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BOOK 193 PAGE 312

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SKAMANIA COUNTY, WASH.
BY Planning Dept.
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AUDITOR
GARY R. OLSON

Alpine Quality Construction
Terry Ryan
16505 SE 1st Street
Vancouver, WA 98684

Document Title(s) or transactions contained herein:

Site Stability Evaluation Report of February 20, 1997

GRANTOR(S) (Last name, first name, middle initial)

Braun Intertec Corporation

[ ] Additional names on page _____ of document.

GRANTEE(S) (Last name, first name, middle initial)

Terry Ryan
Alpine Quality Construction Services

[ ] Additional names on page _____ of document.

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

SE ¼ Section 25, Township 3 North, Range 7 East Willamette Meridian
This report covers the south east portion of a development that was to have been labeled Eagle's Nest Estates at the time the report was written.

[ ] Complete legal on page _____ of document.

REFERENCE NUMBER(S) of Documents assigned or released:

Alpine Heights Short Plat, recorded in Volume 3, Page 356 of Short Plats

[ ] Additional numbers on page _____ of document.

ASSESSOR'S PROPERTY TAX PARCEL/ACCOUNT NUMBER

03-07-25-40-0201

[ ] Property Tax Parcel ID is not yet assigned
[ ] Additional parcel numbers on page _____ of document.

Requested ✓
Indexed ✓
Indirect ✓
Timed
Mailed

The Auditor/Recorder will rely on the information provided on the form. The Staff will not read the document to verify the accuracy or completeness of the indexing information.

BRAUN INTERTEC

Braun Intertec Corporation
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P.O. Box 17126
Portland, Oregon 97217
503-289-1778 Fax: 289-1918

Engineers and Scientists Serving the Built and Natural Environments

February 20, 1997

Project No. EAAX-97-0158
Report No. 09-027-2760

Mr. Terry Ryan
Alpine Quality Construction Services
16505 S.E. 1st Street
Vancouver, Washington 98684

Dear Mr. Ryan:

Re: Preliminary Site Stability Evaluation Report, 25-acre property, Baker Road, Stevenson, Washington

Braun Intertec Corporation has conducted a site reconnaisance of the referenced site to evaluate site stability and landslide hazards. Authorization for our services was provided by Mr. Terry Ryan on February 6, 1997.

Project Description

The site is located roughly a mile north of the City of Stevenson, near Baker Road, as shown in an attached Site Location Map, Figure 1. It is named as 'Eagle's Nest Estates' which is situated in a portion of the SE 1/4 of Section 25, T3N, R7E, W.M. Scamania County, Washington.

We understand that present plans are to develop the site into several individual lots and/or a subdivision as shown in an attached Schematic Site Plan, Figure 2, Sheets 1 through 5, prepared by Lawson Surveying and Engineering.

Purpose and Scope

The purpose of our evaluation was to visually assess the surface soil conditions at the site in order to preliminarily evaluate the site stability and landslide hazards. In general, our scope of work included following specific items:

- Site visits to observe surface conditions at the site and in the site vicinity to evaluate site stability.
- Historical research including aerial photographs and USGS maps.

- Geological and USDA literature review, including the evaluation of available geological hazard maps
- Review of available city and county records on the site development activities.
- Computer modelling using XSTABL software and engineering analyses to evaluate existing site stability.
- Preparation of this report.

Site Description

The site is an inverted L-shaped and undeveloped 25-acre parcel of land located west of Kanaka Creek Road. As shown in attached Figure 1, Baker Road runs east-west through the middle-southern portion of the site. The site is bounded to the north by an airstrip and a plateau, and to the south by a Bonnaville Power easement.

Surface Features

At present, the site is densely wooded in the northernmost and southernmost portions. The remaining portion of the site is generally cleared. Isolated mobile home, garages, barn, and a house exist on Baker Road near the central portion of the site.

The site topography generally consists of a northern plateau followed by roughly 50-60 feet tall steep downward slope (0.5H:1V) just north of Baker Road near the central portion. South of Baker Road, the site topography is rolling and gently sloping downward up to the densely wooded area near the southern boundary. The southern boundary area appears to have a downward gradient of roughly 2.5(H):1(V) to 3.5(H):1(V). Based on our review of available USGS map, the surface elevations are anticipated to range from El. 900 near the northern site boundary to El. 650 near the southern site boundary.

