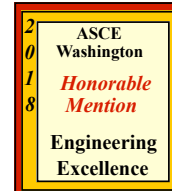


July 8, 2024

Project No. 2EJ01261028

Buying Wang & Wanqiu Yang
c/o Siyao Studio
siyaow@siyao.studio



Re: Civil Engineering Service – Stormwater Impact Letter
6450 E Mercer Way
Mercer Island, WA 98040
Building Permit 2402-186 Circle 2 Comment

Dear Buping and Wanqiu:

At your request, I provide this letter of Stormwater Dispersion Trench Impact Letter responding to City's Circle 2 Civil Comment:

“The letter regarding the dispersion system shall be signed and stamped either by the civil engineer or geotechnical engineer; also the letter or memo will need to address if there are any negative impacts to the downstream properties, if no, explaining in details why not, if yes, explaining how to mitigate the impacts.”

During the design phase, geotechnical engineer identified potential erosion area, delineated by hatching on the plan.

The dispersion trench was placed downslope from the marked erosion-prone area. The design is intended to route storm pipes directly over the potential erosion zone without excavation or alternation.

In Section 9.2 of the Geotechnical Report, Erosion Hazard Mitigation on page 28, “it is noted that drainage pipes should be tightlined to a natural drain course or dispersed in an appropriate area below and away from slope faces.” | In terms of civil design, the dispersion trench placement was in a 13% slope area where a minimum 25 feet of flow path is provided. The CAD measured actual flow path to the east property line at 107 feet, which is exceed than required distance. Meeting the design criteria outlined in the 2019 DOE stormwater manual.

According to initial submission, City of Mercer Island Small Project Stormwater Site Plan/ Report, Section C, infeasibility criteria. Page 22-26, each infeasibility criteria has been

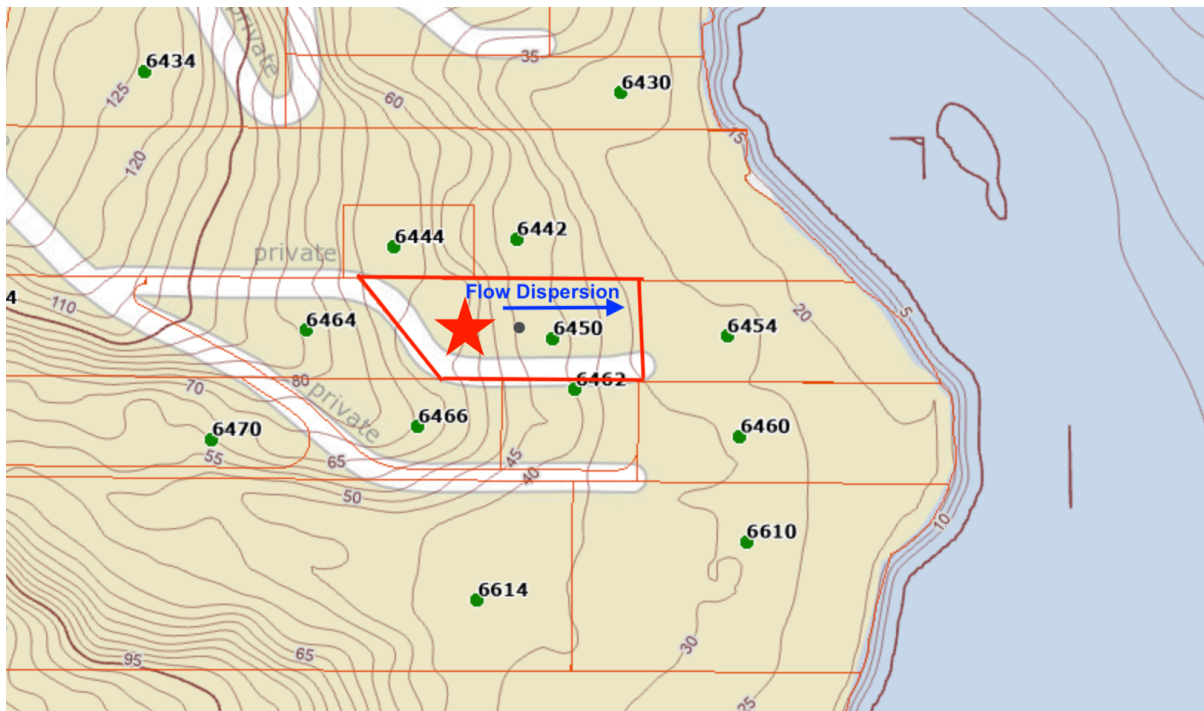
provided with an explanation. The infeasibility analysis stops at page 26 downspout dispersion system.

We have demonstrated the feasibility of the dispersion system in accordance with the 2019 DOE stormwater Manual.

Impact to Downstream Properties

Given the topography of the subject site, which slopes eastward toward Lake Washington, the downstream properties include the site at 6454 E Mercer Way and potentially the property at 6442 E Mercer Way. The dispersion trench has been placed on a 13% slope with a flow path at least 25 feet required. The CAD measurements confirms that the actual flow path to the eastern property line is 107 feet, significantly exceeding the minimum requirement.

This extended flow path allows ample opportunity for water dispersion and absorption into soil before reaching downstream properties, thus reducing the risk of erosion or water logging.



Additionally, the site's fencing along the north and east property lines acts as a physical barrier, which further limiting the potential for water flow into downstream properties. The fencing helps to contain and direct any surface runoff within the subject site, preventing it from spreading unchecked to neighboring properties.

The installation of dispersion trench itself is designed to diffuse concentrated water flow, spreading it over a larger area and thereby reducing the velocity and volume of runoff reaching any single point. This diffusion process minimizes the impact on soil stability and vegetation in downstream areas, contributing to the overall ecological health and reducing the risk of negative impacts such as soil erosion or property damage.

The combination of an extended flow path, effective fencing, dispersion trench design, and supportive landscaping collectively ensure that there is no negative impact on the downstream properties. These measures work together to manage runoff sustainably, protect neighboring sites.

We appreciate this opportunity to present our letter to you. If you have any questions, please contact us at 425-454-2133.

Sincerely,



*Austin Huang, Ph.D., P.E., LG., F.ASCE, D.GE
President*

*Diplomate - Academy of Geo-Professionals
Fellow - American Society of Civil Engineering*

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