



21 August, 2019

Mr. Don Cole
City of Mercer Island Building Department
9507 SE 43rd Street
Mercer Island, Washington 98040
Tel: (206)-232-4034

RE: Critical Areas for Knopf Residence Hillside Improvements
9507 SE 43rd Street Mercer Island, Washington

Dear Mr. Cole,

The Knopf property at 9507 SE 43rd Street is located on a southeasterly facing slope overlooking Lake Washington. The purpose of these studies were to develop plans for slope stabilization to address the 2017 landslides originating on two adjoining uphill parcels (9409 SE 43rd Street and 4304 94th Avenue SE) that descended as debris flows onto the Knopf parcel the adjacent property below. Similar slope movement also occurred in 1982 in the same general location (see geotechnical report by Pan Geo). As a temporary slide control measure a series of timber catchment walls were installed to slow down the velocity of debris flow and prevent damage to the Knopf driveway as well as the houses below.

Repairs on the steeper slopes will consist of Tecco mesh surfacing restrained with soil anchors at 10 feet on center (See geotechnical report and plans by Pan Geo). The flatter slope within the debris chutes may be remediated with native plantings (See planting plan by Environmental Consulting, LLC). The series of timber catchment walls installed as a temporary measure will also be removed as a portion of this project.

The 2017 landslides completely buried a class 2 perennial water course onsite. After stabilizing the steep slope areas above the watercourse, this project will re-establish this water course using a system of trenches with perforated pipe, quarry spall armored stream bed, and open channels to convey the ground and surface water off of the Knopf property at the pre-existing discharge point.

All critical areas on site can be seen on the Permit Set Drawings included as part of this critical areas study. Great care was taken to mitigate all known potential impacts of this project and restoration of the perennial water course was a major priority. Filter fabric fencing and compost socks will be utilized to prevent erosion and control sediments during construction and native plants will be utilized to re-establish ground cover. Once construction is complete, the 50 foot buffer around the stream will be re-established. Please see the Permit Set Drawings for site topography and all construction elements. All information in this report is accurate to the best of our knowledge.

Please let me know if you have any questions.

Sincerely,
Harbor Consulting Engineers, Inc.



Darren S Johnston, P.E., S.E.