Site Specific Stability Observations

At the time of our site visit, we noted evidence of erosion from surface water run-off over the steep cleared slope just north of Baker Road. We noted minor surface water

streams generally running from the northern elevated areas to the southern low lying area. In general, we did not notice unusual surface water features such as filled depressions, deep cracks, disarranged drainage systems, etc which are sometimes indicative of previous landslide activities or slope instability.

During our site visits, we did not notice scarps, crevices and depressions, tension cracks in the ground surface, severely bent tree bottoms, tilted trees, irregular toes, exposed surfaces of ruptures without vegetation, presence of distinct fast growing vegetation, undrained depressions, etc. that are generally indicative of active and/or inactive landslides or slope instability.

Site Vicinity Observations

Our site reconnaisance did not indicate visual evidence of slope instability or landslide hazards in areas adjacent to all site boundaries at the time of our site visits.

Based on our interviews with the City of Stevenson officials, we believe, an unstable area exists west of Kanaka Creek Road. This unstable area is located at least one-half mile from the site. There is no visual evidence of this unstable area affecting the site stability. The site is located sufficiently away from the toe of the unstable area. If a major landslide occurs in this unstable area, it is not anticipated to impact the site because of a great distance and the presence of roadways between these two areas. Moreover, the unstable area is being evaluated and mitigated by the city of Stevenson.

Soils and Geology

We observed 5-foot to 6-foot high cut slopes along Baker Road, and cleared face of a 50- foot to 60-foot tall steep slope situated just north of Baker Road. Based on these observations, our knowledge of the site, and our evaluation of in-house data from other projects, in our opinion, the site is generally underlain by medium dense to dense or stiff mixtures of clays, silts, and fine grained sands, and some cobbles (SM/ML). These soils are generally poorly drained. Based on our geologic literature review, we believe these soils extend to several tens of feet in depth. These soils generally represent completely weathered volcanoclastic rocks and conglomerates that were made of volcanic debris flow, mud flow, and fluvial reworking of volcanic deposits.

Groundwater

As mentioned earlier, we noted evidence of erosion from surface water run-off over the steep cleared slope just north of Baker Road. We noted minor surface water streams generally running from the northern elevated areas to the southern low lying area.

We believe, due to a thick vegetation cover and root system of dense woods on the northernmost area of the site, rainfall over this area is draining surficially into the southern portions of the site. Some infiltration is anticipated to occur over the steep cleared slopes near Baker Road. Due to poorly drained characteristics of soils, surface water run-off continues to flow towards the southern site boundary in minor natural surficial streams.

The presence of surface water run-off is an indication of a potential for perched groundwater conditions at the site. Based on our knowledge of the site, we believe the actual groundwater table is fairly deep. The perched groundwater may exist within upper 3 to 5 feet and flows laterally downwards towards the south.

Slope Stability Evaluation

Using the soils/geology and groundwater data mentioned above, we performed preliminary site slope stability analyses. We used a computer modelling software (XSTABL) to model on-site slopes. Specifically, we chose conservative soil strength parameters based on the results of our field and research activities. Our results of preliminary slope stability analyses indicated that, at this time, the site is stable from slope instability or landslide hazards perspective.

Conclusions and Recommendations

Based on the results of our field work and engineering analysis, it is our opinion that the site is suitable for the proposed development provided the following general recommendations are incorporated into future design and construction activities at the site.

We recommend that the individual lots be specifically evaluated by a geotechnical engineer after the proposed house construction plans are available. In general, following issues must be addressed prior to the construction of residential structures on individual lots at the site.

- Stability of any access road embankments or cuts;
- Stability of any cut slopes and fill slopes to achieve finished floor grade;
- Retaining wall requirements and design;
- Foundation drains and surface drains;
- Subsurface exploration including test pits or soil borings to prepare geotechnical recommendations for site preparation and foundation support.

General

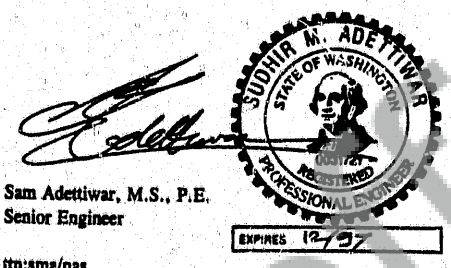
This report should not be used for actual construction of structures on the site. We should be contacted to provide geotechnical recommendation once the construction and site development plans are finalized. The conclusions and recommendations presented in this report are subject to the following general conditions.

