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Document Title(s) or transactions contained therein:

1. Geotechnical Reconnaissance
2. for Kanaka Creek Estates
3.
4.

GRANTOR(S) (Last name, first, then first name and initials)

1. Geo Design, Inc.
2.
3. Russ Gaynor
4.

[ ] Additional Names on page _____ of document.

GRANTEE(S) (Last name, first, then first name and initials)

1. Public, The
2.
3. Skamania County Planning Dept.
4.

[ ] Additional Names on page _____ of document.

LEGAL DESCRIPTION (Abbreviated: I.E., Lot, Block, Plat or Section, Township, Range, Quarter/Quarter)

SE 1/4 Section 25, T3N, R7E W.M.

[ ] Complete legal on page _____ of document.

REFERENCE NUMBER(S) Of Documents assigned or released:

Vol 3 Pg 317 Kanaka Creek Estates

[ ] Additional numbers on page _____ of document.

ASSESSOR'S PROPERTY TAX PARCEL/ACCOUNT NUMBER

3-7-25-4-800

[ ] Property Tax Parcel ID is not yet assigned.

[ ] Additional parcel #'s on page _____ of document.

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GEODESIGN, INC.
GEOTECHNICAL, ENVIRONMENTAL, AND GEOLOGICAL CONSULTANTS

October 21, 1997

Russ Gaynor
PO Box 1176
White Salmon, Washington 98672

Geotechnical Reconnaissance
Kanaka Creek Estates
Skamania County, Washington 98672
GDI Project: Gaynor-1

INTRODUCTION

This letter summarizes our geotechnical reconnaissance of the subject project and incorporates additional recommendations to our original report dated August 26, 1997 as requested by Skamania County. Our services have been provided in accordance with our signed agreement dated August 26, 1997. The purpose and scope of our work was to comment on the slope stability at the project, as evidenced by the surface reconnaissance that our scope of work was limited to.

SITE RECONNAISSANCE / OBSERVATIONS

On August 15, 1997 we visited the subject project located on short plat lots 1 through 4 of Kanaka Creek Estates adjacent to Fern Meadow Road west of Kanaka Creek Road and north of Stevenson, Washington. Based on our review of the site plan (prepared by Taylor Engineering and provided by Mr. Gaynor) the lots are each 2 acres in size and cover sloping terrain west of Kanaka Creek. Based on Mr. Rondema's previous reconnaissance and literature review for the Rancho Del Oro Development northwest of the site, the general site vicinity occupies ancient landslide terrain. The site has an overall downward slope to the south, with undulating ridges running north-south which vary from roughly 10 to 30 feet in elevation change from ridgecrest to base. Isolated knolls are also present on site. Exposed soils in previous percolation test areas and in logging road cuts indicate varied gravelly and bouldery silt soils consistent with mudflow deposits. These features confirm that the site occupies ancient landslide terrain.

During the winter of 1996, a large landslide displaced tens of acres of land northwest of the site. Mudflow debris and ground ruptures were visible within 1,000 feet up and across slope from the site. To our knowledge, and based on our site reconnaissance, ground deformations and downslope mudflow debris did not impact the Kanaka Creek Estates site.

During our site reconnaissance we observed the site ground surface, vegetation, and drainage features for evidence of recent slope instability. Although the site has been recently logged, a number of conifers are present on the site, including cedar trees near the creek and younger firs to the west. These conifers do not exhibit distress or overcorrected growth that is typical of conifers in terrain with recent slope instability. In addition, we did not observe recent stream channel alignment changes, ground surface ruptures or headscarps, sag ponds or springs indicative of recent landslides.

RECOMMENDATIONS

Based on the preceding, we observed no evidence of recent slope instability at the site which would preclude site development. In addition, if the following recommendations are followed the factor of safety for slope stability at the site will not be significantly reduced and the risk of instability will remain low.

- Residential structures should be located in the building envelopes on the attached sketch. Houses should not be founded in the swales.
- Residential structures should be founded in cut or near grade areas with structural fill no greater than 2 feet thick. Structural fill should be compacted to 92% of the relative density determined by ASTM D-1557 or as approved by a licensed engineer qualified in geotechnical engineering.
- Storm water from roofs and impervious surfaces should be tight-lined and routed to the existing drainage running downslope along Fern Meadow Road or into Kanaka Creek.

LIMITATIONS

We have prepared this report for use by Mr. Russ Gaynor and his design and construction team for the proposed project. Our scope of work did not include an exploration of subsurface conditions. A licensed engineer qualified in geotechnical engineering should be retained to observe house pad subgrade prior to house construction. If subsurface conditions differing from those observed in existing cuts are noted during the course of excavation and construction, we will need to reevaluate slope stability impacts.

The site development plans and design details were preliminary at the time this report was prepared. When the design has been finalized and if there are changes in the site grades or location, configuration, design loads or type of construction for the buildings, the conclusions and recommendations presented may not be applicable. If design changes are made, we request that we be retained to review our conclusions and recommendations and to provide a written modification or verification.

The scope of our services does not include services related to construction safety precautions, and our recommendations are not intended to direct the contractor's methods, techniques, sequences or procedures, except as specifically described in our report for consideration in design.

