NSE

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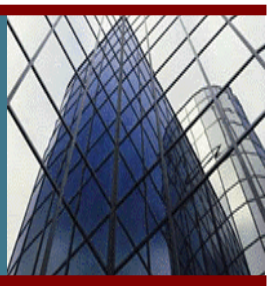

February 15, 2024

Town of Carthage
4396 Hwy 15-507
Carthage, NC 28327

Attn: Emily Yopp

Telephone: 980-585-5160
Email: townmanager@townofcarthage.org

Subject: **Structural Inspection**
**208 Monroe Street**
**Carthage, North Carolina**
**NSE Project #2400511**

Dear Ms.Yopp:

On February 01, 2024, Neal Smith Engineering, Inc. (**NSE)** performed a structural inspection at the above subject location. The purpose of the inspection was to provide an overall structural evaluation of an existing building.

This report summarizes the findings and recommendations based upon the site visit and subsequent engineering evaluation.

## Scope of Investigation

The scope of the investigation included the following:

- Observation of the property by a Professional Engineer
- Visual structural investigation with minimal destructive testing
- Determine the cause of any damage and make recommendations
- Preparation of report and findings

## Description

The property in question is a two-story wood framed structure on a brick basement foundation. There is also attic storage above the second floor and roof access above that. The structure was originally built around 1910. The structure was re-roofed approximately 40 years ago, and there has been little to no maintenance since then.

