Staff Report to the Zoning Administrator

Application Number: 05-0417

Applicant: Jay Poindexter
Owner: Jay Poindexter
APN: 042-101-15

Agenda Date: April 6,2007
Agenda Item #: 4
Time: After 10:00 a.m.

Project Description: Proposal to construct a debris wall of about **53** feet in length up to 12 feet in height. Requires a Coastal Development Permit and a Residential Development Permit to exceed the maximum 6-foot height limitation for walls within the side yard setbacks.

Location: Property located on the west side of Creek Drive about 200 feet south of Glen Drive (at 126 Creek Drive).

Supervisoral District: 2nd District (District Supervisor: Ellen Pirie)

Permits Required: Coastal Development Permit, Residential Development Permit **for** a fence over six feet in height within the side yard setbacks

Staff Recommendation:

- Certification that the proposal is exempt from further Environmental Review under the California Environmental Quality Act.
- Approval of Application 05-0417, based on the attached findings and conditions.

Exhibits

A. Project plans
B. Findings
C. Conditions
D. Categorical Exemption (CEQA determination)
E. Assessor's parcel map
F. Zoning and General Plan map
G. Geotechnical and Engineering Geologic report review letter, dated 2/20/07.
H. Engineering Geologic report by Rogers E. Johnson & Assoc., dated 10/16/02.
I. Geotechnical report by Haro, Kasunich, & Assoc., dated 1/10/03.
J. Response letter from Haro, Kasunich, & Assoc., dated 3/20/05.
K. Plan review letter from Haro, Kasunich, & Assoc., dated 3/30/05.
L. Comments & Correspondence

Parcel Information

Parcel Size:	About 6,500 square feet
Existing Land Use - Parcel:	Single-family dwelling
Existing Land Use - Surrounding:	Single-family dwellings, parks and recreation (beach)
Project Access:	Creek Drive
Planning Area:	Aptos
Land Use Designation:	R-UM (Urban Medium Residential)
Zone District:	R-1-4 (Single-family residential, 4,000 square foot minimum)
Coastal Zone:	_X_ Inside __ Outside
Appealable to Calif. Coastal Comm	_X_ Yes __ No

Environmental Information

Geologic Hazards:	Landslide hazards on site, lower portion of property within 100-year flood plain for Aptos Creek
Soils:	Elder and Elkhorn Sandy Loams
Fire Hazard:	Not a mapped constraint
Slopes:	Up to 75% slopes
Env. Sen. Habitat:	Potential Dudley's Lousewort habitat, no sensitive habitat found on site
Grading:	About 278 cubic yards of cut, 111 cubic yards of fill
Tree Removal:	No trees proposed to be removed
Scenic:	Coastal scenic
.Drainage:	Existing and proposed drainage adequate
Archeology:	Not mapped/no physical evidence on site

Services Information

Urban/Rural Services Line:	_X_ Inside __ Outside
Water Supply:	Soquel Creek Water District
Sewage Disposal:	Santa Cruz County Sanitation District
Fire District:	Aptos/La Selva Fire Protection District
Drainage District:	Zone 6

History

In February **of** 1998, a slope failure resulted in a landslide that damaged the rear portion of the existing residence, resulting in the posting of an "unsafe to occupy" notice by the County Geologist.

In 1996, the County approved a coastal and residential development permit for the construction of a retaining wall and debris fence in conjunction with the neighboring parcel to the north (APN 042-101-16, 130 Creek Drive). The expiration date for this permit was extended by permit 98-0746 for an additional two years, but the permit was never exercised.

In 2003, the property owner applied for a new design for a debris flow barrier wall of up to 12 feet in height, rather than the previously approved retaining wall and debris fence (application 03-0529). This project was abandoned as information requested as **part** of the completeness review was not submitted. In June 2005, the existing application was submitted.

Project Setting

The project site is located at the base **of** a bluff adjacent to Aptos Creek and across the creek from the Rio del Mar flats. The site is the last house at the end of Creek Drive, just north **of** the Seacliff State Beach.

Zoning & General Plan Consistency

The project site is located in the R-1-4 zone district, with a General Plan/Local Coastal Program Land **Use** Designation of R-UM (Urban Medium Density Residential). A debris wall is a permitted structure within the R-1-6 zone district, as it is accessory to the existing single-family residence on site, and is required to protect the residence from landslide hazards.

The proposed debris wall complies with Section 13.10.525 of the County Code (regulations for fences and retaining walls), in that the 12 foot high wall will not deprive adjacent properties of access to light and air as it will be located at the base of a bluff, and the colors and materials will be designed to blend in with the surrounding environment to the greatest extent possible. The maximum height of the wall is 12 feet, below the tallest portion of the existing residence.

Local Coastal Program Consistency

The proposed debris wall is in conformance with the County's certified Local Coastal Program, in that the structure is sited and designed to be visually compatible, in scale with, and integrated with the character of the surrounding neighborhood. The project site **is** located between the shoreline and the first through public road, but is not identified as a priority acquisition site in the County's Local Coastal Program and will be located away from public pedestrian access from Creek Drive to Seascape State Beach. Consequently, the proposed project will not interfere with public access to the beach, ocean, or other nearby body of water.

Design Review

The proposed debris wall complies with the requirements of the County Design Review Ordinance, in that the proposed wall will not exceed the height of the existing residence and will be required to **use** earth-tone colors to match the bluff face (condition of approval II.B.1).

Conclusion

As proposed and conditioned, the project is consistent with all applicable codes and policies of the Zoning Ordinance and General Plan/LCP. Please **see** Exhibit "B" ("Findings") for a complete listing of findings and evidence related to the above discussion.

Staff Recommendation

- Certification that the proposal is exempt from further Environmental Review under the California Environmental Quality Act.

- APPROVAL of Application Number **05-0417,** based on the attached findings and conditions.

Supplementary reports and information referred to in this report are on file and available for viewing at the Santa Cruz County Planning Department, and are hereby made a part of the administrative record for the proposed project.

The County Code and General Plan, as well as hearing agendas and additional information are available online at: www.co.santa-cruz.ca.us

Report Prepared By: David Keyon
Santa CNZ County Planning Department
701 Ocean Street, 4th Floor
Santa Cruz CA 95060
Phone Number: (831) 454-3561
E-mail: david.keyon@co.santa-cruz.ca.us

Coastal Development Permit Findings

1. That the project is a use allowed in one of the basic zone districts, other than the Special Use (SU) district, listed in section 13.10.170(d) as consistent with the General Plan and Local Coastal Program LUP designation.

This finding can be made, in that the property is zoned **R-1-4** (Single-family residential, 4,000 square foot minimum), a designation which allows residential uses and debris walls accessory to these uses. The proposed debris wall is a permitted use within the zone district, consistent with the site's (R-UM) Urban Medium Residential General Plan designation.

2. That the project does not conflict with any existing easement or development restrictions such as public access, utility, or open space easements.

This finding can be made, in that the proposal does not conflict with any existing easement **or** development restriction such as public access, utility, or open space easements in that no such easements or restrictions are known to encumber the project site.

3. That the project is consistent with the design criteria and special use standards and conditions of this chapter pursuant to section 13.20.130 et seq.

This finding can be made, in that the development is consistent with the surrounding neighborhood, in that the debris wall will use materials and colors to blend in with the surrounding hillside to the greatest extent possible.

4. That the project conforms with the public access, recreation, and visitor-serving policies, standards and maps of the General Plan and Local Coastal Program land use plan, specifically Chapter 2: figure 2.5 and Chapter 7, and, as to **any** development between and nearest public road and the sea or the shoreline of any body of water located within the coastal zone, such development is in conformity with the public access and public recreation policies of Chapter **3** of the Coastal Act commencing with section 30200.

This finding can be made, in that the project site is not identified as a priority acquisition site in the County Local Coastal Program, and will be located away from public access points.

5. That the proposed development is in conformity with the certified local coastal program.

This finding can be made, in that the structure is sited and designed to be visually compatible, in scale with, and integrated with the character of the surrounding neighborhood and natural environment. Debris walls are permitted uses within the **R-1-4** zone district, especially when they are designed to protect a single-family dwelling. The project will not disrupt coastal access, as no coastal access points exist across the bluff at this location.

Development Permit Findings

1. That the proposed location of the project and the conditions under which it would be operated or maintained will not be detrimental to the health, safety, or welfare of persons residing or working in the neighborhood **or** the general public, and will not result in inefficient or wasteful use of energy, and will **not** be materially injurious to properties **or** improvements in the vicinity.

