

June 12, 2023

RE: #25 Oak Ave, Assr. Pcl. 7-187
VLS&E Job 576-1

Dear Mr. Dias,

As requested, we have completed our inspection and analysis of your single family dwelling located at the above referenced property. The focus of our review was to determine the condition of the major structural elements of the dwelling as well as the standards of construction, code-compliance and potential code-upgrade requirement associated with any significant renovation:

1. Foundation support
2. First and second floor framing
3. Exterior weather proofing condition.

The dwelling was originally built around 1900 (per assessors' records), at a time when building standards of structural support were much lower than current building codes and regulations. The use of structures has also evolved with the addition of large appliances and furnishings. The following are my observations and opinions regarding the building components reviewed:

1. Foundation system:

The foundation consists of mortared field-stone, board-form concrete, and a brick piling. It appears that the original 13' x 21' building was supported by mortared stone crawlspace. At a later date the crawlspace was partially excavated to create a deeper foundation with the excavation being retained by a mortared stone wall. The brick pile supports the chimney as well as one of the first-floor caring beams. Additions were later added to the structure that are supported by board-formed concrete walls. The mortared stone walls show signs of deterioration. The stone walls have fallen in and dirt has begun to fall into the basement where the stone walls meet the concrete walls. The dwelling is relatively stable on the existing foundation, however the foundation should not be relied upon for any significant reconstruction or major remodeling.

2. First and second floor framing:

The primary support beams consist of approximately 4 x 6 (dimensional) fir on the flat with 2 x 6, fir floor joists. The joists and beams have all deflected significantly contributing to unlevel floors and

ceilings. Though a failure has not occurred, the beams are undersized for the current loading and would need replacement and reinforcing with any significant remodeling.

3. Exterior wall:

The exterior walls are constructed with traditional “balloon frame” techniques that minimize the use of framing members. Much of the original framing is covered with drywall or plaster.

Balloon frame techniques have largely been eliminated in recent years in favor of a more structurally sound stud wall system. Beyond the lack of added structural support, the existing walls do not allow for standard insulating techniques with the lack of a wall cavity. Code-upgrade of the structure would likely result in the addition of wall framing on the interior or the exterior of the building for both strength and insulation standards. Such an upgrade would effectively require the reconstruction of all exterior walls.

Summary:

The existing house is not in total disrepair and does not exhibit any major structural stability problems, however the structure needs significant structural upgrade in each of the load bearing components with any major renovation project. Most of the existing supports would be either removed or support members added with an upgrade, in which case most of the original balloon frame style will be lost within new wall and roof cavities.

If you have any questions or comments regarding this report, please contact me.

Sincerely,



Reid G. Silva, PE PLS
Professional Engineer
Professional Land Surveyor