# Observations and Findings


**Photo #1** - This is the front of 208 Monro St.

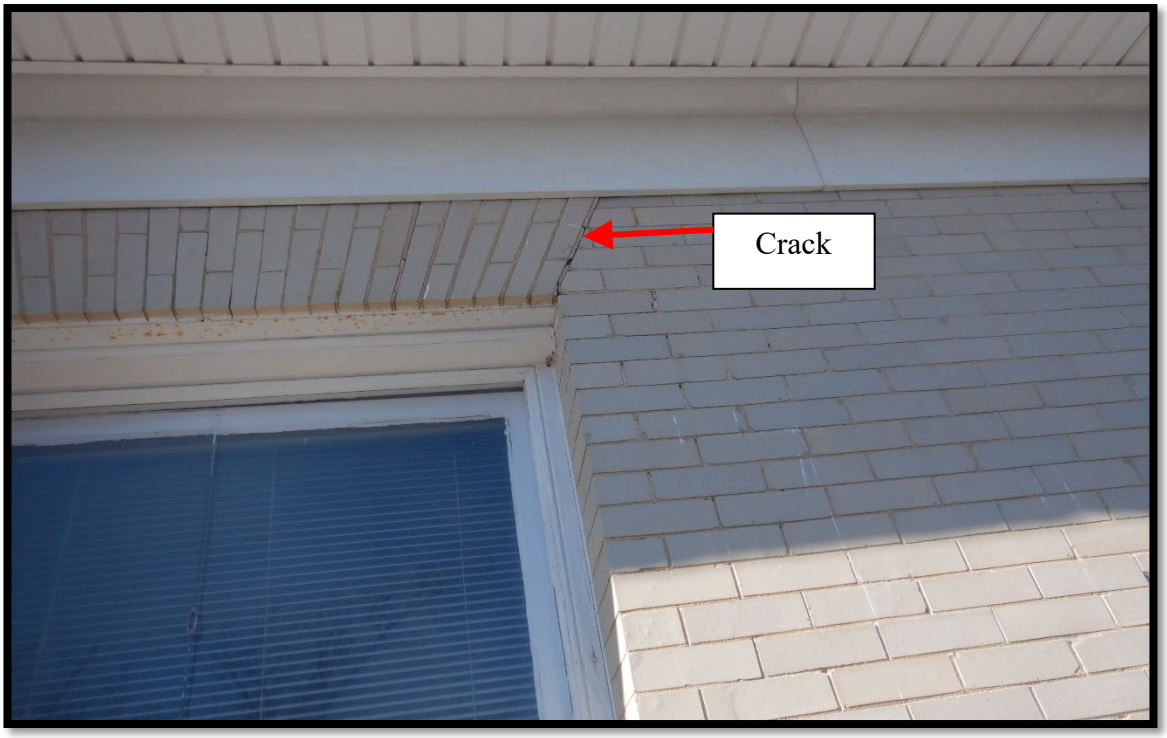


**Photo #2** - This is a photo of a brick crack at a window.

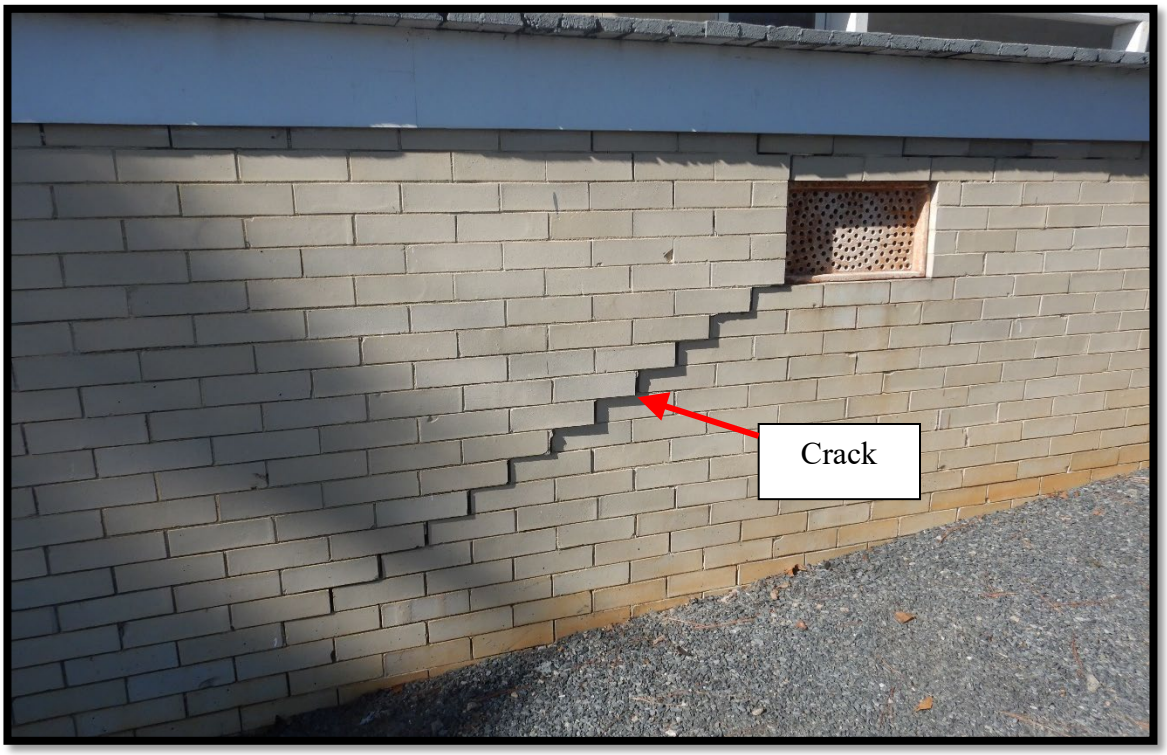


**Photo #3** - This inside of this wall is in photo 23. The brick is single wythe.

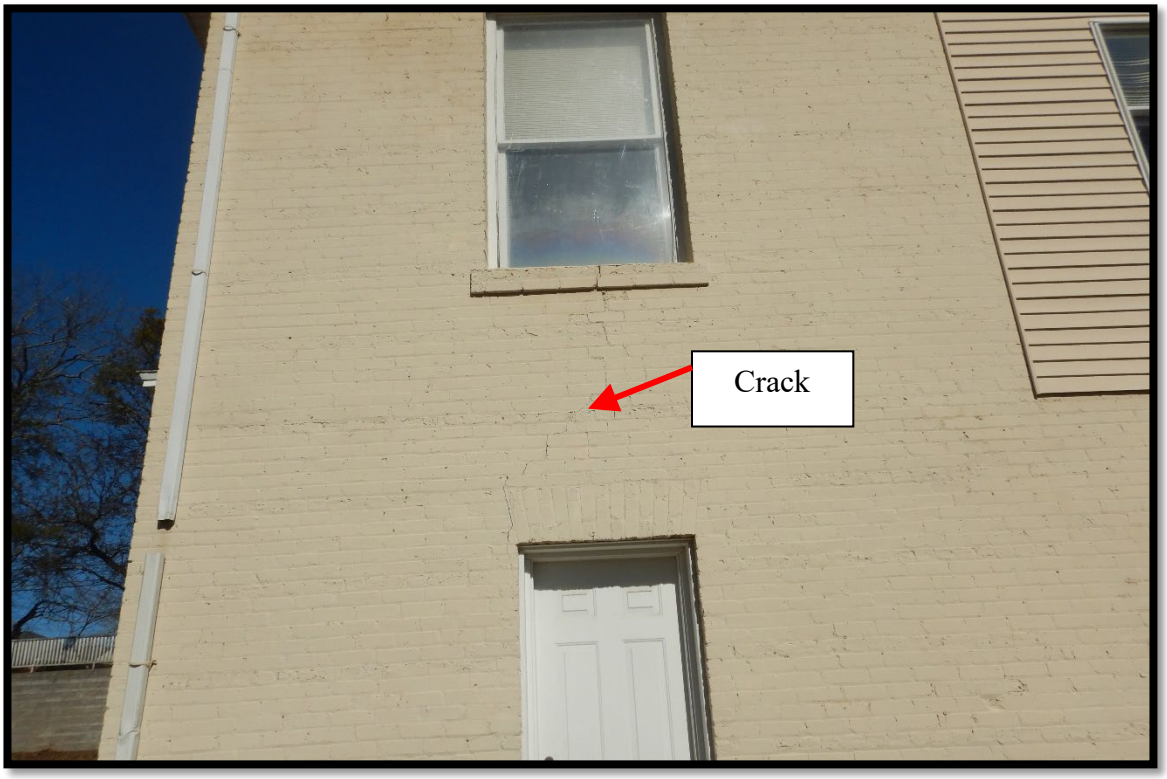


**Photo #4** – Minor brick cracks at the rear elevation.

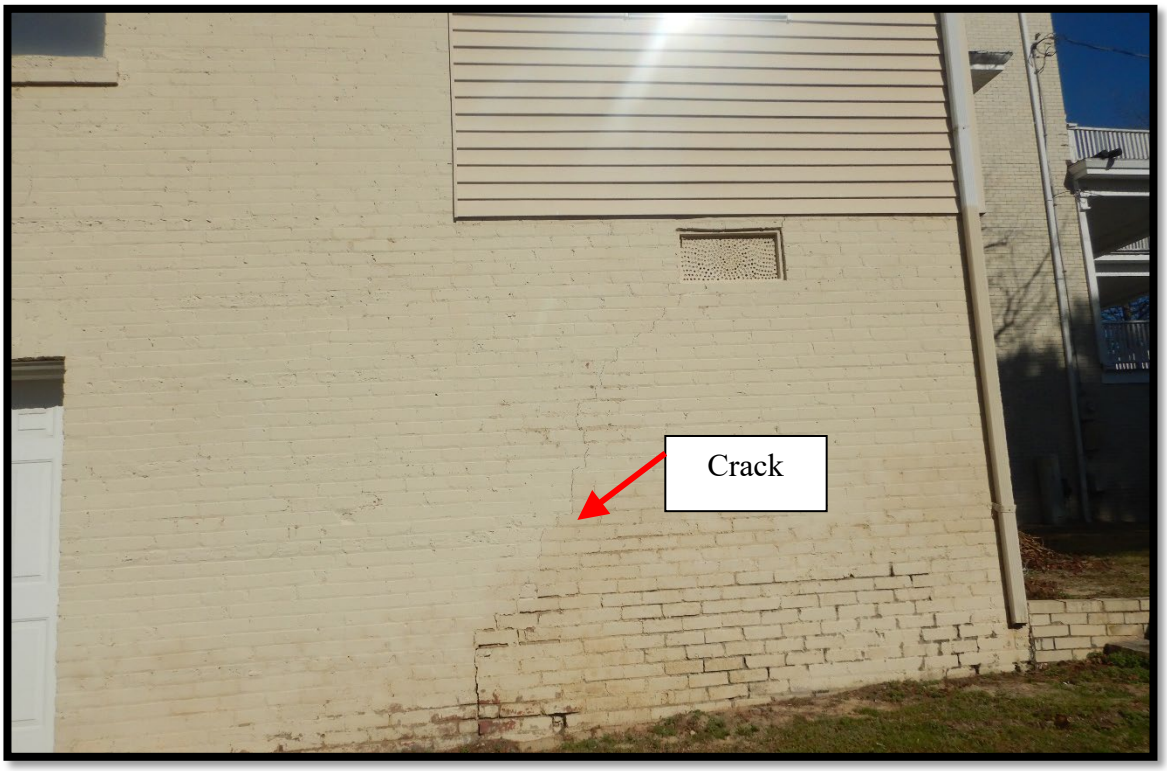


**Photo #5** - Minor brick cracks at the rear elevation.

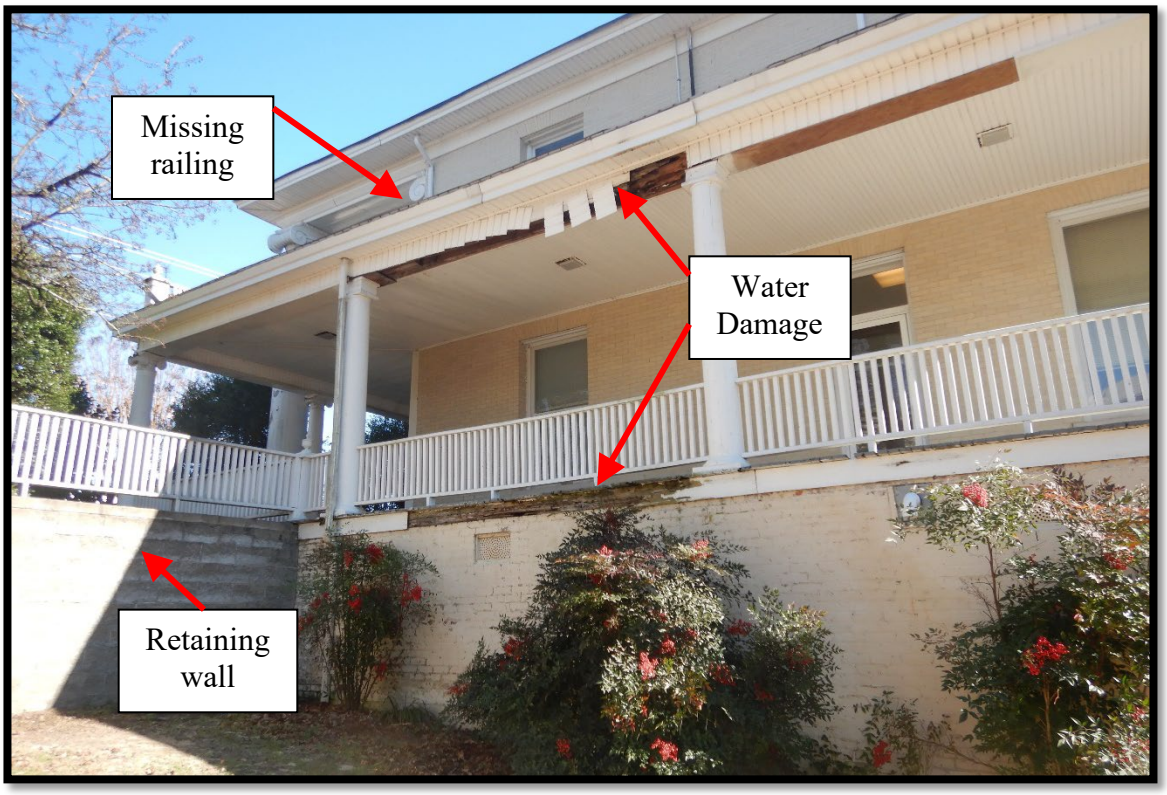


**Photo #6** - This is the right side of the structure. The railing is missing and there is severe water damage to the wood structure. This retaining wall is not original.


