

January 23, 2019

Cheryl and Mark Wheeler
1602 Pease Road
Austin, Texas 78703

**RE: Structural Observations at
1602 Pease Road
Austin, Texas**

Dear Cheryl and Mark:

At your request, I visited the referenced house on Monday January 7th to observe the existing foundation and framing conditions. The house is a single-story, wood framed structure, with a pier-and-beam type foundation. After observing the structure, I believe this is a prime candidate for demolition and replacement. The following are my observations.

Foundation:

I observed the existing foundation through the access door at the southwest corner of the house. The foundation consists of square and round concrete piers supporting a wood floor framing. The piers typically sit on a square footing buried a few feet below the ground.

It is my professional opinion the existing foundation is obsolete and beyond repair.

I have looked at hundreds of pier-and-beam foundations in Austin during my 20-year career and I have personally never seen a pier-and-beam foundation in such a dilapidated state. On any given house it's commonplace to find one or two piers that have structural issues that need attention. So, it is very unusual to find a house where every pier is affected in some way, and in such poor condition.

I observed the existing floor framing within the crawlspace. The floor beams and joists are generally undersized and sagging at numerous locations. The top of all existing foundation piers are shimmed and blocked several inches. Blocking consists of pre-cast concrete paver brick type material. Shimming material was either wood or steel plate. Numerous concrete piers are cracked and leaning. At least one pier was observed to be completely broken and "repaired" by placing pre-cast concrete blocks in the middle of the concrete pier. Photos of a few of the pier issues can be found in the home inspection report by All Star Inspection Service, Inc. dated February 20, 2017 on pages 12 and 13 of the report.

As a result of the poor condition of the foundation the floors inside the house are not level and out-of-level by more than an inch in several locations.

Soils:

I visually observed the soils on 1602 Pease Road and researched the content using the US Bureau of Economic Geology map. The site is very close to an area of transition between two different formations of soil. To the east is alluvial soil that can be clay or a silty clay mix. To the west is Del Rio clay which is known

to be the most expansive clay in central Texas and can shrink and swell up to 5 or 6 inches with changes in moisture. The issues with the existing foundation are consistent with the destructive nature of the Del Rio clay formation. It is my professional opinion that the existing foundation in place is failing due to the results of very expansive clay soils in this area. Only a new foundation will take soils into consideration solve the issues seen on this property.

Attic:

I also observed the existing ceiling and roof framing from the attic. The ceiling joists and rafters are generally undersized and sagging at numerous locations. There are two steel rod and turnbuckle systems running north-south through the attic. The rods are made to be in tension and presumably hold the north and south exterior walls together to keep the walls from splaying or thrusting outward as a result of the roof pushing vertical downward creating this horizontal thrust on the walls. These type of tension rods are not common in residential construction and I have never seen used on a house. When I compare the wood members that work in conjunction with the steel rods to original ceiling and rafter lumber the wood does not match. This leads me to believe that the steel rods were added after the original construction as a repair.

Conclusion:

In conclusion, based on my experience with similar projects it is my professional opinion that this house is a prime candidate for demolition and replacement. The foundation has completely failed, and the framing is undersized and sagging. Almost every part of the foundation and frame would need to be replaced or reinforced to bring it up to modern codes and standards. To do so would be destructive and expensive. Based on my experience on similar projects (in far better condition) the cost to repair and reinforce is not feasible when compared to demolition and new construction.

Please let me know if you have any questions or require additional information.

Sincerely,



Benjamin T. Feldt, P.E.
Principal
Feldt Consulting Engineers, Inc.
TBPE FIRM REG.#6856

