Staff Report to the Planning Commission

Application Number: 05-0246

Applicant: Hamilton-Swift Land Use
Owner: John King
APN: 049-121-78

Agenda Date: February 14,2007
Agenda Item #: 9
Time: After 9:00 a.m.

Project Description: Proposal to divide a parcel into two parcels of 6.63 and 5.74 acres each. Requires a Minor Land Division.

Location: Property located at the corner of Quail Canyon and Larkin Valley Rd., about 3/4 mile east of the intersection of Mar Monte Dr. and Larkin Valley Rd.

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

Permits Required: Minor Land Division

Staff Recommendation:

- Certification that the proposal is exempt from further Environmental Review under the California Environmental Quality Act.
- Approval of Application 05-0246, based on the attached findings and conditions.

Exhibits

A.	Project plans		(Attachment **4:** Assessor's Map)
B.	Findings	E.	Rural Density Matrix
C.	Conditions	F.	Public comment from Environmental Review (Aschoff and Gettel letters of 10/6/06)
D.	Mitigated Negative Declaration and Initial Study	***G.***	Comments & Correspondence
	(Attachment 2: Zoning Map)		
	(Attachment **3:** General Plan Map)		

Parcel Information

Parcel Size:	**12.37** acres (10.57 acres net)
Existing Land Use - Parcel:	One single-family dwelling
Existing Land Use - Surrounding:	Single-family dwellings
Project Access:	Quail Canyon Road (a private road)
Planning Area:	Aptos Hills
Land Use Designation:	R-R (Rural Residential)

Zone District:	RA (Residential Agriculture)	
Coastal Zone:	__ Inside	X Outside
Appealable to Calif. Coastal Comm.	__ Yes	X No

Environmental Information

Geologic Hazards:	No significant hazards
Soils:	Aromas
Fire Hazard:	Mapped Mitagatable Fire Hazard at north end of property
Slopes:	20% to 50%+
Env. Sen. Habitat:	Potential San Andreas *Oak* Woodland
Grading:	329 cubic yards of cut, 319 cubic yards of fill
Tree Removal:	No trees proposed to be removed
Scenic:	Not a mapped resource
Drainage:	Existing/ proposed drainage adequate
Archeology:	Mapped potential archeological resource along north end of property, away from proposed building envelope.

Services Information

Urban/Rural Services Line:	__ Inside X Outside
Water Supply:	Private well
Sewage Disposal:	Private septic system
Fire District:	CDF/Pajaro Valley Fire District (to be annexed to Aptos/La Selva Fire District)
Drainage District:	None

History

In October of 2001, the property owner applied for a Minor Land Division (01-0513) to split the subject property into two parcels of 5.15 and 7.23 acres, which became void in 2002 due to lack of payment of requested fees. In March 2004, a new land division application was made under 04-0102, which also proposed to split the property into two lots. This application was abandoned in November 2004 as items requested during the completeness review were not submitted in a timely manner. Finally, the existing application was made in April 2005. In 2003 one single-family dwelling was constructed with the benefit of a building permit at the south end of the site, on the proposed Parcel B.

Project Setting

The project site is located in the Aptos Hills Planning area, on the south side of Larkin Valley Road about 2/3 mile east of the intersection of Larkin Valley Road and Mar Monte Avenue. This area is rural in character with single-family dwellings on lots of 2.5 acres to 10 acres, small-scale agriculture, and horse keeping. The south side of Larkin Valley Road is heavily wooded with eucalyptus, oaks, and redwoods. Harkin Slough, an intermittent stream, parallels Larkin Valley Road opposite the project site.

The project site encompasses the entire east side of Quail Canyon Road, a privately maintained road intersecting with Larkin Valley Road at the north end of the property. One single-family dwelling currently exists on site, at the southern end of the property with a driveway off of the end of Quail Canyon Road. Vegetation on the property is composed mainly of non-native grassland and the remnants of a fruit orchard, bounded by Eucalyptus forest to the east and west. A few Monterey pines and scattered Oak trees also exist on site, but do not make up a significant portion of the vegetation on site.

Project Scope

The applicant proposes to divide the 12.37-acre property into two lots, parcel A being 6.63 gross acres (5.49 net) at the north end of the property, and parcel B being 5.74 gross acres (5.08 net) on the south end of the property at the end of Quail Canyon Road.

To facilitate the land division, the owner proposes to widen Quail Canyon Road to 18 feet from Larkin Valley Road to the driveway for 371 Quail Canyon. As the road already ranges from 15 feet to 18 feet in width, the widening will only add about 1 to 3 feet of additional road width. This widening will accommodate the access required by the CDF/Pajaro Valley Fire District. However, Aptos/La Selva Fire District is in the process of annexing the property, resulting in reduced response times and therefore reduced road widening requirements (see Road Improvements, below).

The intersection between Quail Canyon Road and Larkin Valley Road will be widened in order to enhance access for fire trucks accessing the site from both the east and west sides of Larkin Valley Road. The widening will occur entirely on the King property, and an easement will be granted for up to 10 feet of additional paving to accommodate fire trucks turning onto Quail Canyon Road fiom the west on Larkin Valley Road.

The proposed land division will result in a new single-family residential lot on the north end of the King property (parcel A), with a new driveway proposed about 650 feet south of Larkin Valley Road, roughly opposite the driveway for 288 Quail Canyon (10 feet north of the driveway).

Zoning & General Plan Consistency

The General Plan designation for the property is R-R (Rural Residential), with a density range of 2.5 to 20 net developable acres per unit, determined by preparation of a Rural Residential Density Matrix (Section 13.14.060 of the County Code). Staff conducted a matrix based on the review and acceptance of information submitted by the applicant, and determined the maximum density for the project site is five net developable acres per residential unit (See Exhibit E). At 10.57 net developable acres, the size of the property is sufficient for the proposed land division resulting in two lots of over 5 net developable acres.

The property is zoned RA (Residential Agriculture), with a 40 foot front yard setback and 20 foot side and rear yard setbacks. However, during the Environmental Review process, a reduced development and building envelope was established on the proposed Parcel A to comply with recommendations of the Geotechnical report and to encourage new growth of San Andreas *Oak* Woodland habitat. The development envelope is less than 1 ½ acres in size, and encompasses all

development related to the construction of the new house on Parcel B, including the driveway, drainage system, and septic system. The development envelope will encompass the smaller building envelope, in which all proposed structures must be located. This building envelope complies with all RA setbacks.

Road Improvements

To obtain the necessary matrix points and satisfy access requirements of the CDF/Pajaro Valley Fire District, the owner proposes to widen Quail Canyon Road up to a width of 18 feet from Larkin Valley Road to the driveway for 368 Quail Canyon Road, To accommodate the widening, an extra one to three feet of paving will be added, requiring the construction of a retaining wall of up to 2 ½ feet tall on the west side of Quail Canyon Road south of the driveway for 288 Quail Canyon Road.

Aptos/La Selva Fire District Annexation
The iminent annexation of the property by the Aptos/La Selva Fire District will reduce the fire response time to less than 10 minutes (Exhibit D, Attachment 21), resulting in a reduction in road widening requirements beyond the point where Quail Canyon Road serves two residences. Instead of an 18 foot wide road up to the driveway 368 Quail Canyon Road (as outlined above), the widening will only be required up to the driveway for 288 Quail Canyon Road (APN 049-121-53, the Gettel property). Proposed improvements to the south of this location, including the proposed retaining walls bordering the Gettel property, will not be required if the annexation is finalized prior to recording of the final map.

Improvements to Larkin Vallev Road Intersection
To improve emergency vehicle access for traffic traveling eastbound on Larkin Valley Road onto Quail Canyon Road, the entrance to Quail Canyon Road will be widened by up to 10 feet to the south, requiring a dedication of about 870 square feet to the private right-of-way. The widened entry has received approval from both the Pajaro Valley and the Aptos La Selva Fire Districts (Exhibit D, Attachments 19 and 21).

In addition to the road improvements mentioned above: a damaged portion of Quail Canyon Road about 500 feet south of the Larkin Valley Road intersection will be repaired. To ensure continued maintenance of Quail Canyon Road, both parcels A and B will be required to enter into the existing Road Maintenance Agreement (Condition of Approval III.C.).

Environmental Review

Environmental review has been required for the proposed project per the requirements of the California Environmental Quality Act (CEQA). The project was reviewed by the County's Environmental Coordinator on September 11, 2006. A preliminary determination to issue a Negative Declaration with Mitigations (Exhibit D) was made on September 13,2006. The public comment period expired on October 9,2006, with comments received from concerned neighbors (Exhibit F), resulting in slight revisions to the Initial Study on November 1,2006. The environmental review process identified groundwater recharge and San Andreas *Oak* Woodland habitat as issues on site.

Primary Groundwater Recharge

The property lies within an area designated Primary Groundwater Recharge (PGR) on County maps, defined as an area with the presence of a soil with a permeability in excess of two inches per hour overlying a "high water bearing" bedrock unit (Santa Cruz County Growth Management Report, 1977, Table 13, pg. 100). Under the Rural Density Matrix (Section 13.14.070 of the County Code and General Plan policy 5.8.2), the minimum parcel size for property with a PGR designation is 10 gross acres. However, the PGR resource maps are general in nature, and the County Code allows the applicant to submit parcel specific information (i.e., a report by a soils engineer and registered geologist or hydrogeologist) demonstrating that local soils, bedrock, and regional hydrogeolgoic conditions do not support percolation rates indicative of PGR areas.

Prior to submittal of the first land division application on the property (01-0513), the property owners submitted a hydrological report prepared by Rogers E. Johnson and Associates (dated March 2000 and updated in March 2001) evaluating conditions on site to determine if the PGR designation is appropriate for the site (Exhibit D, Attachment 11). This report included data from two test borings on the property and borings and well logs off site to determine if significant groundwater recharge occurred on site. The report concluded that the property is not accurately mapped, as percolation rates do not support the PGR designation (permeability of less than two inches per hour) due to the presence of several impermeable clay layers in the subsurface. County staff reviewed the report, and, after much internal debate, accepted the conclusions of this report that the project site is incorrectly mapped PGR, as outlined in a letter from the County Geologist on September 24, 2001 (Exhibit D, Attachment 10).

As part of the current land division application, Environmental Planning staff reviewed the previous determination regarding primary groundwater recharge. In the last year, the methodology used by staff for determining if a site is inaccurately designated PGR has changed. Today, property owners who wish to submit parcel specific information demonstrating their property is not within a PGR are limited to information that demonstrates that the soil on the property is mismapped on the USDA soil map, and that the soil is actually one identified in the USDA nomenclature as having a permeability less than two inches per hour. The determination is now fully based on the soil classification, and may not consider local variations in soil and subsurface hydrology. Nonetheless, since this application was accepted and declared complete prior to this change in practice, and since the Rogers E. Johnson report was previously accepted as a basis for ovemding the PGR designation, staff is recommending that the prior PGR standards be utilizied for this project.

San Andreas *Oak* Woodland

The property is mapped as potential San Andreas *Oak* Woodland habitat, but an investigation conducted by the Biotic Resources Group in May 2003 found no evidence of significant stands of San Andreas *Oak* woodland at the location of the proposed development (Exhibit D, Attachment 16). Invasive eucalyptus trees dominated the vegetation on site prior to being removed by the owner. The proposed development envelope and the requirement for a management plan for the area outside this development envelope will encourage new growth of San Andreas *Oak* Woodland on Parcel A.

Other issues identified during the Environmental Review process were determined to not be significant, as the location of the existing residence and proposed building envelope on Parcel A are outside of the mapped flood plain located at the extreme north end of the property along Larkin Valley Road, and no riparian vegetation exists on site (Exhibit D, Attachment 18). A biotic study prepared by Dana Bland, Wildlife Biologist, in June **2003** determined that no habitat exists on site for special status species (Exhibit D, Attachment **17).**

The environmental review process generated mitigation measures that will reduce potential impacts fi-om the proposed development and adequately address these issues.

Conclusion

The proposed land division will result in the addition of one single-family residential lot, of a size and density comparable to surrounding properties along the south side of Larkin Valley Road.

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 fi-om further Environmental Review under the California Environmental Quality Act.

- **APPROVAL** of Application Number **05-0246,** 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

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Subdivision Findings

1. That the proposed subdivision meets all requirements or conditions of the Subdivision Ordinance and the State Subdivision Map Act.

This finding can be made, in that the project meets all of the technical requirements of the Subdivision Ordinance and is consistent with the County General Plan and the Zoning Ordinance as set forth in the findings below.

2. That the proposed subdivision, its design, and its improvements, are consistent with the General Plan, and the area General Plan or Specific Plan, if any.

This finding can be made, in that this project creates two parcels of 5.15 and **7.23** acres in size, located in the Rural Residential General Plan land use designation. The division of land on parcels with a Rural Residential (R-R) General Plan designation is allowed at densities determined by the Rural Residential Density Matrix (Section **13.14.060** of the County Code). This proposal complies with the requirements of the Rural Residential Density Matrix, which authorizes a density of development of one dwelling unit per ***5*** acres of net developable land area, in that sufficient net developable land area exists for the proposed division (Exhibit E).

Further, the land division is not located in a hazardous or environmentally sensitive area and protects natural resources by expanding in an area designated for residential development at the proposed density, within a limited building envelope that preserves most of the site.

3. That the proposed subdivision complies with Zoning Ordinance provisions as to uses of land, lot sizes and dimensions and any other applicable regulations.

This finding can be made, in that the use of the property will be residential in nature, lot sizes meet the minimum dimensional standard for the RA zone district where the project is located and all yard setbacks will be consistent with zoning standards.

4. That the site of the proposed subdivision is physically suitable for the type and density of development.

This finding can be made, in that the building envelope will be located on slopes of less than 30%, a geotechnical report prepared for the property concludes that the site is suitable for the proposed development, and the two proposed parcels will be configured to ensure development without the need for site standard exceptions or variances. Subsequent to the division, the density will be similar to the three properties on the west side of Quail Canyon Road, all of which are single-family lots of between four and five acres in size. No environmental constraints exist which preclude development on the site, and the project conditions will result in improved San Andreas *Oak* Woodland habitat.

5. That the design of the proposed subdivision or type of improvements will not cause substantial environmental damage nor substantially and avoidably injure fish or wildlife or their habitat.

This finding can be made, in that no sensitive habitats or threatened species were observed on site which would impede development of the site. Though the site is mapped for potential San Andreas Oak Woodland habitat, no significant stands of oaks were identified on site, as most of the site was previously a Eucalyptus forest (Exhibit D, Attachment **16).** With a development envelope excluding *oak* saplings of greater than **6** inches diameter breast height (dbh), and the requirement for a management plan (Condition of Approval III.H.1), the project as conditioned will encourage new growth of San Andreas *Oak* woodland habitat. No Santa Cruz Long-Toed Salamander or California Red-Legged Frog habitat was identified on site, though habitats are known to exist in the vicinity (Exhibit D, Attachment 17).

6. That the proposed subdivision or type of improvements will not cause serious public health problems.

This finding can be made, in that parcel is suitable for a septic system sized for the proposed single-family dwelling, as determined by Environmental Health (Exhibit D, Attachment **14).** The intersection of Larkin Valley Road and Quail Canyon Road will be widened, improving vehicle and pedestrian sight distance as well as emergency vehicle access.

7. That the design of the proposed subdivision or type of improvements will not conflict with easements, acquired by the public at large, for access through, or use of property within the proposed subdivision.

This finding can be made, in that the land division will not interfere with the existing right-of-way easement across the property to the East Bel Mar property to the south (APN **049-561-04).** No other easements exist across the subject property.

8. The design of the proposed subdivision provides, to the extent feasible, for future passive or natural heating or cooling opportunities.

This finding can be made, in that the location of the proposed building envelope will allow future development to take advantage of passive or natural heating and cooling opportunities.

Land Division 05-0246

Tract No.:

Applicant: Hamilton-Swift Land Use (John Swift)

Property Owners: John King

Assessor's Parcel Number: **049**-121-**78**

Property Address and Location: **371** Quail Canyon Road

Planning Area: Aptos Hills

Exhibits:

A. Tentative Map prepared by Bowman & Williams, dated August **3**1, 2006 and revised November 22,2006

All correspondence and maps relating to this land division shall carry the land division number noted above.

I. Prior to exercising any rights granted by this Approval, the owner shall:

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

B. Pay the California Department of Fish and Game review fee to the Clerk of the Board of the County of Santa **Cruz** as required by the California Department of Fish and Game mitigation fees program. Currently, this fee is **$1,800.**

11. A Final Map for this land division must be recorded prior to the expiration date of the tentative map and prior to sale, lease or financing of any new lots. The Final Map shall be submitted to the County Surveyor (Department of Public Works) for review and approval prior to recordation. No improvements, including, without limitation, grading and vegetation removal, shall be done prior to recording the Final Map unless such improvements are allowable on the parcel as a whole (prior to approval of the land division). The Final Map shall meet the following requirements:

A. The Final Map shall be in general conformance with the approved Tentative Map **and** shall conform to the conditions contained herein. All other State and County laws relating to improvement of the property, or affecting public health and safety shall remain fully applicable.

B. This land division shall result in no more than two parcels.

C. The minimum net lot size shall 5 acres per unit.

D. Submit a plan for management of the land outside the development envelopes for the benefit of San Andreas *Oak* Woodland. This plan shall consist of ongoing control of Eucalyptus and non-native shrubs, as well as preservation of native shrubs and Coast Live *Oak* trees in the area.

E. The following items shall be shown on the Final Map:

1. Show the building and development envelope for Parcel A, which shall match the locations shown on the approved Tentative Map. The building envelope shall meet the minimum setbacks for the RA zone district of 40 feet for the front yard and 20 feet for all remaining yards, the 25 foot setback from the base of the adjacent slope.

2. Show a building envelope for Parcel B, incorporating the existing dwelling and delineated by the RA zone district setbacks of 40 feet for the front yard setback and 20 feet for all other yard setbacks and excluding slopes in excess of 30%.

3. Show the net area of each lot to nearest square foot.

F. The following requirements shall be noted on the Final Map as items to be completed prior to obtaining a building permit on lots created by this land division:

1. The existing private well, and any new proposed wells, shall be reviewed by the County Department of Environmental Health Services.

2. The location of the proposed septic system on Parcel A shall be investigated by a Registered Environmental Health Specialist (or other professional approved by County Environmental Health), who shall prepare a report stating the results of this investigation for review by Environmental Health.

3. The septic system shall be reviewed and approved by the County Department of Environmental Health Services.

4. Submit 3 copies of a plan review letter from the project Geotechnical Engineer stating the project complies with the recommendations of the geotechnical report (Haro, Kasunich, and Associates dated August 2002).

5. All future development on the lots shall comply with the requirements of the geotechnical report prepared by Haro, Kasunich, and Associates dated

August 2002 (Exhibit D, Attachment 7) and the subsequent update letters dated 9/7/05 and 4/16/04 (Exhibit D, Attachments 8 and 9).

6. Submit a written statement signed by an authorized representative of the school district in which the project is located confirming payment in full of all applicable developer fees and other requirements lawfully imposed by the school district in which the project is located.

7. Prior to any building permit issuance or ground disturbance, a detailed erosion control plan shall be reviewed and approved by the Department of Public Works and the Planning Department. No earthwork is allowed between October 15 and April 15 unless a separate winter grading approval from Environmental Planning is obtained, which may not be granted. The erosion control plans shall identify the type of erosion control practices to be used and shall include the following:

a. An effective sediment barrier placed along the perimeter of the disturbance area and maintenance of the barrier.

b. Spoils management that prevents loose material from clearing, excavation, and other activities from entering any drainage channel.

8. Any changes between the approved Tentative Map and the final map must be submitted for review and approval by the decision-making body. Such proposed changes will be included in a report to the decision making body to consider if they are sufficiently material to warrant consideration at a public hearing noticed in accordance with Section 18.10.223 of the County Code.

III. Prior to recordation of the Final Map, the following requirements shall be met:

A. Submit a letter of certification from the Tax Collector's Office that there are no outstanding tax liabilities affecting the subject parcels.

B. Meet all requirements of the County Environmental Health Department for the new septic system and well on Parcel A.

C. Both Parcels A and B shall enter into the existing Road Maintenance Agreement for Quail Canyon Road to share future costs **of** maintaining the private road and improvements.

D. All requirements of the CDF/Pajaro Valley Fire Department or the Aptos/La Selva Fire District shall be met, depending on the fire agency in charge of the project site at the time of map recordation.

E. Park dedication in-lieu fees shall be paid for the new single-family dwelling on Parcel **A.** This fee is currently **$1,734** per unit, assuming a three bedroom single-family dwelling ($578 per bedroom, subject to change). If more than three bedrooms are proposed, the in-lieu fees for the additional bedrooms will be paid at the building permit stage.

F. Child Care Development fees shall be paid for the one new single-family dwelling on Parcel A, assuming a three-bedroom dwelling. This fee is currently **$327,** based on fees of $109 per bedroom, but is subject to change. If more than three bedrooms are proposed, the in-lieu fees for the additional bedrooms will be paid at the building permit stage.

G. Submit one reproducible copy of the Final Map to the County Surveyor for distribution and assignment of temporary Assessor's parcel numbers and situs address.

H. Protected Species: To encourage the re-generation of San Andreas *Oak* Woodland, submit a management plan for review and approval by Environmental Planning staff. This management plan shall include provisions for the on-going control of Eucalyptus and non-native shrubs and the preservation of native shrubs and Coast Live *Oak* trees outside of the development envelope.

1. A Declaration of Acknowledgement prepared by Environmental Planning shall be recorded on the deed of Parcel **A** acknowledging the requirement to manage the area for the benefit of re-introducing San Andreas *Oak* Woodland habitat. This Declaration will be prepared by Environmental Planning staff.

I. Engineered improvement plans are required for this land division, and a subdivision agreement backed by financial securities is necessary. Improvements shall occur with the issuance of building permits for the new parcel and shall comply with the following:

1. All improvements shall be prepared by a registered civil engineer and shall meet the requirements of the County of Santa Cruz Design Criteria.

2. Plans shall include a cross section of Quail Canyon Road at the intersection with Larkin Valley Road, and details indicating the re-installation of a stop sign, street sign and stop bar on Quail Canyon Road at Larkin Valley Road.

3. Complete drainage details including existing and proposed contours, plan views and centerline profiles for the new driveway to Parcel **A,** complete drainage calculations and all volumes of excavated and fill soils.

4. All improvements shall be constructed within the Quail Canyon right-of-way or on the subject property. Construction of improvements on neighboring properties requires written permission from the respective property owners.

5. If the property is annexed into the Aptos/La Selva Fire District, revised improvement plans must be submitted to reflect reduced road-widening requirements. Subsequent to the pending annexation, Quail Canyon Road will only be required to be widened up to the driveway for 288 Quail Canyon Road (APN 049-121-53, the Gettel property), and improvement plans shall be revised to reflect this.

IV. All future construction within the property shall meet the following conditions:

A. Prior to any disturbance, the owner/applicant shall organize a pre-construction meeting on the site. The applicant, grading contractor, Department of Public Works Inspector and Environmental Planning staff shall participate.

B. No land clearing, grading or excavating shall take place between October 15 and April 15 unless the Planning Director approves a separate winter erosion-control plan that may or may not be granted.

C. No land disturbance shall take place prior to issuance of building permits (except the minimum required to install required improvements, provide access for County required tests or to carry out work required by another of these conditions).

D. 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 fiom 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.

E. To minimize noise, dust and nuisance impacts of surrounding properties to insignificant levels during construction, the owner/applicant shall or shall have the project contractor, comply with the following measures during all construction work:

1. Limit all construction to the time between 8:00 am and 6:00 pm weekdays unless a temporary exception to this time restriction is approved in advance by County Planning to address an emergency situation; and

2. Each day it does not rain, wet all exposed soil frequently enough to prevent significant amounts of dust from leaving the site.

3. The applicant shall designate a disturbance coordinator and a 24-hour contact number shall be conspicuously posted on the job site. The disturbance coordinator shall record the name, phone number, and nature of all complaints received regarding the construction site. The disturbance coordinator shall investigate complaints and take remedial action, if necessary, within 24 hours of receipt of the complaint or inquiry.

4. During construction, access to residences on Quail Canyon Road shall be maintained.

F. Construction of improvements shall comply with the requirements of the hydrologic report prepared by Rogers E. Johnson and Associates, dated March 14, 2000 (Exhibit D, Attachment 11).

G. Construction of improvements shall comply with the requirements of the geotechnical report prepared by Haro, Kasunich, and Associates, and dated August 2002 (Exhibit D, Attachment 7). The geotechnical engineer shall inspect the completed project and certify in writing that the improvements have been constructed in conformance with the geotechnical report.

H. Prior to building permit final, submit a survey showing all improvements (such as road widening, retaining walls, and drainage structures) are located within the Quail Canyon Road right-of-way or on the subject property. Any encroachments onto neighboring properties must be approved in writing by the respective owner.

V. In the event that future County inspections of the subject property disclose non-compliance 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 Approval revocation.

VI. 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 fi-om 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.

E. Within **30** days of the issuance of this development approval, the Development Approval Holder shall record in the office of the Santa Cruz County Recorder an agreement, which incorporates the provisions of this condition, or this development approval shall become null and void.

VII. Mitigation Monitoring Program

The mitigation measures listed under this heading have been incorporated in the conditions of approval for this project in order to mitigate or avoid significant effects on the environment. As required by Section 21081.6 of the California Public Resources Code, a monitoring and reporting program for the above mitigation is hereby adopted **as** a condition of approval for this project. This program is specifically described following each mitigation measure listed below. The purpose of this monitoring is **to** ensure compliance with the environmental mitigations during project implementation and operation. Failure to comply with the conditions of approval, including the terms of the adopted monitoring program, may result in permit revocation pursuant to section 18.10.462 of the Santa Cruz County Code.

A. Mitigation Measure: San Andreas *Oak* Woodland (Conditions II.D, II.E., and III.H)

Monitoring Program: In order t allow San Andreas *Oak* Woodland species to re-populate a portion of the clearing created by the removal of invasive Eucalyptus in 2002, the applicant must meet the following requirements:

1) Establish a development envelope on Parcel A that excludes *oak* trees greater than six inches diameter breast height (dbh), with the most northern boundary of the development envelope a line between survey points 1208 and 1209 **as** indicated on the staking plan prepared by Bowman and Williams, dated May 2,2005. This building envelope is shown on the current tentative map (dated August 31,2006 and revised November 22, 2006), and shall be shown on the final map for review by Environmental Planning staff prior to recordation.

2) Prior to recordation of the final map a management plan shall submitted for review and approval by Environmental Planning staff. This management plan shall include provisions for the on-going control of Eucalyptus and non-native shrubs and the preservation of native shrubs and Coast Live *Oak* trees outside of the development envelope.

3) Prior to recordation of the final map, a Declaration of Acknowledgement prepared by Environmental Planning shall be recorded on the deed for Parcel A acknowledging the requirement to manage the area for the benefit of re-introducing San Andreas *Oak* Woodland habitat.

B. Mitigation Measure: Geotechnical Hazards. (Conditions II.E.1, II.F.4, II.F.5, **IV.6)**

Monitoring Program: In order to reduce impacts from geotechnical hazards to a less than significant level, the final map shall show the building envelope with the minimum 25 foot setback from the break of slope **as** recommended in the Geotechnical Report prepared by Hara, Kasunish, and Associates (2002). Prior to recordation of the final map, a review letter from Haro, Kasunich, and Associates must be submitted to the Planning Department approving the location of the building envelope.

AMENDMENTS TO THIS LAND DIVISION APPROVAL SHALL BE PROCESSED IN ACCORDANCE WITH CHAPTER 18.10 OF THE COUNTY CODE.

This Tentative Map is approved subject to the above conditions and the attached map, and expires 24 months after the 14-day appeal period. The Final Map for this division, including improvement plans if required, should be submitted to the County Surveyor for checking at least 90 days prior to the expiration date and in no event later than 3 weeks prior to the expiration date.

cc: County Surveyor

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 permifexpires on the expiration date listed below unless you obtain the required permits and commence construction.

Approval Date: _____

Effective Date: _____

Expiration Date: _____

Mark Deming	David Keyon
Assistant Planning Director	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 Planning Commission, may appeal the act or determination to the Board of Supervisors in accordance with chapter 18.10 of the Santa Cruz County Code.

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

NEGATIVE DECLARATION AND NOTICE OF DETERMINATION

Application Number: 05-0246 **Hamilton-Swift Land Use, for John and Katy King**

The applicant proposes to divide an existing residential property of 12.37 acres into two lots of 6.63 and 5.74 acres, respectively. To accommodate the additional residential lot, the applicant proposes to widen portions of Quail Canyon Road to 18 feet in width, and to construct improvements to the intersection of Quail Canyon Road and Larkin Valley Road. The property is located on the east side of Quail Canyon Road, a privately maintained road with access from Larkin Valley Road. The address is 371 Quail Canyon Road in Watsonville, California.

APN: 049-121-78 (formerly 049-121-41) **Paia Levine, Staff Planner**

Zone District: RA (Residential Agriculture)

ACTION: Negative Declaration with Mitigations

REVIEW PERIOD ENDS: October 9,2006

This project will be considered at a public hearing by the Planning Commission. The time, date and location have not been set. When scheduling does occur, these items will be included in all public hearing notices for the project.

Findings:

This project, if conditioned to comply with required mitigation measures or conditions shown below, will not have significant effect on the environment. The expected environmental impacts of the project are documented in the Initial Study on this project attached to the original of this notice on file with the Planning Department, County of Santa Cruz, 701 Ocean Street, Santa Cruz, California.

Required Miticlation Measures or Conditions:

_____ None

__XX__ Are Attached

Review Period Ends__October 9, 2006

Date Approved By Environmental Coordinator__October 11, 2006

KEN HART
Environmental Coordinator
(831) 454-3127

If this project is approved, complete and file this notice with the Clerk of the Board:

NOTICE OF DETERMINATION

The Final Approval of This Project was Granted by _____

on _____. No EIR was prepared under CEQA.

THE PROJECT WAS DETERMINED TO NOT HAVE SIGNIFICANT EFFECT ON THE ENVIRONMENT

Date completed notice filed with Clerk of the Board:_____

EXHIBIT D

NAME: Hamilton Swift Land Use for King
APPLICATION: 05-0246
A.P.N: 049-121-78
DATE: **November** 1,2006

REVISED NEGATIVE DECLARATION MITIGATIONS

A. In order to allow San Andreas Oak Woodland species to re-populate a portion of the open area that was created by the clearing of Eucalyptus in 2002, the applicant shall:

1. Prior to scheduling the public hearing, revise the tentative map to show a ~~development envelope of no greater than 1.5 acres,~~ the north boundary of the development envelope located to exclude oak trees greater than six inches from the envelope. The north boundary shall be set approximately between survey points 1208 and 1209 as indicated on the staking plan, Bowman and Williams, dated May 2, 2005.
2. Prior to recording the map, submit a plan for management of the grassland outside the development envelope for the benefit of San Andreas Oak Woodland. This will consist of ongoing control of Eucalyptus and non- native shrubs, as well as preservation of native shrubs and Coast Live Oak trees that volunteer in the area.
3. Prior to recording the map, record a Declaration on the deed acknowledging the ongoing requirement to manage the area for San Andreas Oak Woodland.

B. In order to reduce impacts from geotechnical hazards ***to*** a less than significant level, prior to scheduling the public hearing the applicant shall revise the tentative map to show the limits of a building envelope which incorporates the setback from slopes as recommended in the geotechnical report (Haro, Kasunich Associates, 2002). The map shall clearly indicate both the proposed development envelope and building envelope.

EXHIBIT D

CALIFORNIA DEPARTMENT OF FISH AND GAME

CERTIFICATE OF FEE EXEMPTION

De minimis Impact Finding

Project Title/Location (Santa Cruz County):

Application Number: 05-0246 **Hamilton-Swift Land Use, for John and Katy King**
The applicant proposes to divide an existing residential property of 12.37 acres into two lots of 6.63 and 5.74 acres, respectively. To accommodate the additional residential lot, the applicant proposes to widen portions of Quail Canyon Road to 18 feet in width, and to construct improvements to the intersection of Quail Canyon Road and Larkin Valley Road. The property is located on the east side of Quail Canyon Road, a privately maintained **road** with access from Larkin Valley Road. The address is 371 Quail Canyon Road in Watsonville, California.
APN: 049-121-78 (formerly 049-121-41) **Paia Levine, Staff Planner**
Zone District: RA (Residential Agriculture)

Findings of Exemption (attach as necessary):

An Initial Study has been prepared for this project by the County Planning Department according to the provisions of CEQA. This analysis shows that the project will not create any potential for adverse environmental effects on wildlife resources.

Certification:

I hereby certify that the public agency has made the above finding and that the project will not individually or cumulatively have an adverse effect on wildlife resources, as defined in Section 711.2 of the Fish and Game Code.

KEN HART
Environmental Coordinator for
Tom Burns, Planning Director
County of Santa Cruz

Date: 11/2/06

EXHIBIT D

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

NOTICE OF ENVIRONMENTAL REVIEW PERIOD

SANTA CRUZ COUNTY

APPLICANT: **Hamilton-Swift Land Use, for John and Katy King**

APPLICATION NO.: **05-0246**

APN: **049-121-78 (formerly 049-121-41)**

The Environmental Coordinator has reviewed the Initial Study for your application and made the following preliminary determination:

XX Negative Declaration
(Your project will not have a significant impact on the environment.)

XX Mitigations will be attached to the Negative Declaration.

_____ No mitigations will be attached.

_____ Environmental Impact Report
(Your project may have a significant effect on the environment. An EIR must be prepared to address the potential impacts.)

As part of the environmental review process required by the California Environmental Quality Act (CEQA), this is your opportunity to respond to the preliminary determination before it is finalized. Please contact Paia Levine, Environmental Coordinator at (831) 454-3178, if you wish to comment on the preliminary determination. Written comments will be received until 5:00 p.m. on the last day of the review period.

Review Period Ends: **October 9,2006**

Paia Levine
Staff Planner

Phone: **454-3178**

Date: **September 13,2006**

EXHIBIT D

Environmental Review
Initial Study

Application Number: 05-0246

Date: September 11, 2006
Revision date: November 1, 2006

Staff Planner: David Keyon

I. OVERVIEW AND ENVIRONMENTAL DETERMINATION

APPLICANT: Hamilton-Swift Land Use

APN: 049-121-78 (formerly 049-121-41)

OWNER: John and Katy King

SUPERVISORAL DISTRICT: 2nd

LOCATION: The property is located on the east side of Quail Canyon Road, a privately maintained road with access from Larkin Valley Road.

SUMMARY PROJECT DESCRIPTION:

The applicant proposes to divide an existing residential property of 12.37 acres into two lots of 6.63 and 5.74 acres, respectively. To accommodate the additional residential lot, the applicant proposes to widen portions of Quail Canyon Road to 18 feet in width, and to construct improvements to the intersection of Quail Canyon Road and Larkin Valley Road, to include a retaining wall of up to four feet in height. Requires a land division and preliminary grading approval for approximately 300 cubic yards of earthwork.

ALL OF THE FOLLOWING POTENTIAL ENVIRONMENTAL IMPACTS ARE EVALUATED IN THIS INITIAL STUDY. CATEGORIES THAT ARE MARKED HAVE BEEN ANALYZED IN GREATER DETAIL BASED ON PROJECT SPECIFIC INFORMATION.

X	Geology/Soils	____	Noise
X	Hydrology/Water Supply/Water Quality	____	Air Quality
X	Biological Resources	X	Public Services & Utilities
____	Energy & Natural Resources	X	Land Use, Population & Housing
____	Visual Resources & Aesthetics	____	Cumulative Impacts
____	Cultural Resources	____	Growth Inducement
____	Hazards & Hazardous Materials	____	Mandatory Findings of Significance

EXHIBIT D

____	____
X Transportation/Traffic	

DISCRETIONARY APPROVAL(S) BEING CONSIDERED

____ General Plan Amendment	X Grading Permit
X Land Division	____ Riparian Exception
____ Rezoning	____ Other:
____ Development Permit	____
____ Coastal Development Permit	____

NON-LOCAL APPROVALS
Other agencies that must issue permits or authorizations: None.

ENVIRONMENTAL REVIEW ACTION
On the basis of this Initial Study and supporting documents:

___ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

__X__ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because the attached mitigation measures have been added to the project. A MITIGATED NEGATIVE DECLARATION will be prepared.

___ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

Paia Levine

11/02/06
Date

For: Ken Hart
Environmental Coordinator

EXHIBIT D

II. BACKGROUND INFORMATION

EXISTING SITE CONDITIONS
Parcel Size: 12.37 acres (10.57 acres net)
Existing Land Use: One single-family dwelling, at south end of property
Vegetation: Non-native grasses, Eucalyptus, Monterey Pine, and scattered Oak trees.
Slope in area affected by project: 7.39 acres 0 - 30% 4.98 acres 31 – 100%
Nearby Watercourse: Harkin Sough (runs roughly parallel to Larkin Valley Road)
Distance To: About 75 feet north of northern property boundary, about 800 feet north from proposed new building site.

ENVIRONMENTAL RESOURCES AND CONSTRAINTS

Groundwater Supply: Outside
Water Supply Watershed: N/A
Groundwater Recharge: Portions of the parcel mapped as Primary Groundwater Recharge. Site specific information overriding that designation has been reviewed and accepted.
Timber or Mineral: N/A
Agricultural Resource: N/A

Biologically Sensitive Habitat: Santa Cruz Long Toed Salamander, Red Legged Frog (see Attachment 17, biotic report). Development determined to be outside of San Andreas Oak Woodland (Attachment 16).
Fire Hazard: Mitigatable Fire Hazard at north end of property
Floodplain: N/A

Erosion: High potential

Landslide: None mapped

Liquefaction: N/A
Fault Zone: N/A
Scenic Corridor: N/A

Historic: N/A
Archaeology: Archaeological Resource along Larkin Valley Road
Noise Constraint: N/A

Electric Power Lines: N/A

Solar Access: Poor (north facing slope)
Solar Orientation: Poor (north facing slope)
Hazardous Materials: N/A

SERVICES

Fire Protection: Pajaro Valley Fire District (proposal to annex to Aptos/La Selva Fire District)
School District: Pajaro Valley

Sewage Disposal: Septic system

Drainage District: Outside of drainage district

Project Access: Quail Canyon Rd. (private)
Water Supply: Private well

PLANNING POLICIES

Zone District: RA (Residential Agriculture)

Special Designation: none

EXHIBIT D

General Plan: R-R (Rural Residential)
Urban Services Line: ___ Inside ___X___ Outside
Coastal Zone: ___ Inside ___X___ Outside

PROJECT SETTING AND BACKGROUND:

The project site is located in the Aptos Hills Planning area, on the south side of Larkin Valley Road about 2/3 mile east of the intersection of Larkin Valley Road and Mar Monte Avenue. This area maintains a rural character with single-family dwellings on large lots (2.5 acres to 10 acres), small-scale agriculture, and horse keeping. Both sides of the valley are heavily wooded with grassland in the center. Harkins Slough runs along Larkin Valley Road.

One single-family dwelling exists on the southern end of the project site, constructed in 2003 with the benefit of a building permit. This dwelling maintains access from Quail Canyon Road, a private road off Larkin Valley Road.

Vegetation
The project site itself is composed mainly of non-native grassland and the remnants of a fruit orchard, bounded by Eucalyptus forest to the east and west. A few Monterey pines and scattered Oak trees also exist on site, but do not make up a significant portion of the vegetation on site. The property is shown as San Andreas Oak woodland on County biotic maps, but few oaks exist on the proposed development site due to the predominance of Eucalyptus and non-native grasses, as documented in a biotic report prepared in May 2003 (Attachment 16).

Special Status Animal Habitat
Due to the proximity of the site to known breeding ponds for the Santa Cruz Long Toed Salamander (SCLTS), a State and Federally listed endangered species, a biotic study was conducted to determine the suitability of the site for SCLTS in June 2003 (Attachment 17). This report determined the site to be unsuitable for SCLTS, due to lack of potential breeding ponds on the site or neighboring properties and the presence of Eucalyptus and Monterey Pine, vegetation which is not conducive to SCLTS. The study also evaluated the site for the presence of California Red-legged frog, and determined the property to be unsuitable habitat due to the lack of surface water and the relatively and environment on site characterized by Eucalyptus and grasslands.

Groundwater Recharge
The site is designated as Primary Groundwater Recharge (PGR) on County maps. However, site specific hydrological information that concluded that soils on the property do not substantially contribute to groundwater recharge (Rogers Johnson Associates, 2000, Attachment 11) was submitted and accepted by the County Geologist in September, 2001 (Attachment 10). The County Geologist determined at that time that the information was adequate to override the designation of PGR on the County resource map.

EXHIBIT D

DETAILED PROJECT DESCRIPTION:

The applicant proposes to divide the 12.37-acre property into two lots, parcel A being 6.63 gross acres (5.49 net) at the north end of the property, and parcel B being 5.74 gross acres (5.08 net) on the south end of the property at the end of Quail Canyon Road. A single-family residence currently exists on the south side of the property, on the proposed parcel B.

To obtain the necessary Density Matrix points to divide the parcel, the owner proposes to widen Quail Canyon Road to 18 feet ~~for its entire length~~ from Larkin Valley Road to the driveway for ~~371~~ 368 Quail Canyon. As the road is already ~~16~~ 15 feet to 18 feet in width, the widening will only add about 1 to 3 feet of additional road width. This widening will accommodate the access required by the Pajaro Valley Fire District, prior to the proposed annexation into the Aptos/La Selva Fire Protection District, When the property is annexed to the Aptos/La Selva Fire Protection District the response time will decrease, possibly to the point that no road widening is required. If no road widening is required, the proposed retaining wall on the west side of the road will not be constructed and will be removed from the improvement plans.

The intersection between Quail Canyon Road and Larkin Valley Road will be widened in order to enhance access for fire trucks accessing the site from both the east and west sides of Larkin Valley Road. The widening will occur entirely on the King property, and an easement will be granted for up to 10 feet of additional paving to accommodate fire trucks turning onto Quail Canyon Road from the west on Larkin Valley Road.

The proposed land division will result in a new single-family residential lot on the north end of the King property (parcel A), with a new driveway proposed about 650 feet south of Larkin Valley Road, roughly opposite the driveway for 288 Quail Canyon (10 feet north of the driveway). Note that this application is for the land division, widening of Quail Canyon Road, intersection improvements, and new driveway. It does not include construction of the single family dwelling.

EXHIBIT D.

III. ENVIRONMENTAL REVIEW CHECKLIST

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable
involving:				
A. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or as identified by other substantial evidence?			X	
B. Seismic ground shaking?			X	
C. Seismic-related ground failure, including liquefaction?			X	
D. Landslides?			X	

A geotechnical investigation for the project was prepared by Haro, Kasunich, and Associates, dated August **13,** 2002 (Attachment 7). This report have been reviewed and accepted by the Environmental Planning Section of the Planning Department (Attachment 6). The reports conclude that fault rupture will not be a potential threat to the proposed development, and that seismic shaking can be managed by constructing with conventional spread footings or pier and grade beam foundation systems and by following the recommendations in the geologic and geotechnical reports referenced above.

Implementation of the additional recommendations included in the review letter prepared by Environmental Planning staff (Attachment 6) will serve to further reduce the potential risk of seismic shaking.

2. Subject people or improvements to damage from soil instability as a result of on- or off-site landslide, lateral			X	

EXHIBIT D

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable
spreading, to subsidence, liquefaction, or structural collapse?				

The report cited above concluded that some movement of concrete slabs is likely, and recommends pre-moistening prior to concrete pouring and adequate spacing of expansion joints to mitigate, The report recommended that all structures bear on a minimum of three feet of engineered fill, and that structures be set back at least twenty five feet from the eastern edge of the building envelope (as shown in Attachment 5). Compliance with these recommendations will be made a condition of the permit.

3. Develop land with a slope exceeding 30%?			X	

There are slopes that exceed 30% on the property. There are two proposed retaining walls that will support road cuts along Quail Canyon. ~~However~~Other than the retaining walls, no improvements are proposed; on slopes in excess of 30%.

4. Result in soil erosion or the substantial loss of topsoil?			X	

The near surface soil on site has a high potential for erosion, and there was moderate erosion during construction of the existing dwelling and driveway on the property. (Attachment **9,** Letter from Haro, Kasunich, and Associates, dated **4/16/04).** The current project will have a condition requiring that, prior to recording the final map, the project have an approved Erosion Control Plan. The plan will specify detailed erosion and sedimentation control measures that must be installed prior to the start of construction. The plan will include provisions for disturbed areas to be planted with ground cover and to be maintained to minimize surface erosion. The report must specifically address the new pipe at the base of the driveway. The approved erosion control plan will reduce the potential for erosion to a less than significant level.

5. Be located on expansive soil, as defined in Table **18-1-B** of the Uniform Building Code(**1994**), creating substantial risks to property?			X	

The geotechnical report for the project did not identify any elevated risk associated with expansive soils.

6. Place sewage disposal systems in areas dependent upon soils incapable of adequately supporting the use of septic tanks, leach fields, or alternative			X	

EXHIBIT D

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable
waste water disposal systems?				

