



July 27, 2023

Kittitas County Community Development Services  
411 N Ruby St., Suite 2  
Ellensburg WA 98926

RE: Repairs and Renovation at 280 Wilderness Lane Easton, WA

To Whom It May Concern:

**Introduction**

As part of renovation work on the subject property (Attachment 1 Site Plan), Erik Hohmann of Straight Arrow Northwest, Inc. (Contractor) discovered cracks in faux stone exterior cladding and observed movement in posts along north side of house that support the existing deck areas.

We made recommendation to investigate further and the Contractor removed the faux stone in areas of concern. The purpose of the inspection was to investigate extent of foundation cracks and to determine the cause of movement/leaning post supports along the northside of the property.

**Findings**

On July 17, 2023 Mr. Fulton inspected the property, with Luke Parmenter of L&S Earthworx, Inc. making excavations. A rubber track mini excavator-JCB 18 Z-1 was used in these tight limited spaces. Pits were located based on crack locations in foundation wall and equipment accessibility (Attachment 2 Cracks and Post Locations). See site photos included in Attachment 3 Site Photos.

The excavations remained open and dry during excavation. Soils consist of loose granular fill. No clay, nor bedrock was observed.

A total of five cracks were observed in foundation walls as noted in Figure 4 Cracks and Post Locations. Excavations were performed along the foundation corresponding to two of the cracks. The cracks varied from hairline to 1/8-in in separation and extended vertically from top of wall to ground surface. Cracks appeared to grow in separation with height above ground surface. Cracks may extend further; however, foundation foam obscured further observation.

Excavations were also performed at two nearby post foundations. Foundations consist of 18-in concrete Sonotubes that extend 4-ft below ground surface resting on concrete pads. These pads were determined in general to extend 1-ft laterally beyond edge of Sonotube. The depth of the supporting concrete pads remains unknown due to equipment limitations and minimizing exposed excavations.

### **Conclusions**

The cracks in the house foundation wall indicate settlement has occurred and can be attributed to mixed bearing conditions of both soft fill soils and bedrock (as seen along east side of house). Cracks will likely continue to propagate however they are not a cause for immediate concern for structural failure.

The loss of plumb at the posts indicates settlement has occurred in supporting concrete pads below ground surface. This is likely due to poor soil compaction at supporting depth and probable erosion along edge of footing (where snow accumulates, shedding from roofline). These conditions are likely to worsen with time and decrease post support if neglected.

The yielding soils below the post foundations are likely to extend to significant depth and will require removal for proper compaction. The observed fill is suitable for reuse in backfill provided all organics and 3-in plus material is removed. This will require significant storage area as soils are excavated and processed.

Soils along north slope are over steepened (approximately 1.5 horizontal: 1 vertical) with signs of creep observed in the curved tree trunks. If ignored, soil movement will continue, exposing yet more soils to erosion and likely causing more settlement in post foundations and possibly the home foundation.

**Recommendations**

The soils appear suitable for supporting an embankment wall along the north slope. This would provide soil support, minimize potential for ongoing movement and decrease likelihood of potential settlement in post and house foundations. In the interim, we recommend the following:

1. Cover soils with impermeable plastic to eliminate further weakening of bearing soils and related damage.
2. Monitor foundation cracks by installing crack gauges. If new cladding is installed, provide observation points at crack locations.
3. Perform survey of house interior to determine current structural status. Use baseline survey for measuring settlement and future evaluation of foundation conditions.

Sincerely,

  

---

Omar C. Fulton, P.E.

GROUND AFFECT, Inc.  
531 Meadow View Dr.  
Ellensburg, WA 98926  
425 830 9219