**Photo #7**- This is water damage at the rear left side.


**Photo #8** - This is the same water damage in photo 6.

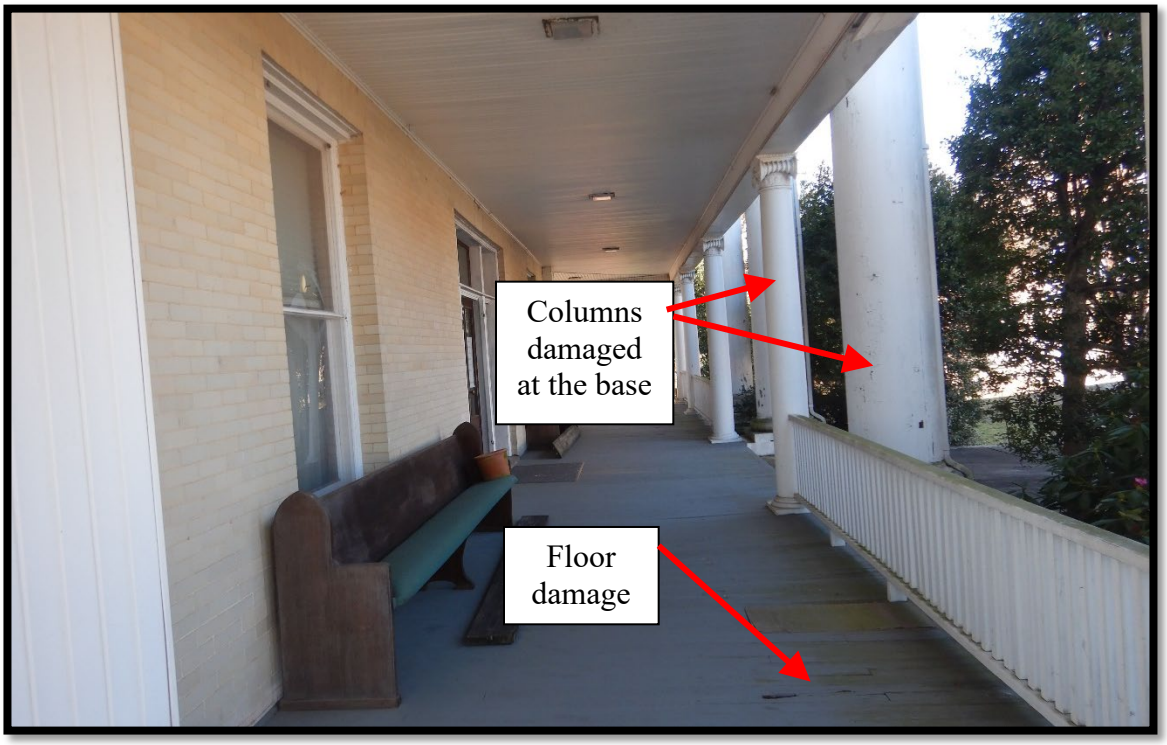


**Photo #9** - This is a photo of the front porch. There is damage to the base of the large columns in front and damage to the tongue and grove deck.