The proposed project will use an onsite sewage disposal system. County Environmental Health Services has determined that site conditions are appropriate to support such a system.

7.	Result in coastal cliff erosion?				X

B. Hydrology, Water Supply and Water Quality

Does the project result in:

1.	Place development within a 100-year flood hazard area?			X	

According to the Federal Emergency Management Agency (FEMA) National Flood Insurance Rate Map, dated April 15, 1986, the northwestern corner of the property adjacent to Larkin Valley Road lies within a 100-year flood hazard area (Attachment 27). The location of the proposed single-family dwelling is located well outside of the flood hazard area, approximately 120 feet higher than Larkin Valley Road.

2.	Place development within the floodway resulting in impedance or redirection of flood flows?			X	

See response to B.1, above.

3.	Be inundated by a seiche or tsunami?				X

4.	Deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit or a significant contribution to an existing net deficit in available supply, or a significant lowering of the local groundwater table?			X	

The property lies within an area designated "Primary Groundwater Recharge" on County maps. However, parcel specific information about recharge was submitted in the form of a hydrologic report prepared by Rogers E. Johnson and Associates, dated March 2000 and March 2001(Attachment 11). The report includes data from two test borings on the property and borings and well logs off site, The author determined that an impermeable clay layer exists below the project site that limits groundwater

EXHIBIT D

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable

recharge. The County Geologist reviewed and approved the conclusions of this report, accepting the parcel specific information as adequate to override the information on the more general County map (Attachment 10, letter of Joe Hanna, dated September 24, 2001) , pursuant to the County General Plan (Figure 1-7, "General Plan Resources and Constraints Maps").

5. Degrade a public or private water supply? (Including the contribution of urban contaminants, nutrient enrichments, or other agricultural chemicals or seawater intrusion).			X	

There is no indication that effluent from the proposed septic system will negatively impact either the regional aquifer or shallow, perched groundwater as long as a minimum separation of ten vertical feet is maintained between the system and the groundwater (Rogers Johnson Associates, March 2001, Attachment 11).

Runoff from this project may contain small amounts of chemicals and other household contaminants, but will not contribute a significant amount of contaminants to a public or private water supply. Potential siltation from the proposed project will be mitigated through implementation of erosion control measures, which will be required to be installed prior to the start of construction.

6. Degrade septic system functioning?			X	

There is no indication that existing septic systems in the vicinity would be affected by the project.

7. Alter the existing drainage pattern of the site or area, including the alteration of the course of a stream or river, in a manner which could result in flooding, erosion, or siltation on or off-site?			X	

The proposal will not alter the existing overall drainage pattern of the site. Department of Public Works Drainage Section staff has reviewed and approved the proposed drainage plan, including at the proposed widening of Quail Canyon Road (Attachment 19).

8. Create or contribute runoff which would exceed the capacity of existing or planned storm water drainage systems, or create additional source(s)			X	

EXHIBIT D

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable
of polluted runoff?				

Drainage Calculations prepared by Bowman and Williams, dated March 8, 2004 and revised August 11, 2005 (Attachment 13), have been reviewed for potential drainage impacts and accepted by the Department of Public Works (DPW) Drainage Section staff. DPW staff have determined that existing and proposed storm water facilities are adequate to handle the increase in drainage associated with the project (Attachment 19).

9. Contribute to flood levels or erosion in natural water courses by discharges of newly collected runoff?			X	

The amount of new impervious surface due to the construction of one single-family dwelling, driveway, and improvements to Quail Canyon Road will be minimal relative to the size of the property, and will be accommodated by the proposed drainage system approved by DPW Drainage staff (Attachment 19). In addition, the system recharges much of the expected runoff.

10. Otherwise substantially degrade water supply or quality?		X		

The one additional septic system for the new single-family dwelling will not impact groundwater quality, as discussed in B.5., above.

C. Biological Resources

Does the project have the potential **to:**

1. Have an adverse effect on any species identified as a candidate, sensitive, or special status species, in local or regional plans, policies, or regulations, or by the California Department of Fish and Game, or U.S. Fish and Wildlife Service?			X	

A Biotic Report was prepared to determine the potential for Santa Cruz Long-toed salamander (SCLTS) and California red-legged frog habitat on the site. A letter prepared by the Biotic Resources Group, dated March 8, 2004 (Attachment 18), determined that the lower portion of the property along Larkin Valley Road does not contain riparian vegetation. A report prepared by Dana Bland, dated June 2003, determined that the site is not viable SCLTS or Red-legged frog habitat as there are no creek, ponds, or surface springs on the property (Attachment 17). No other special status species have been identified on the subject property in either the Biotic Report

EXHIBIT D

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable

or in site visits by Planning Department staff.

2. . Have an adverse effect on a sensitive biotic community (riparian corridor), wetland, native grassland, special forests, intertidal zone, etc.)? _____ _____ X _____

The site is mapped San Andreas Oak woodland, however an investigation conducted by the Biotic Resources Group in May **2003** found no evidence of San Andreas Oak woodland (SAOW) in the development area due to the presence of a Eucalyptus grove (Attachment 18). The Eucalyptus prevent the SAOW associated species from becoming established even though soil type, location, and climactic conditions are favorable.
The open area that was created by the recent removal of Eucalyptus trees will probably return to SAOW over time if it is managed for the benefit of those species and Eucalyptus is controlled. To the extent that development occupies this area, the SAOW cannot re-colonize. This impact will be mitigated by a project condition to limit the size of the development envelope, ~~to 1.5 acres~~ to exclude the young oaks that do exist from the development envelope, and to manage the grassland outside the ~~building~~ development envelope for the benefit of SAOW species in the future.
The extreme north end of the site along Larkin Valley Road is mapped for potential riparian habitat, however a biotic assessment conducted in **2004** did not find evidence of riparian vegetation at this location (Attachment 18).

3. Interfere with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native or migratory wildlife nursery sites? _____ X _____

The proposed project does not involve any activities that would interfere with the movements or migrations of fish or wildlife, or impede use of a known wildlife nursery site.

4. Produce nighttime lighting that will illuminate animal habitats? _____ X _____

The subject property **is** surrounded by existing residential development that currently generates nighttime lighting. There are no sensitive animal habitats within or adjacent to the project site.

5. Make a significant contribution to the reduction of the number of species of _____ X _____

EXHIBIT D

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable
plants or animals?				

Refer to C-1 and C-2 above.

6. Conflict with any local policies or ordinances protecting biological resources (such as the Significant Tree Protection Ordinance, Sensitive Habitat Ordinance, provisions of the Design Review ordinance protecting trees with trunk sizes of *6* inch diameters or greater)?			X	

The project will not conflict with any local policies or ordinances. See response C-2 for a discussion of SAOW, a Sensitive Habitat pursuant to Chapter 16.32 of the County Code.

7. Conflict with the provisions of an adopted Habitat Conservation Plan, Biotic Conservation Easement, or other approved local, regional, or state habitat conservation plan?				X

D. Energy and Natural Resources

Does the project have the potential to:

1. Affect or be affected by land designated as "Timber Resources" by the General Plan?		X		

The project is adjacent to land designated as Timber Resource. However, the project will not affect the resource or access to harvest the resource in the future. The timber resource may only be harvested in accordance with California Department of Forestry timber harvest rules and regulations.

2. Affect or be affected by lands currently utilized for agriculture, or designated in the General Plan for agricultural use?			X	

The project site is not currently being used for agriculture and no agricultural uses are proposed for the site or surrounding vicinity.

3. Encourage activities that result in the use of large amounts of fuel, water, or energy, or use of these in a wasteful manner?		X		

EXHIBIT D

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable

The addition of one single-family dwelling will not present a burden on water resources.

4.	Have a substantial effect on the potential use, extraction, or depletion of a natural resource (i.e., minerals or energy resources)?		X	

E. Visual Resources and Aesthetics

Does the project have the potential to:

1.	Have an adverse effect on a scenic resource, including visual obstruction of that resource?		X	

The project will not directly impact any public scenic resources, as designated in the County's General Plan (1994), or obstruct any public views of these visual resources.

2.	Substantially damage scenic resources, within a designated scenic corridor or public view shed area including, but not limited to, trees, rock outcroppings, and historic buildings?		X	

The project site is not located along a County designated scenic road or within a designated scenic resource area. The subject parcel is separated by a ridge from Highway 1, the closest County designated scenic road.

3.	Degrade the existing visual character or quality of the site and its surroundings, including substantial change in topography or ground surface relief features, and/or development on a ridge line?			X

The existing visual setting is wooded hillsides on both sides of an open meadow. The proposed minor land division will result in the construction of one additional single-family dwelling, which will be located so as to fit into this setting.

4.	Create a new source of light or glare which would adversely affect day or nighttime views in the area?		X	

EXHIBIT D

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable

The project will create an incremental increase in night lighting. However, this increase will be small, and will be similar in character to the lighting associated with the surrounding existing uses.

5. Destroy, cover, or modify any unique geologic or physical feature?				X

There are **no** unique geological or physical features on or adjacent to the site that would be destroyed, covered, or modified by the project.

F. Cultural Resources

Does the project have the potential to:

1. Cause an adverse change in the significance of a historical resource as defined in CEQA Guidelines 15064.5?				X

The existing structure on the property is not designated as a historic resource on any federal, State or local inventory.

2. Cause an adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines 15064.5?				X

No archeological resources have been identified in the project area. Pursuant to County Code Section 16.40.040, if at any time in the preparation for or process of excavating or otherwise disturbing the ground, any human remains of any age, or any artifact or other evidence of a Native American cultural site which reasonably appears to exceed 100 years of age are discovered, the responsible persons shall immediately cease and desist from all further site excavation and comply with the notification procedures given in County Code Chapter 16.40.040.

3. Disturb any human remains, including those interred outside of formal cemeteries?				X

Pursuant to Section 16.40.040 of the Santa Cruz County Code, if at any time during site preparation, excavation, or other ground disturbance associated with this project, human remains are discovered, the responsible persons shall immediately cease and desist from all further site excavation and notify the sheriff-coroner and the Planning Director. If the coroner determines that the remains are not of recent origin, a full archeological report shall be prepared and representatives of the local Native California Indian group shall be contacted. Disturbance shall not resume until the

EXHIBIT D

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable

significance of the archeological resource is determined and appropriate mitigations to preserve the resource on the site are established.

4. Directly or indirectly destroy a unique paleontological resource or site?				X

G. Hazards and Hazardous Materials

Does the project have the potential to:

1. Create a significant hazard to the public or the environment as a result of the routine transport, storage, use, or disposal of hazardous materials, not including gasoline or other motor fuels?				X
2. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?				X

The project site is not included on the July 12, 2005 list of hazardous sites in Santa Cruz County compiled pursuant **to** the specified code.

3. Create a safety hazard for people residing or working in the project area as a result of dangers from aircraft using a public or private airport located within two miles of the project site?				X
4. Expose people to electro-magnetic fields associated with electrical transmission lines?				X
5. Create a potential fire hazard?			X	

The project design incorporates all applicable fire safety code requirements, including required road widening to serve the one additional homesite. Both the Pajaro Valley Fire Protection District and the Aptos/La Selva Fire Protection District reviewed and approved the proposed land division and road improvements (Attachment 19 and 21). Aptos/La Selva Fire Protection District intends to annex the project site in the near

EXHIBIT D

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable

future (Attachment 21). The proposed residence will include fire protection devices as required by the local fire agency at time of building permit issuance.

6. Release bio-engineered organisms or chemicals into the air outside of project buildings? _____ X

H a

D the project have the potential to:

1. Cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system (i.e., substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)? _____ X _____

The project will create a small incremental increase in traffic on nearby roads and intersections resulting from the addition of one single-family dwelling. However, given the small number of new trips created by the project (an average of one peak trip per day), the increase is less than significant. Further, the increase will not cause the Level of Service at any nearby intersection to drop below Level of Service D.

2. Cause an increase in parking demand which cannot be accommodated by existing parking facilities? _____ X _____

The project meets the code requirements for the required number of parking spaces and therefore new parking demand will be accommodated on site.

3. Increase hazards to motorists, bicyclists, or pedestrians? _____ X

The intersection of Quail Canyon Road and Larkin Valley Road is difficult for vehicles to negotiate, particularly from the west. Quail Canyon Road will be widened at this location to allow improved sight distance and access for larger vehicles. This will increase bicycle and pedestrian safety, as well as provide adequate access for fire trucks.

A sight distance analysis was conducted by a traffic engineer in 2004, which determined that despite the substandard intersection the minimum stopping distance is acceptable considering the low volume and rural conditions on site (Attachment 20).

4. Exceed, either individually (the project alone) or cumulatively (the project combined with other development), a _____ X

EXHIBIT D

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable
level of service standard established by the county congestion management agency for designated intersections, roads or highways?				

See response H-1 above.

I. Noise

Does the project have the potential to:

1. Generate a permanent increase in ambient noise levels in the project vicinity above levels existing without the project?			X	

The project will create an incremental increase in the existing noise environment due to the presence of humans and their pets. However, this increase will be small, and will be similar in character to noise generated by the surrounding residences.

2. Expose people to noise levels in excess of standards established in the General Plan, or applicable standards of other agencies?				X
3. Generate a temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?			X	

Noise generated during construction of the one new dwelling, driveway, and any road improvements will temporarily increase the ambient noise levels for adjoining areas. Construction will be temporary, however, and given the limited duration of this impact it is considered to be less than significant.

J. Air Quality

Does the project have the potential to:
(Where available, the significance criteria established by the MBUAPCD may be relied upon to make the following determinations).

1. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?			X	

The North Central Coast Air Basin does not meet State standards for ozone and

EXHIBIT D

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable

particulate matter (PM10). Therefore, the regional pollutants of concern that would be emitted by the project are ozone precursors (Volatile Organic Compounds [VOCs] and nitrogen oxides [NOx]), and dust.
Given the modest amount of new traffic that will be generated by the project there is no indication that new emissions of VOCs or NOx will exceed Monterey Bay Unified Air Pollution Control District (MBUAPCD) thresholds for these pollutants and therefore there will not be a significant contribution to an existing air quality violation.
Project construction may result in a short-term, localized decrease in air quality due to generation of dust. However, standard dust control best management practices, such as periodic watering, will be implemented during construction to reduce impacts to a less than significant level.

2.	Conflict with or obstruct implementation of an adopted air quality plan?		X	

The project will not conflict with or obstruct implementation of the regional air quality plan. See J-1 above.

3.	Expose sensitive receptors to substantial pollutant concentrations?		X	

See J-1 above for discussion dust control measures during construction.

4.	Create objectionable odors affecting a substantial number of people?		X	

K. Public Services and Utilities
Does the project have the potential to:

1.	Result in the need for new or physically altered public facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:			
	a. Fire protection?		X	
	b. Police protection?		X	

EXHIBIT 1

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable
c. Schools?			X	
d. Parks or other recreational activities?			X	
e. Other public facilities; including the maintenance of roads?			X	

While the project represents an incremental contribution to the need for services, the increase will be minimal as the project will only result in the addition of one single-family dwelling. Moreover, the project meets all of the standards and requirements identified by the Pajaro Valley Fire District and the Aptos/La Selva Fire District, and school, park, and transportation fees to be paid by the applicant will be used to offset the incremental increase in demand for school and recreational facilities and public roads.

2. Result in the need for construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?			X	

Drainage analysis of the project was conducted by Bowman & Williams in March 2004 and again in August 2005, which concluded that runoff from the new home site can be accommodated by existing facilities. Department of Public **Works** Drainage staff have reviewed the drainage information and have determined that downstream storm facilities are adequate to handle the increase in drainage associated with the project (Attachment 19).

3. Result in the need for construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?		X		

The project will rely on an individual well for water supply. Public water delivery facilities will not have to be expanded.

The project will be served by an on-site sewage disposal system, which will be adequate to accommodate the relatively light demands of the project.

4. Cause a violation of wastewater			X	

EXHIBIT D

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant *Or* No Impact	Not Applicable
treatment standards of the Regional Water Quality Control Board?				

The project's wastewater flows will not violate any wastewater treatment standards.

5. Create a situation in which water supplies are inadequate to serve the project or provide fire protection?				

The water mains serving the project site provide adequate flows and pressure for fire suppression. Additionally, the local fire agency has reviewed and approved the project plans, assuring conformity with fire protection standards that include minimum requirements for water supply for fire protection.

6. Result in inadequate access for fire protection?			X	

The intersection of Quail Canyon and Larkin Valley Road will be widened and improved. The Aptos/La Selva Fire District has approved the plans showing this improvement.
One lane will remain open at all times. Fire trucks, ambulances and other emergency vehicles will not be blocked from using the road at any time.

7. Make a significant contribution to a cumulative reduction of landfill capacity or ability to properly dispose of refuse?			X	

The project will make an incremental contribution to the reduced capacity of regional landfills. However, this contribution will be relatively small and will be of similar magnitude to that created by existing land uses around the project.

8. Result in a breach of federal, state, and local statutes and regulations related to solid waste management?				X

L. Land Use, Population, and Housing

Does the project have the potential to:

1. Conflict with any policy of the County adopted for the purpose of avoiding or mitigating an environmental effect?			X	

The proposed project does not conflict with any policies adopted for the purpose of

EXHIBIT D

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable

avoiding or mitigating an environmental effect. See response **8.4** and B.5 above for discussion on impacts to Primary Groundwater Recharge.

See response C.l and C.2 for discussion of impacts relating to sensitive biotic habitats.

2.	Conflict with any County Code regulation adopted for the purpose of avoiding or mitigating an environmental effect?		X	

The proposed minor land division does not conflict with County Code policies regarding the projection of groundwater resources (see **B.4** and B.5, above), or sensitive habitat (see C.l and C.2, above).

3.	Physically divide an established community?			X

The project will not include any element that will physically divide an established community.

4.	Have a potentially significant growth inducing effect, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?		X	

The proposed Minor Land Division will result in one additional single-family residential lot, which will meet the density and intensity of development allowed by the General Plan and zoning designations for the parcel. Additionally, the project does not involve extensions of utilities (e.g., water, sewer, or new road systems) into areas previously not served. Consequently, it is not expected to have a significant growth-inducing effect.

5.	Displace substantial numbers of people, or amount of existing housing, necessitating the construction of replacement housing elsewhere?			X

The proposed project will entail a net gain of one housing unit.

EXHIBIT D

M. Non-Local Approvals

Does the project require approval of federal, state, or regional agencies? Yes ____ No X

N. Mandatory indings of Significance

Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant, animal, or natural community, or eliminate important examples of the major periods of California history or prehistory? Yes ____ No X

2. Does the project have the potential to achieve short term, to the disadvantage of long term environmental goals? **(A** short term impact on the environment is one which occurs in a relatively brief, definitive period of time while long term impacts endure well into the future) Yes ____ No X

3. Does the project have impacts that are individually limited, but cumulatively considerable ("cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, and the effects of reasonably foreseeable future projects which have entered the Environmental Review stage)? Yes ____ No X

4. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly? Yes ____ No X

EXHIBIT D

TECHNICAL REVIEW CHECKLIST

	REQUIRED	COMPLETED*	N/A
Agricultural Policy Advisory Commission (APAC) Review			X
Archaeological Review			X
Biotic Report/Assessment		X	
Geologic Hazards Assessment (GHA)			X
Geologic Report			X
Geotechnical (Soils) Report		X	
Riparian Pre-Site		X	
Septic Lot Check		X	
Other:			

Attachments:

1. Vicinity Map
2. Map of Zoning Districts
3. Map of General Plan Designations
4. Assessors Parcel Map
5. Tentative Map & Preliminary Improvement Plans prepared by Bowma and Williams, dated August 15, 2005 and revised February 1, 2006 (on file)
6. Geotechnical Review Letter prepared by Kent Edler, dated October 21, 2005
7. Geotechnical Investigation (Conclusions and Recommendations) prepared by Haro, Kasunich, and Associates, dated August 2002.
8. Geotechnical Report Update letters from Haro, Kasunich, and Associates, dated October 6, 2005 and September 7,2005.
9. Letter from Geotechnical Engineer re: Erosion, prepared by Haro, Kasunich, and Associates, dated April 16, 2004.
10. Hydrologic Investigation review letter, prepared by Joe Hanna, dated September 24, 2001.
11. Hydrologic Investigation, prepared by Rogers E. Johnson & Associates, dated March 14, 2000.
12. Hydrologic Investigation update letter, prepared by Rogers E. Johnson & Associates, dated April 26, 2001.
13. Drainage calculations prepared by Bowman and Williams, dated March 8, 2004 and revised August 11, 2006.
14. Septic Lot Check prepared by Environmental Health Services, dated November 22, 1999.

EXHIBIT D

15. Biotic Report Review Letter prepared by Paia Levine, dated May 16, 2003
16. Biotic Report, re: San Andreas Oak Woodland, prepared by Biotic Resources Group, dated May 6, 2003.
17. Biotic Report, re: Santa Cruz Long Toed Salamander & California Red-Legged Frog, prepared by Dana Bland, Wildlife Biologist, dated June 2003.
18. Biotic Assessment, re: riparian woodland habitat, prepared by Biotic Resources Group, dated March 8, 2004.
19. Discretionary Application Comments, printout dated June 12, 2006.
20. Vehicle and pedestrian sight distance letter, prepared by Ron Marquez, P.E., dated August 11, 2004.
21. Review and preliminary approval letter from the Aptos/La Selva Fire Protection District, dated February 16, 2006
22. FEMA flood hazard area map
23. Two comment letters were received during the public review period. These letters are on file at the Planning Department and are available there for review.

Other technical reports or information sources used in preparation of this Initial Study

Santa Cruz County Code, Santa Cruz County General Plan, 1994.

EXHIBIT ע

NAME: Hamilton Swift Land Use for King
APPLICATION: 05-0246
A.P.N: 049-121-78
DATE: November 1,2006

REVISED NEGATIVE DECLARATION MITIGATIONS

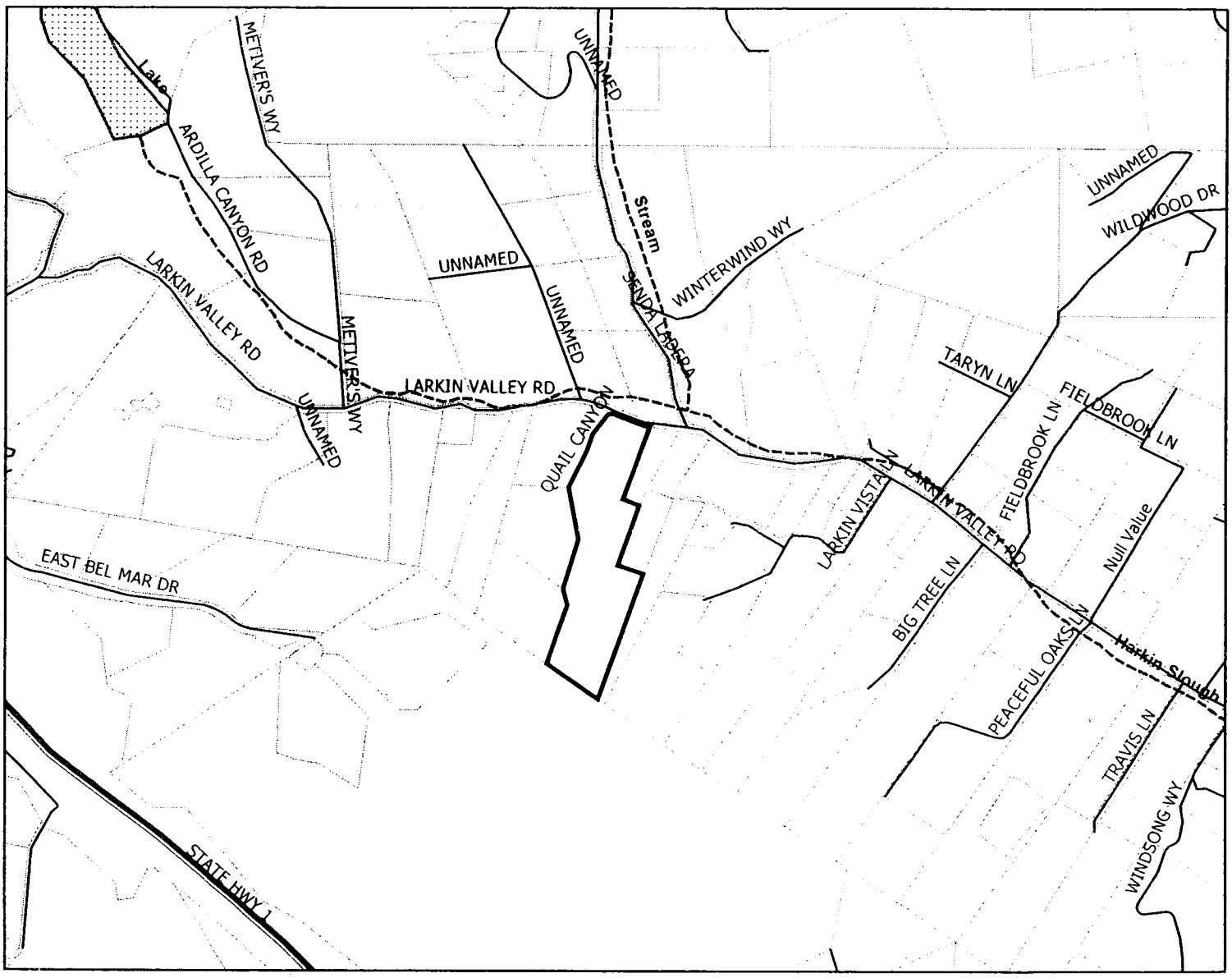
A. In order to allow San Andreas Oak Woodland species to re-populate a portion of the open area that was created by the clearing of Eucalyptus in 2002, the applicant shall:

1. Prior to scheduling the public hearing, revise the tentative map to show a ~~development envelope of no greater than 1.5 acres,~~ the north boundary of the development envelope located to exclude oak trees greater than six inches from the envelope. The north boundary shall be set approximately between survey points 1208 and 1209 as indicated on the staking plan, Bowman and Williams, dated May 2, 2005.
2. Prior to recording the map, submit a plan for management of the grassland outside the development envelope for the benefit of San Andreas Oak Woodland. This will consist of ongoing control of Eucalyptus and non- native shrubs, as well as preservation of native shrubs and Coast Live Oak trees that volunteer in the area.
3. Prior to recording the map, record a Declaration on the deed acknowledging the ongoing requirement to manage the area for San Andreas Oak Woodland.

B. In order to reduce impacts from geotechnical hazards to a less than significant level, prior to scheduling the public hearing the applicant shall revise the tentative map to show the limits of a building envelope which incorporates the setback from slopes as recommended in the geotechnical report (Haro, Kasunich Associates, 2002). The map shall clearly indicate both the proposed development envelope and building envelope.

EXHIBIT D

Location Map



Legend

- APN 049-121-41
- State Highways
- INTERMITTENT STREAM
- PERENNIAL STREAM
- Streets
- Lakes
- Assessors Parcels

Review Inital Stuc
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ATTACHMENT 1
APPLICATION 05-0246

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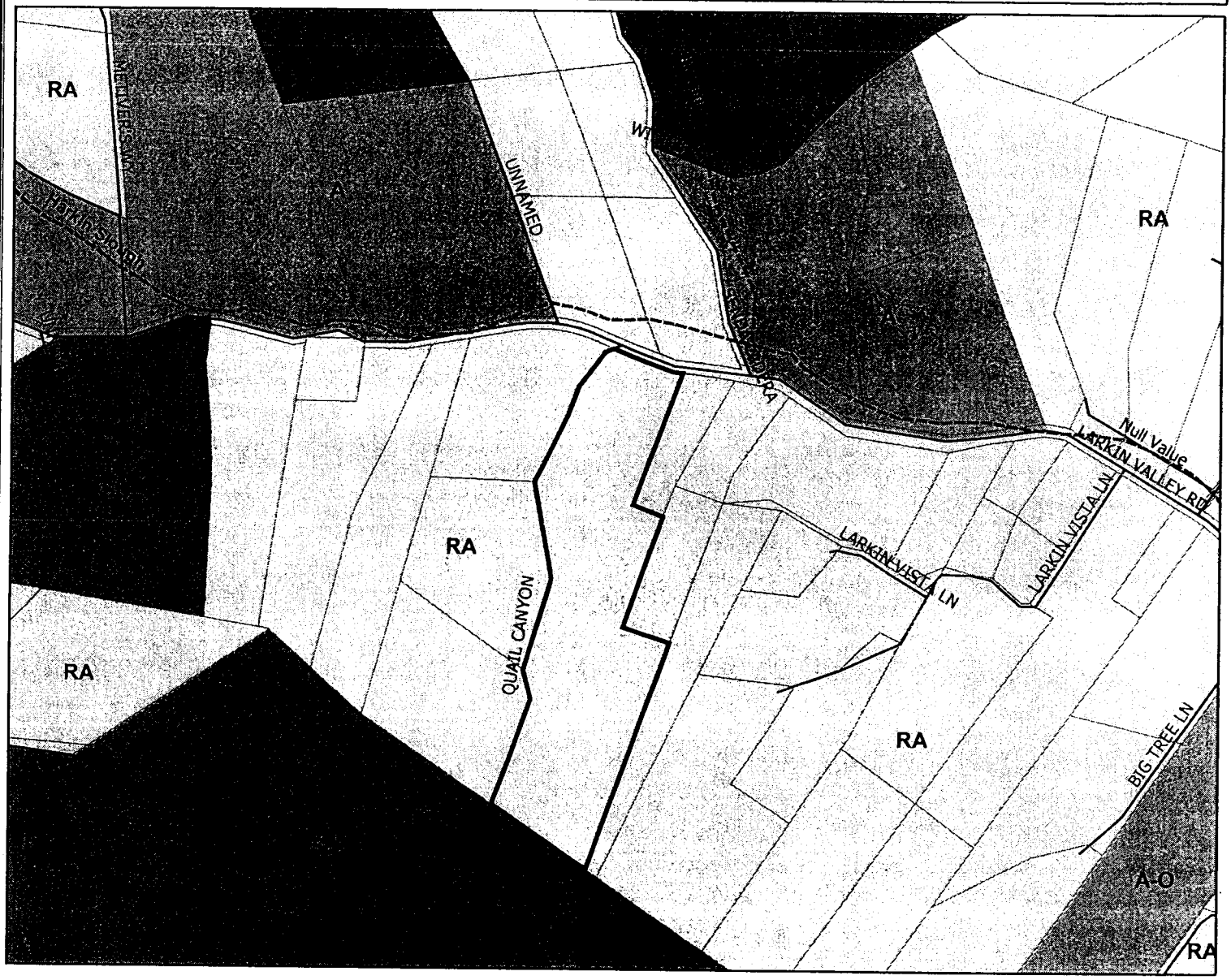
Map Created **by**
County of Santa Cruz
Planning Department
April 2005

EXHIBIT D

Zoning Map



880 1,760 2,640 3,520 Feet

Legend

- APN 049-121-41
- Assessors Parcels
- INTERMITTENT STREAM
- Streets
- AGRICULTURE (A)
- AGRICULTURE RESIDENTIAL (RA)
- SPECIAL USE **(SU)**

Environmental Review Inital Study
ATTACHMENT 2
APPLICATION 05-0246

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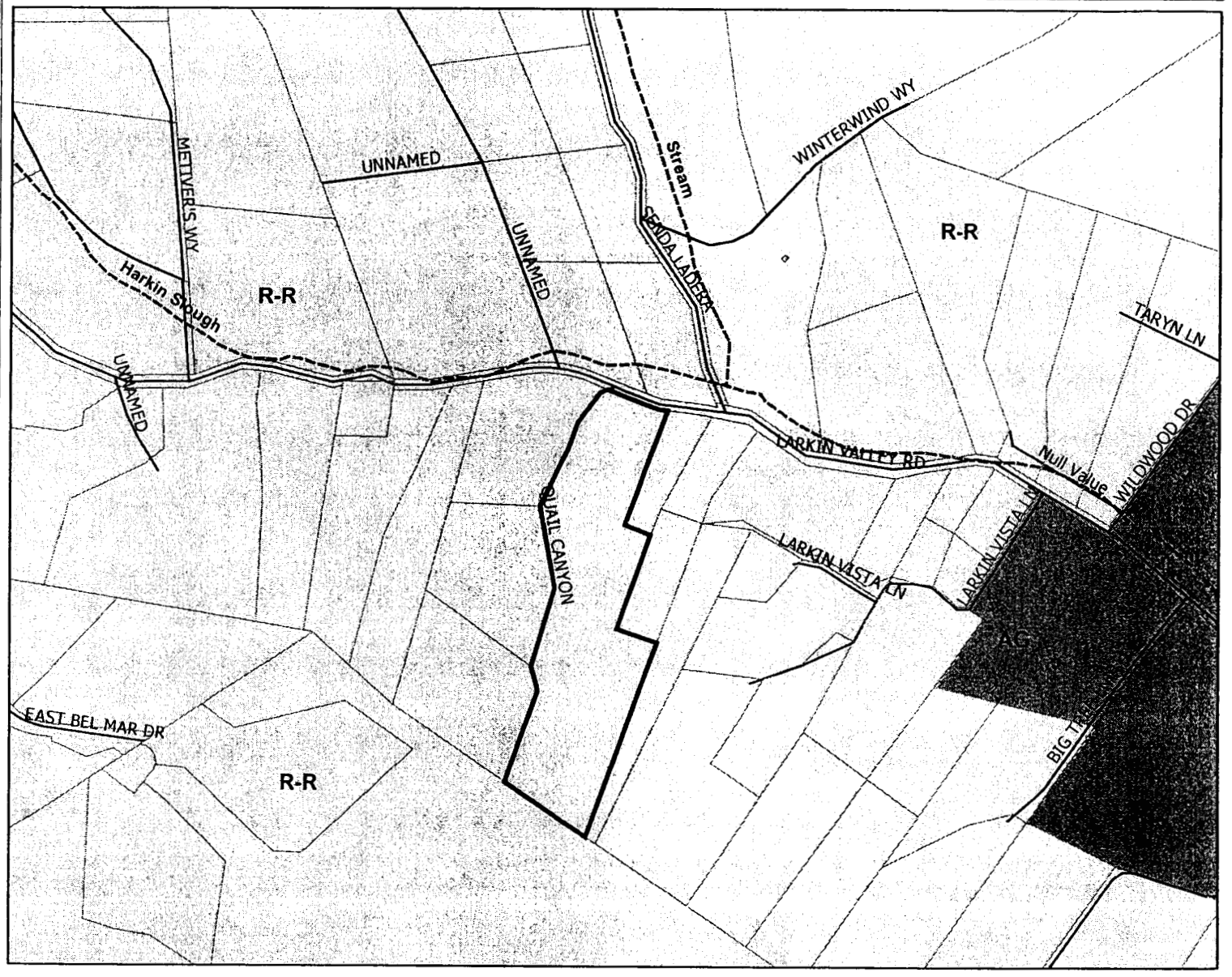
Map Created by
County of Santa Cruz
Planning Department
April 2005

EXHIBIT D

General Plan Designation Map



0 500 1,000 2,000 3,000 4,000 Feet

Legend

Environmental Review Inital Study
ATTACHMENT 3
APPLICATION 05-0246

- APN 049-121-41
- Assessors Parcels
- INTERMITTENT STREAM
- Streets
- Agriculture (AG)
- Residential-Rural (R-R)

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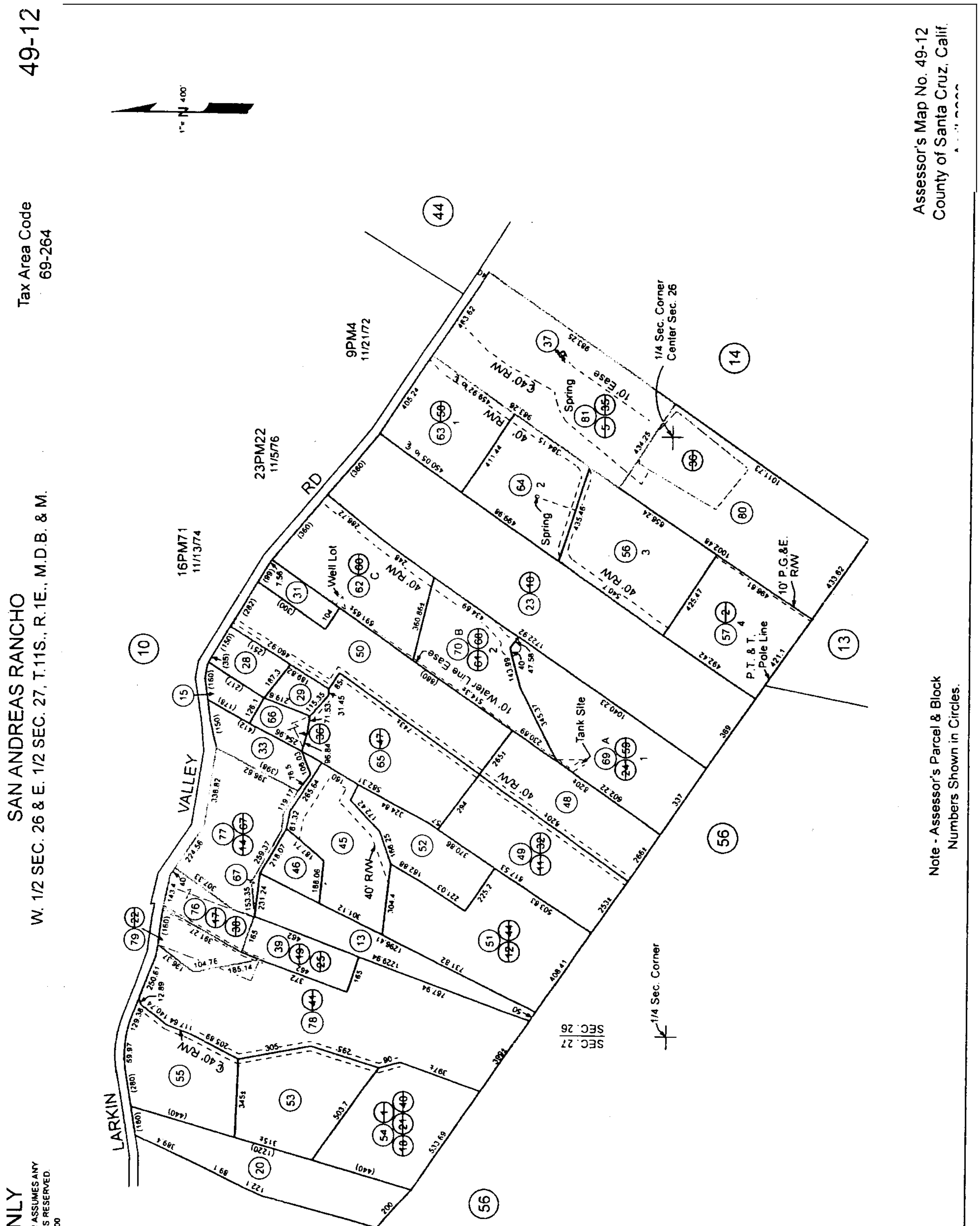
Map Created by
County of Santa Cruz
Planning Department
April 2005

EXHIBIT D



Environmental Review Inital Study
ATTACHMENT 4
APPLICATION 05-0246

EXHIBIT D

HAMILTON SWIFT Land Use & Development Consultants, Inc.
1509 Seabright Avenue, Suite A-1
Santa Cruz, CA 95062

TRANSMITTAL

September 14, 2006

To: Pia Levine
Santa Cruz County Planning
701 Ocean Street
Santa Cruz, CA 95060

From: Amy Roberto
For John Swift
1509 Seabright Avenue, Suite A-I
Santa Cruz. CA 95062

Subject: **App. #05-0246 / APN: 049-121-41**

Date	**Item**
9114/06	Reduced plan set (8 ½ x I I)

Comments:

Pia,

Here is the reduced plan set you requested.

Environmental Review Inital Study
ATTACHMENT 5, 1 of 8
APPLICATION 05-0246

Phone: 831/459-9992 • Fax: 831/459-9998 • e-mail: hs-admin@pacbeii.net

EXHIBIT D

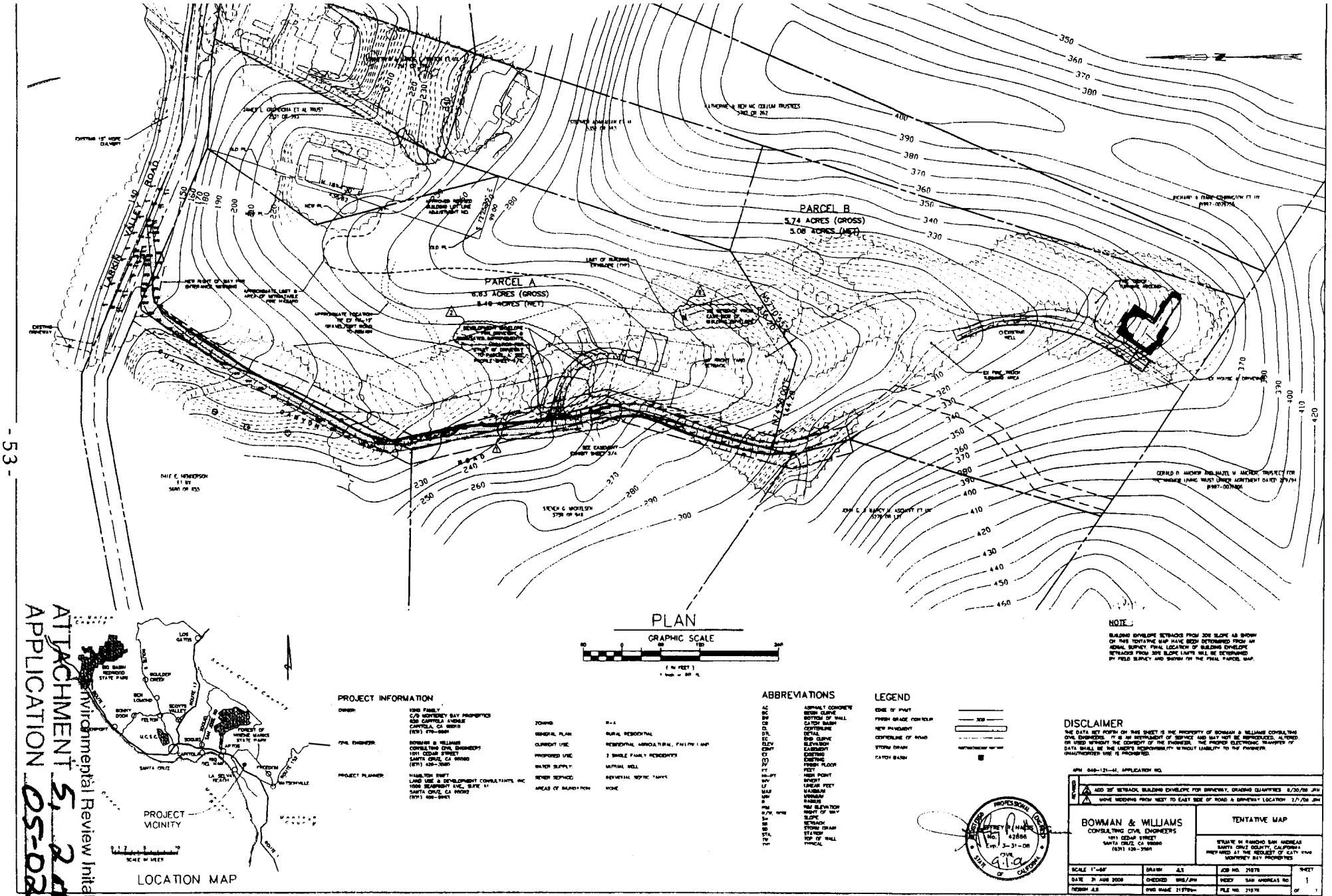


EXHIBIT D

ATTACHMENT 5, 2 of 8
APPLICATION 05-0246

Environmental Review Initial Study

LEGEND

SLOPES LESS THAN 15%	
SLOPES BETWEEN 15% AND 30%	■
SLOPES BETWEEN 30% AND 50%	■
SLOPES GREATER THAN 50%	■

LOT AREA TABULATION

PARCEL	GROSS AREA (ACRES)	< 15% (ACRES)	15% TO 30% (ACRES)	30% TO 50% (ACRES)	> 50% (ACRES)	RIGHT OF WAY (ACRES)	NEW R/W @ ENT (ACRES)	ACCESS ESMT (ACRES)	>50% OUTSIDE OF ACCESS EASEMENT & ROW (ACRES)	NET DEVELOPABLE AREA (ACRES)
[illegible]	6.63	1.43	2.73	1.83	0.84	0.48	0.02	0	0.84	5.40
[illegible]	5.74	1.09	2.22	2.09	0.42	0.05	0.00	0.21	0.40	5.08
TOTAL	12.37	2.44	4.95	3.92	1.08	0.53	0.00	0.21	1.04	10.57

NOTE : NET DEVELOPABLE AREA = GROSS AREA - (>50% SLOPE OUTSIDE OF ACCESS EASEMENT & ROW) - (RIGHT OF WAY) - (ACCESS EASEMENT)

DISCLAIMER

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APN 049-121-41, APPLICATION NO.

