



Cobalt Geosciences, LLC
P.O. Box 82243
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June 16, 2021

Mark Perkoski
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RE: Comment Letter
Oslo Bay Apartments
SR 305
Poulsbo, Washington

In accordance with your authorization, Cobalt Geosciences, LLC has prepared this letter to provide geotechnical responses to a comment letter by Parametrix dated June 3, 2021.

The comment letter discusses the requirement for geotechnical analysis for ponds located within 50 feet from the top of slopes with magnitudes of 15 percent or more, and 200 feet of the top of slopes with magnitudes of 40 percent or more. This requirement is referenced from the 2019 Department of Ecology Stormwater Management Manual for Western Washington.

We have reviewed a plan sheet and section (Sheet C4.53) prepared by KPFF which shows the east pond layout and updated pond depth (12 inches deeper). The section also shows a theoretical geometry with a 30 feet 'setback' from the top of slopes with magnitudes of 15 percent or more.

The previous consultant EnviroSound as well as our firm have both conducted slope stability analyses for the east pond location and planned topography. The results indicate suitable factors of safety with respect to the proposed pond geometry.

The proposed pond layout, including a slight deepening of the pond, creation of a 6 feet wide top of berm, and berm fully within native soils, is suitable from a geotechnical standpoint. The theoretical and essentially, 30-foot effective setback for the pond from 15 percent magnitude slopes is adequate.

It is our opinion that the pond setback requirement from 15 percent magnitude slopes is in place so that a geotechnical consultant verifies that instability is not present from or within shallow magnitude slopes. It is possible for low magnitude slopes (15 percent or thereabouts) to show instability if specific geologic conditions are present. These typically include the presence of permeable sands overlying silt and clay with groundwater at the contact, presence of existing slide features (weakened soils), and presence of clay soils which can be unstable in low magnitude slopes. None of these geologic conditions are present in the area of the east pond. This area is underlain by dense to very dense glacial till which is stable and resistant to global instability in most slope conditions.

Sincerely,

Cobalt Geosciences, LLC

Phil Haberman, PE, LG, LEG
Principal