This report is for the exclusive use of the addressee and their representative to use to design the proposed structure described herein and prepare construction documents. The data, analyses and recommendations may not be appropriate for other structures or purposes. We recommend that parties contemplating other structures or purposes contact us. In the absence of our written approval, we make no representation and assume no responsibility to other parties regarding this report.

Services performed by the geotechnical and materials engineer for this project have been conducted with that level of care and skill ordinarily exercised by members of the profession currently practicing in this area under similar budget and time restraints.

We appreciate the opportunity to be of service to you at this time. We will be pleased to provide additional assistance or information at your request. Please call us at (800)-783-6985 if you have any questions regarding this report.

Sincerely,



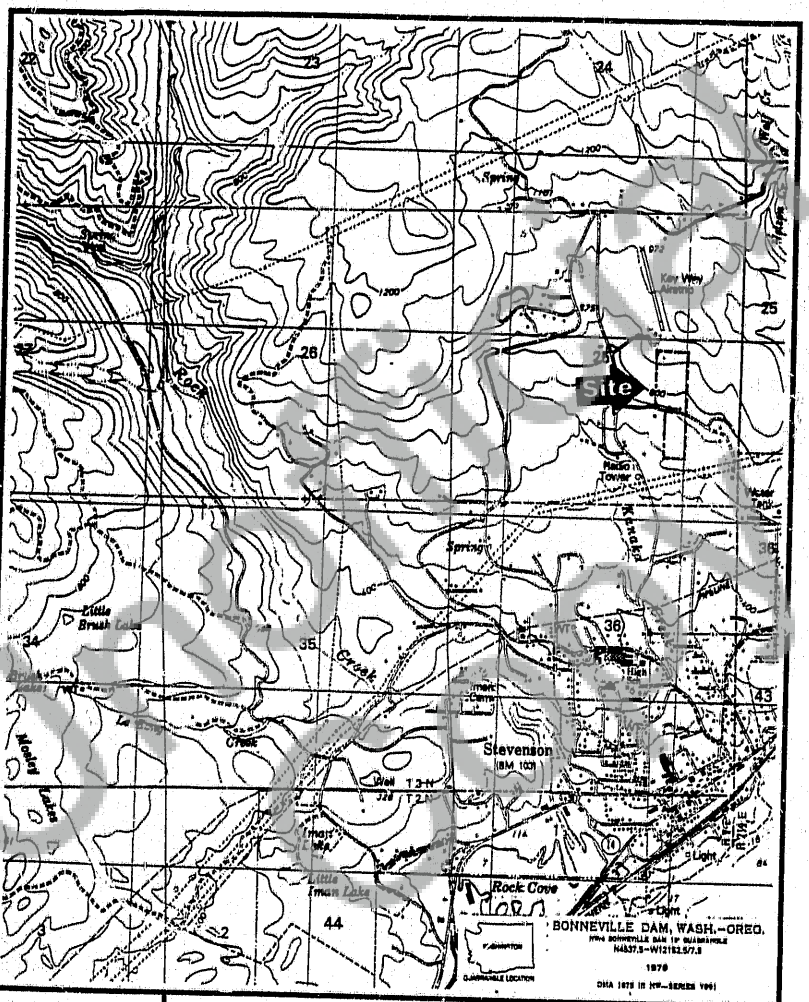
Sam Adettiwar, M.S., P.E.
Senior Engineer

