



January 27, 2021

Emily Flanagan, P.E.
City of Redmond
Senior Engineer
15670 NE 85th Street
Redmond, WA 98073

**Re: *Puget Sound Energy Sammamish-Juanita 115 kV Transmission Line
Deviation Request for Retaining Wall Height (Revised from July 24, 2020 Request)
Otak Project No. 32950A***

Dear Ms. Flanagan:

In reference to the Puget Sound Energy Sammamish-Juanita 115kV Transmission Line Project, we are hereby providing this letter to formally request a deviation from the requirements of Section 8.6.7 "Rockeries/Retaining Walls" of the *Stormwater Technical Notebook 2019 – Issue No. 8* for retaining walls over 8 feet and for combined height of retaining wall and fence over 8 feet.

This deviation request covers sixteen (16) wall locations (Wall 2 – Wall 17). These walls are located at each end of the four (4) proposed fish passage culverts (FP2, FP3, FP4, and FP5). The total length of retaining wall proposed over 8 feet in height is 95 lineal feet of wall. The wall locations are highlighted in the attached Plan and Profile sheets. Please note that the four (4) walls associated with FP5 are technically located within the King County portion of the corridor but included with this request for clarity.

As components of access road improvements, gravity block walls are proposed along the corridor to achieve grading and to limit impacts to critical areas. The gravity block walls are also required to allow removal and replacement of three (3) existing culverts (FP2, FP3 and FP4) within the City limits, and one (1) existing culvert (FP5) within King County limits. These culverts will be replaced with one (1) 8' W x 5' H x 22' L and three (3) 9' W x 5' H x 22' L fish passage culverts. The proposed walls will range from 4.5' to 10.5' in height. Where the walls encompass proposed fish passage culverts, the walls will be integrated with the culverts and will serve as headwalls.

Due to the height of the culverts (5') and minimum cover of 3' from top of culvert to finished grade, resulting wall heights range from 9' to 10.5' around the proposed culverts. The 3' minimum cover over the culverts is needed to provide adequate clearance and cover of proposed power conduits crossing over the culvert as well as to establish the proper bottom elevation for the existing stream conditions. The 3' minimum cover is also the minimum cover recommended by the culvert manufacturer for required loading conditions over the culvert, in consideration of future maintenance and trail requirements. The project team did explore the possibility of reducing cover requirements and the resulting wall heights but determined that this would not be feasible.

Fencing on the top of these walls will be an additional 3'-6" (42") in height. The walls will be designed in accordance with AASHTO LRFD Bridge Design Specifications, 8th Edition, and the manufacturer's specifications. The wall design will be approved by a Professional Engineer licensed in the State of Washington, in collaboration with the project Geotechnical Engineer. A copy of the selected retaining wall drawings is attached for reference along with highlighted locations where retaining wall heights exceed 8 feet (primarily at proposed culvert

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locations). A wall table has been provided which also highlights wall locations that exceed 8 feet. The wall table includes a column with wall heights. Trail cross-sections have been included which show the toe of the wall to the top of wall, including fencing – adjacent to the proposed culvert locations.

The gravity block walls will allow installation of the proposed culverts and retaining walls while meeting the following criteria:

1. *The deviation produces a comparable or improved result, which is in the public interest.*
 - Incorporating the block walls into the headwalls will limit the impacts to critical areas, minimize construction time, and provide flexibility for achieving required fish window timeframes.
2. *The deviation meets requirements for safety, public health, function, fire protection, transit needs, appearance, maintainability, and any other criteria deemed relevant by the city.*
 - The walls will be designed in accordance with AASHTO LRFD Bridge Design Specifications, 8th Edition, and the manufacturer's specifications.
 - The modifications are necessary because of the size, configuration, topography, and location of the existing corridor and minimizing the need for extensive grading and/or filling that would impact critical areas and/or abutting properties.
 - The proposed retaining walls will meet the requirement for safety, public health, function, fire protection, appearance, and maintainability.
3. *The deviation provides substantially equivalent (or improved) environmental protection as would be provided if the standard requirements were met.*
 - Incorporating the block walls into the headwalls will limit the impacts to critical areas, minimize construction time, and provide flexibility for achieving required fish window timeframes.
4. *The deviation reflects sound engineering practices.*
 - The design will be approved by a Professional Engineer licensed in the State of Washington, in collaboration with the project Geotechnical Engineer.
 - Fencing will be provided on the wall to provide additional protection for the public.
5. *The deviation avoids damage to other properties in the vicinity of and downstream of the proposal.*
 - Impacts to adjacent properties and critical areas will be reduced by using the proposed retaining wall system at the heights specified.
6. *The deviation meets the Fire Code.*
 - To the best of our knowledge, the proposed improvements comply with the current Fire Code.

Based on the documentation provided above, we hereby request that a design deviation for retaining wall height greater than 8' be granted. Please let us know if further information is needed. Thank you for your consideration.

Sincerely,

Otak, Inc.



Nico M. Vanderhorst, PE
Principal

Attachments: Preliminary Plan and Profile Sheets
Preliminary Retaining Wall Details
Preliminary Culvert Plans and Details