**Photo #10** – The cover on the left side is sagging and there is likely heavy hidden water damage.

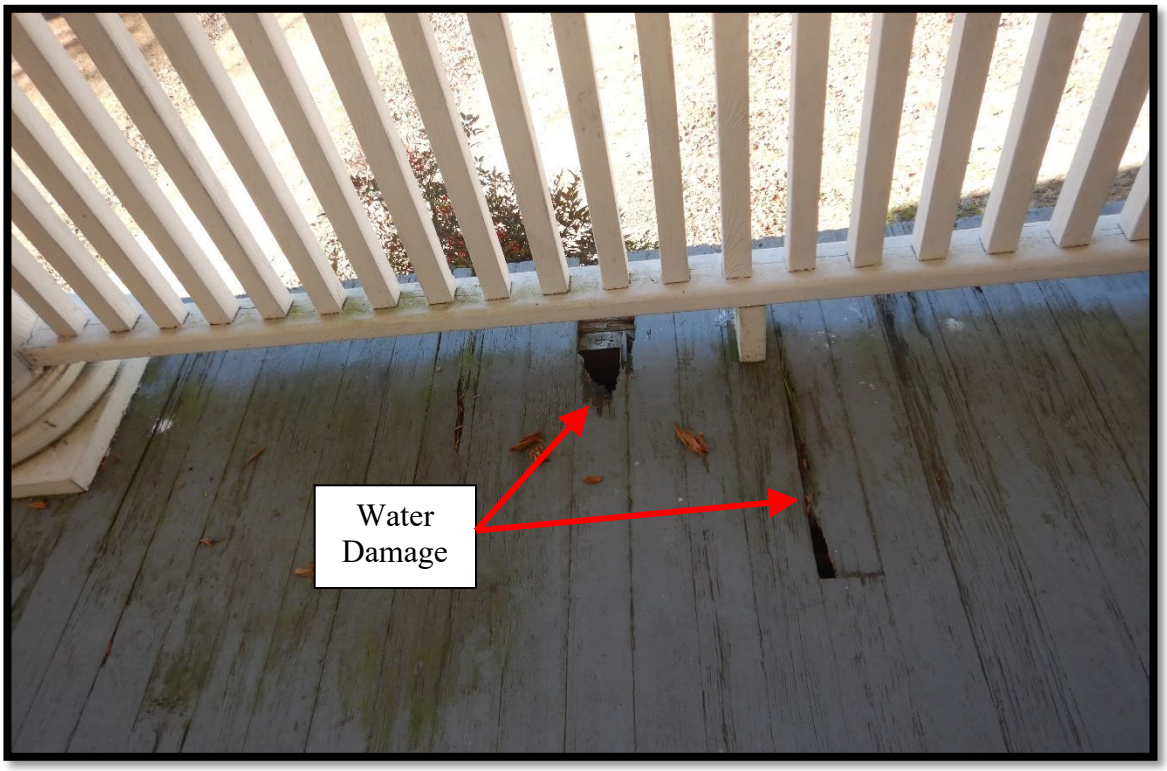


**Photo #11** – Damage to the front porch decking.

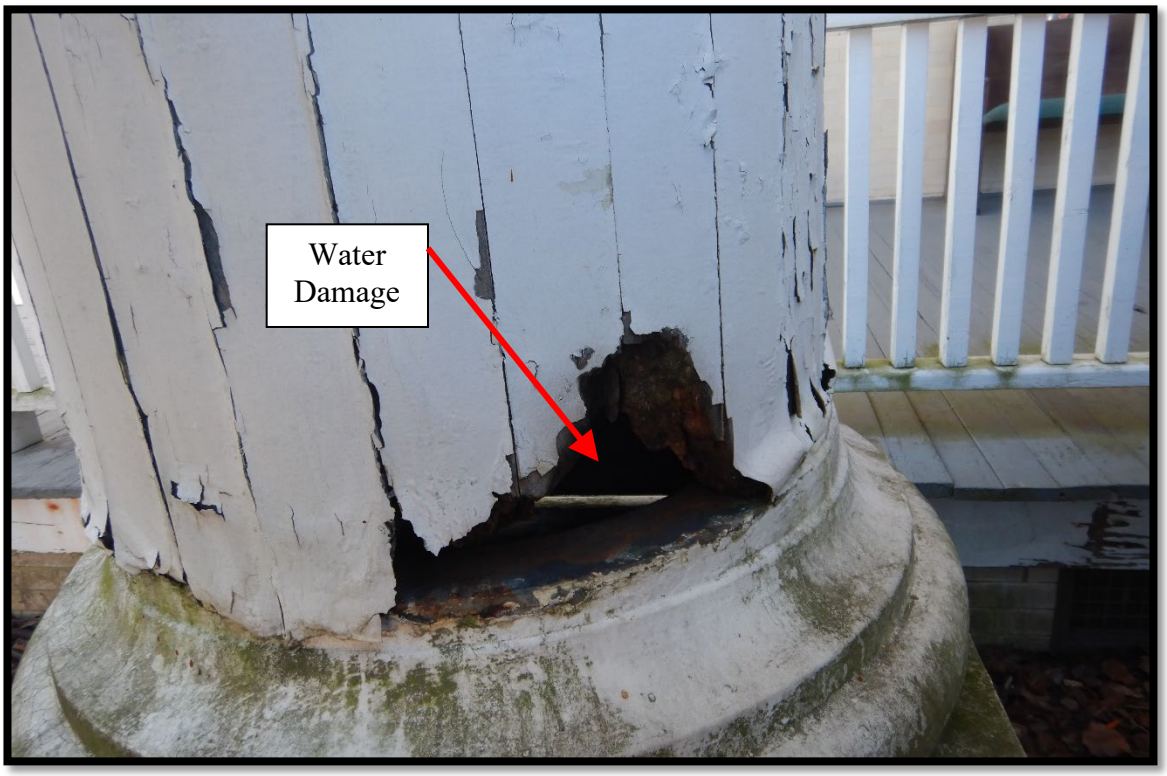


**Photo #12** – Severe column water damage, but appears to be limited to the base.

**Photo #13** – This is the deck with the missing rail in photo 6. There is likely heavy hidden water damage.

**Photo #14** - This is the upper porch along the front. The porches were covered with an EPDM membrane roof approximately 40 years ago. There is likely heavy hidden water damage.

**Photo #15** - This is the main structure basement foundation along the front. The walls are 12” thick solid brick.

**Photo #16** - This is the foundation wall along the right side.

**Photo #17** - This is a photo of the chimney foundation

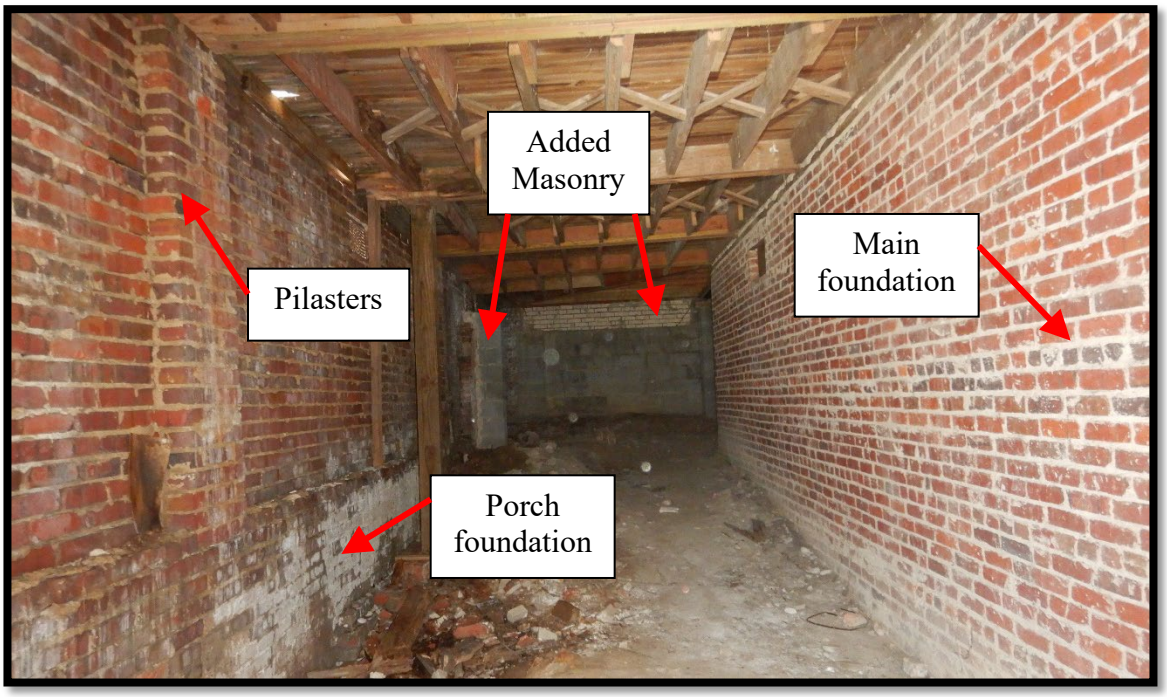


**Photo #18** - This is along the right side. The main structure foundation is 12" solid brick and the porch foundation is 4" brick with pilasters and 8" foundation brick.

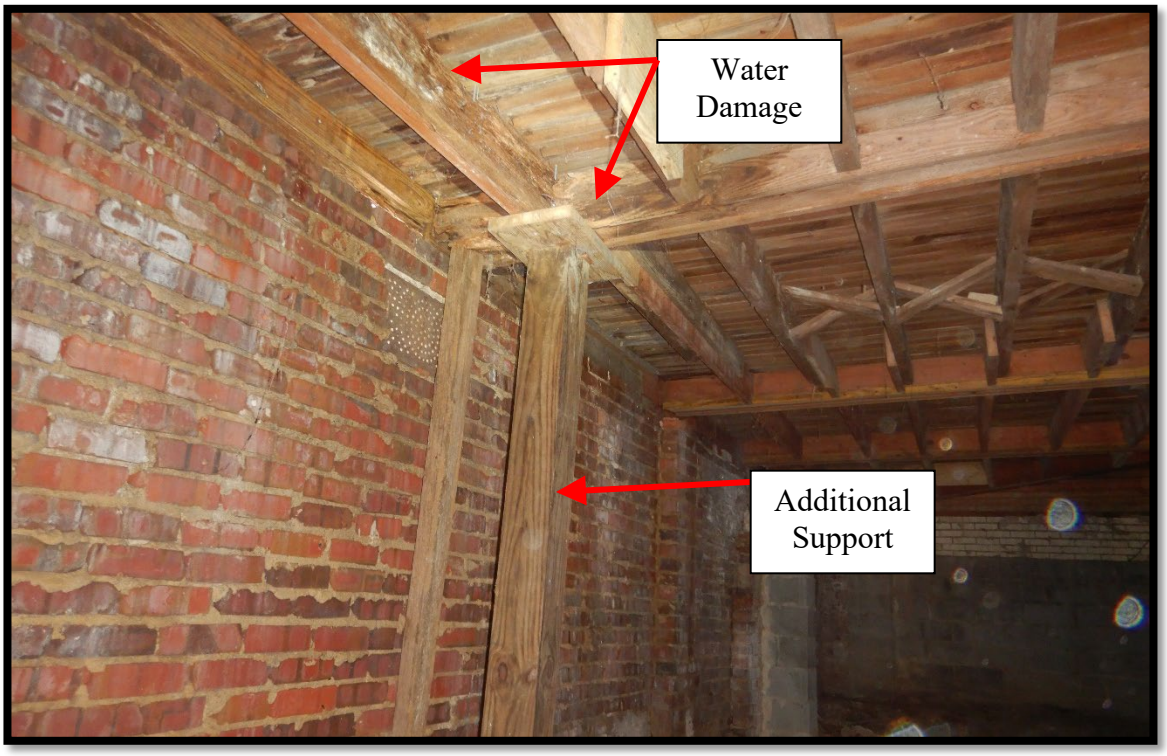


**Photo #19** – Additional supports were added under some of the water damage.


**Photo #20** – Along the front porch wall additional block masonry was added to the brick. The owner stated that about 30 years ago there was a heavy rain that damaged the front wall, so it was reinforced.