This finding can be made, in that the project is located in an area designated for residential uses, and a debris wall is an accessory structure to the primary residential use on site. Construction will comply with prevailing building technology, the Uniform Building Code, and the County Building ordinance to insure the optimum in safety and the conservation of *energy* and resources. The proposed debris wall will not deprive adjacent properties **or** the neighborhood of light, air, or open space, in that the structure will be located against a bluff and will not exceed the height of the existing residence.

2. That the proposed location of the project and the conditions under which it would be operated **or** maintained will be consistent with all pertinent County ordinances and the purpose of the zone district in which the site is located.

This finding can be made, in that the proposed location of the debris wall and the conditions under which it would be operated or maintained will be consistent with all pertinent County ordinances and the purpose of the R-1-4 (Single-family residential, **4,000** square foot minimum) zone district in that the primary use of the property will remain one single-family dwelling.

The proposed debris wall complies with Section **13.10.525** of the County Code (regulations for fences and retaining walls), in that the 12 foot high wall will not deprive adjacent properties of access to light and air as it will be located at the base of a bluff, and **the** colors and materials will be designed to blend in with the surrounding environment to the greatest extent possible. The maximum height of the wall is **12** feet, below the tallest portion **of the** existing residence.

3. That the proposed use is consistent with all elements of the County General Plan and with any specific plan which has been adopted for the area.

This finding can be made, in that the proposed debris wall will protect the primary residential **use** on site, consistent with the use and density requirements specified for the Urban Medium Density Residential (R-UM) land use designation in the County General Plan.

A specific plan has not been adopted for this portion of Aptos.

4. That the proposed **use** will not overload utilities and will not generate more than the acceptable level of traffic on the streets in the vicinity.

This finding can be made, in that the proposed debris wall will not **use** utilities nor will it generate additional traffic.

Conditions of Approval

Exhibit **A:** Project plans, one sheet, drawn by Robert Costa of Terra Firma Engineering, dated March 10,2006.

I. This permit authorizes the construction **of** a debris wall of up to 12 feet in height. Prior to exercising any rights granted by this permit including, without limitation, any construction or site disturbance, the applicant/owner shall:

A. Sign, date, and return to the Planning Department one copy of the approval to indicate acceptance and agreement with the conditions thereof.

B. Obtain a Building Permit from the Santa Cruz County Building Official.

C. Obtain a Grading Permit from the Santa Cruz County Building Official.

II. Prior to issuance of a Building Permit the applicantlownershall:

A. Submit proof that these conditions have been recorded in the official records of the County of **Santa** Cruz (Office of the County Recorder).

B. Submit final architectural plans for review and approval by the Planning Department. The final plans shall be in substantial compliance with the plans marked Exhibit "A" on file with the Planning Department. Any changes from the approved Exhibit "**A**" for this development permit on **the** plans submitted for the Building Permit must be clearly called out and labeled by standard architectural methods to indicate such changes. Any changes that are not properly called out and labeled will not be authorized by any Building Permit that is issued for the proposed development. The final plans shall include the following additional information:

1. Identify finish and color **of** exterior materials **for** Planning Department approval. Materials and colors shall be similar **to** the color boards on file with the Planning Department for permit 05-0417.

2. A grading prepared by a registered Civil Engineer.

3. **A** drainage plan.

4. An erosion control plan.

5. The plans shall reference the project geotechnical and engineering geology reports and shall include a statement that the project shall conform to the reports' recommendations.

C. Submit four copies of the approved Discretionary Permit with the Conditions of Approval attached. The Conditions **of** Approval shall be recorded prior **to**

submittal, if applicable.

D. Meet all requirements of and pay Zone *6* drainage fees to the County Department of Public Works, Drainage. Drainage fees will be assessed on the net increase in impervious area.

E. Submit a letter from the project Geotechnical Engineer approving the design of the debris wall and the proposed drainage system.

F. Submit the following information for review and approval by the County Geologist, as required in the geotechnical and engineering geology report acceptance letter of 2/20/07:

1. Calculations prepared by the project civil engineer demonstrating that the proposed fill is stable under static conditions and during an impact from a debris flow.

2. **A** structural analysis of the berm and retaining wall for review and approval by the County Geologist. This analysis must be prepared by a civil engineer and must consider the impact forces from a debris flow hitting the fill slope behind the wall.

3. A staging and construction plan demonstrating the wall can be constructed and maintained without impacts to adjacent properties.

4. Plan review letters from the project geotechnical engineer and engineering geologist, stating that the project plans conform to the report's recommendations, and that the proposed cut slope and proposed 1:1 fill will be stable as graded.

G. Complete and record a Declaration of Geologic Hazards, as prepared by the County Geologist. **You may not alter the wording of this declaration.** Follow the instructions to record and return the form to the Planning Department.

H. Submit a plan for ongoing maintenance of the debris wall for review and approval by the Planning Department.

III. All construction shall be performed according to the approved plans for the Building Permit. Prior to final building inspection, the applicant/owner must meet the following conditions:

A. All site improvements shown on the final approved Building Permit plans shall be installed.

B. All inspections required by the building permit shall be completed to the satisfaction of the County Building Official.

C. The project must comply with all recommendations **of** the approved geotechnical reports. The project geotechnical engineer and engineering geologist must confirm in writing that all of the construction complies with the recommendations of their respective reports.

D. Both the engineering geologist and civil engineers must inspect and approve the cut slope, and shall submit the results of this inspection in a report to the County Geologist for review and approval. This report shall include photographs that document the conditions of the cut slope after excavation. If the engineering geologist and/or the civil engineer determines that the excavated slope is not stable, then corrective measures must be taken **to** stabilize the slope.

E. The project geotechnical engineers, or similar qualified testing laboratory, must be employed to inspect and test all the fills placed on site. The relative compaction tests' location must be noted on a copy of the approved grading plans, and all related test data must include a table with a reference number that correlates the table data to the test location indicated on the grading plan.

F. The existing residence shall not be deemed safe to occupy until after completion of the final inspection for the debris wall.

G. Pursuant to Sections 16.40.040 and 16.42.100 of the County Code, if at any time during site preparation, excavation, or other ground disturbance associated with this development, any artifact or other evidence of an historic archaeological resource or a Native American cultural site is discovered, the responsible persons shall immediately cease and desist from all further site excavation and notify the Sheriff-Coroner if the discovery contains human remains, or the Planning Director if the discovery contains no human remains. The procedures established in Sections 16.40.040 and 16.42.100. shall be observed.

IV. Operational Conditions

A. In the event that future County inspections of the subject property disclose noncompliance with any Conditions of this approval or any violation of the County Code, the owner shall pay to the County the full cost **of** such County inspections, including any follow-up inspections and/or necessary enforcement actions, up to and including permit revocation.

V. **As** a condition of this development approval, the holder of this development approval ("Development Approval Holder"), is required to defend, indemnify, and hold harmless the COUNTY, its officers, employees, and agents, from and against any claim (including attorneys' fees), against the COUNTY, it officers, employees, and agents to attack, set aside, void, or annul this development approval of the COUNTY or any subsequent amendment of this development approval which is requested **by** the Development Approval Holder.

A. COUNTY shall promptly notify the Development Approval Holder of any claim, action, or proceeding against which the COUNTY seeks to be defended, indemnified, or held harmless. COUNTY shall cooperate fully in such defense. If COUNTY fails **to** notify the Development Approval Holder within sixty **(60)** days of any such claim, action, **or** proceeding, or fails to cooperate fully in the defense thereof, the Development Approval Holder shall not thereafter be responsible to defend, indemnify, or hold harmless the COUNTY if such failure to notify or cooperate was significantly prejudicial to the Development Approval Holder.

B. Nothing contained herein shall prohibit the COUNTY from participating in the defense of any claim, action, or proceeding if both of the following occur:

1. COUNTY bears its own attorney's fees and *costs;* and

2. COUNTY defends the action in good faith.

C. Settlement. The Development Approval Holder shall not be required to pay or perform any settlement unless such Development Approval Holder has approved the settlement. When representing the County, the Development Approval Holder shall not enter into any stipulation or settlement modifying or affecting the interpretation **or** validity of any of the terms **or** conditions of the development approval without the prior written consent of the County.

D. Successors Bound. "Development Approval Holder" shall include the applicant and the successor'(s) in interest, transferee(s), and assign(s) of the applicant.