Within the limitations of scope, schedule and budget, our services have been executed in accordance with generally accepted practices in this area at the time the report was prepared. No warranty, express or implied, should be understood.

We appreciate the opportunity to provide this service. If you have questions please do not hesitate to call.

Respectfully Submitted,

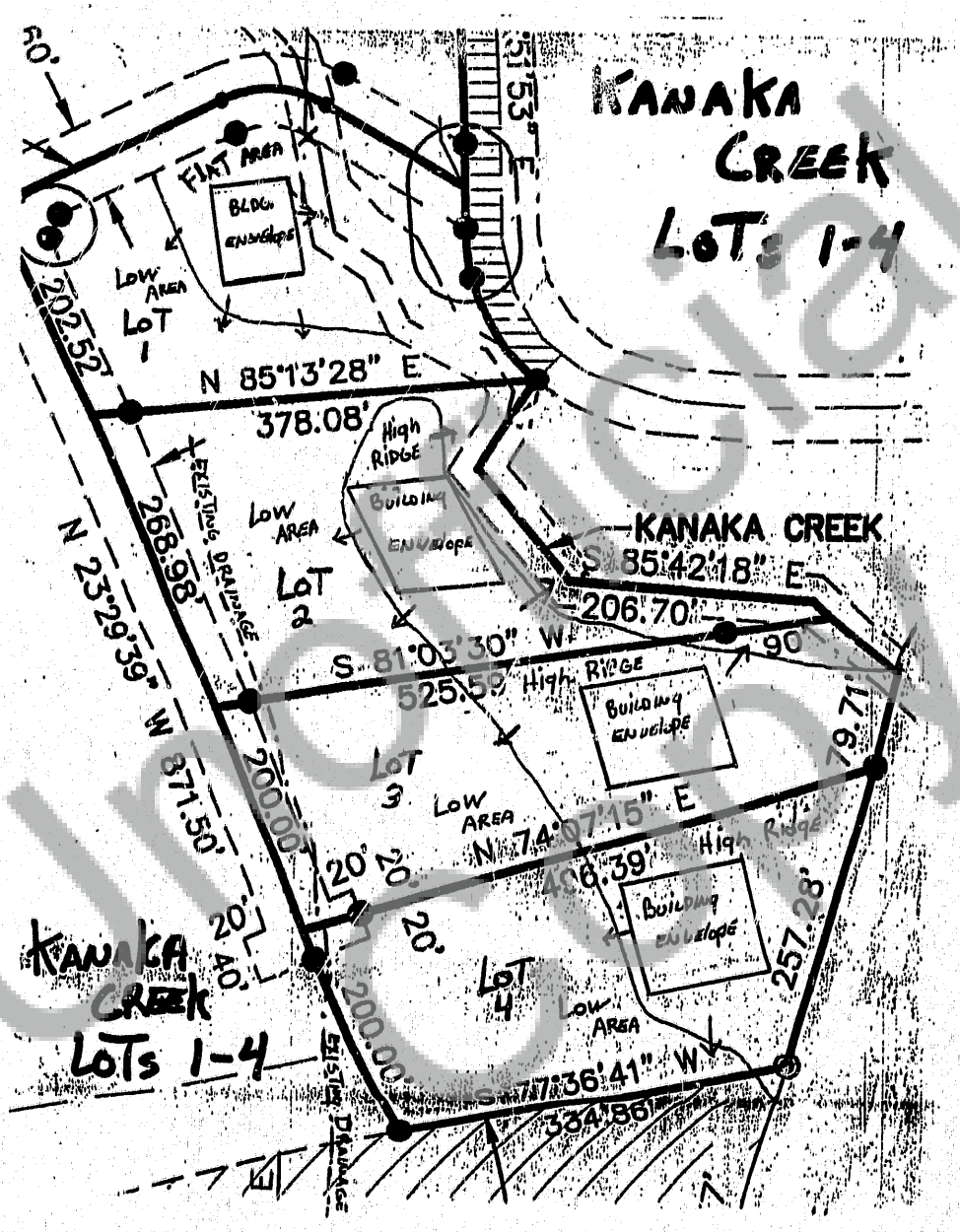
Don Rondema, P.E.
Principal

DON RONDEMA
STATE OF WASHINGTON
9348
REGISTERED
PROFESSIONAL ENGINEER

EXPIRES 9/12/77

Attachments

DLR:GPS
Document ID: Gaynor-1-georecon


KANAKA CREEK LOTS 1-4
50'
FLAT AREA
BLDG ENVELOPE
LOW AREA
LOT 1
202.52'
N 85°13'28" E
378.08'
High RIDGE
BUILDING ENVELOPE
LOW AREA
LOT 2
EXISTING DRAINAGE
268.98'
N 23°29'39" W
371.50'
KANAKA CREEK
S 85°42'18" E
206.70'
S 81°03'30" W
525.59'
High RIDGE
BUILDING ENVELOPE
LOT 3
LOW AREA
N 74°07'15" E
436.39'
High RIDGE
BUILDING ENVELOPE
LOT 4
LOW AREA
S 77°36'41" W
334.86'
EXISTING DRAINAGE
KANAKA CREEK LOTS 1-4
20'
20'
40'
200.00'
200.00'
79.71'
257.28'
90