**Photo #21** – Additional support added at the front left corner under water damage.

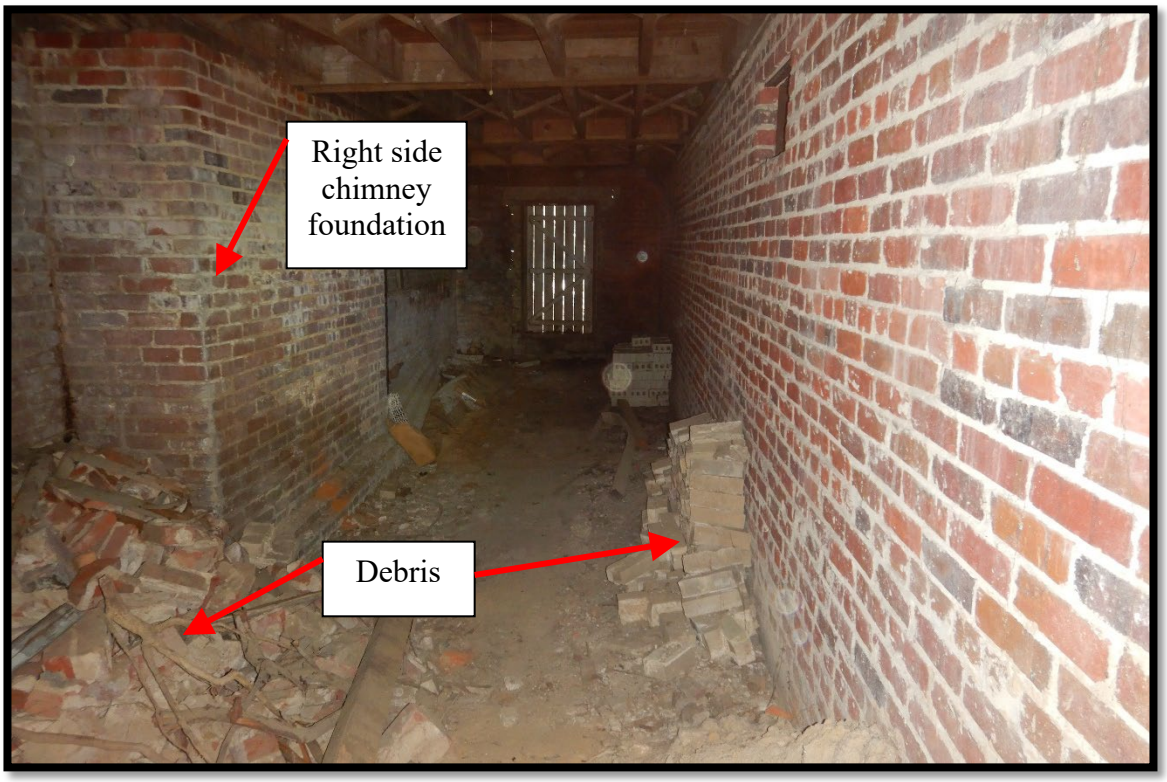


**Photo #22** - This is the other end of photo 18. There is a lot of debris.

**Photo #23** - This is the inside at photo 3. The brick is single wythe.

**Photo #24** - Top roof railing.

**Photo #25** – Closeup of railing showing pealing paint.


**Photo #26** – There is damage to the front flat roof.


**Photo #27** – There were no caps on the top chimneys.

**Photo #28**- There was a cap on the lower rear chimney.

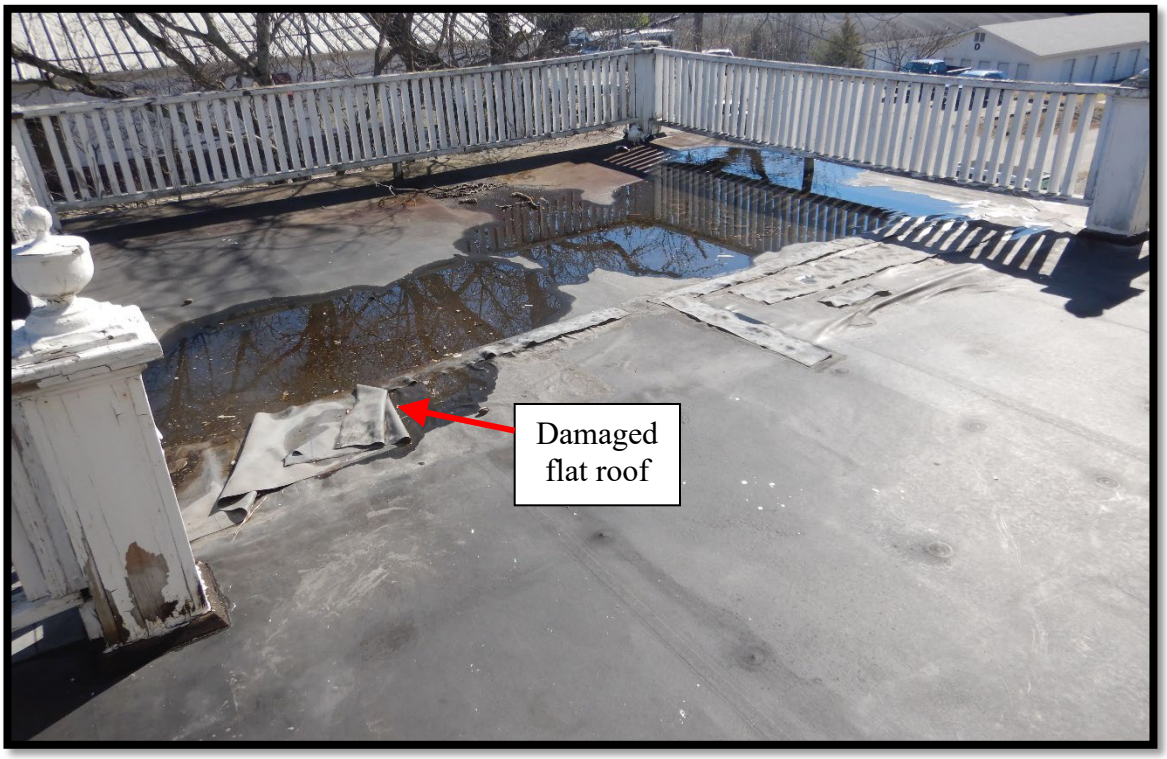


**Photo #29** – Ponding water and damaged roof over the left porch cover in photo 10.


**Photo #30** – Roof water damage around the left chimney.


**Photo #31** – Water damage under the top roof. It appears to be active.


**Photo #32** – Stairs to the top flat roof. The access will need rebuilding. The stairs were not safe.

**Photo #33** - This is a photo of the attic framing. The studs were all different sizes and spacings. Bracing was marginal.


