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BOOK 170 PAGE 571

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Vol 3 Short Plats, Pgs 313 & 315	3rd review <input checked="" type="checkbox"/>
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ASSESSOR'S PROPERTY TAX PARCEL/ACCOUNT NUMBER	5th review <input checked="" type="checkbox"/>
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BOOK 170 PAGE 572

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June 13, 1997

Skamania County Department of
Planning and Community Development
Skamania County Courthouse Annex
P.O. Box 790
Stevenson, Washington 98648



Reference: Hazard Stability
L'Hommedieu and Hillside Short Plats

Gentlemen:

This office, as project engineers on the above short plats, has been asked to provide further comment and recommendation on the possible hazards to public or property that may be created by the development of the lands contained in the proposed plats. There has already been submitted a general report on the soils stability of the ground and comment on the septic effluent for the Hillside Plat. Further remarks would be as follows.

GENERAL

As previously reviewed, this general area has been the subject of land movement; more specifically, in the Maple Hills tract located to the immediate west of the parcel. At the current time there is evidence of a minor movement in the roadbed of the Kanaka Creek and Loop Road located to the north of this parcel approximately 200 feet south of the North 1/4 corner of Section 25, running through portions of Lot 1 of the A. Smith Short Plat. There is no indication, nor is any expected, that this movement extends any distance to the west of Loop Road or enters into Lot 3 of the L'Hommedieu Short Plat. As noted in our previous report, the westerly half of Lot 4 of the L'Hommedieu Short Plat is subject to both drainage problems and potential old slide lines and should not be considered for building site. That area would lie to the west of the North and South Center 1/16 line of the Northwest 1/4 of Section 25. The drainage area of Kanaka Creek and its branches, as well as the small drainage area coming down the approximate west ditch line approximately of Kanaka Creek Road are also areas that would be subject to potential flooding and should not be considered for building sites for not less than 35 feet of either side of any of these drainages.

Skamania Co. Dept of Planning & Community Development
 June 16, 1997
 Page 2

The proposed size of these lots, all in excess of 5 acres (with the exception of Lot 1 in the L'Hommedieu Short Plat which contains the existing farm structure of some 50 years standing) and are such that there would be extremely minimal impact on the groundwater situation caused by septic tank drainfields. As indicated in our prior correspondence, the annual water level build-up from a 2-acre occupancy is something less than 1-1/2 inches under normal conditions when dispersed over 5 to 6 acres. The water level build-up is almost insignificant, especially when compared with something like 80 inches per year of average rainfall. Therefore, from a general development picture, we feel there are no incipient groundwater problems which would increase slide potential in either the existing built-up Lot 1 or the other three remaining L'Hommedieu Plat lots and the Hillside Short Plat lot. Further, provided the construction conforms with the recommendations of the setback from the Kanaka Creek wetlands area and does not include anything on the westerly portion of Lot 4, there would be no hazard to the properties from the apparent surface movement on the Kanaka Creek area located to the northeast of the property.

SITE SPECIFIC

L'Hommedieu Short Plat

Lot 1 of the L'Hommedieu Short Plat is an existing estimated 50 year old occupied premises with established septic tank and drainfield in place. It is located on a well drained knoll, with drainage in all directions from the home itself and on less than a 5 percent ground slope. The concrete house foundation is firm and shows no signs of movement or deterioration. We feel the house is properly sited and in no danger of hazard from occupancy and no danger of property damage from earth movement or other flooding hazard.

Lot 2 is the currently moved home of Mr. L'Hommedieu on a site which has been reviewed specifically and graded and conformed to minimize potential hazards. The septic tank and drainfield have been set up in a pressurized system and surface mounded to minimize impact of groundwater. Well borings adjacent to the house indicate the substructure of some 400 feet depth of claystone with 5 to 10 feet of overburden consisting of topsoil of brown, clayey material and boulders. The majority of this overburden was stripped out in the grading of the site. Site grading provided for drainage around the building, away from the foundation. The foundation design included additional reinforcing, both full continuous bars in the footings and vertical bars for horizontal resistance from adjacent side backfill to compensate for any potential surface ground movement.

Lot 3 (7.8 acres) does not have a specific site selected for building. In review of the property, we would recommend site selection be made to eliminate close adjacency to Kanaka Creek from potential flooding; site grading include factors of directing surface runoff away from the

Skamania Co. Dept of Planning & Community Development

June 16, 1997

Page 3

building site on all sides, back a distance of at least 20 feet in all directions from the building; and the selected building site be restricted to areas where the existing ground slope is less than 15 percent. It would also be advantageous to strip as much as possible of the existing surface clay and topsoil layers from the site when excavating for the building grade. Foundation design should include additional horizontal reinforcing steel continuous around the footings, a minimum of four #4 bars horizontal and vertical #4 bars at 12 inches continuous in the stem walls.

The Lot 4 building site should be restricted to the easterly portion of the lot, away from drainage areas, on less than 15 percent side-slope ground. The same criteria for foundations and grading as for Lot 3 would apply.

HILLSIDE SHORT PLAT

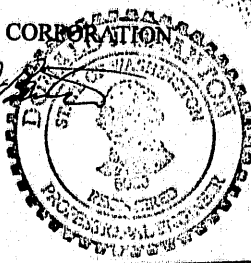
On Lot 1, the building site should be restricted to either the area closely adjacent to Loop Road, with adequate setback from Kanaka Creek, or on the solid ridge running between Kanaka Creek and the Kanaka Creek Road drainage near the center of the lot, at the owner's option. Criteria for foundation should include the same as recommended for the L'Hommedieu short plat areas, extra reinforcing steel continuous around the footings and the stem walls, sloped drainage away from the building site a minimum of 20 feet in all directions, and avoidance of interference with spring areas, drainages, or areas over 15 degree existing ground slope.

With these engineering standards for foundation designs and considerations for selection of the site on the presently unbuilt lots and limited to the density called out over Lot 1 of Hillside Short Plats on 6.7 acre sites, and the four lots of the 32 acres L'Hommedieu Plat, we feel there would be no hazards to the safety or general welfare of persons on the adjacent property or within the subdivision itself, and the construction of the improvements to the engineering standards recommended will not expose persons or the property to hazards of land movement or flooding.

Respectfully submitted,

TENNESON ENGINEERING CORPORATION

Donald J. Branton, P.E.



DJB:jm

EXPIRES: 03/04/99