



Cobalt Geosciences, LLC
P.O. Box 1792
North Bend, WA 98045

September 20, 2024

MacPherson Construction and Design
Attn: Mr. Dan Buchser
dan@macphersonconstruction.com

RE: Geotechnical Addendum
Proposed Additions/Remodel
5330 Butterworth Road
Mercer Island, Washington

In accordance with your authorization, Cobalt Geosciences, LLC has prepared this letter to present responses to City comments. Our responses are as follows:

The risk and amount of differential settlement between current auger-cast pile foundations and new pin pile supported foundation systems would be less than 1/2 inch over a 20 foot span. This of course relies on proper design and placement of both types of systems (older and upcoming). Pin piles driven to refusal typically experience very little post-construction settlement. Load testing to 200 percent of the design load commonly indicate less than 0.25 inches of movement.

Downdrag is not a common discussion or risk with piles smaller than about 6 inches in diameter. Larger piles are more likely to develop skin friction that could result in marginal to significant downdrag. It is our opinion that the risk of downdrag is low and does not pose a life safety risk. Mitigation is not warranted.

Sincerely,

Cobalt Geosciences, LLC



9/20/2024
Phil Haberman, PE, LG, LEG
Principal