Minor variations to this permit which do not affect the overall concept or **density may be approved by the Planning Director at the request** of **the applicant** or **staff in accordance with Chapter 18.10** of **the County Code.**

Please note: This permit expires on the expiration date listed below unless **you** obtain the required permits and commence construction.

Approval Date: _____

Effective Date: _____

Expiration Date: _____

Don Bussey
Deputy Zoning Administrator

David Keyon
Project Planner

Appeals: Any property owner, or **other person aggrieved,** or **any other person whose interests are adversely affected by any act** or **determination** of **the Zoning Administrator, may appeal the act *or* determination to the Planning Commission in accordance with chapter 18.10** of **the Santa Cruz County Code.**

CALIFORNIA ENVIRONMENTAL QUALITY ACT
NOTICE OF EXEMPTION

The Santa Cruz County Planning Department has reviewed the project described below and has determined that it is exempt from the provisions of CEQA as specified **in** Sections 15061 - 15332 of CEQA for the reason(s) which have been specified in this document.

Application Number: 05-0417
Assessor Parcel Number: 042-101-15
Project Location: 126 Creek Drive

Project Description: Construct debris wall up to 12 feet in height behind existing residence

Person or Agency Proposing Project: Jay Poindexter

Contact Phone Number: (831) 595-6553

A. _____ The proposed activity is not a project under CEQA Guidelines Section 15378.
B. _____ The proposed activity is not subject to CEQA as specified under CEQA Guidelines Section 15060 (c).
C. _____ **Ministerial Proiect** involving only the use of fixed standards or objective measurements without personal judgment.
D. _____ **Statutory Exemption** other than a Ministerial Project (CEQA Guidelines Section 15260 to 15285).

Specify type:

E. __X__ **Categorical Exemption**

Specify type: 15303(e): New construction of accessory structure (debris wall)

F. Reasons why the project is exempt:

The debris wall is an accessory structure to the existing single-family **dwelling** on site

In addition, none of the conditions described in Section 15300.2 apply **to** this project.

_____ Date:_____
David Keyon, Project Planner

EXHIBIT D

FOR TAX PURPOSES ONLY

POR. APTOS RANCHO

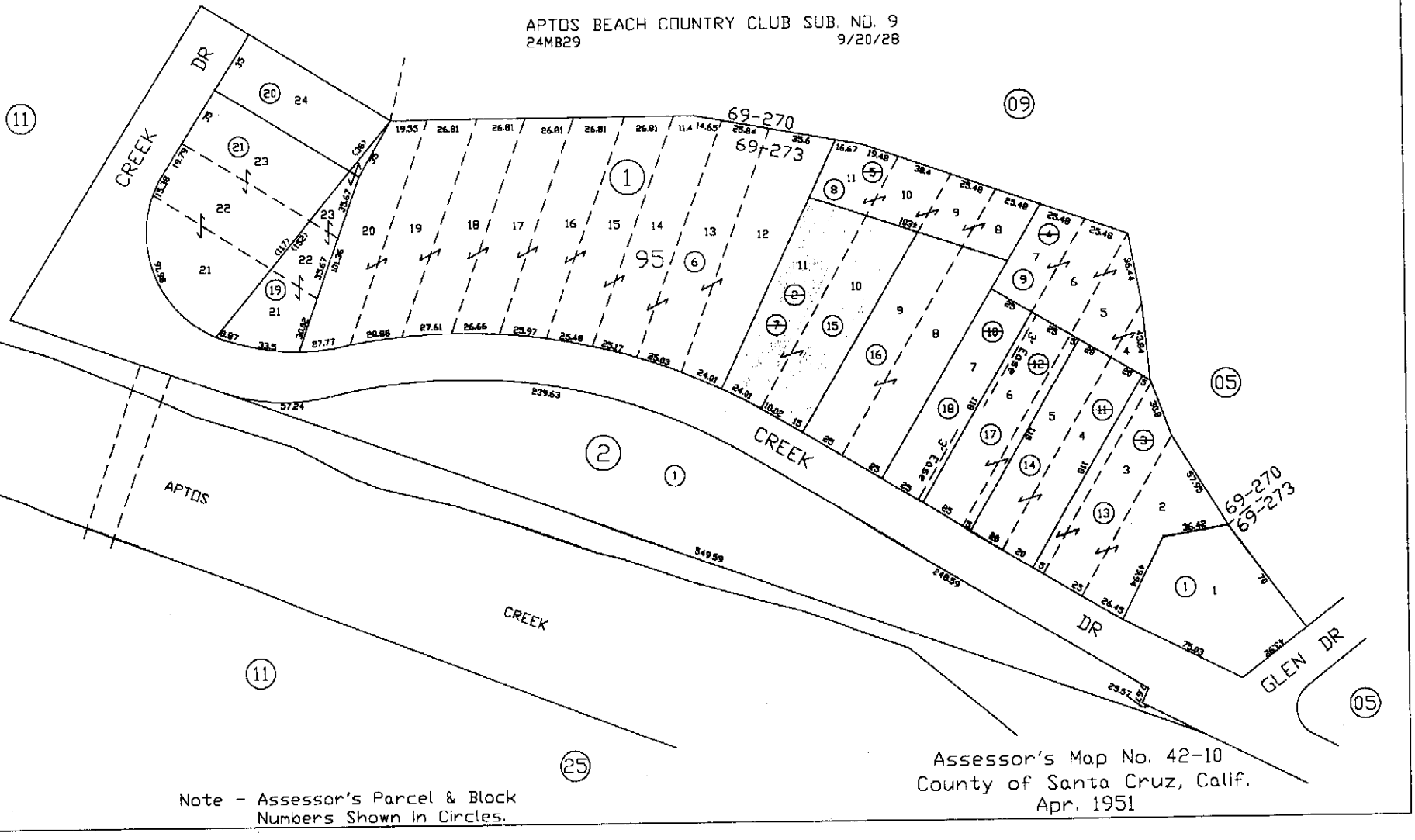
S.W. 1/4 SEC. 18, T.11S., R.1E. M.D.B. & M.

Tax Area Code
69-270 69-273

42-10

1" = 50'