ttn:sma/pas

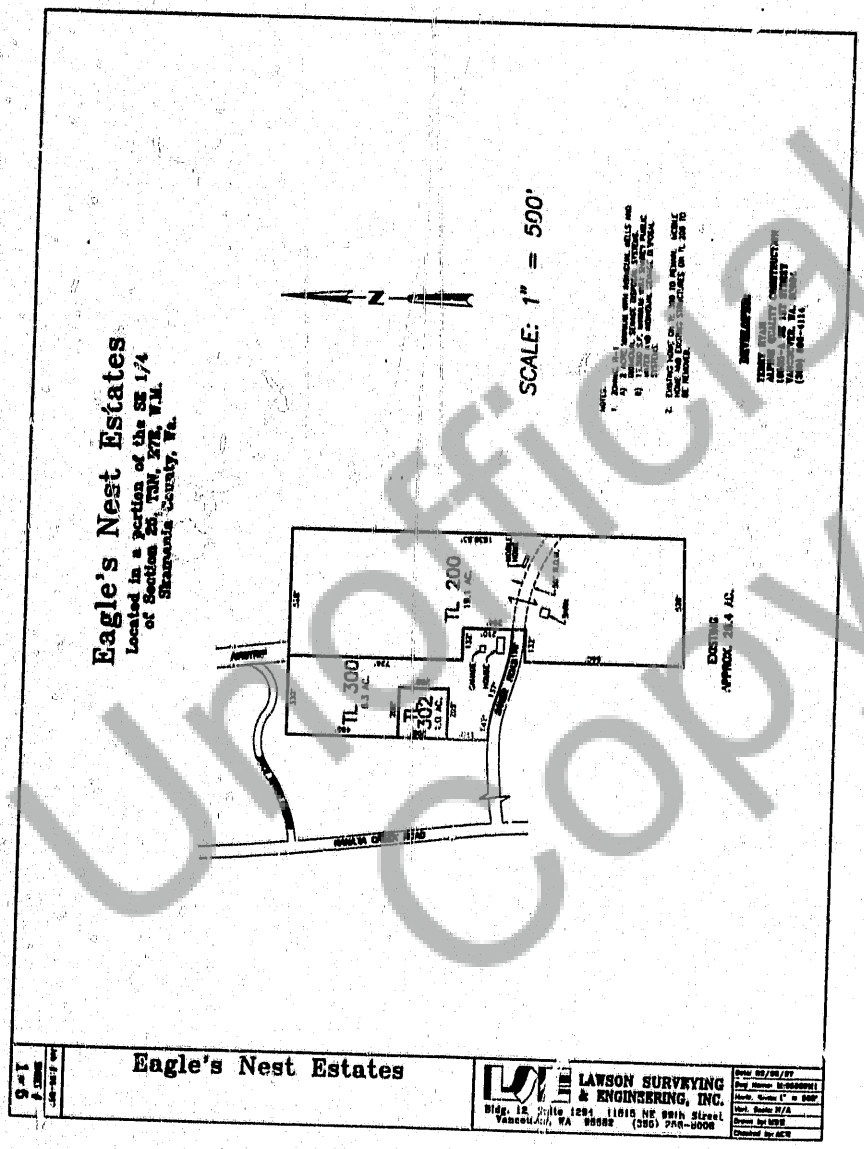
Attachments

c: Braun Intertec Corporation, St. Cloud

BOOK 193 PAGE 319



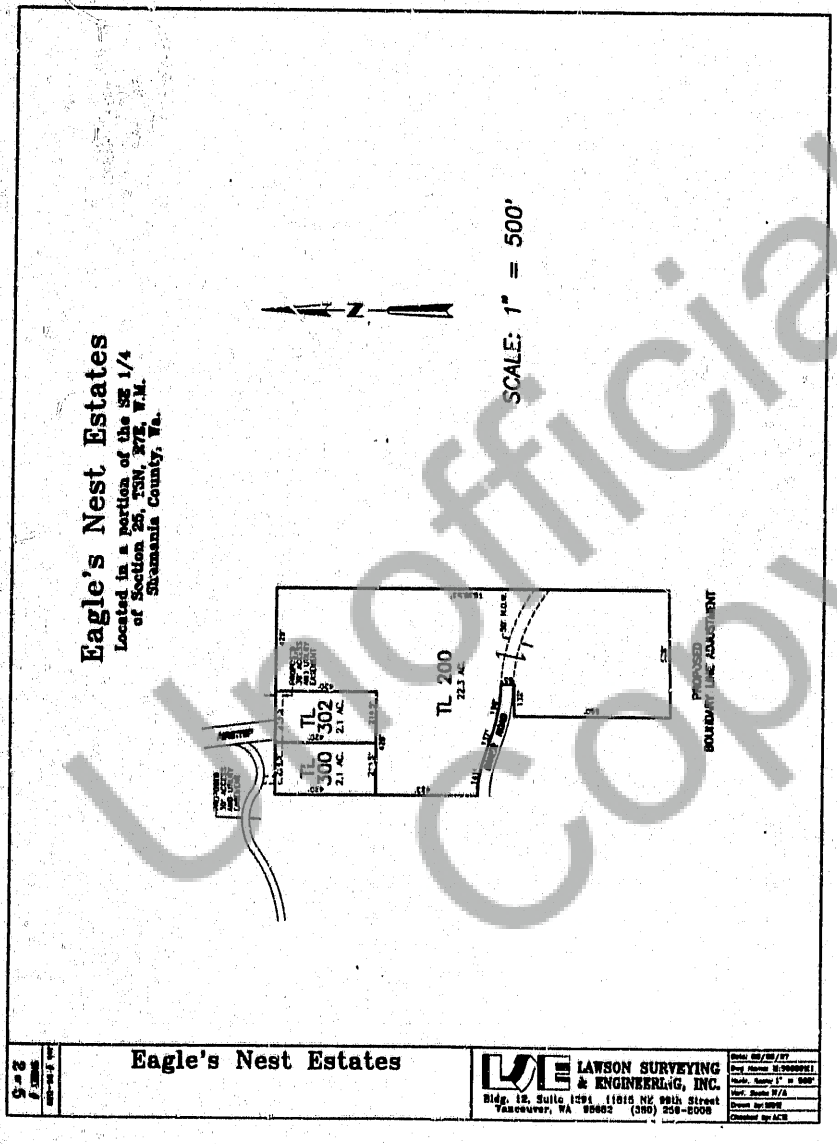
BRAUN INTERTEC	SITE LOCATION MAP 25-1 ACRE PROPERTY EAGLE'S NEST ESTATES STEVENSON, WASHINGTON	DRAWN BY: S.A. JOB NO: EAAX-97-0158 DATE: 02-20-97 DRAWING NO: 1OF 1 FIGURE NO: 1 SCALE: AS SHOWN



Eagle's Nest Estates

LAWSON SURVEYING & ENGINEERING, INC.
Bldg. 12, Suite 1291 (1815 NE 99th Street)
Vancouver, WA 98662 (360) 256-0006

BOOK 193 PAGE 321



Eagle's Nest Estates

Located in a portion of the SE 1/4
of Section 25, T5N, R1E, W.M.
