April 24, 2018

Mr. Douglas Luetjen
BSRE Point Wells, LP
c/o Karr Tuttle Campbell
701 Fifth Avenue, Suite 3300
Seattle, Washington 98177

Re: Landslide Area Deviation Request Support Information
Point Wells Redevelopment
Unincorporated Snohomish County, Washington
17203-54

Dear Mr. Luetjen:

This letter presents project information to support the request for a deviation for development in a landslide area at the Point Wells Redevelopment (Project) in unincorporated Snohomish County, Washington. We have prepared this letter to discuss requirements of the Snohomish County Code for landslide hazard areas (SCC 30.62B.340, 2007 version vested for this project) and show how these requirements have been met. This letter is also to request a deviation for developing parts of the proposed Project in a landslide hazard area after satisfying the SCC 30.62.340 requirements.

Project Background

The proposed project will be a mixed-use (i.e., residential, retail, commercial, and public recreation) urban center development with multiple low- to high-rise buildings, supporting infrastructure, an open space, and a secondary access road. Additional project information is provided in the April 2018 submittal to Snohomish County Planning and Development Services (PDS).

Landslide Area Regulations

Items Satisfying Landslide Hazard Area Requirements

The following items list SCC 30.62B landslide hazard area requirements and references to specific April 2018 submittal documents satisfying these requirements. Items are organized using SCC 30.62B numbering.

SCC 30.62B.140 Geotechnical Report Requirements

- (1) and (2) are satisfied by Sections 3 to 6 and Figures 2 to 12 in the April 20, 2018 geotechnical report (Hart Crowser 2018a) with the following exceptions.

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- (2)(c) is not applicable since the site is not near one of the listed channel migration zones.
- (2)(d) impervious surfaces, wells, and drain facilities, etc. are provided in the existing survey plans (EX1 and EX2), summarized on Figure 3 of the geotechnical report, and Figure 3 of the hydrogeologic report (Hart Crowser 2018c).
- (2)(h) proposed development is described in detail on the April 25, 2018 project plans (Perkins + Will 2018).
- (2)(j) drainage methods are shown on the civil drainage plans (C-300 series, Perkins + Will 2018), discussed in the drainage reports (MIG|SvR 2018a and 2018b) and discussed in Section 7.1.1 of the geotechnical report (Hart Crowser 2018a).
- (2)(k & l) existing vegetation, vegetation management, and vegetation mitigation/restoration plans are included in the critical areas report (especially CAR Section 9, David Evans & Assoc. 2018) and discussed in Sections 5.1.5 and 7.1.1 of the geotechnical report (Hart Crowser 2018a).
- (2)(m) upland erosion is discussed in Sections 6.4 and 7.1.4 of the geotechnical report (Hart Crowser 2018a). Coastal erosion due to wind and wave action, as well as shoreline stabilization methods are discussed in the coastal engineering report (Moffat & Nichol 2018).

SCC 30.62B.320 General Standards and Requirements for Landslide Hazard Areas

- (1)(a)(i) geotechnical reporting is satisfied, as noted in the prior section.

- (1)(a)(ii) would be satisfied by using best management practices (BMPs) and all known and available reasonable technology (AKART) of 30.63A SCC as determined appropriate by PDS for final design. At this preliminary stage of the project, preliminary BMPs are shown on the Civil temporary erosion and sedimentation control plans (C-200 series plans, Perkins + Will 2018), discussed in the drainage reports (MIG|SvR 2018a and 2018b), and discussed in Sections 6.4, 7.1.4, and 7.2 of the geotechnical report (Hart Crowser 2018a).

- (1)(a)(iii) collection, concentration or discharge of stormwater or groundwater within the landslide hazard area will be addressed by methods noted in the response above to SCC 30.62B.140(2)(j). This will improve slope stability from current wet slope conditions by controlling surface water and groundwater.

- (1)(a)(iv) secondary access road will increase impervious surfaces on the slope some, but the added drainage improvements for the road would be designed to control surface and groundwater, which will improve slope stability from current wet slope conditions. Removal of vegetation for the secondary access road would be minimized to the extent practicable. Minimizing removal of vegetation and improving slope vegetation as recommended in Section 7.1.1 of the geotechnical report (Hart Crowser 2018a) would help reduce surface water infiltration, erosion, and shallow sloughing. Mitigation and restoration plans in the CAR (especially Section 9, David Evans & Assoc. 2018) should improve the habitat function for the project overall.

- (1)(b)(i) the risk of property damage, death, or injury from potential landslides will decrease from current conditions by slope stabilization retaining walls designing to resist landslide and seismic forces, as noted in Sections 5.1.6.1, 6.1, and 7.1.1 of the geotechnical report (Hart Crowser 2018a.

- (1)(b)(ii) erosion hazard would be controlled by BMPs and AKART methods, as noted in (1)(a)(ii) above.

- (1)(b)(iii) surface water discharge would be controlled and improved from current conditions on the east slope and conveyed to the base of the slope to existing conveyance pipes, which will reduce slope instability and sedimentation, as discussed in (1)(a)(ii) and (1)(a)(iv) above.