APTOS BEACH COUNTRY CLUB SUB. NO. 9
24MB29 9/20/28

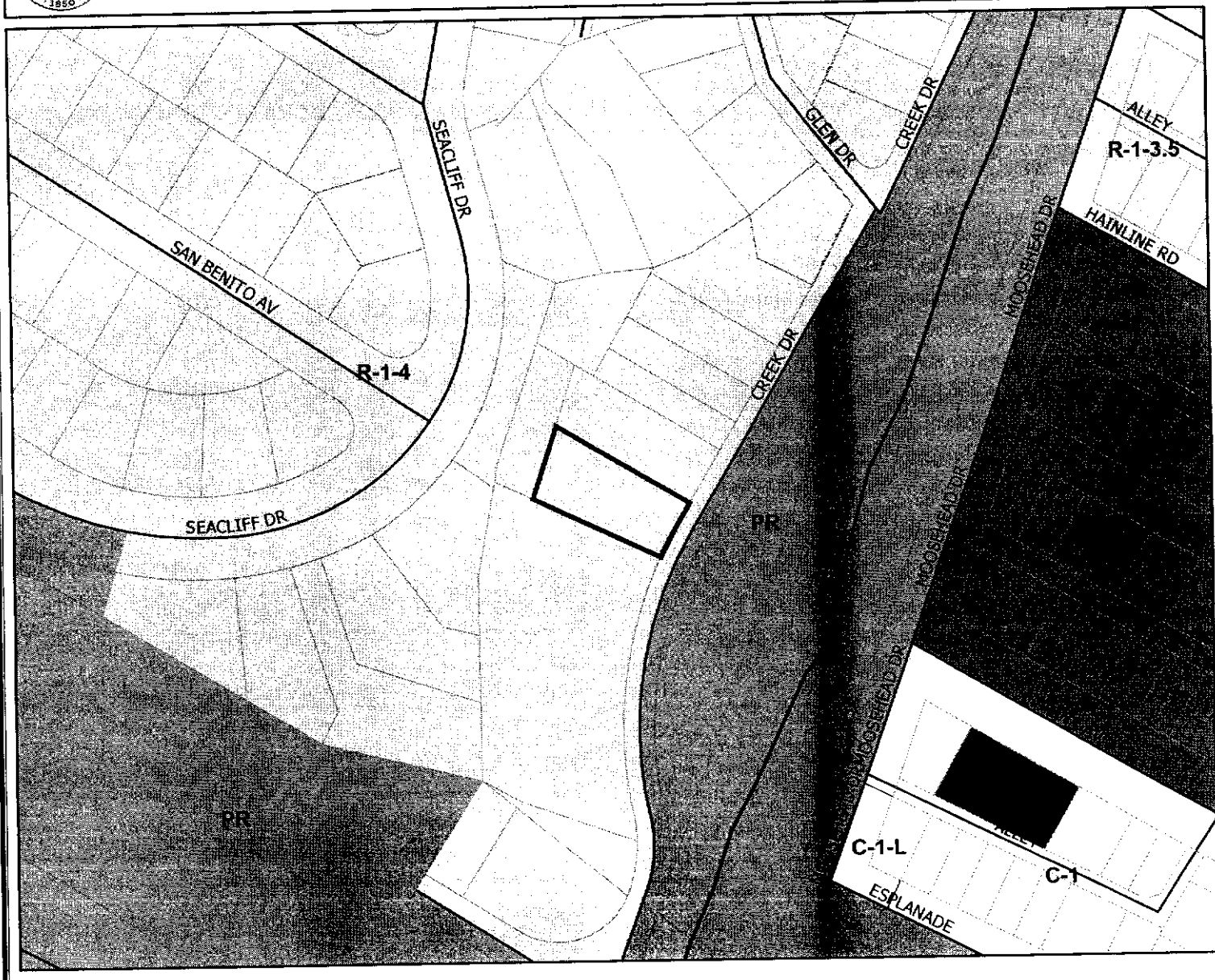


Note - Assessor's Parcel & Block Numbers Shown in Circles.

Assessor's Map No. 42-10
County of Santa Cruz, Calif.
Apr. 1951

Electronically drawn 9/22/95 KSA
Rev. 5/14/98 RV (TCA CONSOLIDATIONS)
Rev. 5/24/99 EB (Tax Consolidations)
Rev. 5/17/01 mm (changed page refs.)

Zoning Map



Legend

- APN 042-101-15
- Assessors Parcels
- Streets
- PERENNIAL STREAM
- RESIDENTIAL-SINGLE FAMILY (R-1)
- PARK (PR)
- RESIDENTIAL-MULTIFAMILY (RM)
- COMMERCIAL-NEIGHBORHOOD (C-1)
- PUBLIC FACILITY (PF)

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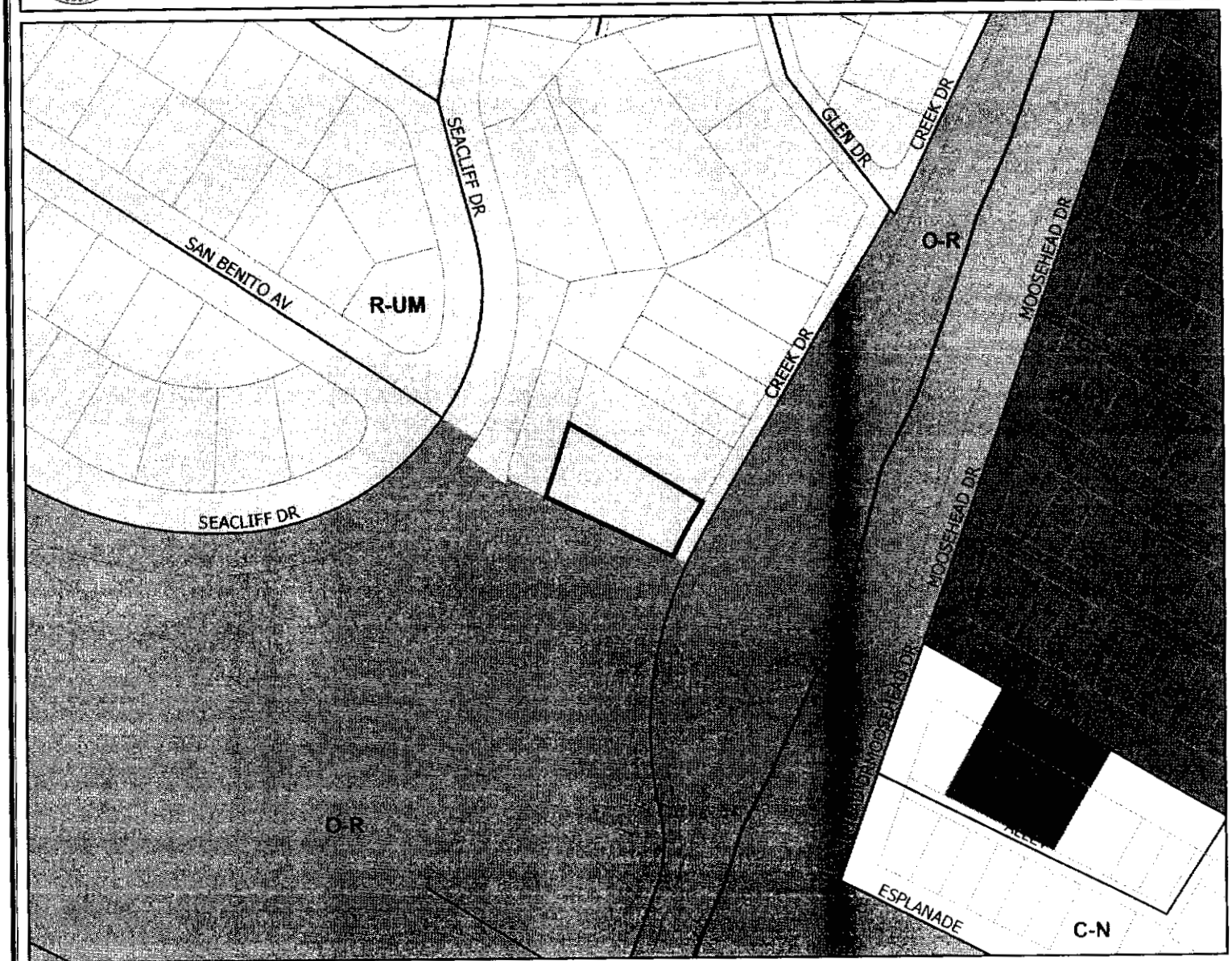
Map Created by
County of Santa Cruz
Planning Department
July 2005

EXHIBIT F

General Plan Designation Map



0 95 190 380 570 760 Feet

Legend

- APN 042-101-15
- Assessors Parcels
- Streets
- PERENNIAL STREAM
- Residential - Urban Medium Density (R-UM)
- Parks and Recreation (O-R)
- Commercial-Neighborhood (C-N)
- Residential - Urban High Density (R-UH)
- Public Facilites (P)

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Map Created by
County of Santa Cruz
Planning Department
July 2005

EXHIBIT F

COUNTY OF SANTA CRUZ

PLANNING DEPARTMENT
701 OCEAN STREET, 4TH FLOOR, SANTA CRUZ, CA 95060
(831) 454-2580 FAX (831) 454-2131 TDD (831) 454-2123
TOM BURNS, PLANNING DIRECTOR

February 20,2007

Jay Pondexter
4711 Thurver Lane
Santa Cruz, CA 95065

Subject: Review of Geotechnical Investigation by Haro, Kasunich and Associates, Dated January 10,2003, and March 30,2005, Project No. SC7983, and, Engineering **Geology** Investigation by Rogers E. Johnson and Associates, Dated October 16,2002; Project No. G02024-57

Reference: **APN** **042-101-15**

APPL# **05-0417**

Dear Applicant:

The purpose of this letter is to inform you that the Planning Department *has* accepted the subject report and the following items shall be required:

1. The project civil engineers must demonstrate through calculations that the proposed one horizontal to one vertical fill is stable under static conditions and during **an** impact from a debris flow. If the fill is not stable, **the** fill must be modified (flattened or reinforced) in **a** manner that provides minimum factors of stability under static conditions (1.5:1) and during an impact from a debris flow(1.5:1). All analyses must include the evaluations **of** surficial stability taking into consideration adverse moisture conditions typical of winter rainfall conditions.

2. **A** building and grading permit is required for this project. **A** complete structural analysis of the berm and retaining wall by a qualified civil engineer is required as part of the application for this permit. This analysis must consider impact forces from a debris flow hitting the fill slope behind the wall.

3. A staging and construction plan is required that demonstrates that the wall can be constructed and maintained without interference with adjacent property.

4. All construction shall comply with the recommendations of the report.

(over)

EXHIBIT G

5. Final plans shall reference the reports and include a statement that the project shall conform to the reports' recommendations.