REVISED		
2	ADD 20' SETBACK, BUILDING ENVELOPE FOR DRIVEWAY, EARTHWORK QUANTITY	8/30/06 JRH
1	MOVE WIDENING FROM WEST TO EAST SIDE OF ROAD & DRIVEWAY LOCATION	2/1/06 JRH

PROFESSIONAL ENGINEER JEFFREY R. NAESS No. 42866 Exp. 3-31-08 CIVIL STATE OF CALIFORNIA

BOWMAN & WILLIAMS
CONSULTING CIVIL ENGINEERS
1011 CEDAR STREET
SANTA CRUZ, CA 95060
(831) 426-3560

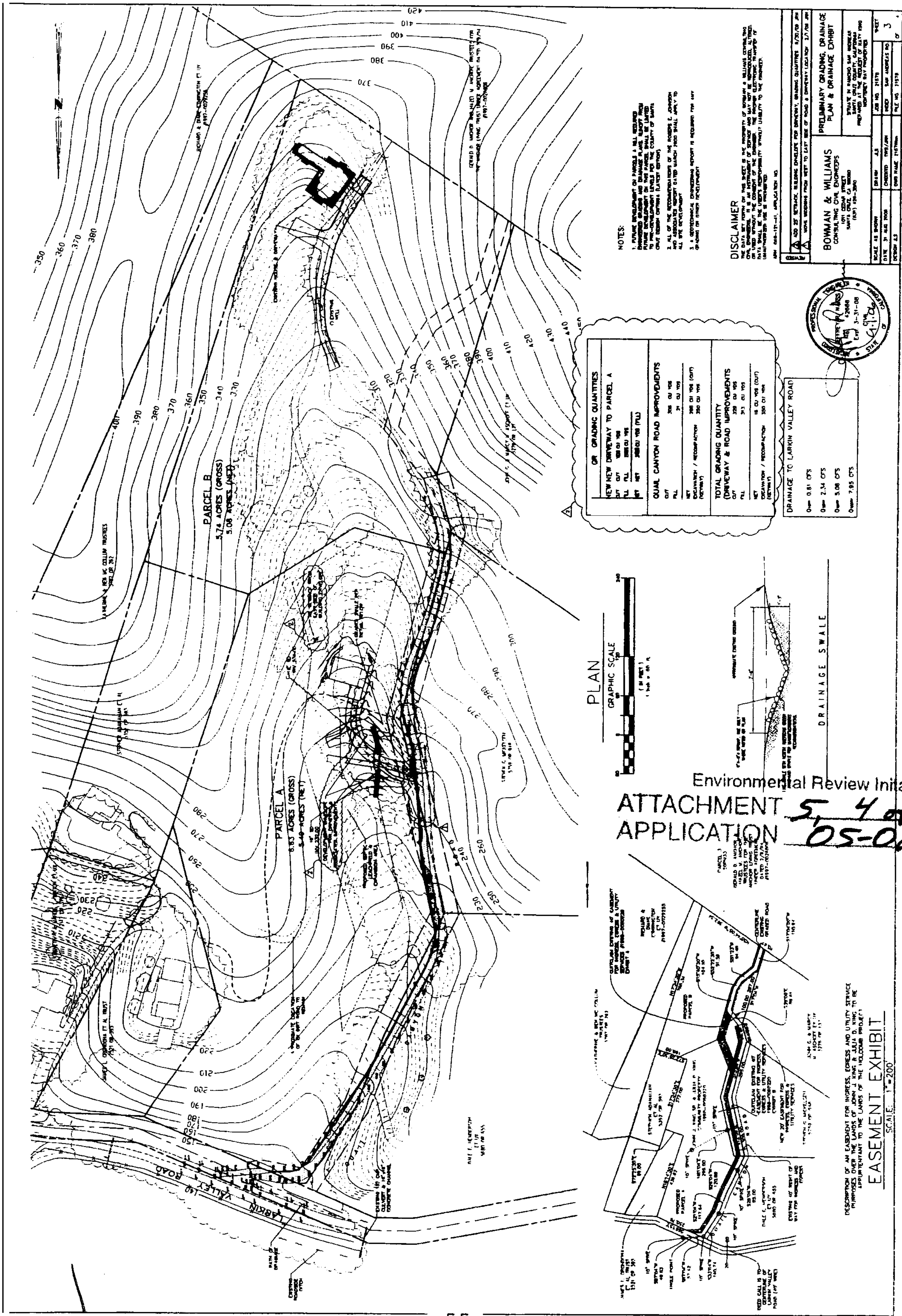
SLOPE MAP

SITUATE IN RANCHO SAN ANDREAS
SANTA CRUZ COUNTY, CALIFORNIA
PREPARED AT THE REQUEST OF KATY KING
MONTEREY BAY PROPERTIES

SCALE 1"=60'	DRAWN JLS	JOB NO. 21878	SHEET 2
DATE 31 AUG 2006	CHECKED JRH	INDEX SAN ANDREAS RD	
DESIGN JLS	DWG NAME 21878slp-EVH	FILE NO. 21878	OF 7

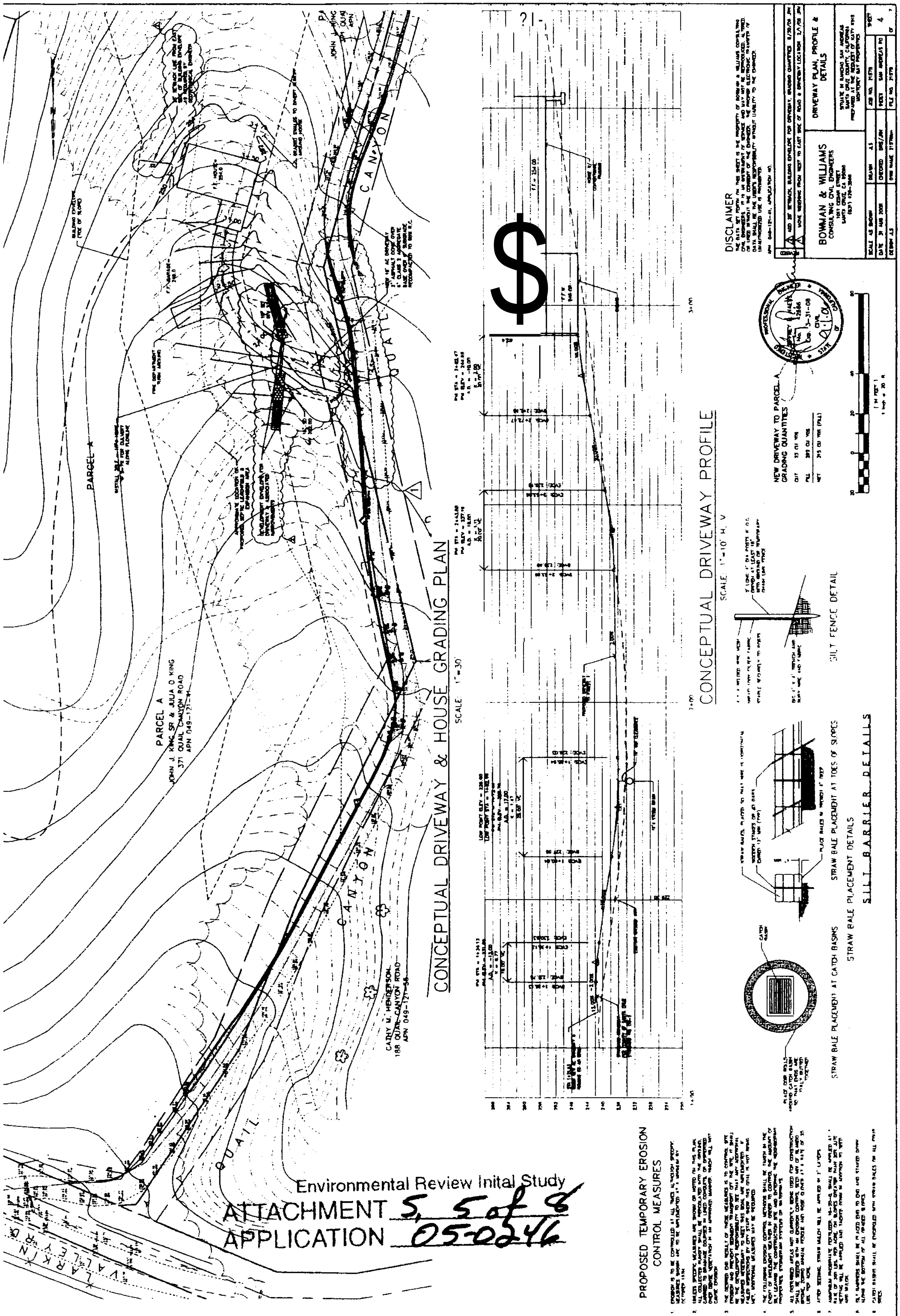
Environmental Review Inital Study
ATTACHMENT 5, 3 of 8
APPLICATION 05-0246

EXHIBIT D



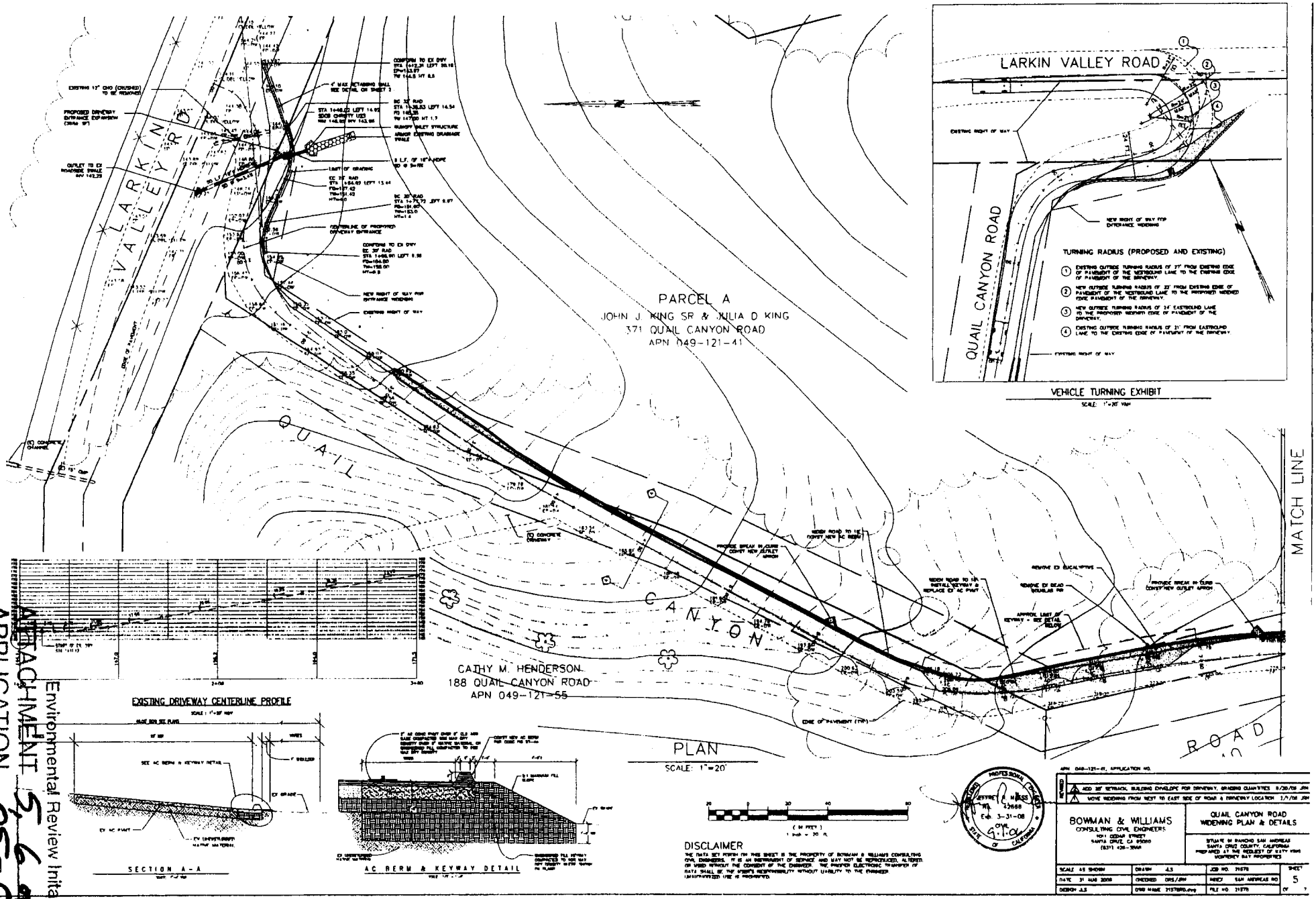
Environmental Review Inital Study
ATTACHMENT 5, 4 of 8
APPLICATION 05-0246

EXHIBIT D



Environmental Review Inital Study
ATTACHMENT 5, 5 of 8
APPLICATION 05-0246

EXHIBIT D



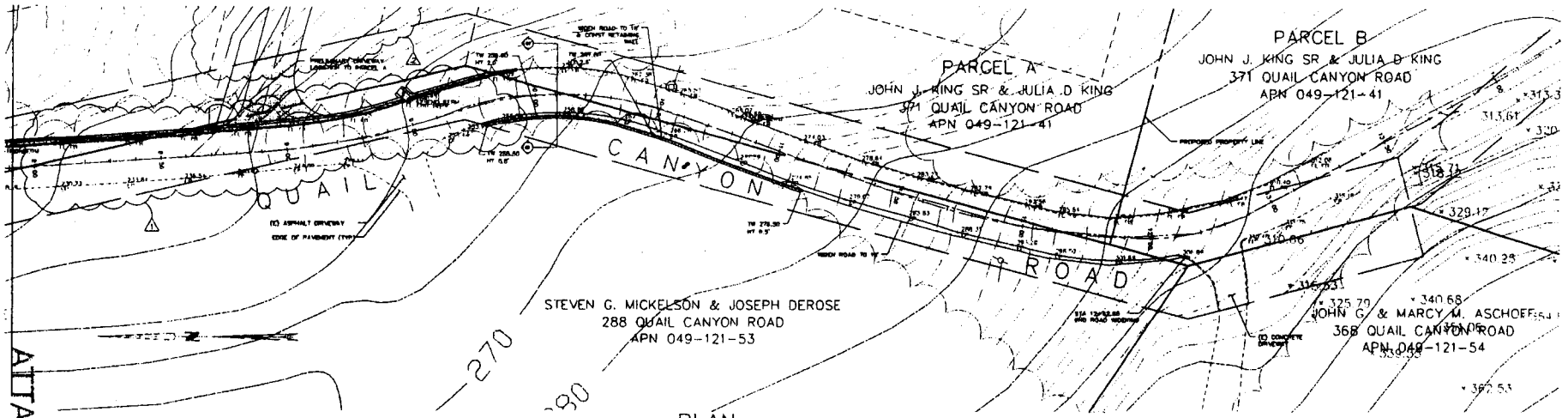
- 57 -

EXHIBIT U

APPLICATION 05-0238

ATTACHMENT 5

Environmental Review Initial Study



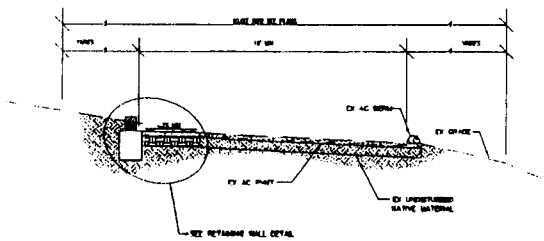
PLAN

SCALE: 1"=20'

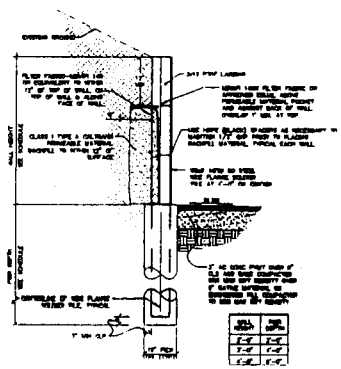
ATTACHMENT 5, 2 of 3

APPLICATION 05-0228

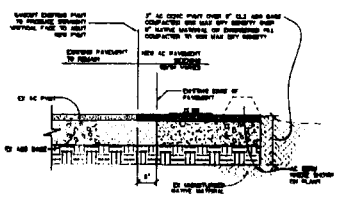
Environmental Review Initial Study



SECTION B-B



RETAINING WALL DETAIL



AC WIDENING DETAIL

QUAIL CANYON ROAD IMPROVEMENTS
GRADING QUANTITIES

CUT	308 CU YDS	
FILL	21 CU YDS	
NET	286 CU YDS (CUT)	
EXCAVATION / RECOMPACTION (REMOVAL)	350 CU YDS	

PROFESSIONAL ENGINEER
No. 42886
Exp. 3-31-08
CIVIL
STATE OF CALIFORNIA

(IN FEET)
1 inch = 20 ft

PAVEMENT CONSTRUCTION NOTES

1. AGGREGATE BASE SHALL BE CLASS 2 IN ACCORDANCE WITH SECTIONS 26-1.02, 26-1.03, 26-1.04 & 26-1.06 OF THE CALTRANS STANDARD SPECIFICATIONS.
2. ASPHALT CONCRETE SHALL BE TYPE B AND SHALL CONFORM TO THE PROVISIONS IN SECTION 39, ASPHALT CONCRETE, OF THE CALTRANS STANDARD SPECIFICATIONS AND THESE SPECIAL PROVISIONS

   ASPHALT CONCRETE SHALL BE PRODUCED FROM COMMERCIAL QUALITY ASPHALT AND AGGREGATES. THE SPREADING AND COMPACTING REQUIREMENTS OF THE STANDARD SPECIFICATIONS WILL NOT APPLY.

   THE ASPHALT CONCRETE SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:

   a) ASPHALT CONCRETE SHALL BE PRODUCED AT A CENTRAL MIXING PLANT.
   b) AGGREGATE SHALL CONFORM TO THE 1/2 MAXIMUM, MEDIUM GRADING SPECIFIED IN SECTION 39-2.02, "AGGREGATE" OF THE STANDARD SPECIFICATIONS.
   c) THE AMOUNT OF ASPHALT BINDER TO BE MIXED WITH THE AGGREGATE SHALL BE IN ACCORDANCE WITH THE MIX DESIGN.
   d) SPREADING AND COMPACTING SHALL BE PERFORMED BY METHODS THAT WILL PRODUCE AN ASPHALT CONCRETE SURFACE OF UNIFORM SMOOTHNESS, TEXTURE AND DENSITY.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR COMPACTION TESTING.

EARTHWORK AND GRADING NOTES

1. WORK SHALL CONSIST OF ALL CLEARING, GRUBBING, STRIPPING, PREPARATION OF LAND TO BE FILLED, EXCAVATION, SPREADING, COMPACTION AND CONTROL OF FILL, AND ALL SUBSIDIARY WORK NECESSARY TO COMPLETE THE GRADING TO CONFORM TO THE LINES, GRADES, AND SLOPES AS SHOWN ON THE APPROVED PLANS.
2. ALL GRADING OPERATIONS SHALL BE DONE IN ACCORDANCE WITH THE GEOTECHNICAL ENGINEERING STUDY, SHALL CONFORM TO SECTION 19 OF THE CALTRANS STANDARD SPECIFICATIONS, AND SHALL ALSO BE DONE IN CONFORMANCE WITH THE REQUIREMENTS OF THE COUNTY OF SANTA CRUZ CODE. THE MOST STRINGENT GUIDELINE SHALL PREVAIL.
3. A REPRESENTATIVE OF A SOILS ENGINEER, AS HIRED BY OWNER, SHALL BE ON SITE DURING GRADING OPERATIONS AND SHALL PERFORM ALL TESTING AS DEEMED NECESSARY. THE REPRESENTATIVE SHALL OBSERVE THE GRADING OPERATIONS FOR CONDITIONS THAT REQUIRE CORRECTION, AND IDENTIFY THOSE CONDITIONS WITH RECOMMENDED CORRECTIVE MEASURES TO THE CONTRACTOR. CONTACT GREG ELOOM AT HARO KASUNICH & ASSOCIATES AT (831) 722-4175 EXTENSION 213.
4. THE CONTRACTOR SHALL GRADE TO THE LINE AND ELEVATIONS SHOWN ON THE PLAN AND SHALL SECURE THE SERVICES OF A LICENSED LAND SURVEYOR OR REGISTERED CIVIL ENGINEER TO ENGAGE STAKES FOR LINE AND GRADE.

RETAINING WALL NOTES

STRUCTURAL STEEL

1. ALL STRUCTURAL STEEL WORK IN THIS SECTION SHALL CONFORM TO THE REQUIREMENTS OF THE AISC SPECIFICATIONS AND THE CODE OF STANDARD PRACTICE, OR THE AWS SPECIFICATIONS FOR WELDING (ANSI B1.1-79).
2. ALL BOLTS SHALL CONFORM TO ASTM A307.
3. BOLTED MEMBERS SHALL BE ASTM A572, GRADE 50 KSI MINIMUM.
4. ALL STEEL FASTENERS EXPOSED TO THE WEATHER SHALL BE HOT DIPPED GALVANIZED AS SPECIFIED BY SECTION 75-1.05 "GALVANIZING" OF THE CALTRANS STANDARD SPECIFICATIONS.
5. ALL STRUCTURAL STEEL MEMBERS EXPOSED TO THE WEATHER SHALL BE PAINTED WITH A ZINC-RICH UNDERCOAT PRIMER SUCH AS "INORGANIC ZINC" BY THE APPROVED EQUIVALENT.
6. ALL SHARP EDGES AND BURRS SHALL BE REMOVED FROM ANY PROJECTING SURFACES OF EXPOSED STRUCTURAL STEEL MEMBERS.
7. DO NOT FIELD CUT ANY STRUCTURAL MEMBER WITHOUT THE APPROVAL OF THE ENGINEER.

TREATED WOOD LAGGING

1. ALL LAGGING AND TIMBER SHALL BE FULL LENGTH PRESSURE-TREATED WITH ACZA CONFORMING TO AWPA STANDARDS P5 TO A KEY RETENTION OF 0.60 PCF OF SHOWN BY ASSAY PER AWPA STANDARDS C1 AND C9.
2. ALL FIELD CUT ENDS OF THE TREATED LUMBER SHALL BE PAINTED WITH A BRUSH APPLIED TREATMENT AS RECOMMENDED BY THE LUMBER MANUFACTURER FOR THE INTENDED USE.
3. SPACERS MUST BE USED BETWEEN ALL LAGGING. SEE CONCRETE LAGGING DETAILS FOR SPACER DESCRIPTION.

CONCRETE NOTES

1. THE CONTRACTOR SHALL NOTIFY THE ENGINEER 48 HRS PRIOR TO PLACING CONCRETE FOR THE PIERS.
2. ALL CONCRETE WORK SHALL BE DONE IN CONFORMANCE WITH THE LATEST EDITION OF THE IBC BUILDING CODE AND THE LATEST EDITION OF THE ACI MANUALS OF CONCRETE PRACTICE.
3. CONCRETE FOR PIERS SHALL BE CLASS B AND MUST HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3000 PSI.
4. MAXIMUM AGGREGATE SIZE SHALL BE 1 1/2" (3/4" FOR PUMP DELIVERED CONCRETE)
5. REINFORCEMENT, ANCHOR BOLTS, PIPE SLEEVES, AND OTHER INSERTS SHALL BE POSITIVELY SECURED IN PLACE BEFORE CONCRETE IS PLACED.
6. PIER CONCRETE IF PUMPED SHALL NOT PERMITTED TO FREE FALL MORE THAN 4 FEET.
7. CONCRETE SHALL BE ALLOWED TO CURE FOR 7 DAYS MIN BEFORE BACKFILLING BEHIND RETAINING WALL.

DISCLAIMER

THE DATA SET FORTH ON THIS SHEET IS THE PROPERTY OF BOWMAN & WILLIAMS CONSULTING CIVIL ENGINEERS. IT IS AN INSTRUMENT OF SERVICE AND MAY NOT BE REPRODUCED, ALTERED, OR USED WITHOUT THE CONSENT OF THE ENGINEER. THE PROPER ELECTRONIC TRANSFER OF DATA SHALL BE THE USER'S PERFORMANCE BY WITHOUT LIABILITY TO THE ENGINEER UNAUTHORIZED USE IS PROHIBITED.

APN 049-121-41, APPLICATION NO.

REVISIONS
ADD 35' SETBACK, BUILDING ENVELOPE FOR DRIVEWAY, GRADING QUANTITIES 9/30/04 JRH
MOVE WIDENING FROM WEST TO EAST SIDE OF ROAD & DRIVEWAY LOCATION 1/1/04 JRH

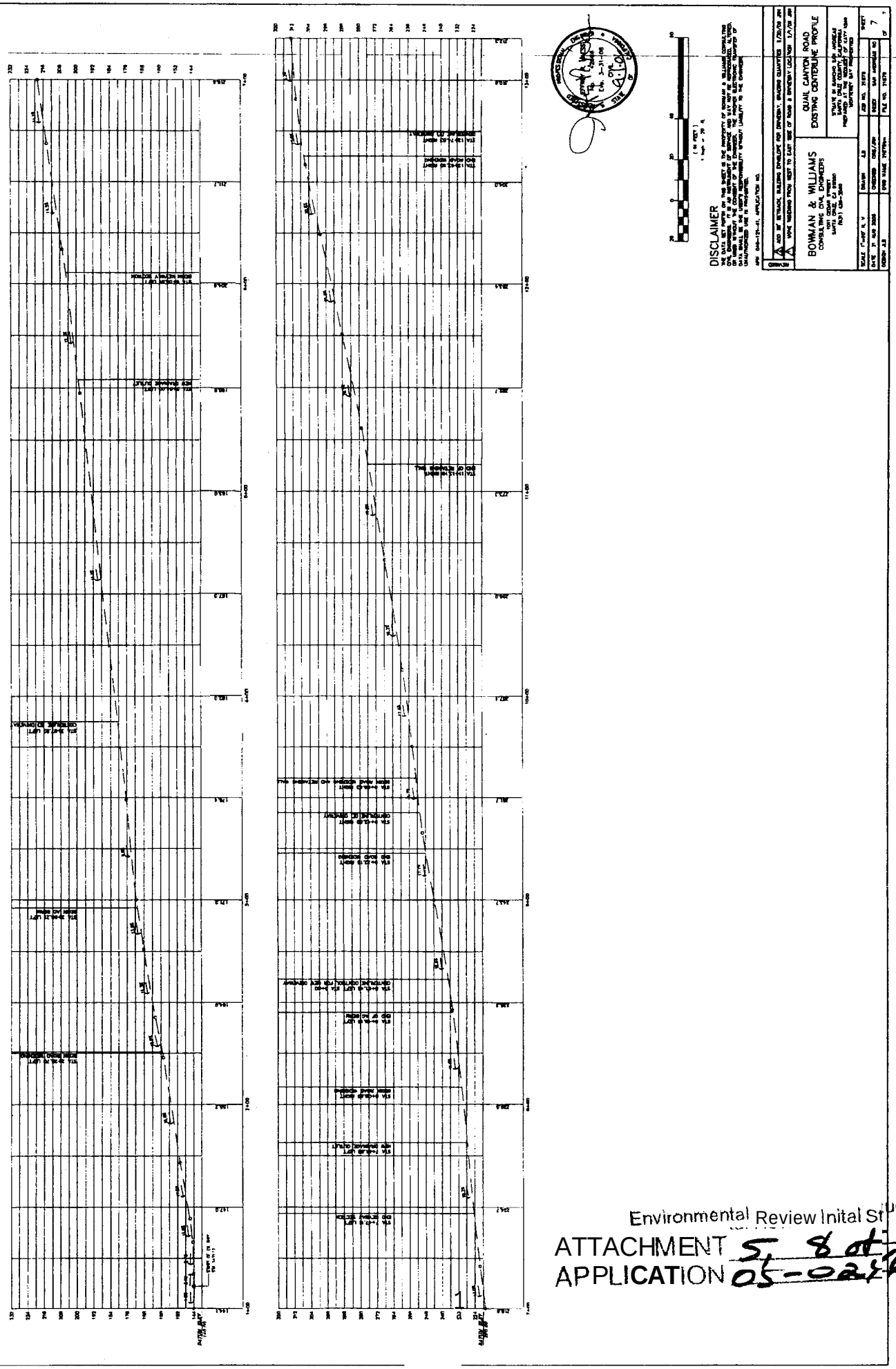
BOWMAN & WILLIAMS
CONSULTING CIVIL ENGINEERS
1011 CEDAR STREET
SANTA CRUZ, CA 95060
(831) 426-3560

QUAIL CANYON ROAD
WIDENING PLAN & DETAILS

SITUATE IN RANCHO SAN ANDREAS
SANTA CRUZ COUNTY, CALIFORNIA
PREPARED AT THE REQUEST OF KATY YONG
MONTEREY BAY PROPERTIES

SCALE: AS SHOWN	DRAWN: JLS	JOB NO. 71578	SHEET
DATE: 29 AUG 2005	CHECKED: DRS/JRH	INDEX: SAN ANDREAS RD	6
DESIGN: JLS	DWG NAME: 71578sht	FILE NO. 71578	OF 7

EXHIBIT D



Environmental Review Inital Study
ATTACHMENT 5 8 of 8
APPLICATION 05-0216

EXHIBIT D

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

October 21, 2005

Hamilton-Swift Land Use
1509 Seabright Ave, Suite A-1
Santa Cruz, **CA,** 95062

Subject: Review of Geotechnical Investigation by Haro, Kasunich and Associates Dated August 13, 2002; Project #: SC7977
w/ September 7, 2005 Response Letter and October 6, 2005 Geotechnical Report Update
APN 049-121-41, Application #: 05-0246

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

2. Final plans shall reference the report and include a statement that the project shall conform to the report's recommendations.

3. Prior to building permit issuance a *plan review letter* shall be submitted to Environmental Planning. The author of the report shall write the *plan review letter.* The letter shall state that the project plans conform to the report's .recommendations.

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

Our acceptance of the report 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 submit two copies of the report at the time of building permit application.

Please call the undersigned at (831) 454-3168 if we can be *of* any further assistance

Sincerely,

Kent Edler

Civil Engineer

Cc: David Keyon, Project Planner
John and Julia King, Owner

Environmental Review Initai Study
ATTACHMENT 6
APPLICATION 05-0246

(over)

EXHIBIT D

c49-121-41
04-0102

b

GEOTECHNICAL INVESTIGATION
for
PROPOSED SINGLE FAMILY RESIDENCE
Quail Canyon Road (APN 049-121-41)
Santa Cruz County, California

Prepared For
Katy King

Environmental Review Inital Stu
ATTACHMENT 7, 1 of 13
APPLICATION 05-0246

EXHIBIT I

HARO, KASUNICH AND ASSOCIATES, INC.

CONSULTING GEOTECHNICAL & COASTAL ENGINEERI

Project No. SC7977
13 August 2002

KATY KING
Monterey Bay Properties
620 Capitola Avenue
Capitola, California 95010

Subject: Geotechnical Investigation

Reference: Residential Construction
Quail Canyon Road (APN 049-121-41)
Santa Cruz County, California

Dear Ms. King:

The following report presents the results and conclusions of our Geotechnical Investigation for the proposed residential construction. This report includes design criteria and recommendations addressing the geotechnical aspects of the proposed development.

The results of our investigation indicate there are no significant geotechnical concerns at the site provided the recommendations presented in this report are followed in development of project plans and specifications.

If you have any questions concerning the data or conclusions presented in this report, please call our office.

Very truly yours,

HARO, KASUNICH & ASSOCIATES, INC.

Greg Bloom
C.E. 58819

GREG BLOOM
C.E. 58819
Exp 6/03
CIVIL
STATE OF CALIFORNIA

GB/dk

Copies: 5 to Addressee
1 to Bowman and Williams

Environmental Review Inital Study
ATTACHMENT 7, 2 of 13
APPLICATION 05-0246

116 EAST LAKE AVENUE • WATSONVILLE, CALIFORNIA 95076 • (831) 722-4175 • FAX (831) 722-3202

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DISCUSSIONS AND CONCLUSIONS

Based on the results of our investigation, the proposed development, from a geotechnical standpoint, is feasible. The recommendations presented in this report are to be incorporated into the design and construction of the proposed development.

The site is underlain by loose sand which will require densification to support the proposed residences. It is recommended that all footing elements and slab-on-grades be underlain by a minimum of 3 feet of engineered fill.

If level building pads are to be constructed by cutting and filling the hillside, the pad should consist of an even thickness of engineered fill across the pad. The construction of the pad should extend a minimum of 5 feet beyond the edge of the building envelope in all directions.

RECOMMENDATIONS

The following recommendations should be used as guidelines for preparing project plans and specifications:

Site Grading

1. We request the opportunity to review project grading and foundation plans during the design phase of the project. We can then provide our opinion regarding geotechnical considerations.

2. Observation and testing services for earthwork performed at the project site should be provided by Haro, Kasunich and Associates. The observation and testing of earthwork allows for contractors compliance evaluation to project plans and specifications and our geotechnical recommendations. It also allows us the opportunity to confirm that actual soil conditions encountered during construction are essentially the same as those anticipated based on the subsurface exploration.

3. 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 can be made. The

recommendations of this report are based on the assumption that the geotechnical engineer will perform the required testing and observation during grading and construction. It is the owner's responsibility to make the necessary arrangements for these required services.

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

5. Areas to be graded or to receive building foundations should be cleared of obstructions including loose fill, debris, foundations, trees not designated to remain and their principal roots, or other unsuitable material. Existing depressions or voids created during site clearing should be backfilled with engineered fill.

6. Engineered fill should be placed in thin lifts not exceeding 8 inches in loose thickness, moisture conditioned, and compacted io a minimum of 90 percent relative compaction. The upper 8 inches should be compacted to a minimum of 95 percent relative compaction. Engineered fill placed on slopes greater than 15 percent should be keyed and benched into the hillside. A typical keying and benching detail is provided in the appendix.

7. The on-site material may be reused as engineered fill once the majority of organics and other deleterious material is removed.

a

EXHIBIT D

8. Any imported 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 samples of import material or utility trench backfill for compliance testing a minimum of 4 days before it is delivered to the job site.

9. After the earthwork operations have been completed and the geotechnical engineer has finished his observation of the work, no further earthwork operations shall be performed except with the approval of and under the observation of the geotechnical engineer.

1. Temporary excavations may be backsloped at a 1:1 (H:V) gradient during dry conditions. Slopes cut steeper than 1:1 should be temporarily shored. Permanent cut slopes should be sloped no steeper than 3:1.

2. All disturbed slopes should be planted with erosion resistant material once grading is finished.

Conventional Spread Footinq Foundations

10. The proposed structure may be supported on conventional spread footings founded on a minimum of 3 feet of engineered fill as specified in the grading section of the report. Footing dimensions should be determined in accordance with anticipated use and applicable design standards, but should be a minimum of 15 inches wide and be embedded a minimum of 12 inches for one-story structures and 18 inches for two-story structures. The footings should be reinforced as required by the structural designer based on the actual loads transmitted to the foundation.

11. Foundations designed in accordance with the above may be designed for an allowable soil bearing pressure of 2,000 psf for dead plus live loads. This value may be increased by one-third to include short-term seismic and wind loads.

12. Lateral load resistance for the buildings supported on footings may be developec in friction between the foundation bottom and the supporting subgrade. A friction coefficient *of* 0.35 is considered applicable. Passive resistance of 250 pcf may be used below a depth of 12 inches against engineered fill.

Retaininq Walls and Lateral Pressures

13. Retaining walls should be designed to resist the lateral earth pressures listed in Table 1. The values listed in Table 1 are for non-seismic conditions and are based on the

ATTACHMENT 7, 7 of 13
APPLICATION 05-0246

EXHIBIT D

assumption that walls will be adequately drained.

Table 1 - Active and At-Rest Pressures

Backslope Gradient	Active Pressure (pcf)	At-Rest Pressure (pcf)
Level	35	55
2:1	45	65

14. 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.

15. To account for seismic loading, a horizontal line load surcharge equal to $10H^2$ lbs/horizontal foot of wall may be assumed to act at 0.6H above the heel of the wall base {where H is the height of the wall.)

16. 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. Drainage material should be wrapped in

Environmental Review Inital Study
ATTACHMENT 7, 8 of 13
APPLICATION 05-0246

EXHIBIT D

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 the 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 shouid be plugged at the surface with clayey material to prevent infiltration of surface runoff into the backdrains.

199 UBC Seismic Desian Considerations

For purposes of design of structural features for the proposed project, seismic coefficients may be used based on a soil profile Sd as described in Table 16-J of the 1997 UBC. The coefficients should be based on the 1997 UBC and the San Andreas Fault (Type A at a distance of 9 kilometers) and/or the Zayante-Vergales Fault (Type 8 at a distance of 4 kilometers).

Slabs-on-Grade

17. Concrete slabs-on-grade planned for the site should be constructed on a minimum of 3 feet of engineered fill as outlined in the Site Grading and Excavation section of this report. Prior to construction of the slab, the subgrade surface should be proof-rolled to provide a smooth, firm, uniform surface for slab support. Slab reinforcement should be provided in accordance with the anticipated use and loading of the slab. As a minimum, we recommend the use of number 4 bars placed within the slab at 18 inches on center. Slab joints should be spaced no more than 15 feet on center to minimize random cracking.

While some movement of slabs is likely, a well-prepared subgrade including pre-moistening prior to pouring concrete, adequately spaced expansion joints, and good workmanship should minimize cracking and movement.

18 In areas where floor wetness would be undesirable, a blanket of 4 inches of free-draining gravel should be placed beneath the floor slab to act as a capillary break. In order to minimize vapor transmission, an impermeable membrane should be placed over the gravel. The membrane should be covered with 2 inches of sand or rounded gravel to protect it during construction. The sand or gravel should be lightly moistened just prior to placing the concrete to aid in curing the concrete. If moisture is expected, a surface treatment or moisture retardant should be added to the concrete.

Site Drainaae

19. Thorough control of runoff is essential to the performance of the project. The soil on the site has a high potential for erosion.

20. Runoff must not be allowed to sheet over graded slopes. Where uncontrolled runoff flows over the slopes or concentrated runoff is directed onto slopes, the potential for erosion or shallow debris flows is greatly increased. Asphalt or earthen berms, or lined V-ditches should be planned, as determined by the project Civil Engineer, to adequately control surface runoff.

Environmental Review Inital Study
ATTACHMENT 7, 10 of 13
APPLICATION 65-0246

EXHIBIT D

21. Surface drainage should include provisions for positive slope gradients so that surface runoff is not permitted to pond adjacent to foundations, pavements, or other improvements. Surface drainage should be directed away from the building foundations and improvements. Minimum slope gradients of at least 2 percent. (1/4 inch per foot), are recommended.

22. Roof gutters should be placed around eaves. Discharge from the roof gutters should be conveyed away from the downspouts by splash blocks or closed plastic conduits.

23. The migration of water or spread of extensive root systems below foundations, slabs, or pavements may cause undesirable differential movements and subsequent damage to these structures. Landscaping should be planned accordingly.

Plan Review, Construction Observation. and Testing

24. Our firm must 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 responsibility 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.

ATTACHMENT 7, 12 of 13
APPLICATION 05-0246

EXHIBIT D

Project No. SC7977
13 August 2002

LIMITATIONS AND UNIFORMITY OF CONDITIONS

1. The recommendations of this report are based upon the assumption that the soil conditions do not deviate from those disclosed in the borings. If any variations or undesirable conditions are encountered during construction, or if the proposed construction will differ from that planned at the time, our firm should be notified so that supplemental recommendations can be given.

2. This report is issued with the understanding that it is the responsibility of the owner, or his representative, to ensure that the information and recornmendations contained herein are called to the attention of the Architects and Engineers for the project and incorporated into the plans, and that the necessary steps are taken to ensure that the Contractors and Subcontractors carry out such recommendations in the field. The conclusions and recommendations contained herein are professional opinions derived in accordance with current standards of professional practice. No other warranty expressed or implied is made.

3. The findings of this report are valid as of the present date. However, changes in the conditions of a property can occur with the passage of time, whether they be due to natural processes or to the works of man, on this or adjacent properties. In addition, changes in applicable or appropriate standards occur whether they result from legislation or the broadening of knowledge. Accordingly, the findings of this report may be invalidated, wholly or partially, by changes outside our control. Therefore, this report should not be relied upon after a period of three years without being reviewed by a geotechnical engineer.

Environmental Review Inital Study
ATTACHMENT 7, 13 of 13
APPLICATION 05-0246

EXHIBIT D

Project No. SC7977
6 October 2005

TIM AND KATY KING
160 Los Reyes Road
La Selva Beach, California 95076

Subject: Geotechnical Report Update

Reference: Residential Construction
Quail Canyon Road (APN 049-121-41) – Lower Parcel
Application #050246
Santa Cruz County, California

Dear Mr. and Mrs. King:

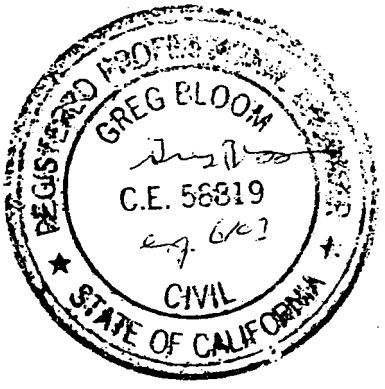
At your request, we visited the site in August 2005 to review current site conditions for the lower lot. It is our opinion that the recommendations provided in the August 2002 report are still valid.

If you have any questions, please call our office.

Very truly yours,

HARO, KASUNICH & ASSOCIATES, INC.

Greg Bloom
C.E. 58819



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1 to Hamilton Swift

Environmental Review Inital Study
ATTACHMENT 8, 1 of 3
APPLICATION 05-0246

EXHIBIT D

116 EAST LAKE AVENUE • WATSONVILLE, CALIFORNIA 95076 • (831) 722-4175 • FAX (831) 722-3202

HARO, KASUNICH AND ASSOCIATES, INC.

CONSULTING GEOTECHNICAL & COASTAL ENGINEERS

Project No. SC7977
7 September 2005

TIM AND KATY KING
160 Los Reyes Road
La Selva Beach, California 95076

Subject: Erosion (Response to County Comments)

Reference: Residential Construction
Quail Canyon Road (APN 049-121-41)
Santa Cruz County, California

Dear Mr. and Mrs. King:

At your request, we are providing addendum recommendations in response to the letter by Kent Edler, Associate Civil Engineer for the County of Santa Cruz Planning Department, dated 29 March 2004.

Our firm has also met with Mr. Edler on 19 August 2005 to discuss the project. His concerns are with the slopes to the east and southeast of the building envelope.

The slopes above the building envelope are moderate (30 to 45 percent). The slopes were probably denuded in the past 100 years (originally an oek woodlands forest) for agricultural purposes (apple groves?) and are currently covered with eucalyptus trees. It is our opinion that this process has disturbed the near surface sands and has caused erosion on the hillside.

Our firm did not observe any concave slopes above the building envelope that would direct drainage and cause accelerated erosion of the hillside onto the building envelope.

Recommendation

To mitigate the potential of erosion affecting the residence, it is recommended that the proposed residence be setback a minimum of 25 feet from the existing eastern building envelope. The current edge of the building envelope is approximately at the base of the eastern facing hillside.

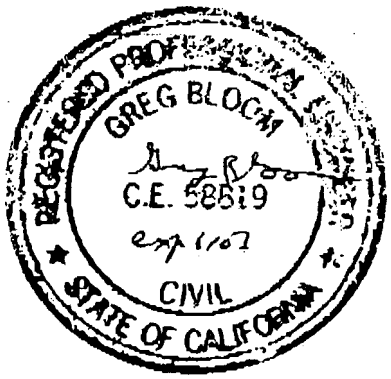
Environmental Review Initial Study
ATTACHMENT 8, 2 of 3
APPLICATION 05-0246

If you have any questions, please call our office.

Very truly yours,

HARO, KASUNICH & ASSOCIATES, INC.

Greg Bloom
C.E. 58819



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Environmental Review Inital Study
ATTACHMENT 8, 3 of 3
APPLICATION 05-0246

EXHIBIT D

Project No. SC7977
16 April 2004

TIM AND KATY KING
160 Los Reyes Road
La Selva Beach, California 95076

Subject: Erosion (Response to Santa Cruz County Comments)

Reference: Residential Construction
Quail Canyon Road (APN 049-121-41)
Santa Cruz County, California

Dear Tim and Katy King:

At your request, we have reviewed the comments by Kent Edler (dated 29 March 2004), Associate Civil Engineer for the County of Santa Cruz Planning Department, in regards with our geotechnical investigation dated 13 August 2002.

The report provides recommendations for two different building locations: 1. the upper lot and 2. the lower lot. The upper lot is currently under construction. Mass grading is complete and the actual structure is under construction. It is proposed that the parcel be split and the lower lot be constructed.

Mr. Edler is concerned that loose soil is being shed from surrounding slopes and could impact the lower site. Our firm re-visited the site on 12 April 2004 and reviewed our geotechnical investigation.

