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LETTERS

**STRATUM GROUP**

1451 Grant Street, Bellingham, WA 98225  
Phone (360) 714-9409

April 5, 2007

Mary DeVeneau  
141 Sunset Blvd.  
Port Townsend, WA 98368

Re: **Review of Drainage Plan**  
Block 4, Lot 30 and 27, Sunset Blvd, Cape George  
Port Townsend, Washington

Dear Ms DeVeneau:

As per your request I have reviewed the site drainage and storm water plan prepared by Low Impact Engineering. The foundation drainage is consistent with the recommendations I made in my March 7, 2005 Engineering Geology Evaluation.

The location of the trapezoidal stormwater infiltration area and infiltration of water at the proposed location between the home site and Sunset Blvd. will not cause any slope stability problems on or off of the site. Patrick Herbig, P.E. indicated that the trapezoidal area should be lined if glacial till is not present. Glacial till is not likely underlying the site; however, silt/clay layers associated with early advance outwash or transitional alluvial beds likely underlie the site and this compact silt/clay units will perform as well or better than till if they are present. If silt/clay is not present then a liner per the engineer's recommendation should be installed.

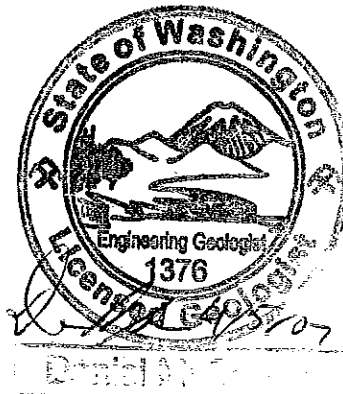
Stratum Group appreciates the opportunity to be of service to you. Should you have any questions regarding our reconnaissance please contact our office at (360) 714-9409.

Sincerely yours,

**Stratum Group**



Dan McShane, L.E.G., M.Sc.  
Licensed Engineering Geologist



BLD06-477

**STRATUM GROUP**1451 Grant Street, Bellingham, WA 98225  
Phone (360) 714-9409

March 7, 2005

Mary DeVeneau  
141 Sunset Blvd.  
Port Townsend, WA 98368**Re: Engineering Geology Evaluation**  
Block 4, Lot 30 and 27, Sunset Blvd, Cape George  
Port Townsend, Washington

Dear Ms DeVeneau:

I visited the above lots on February 16, 2005 to qualitatively evaluate the slope stability and drainage issues on the slope of the proposed home site. It is my understanding that a septic site has been permitted on the south lot and would be utilized by the home on the north lot. The purpose of the site visit was to assess the slope and soil stability and drainage issues on the north lot and provide recommendations for development of the site.

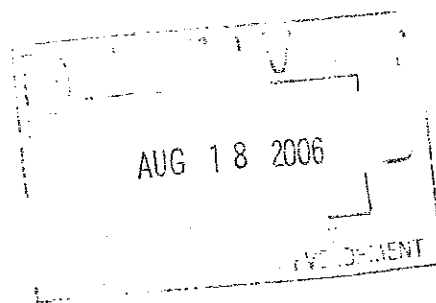
Based on my assessment of geologic conditions, the lot is not at risk of being impacted by slope failures. Fill soils and organic soils beneath the fill potentially could cause settlement problems for a home on the site. This can be avoided by founding the home on good bearing soils beneath the fill and buried organic soils. It is my understanding that a daylight basement foundation is being considered for this site. This type of foundation will be acceptable at this site as long as all fill soil and organic rich soil buried beneath the fill is removed prior to construction of the foundation.

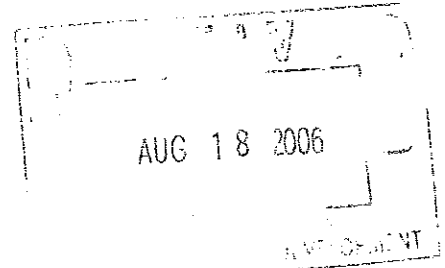
Because of shallow ground water within the soils at the site, attention to foundation drainage will be particularly important. I suggest that the daylight basement foundation drainage system be carefully designed to allow for complete drainage from behind the back wall and slab floor of the daylight basement. This can be accomplished in a variety of ways including well sealed foundation and slab walls and well draining gravel and drainage lines placed along the outside of the walls and beneath the slab foundation. As I suggested to you at the time of my site visit, it is my opinion that some over design of the drainage system would be well worth the extra costs that may be entailed to ensure that the foundation remains dry. The extra design could include additional drain rock and drain lines, and I suggest that clean out risers be provided for the drain lines so that they can be readily maintained in case of clogging.

**GEOLOGY**

This geology description of the area is to provide some background regarding the conditions at the site and why shallow ground water is present on the site.

Northwestern Washington has been occupied by continental glaciers at least four times during





March 7, 2005  
Sunset Blvd Lot, Cape George, WA  
Geology Assessment

the Pleistocene Epoch (1.6 million to 10,000 years ago). During these glacial and accompanying interglacial periods, the underlying bedrock was deeply eroded. The Surficial Geologic Map of the Port Townsend 30- by 60-Minute Quadrangle, Puget Sound Region, Washington (Pessl, Dethier, Boot and Minard, 1989) and the Geologic Map of Northeastern Jefferson County (Gayer, 1976) indicate that the subject property is located near the contact between advance outwash deposits and underlying glacial and nonglacial sedimentary deposits. Site observations on the subject property and in the vicinity are consistent with the above-described mapping.

The slopes above the property appear to be underlain primarily by sand and gravel outwash deposits. Sand and gravel and silt in a very compact condition are present on the subject property. No silt or clay layers were observed within the ditch on the subject property, but I have observed very compact clays on along the shoreline below the subject property and on other properties in the vicinity.

Advance outwash deposits were deposited by melt water streams as the glacial ice advanced over the area. The outwash exposed in the area is predominantly sand and gravel. However, advance outwash deposits tend to grade finer towards the base of the unit.

Layered silts and clays and some fine sand layers all in a very compact condition underlay the advance outwash on the steep shoreline slope to the south of the subject property and silts and clays in a very compact condition are present along the shoreline below the subject property. The silts and clays are consistent with the descriptions of the Kitsap Formation.

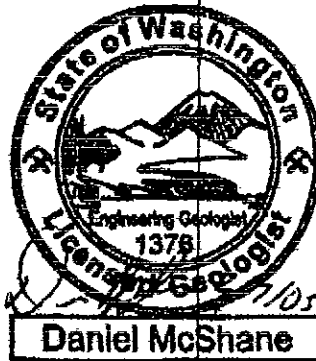
The presence of silts and clays within the either the lower part of the outwash deposits or the upper portions of the preglacial deposits is the likely cause of shallow ground water being present at the site. The well drained sand and gravel outwash deposits on the slopes above the subject property allow for hydrostatic head such that the water can reach the proposed building site even though a cut off trench has been excavated behind the proposed building site area.

We appreciate the opportunity to be of service to you. Should you have any questions regarding our reconnaissance please contact our office at (360) 714-9409.

Sincerely yours,

**Stratum Group**

Dan McShane, L.E.G., M.Sc.  
Licensed Engineering Geologist



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