6. Before final inspection, the geotechnical engineer and engineering geologist must confirm in writing that all **of** the construction complies with the recommendations of their respective report.

7. Before building permit issuance *plan-review* fetters shall be submitted to Environmental Planning. The authors of the reports shall write the plan *review letters.* These letters shall state that the project plans conform to the report's recommendations, and shall state that the proposed cut slope and the proposed 1:1 fill will be stable **as** graded.

8. Both the engineering geologist and civil engineers must inspect and approve the cut slope. The results of this inspection must be submitted in writing to the County for **rrvirw** and must include photographs that document the conditions oi the cui slope after excavation. If the engineering geologist and/or the civil engineering determines that the excavated slope is not stable, then corrective measures must be taken to stabilize the slope.

9. Haro, Kasunich, and Associates, or a similar qualified testing laboratory, must be employed to inspect and test all the fills placed on the site. The relative compaction tests' location must be noted on a copy **of** the approved grading plans, and **all** related test data must be includes in a table with a reference number that correlates the table data to the test location indicated on the grading plan.

10. **A** declaration of Geologic Hazard must be recorded before **the** issuance of the Building Permit.

After building permit issuance the soils engineer and engineering geologist *must* remain *involved* with the *project* during construction. Please review the Notice *to Permits Holders* (attached).

Our acceptance **of** the reports is limited to its technical content. Other project issues such as zoning, fire safety, septic or sewer approval, etc. may require resolution by other agencies.

Please call the undersigned at **(831)** 454-3175 if we can be of any further assistance.

Sincerely,

Joe Hanna
County Geologist

Cc: David Keyon, Planner
John Kasunich, Haro, Kasunich, and Associates
Rogers E. Johnson, Rogers E. Johnson, and Associates

EXHIBIT G

ROGERS E. JOHNSON & ASSOCIATES
CONSULTING ENGINEERING GEOLOGISTS
41 Hangar Way, Suite B
Watsonville, California 95076
e-mail reja@bigfoot.com
Ofc (831)728-7200 • Fax (831) 728-7218

GEOLOGIC INVESTIGATION FOR DEBRIS CONTAINMENT WALL POINDEXTER PROPERTY SANTA CRUZ COUNTY APN 042-101-15 126 CREEK DRIVE RIO DEL MAR, CALIFORNIA

REJA Job No. G02024-57
October 16,2002

EXHIBIT H

ROGERS E. JOHNSON & ASSOCIATES
CONSULTING ENGINEERING GEOLOGISTS
41 Hangar Way, Suite B
Watsonville, California 95076
e-mail: rEJa@blbfoot.com
Ofc (831) 728-7200 • Fax (831) 728-7218

October 16,2002

Joseph Haro
Haro, Kasunich and Associates, Inc.
116 East Lake Avenue
Watsonville, California 95076

Job No. G02024-57

Re: Debris Containment Wall, Poindexter Property
Santa Cruz County APN 042-101-15
126 Creek Drive, Rio Del Mar, California

Dear Mr. Haro:

At your request, we have performed a geologic investigation of the above referenced property. This letter addresses the geologic issues for the design of a debris containment wall to be located at the base of the slope behind the existing house. Specifically, we provide a design debris slide volume and the resulting cross-sectional configuration at the site of the proposed containment wall. However, it should be understood that due to the particular geologic conditions at this site (discussed later), there is a potential for future large slope failures to overwhelm any economically reasonable protective structure.

Our services included: 1) review of published and unpublished literature relevant to the site and vicinity, including our previous report (Johnson, 1995); 2) co-logging of exploratory borings advanced by the project geotechnical engineer, Haro, Kasunich and Associates; 3) reconnaissance mapping of the slope behind the existing residence; **4)** compilation and analysis of the resulting data; 5) coordination with the project geotechnical engineer; and 6) preparation of this letter and accompanying illustrations, including a geologic map and cross section.

The Poindexter property is located at 126 Creek Drive, above Aptos Creek, within Rio Del **Mar,** Santa Cruz County, California. The area of investigation encompassed the steep to moderately-steep slope behind the existing residence. Large debris slides occurred, likely **as** two events, during the winters of 1996-97 and 1997-98 on the slope under investigation. The portion of the **failures** that occurred directly behind the residence and on the subject property totaled approximately 280 cubic yards of material. The failures directly impacted the residence. Due to the slides' viscous state and slow velocity, it did relatively minor damage to the structure. The residence was subsequently red-tagged pending investigations and future remediation. The slide material **was** excavated away from the house by hand. The hand excavation has continued, removing in-place Purisima Formation bedrock and generating a steep cut-slope.

EXHIBIT H

CONCLUSIONS AND RECOMMENDATIONS

1. It is our opinion that there is a high potential for the existing residence on the Poindexter property to be impacted by future debris slides. The structure should be protected via a debris slide containment wall. The debris containment wall should be designed to accommodate a debris slide mass of 165 cubic yards, with a cross-sectional area of 81 square feet. The wall height must include 3 feet of free board above the debris and may incorporate a debris angle-of-repose of 4 to 1 (horizontal to vertical). The wall should run parallel to the slope and not deflect debris onto the adjacent properties. The position of the wall should be checked in the field by the engineering geologist prior to its construction.

2. We recommend laying back the over-steepened cut-slope to an angle of 0.75 to 1 (horizontal to vertical). Engineered, site-specific erosion control and slope/wall drainage plans are essential and should be reviewed and approved by the project geologist and project geotechnical engineer. The attached Appendix A, Maintenance of Hillside Homes, contains general, common-sense recommendations for drainage control, but is not a substitute for a site-specific drainage plan.

3. We request the privilege of reviewing any forthcoming geotechnical reports on the site and all new civil engineering and architectural plans pertaining to the proposed structure.

INVESTIGATION LIMITATIONS

1. The conclusions and recommendations noted in this report are based on probability and in no way imply the site will not possibly be subjected to debris slides so large that structures will be severely damaged or destroyed. Our report does suggest that construction of a debris containment wall at the subject site, in compliance with the recommendations noted in this report, will substantially reduce the debris slide hazard at the Poindexter residence.

2. This letter is issued with the understanding that it is the duty and responsibility of the owner or his representative or agent to ensure that the recommendations contained in this report are brought to the attention of the architect and engineer for the project, incorporated into the plans and specifications, and that the necessary steps are taken to see that the contractor and subcontractors carry out such recommendations in the field.

3. If any unexpected variations in soil conditions or if any undesirable conditions are encountered during construction or if the proposed construction will differ from that planned at the present time, Rogers E. Johnson and Associates should be notified so that supplemental recommendations can be given.

If you have any questions, please contact us at your earliest convenience.

Sincerely,

ROGERS E. JOHNSON & **ASSOCIATES**

James A. Olson
Project Geologist
C.E.G. No. 2267

Rogers E. Johnson
Principal Geologist
C.E.G. No. 1016

JAO/REJ/jao/cjr

Attachments: Plate 1: Geologic Map
Figure 1: Geologic Cross Section
Appendix A: Maintenance of Hillside Home Sites

EXHIBIT 4

Project No. SC7983
16 January 2003

MR. JAY POINDEXTER
% Mr. William Costanzo
619 Morninghome Road
Danville, California 94526

Subject: Limited Geotechnical Investigation

Reference: Debris Barrier Wall
126 Creek Drive (APN 042-101-15)
Aptos, Santa Cruz County, California

Dear Mr. Poindexter:

At your request. our firm has coinpleted a limited geotechnical investigation to evaluate and develop geotechnical-related design parameters for a proposed debris barrier wall at the rear of the residence at 126 Creek Drive in Aptos, Santa Cruz County, California. Historically, the site has been impacted by one or more debris-flow type slides in the winters of 1996-1997 and 1997-1998.

We understand approximately 280 cubic yards of material was excavated away from the house by hand and that structural damage to the residence by the debris **has** been minor.

This report should be reviewed in conjunction with the report entitled "Geologic Investigation For Debris Containment Wall" prepared **by** Rogers **E.** Johnson 2nd Associates dated 16 October 2002.

Purpose and Scope

The purpose of our investigation was to explore surface and subsurface soil conditions of the rear toe hillside and to prcvide geotechnical design parameters for design and construction of the proposed debris barrier wall.