Our report identifies the near surface soil at the site as having a high potential for erosion (see page 13). The near surface soil consists of loose silty sand. Based on our site reconnaissance, the site has experienced moderate erosion over this past winter. The erosion appears io be a result of completing the framing of the residence and not completing the proposed drainage improvements. In addition, the driveway is currently unpaved and there are several fill piles scattered across the site.

Some erosion control measures were put in place, but it appears that they were only moderately effective.

It is our opinion that once the proposed drainage improvements are put in place, the driveway is paved, and the site is vegetated with an approved erosion control mix the potential for soil to erode from the upper site onto the lower site will be very low. In summary, it is our opinion that no additional recommendations are required from our perspective, but erosion control is a very important component of both projects.

Environmental Review Inital Study
ATTACHMENT 9, 1 of 2
APPLICATION 05-0246
EXHIBIT D

116 EAST LAKE AVENUE • WATSONVILLE, CALIFORNIA 95076 • (831) 722-4175 • FAX (831) 722-3202

If you have any questions, please call our office.

Very truly yours,

HARO, KASUNICH & ASSOCIATES, INC.

Greg Bloom
C.E. 58819

GB/jm

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Environmental Review Inital Study
ATTACHMENT 9, 2 of 2
APPLICATION 05-0246

EXHIBIT D

COUNTY OF SANTA CRUZ

PLANNING DEPARTMENT

701 OCEAN STREET, SUITE 310, SANTA CRUZ, CA 95060
(831) 454-2580 FAX: (831) 454-2131 TDD: (831) 454-2123
ALVIN JAMES. DIRECTOR

Monday, September 24, 2001

Ms. Katy King
Monterey Bay Properties
620 Capitola Avenue
Capitola, California 95010

SUBJECT: Approval of the Hydrogeologic Investigation
Rogers E. Johnson and Associates
MARCH 14,2001
APPLICATION 00-0387
ASSESOR PARCEL NUMBER 049-121-41

Dear Ms. Katy King:

Mr. Alvin James has asked me to resume my review of the subject report by Rogers E. Johnson and Associates. I have completed this review and agree with the report's conclusions that the site should be removed from the Primary Ground Water Recharge Designation.

Purpose of the Ground Water Recharge Designation

The general purpose of the Primary Ground Water Designation is to protect high water bearing rock formations that "hold sufficient amounts of water for community or municipal use are considered as high–water-bearing formations" which are over-lain by soils that are have "high permeability "[1] Consequently, a specific site can be removed from Primary Ground Water Recharge Designation by showing that the site' soils are not highly permeable, by showing that the underlying formation does not hold sufficient ground water form community or municipal use or by showing that the site will not transmit water to a high-water bearing formation.

Environmental Review Inital Study
ATTACHMENT 10, 1 of 2
APPLICATION 05-0246

Rogers E. Johnson Conclusions

The Geology report identifies two formations below the King property: the Fluvial Faces of the Aromas formation and the Purisma formation and concludes that the Fluvial Facies does not transmit water readily to the Punsma Formation and the underlying aquifer. This report identifies the presents of lagoonal clays and related inter-bedded clayey sands and paleosols within the Aromas Fluvial Lithofacies that significantly reduce the amount of the formation's vertical

[1] **Environmental** Report GROWTH **MANAGEMENT** PROGRAM 12-77

EXHIBIT 1

percolation/permeability [2]. This conclusion is similar to the conclusion of several other geologists who have investigated the Aromas' fluvial facies in the Larkin Valley areas.

Further, the site is located in a hillside area where drainage quickly concentrates and flows to near by Larkin Valley reducing the likelihood of recharge.

Conditions of Approval

The project is approved with the following conditions:

1. *An* engineered drainage plan is required for any Development. This study must show that pre and post development drainage is the same in amount, time of concentration and intensity.
2. All of the recommendations of the Rogers E. Johnson and Associates Report dated March 2000 apply to all site development.
3. **A** geotechnical engineering report is required for any grading or other development.

If you have any questions please call me at (831) 454-3175.

Very truly yours,

Joe Hanna
County Geologist CEG 1313

Environmental Review Inital Study
ATTACHMENT 10, 2 of 2
APPLICATION 05-0246

[2] Maps Showing Geology and Liquefaction Potential of Quaternary Deposits in Santa Cruz County, William R. Dupre, 1975, Dupre indicates that the fluvial facies has a moderate level of permeability.

EXHIBIT D

ROGERS E. JOHNSON & ASSOCIATES
CONSULTING ENGINEERING GEOLOGISTS
1729 Seabright Avenue, Suite D
Santa Cruz. California 95062
e-mail: reja@bigfoot.com
Ofc (831) 425-1288 • Fax (831) 425-1136

HYDROGEOLOGIC INVESTIGATION
KING PROPERTY
LARKIN VALLEY ROAD
WATSONVILLE, CALIFORNIA
SANTA CRUZ COUNTY APN 049-121-41

REJA Job No. H98056-76
March 14,2000

EXHIBIT D

ROGERS E. JOHNSON & ASSOCIATES
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1729 Seabright Avenue, Suite D
Santa Cruz. California 95062
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March 14,2000

Ms. Katy King
Monterey Bay Properties
620 Capitola Avenue
Capitola, California 95010

Job No. H98056-76

Re: Hydrogeologic Investigation
Larkin Valley Road, Watsonville, California
Santa Cruz County APN 049-121-4]

Dear Ms. King:

The following report presents the results of our hydrogeologic investigation of the above referenced property. The purpose of our investigation was to determine whether the proposed 2-split of the 12-acre parcel would be feasible without causing contamination of the aquifer beneath the property.

The Santa Cruz County Planning Department has designated the subject property a Primary Groundwater Recharge (PGR) constraint area. The Planning Department defines PGR areas as being underlain by an aquifer where soils and native earth materials exhibit a percolation rate of greater than 2 inches per hour. These areas are thought to be substantial contributors of recharge to aquifers (water bearing units) at depth. For newly created parcels of less than 10 acres; the county requires a technical report to determine whether a septic system on the parcel can dispose of effluent without adversely affecting the groundwater.

Our study indicates that the property should be removed from Primary Groundwater Recharge status as defined by the Santa Cruz County ordinances. Septic effluent discharged beneath the property has a very low potential for contamination of the aquifer.

Please call if you have questions.

Sincerely,

ROGERS E. JOHNSON & ASSOCIATES

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

Environmental Review Inital Study
ATTACHMENT 11, 2 of 20
APPLICATION 05-0246

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INTRODUCTION

This report presents the results of our hydrogeologic investigation of the 12-acre parcel (APN 049-121-41) located on Larkin Valley Road in Santa Cruz County, California (Figure 1). The property owner proposes to subdivide the currently undeveloped parcel into two parcels of roughly equal acreage.

The purpose of our investigation was to evaluate the hydrogeologic conditions of the property and determine whether the conditions are conducive with removal of the property from Primary Groundwater Recharge constraint status. The scope of our study included the following:

1. Review of pertinent published and unpublished maps and reports;

2. Aerial photograph analysis;

3. Field mapping;

4. Subsurface exploration consisting of two deep borings;

5. Analysis of water well logs and logs of exploratory borings advanced on nearby properties; and

6. Preparation of this report and the accompanying graphics.

SITE LOCATION AND DESCRIPTION

The subject property is located on the northeast-facing flank of a low, northwest trending ridge in the Larkin Valley area of southern Santa Cruz County. Access if via an existing driveway off Larkin Valley Road. The moderately sloping northwestern flank meets Larkin Valley Road at about 160 feet. The subject property itself extends from just below the crest of the ridge to Larkin Valley Road. The slope averages about 17 percent grade. Vegetation consists primarily of a pine and eucalyptus forest with patchy, dense underbrush.

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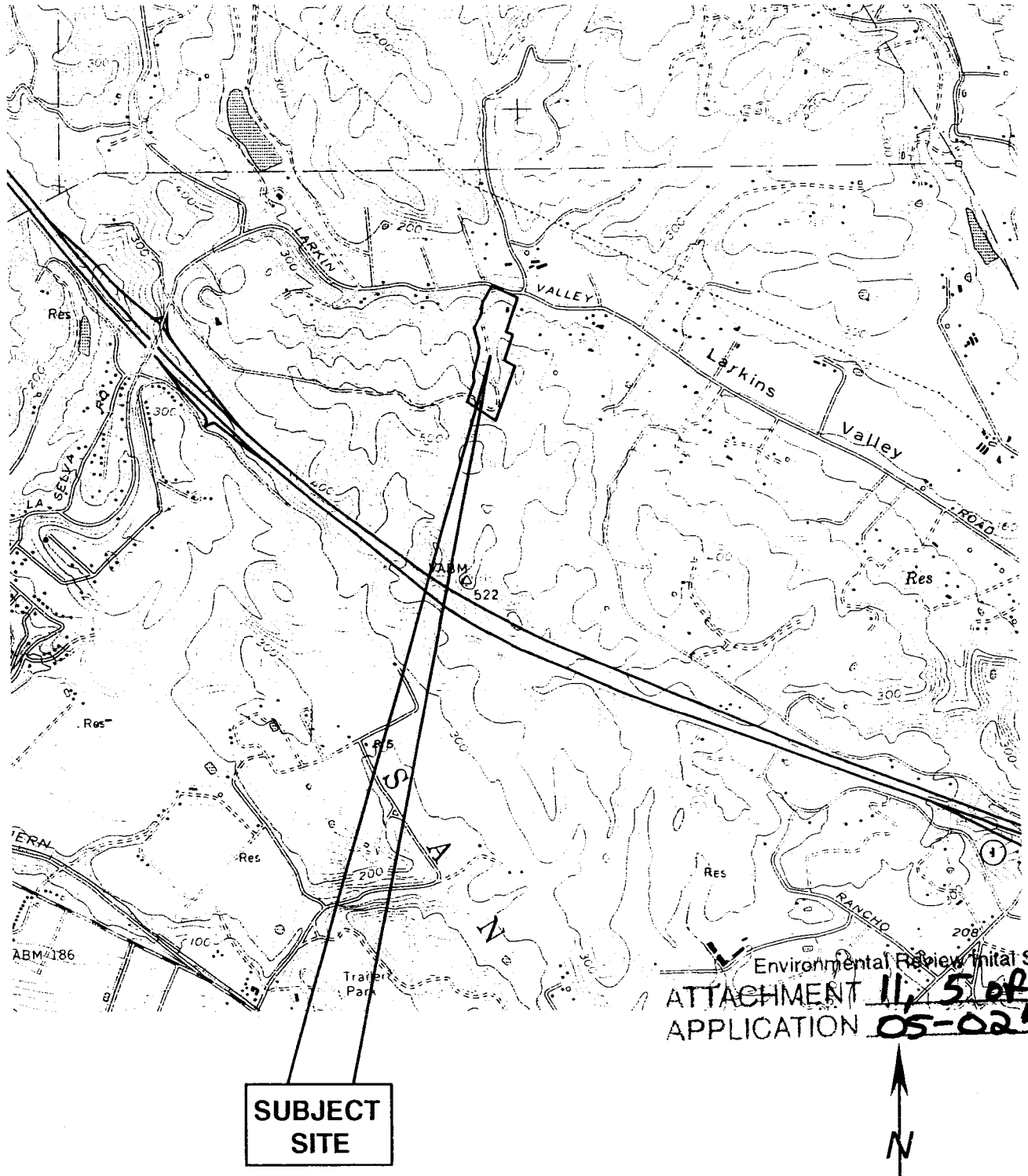
REGIONAL GEOLOGY

The subject property is underlain by the Aromas Formation of Pleistocene age (Figure 2). The Aromas Fomiation (also known as the Aromas Sand) consists of two members: a lower, fluvial facies containing interfingering gravel, sand: silt, and clay deposited in a meandering stream and estuary environment; and an upper eolian facies consisting of well-sorted, fine-grained sand deposited in a coastal dune field. As noted on Figures 2 and 3, the Aromas Formation in the Larkin Valley area strikes northeast and dips about 1° to the southeast. The maximum thickness of the Aromas deposits is in excess of 700 feet (Dupre and Tinsley, 1980).

EXHIBIT D



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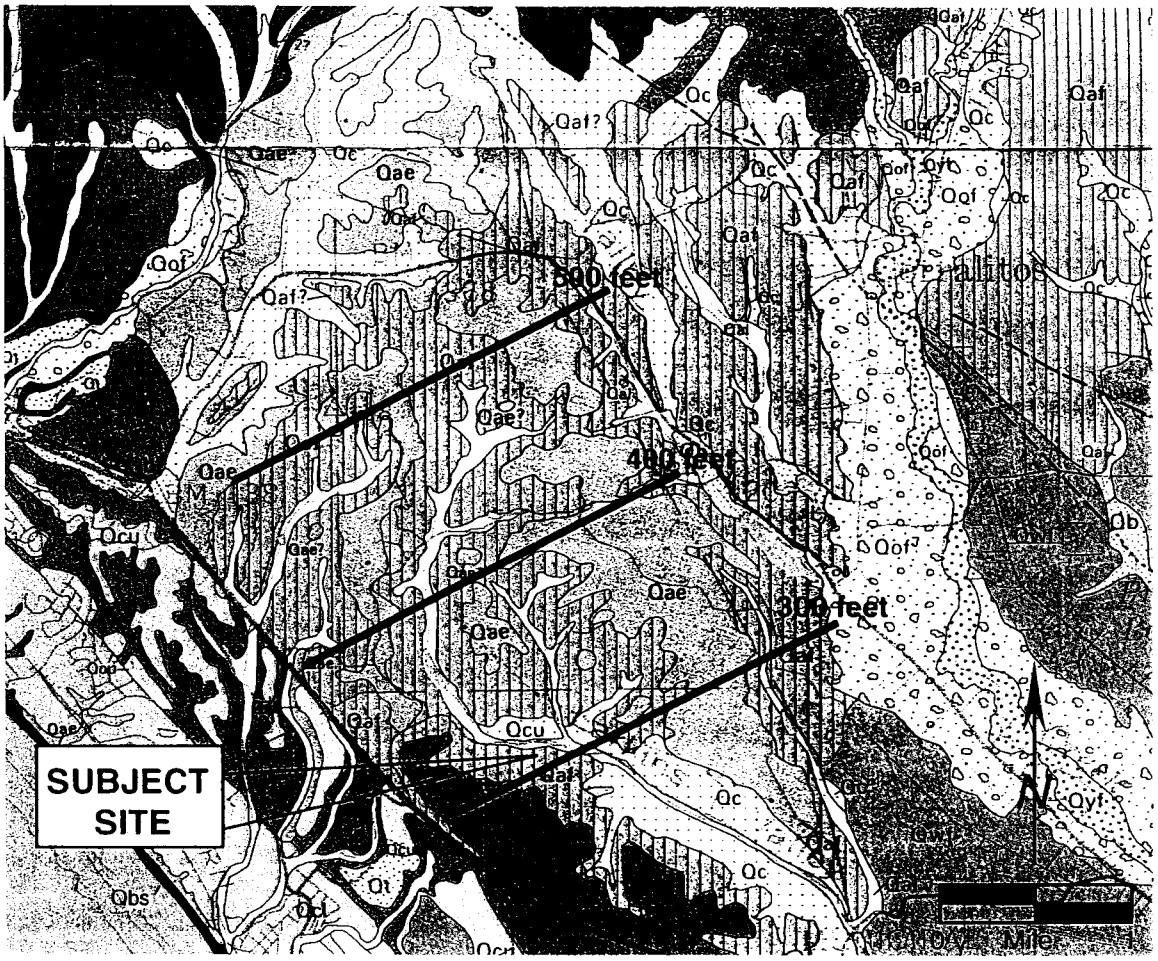
BASE MAP: WATSONVILLE WEST, CALIFORNIA, 7.5' Quadrangle, United States Geological Survey, 1954 (Photorevised 1980) Scale 1:24,000

ROGERS E. JOHNSON & ASSOCIATES Consulting Engineering Geologists 1729 Seabright Avenue Santa Cruz , California 95062 (831)425-1288 FAX (831)425-1136	**SITE LOCATION MAP** *King* APN 49-121-41 Larkin Valley Road Watsonville, California	**FIGURE #** 1 JOB # H98056 - 76

EXHIBIT D



EXPLANATION

Qc	Colluvium	**Tp**	Purisima Formation
Qal	Alluvium	**Tsc**	Santa Cruz Mudstone
Qyf	Younger flood-plain deposits	**Tsm**	Santa Margarita Formation
Qof	Older flood-plain deposits		Earth materials contact
Qb	Basin deposits		Fault
Qbs	Beach sand		Bedding attitude
Qt	Terrace deposits, undifferentiated	300 feet	Structure contour - on contact between eolian & fluvial facies of Aromas sand
Qwf	Terrace deposits of Watsonville - Fluvial facies		
Qcu	Coastal terrace deposits, undifferentiated		
Qcl	Lowest emergent coastal terrace deposits		
Qa	Aromas sand, undivided		
Qae	Aromas sand - eolian facies		
Qaf	Aromas sand - fluvial facies		
QTc	Continental deposits, undifferentiated		

contact oriented: N60-65E, 1.1 SE

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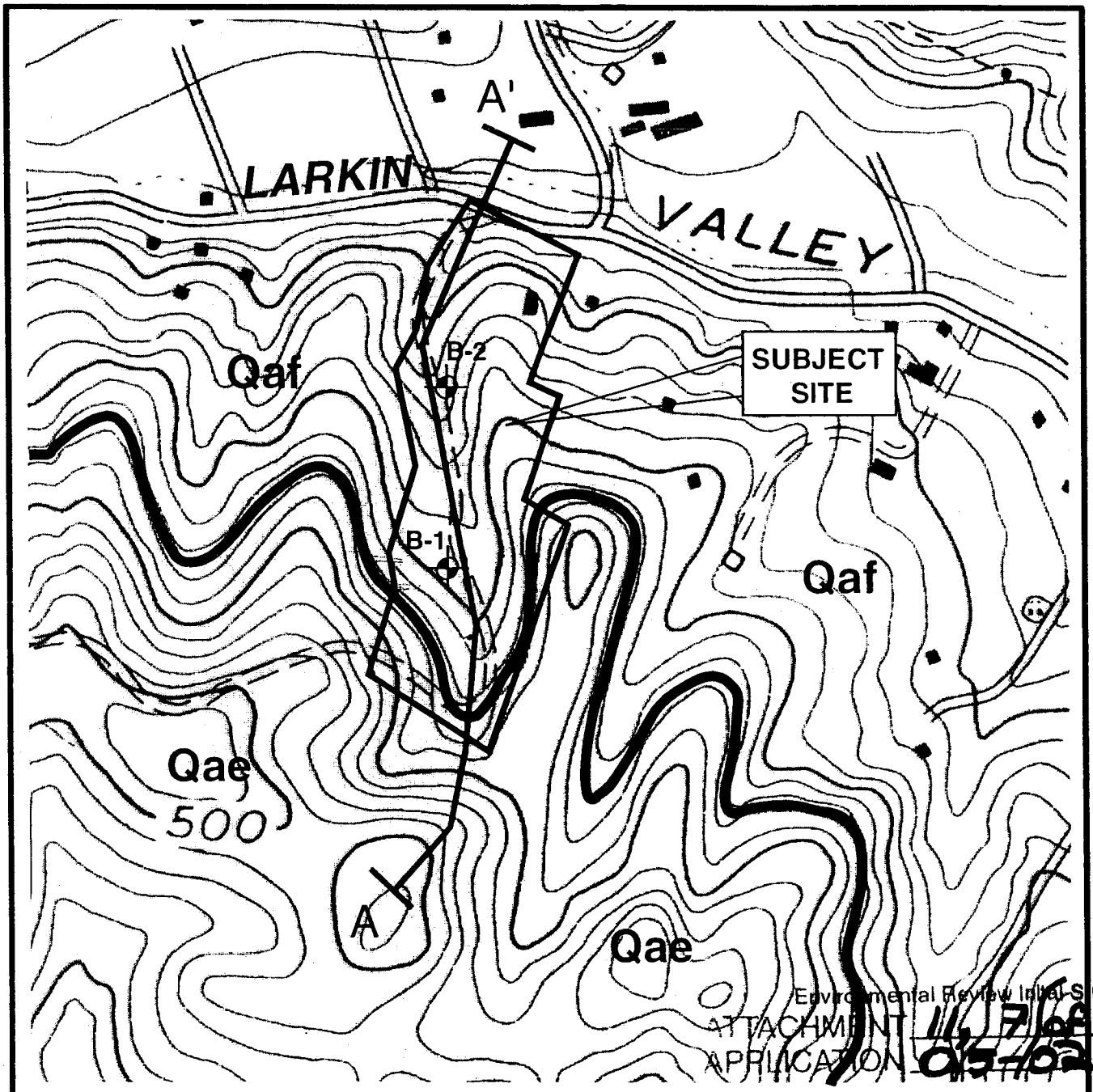
Base Map: "GEOLOGIC MAP OF SANTA CRUZ COUNTY, CALIFORNIA" by Earl E. Brabb, 1989, United States Geological Survey, Miscellaneous Investigation Series Map 1-1905, Scale 1:62,500

ROGERS E. JOHNSON & ASSOCIATES Consulting Engineering Geologists 1729 Seabright Avenue Santa Cruz , California 95062 (831)425-1288 FAX (831)425-1136	**GEOLOGIC MAP - Watsonville Lowlands** *King* **APN 49-121-41** Larkin Valley Road Watsonville, California	**FIGURE #** 2 JOB # H98056 - *76*

EXHIBIT D



BASE MAP: WATSONVILLE WEST, CALIFORNIA, 7.5' Quadrangle,
United States Geological Survey, 1954 (Photorevised 1980) Scale 1:24,000

Note - Geologic contact from Dupre and Tinsley 1980

ROGERS E. JOHNSON & ASSOCIATES Consulting Engineering Geologists 1729 Seabright Avenue Santa Cruz , California 95062 (831)425-1288 FAX (831)425-1136	**SIMPLIFIED GEOLOGIC MAP - Larkin Valley** *King* **APN** 49-121-41 Larkin Valley Road Watsonville, California	**FIGURE 3** JOB # H98056 - 76

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Throughout most of the Larkin Valley area, the fluvial and eolian members of the Aromas Formation are separated by a distinct clay unit, 10 of more feet thick, which was probably deposited in a lagoonal environment. This clay unit is especially well exposed in the Cabrillo Sand and Gravel Quarry on Freedom Boulevard, about 2 ½ miles north of the subject property (Dupre, 1971; Cotton, 1976). Less than a mile northeast of the subject site, our firm has detected the lagoonal clay in exploratory borings for previous hydrogeologic studies (Johnson, 1988, 1989, 1992).

REGIONAL GROUNDWATER

Significant amounts of groundwater are found in two geologic units in the vicinity of the subject property: 1) the Aromas Formation, and **2)** the Pliocene Purisima Formation (marine sandstone and siltstone) which underlies the Aromas Formation at depth (Figure **4).** The Aromas Formation forms the major aquifer (water bearing unit) from which groundwater is extracted for general use. Based on a conversation with Doug Coty of the Pajaro Valley Water Management Agency, the regional water table is about 5 feet above mean sea level in the Larkin Valley area. Perched groundwater of limited horizontal extent is common throughout the fluvial facies of the Aromas Formation due to the presence of impermeable clay layers.

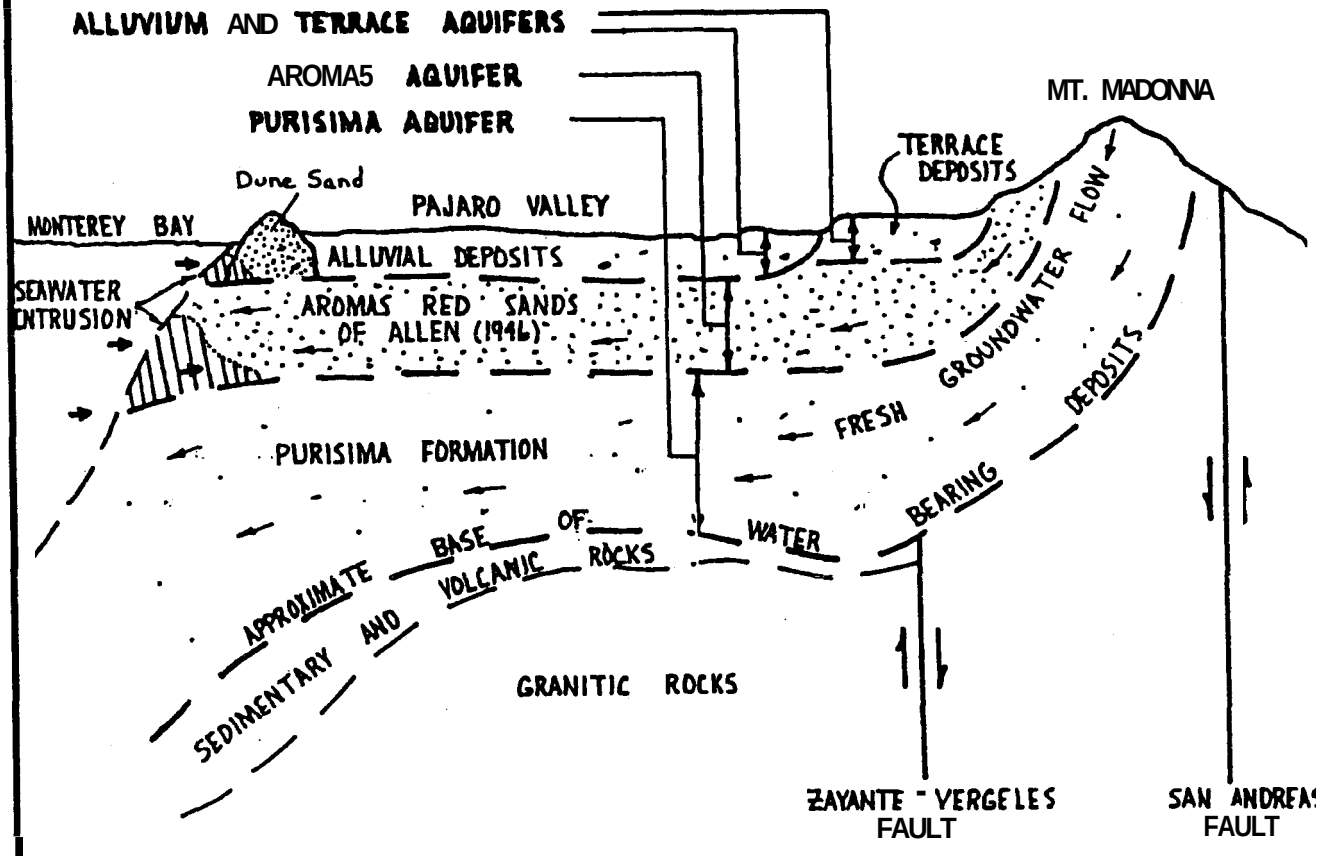
LOCAL GEOLOGY

The subject property is almost entirely underlain by the fluvial facies of the Aromas Formation, with the contact between the upper, eolian member and the lower, fluvial member about 300 feet in elevation near the top of the property (Figures 3 and 5). We drilled two 6-inch flight-auger borings on the property, both 100 feet deep, to characterize the subsurface distribution of earth materials (see Appendix A, Logs of Exploratory Borings). For additional subsurface information, we consulted existing well data and the logs of exploratory borings from a nearby geotechnical report (Raas, 1989; see Appendix B).

The borings advanced for this study encountered red-brown sands and silty sand with intervals of lagoonal clays found at varying elevations (see Appendix **A,** Logs of Exploratory Borings). Boring 1 encountered perched groundwater 24 feet below the ground surface. The water is perching on a silty clay unit located between 25 and 28 feet below the ground surface. Boring 2, which is located downslope about 600 feet horizontal distance and about 65 feet lower than Boring 1 , encountered perched water 7.5 feet below the ground surface. More clay was encountered at 16 feet below the ground surface and again at between 63 and 67 feet below the ground surface. **A** small spring is located near the intersection of the driveway on the property and Larkin Valley Road. This spring lies at an elevation of about +160 feet MSL which roughly corresponds with the elevation of the top of the clay layer encountered at a depth of 63 feet below the ground surface in Boring 2.

Unfortunately, we were unable to drill deep enough in Boring 1 to determine if the clay layer, encountered at 63 feet below the ground surface in Boring 2, was continuous across the entire

SCHEMATIC CROSS SECTION OF THE PAJARO VALLEY **AREA** SHOWING:
Location of aquifers, general groundwater flow,
and schematic presentation of seawater intrusion



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ROGERS E. JOHNSON & ASSOCIATES Consulting Engineering Geologists 1729 Seabright Avenue Santa Cruz , California 95062 (831)425-1288 **FAX** (831)425-1136	**REGIONAL CROSS SECTION-Pajaro Valley** *King* **APN** 49-121-41 Larkin Valley Road Watsonville, California	**FIGURE #** 4 JOB # H98056 - 76

EXHIBIT D

ROGERS E. JOHNSON & ASSOCIATES
Consulting Engineering Geologists
1729 Seabright Avenue
Santa Cruz, California 95062
(831)425-1288 FAX (831)425-1136

GEOLOGIC CROSS SECTION
King
APN 49-121-41
Larkin Valley Road
Watsonville, California

FIGURE # 5
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See Figure 3 (Simplified Geologic Map) for explanation.

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property. We can state, however, that we encountered relatively impermeable clay layers throughout the property.

Review of logs of borings for a geotechnical investigation by Steven Raas and Associates (1989), done for a 4-lot subdivision located about 1,000 feet northeast of the subject property, encountered clay layers **4** to 7 feet thick; the elevations of the top of these clay layers ranged between 107 and 122 feet MSL.

The logs of a water well, drilled in the vicinity of the subject property, also encountered a clay layer 20 to 30 feet thick, as described below.

LOCAL GROUNDWATER

Infomiation obtained from the Pajaro Valley Water Management Agency indicates that groundwater levels in the Larkin Valley area have been "hovering around sea level" for the past several years. A well, drilled in 1983, located adjacent to the west side of the subject property, encountered water 90 feet below the ground surface (see Appendix B). The elevation of the well head is approximately 180 feet, putting the water level at +90 feet MSL. The well log shows a 22-foot thick layer of "blue sand and clay'! between 90 and 112 feet below the ground surface. This water is perched on the clay layer and does not represent the regional ground water table.

Thus, the subsurface data indicates the property is underlain by fluvial facies Aromas Forniation containing numerous interbeds of clay that perch groundwater at various intervals before the regional water table is reached, approximately 150 to 400 feet below the ground surface. Both of our test borings encountered water perched on clay units. In addition, seeps noted adjacent to Larkin Valley Road and the clays encountered in test borings just northeast of the subject property attest to the numerous layers of clay (between 4 and 20 feet thick) that are found in the fluvial facies of the Aromas Formation in the immediate vicinity of the subject property.

SEPTIC EFFLUENT

Our investigation indicates that he building sites on the subject property are separated from the Aromas aquifer by numerous layers of clay. Subsurface borings on and near the property indicate the presence of numerous impenneable clay layers ranging between 4 and 20 feet thick at a depth of 90 feet of less; while the regional water table is at a depth ranging between 150 and 380 feet below the subject property. The layers of clay serve as impermeable barriers that interrupt the downward migration of groundwater from the ridge top. The perched water slowly flows over the clay layers until it presumably emerges as distributed seepage or discrete springs.

The question now arises whether septic effluent from the two building sites might contaminate the perched groundwater that eventually issues to the ground surface as seeps and springs. Based on the literature reviewed below, we do not believe this effluent will cause a problem.

In the early 1960s, Romero (1970) compiled data from several studies in Colorado to evaluate the characteristics of earth materials capable of adequately filtering septic effluent. Romero found that sediments with particle sizes less than 0.08 millimeters (mostly coarse silt and finer) demonstrate nearly complete removal of pathogens in the first 5 feet of travel distance. Sediments with particle sizes between 0.08 and 0.25 millimeters (mostly fine sand) demonstrate nearly complete removal with effluent travel of 5 to 20 feet. The sands, silts and clays that comprise a significant percent of the native material fluvial Aromas Formation beneath the proposed homesites is very effective in removing pathogens. Moreover, Franks (1972) argues that the finest 10 percent (by weight) of any sediment is most critical in determining its filtering properties. Most pathogens then will be removed within 5 to 10 feet of travel distance.

Even if we assume the unlikely, Olivieri and Roche (1979) have shown that whatever small amounts of bacterial and viral waste might reach the perched water will be removed after 100 feet of lateral travel distance. The leach field for any potential homesite on the subject property can be positioned and designed to allow for greater than 10 feet of separation between the invert of the leach lines and any perched water.

CONCLUSIONS AND RECOMMENDATIONS

1. The proposed homesites on the subject property should be removed from the Primary Groundwater Recharge constraint list because they lie above several impermeable clay layers (at a depth of 90 feet or less) which isolates the sites hydrologically from the regional water table at a depth ranging between 150 and 380 feet.

2. Septic effluent from the proposed ridge top homesites will not contaminate the seasonal perched water table forming over the clay layers.

3. Proposed septic leach fields should be investigated by a Registered Environmental Health Specialist or other licensed professional approved by the Santa Cruz County Environmental Health Service. This report should be carefully reviewed by the person designing the sewage disposal systems.

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INVESTIGATION LIMITATIONS

1. This report is <u>not</u> an engineering geologic report. It is limited to the hydrogeology of the subject property and in no way implies the sites will not be subjected to ground failure or seismic shaking so intense that structures will be severely damaged or destroyed.

2. This report is issued with the understanding that it is the duty and responsibility of the owner or her 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.

Environmental Review Inital Study
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REFERENCES

Aerial Photographs

October 14, 1975, Frames SZCZO, black and white, nominal scale 1:12,000, American Aerial Surveys, Sacramento, California.

Maps and Reports

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Olivieri, A.W. and Roche, R.J., (eds.), 1979, Minimum Guidelines for the Control of Individual Wastewater Treatment and Disposal Systems, California State Water Quality Control Board.

Raas, Steven and Associates, 1989, Geotechnical Investigation, 750 Larkin Valley Road, Watsonville, California, unpublished report.

Romero, J.C., 1970, The Movement of Bacteria and Viruses Through Porous Media *in* Olivieri, A.W. and Roche, R.F., (eds.), Minimum Guidelines for the Control of Individual

Wastewater Treatment and Disposal Systems, California State Water Quality Control Board, 1979.

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Styles, S., 1977, Pajaro Valley Groundwater Levels and Quality, Santa Cruz County Flood Control and Water Conservation District, 73 **p.**

EXHIBIT D

APPENDIX A

Logs of Exploratory Borings

ROGERS E. **JOHNSON & ASSOCIATES**
CONSULTING ENGINEERING GEOLOGISTS
1729 **Seabright Avenue. Suite D**
Santa Cruz, California 95062
e-mail: reja@bigfoot.com
Ofc (831) 425-1288 • **Fax** (831) 425-1136

Job No. G98056 **Date:** 08/07/98
Client: Katy King **Logged by:** JAO
Location: APN 049-121-41, Watsonville, California

Boring 1

Depth (ft)	Blow Counts/ Graphic Log	Description	Sample
	Sand	lark red brown, fine to med. sand with trace silt, mod. well rounded to subrounded, loose, moist	
5	L - 4, 7•, 7	ledium brown sand, less dark with depth	X
10			
15	L - 7, 10•, 11	;and with trace gravel and clay, wet	X
20			
	▼	Vater at 24' and slightly harder drilling	
25	T 10, 13, 15	nterbedded clayey silt and medium to coarse sand, light green gray and light red brown,	Bag
		espectively; wet. harder "chunky" drilling at 28: caving sands to 18'; **no samples** retrievable	
30			
		Coarse sand with some silt. wet	
35			
40		Sand with some silt	
		Dense sand with some silt	
45			
		Jery dense sands with intermittent gravel layers	
50			
		Sand "feels silty"	
55			
		Continued dense sands with some silt	
60			
65			
		Continued dense sands with some silt	
70			
		Very dense sands, gravel at 72'	
75			
80			
85			
90			
		Very dense sands	
95			
		Very dense sands	
100	Sand	Boring terminated at 100'	

• Sampled interval ▼ Water table

Sheet 1 of 1

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Log of Boring

ROGERS E. JOHNSON & ASSOCIATES
CONSULTING ENGINEERING GEOLOGISTS
1729 Seabright Avenue, Suite D
Santa Cruz, California 95062
e-mail: reja@bigfoot.com
Ofc (831) 425-1288 • Fax (831) 425-1136

Job No. G98056 **Date:** 08/07/98

Client: Katy King **Logged by:** JAO

Location: APN 049-121-41, Watsonville, California

Boring 2

Depth (ft)	Blow Counts/ Graphic Log	Description	Sample
	Sand	Very dark gray/black, sand and clay, moist, loose, lighter color with depth	
5	L - 2, 3, 3	Dark red brown, wet. medium to fine sand with some silt, loose	X
	▼	Water at 7.5	
10			
		Gravel at 12'	
15			
		Medium sand and clav at 16', wet	
20		Caving sands, no sample retrievable	
		Gravelly layers interbedded with sand	
25			
		Gravelly lavers interbedded with sand	
30			
		Gravelly layers interbedded with sand	
35			
		Verv dense sands	
40			
		Very dense sands	
45			
		Very dense sands with some interbedded gravel layers	
50			
		Very dense sand	
51			
		Very dense sand	
60			
		Harder drilling at 62': cohesive silt or clav with some sand	
65	Clayey		
	////////	Less dense at 67'	
70	gradational	Very dense sand	
	to	Gravelly at 74'	
75	87'		
		Very dense sand	
80			
		Very dense sand	
85			
	Dense sand		
90		Dense sands	
95		Dense sands	
100	Sand	Boring terminated at 100'	

• Sampled interval ▼ Water table

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APPLICATION 05-0246

Sheet 1 of

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APPENDIX B

Existing Well Data and Logs of Offsite Exploratory Borings

Existing Well Data and Logs of Offsite Exploratory Borings

King Property Well Log Review
August 4,1998

---

835 Larkin Valley Road
Property West of King Property
North End of Property (seen from driveway)

Drill date: 6/27/83 **Water:** 90' bgs **UTM grid card:** 043 899

Log:		
	0 - 2 feet	Top soil
	2 - 22 feet	Fine yellow sand
	22 - 48 feet	Coarse yellow sand
	48 - 68 feet	Fine yellow sand
	68 - 90 feet	Coarse brown sand
	90 - 112 feet	Blue sand and clay
	112 - 135 feet	Brown sand
	135 - 261 feet	Fine brown sand

---

719 Larkin Valley Road

Drill date: 11/94 **Water:** Level unknown

Log:		
	0 - 4 feet	Sand
	4 - 35 feet	Brown sandy clay
	35 - 43 feet	Gravel and sand
	43 - 130 feet	Gravel
	130 - 140 feet	Gravel
	140 - 200 feet	Gravel and sand
	200 - 220 feet	Sand and gravel
	220 - 240 feet	Sand
	240 - 260 feet	Sand and gravel
	260 - 300 feet	Gravel and sand
	300 - 320 feet	Sand

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EXHIBIT D

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26 April 2001

H98056-76

Mr. Richard Emigh
Emigh Land Use Analysis
413 Capitola Ave.
Capitola, **CA** 95010

Subject: Ground Water Recharge on King Property, Larkin Valley Area
APN 049-121-4I

Environmental Review Initial Study
ATTACHMENT 12, Lok 2
APPLICATION 0

Dear Mr. Emigh:

At the request of Jerry Bowden, I have reviewed our original hydrogeologic report (REJA, 2000) **as** well as the notes from numerous meetings I have liad with county staff and reiterate that, in my opinion, it is quite clear that two septic systems on the subject, roughly twelve acre, property would not have an adverse effect on the water quality of the aquifer that underlies the Larkin Valley area. The silty fine sands and clays that underlie the property have the capacity to filter out any pathogenic contaminants within the septic leachate long before the leachate would reach the ground water table.

As we state in our report: "Our investigation indicates that the building sites on the subject property are separated from the Aromas aquifer by numerous layers of clay. Subsurface borings on and near the property indicate the presence of numerous impermeable clay layers ranging between **4** and 20 feet thick at a depth of 90 feet or less; while the regional water table is at a depth ranging between 150 and 380 feet below the subject property. The layers of clay serve as impermeable barriers that interrupt the downward migration of groundwater froin the ridge top. The perched water slowly flows over the clay layers until it presumably emerges as distributed seepage or discrete springs.

The question now arises whether septic effluent from the two building sites niight contaminate the perched groundwater that eventually issues to tlie ground surface as seeps and springs. Based on the literature reviewed below, we do not believe this effluent will cause a problem.

In the early 1960s, Romero (1970) compiled data from several studies in Colorado to evaluate the characteristics of earth materials capable of adequately filtering septic effluent. Romero found that sediments with particle sizes less than 0.08 millimeters (mostly coarse silt and finer) demonstrate nearly complete removal of pathogens in the first 5 feet of travel distance. Sediments with particle sizes between 0.08 and 0.25 millimeters (mostly fine sand) demonstrate nearly complete removal with effluent travel of 5 to 20 feet. The sands, silts and clays that comprise a significant percent of the native material fluvial Aromas Formatic- 101 -ith the proposed home sites is very effective in

EXHIBIT D

removing pathogens. Moreover, Franks (1972) argues that the finest 10 percent (by weight) of any sediment is most critical in determining its filtering properties. Most pathogens then will be removed within 5 to 10 feet of travel distance.

Even if we assume the unlikely, Olivieri and Roche (1979) have shown that whatever small amounts of bacterial and viral waste might reach the perched water will be renioved after 100 feet of lateral travel distance. The leach field for any potential homesite on the subject property can be positioned and designed to allow for greater than 10 feet of separation between the invert of the leach lines and any perched water."

This concludes our letter; please contact us if you have questions.

Sincerely,

ROGERS E. JOHNSON & ASSOCIATES

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

REJ

copies: addressee **(4)**
Katy King
Jerry Bowden

References

Jolmson, R.E. and Associates, 2033, Hydrogeologic Investigation, King Property, Larkin Valley Road, Watsonville, California, Santa Cruz County APN 049-121-41, 14 March 2000

Oliveri, A. W. and Roche, R. J., (eds.), 1979, Minimum Guidelines for the Control of Individual Wastewater Treatment ands Disposal Systems, California State Water Control Board.

Romero, J. C., 1970, The movement of Bacteria and Viruses Through Porous Media *in* Oliveri, A.W. and Roche, R. J., (eds.), 1979, Minimum Guidelines for the Control of Individual Wastewater Treatment ands Disposal Systems, California State Water Control Board.