- (1)(b)(iv) impact wetlands, fish, and wildlife habitat conservation areas are discussed in Section 9 of the CAR (David Evans & Assoc. 2018).

- (2) shoreline stabilization measures are discussed in the coastal engineering report (Moffat & Nichol 2018) and setbacks and protection of wetlands and habitat conservation measures are discussed in Sections 3, 8, and 9 of the CAR (David Evans & Assoc. 2018).
  - (2)(a) the existing shoreline bulkhead will be removed, the shoreline flattened (effectively setting back, and the shoreline restored to natural habitat conditions (see CAR Section 9, David Evans & Assoc. 2018) using minor non-structural stabilization measures (Moffat & Nichol 2018).
  - (2)(b) landslide stabilization measures consisting of a retaining wall for the secondary access road are necessary to stabilize the slope to adequate factors of safety per SCC 30.62B.340(3)(b), as discussed in the next section.

SCC 30.62B.340 Landslide Hazard Area

- (2) construction of the secondary access road required by PDS can only be located in a landslide area, and the location shown on Plan A-051 and in the geotechnical report (Figure 10 Hart Crowser 2018a) encounters the least amount of geologic critical areas, especially landslide hazard area.

  The retaining wall for the secondary access road would improve slope stability above current conditions to satisfy the required factors of safety in SCC 30.62B.340(3)(b), as discussed in Sections 5.1.6.1 and 7.1.1 of the geotechnical report (Hart Crowser 2018a). The geotechnical report meets the requirements of SCC 30.62B.320, as discussed in the prior section.

- (3)(a) vegetation removal would be minimized, as discussed in SCC 30.62B.320(1)(a)(iv) and the vegetation management and restoration are discussed in the CAR (David Evans & Assoc. 2018).

- (3)(b) slope stability factors of safety are satisfied, as discussed in (2) above.

- (3)(c & d) different retaining wall and slope stabilization options (single wall and multiple stabilization tiers) are presented in the geotechnical report (Hart Crowser 2018a) that satisfy this and the prior item.

- (3)(e) utility lines would be constructed along the secondary access road according to these requirements, as the existing utilities in this sloped area are now.

- (3)(f) stormwater, surface water, and collected groundwater along the secondary access road would be collected and conveyed down slope to a suitable discharge point, as discussed in SCC 30.62B.140(2)(j) and SCC 30.62B.320(1)(a)(iii) above.

Conclusions

In summary, our findings and recommendations are:

- The proposed development would not decrease and would actually increase slope stability and improve drainage conditions on the slope by the secondary access road.

- Some items to completely satisfy SCC 30.62B would need to be completed during final design stages when final design plans are being completed.

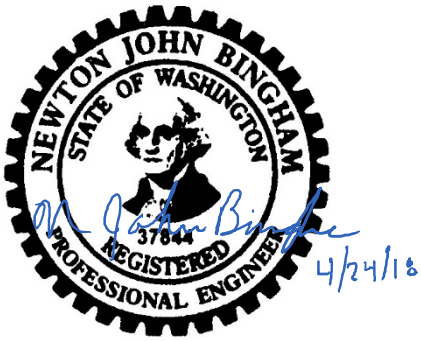
- If the proposed development is designed, constructed, operated, and maintained in conformance with the appropriate construction practices and County regulations and final design geotechnical recommendations by Hart Crowser, as well as by other design team members, slope stability, drainage, and habitat protection, mitigation, and restoration are unlikely to be degraded by the proposed development (many would be improved), and County requirements for SCC 30.62B would be satisfied.

- Based on our review of the documents included in the April 2018 submittal to PDS, we are of the opinion that a deviation to allow development in the landslide hazard area can be completed to satisfy the requirements of SCC 30.62B.140, SCC 30.62B.320, and SCC 30.62B.340.

We trust this letter provides the required information. Please let us know if you or others have any questions about the content of this letter.

Sincerely,

HART CROWSER, INC.



N. JOHN BINGHAM, PE
Senior Associate, Geotechnical Engineer

References

David Evans and Associates, 2018. Critical Areas Report, BSRE Point Wells, LP, Redevelopment Project, April 2018.

Hart Crowser 2018a. Subsurface Conditions Report: Point Wells Redevelopment. April 20, 2018.

Hart Crowser 2018b. Point Wells Urban Center, Environmental Remediation Approach, Memorandum April 20, 2018.

Hart Crowser 2018c. Point Wells Redevelopment, Hydrogeologic Report, dated April 20, 2018.

MIG|SvR 2018a. Point Wells Development, Preliminary Short Subdivision Submittal, Targeted Stormwater Site Plan Report, April 24, 2018.

MIG|SvR 2018b. Point Wells Development, Urban Center Submittal, Targeted Stormwater Site Plan Report, April 24, 2018.

Moffat & Nichol 2018. Coastal Engineering Assessment, Point Wells Redevelopment. April 23, 2018.

Perkins + Will 2018. Point Wells Development, Urban Center Review Response, Combined [Plan] Set, April 25, 2018.

Snohomish County 2007. Snohomish County Code, Chapters 30.62A - Wetlands and Fish & Wildlife Habitat Conservation Areas and 30.62B Geologic Hazardous Areas.