The specific scope of our services was as follows:

1. Site reconnaissance and review of available proprietary data in our files pertinent to the site. Specifically, our firm reviewed the report entitled "Geologic Investigation For Debris Containment Wall" prepared by Rogers **E.** Johnson 8 Associates, dated 16 October 2002.
2. Explore the subsurface conditions at the toe of the hillside with two flight augered borings drilled to depths of 14 and 15 feet deep, respectively.

EXHIBIT I

3. Evaluate the field data to develop geotechnical criteria for general site grading, debris wall loads, foundations, and general site drainage.
4. Present the results of our investigation in this letter report.

Proiect Description

Figure 2 presents a topographic plan that depicts the relationship of the hillside to the house, which is a two story single-family structure. This structure is of typical wood frame construction and a stucco exterior. The parcel is approximately 6.600 square feet in size and approximately rectangular in shape. The front portion of the residence abuts Creek Drive (Elevation 12 feet) and the rear of the residence is cut into the hillside. The rear portion of the parcel rises at an average gradient of approximately 75 percent to the property line at approximately elevation 75 feet. The crest of the hill lies on the adjoining parcel at elevation 95 feet. The hillside relief; therefore is approximately 80 feet.

The lowest elevations of the parcel have been impacted by debris flow slides that occurred in the winters of 1996-1997 and 1997-1998. In the process of excavating past slide events the homeowner has created an 11 foot wide level yard between the rear of the house and toe of the hillside. A steep, 6 foot high cut-slope into purisima formation sandstone has resulted'from the excavation.

In order to mitigate against future debris flow events, a containment wall is proposed. Rogers E. Johnson and Associates recommends that the wall be designed to catch a volume of 165 cubic yards, although it is possible (though less likely) that 600 cubic yards could potentially be displaced from the hillside directly above the residence.

Field Exploration

Subsurface conditions for the proposed wall area were investigated on 4 September 2002. Two 4-inch flight augered bohngs were advanced with either an all terrain vehicle (B-1) or portable minuteman equipment (B-2). The approximate location of the test borings is shown on the attached Boring Site Plan. The soils encountered were continuously logged in the field and described in accordance with the Unified Soil Classification System (ASTM D2486). The Logs of Test Borings are included in the Appendix of this report.

The boring logs denote subsurface conditions at the locations and time observed and it is not warranted that they are representative of subsurface conditions at other locations or times.

EXHIBIT I

Subsurface Conditions

Based on our investigation. the proposed retaining wall location is underlain by purisima formation sandstone bedrock. The sandstone is a soft, loose to medium dense, weathered, and friable bedrock. Minor amounts of slide debris (1 to 3) feet are located in the location of the proposed wall overlying the sandstone bedrock. The debris is made up of the parent material and is described as a loose silty sand.

Groundwaterwas not encountered during our drilling operations. Groundwater depths may change based on seasonal factors and other variables.

DISCUSSIONS, CONCLUSIONS **AND** RECOMMENDATIONS

Based on the results of our investigation, it is our opinion that the structural engineer needs to provide the restraint to retain the toe cut slope and a debris flow event of 165 cubic yards to contain the more likely debris flow event. The slide mass is anticipated to be semi viscous and its mass velocity is anticipated to only be several feet per second (refer to the RJA report).

The owner should be aware that the project geologist, Rogers E. Johnson and Associates, has determined a worst case failure, although less likely, could include failure of 600 cubic yards. The homeowner is advised that the risk *of* greater than the proposed design containment is possible. The less likely event of 600 cubic yards is a consideration the homeowner needs to discuss further with the geologist. The final design considerations may need to be agreed to by the homeowner and the reviewing governmental agencies.

In discussions with the structural engineer, a soldier beam with wood lagging retaining wall is proposed to contain the debris.

Cut-Slope

The project geologist recommends laying the over-steepened cut slope back to an angle of 0.75 to 1 (H:V). If the 0.75 to 1 gradient can not be achieved, the cut-slope should be retained.

Debris Containment **Wall**

Under the more likely event, the proposed wall *is* required to contain 165 cubic yards of material over the width of the property. This computes to a cross-sectional area of 81 square feet. The structural engineer can assume that the debris will have an angle of repose of 4:1 (H:V). The final wall height must include 3 feet of free board above the calculated debris height, refer to the geologist report.

EXHIBIT 1

it is assumed the wall will be located between the house and the existing cut-slope. For safety reasons, it is the owner's responsibility to restrict access to the area. Removai of debns after an event will be necessary and should be incorporated into the design considerations.

Wall Height

The height of the wall will be determined by the location at the wall and the calculated storage volumes. Details of potential wall locations are attached for clarity. These drawings are only conceptual.

Site Gradinq

1. The geotechnical engineer should be notified **at least four (4)working days prior *to* any** site **clearing** or **grading** so that the work in the field can be coordinated with the grading contractor, and arrangements for testing and observation services can be made. The recommendations of this report are based on the assumption that the geotechnicalengineerwill performthe requiredgeotechnicai related earthwork testing and observation services during grading and construction. It is the owner's responsibilrty to make the necessary arrangements for these required services.

2. Where referenced in this report, Percent Relative Compaction and Optimum Moisture Content shall be based on ASTM Test Designation D1557-91.

3. Areas to be graded should be cleared of obstructions including loose fill, trees not designated to remain, and other unsuitable material. Existing depressions or voids created during site clearing should be backfilled with engineered fill.

4. Engineered fill should be placed in thin lifts not to exceed 8 inches in loose thickness, moisture conditioned, and compacted to at least 90 percent relative compaction. The upper 8 inches of fill and all areas to receive baserock should be compacted to a minimum of 95 percent relative compaction.

5. The on-site soil may be re-used as engineered fill once the majority of organics and other deleterious materials are removed.

6. Imported engineered fill should meet the following criteria:
   a. Be free of wood, brush, roots, grass, debris and other deleterious materials.
   b. Not contain rocks or clods greater than 2.5 inches in diameter.
   c. Not more than 20 percent passing the #200 sieve.
   d. Have a plasticity index less than 15.
   e. Be approved by the geotechnical engineer. Submit to the geotechnical engineer

EXHIBIT 1

11. Active pressures should be used for walls where horizontal movement at the top of the wall is not restricted. At-rest pressures should be used to design walls with movement restrained at the top, such as basement walls and walls structurally connected at the top. The walls should also be designed to resist one half of any surcharge loads imposed on the backfill behind the walls. The designer should account for the surcharge loading created during backfill operations.

12. The above lateral pressures assume the walls are fully drained to prevent hydrostatic pressure behind the walls. Drainage materials behind the wall should consist of Class 1, type A permeable material complying with Section 68 of CalTrans Standard Specifications, latest edition, or 3/4 inch permeable drainrock wrapped in Mirafi 140 N or equivalent. The drainage material should be at least 12 inches thick. The drains should extend from the base of the walls to within 12 inches of rhe top of the backfill. A perforated pipe should be placed (holes down) about 4 inches above the bottom of the wall and discharge at a suitable location. Wall backdrains should be plugged at the surface with clayey material to prevent infiltration of surface runoff into the backdrains.

Site Drainage

13. Thorough control of runoff is essential to the performance of the project.

14. Surface drainage should include provisions for positive slope gradients so that surface runoff is not permitted to pond adjacent to foundations or other improvements.

Plan Review. Construction Observation **and** Testing

15. Our firm should be provided the opportunity for a general review of the final project plans prior to construction so that our geotechnical recommendations may be properly interpreted and implemented. If our firm is not accorded the opportunity of making the recommended review, we can assume no responsibilrty for misinterpretation of our recommendations. We recommend that our office review the project plans prior to submittal to public agencies, to expedite project review. The recommendations presented in this report require our review of final plans and specifications prior to construction and upon our observation and, where necessary, testing of the earthwork and foundation excavations. Observation of grading and foundation excavations allows anticipated soil conditions *to* be correlated to those actually encountered in the field during construction.

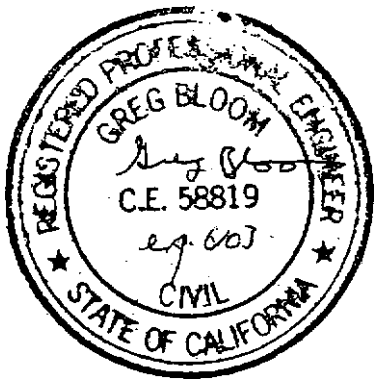
EXHIBIT I

If you have any questions, please call our office

Very truly yours,

HARO, KASUNICH AND ASSOCIATES, INC.