Environmental Review Inital Study
ATTACHMENT 12, 2 of 2
APPLICATION 05-0246

EXHIBIT D

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DRAINAGE CALCULATIONS

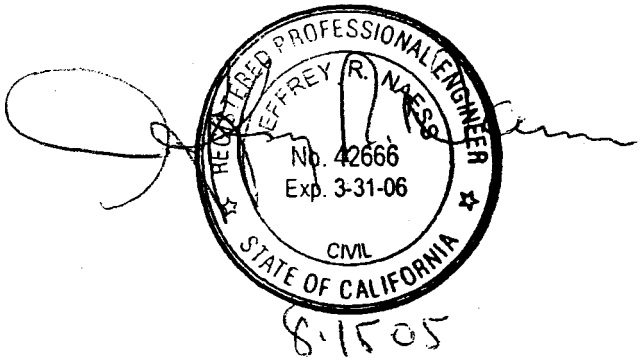
Prepared for

Quail Canyon Road
Minor Land Division
Santa Cruz, CA

APN: 049-121-41

BOWMAN & WILLIAMS FILE NO. 21578

March 8,2004
Revised August 11, *2005*



8-15-05

References:

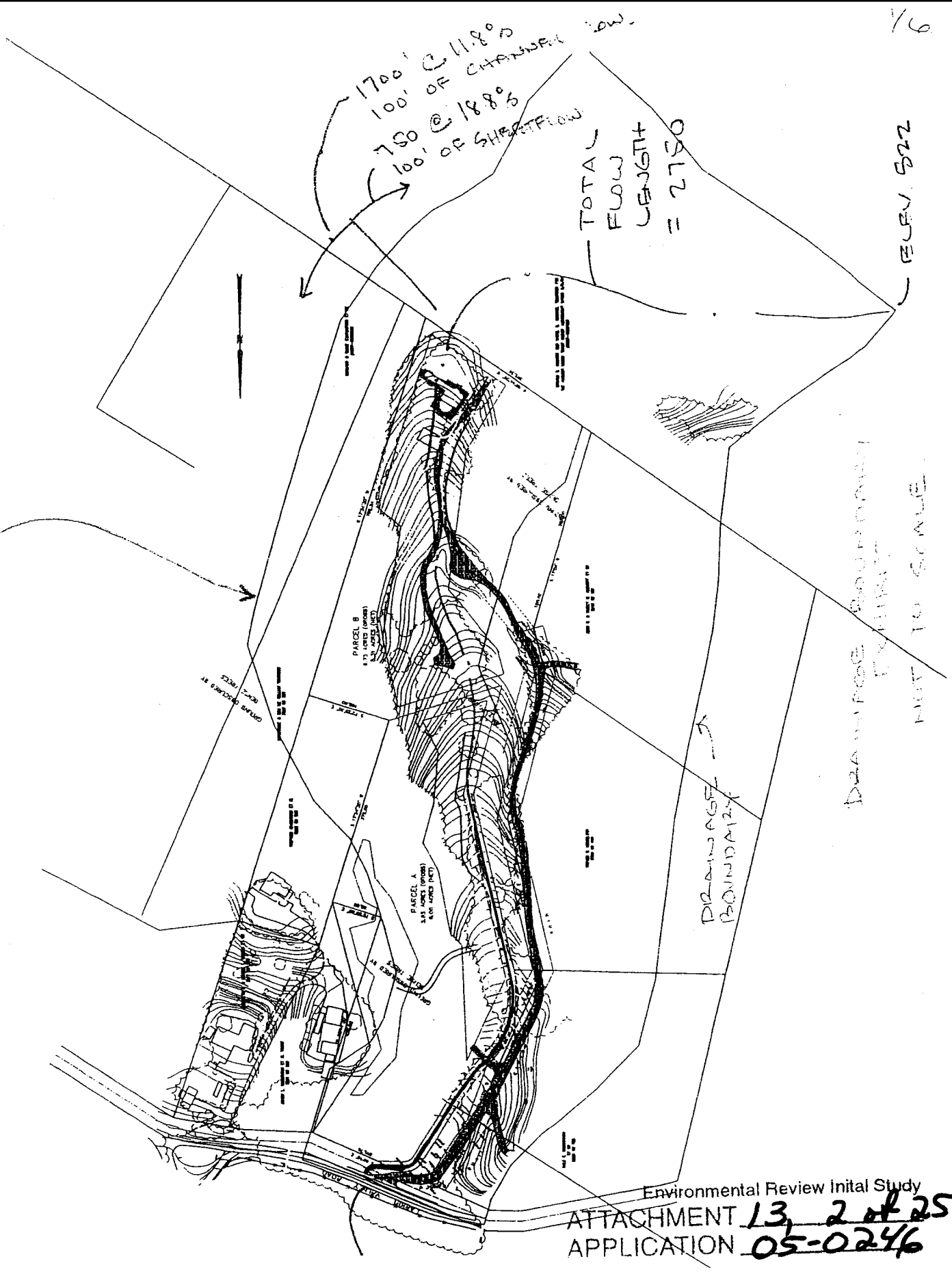
1. County of Santa Cruz, Design Criteria, Part 3, Storm Drainage

2. TR55 Method for Determining Runoff in Small Watersheds – US Dept of Agriculture Soil Conservation Service, Technical Release 55, June 1986

References:

County of Santa Cruz, Design Criteria: Part 3, Storm Drainage

1. Drainage Analysis — Sheets 1-11
2. Appendix — Sheets A1-A13



Environmental Review Inital Study
ATTACHMENT 13 2 of 25
APPLICATION 05-0246

EXHIBIT D

Worksheet 2: Runoff curve number and runoff

Project QUAIL CANYON RD (KING) By JS Date 9.4.03

Location SANTA CRUZ CO. Checked ____ Date ____

Circle one: (Present) Developed

1. Runoff curve number (CN)

Soil name and hydrologic group (~~appendix A~~)	Cover description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN 1/ Table 2-2	CN 1/ Fig. 2-3	CN 1/ Fig. 2-4	Area ☑acres ☐mi² ☐%	Product of CN x area
GROUP 'A'	BRUSH (FAIR CONDITION) (LARGE LOTS > 5 ACRES)	35			18.4	644
GROUP 'B'	WOODS - GRASS COMBINATION (LARGE LOTS > 5 ACRES) (FAIR)	65			16.4	1066

Use only one CN source per line. Totals = 34.8 1710

CN (weighted) = $\frac{\text{total product}}{\text{total area}} = \frac{1710}{34.8} = 44$ Use CN = 49

2. Runoff

	Storm #1	Storm #2	Storm #3	STM #4
Frequency ..... yr	10 YR	25 YR	50 YR	100 YR
USE AVE. BTWN STA.'S 8680 & 20 SEE SHEET A3 Rainfall, P (24-hour) ..... in	3.99	4.69	5.19	5.66
Runoff, Q USE FIG. 2-1 ..... in (Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)	.18	.30	.45	.63

$P_{2YR} = 2.45$

Environmental Review Inital Study
ATTACHMENT 13, 3 of
APPLICATION 05-0246

EXHIBIT I

Worksheet Time of concentration (T_c) or .vel time (T_t)

Project QUAIL CANYON RD. (KING) By JS Date 9 4 03

Location SANTA CRUZ CO. Checked _____ Date _____

Circle one: Present Developed

Circle one: (T_c) T_t through subarea

NOTES: Space for as many as two segments per flow type can be used for each worksheet.

Include a map, schematic, or descripcion of flow segments.

Sheet flow (Applicable to T_c only)		Segment ID		
1. Surface description (~~table 3-1~~ A7)		Light Underbrush		
2. Manning's roughness coeff., n (~~table 3-1~~ A7)		0.40		
3. Flow length, L (total L ≤ 300 ft)	ft	100		
4. Two-yr 24-hr rainfall, P_2	in	1.93		
5. Land slope, s	ft/ft	0.33		
6. $T_t = \frac{0.007\ (nL)^{0.8}}{P_2^{0.5}\ s^{0.4}}$ Compute T_t	hr	.12	+	= .12

Shallow concentrated flow		Segment ID		
7. Surface description (paved or unpaved)		UNPAVED	UNPAVED	
8. Flow length, L	ft	1700	750	
9. Watercourse slope, s	ft/ft	.118	.188	
10. Average velocity, V (~~figure 3-1~~ A8)	ft/s	5.5	7	
11. $T_t = \frac{L}{3600\ V}$ Compute T_t	hr	.09	+ .03	= .12

Channel flow		Segment ID		
12. Cross sectional flow area, a	ft2	2.0		
13. Wetted perimeter, p_w	ft	4.47		
14. Hydraulic radius, $r = \frac{a}{p_w}$ Compute r	ft	0.44		
15. Channel slope, s	ft/ft	0.02		
16. Manning's roughness coeff., n		0.035		
17. $V = \frac{1.49\ r^{2/3}\ s^{1/2}}{n}$ Compute V	ft/s	3.48		
18. Flow length, L	ft	100		
19. $T_t = 3600\ V$ Compute T_t	hr	0.02	+	= 0.01
20. Watershed or subarea T_c or T_t (add T_t in steps 6, 11, and 19)	hr			.25

15 MIN

Environmental Review Inital Study
ATTACHMENT 13, 4 of 25
APPLICATION 05-0246

Worksheet 4: Graphical **Peak** Discharge method

Project QUAIL CANYON RD (KING) By JS Dace 9-4-03

Location SANTA CRUZ CO. Checked _____ Dace _____

Circle one: (Present) Developed

1. Data:

Drainage area ..... A_m = .054 mi^2 (acres/640)

Runoff curve number .... CN = 39 (From worksheet **2**)

Time of concentration .. T_c = 15 hr (From worksheet *3*)

Rainfall distribution type = I (I, IA, II, III) SEE SHT A11

Pond and swamp areas spread t'hroughout watershed ..... = 0 percent of A_m (✓ acres or mi^2 covered)

		Storm #1	Storm #2	Storm #3	
2.	Frequency ..... yr	10Y	25Y	50Y	100Y
3.	Rainfall, P (24-hour) ..... in	3.99	4.69	5.19	5.66
4.	Initial abstraction, I_a ..... in (Use CN with table ~~4-1~~ A5.)	2.082	2.082	2.082	2.082
5.	Compute I_a/P	.52	.44	.40	.37
6.	Unit peak discharge, q_u ..... csm/in (Use T_c and I_a/P with exhibit 4- I) (A4)	50	80	125	155
7.	Runoff, Q ..... in (From worksheet 2).	.30	.55	.75	.95
8.	Pond and swamp adjustment factor, F_p .... (Use percent pond and swamp area with ~~table 4-2~~. Factor is 1.0 for zero percent pond and swamp area.)	1.0	1.0	1.0	1.0
9.	Peak discharge, q_p ..... cfs (Where $q_p = q_u A_m Q F_p$)	.81	2.34	5.06	7.95

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ATTACHMENT 13, 5 of 25
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10Y $q_p = 50 \times 0.054 \times .30 = .81$ CFS

25Y $80 \times 0.054 \times .55 = 2.34$ CFS

50Y $125 \times 0.054 \times .75 = 5.06$ CFS

100Y $155 \times 0.054 \times .95 = 7.95$ CFS

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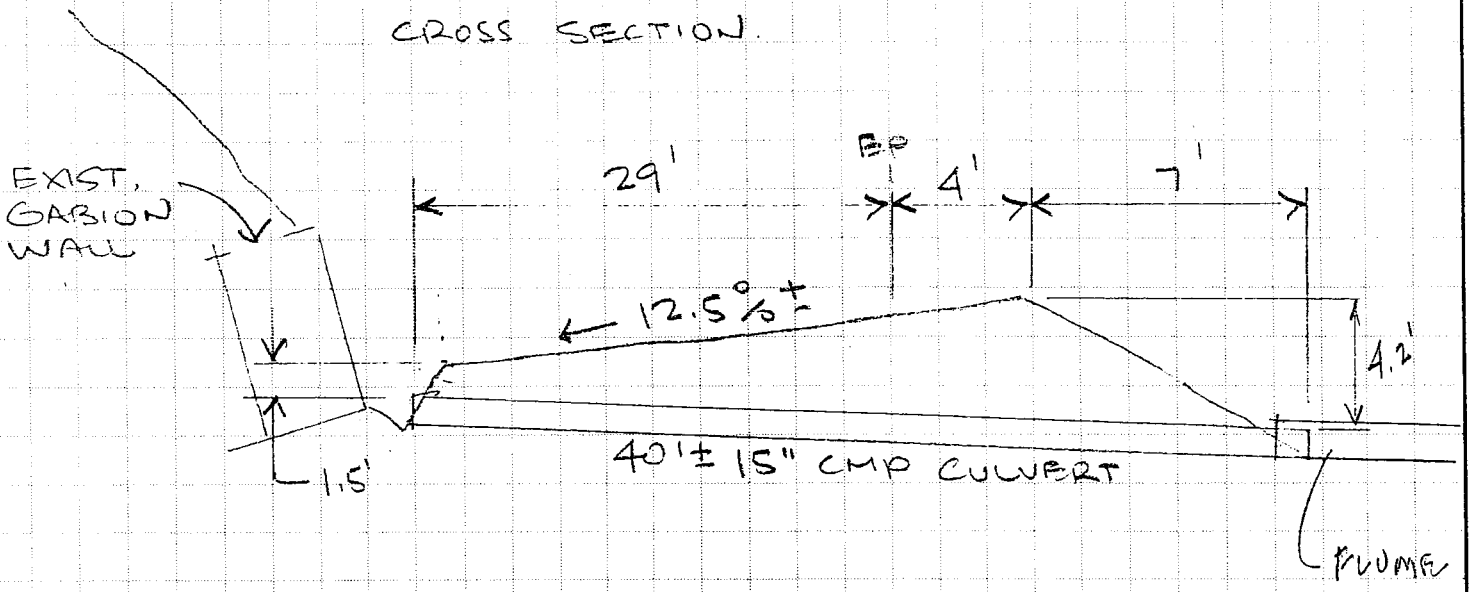
JOB
SHEET NO OF
CALCULATED BY DATE
CHECKED BY DATE
SCALE

EXISTING CULVERT
CROSS SECTION



LOOKING WEST DOWN
LARKIN VALLEY ROAD.

NOT TO SCALE

Environmental Review Inital Study
ATTACHMENT 13, 6 & 25
APPLICATION 05-0246

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JOB _____ _____

SHEET NO _____ OF _____

CALCULATED BY _____ DATE _____

CHECKED BY _____ DATE _____

CHECK EXISTING 15" CMP CULVERT ACROSS LARKIN VALLEY ROAD (USE CULVERT PROJECTING)

- ASSUME PIPE IS UNDER INLET CONTROL (SEE CHART 5 ON SHT 6)

	H_w/D	H_w	HT. ABOVE PIPE CROWN BELOW CROWN
FOR Q_{25} =>	.74	=> .93	
Q_{50}	1.35	1.69	+ .44
Q_{100}	2.40	3'	+ 1.75

FROM FIELD MEASUREMENTS THE ACTUAL HT IS ABOUT 1.5' TO THE EDGE OF PAVEMENT SO CULVERT IS ABLE TO HANDLE 100 YEAR FLOW WITH VERY MINOR ROADWAY FLOODING $\frac{.25}{.125} = 2'$ INTO EASTBOUND LANE.

- ASSUME PIPE IS UNDER OUTLET CONTROL (SHT 9)

		H
FOR	Q_{25} =>	.3'
	Q_{50}	1.6'
	Q_{100}	3.8'

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BY INSPECTION IN THE FIELD THE ACTUAL H IS SOMEWHERE BETWEEN 1.5 & 2' CULVERT IS MOST LIKELY UNDER OUTLET CONTROL FOR Q_{100}

CHECK NEW 18"ϕ CULVERT @ QUAIL RUN ENTRANCE

$$R^{2/3} = \left(\frac{A}{P}\right)^{2/3} = \left(\frac{\frac{\pi(1.5)^2}{4}}{2\pi(.75)}\right)^{2/3} = .52$$

$$Q = \frac{1.49}{n} R^{2/3} S^{1/2} A \quad \text{CHECK SLOPE FOR } Q_{25}$$

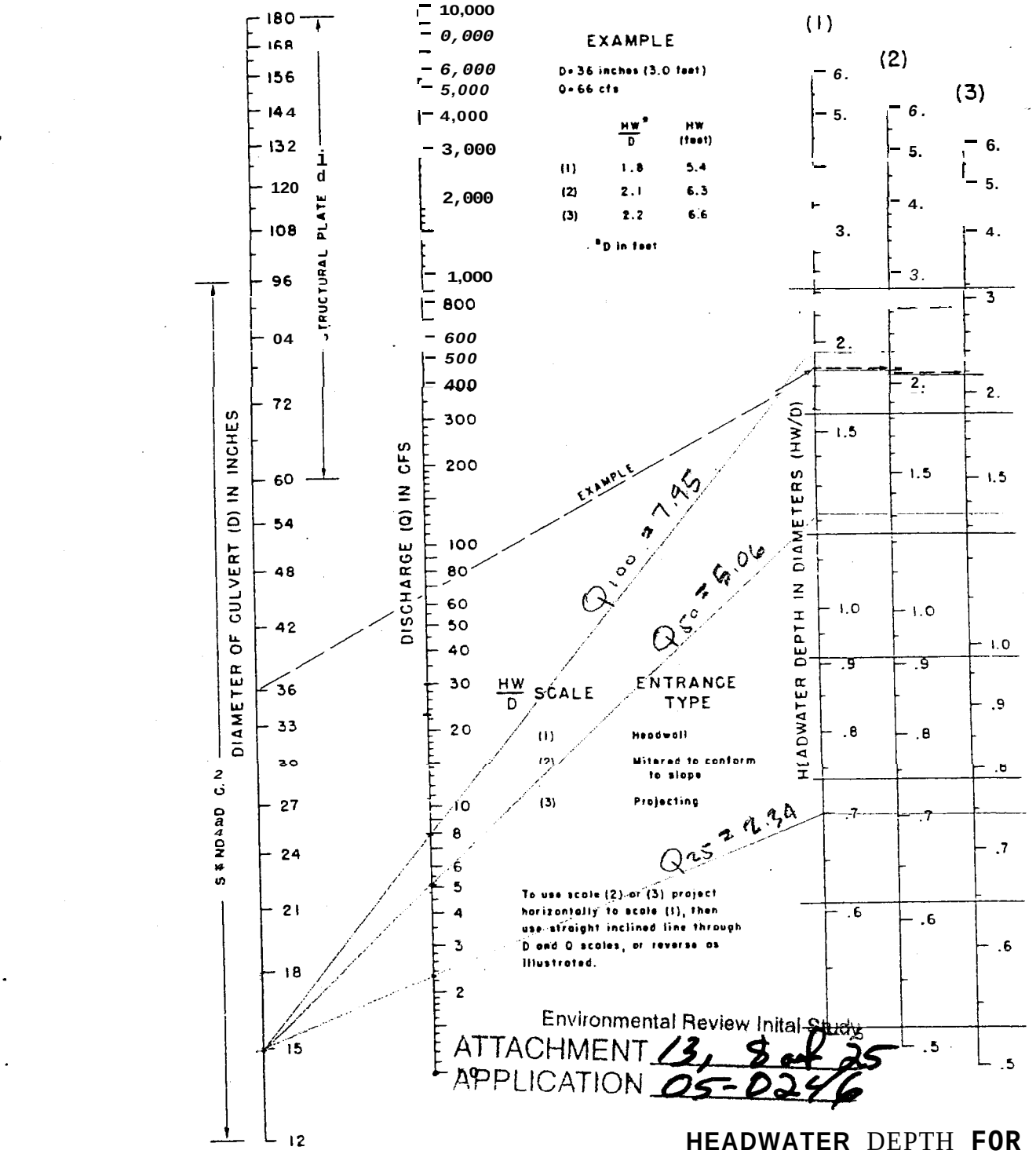
$$S = \left[\frac{(7.95)(.01)}{(.52)\left(\frac{\pi(1.5)^2}{4}\right)(1.49)}\right]^2 = .0034 \text{ OR } .34\%$$

OK SLOPE IS 20 - 30%

EXHIBIT D

1/6

CHART 5



USE SCALE #3 (PROJECTING)

BUREAU OF PUBLIC ROADS JAN. 1963

HEADWATER DEPTH **FOR**
C. M. PIPE CULVERTS
WITH INLET CONTROL

Environmental Review Inital Study
ATTACHMENT 13, 8 of 25
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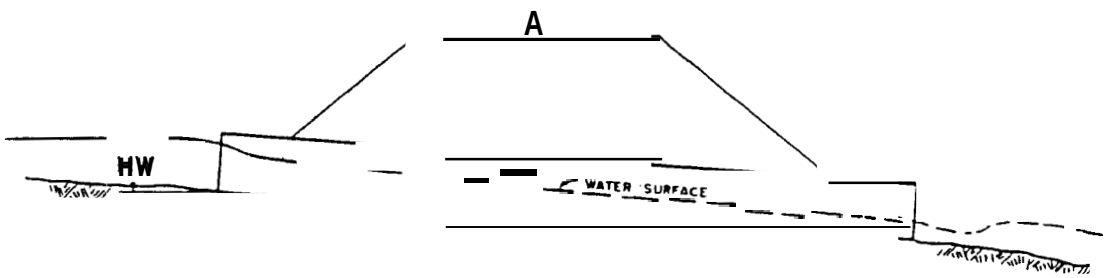
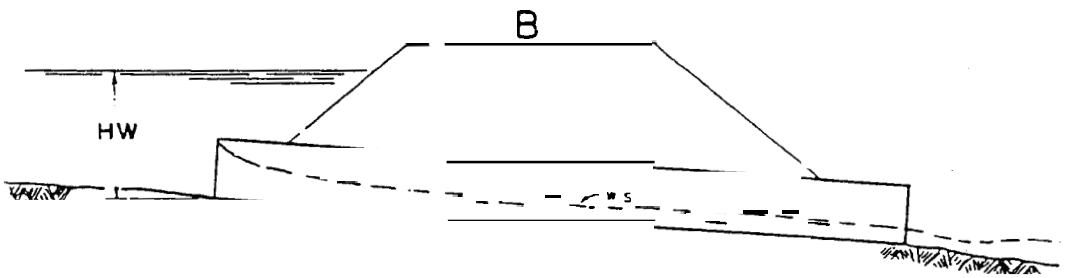
	Hw/D	Hw
Q_{25}	.74	.93'
Q_{50}	1.35	1.69'
Q_{100}	2.40	3'

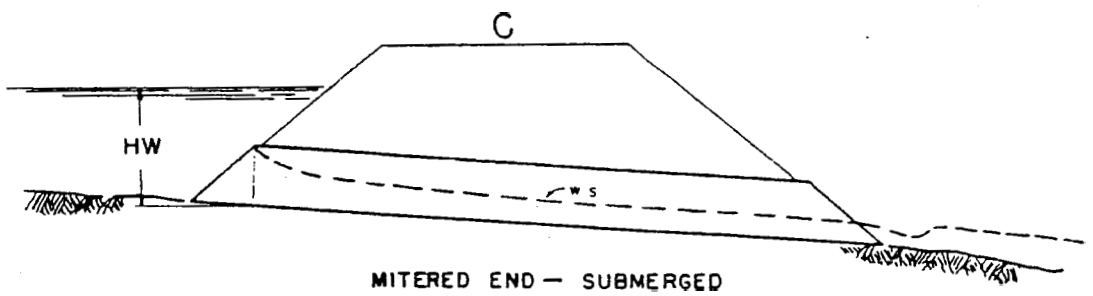
EXHIBIT D



PROJECTING END – UNSUBMERGED



PROJECTING END – SUBMERGED

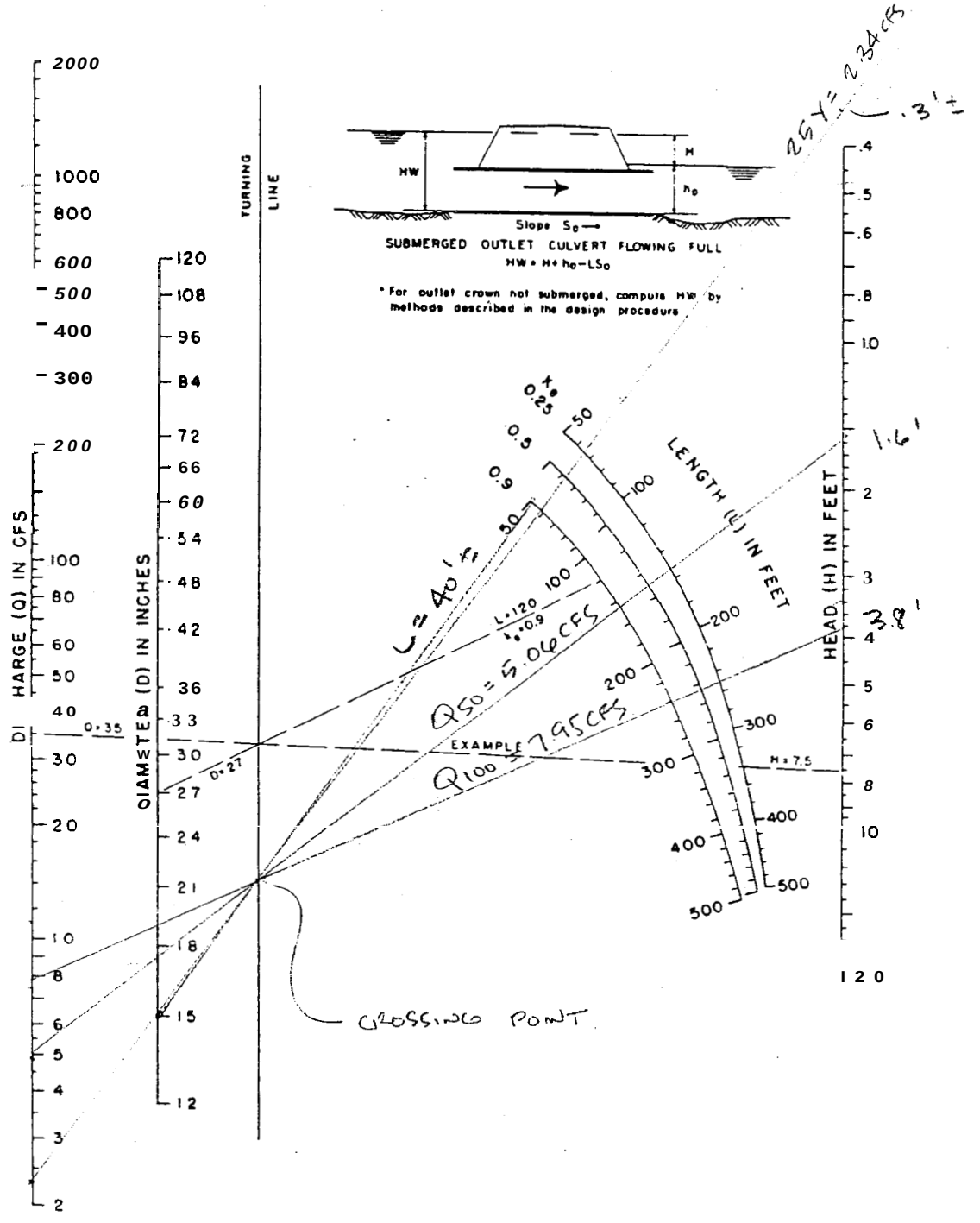


MITERED END – SUBMERGED

INLET CONTROL

Figure I

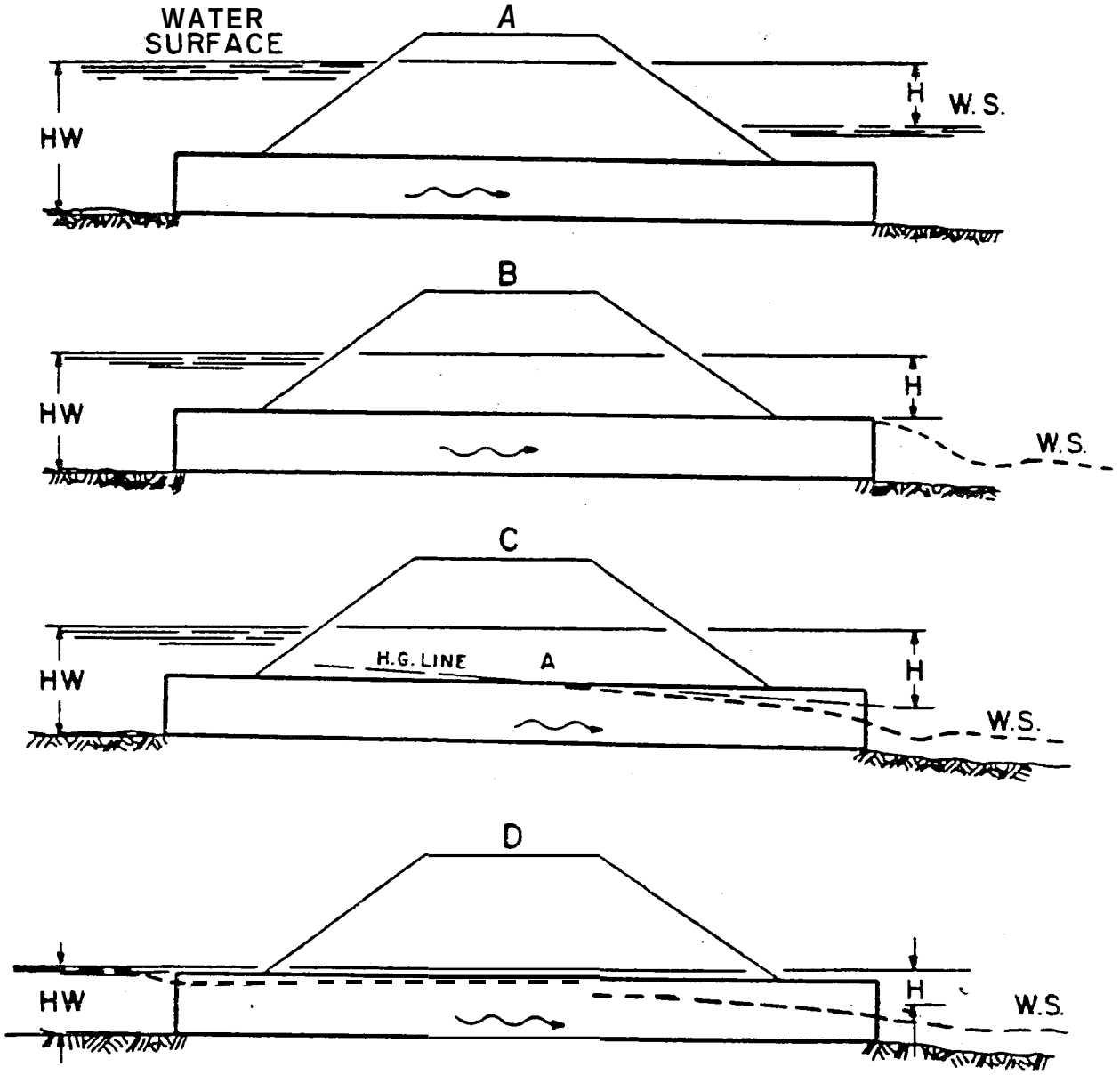
CHART 11



HEAD FOR STANDARD C. M. PIPE CULVERTS FLOWING FULL n = 0.024

BUREAU OF PUBLIC ROADS JAN 1963

5-34



OUTLET CONTROL

Figure 2

Environmental Review Initial Study
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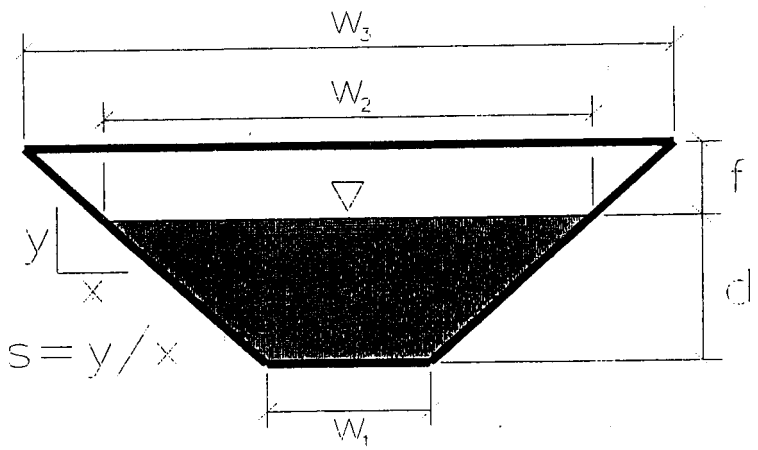
APPLICATION 05-0246

EXHIBIT D

Open Channel Calculations for King parcel

23 February, 2004
Job # 21578

Flow Q = 7.30 cfs (from the drainage calculations)



Channel geometry

bottom of channel width w_1 =	0.00	ft
slope of sides of channel s =	0.33	
depth of channel d =	0.75	ft
water surface width w_2 =	4.55	ft
top of channel width w_3 =	7.58	ft
freeboard height f =	0.50	ft

Manning's equation $Q=VA=(1.49/n)R^{2/3}S^{1/2}A$

roughness coefficent n =	0.035	
slope of the energy grade line S =	0.05	
area of channel A =	1.70	ft^2
wetted perimeter p =	4.55	ft
hydraulic radius R = A/p =	0.38	ft
velocity V =	4.95	ft/s
maximum flow Q_{max} =	8.44	cfs

> 7.95 cfs OK !

Environmental Review Initial Study
ATTACHMENT 13
APPLICATION 05-0276

EXHIBIT 1

SOILS SURVEY MAPS @ 1" = 1000'

TABLE 13.--SOIL AND WATER FEATURES--Continued

Soil name and map symbol	Hydrologic group	High water table			Bedrock		Risk of corrosion	
		Depth	Kind	Months	Depth	Hardness	Uncoated steel	Concrete
		Ft			In			
136*: Elkhorn	B	>6.0	---	---	>60	---	Moderate	Low.

TABLE 13.--SOIL AND WATER FEATURES

[The definition of "water table" in the Glossary explains the terms "apparent" and "perched." The symbol > means more than. Absence of an entry indicates that the feature is not a concern.]

Soil name and map symbol	Hydrologic group	High water table			Bedrock		Risk of corrosion	
		Depth	Kind	Months	Depth	Hardness	Uncoated steel	Concrete
		Ft			In			
100, 101, 102----- Aptos	C	>6.0	---	---	20-40	Rippable		
103. Aquents.								
104, 105, 106, 107----- Baywood	A	>6.0	---	---	>60	---	Moderate	Moderate
108----- Baywood Variant	B/D	2.0-4.0	Perched	Nov-Mar	>60	---	High	Low

PRECIPITATION DEPTH-DURATION-FREQUENCY TABLE

STATION NO. BSN ORDER SUB	STAT	NAME	ELEV	SEC	TWP	RNG LOT	BMM	LATI.	LONGITUDE	COUNTY
010 8660 0		SUNSET BEACH STATE PARK	85		12S	01E	M	36.900	121.833	SANTA CRUZ

MAXIMUM PRECIPITATION (IN) FOR INDICATED DURATION D=DAYS H=HOURS M=MINUTES

RETURN PERIOD IN YEARS	5M	10M	15M	30M	1H	2H	3H	6H	12H	24H	C-YR
2	0.13	0.18	0.21	0.31	0.46	0.66	0.81	1.21	1.53	2.02	18.84
5	0.18	0.24	0.29	0.42	0.43	0.90	1.11	1.65	2.10	2.76	24.49
10	0.20	0.28	0.33	0.48	0.72	1.04	1.28	1.90	2.41	3.18	27.69
20	0.23	0.31	0.37	0.54	0.80	1.16	1.42	2.12	2.69	3.54	30.46
25	0.23	0.32	0.38	0.55	0.83	1.19	1.67	2.19	2.77	3.65	31.29
40	0.25	0.34	0.41	0.59	0.88	1.26	1.55	2.32	2.90		32.91
50	0.25	0.35	0.42	0.60	0.90	1.30	1.60	2.38	3.01		33.73
100	0.27	0.38	0.45	0.65	0.97	1.39	1.71	2.56	3.24	3.97	35.99
200	0.29	0.40	0.48	0.69	1.03	1.48	1.83	2.72	3.45	4.26	38.13
1000	0.33	0.46	0.54	0.78	1.17	1.68	2.07	3.08	3.91	5.14	02.71
10000	0.38	0.52	0.62	0.90	1.35	1.93	2.38	3.55	0.50	5.92	48.67
PMP	0.94	1.29	1.54	2.22	3.33	4.77	5.88	8.77	11.11	14.62	115.20
MEAN	0.133	0.184	0.219	0.315	0.472	0.678	0.835	1.244	1.577	2.075	19.265
CLOCK HR. COR.	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
CALCULATED SKEW	0.732	0.973	0.823	1.205	1.173	1.078	0.971	0.750	0.800	1.101	0.783
REGIONAL SKEW	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400
SKEW USED	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400

SLOPE OF LOG INTENSITY / LOG TIME = -.480 ; INTERCEPT (TIME=1 HOUR) =0.467 ; COEFFICIENT OF DETERMINATION = 0.998
1HR INTERCEPT / MEAN YR =0.02423 ; AVERAGE CALC CV / USED CV = 0.84

KURTOSIS	3.894	3.693	3.166	4.267	4.628	4.799	4.420	3.706	3.052	0.291	3.497
N	20	20	26	26	35	31	31	35	31	35	28
RECORD YEAR	1958	1962	1962	1967	1967	1967	1959	1959	1959	1959	1941
RECORD MAXIMUM	0.230	0.360	0.380	0.590	0.910	1.270	1.600	2.360	2.980	4.630	35.170
NORMILIZED MAX	2.019	2.547	2.052	2.641	3.087	2.819	2.826	2.820	2.384	2.992	2.447
CALC. COEF. VAR	0.359	0.377	0.359	0.331	0.301	0.310	0.325	0.318	0.373	0.412	0.337
REGN. COEF. VAR	0.403	0.403	0.403	0.403	0.403	0.403	0.403	0.403	0.403	0.403	0.332
USED COEF. VAR	0.403	0.403	0.003	0.003	0.403	0.403	0.403	0.003	0.403	0.403	0.332

MEAN/A	0.0069	0.0095	0.0114	0.0164	0.0245	0.0352	0.0433	0.0646	0.0819	0.1077	1.0000
RP10/A	0.0106	0.0146	0.0174	0.0250	0.0375	0.0538	0.0663	0.0989	0.1253	0.1648	1.4371
RP25/A	0.0122	0.0168	0.0200	0.0287	0.0431	0.0618	0.0761	0.1135	0.1439	0.1893	1.6243
RP50/A	0.0132	0.0182	0.0217	0.0313	0.0468	0.0672	0.0828	0.1234	0.1565	0.2058	1.7508
RP100/A	0.0142	0.0196	0.0233	0.0336	0.0503	0.0723	0.0890	0.1327	0.1681	9.2212	1.8683
RP1000/A	0.0171	0.0236	0.0281	0.0405	0.0607	0.0872	0.1073	0.1600	0.2028	0.2668	2.2171
RP10000/A	0.0197	0.0272	0.0324	0.0466	0.0699	0.1004	0.1236	0.1842	0.2335	0.5072	2.5262
PMP/A	0.0488	0.0672	0.0800	0.1152	0.1726	0.2471	0.3052	0.0550	0.5767	0.7586	5.9800

PEARSON TYPE III DISTRIBUTION USED
PROBABLE MAXIMUM PRECIPITATION ESTIMATE BASED ON 15 STANDARD DEVIATIONS
WHERE N IS SMALL (<25) RESULTS ARE NOT DEPENDABLE

PRECIPITATION DEPTH-DURATION-FREQUENCY TABLE

STATION NO. BSN ORDER SUB	STATION NAME	ELEV	SEC	TWP	RNG LOT	BMM	LATITUDE	LONGITUDE	COUNTY
000 2048 0	CORRALITOS	260	12	11S	01E	M	36.983	121.800	SANTA CRUZ

MAXIMUM PRECIPITATION (IN) FOR INDICATED DURATION D=DAYS H=HOURS M=MINUTES

RETURN PERIOD IN YEARS	5M	10M	15M	30M	1H	2H	3H	6H	12H	24H	C-YR
2	0.14	0.19	0.24	0.35	0.53	0.84	1.09	1.62	2.07	2.87	24.40
5	0.19	0.27	0.34	0.49	0.75	1.18	1.54	2.28	2.91	4.03	32.12
10	0.23	0.32	0.40	0.58	0.89	1.40	1.83	2.72	3.46	4.75	36.84
20	0.26	0.37	0.46	0.67	1.03	1.61	2.10	3.12	3.98	5.50	41.10
25	0.27	0.39	0.48	0.69	1.07	1.67	2.18	3.25	4.14	5.73	42.40
40	0.29	0.42	0.52	0.15	1.15	1.81	2.36	3.51	4.47	6.19	45.06
50	0.30	0.43	0.54	0.78	1.19	1.87	2.44	3.63	4.63	6.40	46.29
100	0.34	0.48	0.59	0.85	1.32	2.06	2.69	4.00	5.10	7.06	50.01
200	0.37	0.52	0.64	- 0.93	1.44	2.25	2.94	4.36	5.57	7.70	53.58
1000	0.43	0.62	0.17	1.11	1.71	2.67	3.49	5.18	6.61	9.14	61.47
10000	0.53	0.76	0.93	1.35	2.06	3.26	4.25	6.32	8.06	11.15	12.12
PMP	1.08	1.49	1.83	2.65	0.09	6.41	8.36	12.02	15.84	21.91	152.58
MEAN	0.148	0.211	0.260	0.377	0.580	0.909	1.187	1.763	2.249	3.110	25.515
CLOCK HR. COR.	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
CALCULATED SKEW	0.975	1.285	1.687	0.749	0.556	0.733	0.692	0.695	0.861	1.030	0.228
REGIONAL SKEW	1.200	1.200	1.200	1.200	1.200	1.200	1.200	1.200	1.200	1.200	0.800
SKEW USED	1.200	1.200	1.200	1.200	1.200	1.200	1.200	1.200	1.200	1.200	0.800

SLOPE OF LUG INTENSITY / LOG TIME = -.417 I INTERCEPT (TIME=1 HOUR) =0.598 ; COEFFICIENT OF DETERMINATION = 0.995
1HR INTERCEPT / MEAN YR =0.02345 ; AVERAGE CALC CV / USED CV = 0.96

KURTOSIS	0.073	4.990	7.006	3.326	4.427	4.934	4.070	3.390	4.220	3.713	2.909
N	24	24	24	24	30	30	30	30	30	30	29
RECORD YEAR	1952	1959	1959	1959	1959	1959	1959	1959	1959	1959	1969
RECORD MAXIMUM	0.300	0.480	0.620	0.660	1.150	1.690	2.500	3.660	5.090	7.340	45.800
NORMILIZED MAX	2.264	2.871	3.258	2.334	2.927	3.092	2.830	2.559	2.956	2.754	2.164
CALC. COEF. VAR	0.454	0.444	0.424	0.322	0.335	0.349	0.391	0.420	0.427	0.494	0.367
REGN. COEF. VAR	0.403	0.403	0.403	0.403	0.403	0.403	0.403	0.403	0.403	0.403	0.332
USED COEF. VAR	0.403	0.403	0.403	0.403	0.403	0.403	0.403	0.403	0.403	0.003	0.332

MEAN/A	0.0056	0.0083	0.0102	0.0148	0.0227	0.0336	0.0465	0.0691	0.0881	0.1219	1.0000
RP10/A	0.0089	0.0127	0.0151	0.0227	0.0350	0.0549	0.0716	0.1064	0.1358	0.1877	1.4437
RP25/A	0.0107	0.0152	0.0188	0.0272	0.0419	0.0656	0.0856	0.1272	0.1623	0.2244	1.6617
RP50/A	0.0119	0.0170	0.0210	0.0304	0.0468	0.0734	0.0957	0.1422	0.1814	0.2509	1.8144
RP100/A	0.0132	0.0188	0.0232	0.0335	0.0516	0.0809	0.1055	0.1568	0.2000	0.2766	1.9598
RP1000/A	0.0170	0.0243	0.0300	0.0434	0.0669	0.1048	0.1368	0.2032	0.2592	0.3584	2.4091
RP10000/A	0.0208	0.0296	0.0366	0.0529	0.0815	0.1277	0.1667	0.2477	0.3159	0.4368	2.8264
PMP/A	0.0408	0.0582	0.0119	0.1040	0.1602	0.2511	0.3276	0.4868	0.6210	0.8586	5.9800

PEARSON TYPE III DISTRIBUTION USED
PROBABLE MAXIMUM PRECIPITATION ESTIMATE BASED ON 15 STANDARD DEVIATIONS
WHERE N IS SMALL (<25) RESULTS ARE NOT DEPENDABLE

Environmental Review Inital Study
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EXHIBIT D

Plate 2 Sheet 3 of 5

Location of RECORDING RAIN GAGES

June 1976

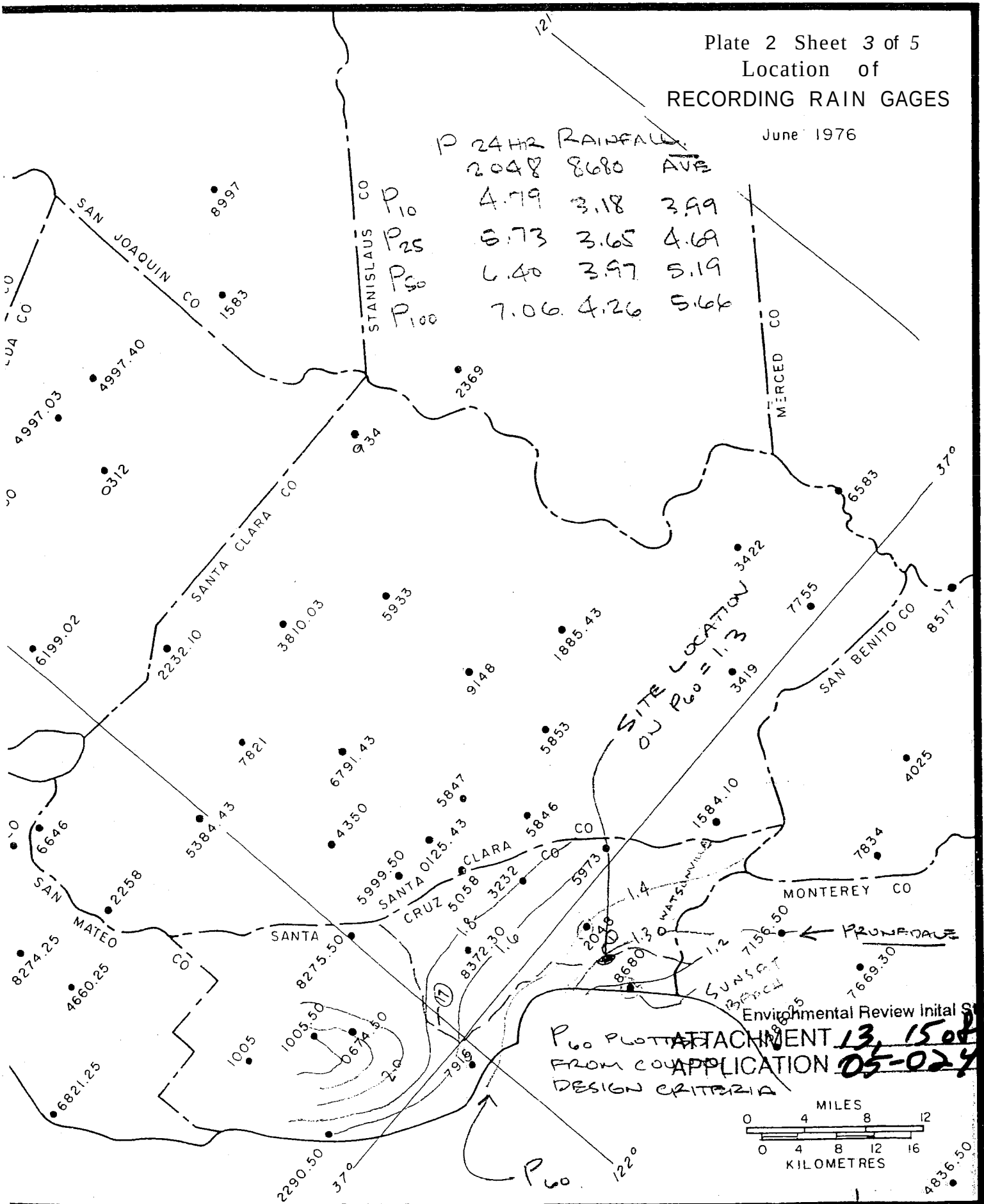

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EXHIBIT D

Chapter 4: Graphical Peak Discharge method

This chapter presents the Graphical Peak Discharge method for computing peak discharge from rural and urban areas. The Graphical method was developed from hydrograph analyses using TR-20, "Computer Program for Project Formulation—Hydrology" (SCS 1983). The peak discharge equation used is

$$q_p = q_u A_m Q F_p \qquad \text{[Eq. 4-1]}$$

where

q_p = peak discharge (cfs);
q_u = unit peak discharge (csm/in);
A_m = drainage area (mi^2);
Q = runoff (in); and
F_p = pond and swamp adjustment factor.