**Photo #34** – Large crack in the stucco at the ceiling in an upstairs room.


**Photo #35** – Water damage in an upstairs room.


**Photo #36** – Vertical crack in a downstairs room.


**Photo #37** - This is a another photo of water damage.

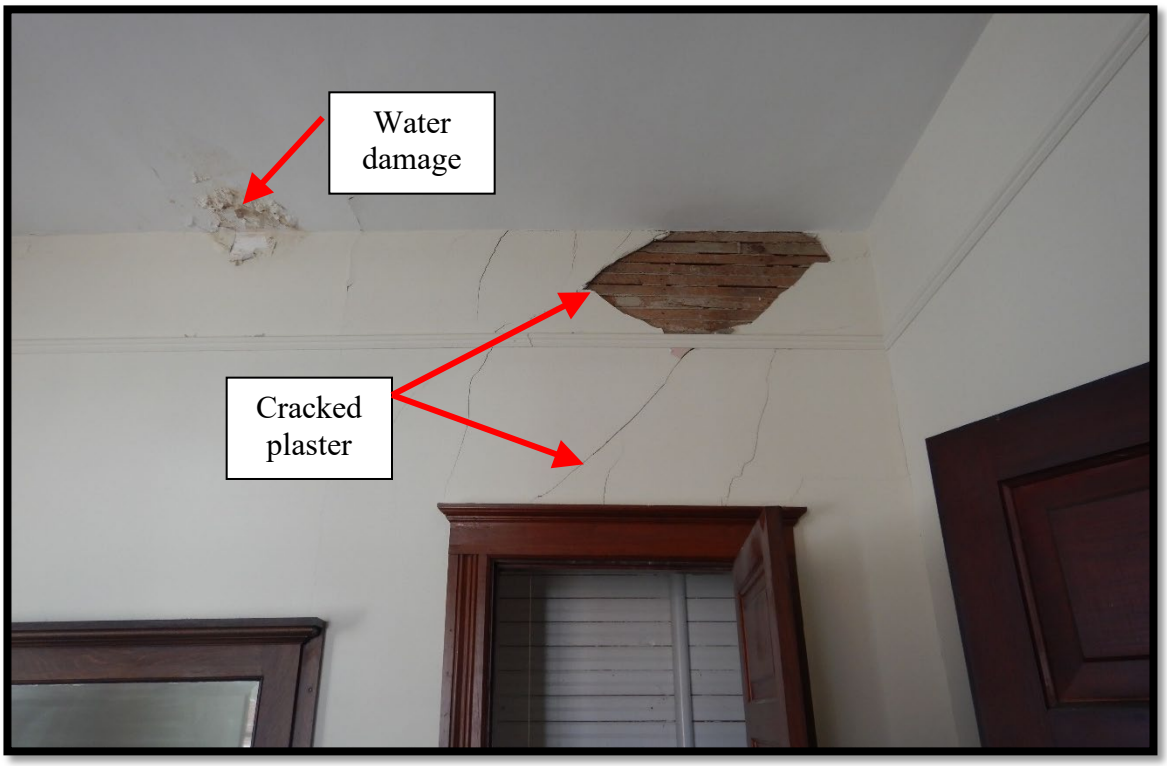


**Photo #38** – Cracked plaster and water damage upstairs.


**Photo #39** – Water damage downstairs, likely caused by a leaking HVAC pan.

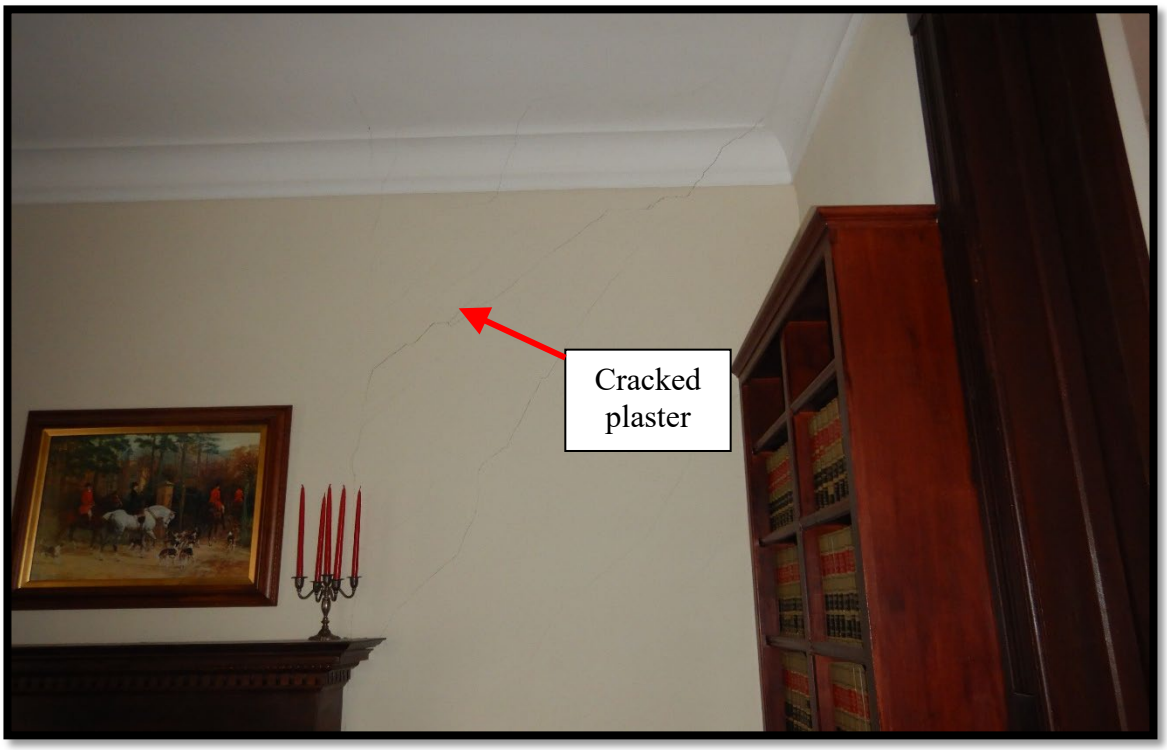


**Photo #40**- Plaster cracks downstairs.

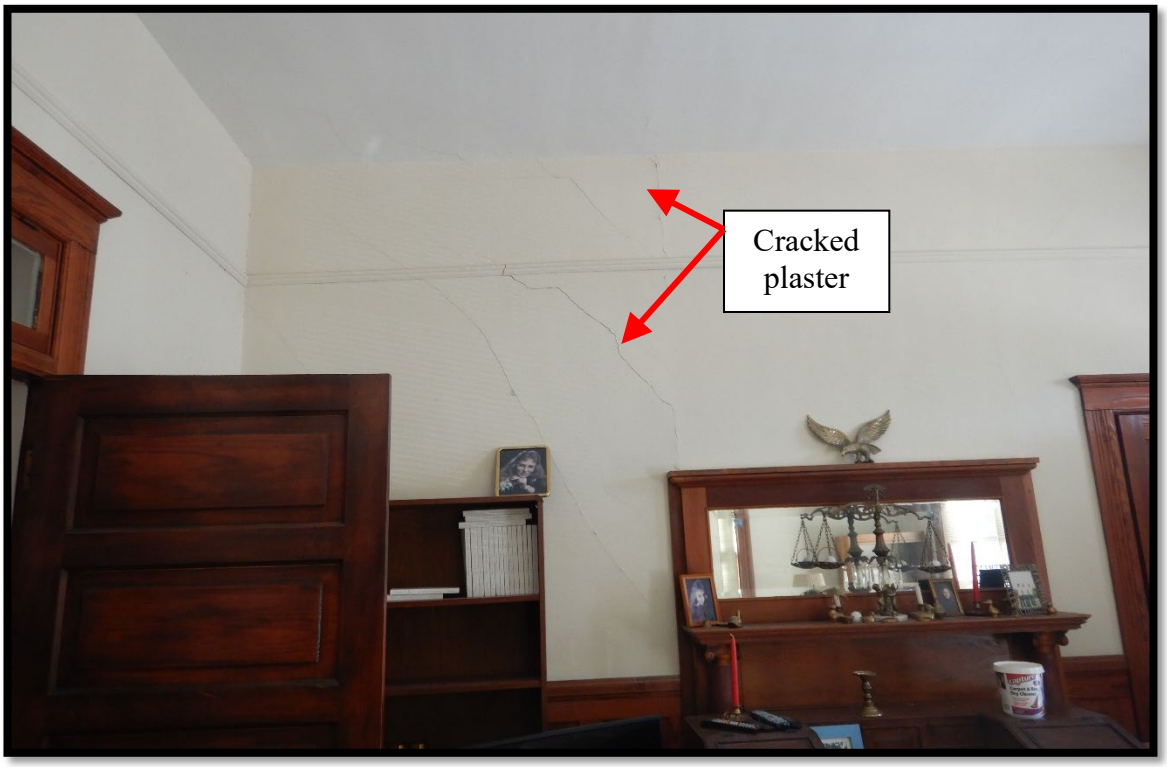


**Photo #41** – More plaster cracks downstairs.

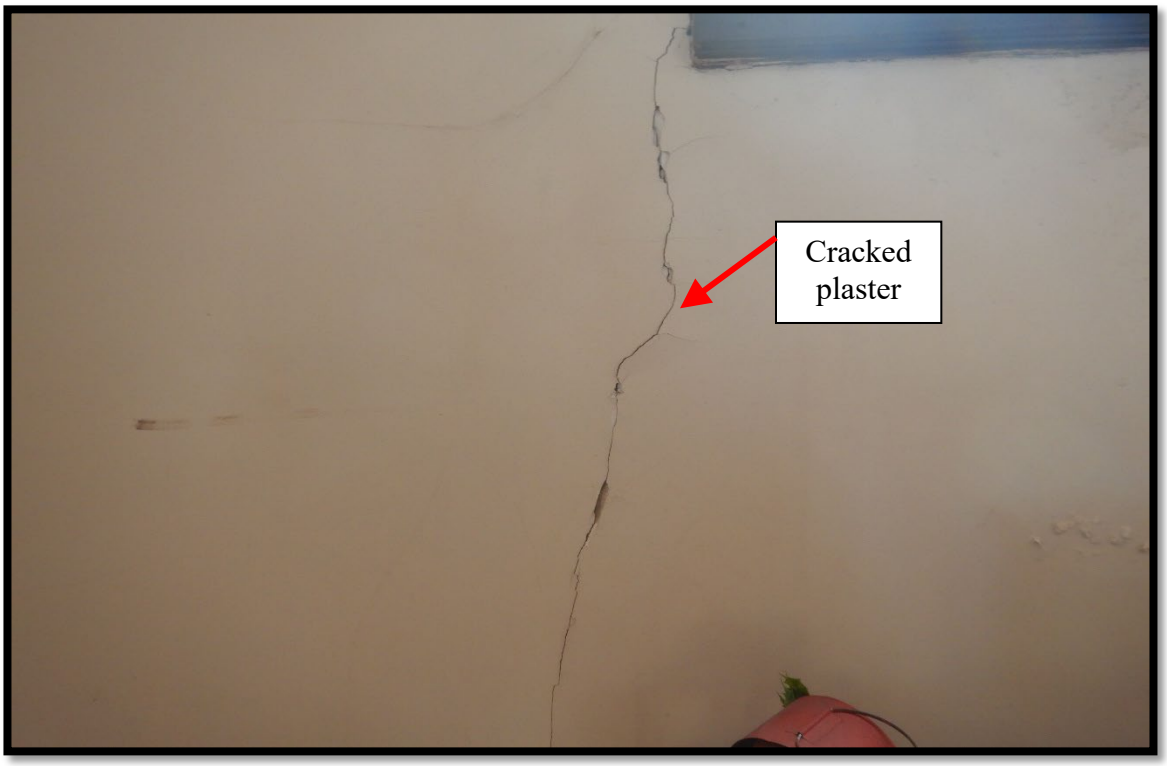


**Photo #42** – Plaster cracks in the stairwell.

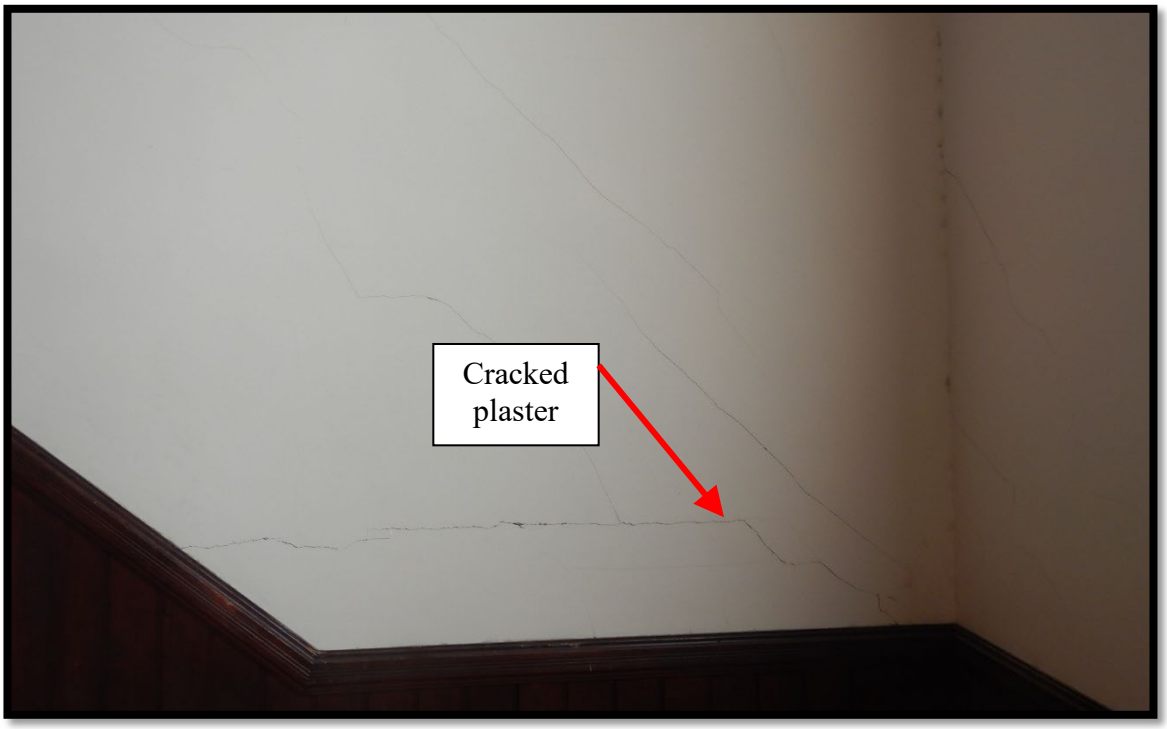


**Photo #43** – More cracked plaster in the stairwell.

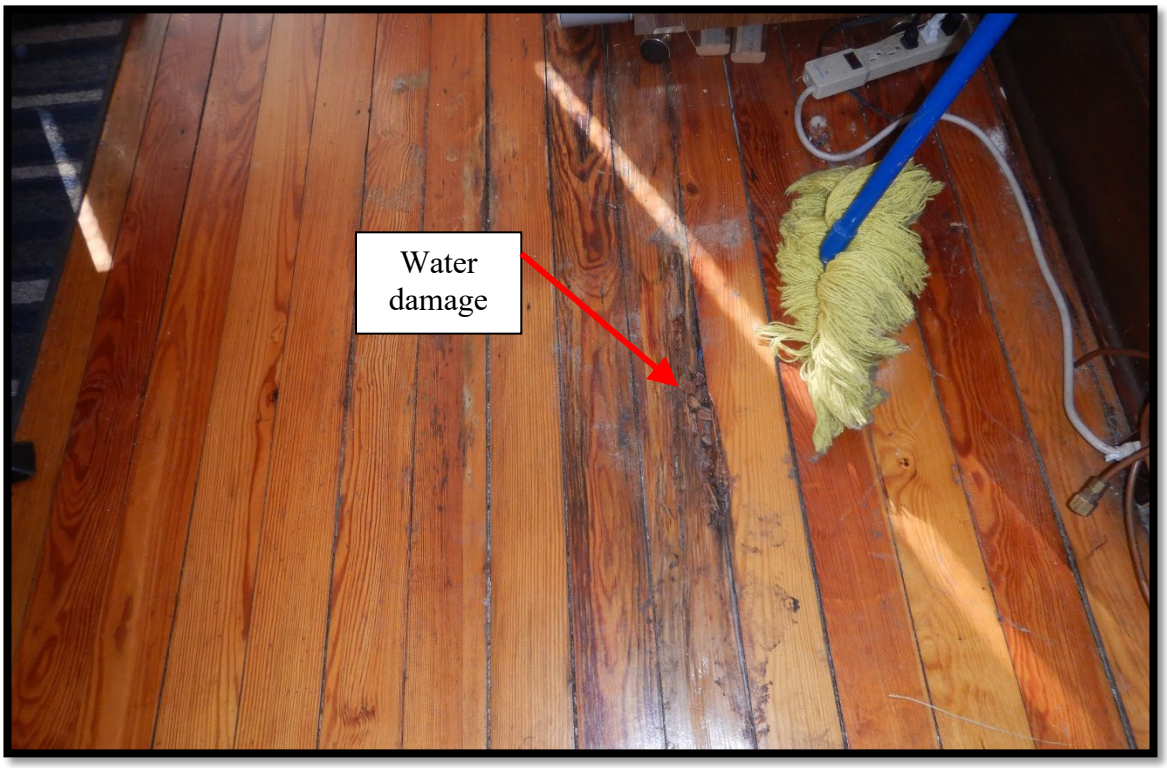


**Photo #44** - This is a photo of water damaged floor.


**Photo #45** – Water damage at a sill plate.

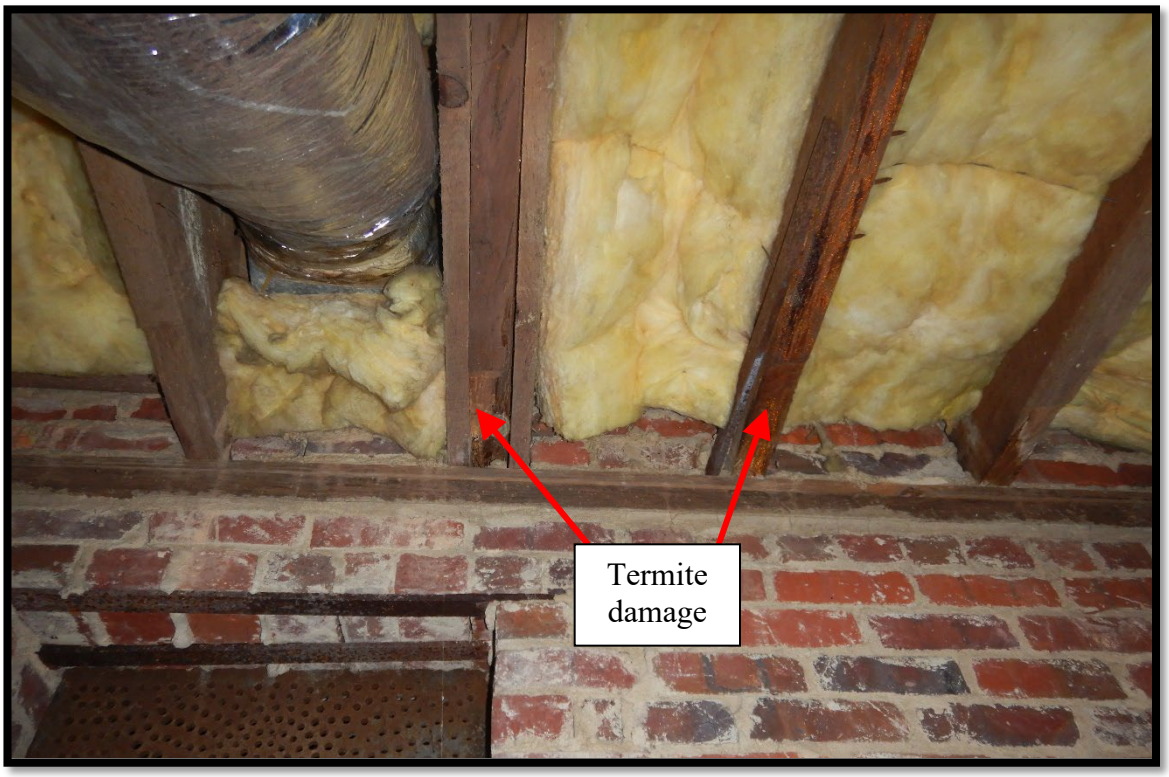


**Photo #46** - This is a photo of termite damage in the basement.

# Conclusions and Recommendations

This structure has been neglected for decades and there is extensive water damage throughout. The entire structure needs to be reroofed. Water damaged roof sheathing and framing will need to be replaced. If the structure is to be saved, this is a must. Each day there will be more decay until the structure is at least dried in.