Greg Bloom
C.E. 58819



GB/dk

Copies: 5 *to* Addressee
1 to Rogers E. Johnson and Associates

EXHIBIT I

Project No SC7983
20 March 2005

MR. JAY POINDEXTER
4711 Thurber Lane
Santa Cruz, California 95065

Subject: Technical Response to Additional Information
Required by Joe Hanna, Santa Cruz County Geologist
Re-Application Letter July 28, 2005

Reference: Debris Flow Barrier Wall
Poindexter Residence
126 Creek Drive
Application No. 05-0417
APN 042-101-15
Santa Cruz County, California

Dear Mr. Poindexter:

Our firm has been working with Bob Milano of Terra Firma, Civil Engineering to develop appropriate geologic/geotechnical design criteria for a debris flow barrier wall to be located behind your existing residence at the referenced site. We have coordinated our geotechnical investigation with the geology firm of Rogers E. Johnson and Associates to develop design criteria for the barrier wall. The County Geologist has asked us to evaluate the stability *of* the proposed grades for the lower section of the bluff where cuts into the Purisima sandstone will be inclined up to ¾:1 (horizontal to vertical) and the proposed 1:1 backfill will be constructed for the debris wall. Talus colluvium will be removed and used as backfill material to increase void space behind the wall to accommodate future slide debris. This material will be backfilled as an impact embankment behind the wall. Using laboratory derived direct shear strength parameters obtained in our geotechnical investigation for the properly, dated 24 July 1995, and recent direct shear testing of the colluvial soil remolded to 90 percent, we have completed a quantitative slope stability analysis of the proposed ¾:1 cut slope into the Purisima sandstone and the 1:1 fill slope at 90 percent relative compaction. Attached with this letter is our slope stability cross-sections which utilize the geologic profile prepared by Rogers E. Johnson and Associates and the proposed excavation by Terra Firma.

A. The project engineer Bob Milano has taken the geologic information from the Rogers E. Johnson and Associates cross-section and super imposed it on his cross-section AA.

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EXHIBIT J

B. Our slope stability results for the 3/4:1 cut slope indicate static factors of safety of 1.9 and seismic factors of safety of 1.3. The proposed 1:1 fill slope, an impact embankment to be constructed behind the segmented wall, will be constructed from the excavated materials along the base of the bluff. Utilizing a direct shear sample obtained from those materials and remolded to 90 percent we have completed slope stability analysis of the 1:1 backfill slope. In order to attain static and seismic slope stability analysis with factors of safety greater than 1.5 and 1.2 respectively, the 1:1 fill slope must be reinforced with geogrid reinforcement. Attached with this letter is the slope stability analysis for the 1:1 fill slope with reinforcement. Static factors of safety of 2.6 and seismic factors of safety of 1.9 were generated. Since the reinforcing grid system is necessary for the 1:1 fill, we recommend attaching it to the segmented block wall. This will increase its ability to contain impact forces and increase overturning and sliding factors of safety. Our slope stability results indicate the reinforced 1:1 embankment backfill will have more than just enough stability.

C. If the debris barrier wall is impacted by a debris flow slide, debris materials will have to be removed from the reservoir to allow for future protection. This will have to be done with hand labor using shovels and wheelbarrows. This process of soil removal is very common at the back of the homes along Beach Drive during the frequent debris flow slides which occur there.

D. We have evaluated instantaneous settlement and settlement projected to occur in 1 year across the segmented gravity wall system proposed as a containment structure. Attached to this letter are the calculated settlements overtime, these settlements varied from less than a 1/10" for instantaneous to 1/3" to ½" of settlement in 1 year. Based on these calculations the differential settlement of the segmented wall is expected to be less than ½".

This concludes our response to the additional information requested by Santa Cruz County geologist, Joe Hanna.

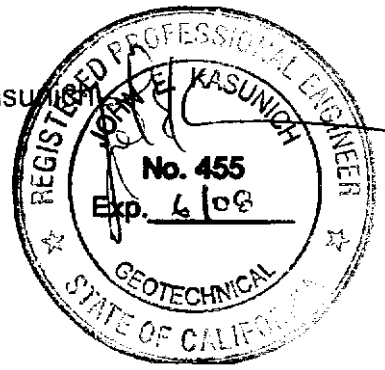
EXHIBIT J

If you have any questions, please call our office.

Very truly yours,

HARO, KASUNICH AND ASSOCIATES, INC.

John E. Kasunich
G.E. 455



JEK/sq

Attachments

Copies: 1 to Addressee
2 to Bob Milano, Terra Firm
1 to Brett Manning, Structural Engineers
1 to David Keyon, Santa Cruz County Planning
1 to Joe Hanna, Santa Cruz County Geologist

EXHIBIT J

Project No. SC7983
30 March 2005

MR. JAY POINDEXTER
c/o Terra Firma
2855 Honeysuckle Circle
Antioch, California 9431

Attention: Robert Milano

Subject: Geotechnical Plan Review

Reference: Poindexter Residence
126 Creek Drive
Santa Cruz County, California

Dear Mr. Poindexter:

At the request of your civil engineer, Bob Milano, we have reviewed the most recent Civil Plans sent to our office by Terra Firma, dated February 2004. These plans were prepared based on geologic input by Rogers Johnson and Associates, Geotechnical input by Haro, Kasunich and Associates, and Structural Engineering by L&M Engineers. We have also reviewed the "Actual Latest Cross-Section of the Wall" sent to our office on 7 March 2005. The plans depict a debris flow barrier wall behind the Poindexter residence to protect it from potential slump sliding and debris flows which could occur on the bluff directly behind the residence. As part of our review, we discussed the final plans with Robert Milano from Terra Firma and with the project structural engineer, Brett Manning from L&M Engineering. We also discussed the review letter prepared by Rogers Johnson, Project Geologist in December 2004.

A segmented block gravity wall, with a downward 1:1 backslope, will be constructed behind the residence. The retaining wall has been designed for a 12 foot height. The 1:1 backslope acts as a protective embankment that will absorb much of the debris flow impact force. The basic requirements for the segmented block gravity wall are that its foundation is excavated into firm native materials, deep enough to eliminate surcharge loadings to the adjacent residential retaining structures and building foundation systems. The cross sectional plans indicate that this has been achieved. Portions of the base of the coastal bluff and talus material will be excavated to utilize in construction of the 1:1 impact buttress fill placed against the back of the segmented block wall. This excavation will also open up a catchment area that will allow collection of slump slide debris materials.

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EXHIBIT V

Volumes of the potential slide debris have been estimated by the project geologist and utilized in design of the barrier wall. Excavation at the base of the bluff must be inspected by the project geologist to ensure that the Purisima sandstone is exposed in the cuts and will therefore stand at a steep gradient. Should talus or terrace deposit materials be exposed then field decisions will be made to either contain the exposure or to flatten the excavations if possible. The 1:1 backslope will lie against the back of the segmented block gravity wall. This material should be compacted just enough to allow it to stand at a 1:1 gradient, but loose enough to compress and absorb energy when a slide impacts this fill. A 1:1 slope is a steep gradient for fill material. We recommend that immediately after construction, erosion control fabric and a ground cover with deep roots be established to maintain the steep surface gradient of the constructed backslope.

Recent discussions with Brett Manning, project structural engineer, and a review of his calculations for a 3, 6, 10 and 12 foot high debris barrier wall indicate that the top 3 feet of the "Actual Latest Cross-Section of the Wall" (a copy is attached to this letter) has factors of safety greater than 1.5 relative to the after slide impact condition of 100 pcf, equivalent fluid weight of the contained landslide debris. Mr. Manning indicated that the top 3 foot freeboard segmented blocks of the debris barrier wall will be epoxy glued together to increase their resistance to impact and static load forces. We have indicated that the impact load is a temporary transient load and that at least a one-third increase in allowable stress is appropriate for this dynamic load (see attached Table-Usual Design Factors for Duration of Loading).

In summary, Rogers Johnson, project geologist, indicated if the "Actual Latest Cross-Section of the Wall" utilizes the top 3 feet (the freeboard height) to contain landslide debris, the barrier wall will have a capacity to contain 216 cubic yards of landslide material which is greater than the 165 cubic yards of landslide debris he has estimated could impact the wall. Brett Manning has indicated that the segmented wall including the top 3 foot freeboard, has been designed to contain static and dynamic loads imposed on it, by Haro, Kasunich and Associates design criteria (HKA letter dated 23 June 2004). Mr. Manning indicated he has not used passive resistant pressures in his calculation to resist sliding or overturning. Therefore the barrier wall will not add stress to the adjacent downslope retaining walls. The vertical bearing load forces of the barrier wall do not influence the adjacent retaining wall or house foundation as laid out.