The input requirements for the Graphical method are as follows: (1) T_c (hr), (2) drainage area (mi^2), (3) appropriate rainfall distribution (I, IA, II, or III), (4) 24-hour rainfall (in), and (5) CN. If pond and swamp areas are spread throughout the watershed and are not considered in the T_c computation, an adjustment for pond and swamp areas is also needed.

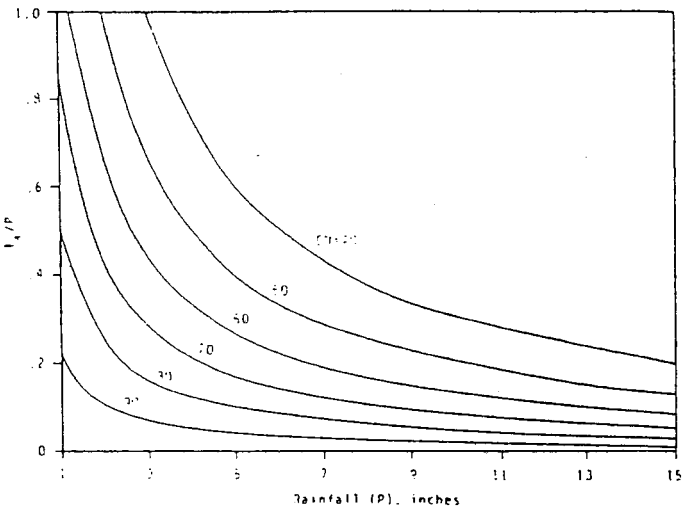

Figure 4-1.—Variation of I_a/P for P and CN.

Peak discharge computation

For a selected rainfall frequency, the 24-hour rainfall (P) is obtained from appendix B or more detailed local precipitation maps. CN and total runoff (Q) for the watershed are computed according to the methods outlined in chapter 2. The CN is used to determine the initial abstraction (I_a) from table 4-1. I_a/P is then computed.

If the computed I_a/P ratio is outside the range shown in exhibit 4 (4-I, 4-IA, 4-II, and 4-III) for the rainfall distribution of interest, then the limiting value should be used. If the ratio falls between the limiting values, use linear interpolation. Figure 4-1 illustrates the sensitivity of I_a/P to CN and P.

Peak discharge per square mile per inch of runoff (q_u) is obtained from exhibit 4-I, 4-IA, 4-II, or 4-III by using T_c (chapter 3), rainfall distribution type, and I_a/P ratio. The pond and swamp adjustment factor is obtained from table 4-2 (rounded to the nearest table value). Use worksheet 4 in appendix D to aid in computing the peak discharge using the Graphical method.

Table 4-1.—I_a values for runoff curve numbers

Curve number	I_a (in)	Curve number	I_a (in)
40	3.000	70	0.857
41	2.878	71	0.817
42	2.762	72	0.778
43	2.651	73	0.740
44	2.545	74	0.703
45	2.444	75	0.667
46	2.348	76	0.632
47	2.255	77	0.597
48	2.167	78	0.564
49	2.082	79	0.532
50	2.000	80	0.500
51	1.922	81	0.469
52	1.846	82	0.439
53	1.774	83	0.410
54	1.704	84	0.381
55	1.636	85	0.353
56	1.571	86	0.326
57	1.509	87	0.299
58	1.448	88	0.273
59	1.390	89	0.247
60	1.333	90	0.222
61	1.279	91	0.198
62	1.226	92	0.174
63	1.175	93	0.151
64	1.125	94	0.128
65	1.077	95	0.105
66	1.030	96	0.083
67	0.985	97	0.062
68	0.941	98	0.041
69	0.899		

Table 2-2c.—Runoff curve **numbers** for other **agricultural** lands[1]

Cover description		Curve numbers for hydrologic soil group—			
Cover type	Hydrologic conilition	A	B	C	D
Pasture, grassland, **or** range—continuous forage for grazing.[2]	Poor	68	79	86	89
	Fair	49	69	79	84
	Good	39	61	74	80
Meadow—continuous grass, protected from grazing and generally mowed for hay.	—	**30**	58	71	78
Brush—brush-weed-grass mixture with brush the major element.[3]	Poor	48	67	77	83
	Fair	35	56	70	77
	Good	[4]30	48	65	73
Woods—grass combination (orchard or tree farm).[5]	Pour	57	73	82	86
	Fair	43	65	76	82
	Gootl	32	58	72	79
Woods.[6]	Poor	45	66	77	83
	Fair	36	60	73	79
	Gootl	**430**	55	70	77
Farmsteads—buildings, lanes, driveways, and surrounding lots.	—	59	74	82	86

[1]Average runoff condition, and I_a = 0.2S.

[2]*Poor:* <50% ground cover or heavily grazed with no mulch.
Fair: 50 to 75% ground cover and not heavily grazed.
Good: >75% ground cover and lightly or only occasionally grazed.

[3]*Poor:* <50% ground cover.
Fair: 50 to 75% ground cover.
Good: >75% ground cover.

[4]Actual curve number is less than 30; use CN = 30 for runoff computations.

[5]CN's shown were computed for areas with 50% woods and 50% grass (pasture) cover. Other combinations of conditions may be computed from the CN's for woods and pasture.

[6]*Poor:* Forest litter, small trees, and brush are destroyed by heavy grazing or regular burning.
Fair: Woods are grazed but not burned, and some forest litter covers the soil.
Good: Woods are protected from grazing, and litter and brush adequately cover the soil.

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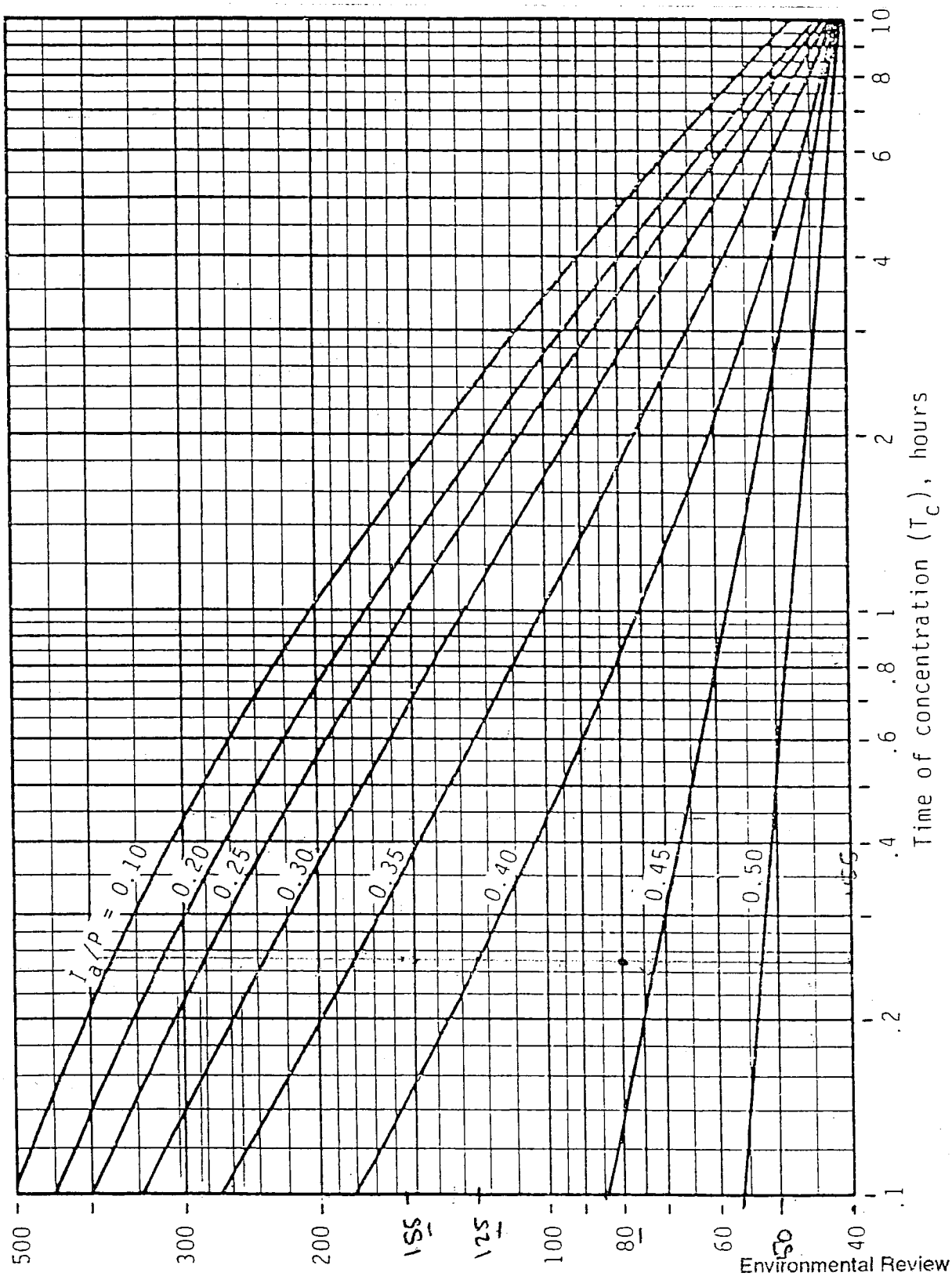
EXHIBIT D

Exhibit 4-I: Unit peak discharge (q_u) for SCS type I rainfall distribution



Sheet flow

Sheet **flow** is flow over plane surfaces. It usually occurs in the headwater of streams. With sheer flow, the friction value (Manning's n) is an effective roughness coefficient that includes the effect of raindrop impact; drag over the plane surface; obstacles such as litter, crop ridges, and rocks; and erosion and transportation of sediment. These n values are for very shallow flow depths of about 0.1 foot or so. Table 3-1 gives Manning's n values for sheet flow for various surface conditions.

For sheet **flow** of less than 300 feet, use Manning's kinematic solution (Overton and Meadows 1976) to compute T_t:

$$T_t = \frac{0.007\ (nL)^{0.8}}{(P_2)^{0.5}\ s^{0.4}} \qquad \text{[Eq. 3-3]}$$

Table 3-1.—Roughness coefficients (Manning's n) for **sheet flow**

Surface description	n[1]
Smooth surfaces (concrete. asphalt. gravel, or bare soil)	0.011
Fallow (no residue)	0.05
Cultivated soils:	
Residue cover ≤20%	0.06
Residue cover >20%	0.17
Grass:	
Short grass **prairie**	0.15
Dense grasses?	0.24
Bermudagrass	0.41
Range (natural)	0.13
Woods:[3]	
Light underbrush..	0.40
Dense underbrush	0.80

[1]The n values are a composite of information compiled by Engman (1986).
[2]Includes species such as weeping lovegrass, bluegrass, buffalo grass, blue grama grass, and native grass mixtures.
[3]When selecting n, consider cover to a height of about 0.1 ft. This is the only part of the plant cover that will obstruct sheet flow.

where

T_t = travel time (hr),
n = Manning's roughness coefficient (table 3-1),
L = flow length (ft),
P_2 = 2-year, 24-hour rainfall (in), and
s = slope of hydraulic grade line (land slope, ft/ft).

This simplified form of the Manning's kinematic solution is based on the following: (1) shallow steady uniform flow, (2) constant intensity of rainfall excess (that part of a rain available for runoff), (3) rainfall duration of 24 hours, and (4) minor effect of infiltration on travel time. Rainfall depth can be obtained from appendix B.

Shallow concentrated flow

After a maximum of 300 feet, sheet flow usually becomes shallow concentrated flow. The average velocity for this flow can be determined from figure 3-1, in which average velocity is a function of watercourse slope and type of channel. For slopes less than 0.005 ft/ft, use equations given in appendix F for figure 3-1. Tillage can affect the direction of shallow concentrated flow. Flow may not always be directly down the watershed slope if tillage runs across the slope.

After determining average velocity in figure 3-1, use equation 3-1 to estimate travel time for the shallow concentrated flow segment.

Open channels

Open channels are assumed to begin where surveyed cross section information has been obtained, where channels are visible on aerial photographs, or where blue lines (indicating streams) appear on United States Geological Survey (USGS) quadrangle sheets. Manning's equation or water surface profile information can be used to estimate average flow velocity. Average flow velocity is usually determined for bank-full elevation.

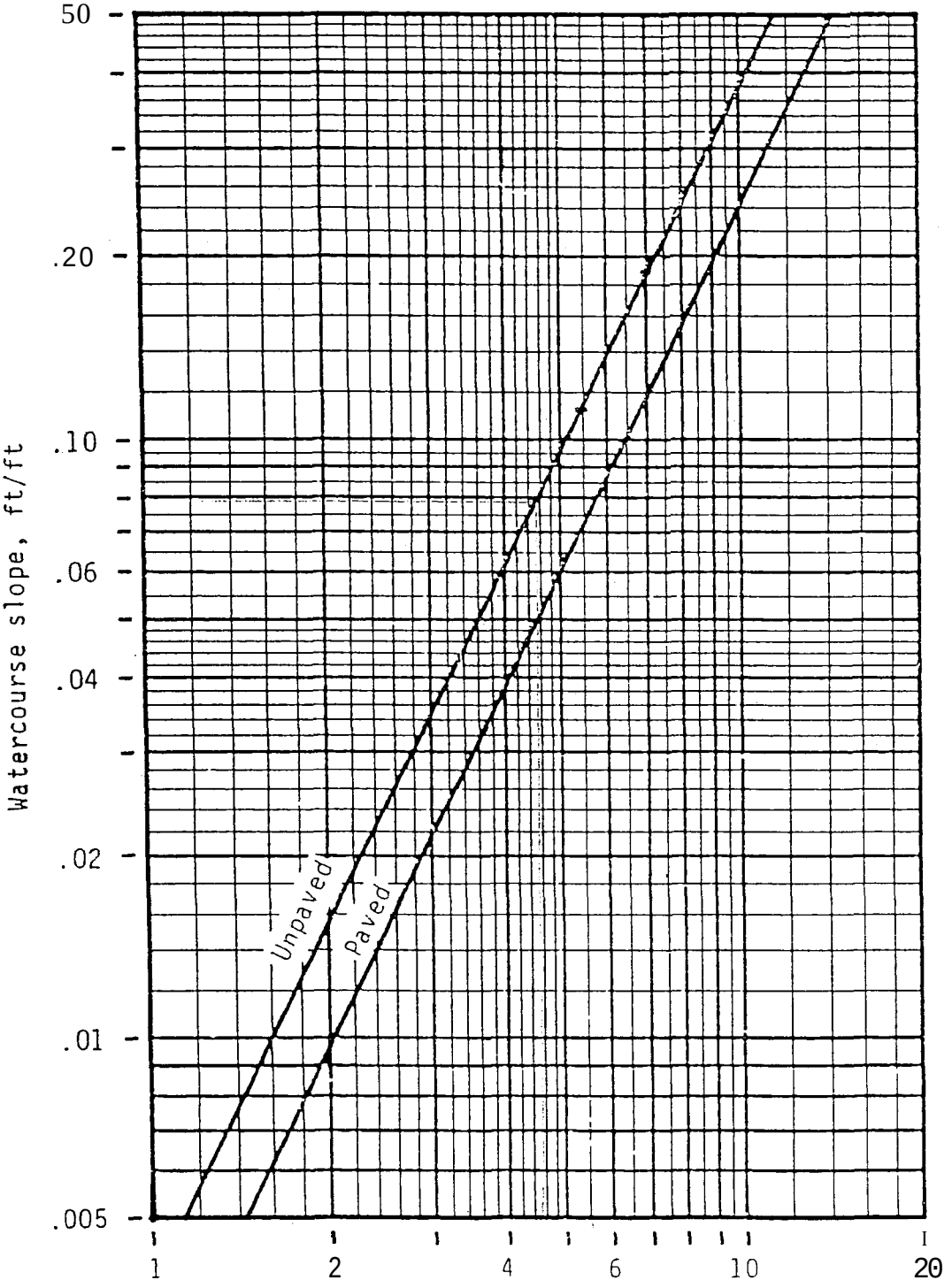


Figure 3-1.—Average velocities for estimating travel time for shallow concentrated flow.

EXHIBIT D

APPENDIX 19.A
Manning's Roughness Coefficient,[a] n
(design use)

channel material	n^b
plastic (PVC and ABS)	0.009
clean, uncoated cast iron	0.013–0.015
clean: coated cast iron	0.012–0.014
dirty, tuberculated cast iron	0.015–0.035
riveted steel	0.015–0.017
lock-bar and welded steel pipe	0.012–0.013
galvanized iron	0.015–0.017
brass and glass	0.009–0.013
wood stave	
small diameter	0.011–0.012
large diameter	0.012–0.013
concrete	
average value used	0.013
typical commercial, ball and spigot rubber gasketed end connections	
– full (pressurized and wet)	0.010
– partially full	0.0085
with rough joints	0.016–0.017
dry mix, rough forms	0.015-0.016
wet mix, steel forms	0.012-0.014
very smooth, finished	0.011–0.012
vitrified sewer	0.013–0.015
common-clay drainage tile	0.012–0.014
asbestos	0.011
planed timber (flume)	0.012 (0.010–0.014)
canvas	0.012
unplaned timber (flume)	0.013 (0.011–0.015)
brick	0.016
rubble masonry	0.017
smooth earth	0.018
firm gravel	0.023
corrugated metal pipe (CMP)	0.024 (see App. 17.F)
natural channels, good condition	0.025
rip rap.	0.035
natural channels with stones and weeds	0.035
very poor natural channels	0.060

[a] Compiled from various sources.
[b] Values outside these ranges have been observed. but these values are typical

A10

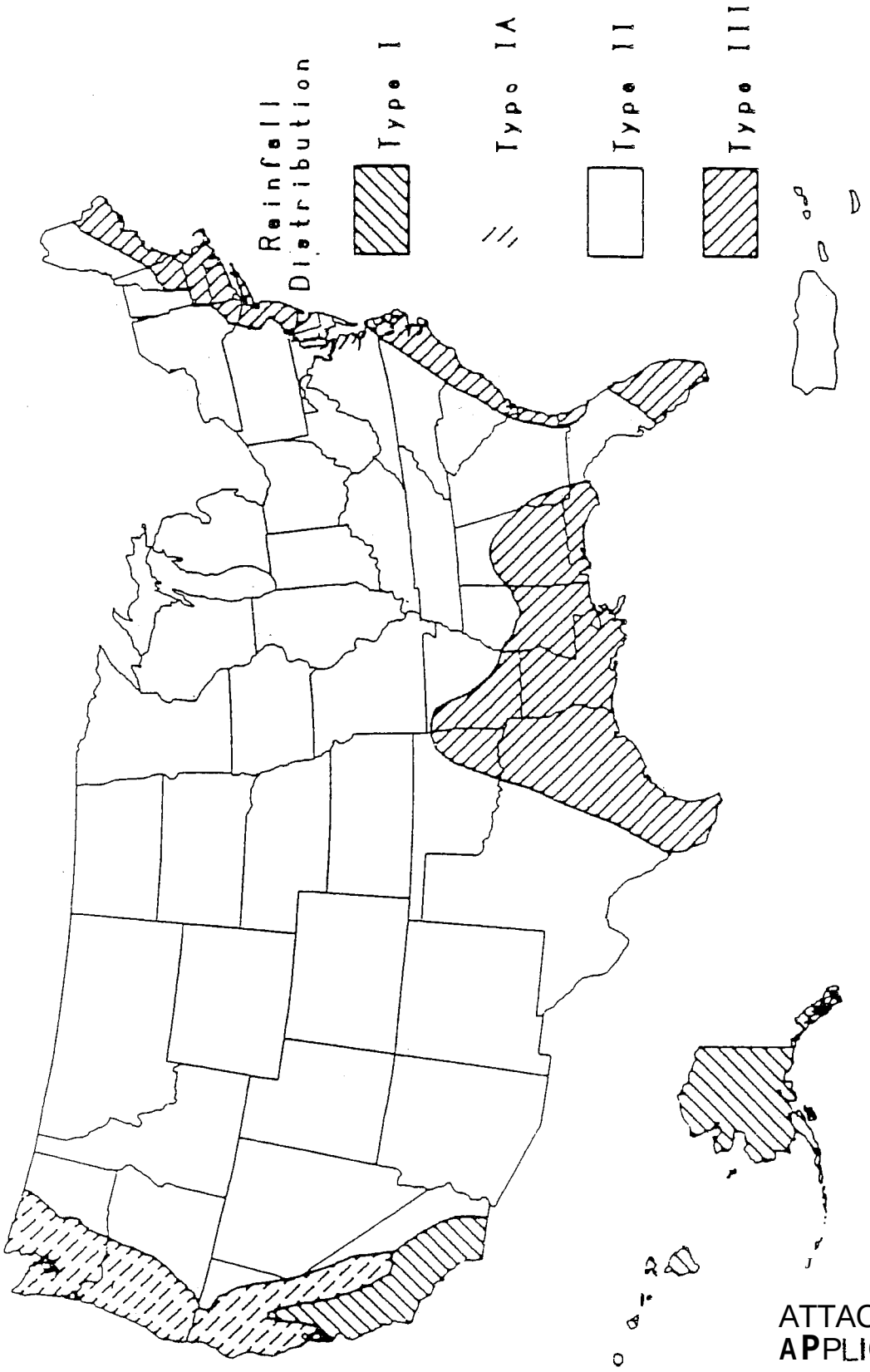


Figure B-2.—Approximate geographic boundaries for SCS rainfall distributions.

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EXHIBIT 1

A11

EXISTING 15" CMP
CULVERT INLET

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EXHIBIT D

EXISTING 15" CMP
CULVERT OUTLET

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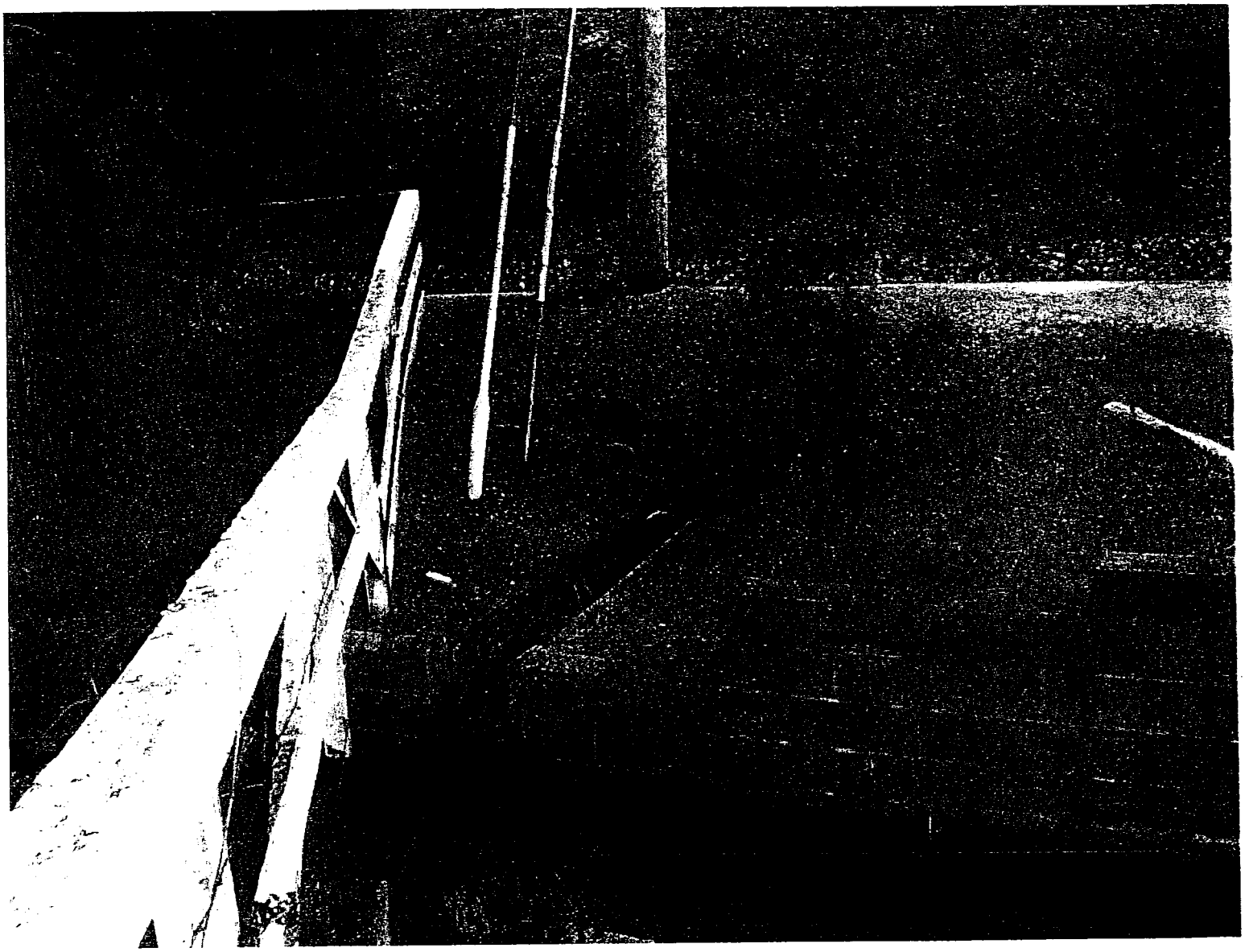
EXHIBIT D



EXISTING 15" CMP
CULVERT OUTLET
CONDITIONS

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EXHIBIT D

SANTA CRUZ COUNTY HEALTH SERVICES AGENCY
ENVIRONMENTAL HEALTH SERVICE
701 Ocean Street - Room 312, Santa Cruz, CA 95060 (408) 454-2022

PRELIMINARY LOT INSPECTION REPORT

MLD # 99-004 PROPOSED LOT A LOT SIZE 6 ± AC. ASSESSORS PARCEL NUMBER 049-121-41
SITE LOCATION Larkin Valley Rd Watsonville OWNER'S WRITTEN PERMISSION ATTACHED YES __ NO __

TO: _____
(STAFF PERSON)

VALIDATION

WATER SUPPLY _____
REQUESTED BY: Environmental Concepts (NAME) PO Box 1445 (ADDRESS) Aptos 684-1555 (PHONE)
OWNER-APPLICANT: Katie + Julia King (NAME) 225 Camino Almar (ADDRESS) SLB 458-5256 (PHONE)
(if different)

☐ Item/s checked below do not meet present sewage disposal requirements and is/are the basis for a negative report at this time.

☐ **Soil** tests indicate soils not suitable.

☐ Lot slope excessive

☐ Tests indicate failure to provide required separation of leaching and seasonal **high** groundwater.

☐ Lot has no water supply.

☐ Unable to provide a 100 foot separation between a septic system **and a** well, **spring, stream,** or waterway.

☐ Inadequate space **for** both the sewage disposal system and the required **future** expansion **area.**

☐ Unable to provide setback from cut bank.

☐ Inadequate surface drainage of storm water.

REMARK~ 7/30/99 = Met at site with Julie Mabie. Soil test dbue.
Soils: (#2 on plot plan)
0'-14' ⇒ orange/brown soft, slightly silty red arenas sand dry

Slope is OK, need water approval and perc's. Water is generally obtainable in this area.
B Faundez

11/22/99 = Received perc results. OK to approve lot split. B Faundez

☒ Preliminary inspection of this lot did not reveal conditions which **would** render **it** unsuitable for individual sewage disposal.

NOTE Preliminary inspections do not take into account **all** factors, which ***are*** considered in the issuance of a sewage disposal permit. **Consequently,** a positive preliminary lot inspection report **WILL** NOT CONSTITUTE APPROVAL FOR THE **ISSUANCE** OF **A SEWAGE DISPOSAL** PERMIT OR **A** GUARANTEE THAT **SUCH A** PERMIT **WILL BE** ISSUED WHEN APPLIED FOR. An application for a sewage disposal permit **can only** be considered at such time as bona fide plans are developed for a particular dwelling **or** other structure.

B Faundez
ENVIRONMENTAL HEALTH SPECIALIST

11/22/99
DATE

PHD-72 (REV. 3/96)

Environmental Review Inital Study
ATTACHMENT 14
APPLICATION 05-0246

EXHIBIT D

DATE: May 16,2003
TO: File APN 049-121-41
FROM: Paia Levine, Environmental Planning
SUBJECT: Biotic Assessment 02-0188, Special Forest Designation

An evaluation of the woodland habitat (Biotic Resources Group, May **6,** 2003) on the parcel has been submitted by the applicant as part of resolving a Code Compliance investigation of unauthorized tree removal within Sensitive Habitat. The parcel is mapped as San Andreas Oak Woodland (SAOW) on the General Plan Maps and three special status species are potentially located **on** the parcel (California Natural Diversity Database).

Consulting biologist Bill Davilla visited the parcel and reviewed the evaluation. He concurs that at this time the parcel is not accurately characterized as **SAOW.** Therefore the General **Plan** and Chapter 16 policies limiting development within special forest will not apply to a proposed development on this parcel.

The applicant *is* aware that other potential biotic issues exist (potential habitat for Santa Cruz Long Toed salamander) and that they may require a separate biotic review when plans are submitted.

cc: Ken Hart, Principal Planner
John Swift, Applicant
Bob Loveland, Resource Planner

Environmental Review Initial Study
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EXHIBIT D

Biotic Resources Group

Biotic Assessments • Resource Management • Permitting

May 6, 2003

John and Katy King
C/o Monterey Bay Properties
620 Capitola Avenue
Capitola, CA 95010

RE: Larkin Valley Road Parcel, APN 049-121-41, Santa Cruz County: Results of Botanical Evaluation of Woodland Habitat

Dear Mr. and Ms. King,

The Biotic Resources Group conducted a botanical review of your property on Quail Canyon Road (off Larkin Valley Road) in the Aptos area of Santa Cruz County, as per your request. The review was conducted to evaluate the composition of the woodland areas on the parcel and ascertain if the site supports coast live oak woodland. The results of this review are described herein.

ASSESSMENT METHODOLOGY

A site visit of the property was conducted on May 6, 2003 by Kathleen Lyons, plant ecologist. The hillsides surrounding the central grassy area were walked to document plant species composition. In addition, aerial photos were reviewed to evaluate the pre-2000 habitat within the central grassy area. According to Katy King, the central portion of the property supported a eucalyptus-dominated forest until 2000, wherein the Kings removed the eucalyptus trees. In fall 2000, the cleared area was seeded and mulched for erosion control.

ASSESSMENT RESULTS

Existing Conditions: The property extends on both sides of a central grassy area; most of the property is visible from Quail Canyon Road. The hillsides are comprised of a eucalyptus-dominated forest. Blue gum eucalyptus (*Eucalyptus globulus*) is the dominant tree species, providing over 80% of the tree canopy cover. The eucalyptus trees range in size from approximately 4 inches to over 20 inches in diameter. Within the understory of the tall eucalyptus trees are scattered groups and individuals of coast live oak (*Quercus agrifolia*). The most prevalent understory species is California blackberry (*Rubus ursinus*). This species provides the most shrub cover within the dense eucalyptus areas. Within more open areas, such along the edge of the eucalyptus woodland, additional understory plant species occur. These areas support poison oak (*Toxicodendron diversilobum*), bracken fern (*Aquilinum pubescens*), sticky monkey flower (*Mimulus aurantiacus*), wild cucumber (*Marah fabaceous*), mugwort (*Artemisia douglasiana*), coffeeberry (*Rhamnus californica*) and hedge nettle (*Stachys* sp.). A few occurrences of brittle-leaved manzanita (*Arctostaphylos tomentosa crustacea*) were also observed within the eucalyptus woodland. One Douglas fir (*Pseudotsuga menziesii*) was observed on the southern hillside. The eucalyptus-dominated forest abuts other eucalyptus-forested areas to the west, as well as areas dominated by coast live oak woodland. The extent of coast live oak woodland occurring west of the King property appears to terminate at the King property line.

1551 South Rodeo Gulch Road, #12 ♦ Soquel, California 95073 ♦ (831) 476-4803 ♦ Fax (831) 476-8038

Environmental Review Inital Study
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EXHIBIT D

The eastern most portion of the property includes stands of Monterey pine (*Pinus radiata*), scattered oak trees and scattered orchard (*Prunus*) trees. A small patch of willow (*Salix* sp.) grows near the junction of Quail Canyon Road and Larkin Valley Road.

No special status plant species were observed within the eucalyptus forest or within the central grassy area of the property during the May survey. Two special status species are known to occur on properties to the west: Hooker's manzanita and Monterey spineflower. These occurrences are located approximately 300-500 feet west of the King property line within maritime chaparral habitat. Neither of these two species was observed on the King property during the May 2003 field review; however suitable sandy areas occur within opening in the forest. Two locally unique species, California bottlebrush grass and small-flowered lomatium, also occur on lands to the west of the King property. These occurrences are located 500-600 feet west of the King property.

Review of Aerial Photos: An aerial photo, dated January 2000, was reviewed to evaluate the extent of woodland habitat on the King property prior to landowner clearing in spring 2000. The aerial photo shows that the central portion of the site supported a mosaic of woodland and grassland/scrub-type vegetation. The tree density within this central area does not appear as dense as the tree cover on the surrounding hillsides; however, the photo signature indicates that eucalyptus trees provided some cover within this central area. Open grassy and/or scrub areas and a dirt road also appear on the aerial photo.

CONCLUSION

At present, the hillsides on the King property support a eucalyptus-dominated forest. The central portion of the property is dominated by non-native grasses (seeded for erosion control) and forbs. The easternmost portion of the property supports a mosaic of orchard trees, oak tree groves and Monterey pines.

Intended Use of this Report

The findings presented in this review are intended for the sole use of John and Katy King and the County of Santa Cruz in evaluating the extent of forest and woodland habitat on the subject parcel. The findings presented by the Biotic Resources Group in this report are for information purposes only; they are not intended to represent the interpretation of any State, Federal or County laws, polices or ordinances pertaining to permitting actions within sensitive habitat or endangered species. The interpretation of such laws and/or ordinances is the responsibility of the applicable governing body.

Thank you for the opportunity to assist you in your project planning. Please give me a call if you have any questions on this report.

Sincerely,

Kathleen Lyons

Kathleen Lyons
Plant Ecologist

Environmental Review Inital Study
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CC: John Swift, Hamilton Swift Land Use & Development Consultants, Inc.

HABITAT ASSESSMENT FOR

SANTA CRUZ LONG-TOED SALAMANDER

AND CALIFORNIA RED-LEGGED FROG

AT

KATY KING PROPERTY

QUAIL CANYON ROAD

SANTA CRUZ COUNTY, **CA**

*Report Prepared **For:***

Ms. Katy King
c/o Monterey Bay Properties
620 Capitola Avenue
Capitola, CA 95010

Report Prepared By:

Dana Bland, Wildlife Biologist
Dana Bland & Associates
P.O. Box 636
Aptos, CA 95001

June 2003

INTRODUCTION

The Katy King property located on Quail Canyon Road (APN 049-121-4I) in Santa Cruz County is approximately 12 acres. The owner proposes to split the site into two separate parcels, Parcel **A** (approximately 5 acres) and Parcel B (approximately 7 acres), **as** shown on a tentative map prepared by Bowman & Williams dated October 25, 2001. The purpose of this report is to evaluate the 12 acre Katy King parcel for potential habitat for the Santa Cruz long-toed salamander *(Ambystoma macrodactylum croceum)*, a species listed by both state and federal agencies **as** endangered, and for the California red-legged frog (*Rana aurora druytonii),* a species federally listed as threatened.

METHODS

Dana Bland, Wildlife Biologist, visited the site on June **13,** 2003, to evaluate the site for its potential as habitat for Santa Cruz long-toed salamander and California red-legged frog. The proposed project site was walked and notes on habitat types and surrounding land uses were recorded in a field notebook. Photos of the site were taken.

EXISTING HABITATS

The proposed Parcel **A** (Figure 1) is located on the northern half of the property, and abuts Larkin Valley Road on the north, Quail Canyon Road on the west, another parcel with a single family residence to the east, and Parcel B to the south. The southern portion of Parcel **A** contains a central area of non-native grassland surrounded by Eucalyptus forest on the slopes to the east and west. The northern portion of Parcel **A** contains a small fruit orchard adjacent to Quail Canyon Road, a Monterey pine forest on the eastern portion, scattered *oak* trees, and a willow tree at the intersection of Quail Canyon Road with Larkin Valley Road.

There are no creeks, ponds, or surface springs on APN 049-121-4I. Upper Harkins Slough flows along the north side of Larkin Valley Road, approximately 75 feet north of Parcel **A.** There is no standing water or evidence of ponding around the one willow patch at the northern boundary of Parcel **A** adjacent to Larkin Valley Road.

Figure 1. Proposed Parcel A, APN 049-121-41, Quail Canyon Road, Santa Cruz County, CA, June **13,2003.** Looking north from boundary with Parcel B.

Proposed Parcel B (Figure 2 and **3)** is located on the southern half of the property and consists of a central valley area of non-native grassland surrounded by Eucalyptus forest on the slopes to the south, east and west. Parcel **A** abuts the northern boundary of Parcel B. The slope adjacent to the southern boundary of the parcel contains some small oaks and understory plants (e.g., blackberry, hazelnut, poison oak) with scattered Eucalyptus trees.

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Figure 2. Proposed Parcel B, APN 049-121-41, Quail Canyon Road, Santa Cruz County, CA, June 13, **2003.** Looking north towards Parcel **A.**

Figure 3. Proposed Parcel B, APN 049-121-41, Quail Canyon Road, Santa Cruz County, CA, June 13,2003. Looking south.

ECOLOGY OF TEE SPECIES

A brief description is given below of the habitat requirements and known populations within the general vicinity of the project site for the Santa Cruz long-toed salamander and California red-legged frog.

Santa Cruz long-toed salamander ***(Ambystomamacrodactylum croceum***) is listed by both California Department of Fish and Game and the U S. Fish and Wildlife Service as endangered This salamander spends most of the year in upland refugia They use small mammal burrows or hide under dense leaf litter and rotting logs. This salamander prefers riparian, *oak* woodland and coastal scrub for upland habitat During rainy winter nights, adult salamanders travel from their upland refugia to temporary or semi-permanent ponds to breed (USFWS 1999). This species is not known to breed in flowing waters (i e., creeks). Santa Cruz long-toed salamanders have been documented to travel **up** to 0.6 mile fiom upland habitat to breeding ponds (Steve Ruth, pers comm), and have been documented to move in straight lines between their upland refugia and their breeding ponds (Mark Allabach, pers. comm.). Females lay eggs singly on stalks of submerged vegetation, which hatch within 30 days Larvae take up to 6 months to transform into juveniles, depending upon pond conditions. The juveniles then typically remain in the moist pond environs until the first fall rains, when they begin their dispersal to upland areas. Loss of wetlands and introduced species such as bullfrog, non-native fish, and crayfish are threats to this species.

There are only 12 –13 known breeding populations of this salamander. The closest known breeding pond of the Santa Cruz long-toed salamander is the Calabasas Pond (0.6 mile northwest).

The **California red-legged frog** (*Rana aurora druytonii)* is a State Species of Special Concern and Federally listed as threatened. This species is found in quiet pools along streams, in marshes, and ponds. Red-legged frogs are closely tied to aquatic environments and favor ponds and streams which include some areas with water at least 2.5 ft. deep, a largely intact emergent or shoreline vegetation, and a lack of introduced bullfrogs and non-native fishes. This breeding season for this fiog on the central coast spans January to April (Stebbins **1985).** Females deposit large egg masses on submerged vegetation at or near the surface. Embryonic stages require a salinity of **5 4.5** parts per thousand (Jennings and Hayes **1994).** They are generally found in ponds or on streams having a small drainage area and low gradient (Hayes and Jennings **1988).** Recent studies have shown that although only a small percentage of red-legged frogs from a pond population disperse, they are capable of moving distances **of** up to 2 miles (Bulger **1999,** Dana Bland & Assoc. 2001). The red-legged frog occurs west of the Sierra Nevada-Cascade crest and in the Coast Ranges along the entire length of the state. Much of its habitat has undergone significant alterations in recent years, leading to extirpation of many populations. Other factors contributing to its decline include its former exploitation as food, water pollution, and predation and competition by the introduced bullfrog and green sunfish (Moyle 1973, Hayes and Jennings **1988).**

California red-legged frogs are known to occur in the Calabasas Pond (Amelia Orton-palmer, pers. comm., CDFG 2003) located approximately 0.6 mile north of the subject property. There are two other ponds shown on the USGS topo map approximately 1.0 mile east of the subject property, but it is unknown if these ponds still exist and they have not been sampled for amphibians. Both **of** these known and potential locations of red-legged frogs are within the range that this species in known to travel.

RESULTS

The Katy King property on Quail Canyon Road is located on the Watsonville West USGS **7.5'** quadrangle (Figure **4).** It is located approximately 0.6 mile southeast of Calabasas Pond, which is the closest known location for Santa Cruz long-toed salamander and California red-legged frog. There are two other ponds shown on the USGS topo map located approximately 1 mile to the east of the Katy King property, on the north side of Larkin Valley Road. The status of those two ponds is unknown. There are no other ponds or creeks shown on the topo map between the Katy King property and areas to the west and south between Larkin Valley Road and Highway 1.

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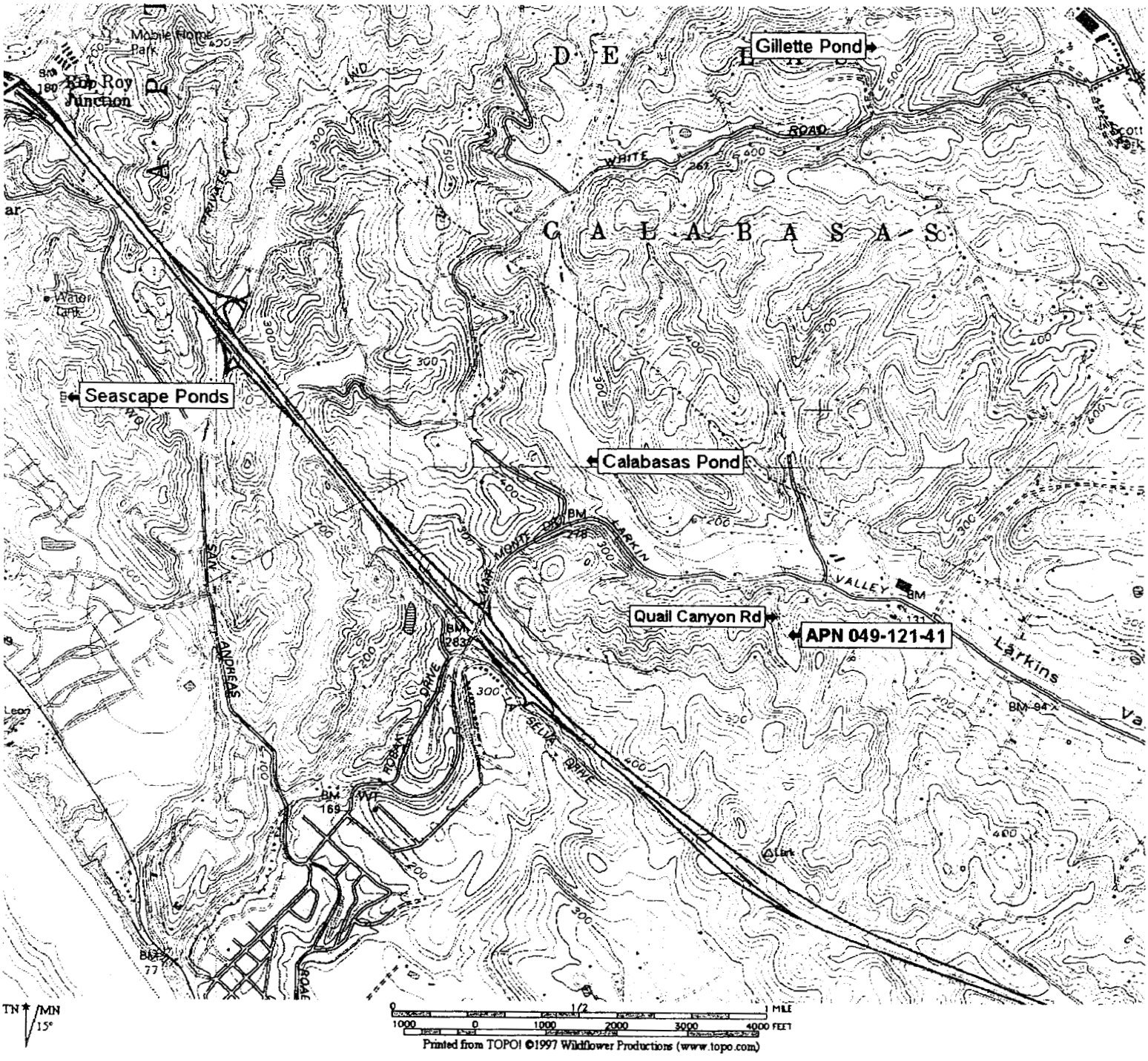

Figure 4. Location of Katy King property (APN 049-121-41) on Quail Canyon Road in Santa Cruz County, **CA.** Known pond locations of Santa Cruz long-toed salamander and/or California red-legged frogs in the general site vicinity are shown. Watsonville West USGS 7.5' topographic map. June 2003.