The EPDM rubber roofs need replacing as well. They should be replaced with a TPO membrane roof instead. The TPO membrane will last longer and will reflect light as well keeping the structure cooler. There is likely significant water damage under the existing EPDM roof. After the roof is removed, the contractor will be able to evaluate and repair any damaged wood.

Much of the interior damage to the plaster and wood lath is also caused by water damage. Certainly, there is also natural settling and deflection of wood members that is contributing to the cracks. Ideally the plaster and lath would be removed and replaced with drywall, but it can also be repaired.

There is a lot of water damage to facia boards and soffits that need to be repaired.

Many of the railings are already removed. Some that remains is not stable. Most of it, if not all, should be replaced to ensure proper connection to the roof members.

The front gable should be replaced and enlarged to get rid of the small flat areas if allowed by historic preservation.

The stairs to the roof and roof access hatch need to be replaced.

Damaged floors should be repaired.

The main foundation is in good condition. There are a few minor cracks that can be grouted or caulked. No significant foundation repair is required.

The floor and wall framing seems solid except for the water damaged areas.

The termite damage was insignificant compared to the water damage.

The additional supports shown under the porches were added to keep from repairing the water damaged wood below. Damaged framing and deck members should be repaired.

The damage to the large columns out front can be repaired. They do not support much weight. They are made with tongue and groove wood members. There are companies that specialize in restoration that can handle this repair.

Reroofing and new gutters should be a priority including any damaged framing below the roof coverings. Damaged facia boards, soffits, rails, and the exterior deck is the next priority including painting.

Where there is severe cracking in the plaster, the plaster should be removed to make sure that there is no structural framing damage from water behind the plaster.

The chimneys should be capped to prevent water from entering.

Neal Smith Engineering, Inc., uses the generally accepted practices and principles used within the profession, and expresses its opinion based on visual observation of the current condition of the structure relative to its condition as generally constructed. **NSE** does not assume any legal responsibilities of the original designers, developers, architects, engineers, or contractors for the property. If other conditions than those assumed by this report are discovered during repairs, recommendations contained in this report will not be considered valid unless the changes are reviewed, and conclusions modified or verified in writing.

If you have any questions or if we can be of additional assistance, please contact us.

Sincerely,
**NEAL SMITH ENGINEERING, INC.**

Digitally signed by Neal Smith
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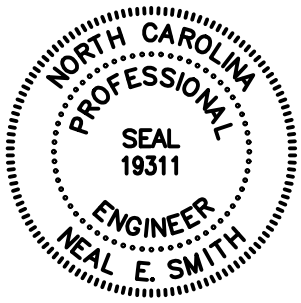


Neal Smith, PE
President