Based on a review of the Terra Firma February 2004 plan and the 7 March 2005 "Actual Latest Cross-Section of the Wall" sent to us by Bob Milano *of* Terra Firma, recent discussions with and review of updated calculations by the project structural engineer, Brett Manning and discussions with the project geologist, Rogers Johnson, it is our opinion the debris barrier wall is in conformance to our geotechnical recommendations presented in our Limited Geotechnical Investigation, dated 10 January 2003 and supplemental letter, dated 23 June 2004. Our firm is on stand by to observe and test all

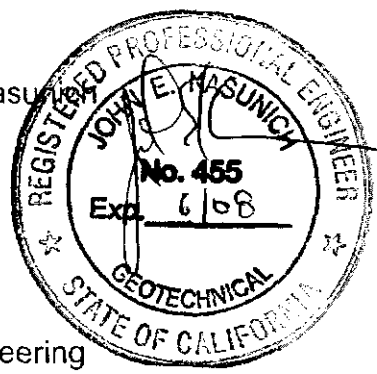
EXHIBIT K

geotechnical aspects of the construction project. If you have any questions, please call our office.

Very truly yours,

HARO, KASUNICH AND ASSOCIATES, INC.

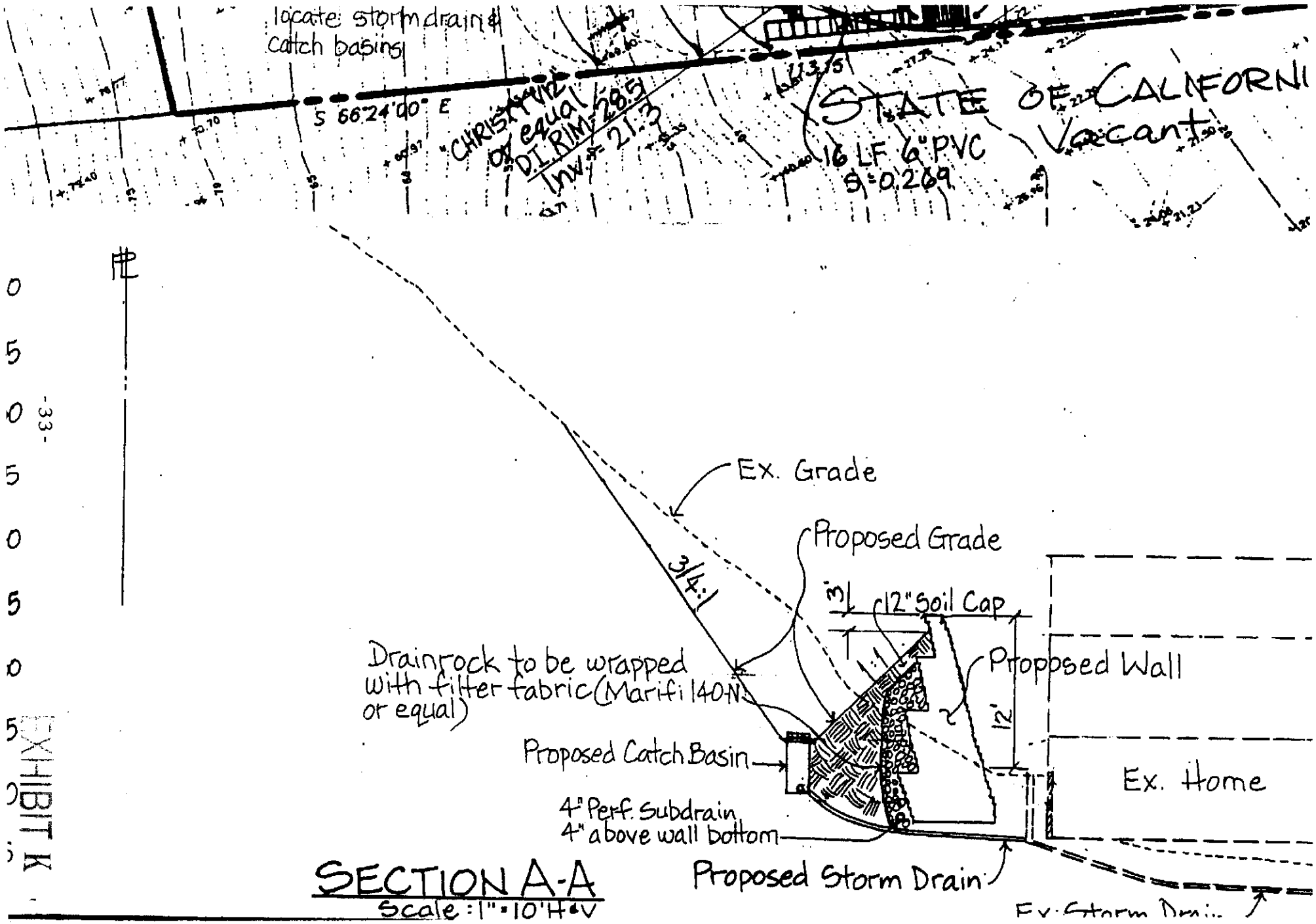
John E. Kasunich
G.E. 455



JEK/dk

Copies: 1 to Jay Poindexter
3 to Bob Milano, Terra Firma
1 to Brett Manning, L&M Engineering
1 to Rogers Johnson, Rogers Johnson & Associates
1 to Dave Keyon, Santa Cruz County Planning Department
1 to Joe Hanna, Santa Cruz County Planning Dept.

EXHIBIT K



SECTION A-A
Scale: 1" = 10' H & V

EXHIBIT K

TABLE 2.12

USUAL DESIGN FACTORS FOR DURATION OF LOADING

Duration of Load	Factor
2 months (as for snow)	1.25
7 days	1.33
Wind or earthquake	1.66
Impact	2.00

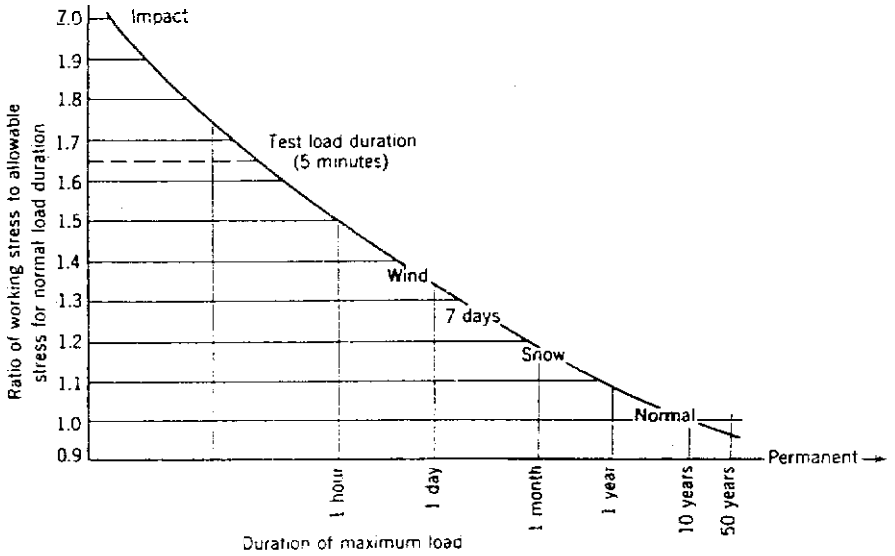


Figure 2.3. DURATION OF LOAD FACTORS. Derived from Forest Products Laboratory Report No. R1916

If loads of different durations are applied simultaneously, the size of member required is determined for the total of all loads applied at the allowable unit stress adjusted by the factor for the load of shortest duration in the combination. In like manner, but neglecting the load of shortest duration, the size of member required to support the remaining loads at the stress adjusted by the factor for the load of next shortest duration is determined. By repeating this procedure for all the remaining loads, the size of member required for the controlling duration of load condition is obtained. When the permanently applied load is less than or equals 90% of the total normal load (including the permanently applied load), the normal loading condition will control the size of member required.

Example. Determine the governing loading condition for a 40 ft span glued laminated timber purlin under the uniform loads given.

$$DL = 200 \text{ plf}$$
$$SL\ (2 \text{ months}) = 800 \text{ plf}$$
$$WL = 500 \text{ plf}$$

EXHIBIT K