

Exhibit D.2



September 19, 2022

Scott and Sharon Hancock
4955 South Pyrite Road
Flagstaff, Arizona

**RE: RECOMMENDED SETBACK & SLOPE RETREAT MITIGATION MEASURES
LOT 37 SHELTER COVE
FLORENCE, OREGON
BRANCH ENGINEERING INC. PROJECT NO. 21-335**

Pursuant to the City of Florence's (COF) request for a site-specific recommendation as to the risk of retreat and erosion of the sand slope down to the Siuslaw River on the southwest edge of the property, Branch Engineering Inc. (BEI) has revisited our July 8, 2022 Erosion/Recession Site Assessment report and subsequent site information provided by the COF.

The erosion of the east bank of the Siuslaw River in the area of the subject site and several others locations appears to have been accelerated by the construction of the river groynes on the west bank prior to 1976. As we noted in our July 8, 2022 report the extent of erosion is difficult to determine from the aerial photographs but is estimated to be at least 20-feet between 1952 and 2005. Rudimentary measurements from Rhododendron Drive indicate possibly 80-feet of slope loss from 1976 to 2016. Development of the Shelter Cove subdivision occurred between 1988 and 1994 with the adjacent house on the north side appearing in the 2000 photograph.

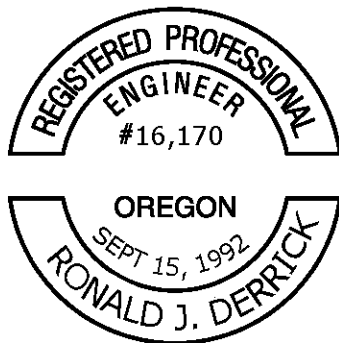
It is our understanding that around 2006 a rip-rap revetment was constructed along the toe of the slope in accordance with the December 1, 2003 *Dune Stabilization* report by Boire Associates, Inc.; however, details of construction and the extent of revetment have not provided to BEI, if they exist. Our investigation encountered remnants of rip-rap material scattered near the toe of slope and below the water line but it was not indicative of an engineered revetment as shown in the Boire report and subsequent addendums.

As BEI previous concluded, the approximately 90-foot dune sand lies atop a cemented terrace layer that appears to have some undercutting below in more easily eroded sediment that are generally below the river surface level. The construction of the river groynes have diverted the river flow to the east and caused erosion of the bank in the area of the subject site and other locations. The rate of erosion appears to have been higher during the 10-to 15-years after immediately after groyne construction as expected and a slight rate of erosion increase sometime after the construction of the rip-rap revetment in 2006 possibly due to the weight of the revetment shearing off the cemented terrace layer that holds the overlying toe of the dune sand slope. The apparent failure of the revetment may have been the cause of the surficial slope failure observed off the northwest corner of Lot 37 and onto the adjacent lot to the north. The slope erosion in the failure area appears to be relatively stable since 2019. It is not known whether the adjacent property owner(s) have maintained records of the slope conditions.

Based on our site research, BEI concludes that the stabilized rate of erosion of the west slope of Lot 37 property is approximately 1-foot per year and for an anticipated 50-year life span of the residential structure we continue to recommend at least a 50-foot setback from the top of the dune sand slope as stipulated in our June 18, 2021 *Geotechnical Site Evaluation*. In addition, vegetation

shall be maintained and enhanced on the existing slope and all stormwater runoff from impervious surface area shall be collected and conveyed to a suitable point of disposal away from the existing slope. The property owner has been advised that this location is prone to river erosion activity and the rate of may vary depending on circumstances and activities beyond their control, and that the risk of slope erosion and failure exists. Building foundations should be designed for rigidity and structural cohesiveness, and may be designed to accommodate future under pinning, if required. Development of the lot as proposed does not increase the risk of slope instability nor does development have any additional risk than the developed properties immediately adjacent to the site

Sincerely,
Branch Engineering Inc,



EXPIRES: 12/31/2023

Ronald J. Derrick, P.E., G.E.
Principal Geotechnical Engineer