DYNAMIC ANALYSIS

ENGINEERING CONSULTING

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1501 14TH STREET WEST
SUITE 202
BILLINGS, MT 59102
(406) 831-0042
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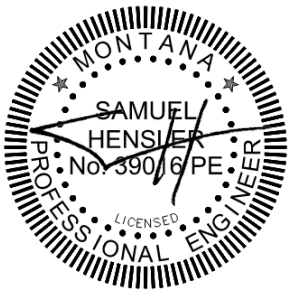
RESIDENTIAL STRUCTURAL CONDITION ASSESSMENT

July 11, 2024

Single Family Residential Dwelling located at 6227 Western Bluffs Boulevard, Billings, MT

Prepared for John Petrisko
Current Homeowner



Samuel Hensler, P.E.
MT License Number: MT39016 PE
Dynamic Analysis Engineering Consulting, Inc.
1501 14th Street West
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SUMMARY

The home is in excellent structural condition. There are a couple foundation cracks that could be sealed as part of standard home maintenance, but otherwise, no repairs are necessary.

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INTENT AND LIMITATIONS

The intent of this report is to create a disclosure document that accurately and understandably conveys the structural condition of the building in question to the buyer and/or seller. This letter is not a forensic report, and it has not been prepared as an expert witness disclosure for pending or active litigation. The goal of this investigation is to determine if there is any serious damage, distress, deterioration, or degradation to the structure that is important for a homeowner to be aware of.

It is usually not possible to perform a complete analysis of the structure as most of the structural elements are obscured from view. Thus, this assessment is limited by the visible and observable characteristics and behaviors of the structure. No destructive testing was performed. The behavior of the structural elements has been observed to the best of our ability. Thus, these observations are dependent on incomplete information, and someone may discover issues not identified in this letter. Our determinations can often depend on the accuracy of information provided by the current, previous, or neighboring property owners. This letter contains our professional opinion based on our education and professional experience evaluating thousands of similar structures.

In some instances, we are asked to mention only a specific item or deficiency. If this is the case, it will be stated clearly. Otherwise, our analyses include the foundation, slabs-on-ground, floor support system, floor structure, wall framing, ceiling structure, and roof system of the main dwelling. Our analyses do not include detached ancillary structures unless this report specifically states that it does. Our reports typically do not include non-structural observations or recommendations; however, non-structural deficiencies may be structurally relevant and will be identified as such.

Our reports do not include soils testing; however, if specific soil types are known to be present in a given area, or if we have observed the effects of specific soils conditions in nearby areas, this will be remarked in the report.

The recommendations contained herein are general in nature and may not be adequate to build from – which is beyond the intent of this report. In applicable scenarios, the IEBC, IRC, and WFCM should be referenced by the contractor to ensure the installation includes the adequate connections and members detailed in the IRC or WFCM. Alternatively (and in some cases, necessarily), an engineered repair plan may be developed separately from this report to provide building instruction.

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BACKGROUND, OBSERVATIONS, & FINDINGS

At the request of the Client, Dynamic Analysis performed a site visit on July 9, 2024. I, Samuel Hensler, PE performed visited this site inspection in person. My understanding of the objective of this assessment is to evaluate the overall structural integrity of the house for no particular concerns other than its location in a neighborhood known to contain adverse soil conditions which have negatively impacted the foundations of several homes in the area.

The home was well constructed, exhibiting rational structural load paths from the roof to the foundation. During their ownership, the current owners have only patched a ceiling crack in the living room and have not undertaken any other similar repairs. A ceiling crack of this nature could be attributed to various factors and is not structurally concerning.

There are a few foundation cracks around the egress windows on the east side of the home. Although these cracks are not structurally significant, they should be professionally sealed to prevent water or insect ingress into the basement, which is a standard aspect of home maintenance.

I measured the differential elevation of the main floor and the area above the garage, finding the building's footprint to be within ½ inch of level. This degree of levelness is about as precise as a house of this size can be constructed. For a home of this age in this specific location, the absence of evidence of differential movement is very encouraging.

In my professional opinion, this home is unlikely to experience the soil-related issues that have affected other homes in the area, provided that drainage is reasonably maintained. The current condition and levelness of the home suggests that it has been built on a stable foundation, which is a positive indicator for its long-term structural health.

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RECOMMENDATIONS

No structural recommendations at this time.

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APPENDIX A

Photographs

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Photo 1:

Exterior profile

Photo 2:

Exterior profile

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Photo 3:

Exterior profile

Photo 4:

Exterior profile

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Photo 5:

2.0mm foundation crack around egress window

Photo 6:

1.5mm foundation crack around egress window

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Photo 7:

Crack in driveway – not a concern

Photo 8:

Irrigation vacuum breaker torqued – but not due to foundation settlement. Possibly backfill settlement.

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Photo 9:

Patched drywall crack in ceiling