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The Katy King property on Quail Canyon Road (APN 049-121-41) does not provide suitable upland habitat for the Santa Cruz long-toed salamander. This salamander is not known to aestivate in grasslands, Eucalyptus, or Monterey pine forests. There are only a few scattered oak trees on the property, mostly at the open edges of the Eucalyptus forest. The Eucalyptus forest covers large areas of the adjacent properties to the west, east and south of this parcel. On the north side of Larkin Valley Road the habitat is mostly open horse pastures and rural residential. These areas appear to be largely unsuitable for salamander aestivation habitat as well. There are large expanses of oak woodland on properties further north and west, between Katy King property and Calabasas Pond, as well as to the southeast closer to the two other ponds shown on the topo map, that do appear to provide suitable upland habitat for the Santa Cruz long-toed salamander. For the following reasons, the APN 049-121-41 property is not expected to support Santa Cruz long-toed salamanders:

- There are no potential breeding ponds on the property.
- The closest known or potential breeding pond (Calabasas Pond) is located approximately 0.6 mile to the northwest of this property, and there is good quality upland habitat around that pond as well as within *oak* woodland within 0.4 mile of that pond.
- There are no other potential ponds on adjacent properties that would attract dispersing salamanders to travel through the subject property.
- Highway 1 is a barrier to salamander movement between **Larkin** Valley area and other ponds on the south side of the highway.
- If salamanders dispersing from Calabasas Pond were to travel to the other two ponds 1 mile south of the subject property, the most likely travel routes would be straight line routes on the north side of Larkin Valley Road, or along Upper **Harkins** Slough. Neither of these potential routes crosses the subject property.
- The habitat types on the subject property are not known and not likely to be used as aestivation sites for this species (e.g., grassland, Eucalyptus, Monterey pine) due to the arid conditions and potentially toxic substances in the plant leaves.

The Katy King property on Quail Canyon Road (APN 049-121-41) does not provide suitable habitat for the California red-legged frog. Although this frog can traverse great distances (at least 2 miles) during dispersal, studies indicate that it also usually moves in straight lines between aquatic habitats. On the central coast, the California red-legged frog do not usually aestivate in upland habitats, although they may take shelter in burrows or under woody debris when traveling between aquatic sites, especially during the rainy season. Studies have also shown that California red-legged frogs are closely tied to their aquatic environments, and the majority of adult frogs live within the immediate environs of their breeding pond. For the following reasons, the APN 049-121-41 property is not expected to support California red-legged frog:

- There are no potential breeding ponds on the property.
- There are no other areas of surface water on the property (i.e., seeps, springs, creeks) that would be attractive to this species.

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- There are no other aquatic habitats between the subject property and adjacent areas to the west, south, and southeast that would make the subject property a potential dispersal route for this frog.
- Highway 1 is a barrier to frog movement between Upper Harkins Slough and other ponds in Larkins Valley and ponds/creeks on the south side of Highway 1.
- The arid and unsuitable habitat types on the subject parcel (e.g., grasslands, Eucalyptus, Monterey pine), make it unlikely that this frog would take refuge on the property during dispersal between other aquatic habitat on the north side of Larkin Valley Road.
- If frogs dispersing fiom Calabasas Fond were to travel to the other two ponds 1 mile south of the subject property, the most likely travel routes would be straight line routes on the north side of Larkin Valley Road, or along Upper Harkins Slough. Neither of these potential routes crosses the subject property.

SUMMARY

The Katy King property on Quail Canyon Road, APN 049-1212-41, does not provide suitable breeding habitat, upland habitat, migration routes, or dispersal routes for either the Santa Cruz long-toed salamander or California red-legged frog, as explained above. Although the northernmost border of the property is located just south of Upper Harkins Slough, there are no aquatic or upland habitats on the property that would attract these amphibian species.

LITERATURE CITED

Dana Bland & Associates. 2001. Radio-tracking of California red-legged hogs at Soda Lake, Santa Cruz County: Report of tracking results from February 2000 through September 2001. Report prepared for Graniterock Company December, 2001.

Bulger, J. B. 1999. Terrestrial activity and conservation of California red-legged frogs (*Rana aurora draytonii*) in forested habitats of Santa Cruz County, California. Report prepared for Land Trust of Santa Cruz, dated March 2, 1999.

California Department of Fish and Game. 2003. California Natural Diversity Data Base. Rarefind2 Program, Natural Heritage Division, Sacramento, CA.

Hayes, M. F. and M. R. Jennings. **1988.** Habitat correlates of distribution of the California red-legged hog (*Rana aurora draytoni*) and the foothill yellow-legged frog (*Ramboylii*): Implications for management. *In* Management of amphibians, reptiles, and small mammals in North America (R C. Szaro, K. E. Severson, and D. R. Patton, tech. coord.). USDA, Forest Serv., Rocky Mountain Forest and Range Experiment Sta Gen. Tech. Rpt. RM-166.

Jennings, M. R. and M. P. Hayes. 1994. Amphibian and Reptile Species of Special Concern in California. Report to California Dept. of Fish and Game; Rancho Cordova, CA.

Moyle. P. B. 1973. Effects of introduced bullfrogs, ***Rana catesbiana,*** on native frogs of the San Joaquin Valley, California. Copeia 1973:18-22.

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U. S. Fish and Wildlife Service. 1999. Santa Cruz long-toed salamander ***(Ambystoma macrodactylum croceum)*** draft revised recovery plan. U.S. Fish and Wildlife Service: Portland, Oregon. Vi. + 82 pp.

Biotic Resources Group

Biotic Assessments • Resource Management • Permitting

March 8, 2004

John and Katy King
C/o Monterey Bay Properties
520 Capitola Avenue
Capitola, CA 95010

RE: Larkin Valley Road Parcel, APN 049-121-41, Santa Cruz County: Results of Evaluation of Potential Riparian Woodland Habitat

Dear Mr. and Ms. King,

The Biotic Resources Group conducted a botanical review of your property on Quail Canyon Road (off Larkin Valley Road) in the Aptos area of Santa Cruz County. The review was conducted to evaluate whether the property supports riparian woodland. The results of this review are described herein.

ASSESSMENT METHODOLOGY

A site visit of the property was conducted on May 6, 2003 by Kathleen Lyons, plant ecologist. In addition, a subsequent site review was on the lower portion of the parcel on June 5, 2003. The focus of the June 5 survey was to determine if the site supports a riparian woodland.

ASSESSMENT RESULTS

The lower portion of the property abuts Larkin Valley Road. An existing road cut near the junction of Larkin Valley Road and Quail Canyon Road shows evidence of seasonal seepage. This hillside seepage has created conditions suitable for the growth of a small patch of willow (*Salix* sp.). The willow area is an isolated patch, growing because of the road cut seepage. The willow patch does not form, or connect to, any riparian corridor, nor does it constitute riparian vegetation.

Please give me a call if you have any questions on these findings.

Sincerely,

Kathleen Lyons
Plant Ecologist

CC: John Swift, Hamilton Swih Land Use & Development Consultants, Inc

2551 South Rodeo Gulch Road, #It 6 Soquel, California 95073 ◆ (831) 4761803 ◆ Fax (831) 416-8038

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APPLICATION 05-0246

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Project Planner: David Keyon
Application No.: 05-0246
APN: 049-121-41

Date: June 12, 2006
Time: 10:04:14
Page: 1

Environmental Planning Completeness Comments

========== UPDATED ON SEPTEMBER 8, 2005 BY KENT M EDLER ==========

1. The updated slope map has been reviewed and accepted.

2. The soils letter from Haro, Kasunich has not been received and is therefore still outstanding.

3. The plans for the widening of Quail Canyon are complete. See misc. comments.

========== UPDATED ON OCTOBER 5. 2005 BY KENT M EDLER ==========

The response letter from the soils engineer has been received and addresses the initial questions on the soils report, but the original report is now more than 3 years old and must be updated in order for it to be accepted by the County. Please submit an update letter. (The original report was dated 8/13/02).
========== UPDATED ON OCTOBER 24. 2005 BY KENT M EDLER ==========

The soils report has been accepted. The project is complete for EP purposes. Also see misc. comments.
========== UPDATED ON MAY 10. 2006 BY KENT M EDLER ==========

The set of plans routed to me show widening outside of the easement. An Owner agent form must be subrnittd from the owner of parcels that work is proposed on.

Environmental Planning Miscellaneous Comments

========== REVIEW ON MAY 16, 2005 BY ROBERT S LOVELAND ==========
========== UPDATED ON SEPTEMBER 8, 2005 BY KENT M EDLER ==========

1. An erosion control plan for the road widening and the proposed home will be required in the building permit stage.

2. A plan review letter from the soils engineer will be required for the road widening and the proposed home in the building permit stage.

3. An owner agent form from the owners of parcel 049-121-53 will be required for the road widening work on their parcel (from approx. sta 8+70 to 9+80).
========== UPDATED ON OCTOBER 24. 2005 BY KENT M EDLER ==========

Environmental Review Inital Study
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Conditions of Approval:

1. An erosion control plan for the road widening and the proposed home will be required in the building permit stage.

2. A plan review letter from the soils engineer will be required for the road widening and the proposed home in the building permit stage.

3. An owner agent form from the owners of parcel 049-121-53 will be required for the

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road widening work on their parce (from approx. sta 8+70 to 9+80).

4. The proposed residence on the ower parcel must be set back 25' from the eastern edge of the building envelope (or the building envelope should be modified so that the the eastern side of the build ng envelope is moved 25' to be in compliance with the soi1s report).
========= UPDATED ON MAY 10. 2006 BY KENT M EDLER =========

Same previous comments apply.

Dpw Drainage Completeness Comments

LATEST COMMENTS HAVE **NOT YET** BEEN SENT TO PLANNER FOR THIS AGENCY

========= REVIEW ON MAY 12. 2005 BY CARISA REGALADO =========
A project on this parcel was previously considered under discretionary application 04-0102. Comments under that application remain applicable for this submittal: therefore, a response to those items is needed before a more complete review can proceed.

From submitted drainage calculations:

1) The rainfall shown on Worksheet 2 using a Prunedale rain gage appears to be low for the project area. Please demonstrate that this is applicable.

2) Please clarify if the flow length of 300-ft used on Worksheet 3 for Sheet Flow was confirmed through site visits in the project area. (NRCS currently limits the flow length to 100-ft.)

Please call or visit the Dept. of Public Works, Stormwater Management Division. from 8:00 am to 12:00 pm if you have any questions. ========= UPDATED ON SEPTEMBER 14, 2005 BY CARISA REGALADO =========
Revised plans dated August 15. 2005 and revised drainage calculations dated August 11. 2005 from Bowman & Williams have been received.

Some typos have been found in the drainage calculations. These items do not affect the end result; therefore, the plans and conclusions of the calculations have been accepted as submitted. A marked-up copy of the calculations will be forwarded under separate cover to Bowman & Williams.

Please see Miscellaneous Comments

This application is complete for the Discretionary application review. ========= UPDATED ON MAY 16. 2006 BY CARISA R DURAN =========
No comment.

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Dpw Drainage Miscellaneous Comments

LATEST COMMENTS HAVE **NOT YET** BEEN SENT TO PLANNER FOR THIS AGENCY

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======== REVIEW ON MAY 12, 2005 BY CARISA REGALADO =========
No comment. ========= UPDATED ON SEPTEMBER 14, 2005 BY CARISA REGALADO =========
For the final map, please correct typo errors in drainage calculations.

Note for future development on Parcel A: It is required that post- development run-off rates not exceed pre-development rates exiting the parcel. This includes the driveway from Quail Canyon Road to the future residence. ========= UPDATED ON MAY 16, 2006 BY CARISA R DURAN =========
No comment.

Dpw Driveway/Encroachment Completeness Comments

========= REVIEW ON APRIL 28, 2005 BY RUTH L ZADESKY =========
No comment, project involves a subdivision or MLD.

Dpw Driveway/Encroachment Miscellaneous Comments

========= REVIEW ON APRIL 28, 2005 BY RUTH L ZADESKY =========
No comment.

Dpw Road Engineering Completeness Comments

========= REVIEW ON MAY 13, 2005 BY GREG J MARTIN =========
The intersection of Larkin Valley Road and the access road is recommended to be improved to current County standards. The sight distance at the intersection of the access road with Larkin Valley Road is recommended to be evaluated by a traffic engineer. The angle of the intersection of the access road and Larkin Valley Road appears to be an angle less than 60 degrees. Twenty foot returns are recommended at the intersection and the access road approach is recommended to be 24 feet wide for a minimum of 50 feet from the intersection. The gradient of the access road entering the intersection is recommended to be no more than 3 percent within a distance of 20 feet from Larkin Valley Road.

The access road serves more than 2 parcels and is recommended to be 24 feetwide road with a 40 foot right-of-way. An 18 foot wide road is acceptable if there are constraints. Please provide a profile for the access road and indicate the composition of the existing roads and driveways on the plan view.

If you have any questions please contact Greg Martin at 831-454-2811. ========= UPDATED ON SEPTEMBER 9, 2005 BY GREG J MARTIN =========
The intersection of Larkin Valley Road and the access road is proposed to be improved based upon an engineering analysis using a passenger vehicle turn template and not crossing over into the adjacent oncoming lane. Fire trucks shall need to cross over the oncoming lane in order to turn into the driveway. The sight distance at the intersection of the driveway and Larkin Valley Road was evaluated by a traffic engineer and found to be acceptable. Public Works has no objection to the design.

If you have any questions please contact Greg Martin at 831-454-2811. ========= UPDATED ON MAY 11, 2006 BY GREG J MARTIN =========
No comment.

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Dpw Road Engineering Miscellaneous Comments

========== REVIEW ON MAY 13, 2005 BY GREG J MARTIN ==========
========== UPDATED ON SEPTEMBER 9, 2005 BY GREG J MARTIN ==========
========== UPDATED ON MAY 11, 2006 BY GREG J MARTIN ==========

Environmental Health Completeness Comments

========== REVIEW ON MAY 12, 2005 BY JIM G SAFRANEK ==========
NO COMMENT

Environmental Health Miscellaneous Comments

========== REVIEW ON MAY 12, 2005 BY JIM G SAFRANEK ========== Septic suitability testing has been completed for this proposal.

Pajaro Valley Fire District Completeness Comments

LATEST COMMENTS HAVE **NOT YET** BEEN SENT TO PLANNER FOR THIS AGENCY

========== REVIEW ON MAY 19, 2005 BY COLLEEN L BAXTER ==========
========== UPDATED ON MAY 19, 2005 BY COLLEEN L BAXTER ========== DEPARTMENT NAME: PAJARO VALLEY FIRE Add the appropriate NOTES and DETAILS showing this information on your plans and RESUBMIT, with an annotated copy of this letter: Note on the plans that these plans are in compliance with California Building and Fire Codes (2001) as amended by the authority having jurisdiction. The job copies of the building and fire systems plans and permits must be onsite during inspections. SHOW on the plans a 10,000 gallon water tank for fire protection with a "fire hydrant" as located and approved by the Fire Department if your building is not serviced by a public water supply meeting fire flow requirements. For information regarding where the water tank and fire department connection should be located, contact the fire department in your jurisdiction.
NOTE on the plans that the building shall be protected by an approved automatic fire sprinkler system complying with the currently adopted edition of NFPA 130 and Chapter 35 of California Building Code and adopted standards of the authority having jurisdiction. NOTE that the designeriinstaller shall submit three (3) sets of plans and calculations for the underground and overhead Residential Automatic Fire Sprinkler System to this agency for approval. Installation shall follow our guide sheet. NOTE on the plans that an UNDERGROUND FIRE PROTECTION SYSTEM WORKING DRAWING must be prepared by the designer/installer. The plans shall comply with the UNDERGROUND FIRE PROTECTION SYSTEM INSTALLATION POLICY HANDOUT. Building numbers shall be provided. Numbers shall be a minimum of 4 inches in height on a contrasting background and visible from the street, additional numbers shall be installed on a directional sign at the property driveway and street.
NOTE on the plans the installation of an approved spark arrester on the top of the chimney. The wire mesh shall be 1/2 inch.
NOTE on the plans that the roof covering shall be no less than Class "B" rated roof.
NOTE on the plans that a 30 foot clearance will be maintained with non-combustible vegetation around all structures or to the property line (whichever is a shorter distance). Single specimens of trees, ornamental shrubbery or similar plants used as ground covers, provided they do not form a means of rapidly transmitting fire from

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native growth to any structure are exempt.
The access road shall be 12 feet minimum width and maximum twenty percent slope. All bridges, culverts and crossings shall be certified by a registered engineer. Minimum capacity of 25 tons. Cal-Trans H-20 loading standard. The access road shall be in place to the following standards prior to any framing construction, or construction will be stopped: - The access road surface shall be "all weather", a minimum 6" of compacted aggregate base rock, Class 2 or equivalent, certified by a licensed engineer to 95% compaction and shall be maintained. - ALL WEATHER SURFACE: shall be minimum of 6" of compacted Class II base rock for grades up to and including 5%.oil and screened for grades up to and including 15%and asphaltic concrete for grades exceeding 15%, but in no case exceeding 20%. The maximum grade of the access road shall not exceed 20%, with grades greater than 15%not permitted for distances of more than 200 feet at a time. The access road shall have a vertical clearance of 14 feet for its entire width and length, including turnouts. A turn-around area which meets the requirements of the fire department shall be provided for access roads and driveways in excess of 150 feet in length. Drainage details for the road or driveway shall conform to current.engineering practices, including erosion control measures. All private access roads, driveways, turn-around and bridges are the responsibility of the owner(s) of record and shall be maintained to ensure the fire department safe and expedient passage at all times. SHOW on the plans, DETAILS of compliance with the driveway requirements. The driveway shall be 12 feet minimum width and maximum twenty percent slope.
The driveway shall be in place to the following standards prior to any framing construction. or construction will be stopped: - The driveway surface shall be "all weather", a minimum 6" of compacted aggregate base rock, Class 2 or equivalent certified by a licensed engineer to 95% compaction and shall be maintained. - ALL WEATHER SURFACE: shall be a minimum of 6" of compacted Class II base rock for grades up to and including 5%.oil and screened for grades up to and including 15%and asphaltic concrete for grades exceeding 15%.but in no case exceeding 20%. - The maximum grade of the driveway shall not exceed 20%, with grades of 15%not permitted for distances of more than 200 feet at a time. - The driveway shall have an overhead clearance of 14 feet vertical distance for its entire width. - A turn-around area which meets the requirements of the fire department shall be provided for access roads and driveways in excess of 150 feet in length. - Drainage details for the road or driveway shall conform to current engineering practices, including erosion control measures. - All private access roads, driveways, turn-arounds and bridges are the responsibility of the owner(s) of record and shall be maintained to ensure the fire department safe and expedient passage at all times. - The driveway shall be thereafter maintained to these standards at all times. All Fire Department building requirements and fees will be addressed in the Building Permit phase. Plan check is based upon plans submitted to this office. Any changes or alterations shall be resubmitted for review prior to construction. 72 hour minimum notice is required prior to any inspection and/or test. Note: As a condition of submittal of these plans, the submitter. designer and installer certify that these plans and details comply with the applicable Specifications, Standards, Codes and Ordinances, agree that they are solely responsible for compliance with applicable Specifications, Standards, Codes and Ordinances. and further agree to correct any deficiencies noted by this review, subsequent review, inspection or other source, and, to hold harmless and without prejudice. the reviewing agency. ========= UPDATED ON MAY 19, 2005 BY COLLEEN L BAXTER =========
========= UPDATED ON MAY 23, 2005 BY COLLEEN L BAXTER =========

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EXHIBIT U

========== UPDATED ON SEPTEMBER 13, 2005 BY SKIP RATSEP ==========
========== UPDATED ON SEPTEMBER 13, 2005 BY SKIP RATSEP ==========
DEPARTMENT NAME:
Have the DESIGNER add the appropriate NOTES and DETAILS showing this information on the plans and RESUBMIT. with an annotated copy of this letter:
Add the appropriate NOTES and DETAILS showing this information on your plans and RESUBMIT, with an annotated copy of this letter:
Submit a "plan review response sheet" when corrected sets are submitted for back check. All changes to drawings will require "clouding of the change".
Note on the plans that these plans are in compliance with California Building and Fire Codes (1997) as amended by the authority having jurisdiction.
NOTE on the plans that these plans are in compliance with California Building and Fire Codes (1997) and District Amendment.
Each APN (lot) shall have separate submittals for building and sprinkler system plans.
The job copies of the building and fire systems plans and permits must be onsite during inspections.
SHOW on the plans a public fire hydrant within _____ feet of any portion of the property, along the fire department access route, meeting the minimum required fire flow for the building. This information can be obtained from the water company.
SHOW on the plans a public fire hydrant, meeting the minimum required fire flow for the building, within 150 feet of any portion of the building. This information can be obtained from the water company.
Fire hydrant shall be painted in accordance with the state of California Health and Safety Code. See authority having jurisdiction.
A minimum fire flow _____ GPM is required from 1 hydrant located within _____ feet.
SHOW on the plans a _____ gallon water tank for fire protection with a "fire hydrant" as located and approved by the Fire Department if your building is not serviced by a public water supply meeting fire flow requirements. For information regarding where the water tank and fire department connection should be located, contact the fire department in your jurisdiction.
NOTE on the plans that the building shall be protected by an approved automatic fire sprinkler system complying with the currently adopted edition of NFPA _____ and Chapter 35 of California Building Code and adopted standards of the authority having jurisdiction.
Building numbers shall be provided. Numbers shall be a minimum of _____ inches in height on a contrasting background and visible from the street, additional numbers shall be installed on a directional sign at the property driveway and street.
NOTE on the plans the installation of an approved spark arrester on the top of the chimney. The wire mesh shall be 1/2 inch.
NOTE on the plans that a _____ foot clearance will be maintained with non-combustible vegetation around all structures or to the property line (whichever is a shorter distance). Single specimens of trees, ornamental shrubbery or similar plants used as ground covers, provided they do not form a means of rapidly transmitting fire from native growth to any structure are exempt.
The street/access road shall be named and addressed by the County Office of Emergency Services. Street signs shall be posted, and maintained, to County Public Works. Green and white County style signs shall be used.
Provide an official copy of the duly recorded road maintenance agreement.
All Fire Department building requirements and fees will be addressed in the Building

Permit phase.
Plan check is based upon plans submitted to this office. Any changes or alterations shall be re-submitted for review prior to construction.
____ hour minimum notice is required prior to any inspection and/or test.
Note: As a condition of submittal of these plans, the submitter, designer and installer certify that these plans and details comply with the applicable Specifications, Standards, Codes and Ordinances, agree that they are solely responsible for compliance with applicable Specifications, Standards, Codes and Ordinances, and further agree to correct any deficiencies noted by this review. subsequent review, inspection or other source, and, to hold harmless and without prejudice. the reviewing agency.
========= UPDATED ON SEPTEMBER 26, 2005 BY ROBERT J SHERMAN =========
DEPARTMENT NAME: PV Fire
All Fire Department building requirements and fees will be addressed in the Building Permit phase.
72 hour minimum notice is required prior to any inspection and/or test.
Note: As a condition of submittal of these plans, the submitter, designer and installer certify that these plans and details comply with the applicable Specifications. Standards. Codes and Ordinances. agree that they are solely responsible for compliance with applicable Specifications, Standards, Codes and Ordinances, and further agree to correct any deficiencies noted by this review. subsequent review, inspection or other source, and, to hold harmless and without prejudice, the reviewing agency.

Pajaro Valley Fire District Miscellaneous Comments

LATEST COMMENTS HAVE **NOT YET** BEEN SENT TO PLANNER FOR THIS AGENCY

=========.REVIEWON MAY 19, 2005 BY COLLEEN L BAXTER =========
========= UPDATED ON SEPTEMBER 26. 2005 BY ROBERT J SHERMAN =========

Environmental Review Inital Study
ATTACHMENT 19, 7 of 7
APPLICATION 05-0246

EXHIBIT D

Marquez Traffic Engineering

August 11,2004

John Swift
Hamilton-Swift LUDC
1509 Seabright Avenue
Santa Cruz, CA 95062

Dear John:

I have visited the intersection of Larkin Valley Road and Quail Canyon Road and evaluated the sight distance for the proposed expanded use of this intersection. 1 understand that your client is proposing to add single home site in this area. The parcel in question is APN 049-121-41 and the owner is Katy King. The following are my observations of the site visit made August 10,2004.

The subject intersection is located on Larkin Valley Road approximately ¼ mile east of Mar Monte Road. Larkin Valley Road in this area is a two lane County maintained road with a narrow shoulder along most of its length. Pavement width in the area of the intersection ranges from 32 to 35 feet wide. The pavement is in good condition. The posted speed limit is 35 miles per hour and observed speeds were close to the speed limit in both directions. The roadway is relatively flat to the west of the intersection and has a slight up-grade east of the intersection (2%).

Quail Canyon Road is a narrow .private road 16 to 18 feet wide. The roadway is paved in the vicinity of the intersection. Quail Canyon Road intersects the County roadway at approximately a 45 degree angle. The private road bas a moderate downgrade as it approaches the intersection. (Approximately 4%).

Sight distance measured to the east was more than 500 feet. Sight distance in this direction is more than adequate for the prevailing speed and road geometry.

Sight distance to the west is more restricted. This sight distance was measured as 226 feet. This sight distance falls in the range of values established as acceptable for the 35 mpb design speed of the roadway. (See Table III-1. m A Policy on Geometric Design of Highways and Streets 1990) The minimum stopping sight distance is calculated using the formula:

SSD = Stopping sight distance = 1.47 PV + V^2 / 30(f + G)
P = Perception reaction Time (2.5 sec)
V = Speed (Use 32 -35 mph)
f = Coefficient of braking friction (Use .34)
G = Grade percent (use -0%)

For this location the minimum stopping sight distance acceptable range is calculated as 218 to 249 feet. Under the low volume and rural conditions expected at the site the available sight distance is considered adequate.

Let me know if you bave questions.

Sincerely,

Ron Marquez, P.E.

Environmental Review inital Study
ATTACHMENT 20
APPLICATION 05 0246

737 Via Novella, Aptos 95003 831.688.8178 fax 831.688.8179

EXHIBIT D

Aptos/La Selva Fire Protection District
6934 Soquel Drive • Aptos, CA *95003*
Phone # 831-685-6690 ▪Fax # 831-685-6699

February 16,2006

David Keyon - Planner
County of Santa Cruz Planning Department
701 Ocean Street
Santa Cruz, **CA** 95060

RE: King Project on Quail Canyon Dr. Aptos

David,

As we discussed last week, I met with Katy King and reviewed the improvement plans for Quail Canyon Dr.. Although not currently in the Fire District, we are in the process of annexing the upper end of Larkin Valley Road, and this location falls within the proposed annexation area. As detailed in the improvement plan, it appears that these proposed plans will be a vast improvement over what currently exists and fully support the changes. The current road widths, although not ideal, will suffice, and we will not require the road to be any wider than 12 feet when serving two residences. The road past what would **be** considered the third driveway is more than adequate and would not need any further improvements for our needs. The improvement to the intersection at Larkin Valley and Quail Canyon is a big improvement and will greatly enhance our ability to access the four existing homes on Quail Canyon and the one additional proposed dwelling.

The annexation proposal is based on time trials, and "first due". This area has for many years been known to be better served by the Aptos/LaSelva Fire Protection District because of our response times, and level of protection that we provide. Our response time to the area of this project is approximately 7minutes - 30seconds. There have been **no** changes to County Roads that would impact this in either a positive of negative way.

If you have any questions, please feel free to give me a call at (831)685-6690.

Sincerely,

Jim Dias, Battalion Chief
Fire Marshal
Aptos/LaSelva Fire Protection District

Environmental Review Inital Study
ATTACHMENT 21
APPLICATION 05-0246

EXHIBIT D

Environmental Review Initial Study
ATTACHMENT 2.2
APPLICATION 05-0246

EXHIBIT D

Two comment letters were received during the public review period. These letters are on file at the Planning Department and available for review.

Attachment 23

05-0246

EXHIBIT D

Rural Residential Density Matrix

APN: 049-121-78 General Plan: Rural Residential (R-R)

Developable Land:
12.37 gross acres – 0.53 acres (right-of-way) – 1.06 acres (Slopes > 30%) = **10.57 acres** Net Developable

		Current Point Score with plans dated 8/31/06 La and revised 11/22/06	**Point Score with annexation to Aptos-Selva Fire District**
1.	**Location:** Access via 15' to 16' wide private road	7	8
2.	**Groundwater Quality:** Area IV Adequate quantity, good quality Private/mutual well	8	8
3.	**Water Resource Protection:** Not in septic Problem area. Septic outside groundwater recharge and water supply watershed	6	6
4.	**Timber Resources:** None mapped	10	10
5.	**Biotic Resource:** San Andreas Oak Woodland, Mapped riparian vegetation along Larkin Valley Road (development activity located outside of important habitat)	10	10
6.	**Erosion:** Aromas Weighted average break down 19.7% of site at 0-15% slope = 1.2 (6 X 19.7%) 40% of site at 16-30% slope = 1.2 (3 X 40%) 31.7% of site at 31-50% slope = 0 Total weighted average: 2.4 points	2.4	2.4
7.	**Seismic Activity:** No mapped faults, moderate liquefaction potential	8	8
8.	**Landslide:** Aromas bedrock Weighted average break down 19.7% of site at 0-15% slope = 1.2 (6 X 19.7%) 40% of site at 16-30% slope = 1.2 (3 X 40%) 31.7% of site at 31-50% slope = 0 Total weighted average: 2.4 points	2.4	2.4

EXHIBIT E

9.	**Fire Hazard: 10-20** minute response time on non-dead end road (per GP, less than ½ mile in length) ***Annexation into the Aptos/La Selva Fire Protection District will result in a response time of less than 10 minutes and the building sites are located outside of Critical Fire Hazard***	***6***	10
	TOTAL	**60.8**	***64.8***

Minimum Average Developable Parcel Size*: **5 acres**
(from Rural Residential Table minus Cumulative Constraint Points as determined by the point score)

Number of Potential Building Sites* **2 sites**
(developable acreage divided by minimum average parcel size)

EXHIBIT E

STEPHEN W. GETTEL
288 Quail Canyon
Watsonville, California 95076

October 6,2006

Paia Levine, Staff Planner
County of Santa Cruz Planning Department
701 Ocean Street, 4th Floor
Santa Cruz, CA 95060

Re: Response to Environmental Review
Land Division Application 05-0246

Via: Personally Delivered

Dear Ms. Levine:

I have reviewed your Environmental Review Initial Study. I have serious concerns with the errors and omissions in the study, which I believe substantially affect your determination.

I find it ironic that your study indicates "No improvements are proposed on slopes in excess of 30%." Didn't you review the environmental implications of the plans for the road widening including retaining walls? How can you validate the applicants' making this claim when they propose coming across the road to cut and install a retaining wall in my property frontage sloped in excess of 50%! This will severely limit access to my property. Based upon the proposed encroachment last year, I must insist that a survey be done to prevent any encroachment beyond the right-of-way and on to my property. Because the retaining wall is at the limit of the right-of-way, construction of a retaining wall will impact my property beyond it. Disturbing this slope by placing a retaining wall in it will undermine the tree roots of several huge trees in a slope of sand. Furthermore, it will cover up the existing drainage system at the base of the slope, which is not even shown on the plans. The retaining wall plan is a prescription for disaster. It will cause greater erosion, the possibility of initiating a landslide, the toppling of trees into the roadway and power lines, as well as other factors documented in my letter to Kent Edler, dated September 27,2006, attached. I purchased my property for its privacy, serenity and its natural surroundings. The County classifies my property as part of a Primary Ground Water Recharge Area and a San Andreas Oak Woodland. The proposed wood retaining wall will defile the natural beauty of my property reducing its market value. Also it will leach its preservatives into my part of the primary ground water recharge area, and its construction may destroy some of the young oak seedlings arising all over the properties in the area. I recommend that the applicant make all road widening improvements on their side of the road.

(831)345-8833 • (831)763-0644 FAX
Email: sgettel@charter.net

EXHIBIT F

performed and considered upon which an exception to remove the property from PGR has been made with the re-siting of the prospective improvements into the middle of a riparian feature. This possess a threat to the aquifer, my well and my family's drinking water.

Please consider the attached Pictures 1 – **4** as new evidence.

Picture 1 exhibits a riparian flow through the middle of the building envelope in April 2006.

Picture 2 exhibits the continuing riparian flow below the building envelope distinctly disappearing into the ground. Where does it flow to? Does it flow into the aquifer? So your going to sanction putting a septic field in the middle of this flow without knowing where it goes? This is irresponsible!

Picture ***3*** exhibits the riparian flow out of the applicants' site and into Quail Canyon's entrance at Larkin Valley Road, which then drains into the creek in Harkins Slough. The water stopped flowing out of the site in late August 2006, nearly two months after the creek in Harkins Slough had stopped flowing. This strongly suggests that Quail Canyon is a longer lasting and significant watershed even filling the aquifer beneath Quail Canyon, long after filling of the aquifer from Harkins Slough has declined.

Picture 4 exhibits yet another riparian feature, the overgrown creek bed, which is 2-3 feet deep exiting the applicants' site at Larkin Valley Road. No one has even considered this!

Further investigation of these riparian and ground water recharge features in this situation was strongly recommended by EPA management and staff with whom I have sought advice and direction. Safe Drinking Water, Clean Water, and Wetlands regulations may apply in this situation. The creek bed may link the applicants' property to Harkins Slough, which is considered a "wetlands" by **EPA.**

Splitting a lot and allowing the development of a house with a septic system right in the middle of this riparian and primary ground water recharge swale is unprecedented. Why is the County making an exception supporting such a position against even its own criteria and I would hope better judgment? Your study fails *to* consider the legal background leading to the recommendation of an Environmental Impact Report. I strongly recommend that you reconsider your determination to conclude that an objective and independent Environmental Impact Report be required in order to further this application. I await your response! EPA officials are awaiting my response!

(831)345-8833 • (831)763-0644 FAX
Email : sgettel@charter.net

EXHIBIT F

Very truly yours,

Stephen W. Gettel

Copies to: Tom Burns, Director of Planning
Mark Deming

Attachments

See Aschoff letter of 10/6/06 for Writwer letters of 5/23/06 and 8/24/06

(831)345-8833 • (831)763-0644 FAX
Email: sPettel(ii),charter.net

EXHIBIT F 1

STEPHEN W. GETTEL
288 Quail Canyon
Watsonville, California 95076

September 27,2006

Kent Edler, Civil Engineer
County of Santa Cruz Planning Department
701 Ocean Street, 4th Floor
Santa Cruz, CA 95060

Re: Land Division Application 05-0246
APN 049-121-41

Via: Certified U.S. Mail

Dear Mr. Edler:

Thank you for meeting with me so that I might review the revised plans prepared by Bowman & Williams dated 02-01-06. I do not understand why the plans were unavailable until now?

It appeared to me that the entrance to Quail Canyon at Larkin Valley Road had been reduced from the previous plans. Is this true? Did it receive sufficient review and approval?

While the revised plans no longer appear to indicate a physical "Taking" of my private property outside of the right-of-way for the expansion of the road, the new plans do continue to impose a substantial increase in the burden on my property as the servient tenement. The proposed retaining wall is damaging to my property physically, environmentally, financially, and from a safety standpoint.

As you indicated the proposed retaining wall is to be made of wood and approximately 135-feet long. My property by itself does not even necessitate a retaining wall for any reason. The proposed wall will severely limit access along 135-feet of the front of my property including but not limited to the alternate access road to my property. The proposed wall will be a safety concern. It will be an unforgiving escape to oncoming traffic on this curve. Also it will limit fire fighting access to my property.

I purchased my property for its privacy and its natural surroundings. The County classifies my property as part of a Primary Ground Water Recharge Area and a San Andreas Oak Woodland. The proposed wood retaining wall will defile the natural beauty of my property reducing its market value. **Also** it will leach its preservatives into my part of the primary ground water recharge area, and its construction may destroy some of the young oak seedlings arising all over the properties in the area.

(831)345-8833 • (831)763-0644 FAX
***Email:* sgettel@charter.net**

EXHIBIT F

The proposed retaining wall in the previous plans dated 08-15-05 that encroached beyond the right-of-way and onto my private property has now been proposed to end abruptly at the edge of the right-of-way in a "chop job", which will leave an ugly and unsafe discontinuity for me and my neighbors. If the original proposal was what was required from an engineering perspective and it required a taking of my private property to accomplish it, and I refused, then a proper wall is unlikely and should be moved to the land division side of the road. In response to my questions you indicated that there is no reason that the retaining wall couldn't be built on the land division side of the road, except that it would require engineering since it would be 4-feet or more and consequently would cost more. I will not accept a further burden to my property by the applicant trying to reduce their cost in a speculative development by shifting and reducing their financial responsibility in meeting County matrix requirements and proposing to damage my property in the process.

I find it ironic that documentation provided to me concerning the land division indicates that no cutting and grading will be needed of any 30% or greater slope on the applicant's site. How can the applicant make this claim when they propose coming across the road to cut and install a retaining wall in my greater than 30% sloped property frontage! This slope is sand and I strongly recommend against it.

More burdensome is the fact that a wood wall is going to deteriorate requiring future cost expenditures and yet the applicant does not even participate in the road maintenance agreement and in August 2005 when I was last contacted by the applicant and I refused to sign an agreement in support of the land division, I was then threatened with "they will never sign a road maintenance agreement.'' Well I will not accept any financial burden imposed by the proposed retaining wall.

I will not accept the increased burdens that the proposed retaining wall will impose on my property. Please do not approve the plans as proposed.

Very truly yours,

Stephen W. Gettel

Copies to: Tom Burns, Director of Planning
Mark Demming

(831)345-8833 • (831)763-0644 FAX
Email: **sgettel@charter.net**

EXHIBIT F

-160-

Picture 1

EXHIBIT F

EXHIBIT F

EXHIBIT F

Figure 4

EXHIBIT F

John and Marcy Aschoff
368 Quail Canyon
Watsonville, CA 95076

October 6,2006

To: Paia Levine, Staff Planner – Santa Cruz County Planning Department

Subject: Feedback on Environmental Review Initial Study for Land Division Application 05-0246

Dear Paia,

As residents of Larkin Valley, as well as property owners responsible for the maintenance of the Quail Canyon roadway, we disagree with many of the points of this review Analysis has been insufficient in several key areas, and significant issues have been glossed over or ignored

1 The study ignores the presence of a substantial oak grove WITHIN the building envelope in an area designated as San Andreas Oak Woodland
2. Analysis has been insufficient for the current building site to warrant exception to Primary Groundwater Recharge (PGR) In addition, septic analysis specified as a condition of approval of the PGR exception has not been identified
3 Erosion and drainage from the site will have detrimental effects on the shared roadway, as well as to homeowners along Harkins Slough

As a result, the county should require an Environmental Impact Report and additional mitigating measures to minimize environmental impacts and risks.

The following sections describe the issues in more detail

San Andreas Oak Woodland

Issue 1: The study has ignored the presence of a significant number of oaks growing within the building envelope and in the direct path of the development. Measures should be taken to protect those oaks that may have taken decades to grow within an area designated as San Andreas Oak Woodland (SAOW). This is especially important considering the erosion potential of the soil.

The description of Vegetation on page **4** and the discussion in C2 on page 11 are inaccurate, as they ignore the presence of the oak grove that lies within the building envelope. Here is the situation:

1. The report from Biotic Resources Group of May 6, 2003 written by Kathleen Lyons in its conclusion states that "the easternmost portion of the property supports a mosaic of orchard trees, oak tree groves and Monterey pines". (Please note that her report has compass directions confused since she assumed that Larkin Valley lies to the east of the property when in fact it lies to the north at this point. These *oak* groves are on the northern portion.) The report also lists the presence of many of the species the county

1

EXHIBIT F 4

considers part of **SAOW:** brittle-leaved manzanita, sticky monkeyflower, bracken fern, coast live oak, coffeeberry, California blackberry, and hedge nettle. This report did not examine the characteristics of these groves nor their relationship to the current planned building envelope.

2. If you observed this property today, you would see that the oak groves extend from Larkin Valley to approximately the midpoint of the building envelope. These oaks are not "seedlings", but represent decades of growth. Driving by on the roadway we have counted at least 25 trees, most well over 10 feet tall and some perhaps 35 feet in height, that appear to be within or very close to the building envelope. (We have driven by this substantial emerging oak grove nearly every day for the last 25 years.) We have attached a couple of photos (see Attachment C) taken from the Quail Canyon roadway of the portions of the grove that appear to be within the building envelope and in the path of development
3. There is also a cutout from the Quail Canyon roadway at the north end of the building envelope which serves as the only path for construction vehicles to the actual building site until a driveway is constructed off of the road. **As** a consequence, even if the building envelope is moved, the oak grove would be destroyed or highly impacted unless construction vehicles are restricted from using that path

The county staff should clearly make an onsite evaluation, assessing the quantity, size, and age of the oaks that may be impacted.

In addition, the developer should be required to take measures to protect that oak woodland, as well as other vegetation, both within and outside the building envelope. This should include the entire oak woodland stretching from Larkin Valley Road into the building envelope. This is especially important considering the erosion potential of the soil, drainage problems, and flooding of nearby Harkins Slough.

Primary Groundwater Recharge

Issue 2: The property is mapped as Primary Groundwater Recharge and the applicant has not provided sufficient data or analysis to warrant exception from this classification. The exception to PGR was granted based on a highly-controversial study conducted in 2000 for ridge-top home sites planned for land division application No. 00-0387, and now six years later being applied to this new application with a DIFFERENT building site, located in **a** more environmentally-sensitive area in the basin of a canyon, without ANY further analysis to justify PGR exception of this new building site. The county should require additional analysis pertinent to the new building site.

The following explains our justification for this position:

1. On a previous land division application (00-387), technical experts disagreed regarding removal of ridge-top home sites from **PGR.** The USDA geologists have mapped this area **PGR.** After reviewing the results of the hydrogeology study by Johnson and Associates (J&A), the county water resources experts (Bruce Leclergue and Mike Cloud) requested additional data in the form of soil samples and borings. Only two borings were taken on the parcel, and one of those identified only sand to a depth of a hundred feet. **PGR** designation for the ridge-top home sites was granted only after an appeal by the

applicant's attorney. The county geologist (Joe Hanna) supported the appeal. In processing the current application in 2006 for a new building site in the basin of the canyon, Environmental Planning again requested additional data (e.g., borings supervised by county staff), and again this requirement was over-ridden through an appeal by the applicant's attorney. (See discussions in Attachments A and B.)

2. In application No. 00-387, the planned location of the home sites within the parcel was a significant factor in allowing the exception. The Johnson and Associates (J&A) analysis specifically refers to the "ridge top" home sites. In addition, the letter from the county geologist specifically refers to a "hillside area". They have used the assumption that water would quickly run AWAY from these sites.
3. The location of the proposed home site and building envelope in the current application is in a much more environmentally-sensitive area, namely in the basin of the canyon and in a gently sloping location. Water runs TO this building envelope from the surrounding ridges on the east, south, and west. No analysis has been done to justify removing this particular building site from PGR.
4. Although the Environmental Review claims that the exception to PGR has been applied to the whole parcel (section B4), no analysis has ever been done to justify this broadening of the exception. The Johnson and Associates study from March 2000 on page 9 recommended removal of those "homesites". No data has been shown, either through borings or well samples, that justify exemption for the entire parcel. For example, boring 1 identified in the J&A study is located in the southern portion, but drilling to 100 feet identified only sand. That data alone would suggest that PGR exception for the entire parcel is unwarranted. In fact broadening of the exception to the entire parcel was simply based on claims by the applicant without any justification.
5. Two packages from Jonathan Wittwer (Attachments A and B) provide legal precedents and statutory arguments for requiring an EIR for a PGR exception. In particular, Santa Cruz County Code 16.10.060 justifies a new study based on the fact that building sites have changed significantly.