Skamania County, Wa.

NOTES:

1. [illegible] SUBJECT TO PUBLIC APPROVAL.
2. [illegible] SUBJECT TO PUBLIC ACCESS
3. [illegible]
4. [illegible]

Eagle's Nest Estates

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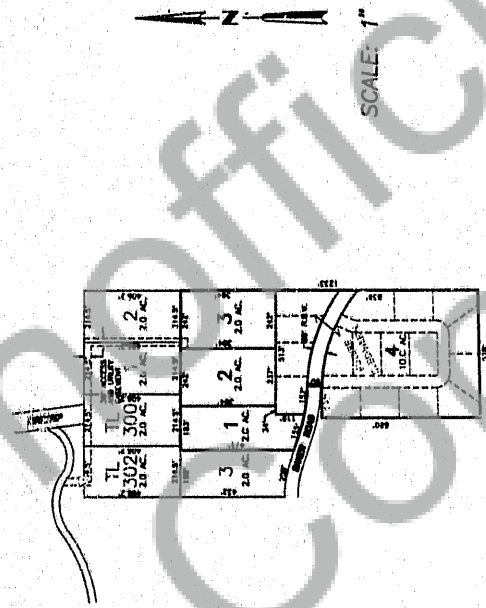
of Section 25, T5N, R7E, W.M.
Skamania County, Wa.



Eagle's Nest Estates

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Eagle's Nest Estates

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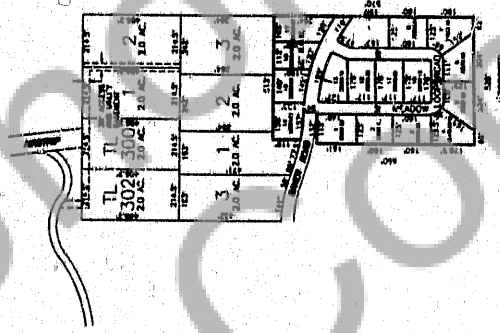
of Section 25, T3N, R2E, W.M.
Skamania County, Wa.

N

SCALE: 1" = 500'



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