Issue 3: Provisions for septic analysis are not sufficient. A septic analysis must be conducted as a condition for approval of a PGR exception.

Conclusion #3 from the J&A investigation states that ***'proposed septic leachfield should be investigated by a Registered Environmental Health Specialist or other licensed professional approved by the Santa Cruz County Environmental Health Service. This report should be carefully reviewed by the person designing the sewage disposal systems."*** Joe Hanna's letter (Attachment 10 of the ER document) indicated that all recommendations of the J&A study are conditions of approval for the exception to PGR. I have seen no indication of such conditions presented in the Environmental Review document.

Drainage and Erosion

Issue 4: Drainage from the site is currently inadequate and continually undercuts the Quail Canyon access road. Development and road widening plans must address this drainage problem.

EXHIBIT F

Seepage from the property continually undercuts the road at the entrance from Larkin Valley. This seepage runs through the winter and often into July. Additional development will increase runoff and exacerbate this problem, creating additional cost for neighbors and maintainers of the road. **A** hole roughly 2 feet by 3 feet and nearly a foot deep was recently patched and filled on the side of the road near the entrance from Larkin Valley Road (by the developer, to his credit, prior to putting the existing home on the market). However, that inherent drainage problem persists, and will continue to get worse unless addressed by both the drainage plan and the plans for road widening.

Issue **5:** Development of this site has potentially damaging effects due to increased flooding and silting **of** Harkins Slough. County Planning should require analysis and mitigation plans to address this issue.

Harkins Slough lies in a floodplain, and flooding of the slough onto Larkin Valley Road occurs every year downstream of this site. The flooding has been getting worse in recent years. This causes a safety hazard and property damage to downstream home owners, as well as environmental damage to the slough. Increased runoff and silting of the slough are major causes of this problem and runoff and erosion from this site threaten to exacerbate the problem. This site has been identified as high erosion potential. In prior years, there have been gullies several feet deep with sand washing onto the Quail Canyon roadway. **A** stream runs through the building envelope in the winter. Runoff from the site will increase by reducing the highly permeable surfaces in the basin of the canyon (exactly the location of the building envelope). Note: In the early 1980's in one heavy storm, one house (with its resident) at the base of a canyon several parcels to the west slid onto Larkin Valley Road. This gives an indication of the potential severity of erosion, runoff, and slides in this environmentally-sensitive area.

Road Widening and Retaining Structures

Issue 6: Road widening assumptions in the Environmental Review are incorrect and misleading, and do not take into consideration impact to neighboring properties. The environmental effects of this widening must take into consideration any impact to neighboring properties.

1. In the "Detailed Project Description" (page 5, second paragraph), several items need to be corrected, as follows:
   a. The report claims that the road is 16 to 18 feet wide. This is incorrect and has been previously brought to the Planner's attention on more than one occasion. The road is by and large 16 feet wide with some places as narrow as 15 feet. Note: Kent Edler validated the road dimensions during his site visit on May 13, 2005.
   b. The report claims that the road **will** be widened to 18 feet for its entire length from Larkin Valley Road to the driveway for 371 Quail Canyon. This is incorrect and has been previously brought to the Planner's attention on more than one occasion. The road widening is being proposed to the point of entry to the Aschoff driveway (368 Quail Canyon). The driveway to 371 does NOT begin at this point. **A** right-of-way exists on the roadway along the Aschoff property for another 90 feet beyond the start of the Aschoff driveway, providing access to the Aschoff property for various purposes (e.g., well

EXHIBIT F

maintenance). In addition, that portion of roadway leads to a "turnaround" required for emergency services. This section of road is not a "driveway" and cannot be used as such (e.g., parking of vehicles that block access to the Aschoff property or emergency services turnaround). Consequently, the "full length" of the roadway is well beyond the start of the driveway for **368** Quail Canyon, and in reality extends to the emergency services turnaround. Note that there is also another right-of-way leading to the Holcomb property to the south that lies on top of this section of roadway

Note: The entire road from Larkin Valley to and including the emergency services turnaround existed before 1980, way before the driveway or residence for 371 Quail Canyon was ever planned

2. The applicant had always conveyed to us, on multiple occasions, that any road widening would occur entirely on the 12-acre side of Quail Canyon However, the proposed road widening plans do NOT honor that commitment. In fact, the proposed road widening plans include grading and an approximately 100-foot long retaining wall on Mr Gettel's property, despite Mr. Gettel's objections. The proposal calls for widening in a critical area that is currently only 15 feet wide just past Mr Gettel's driveway The grading will occur on his property in an area in excess of 50% grade **Note: Page 7, #3 of this report states that no improvements are proposed on slopes in excess of 30%. Based upon the proposed retaining wall on Mr. Gettel's property, this is NOT a correct statement.**

   Also, the grading on Mr Gettel's property may impact the root structure of several trees along the road on his property. We're concerned because we're ultimately responsible for maintaining this section of the Quail Canyon road (based on our Road Maintenance Agreement which the applicant does not participate in)

   Kent Edler confirmed, on several occasions, that it is technically feasible to widen Quail Canyon on the 12-acre side of the road. **Consequently, the road widening needs to occur entirely on the 12-acre side of Quail Canyon, as originally communicated to us, and to minimize impact to the neighbors.**

3. This report neglects to mention that the proposed retaining wall on Mr Gettel's property would be constructed of treated wood, which has adverse environmental effects, as well as limited longevity. This translates into additional burden and unfair impact to the Quail Canyon neighbors. **If there are any retaining structures, they should be concrete.**

   Note: Quail Canyon does not currently have any retaining wall structures since the road follows the natural contour of the land, and has survived the last 25+ years.

4. In a letter (dated March 27, 2006) from Jonathan Swift, the applicant's land consultant, there is reference to a retaining wall on the Aschoff property. However, no such plans have been shared with us. Do such plans exist? If so, how can we obtain a copy of them?

5. There is confusion about the specific road widening requirements for Quail Canyon. For example,
   a. According to Randall Adams (email dated 9/29/04): *"The road will need to be widened to the point where no more than two driveways exit the roadway – this requirement is an absolute minimum, and **18** feet **(or** more) width could be required by the decision making body all the way to the last driveway entrance."*

b. In the review by Greg Martin (dated 5/13/05), the following is stated: *"The access road serves more than 2 parcels and is recommended to be 24 feet wide road with a 40 foot right-of-way. An 18 foot wide road is acceptable if there are constraints."*
c. Based on a letter to the Planner from Jim Dias (Aptos/La Selva Fire Protection District, dated 2/16/06), the following is stated: *The current road widths, although not ideal, will suffice, and we will not require the road to be any wider than 12 feet when serving two residences."*
d. The Santa **Cruz** County General Plan (section 6.5.1) clearly identifies road widening requirements, as follows: *"Access roads shall be a minimum of 18 feet wide for all access roads or driveways serving more than two habitable structures, and 12 feet for an access road or driveway serving two or fewer habitable structures."*

If the intent is to satisfy the minimum requirement, then widening the road to Mr. Gettel's driveway should be sufficient. If the intent is to provide full access (i.e., the full length of the road) for fire protection vehicles, then the road needs to be widened all the way to the emergency services turnaround. **The plans need to be revised to reflect one of these two options, and the density matrix and implementation need to accurately reflect the option selected.**

6. The road widening plans have been revised since August 2005. Have the revised plans, dated February 2006, been reviewed and approved by the same individuals reviewing and approving the August 2005 road widening plans? If so, where are these approvals documented?

Other comments and reference to sections in the Environmental Review

1. Page **5**, second paragraph. We disagree Please see Issue 6.
2. Page 7, A3. We disagree. Please see Issue 6.
3. Page **7, A6.** We disagree. Please see Issue 3.
4. Page **8,** B4. We disagree. Please see Issue 2.
5. Page **9,** B5. We disagree. Please see Issue 3.
6. Page 9, B7. We disagree. Please see Issues 4 and 5.
7. Page **9,** B8. We disagree. Please see Issues 4 and 5.
8. Page 10, B9. We disagree. Please see Issues 4 and 5.
9. Page 10, B10. We disagree. Please see Issue 2.
10. Page 11, C2. We disagree. Please see Issue 1.
11. Page 13, **E3. We** disagree. Please see discussion of retaining wall in Issue 6.
12. Page 20, **K6** of the report, the following is stated: *"One lane will remain open at all times."* Does this refer to Larkin Valley Road or Quail Canyon? In order for that statement to be true for Quail Canyon, this road would have to be widened to 18 feet fiom Larkin Valley Road to the emergency services turnaround, which is not the case in the proposed road widening plans.

Summary and Conclusions

We believe that the detrimental effects of all of the above-mentioned issues warrant a requirement for an Environmental Impact Report The report should address

- Examination of the Primary Groundwater Recharge designation for the specific building site proposed in this application This should include borings and soil samples monitored by appropriate county staff
- Effects of increased runoff created by impermeable surfaces on top of the naturally highly-permeable soils at the basin of this canyon, causing increased flooding of the Harkins Slough floodplain
- Effects of erosion of the sandy soils and resulting silting of the Harkins Slough floodplain and riparian areas
- Potential destruction of oak woodland and other vegetation inside and outside the building envelope in prime SAOW habitat, and in areas highly subject to erosion
- Septic contamination in highly-permeable soils

We also believe that decisions being made for this land application are setting a dangerous precedent. For example, exemption of the entire 12-acre parcel from Primary Groundwater Recharge based on a single boring is entirely inappropriate. It suggests that nearly any parcel in the Larkin Valley area should be exempt from PGR, or alternatively suggests that this application is being treated in a very special manner.

We appreciate your attention *to* the issues presented here

Sincerely,

John Aschoff

Marcy Aschoff

Attachment **A:** Letter from Jonathan Wittwer to Mi. Ken Hart, May 23,2006, regarding Environmental Review of Groundwater Recharge Designation for Land Division Application No. 05-0246

Attachment B: Letter from Jonathan Wittwer to Tom Burns, et al, August 24,2006, regarding Application No. 05-0246, APN 049-121-78 Quail Canyon and Larkin Valley Roads

Attachment **C:** Photos of oaks within or near building envelope taken from the access road

EXHIBIT F

Attachment A

EXHIBIT

Jonathan Wittwer
William P. Parkin
Shandra D. Handley
Brett W. Bennett

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SANTA CRUZ, CALIFORNIA 95060
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PARALEGAL
Miriam Celia Gordon

May 23, 2006

Mr. Ken Hart, County Environmental Coordinator
Santa Cruz County Planning Department
701 Ocean Street, Room 400
Santa Cruz, CA 95060-4073
(831) 454-2131 facsimile
(831) 454-3127

Mr. John Ricker, Land Use and Water Quality Program Coordinator
Environmental Health Department
County of Santa Cruz
701 Ocean Street, Room 330
(831) 454-3128 facsimile
(831) 454-2022

RE: Environmental Review of Ground Water Recharge Designation for Land Division Application No. 05-0246
Applicant: King
APN: 049-121-78
Former APN: 049-121-41

Dear Mssrs. Hart and Ricker:

This office represents John Aschoff, Marcy Aschoff, and Stephen Gettel, neighboring property owners to the above-described Land Division Application. Our clients request that the County maintain and enforce the primary groundwater recharge regulations applicable to APN 049-121-78 so as to avoid septic contamination and to assure recharge of scarce water supplies. The purpose of this letter is to address environmental review of Land Division Application Number 05-0246 as it relates to the primary ground water recharge designation.[1] We submit that this project requires an

[1] Other potential environmental impacts will be addressed separately from this letter.

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environmental impact report (EIR) because it inay be fairly argued that this project inay cause significant, adverse environmental effects.

Under the California Environmental Quality Act (CEQA-Public Resources Code, § 21000 et seq.), the standard of review for a public agency deciding whether to prepare an environmental impact report (EIR) is a "fair argument." If a lead agency, such as the County here, receives fair argument that a project may cause significant, adverse environmental effects, the agency has a non-discretionary duty to require an EIR. Pub. Res. Code §§ 21100, 21151,[2] 21080, 21082.2; *Pocket Protectors v. City of Sacramento* (2004) 124 Cal. App. 4th 903, 927-928; see also *No Oil, Inc.* v. *City of Los Angeles* (1974) 13 Cal.3d 68, 75.

Further, under the fair argument standard, the question is not whether the significant impacts will occur, but whether, in light if the whole record, there is any substantial evidence to support a fair argument that negative effects might occur. If there is any substantial evidence of a fair argument that a project might cause a significant impact, the agency's decision to adopt a negative declaration inust be set aside. *Friends of "B" Street v. City of Hayward* (1980) 106 Cal. App. 3d 988, 1002; *San Bernardino Valley Audubon Society v. Metropolitan Water Dist.* (1999) 71 Cal. App. 4th 382, 389. Moreover, even if the agency can point to evidence that the project will not have a significant environmental impact, a negative declaration still must be set aside if the record contains *any* substantive evidence that there might be a significant, adverse environmental impact. *Pocket Protectors* (2004) 124 Cal. App. 4th at 927 citing Pub. Res Code $21151(a) and Cal. Code. Regs., tit. 14, §15064(f)(1),(2).

In the case of this Land Division Application, the project inay have at least two significant, adverse effects on the environment: (1) the redesignation of twelve rural acres from a primary groundwater recharge area to an unrestricted, divided parcel; and (2), the potential construction of buildings involving the creation of new septic systems which inay contaminate the groundwater. Historically, the County has protected this area and restricted population density and growth because there was concern that the area was important for groundwater recharge and vulnerable to contamination by septic systems. Santa Cruz County General Plan, §§ 5.8.2.; 2.3.1 and 2.3.2 on the Rural Density Matrix, See Exhibit 5.

Under Section 5.8.2 of the Santa Cruz County General Plan, the County determined that the soils of the area were porous to the extent that new parcel sizes had to

[2] Section 21151 creates a low threshold requirement for initial preparation of an EIR and reflects a preference for resolving doubts in favor of environmental review when the question is whether any such review is warranted.

be a minimum of ten acres in size. Santa Cruz County General Plan, Objective 5.8b "Overdrafted Groundwater Basins", § 5.8.2 Land Division Density Requirements in Primary Groundwater Recharge Areas. Under CEQA, there is evidence of a fair argument when the applicant aspires to begin "a project [that] may '[c]onflict with any applicable land use plan, policy, or regulation ... adopted for the purpose of avoiding or mitigating an environmental effect.'" *Pocket Protectors v. City of Sacramento* (2004) 124 Cal. App. 4th 903, 929 [emphasis added] citing CEQA Guidelines, appendix. G, § IX, subd. (b). Consequently, an EIR is required here because the applicants seek to create a parcel that is smaller than ten acres, and arguably detrimental to the General Plan's goal of preventing groundwater overdraft. This qualifies as a fair argument under CEQA.

Applicants here have sought to avoid the General Plan requirements by claiming that the Subject Property is not in a prime groundwater recharge area. Recently, Staff Geologist Joe Hanna apparently accepted the conclusions of the hydrogeologic testing performed for ridge top building sites by Rogers E. Johnson & Associates (the J&A Investigation). Based on only two boring samples, the J&A Investigation extrapolated that there is a continuous layer of clay preventing the percolation of all surface water into the ground water. Exhibit 4, p.9. We submit that the proper way to evaluate whether the General Plan recharge requirements apply is through an independent EIR consultant. The presence of subsurface clay in two locations does not preclude water or septic waste from reaching the ground water. At a minimum, as described in the following, there is fair argument that the General Plan recharge requirement applies.

In a February 12, 2001 letter to the Land Division Applicants from Bruce Leclergue and John Ricker, Mssrs. Leclergue and Ricker state that the property lies in "a critically overdrafted area" according to the California Department of Water Resources. As a consequence, "[a]pproximately three times as much groundwater is presently extracted from the local aquifers as compared to the level of pumpage that can be sustained through natural replenishment." Exhibit 1, p.1. The Leclergue/Ricker letter goes on to discuss that the overdrafting of the ground water has resulted in a lowering of the water table and salt water intrusion which has now reached one mile inland. Most significantly, the letter stated that "[a]ny intensitication of groundwater use or **reduction in recharge in this area will only serve to exacerbate the present serious problem."** [emphasis added] *Ibid.*

Furthennore, Mssrs. Leclergue and Ricker also addressed the issue of subsurface clay deposits argued by the Applicants. The J&A Investigation found clay and concluded that it was impossible for the groundwater to recharge the aquifer. Leclergue and Ricker point out that there is no reason to make such a conclusion. In their letter to the Applicants, they state that despite the presence of some clay, "it is unlikely that [the clay layers] create an impenetrable seal above the regional water table. More likely,

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groundwater infiltrates onto and cascades over these perching layers. **Thus, the regional water table is still recharged from this location, albeit at a slower rate than if the aquifer consisted only of sands and gravels."** [emphasis added] Exhibit 1, p.2.

Additionally, On July 13, 2001, Mike Cloud met with Rogers Johnson with the understanding that the primary groundwater recharge designation would be removed if Mr. Johnson could demonstrate a continuous layer of impenetrable clay. Mr. Cloud wrote "[t]oday [Rogers Johnson] showed me a cross-section generated from the field boring data that depicted subsurface conditions." Based on these data Mr. Cloud saw layers of clay but they never lined up to the extent that they sealed the surface water from the ground water; Mr. Cloud noted that he and Rogers Johnson both agreed with this appraisal. Mr. Cloud stated that "[a]lthough there were several relatively thin clay layers encountered in each of the holes, and an inferred clay layer immediately below a mapped spring location, none of these layers lined up in such a way as to infer a continuous clay unit. . . Based on this cross-section, I indicated that that we did **not** have sufficient grounds to remove the 'primary groundwater recharge' designation for the parcel." Based on all this information, it appears that the presence of clay is a very misleading indicator. It seems that any boring sample in the area will hit layers of clay; however, numerous sources have stated that the clay does not create an iinpenneable seal over the groundwater. Exhibits 1 and 3.

And finally, according to the attached Santa Cruz County GIS map, the County currently regards approximately 90% of the parcel as a groundwater recharge area. Since the current, revised building project involves the middle-western area of the parcel, there is an extremely high chance that the applicant is planning to build above a primary groundwater recharge area. The County's map shows that the entire lower half of APN 049-121-78 sits above a primary groundwater recharge area. See Exhibit 2 and 6.

The foregoing examples indicate that there is excellent evidence that this parcel is indeed a primary groundwater recharge area. Moreover, even if **this** is viewed simply as a difference of opinion ainong experts, an EIR is still required. Under *Pocket Protectors*, the court stated that "[w]here such expert opinions clash, an EIR should be done." *Pocket Protectors v. City of Sacramento* (2004) 124 Cal. App. 4th 903, 928 citing Cal. Code Regs. tit. 14, §15063(g). Moreover. in the *Architectural Heritage* case, the court found that fact-based evidence proffered by staff constitutes substantial evidence of fair argument under Section 21082.2 (c) of CEQA. *Architectural* ***Heritage*** *Association v. County of Monterrey* (2004) 122 Cal. App. 4th 1095, 1115. Therefore, a letter from two experienced staff members from the Planning Department and a Planning Department Memorandum from Mike Cloud qualify as fair argument. Likewise, as stated earlier, there is also substantial evidence of a fair argument when a project conflicts with the General Plan.

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Under CEQA, "substantial evidence" means "enough relevant information and reasonable inferences from this information" that a fair argument can be made to support a conclusion. *Pocket Protectors v. City of Sacramento* (2004) 124 Cal. App. 4th 903, 927-928. Substantial evidence includes "facts, reasonable assumptions predicated upon facts, and expert opinion supported by facts." *Id.* citing Guidelines, Cal. Regs. Code, tit. 14, §15384(b).

Here, there is substantial evidence that it was correct for the County to designate this parcel as a primary groundwater recharge area; at minimum the evidence here shows that experts disagree about the potential impacts of this project. Mike Cloud criticized the conclusions of the J&A Investigation and so did John Ricker and Bruce Leclergue. Exhibits 1 and 3. All three of these County officials/experts indicated that the J&A Investigation did not support the removal of the Primary Groundwater Recharge designation for this project. Exhibit 1, p.2; Exhibit 3, p.1. Moreover, the County Geographic Information Service (GIS) Website used compiled scientific data regarding soil characteristics to determine where the groundwater recharge areas are located. Exhibit 2. Thus, there is ample evidence to support a conclusion that this parcel sits on a primary groundwater recharge area. At the very minimum, there is abundant fair argument that this project should be vetted through the EIR process.

Alternatively, we also disagree with the use of the J&A Investigation in this context because the **investigation was not prepared for this particular project or building site.** The Land Division Applicants are content to infer that the data collected by J&A back in 2000 is applicable to the entire twelve acre parcel. There is at least fair argument that this is an unreasonable inference because the property is large and not uniform. Moreover, as Mssrs. Ricker and Laclergue discussed in their letter, the primary groundwater designation was couched on the permeability of the surficial soils and their ability to allow for recharge. Exhibit 1, p.1. The fact that the J&A Investigation did not even sample where the applicants plan to construct buildings leaves a critical gap in the necessary infonnation. Cal. Regs. Code, tit., 14, §15063(c). Thus, without more data, this Initial Study cannot reasonably state that there is a continuous, gap-free layer of clay under the entire twelve acre parcel; more significantly, as the statements of Mssrs. Ricker, Cloud, and Laclergue indicate, even if there is a layer of clay under their proposed building sites, it is not necessarily accurate or prudent to conclude that the water [or septic waste] cannot percolate down to the ground water.

The J&A Investigation of the Property (Exhibit 4) discusses whether the septic effluent will contaminate the seasonal perched water table fonning over the clay layers based on ridge top homes. J&A Investigation, p. 9. The Land Division Applicants rely heavily on this appraisal, however, the current land division plan calls for the

EXHIBIT F

development of homes in a very different location.[3] Thus, if the J&A Investigation does not contemplate this project's building sites, the Initial Study cannot rely on the J&A Investigation to demonstrate the absence of a fair argument as to the impacts fi-om the addition of different impervious surfaces and new septic systems to the area.

In conclusion, we submit that the Environmental Coordinator should require preparation of an EIR to evaluate the impacts of their development project and the reclassification of the area as an unrestricted, divided parcel.

Very truly yours,

WITTWER & PARKIN, LLP

Jonathan Wittwer

Enclosures:
Exhibit 1-Ricker/Laclergue letter to Applicants-February 12, 2001
Exhibit 2-Santa Cruz County GIS Map-showing parcel lines and shaded areas of primary groundwater recharge
Exhibit 3-Planning Department Memorandum by Mike Cloud-re his meeting with Rogers E. Johnson
Exhibit 4-Hydrogeologic Investigation by Rogers E. Johnson & Associates
Exhibit 5-Santa Cruz County General Plan-sections on the Rural Density Matrix and Land Division Density Requirements for Primary Groundwater Recharge Areas
Exhibit 6-Area where Applicants plan to build.

cc: John and Marcy Aschoff
Stephen W. Gettel
Ellen Pirie, District Supervisor
Tom Burns, Planning Director

[3] John Aschoff went to the County Planning Department to visually inspect the building plans for this site. The office does not allow photocopying of plans so Mr. Aschoff marked the building site on his own map of APN 049- 121-78 (Exhibit 6). From the map it is apparent that the Applicants plan to build a good distance from the two boring sites. This inap was photocopied from the J&A Investigation.

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Exhibit 1

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County of Santa Cruz

Flood Control and Water Conservation District

701 OCEAN STREET, SUITE 330, SANTA CRUZ. CA 95060-4073
(831) 454-2580 FAX: (831) 454-2131 TDD: (831) 454-2123
ALVIN D. JAMES, DIRECTOR

February 12,2001

John &Julia King
225 Camino Al Mar
Watsonville, CA 95076

Re: Review of Development Permit Application 00-0387, Parcel 049-121-41

Dear Mr. and Ms. King,

Water Resources staff reviewed Application 00-0387 which proposes to subdivide a 13-acre parcel in Larkin Valley into three lots of approximately 4-acres each. Staff were asked to review the application to evaluate its conformance with current planning code as well as general plan policy. Accompanying the application is a hydrogeologic report, prepared by Rogers Johnson, dated March 14,2000. The report concludes that the property should be removed from the designated Primary Groundwater Recharge constraint list because "several impermeable clay layers" separate the ground surface from the regional water table. The report suggests that infiltrating water does not recharge the regional aquifer, nor will effluent from site septic systems impact the regional water table. Staff has also met with Rogers Johnson to discuss the technical and regulatory issues surrounding this application.

This property lies within a region designated as critically overdrafted according to the California Department of Water resources. Approximately three times as much groundwater is presently extracted from the local aquifers as compared to the level of pumpage that can be sustained through natural replenishment. Due to the high level of groundwater pumping in this region, the regional water table in the Larkin Valley area table has been lowered roughly to sea level. This basin-wide lowering of the water table has resulted in seawater intrusion into the aquifer for a distance of approximately one mile from the shore line. Any intensification of groundwater use or reduction in recharge in this area will only serve to exacerbate the present serious problem.

Chapter 5 of the County's General Plan specifically addresses overdrafted groundwater basins. This Chapter, in Section 5.8, defines the County's goals and policies in protecting these areas. The "Primary Groundwater Recharge Area" is defined as "... those areas where local soil conditions and underlying geologic formations allow for infiltration and percolation of rainfall and runoff into groundwater basins." This Section goes on to restrict the minimum size of new parcels located in these designated areas.

There appears to be some confusion regarding the definition of "Primary Groundwater Recharge Area." As indicated above, your geologic consultant concludes that the property should be removed from the designated Primary Groundwater Recharge constraint list because "several impermeable clay layers" separate the ground surface from the regional water table. However, the main issue regarding "primary" recharge, is that the surficial soils in these areas allow for relatively rapid infiltration of rainfall and

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runoff into the subsurface so that the recharge may eventually reach the main aquifer. Although there may be intervening low permeability layers that inhibit or cause the infiltrating groundwater to take a more circuitous path to reach the main aquifer, the pathway the infiltrating groundwater takes is of secondary importance. Only if there were a laterally extensive aquiclude that caused nearly all of the infiltrated groundwater to discharge to the ground surface could an area such as this be considered for removal from the Primary Groundwater Recharge designation.

Staff concludes there is inconclusive proof that infiltrating water from this site would not recharge the aquifer. As the report points out, the two subsurface clay layers identified during the site investigation were deposited in a fluvial environment. In such an environment, the different sediment types typically occur as lenticular deposits and are discontinuous in extent. Although the clayey deposits prevent a direct flow route from the ground surface to the water table, it is unlikely that they create an impenetrable seal above the regional water table. More likely, groundwater infiltrates onto and cascades over these perching layers. Thus, the regional water table is still recharged from this location, albeit at a slower rate than if the aquifer consisted only of sands and gravels.

The County is presently reviewing the adequacy of current policies, ordinances, and practices for the protection of groundwater resources and specifically the recharge areas. Water Resources staff will be going back to the Board of Supervisors to seek further guidance on this issue. And it is likely that staff will recommend that no further applications for removal from designated groundwater recharge areas be considered until the area specific conditions can be remedied and the policies updated in the upcoming General Plan revision.

Based on the above discussion, we have determined that the information submitted in your report by Rogers Johnson, dated March 14, 2000, does not support the removal of the Primary Groundwater Recharge designation from this parcel.

Bruce Laclergue

Bruce Laclergue
Water Resources Manager

John Ricker
Land Use and Water Quality Program Coordinator

cc: Ken Hart, Co. Environmental Coordinator
Richard Emigh, Applicant

King Recharge Letter.wpd

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Exhibit 2

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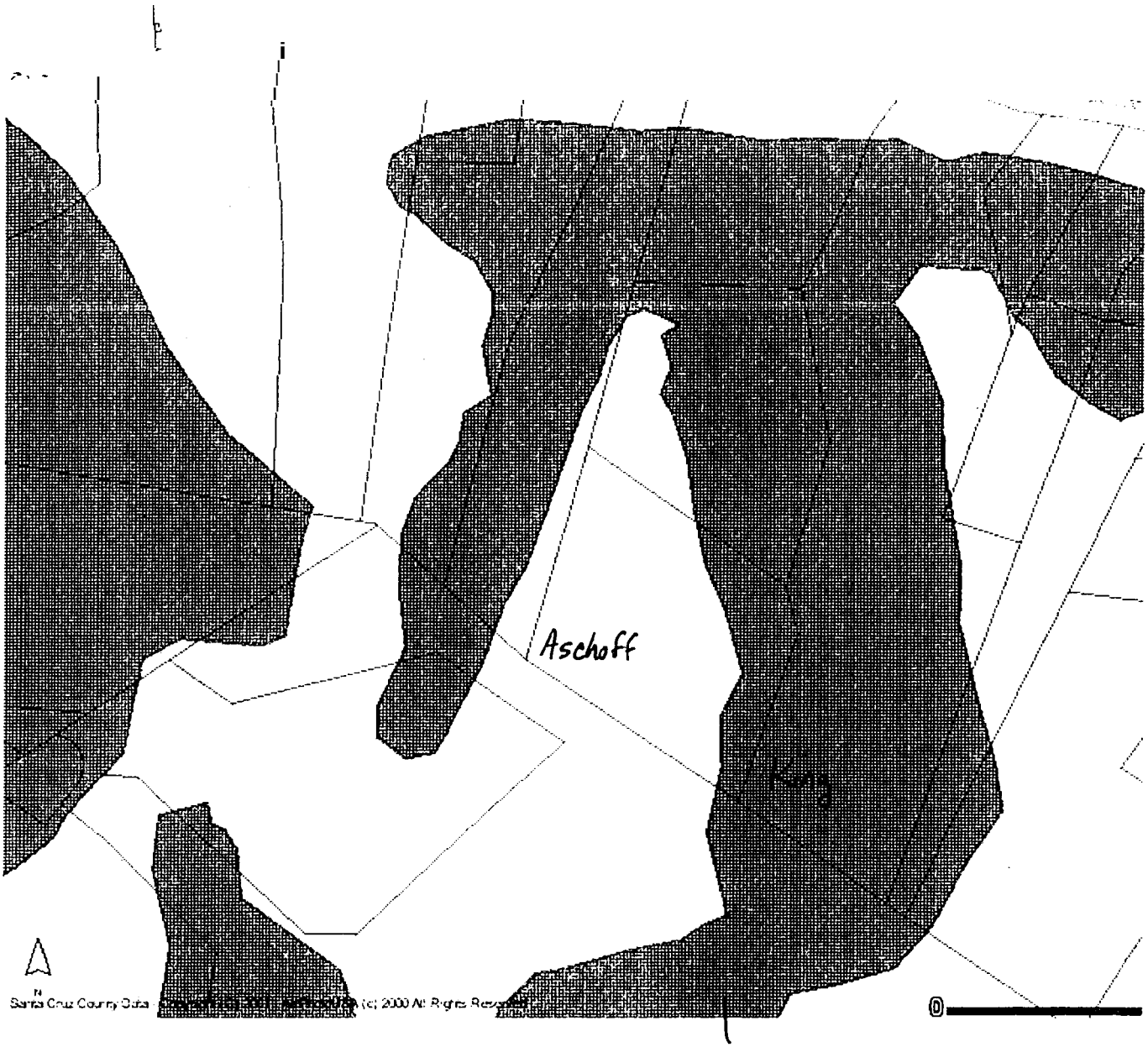


groundwater recharge areas are shaded.

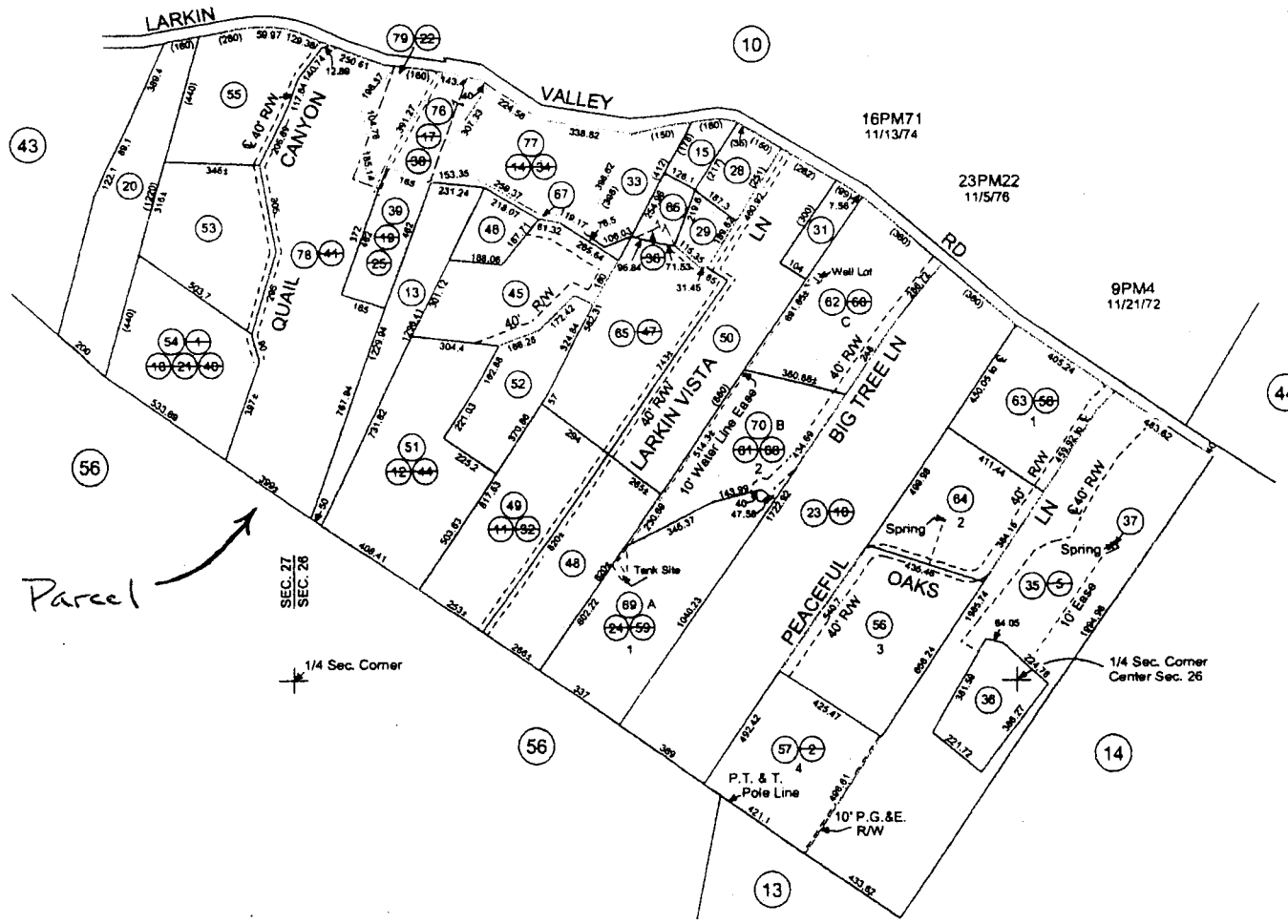
FOR TAX PURPOSES ONLY

SAN ANDREAS RANCHO

W. 1/2 SEC. 26 & E. 1/2 SEC. 27, T.11S., R.1E., M.D.B. & M.

Tax Area Code
69-264

49-12



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

Assessor's Map No. 49-12
County of Santa Cruz, Calif.
April 2000

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Exhibit 3

COUNTY OF SANTA CRUZ
PLANNING DEPARTMENT
MEMORANDUM

DATE: July 13, 2001

TO: Application File 00-0387

FROM: Mike Cloud MC

SUBJECT: Parcel 049-121-41

I met today with Rogers Johnson, the geologic consultant for the property owner Katey King, regarding the hydrogeologic evaluation he was conducting on the subject parcel. The property owner was applying to have the designation of "primary groundwater recharge" removed from the subject parcel. At a meeting with Rogers on April 5,2001, we agreed that if he could demonstrate using the field data that 1) there was a *continuous* clay layer beneath the site that prevented infiltrating water fiom reaching the underlying aquifer and 2) that this clay layer was oriented such that the intercepted (perched) groundwater would drain towards the creek and daylight as surface springs (thereby not recharging the aquifer beneath the site), then we would remove the "primary groundwater recharge" designation fiom this parcel. **At** the time of that meeting, he only had subsurface data from 2 borings and a sketch map. Later in May he sent me a driller's log and a geophysical log from a **well** that was installed on the property last year. He and I agreed that prior to drilling any additional borings that he should generate a cross-section to see if he could infer a continuous, correctly oriented clay layer, using the data from the well, **2** borings, and surveyed topographic map.

Today he showed me a cross-section generated from the field boring data that depicted subsurface conditions. The cross-section was keyed to a Bowman and Williams surveyed base map. Although there were several relatively thin clay layers encountered in each of the holes, and an inferred clay layer immediately below a mapped spring location, none of these layers lined up in such a way as to infer a continuous clay unit. We both noted that we could not see a meaningful correlation. Based on this cross-section, I indicated that we did not have sufficient grounds to remove the "primary groundwater recharge" designation from this parcel. Rogers said that he would share the newest data and summary of our meeting with his client.

I asked that he send me a copy of the cross-section to add to our files. He said he would get it to me later.

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Exhibit 4

EXHIBIT F

ROGERS E. JOHNSON & ASSOCIATES
CONSULTING ENGINEERING GEOLOGISTS
1729 Seabright Avenue, Suite D
Santa Cruz, California 95062
e-mail: reje@bigfool.com
Ofc (831) 425-1288 • Fax (831) 425-1136

HYDROGEOLOGIC INVESTIGATION
KING PROPERTY
LARKIN VALLEY ROAD
WATSONVILLE, CALIFORNIA
SANTA CRUZ COUNTY APN 049-121-41

REJA Job No. H98056-76
March 14,2000

EXHIBIT F

ROGERS E. JOHNSON & ASSOCIATES
CONSULTING ENGINEERING GEOLOGISTS
1729 Seabright Avenue, Suite D
Santa Cruz, California 95062
e-mail: reja@bigfoot.com
Ofc (831) 425-1288 • Fax (831) 425-1136

March 14,2000

Ms. Katy King
Monterey Bay Properties
620 Capitola Avenue
Capitola, California 95010

Job No. H98056-76

Re: Hydrogeologic Investigation
Larkin Valley Road, Watsonville, California
Santa Cruz County APN 049-121-41

Dear Ms. King:

The following report presents the results of our hydrogeologic investigation of the above referenced property. The purpose of our investigation was to determine whether the proposed 2-split of the 12-acre parcel would be feasible without causing contamination of the aquifer beneath the property.

The Santa Cruz County Planning Department has designated the subject property a Primary Groundwater Recharge (PGR) constraint area. The Planning Department defines PGR areas as being underlain by an aquifer where soils and native earth materials exhibit **a** percolation rate of greater than 2 inches per hour. These areas are thought to be substantial contributors of recharge to aquifers (water bearing units) at depth. For newly created parcels of less than 10 acres, the county requires a technical report to determine whether a septic system on the parcel can dispose of effluent without adversely affecting the groundwater.

Our study indicates that the property should be removed from Primary Groundwater Recharge status as defined by the Santa Cruz County ordinances. Septic effluent discharged beneath the property has a very low potential for contamination of the aquifer.

Please call if you have questions.

Sincerely,

ROGERS *E*. JOHNSON & ASSOCIATES

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

EXHIBIT F

TABLE OF CONTENTS

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INTRODUCTION

This report presents the results of our hydrogeologic investigation of the 12-acre parcel (APN 049-121-41) located on Larkin Valley Road in Santa Cruz County, California (Figure 1). The property owner proposes to subdivide the currently undeveloped parcel into two parcels of roughly equal acreage.

The purpose of our investigation was to evaluate the hydrogeologic conditions of the property and determine whether the conditions are conducive with removal of the property from Primary Groundwater Recharge constraint status. The scope of our study included the following:

1. Review of pertinent published and unpublished maps and reports;

2. Aerial photograph analysis;

3. Field mapping;

4. Subsurface exploration consisting of two deep borings;

5. Analysis of water well logs and logs of exploratory borings advanced on nearby properties; and

6. Preparation of this report and the accompanying graphics.

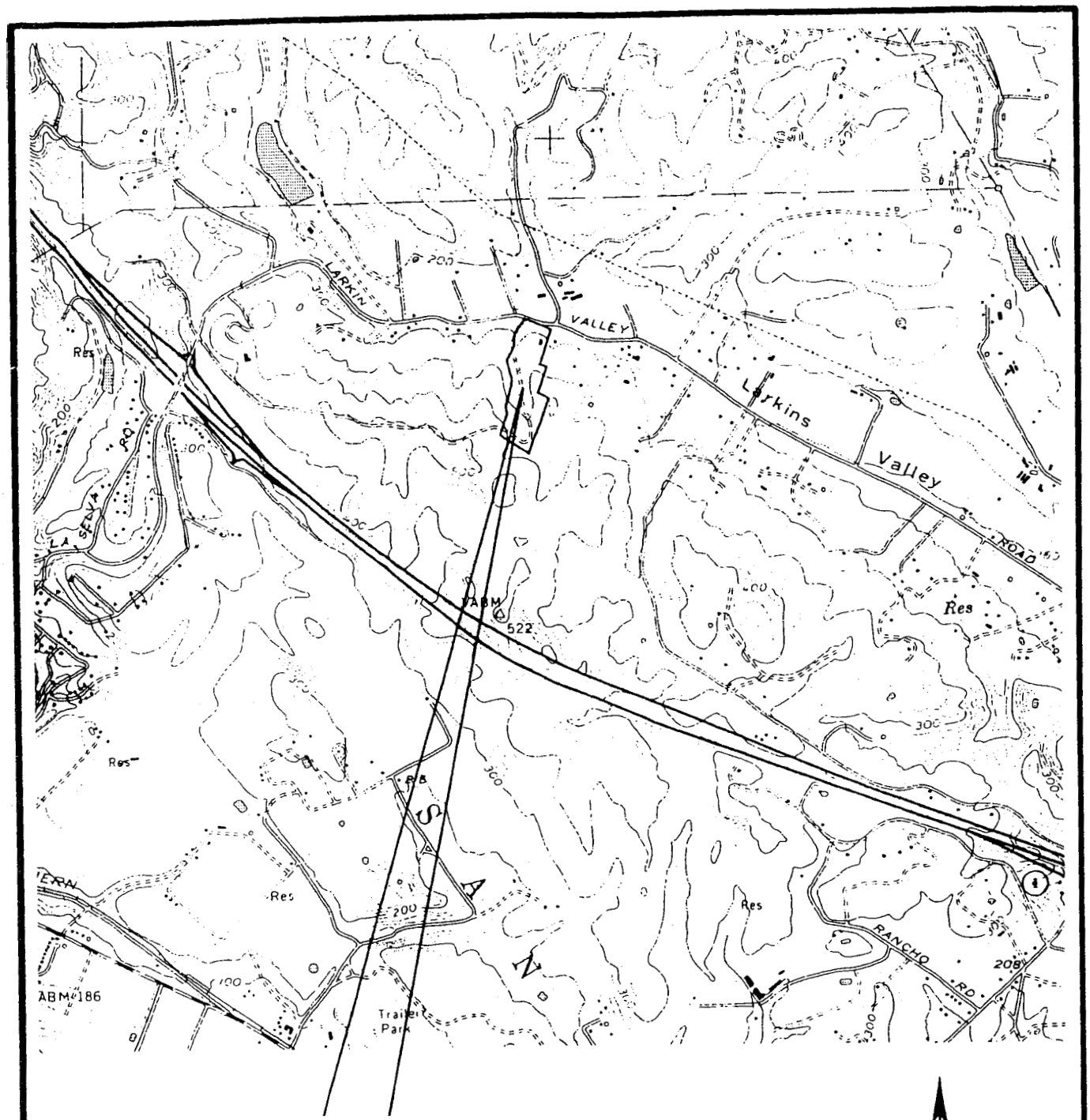
SITE LOCATION AND DESCRIPTION

The subject property is located on the northeast-facing flank of a low, northwest trending ridge in the Larkin Valley area of southern Santa Cruz County. Access if via an existing driveway off Larkin Valley Road. The moderately sloping northwestern flank meets Larkin Valley Road at about 160 feet. The subject property itself extends from just below the crest of the ridge to Larkin Valley Road. The slope averages about 17 percent grade. Vegetation consists primarily of a pine and eucalyptus forest with patchy, dense underbrush.

REGIONAL GEOLOGY

The subject property is underlain by the Aromas Formation of Pleistocene age (Figure 2). The Aromas Formation (also known as the Aromas Sand) consists of two members: a lower, fluvial facies containing interfingering gravel, sand, silt, and clay deposited in a meandering stream and estuary environment; and an upper eolian facies consisting of well-sorted, fine-grained sand deposited in a coastal dune field. As noted on Figures 2 and 3, the Aromas Formation in the Larkin Valley area strikes northeast and dips about 1° to the southeast. The maximum thickness of the Aromas deposits is in excess of 700 feet (DuprC and Tinsley, 1980).

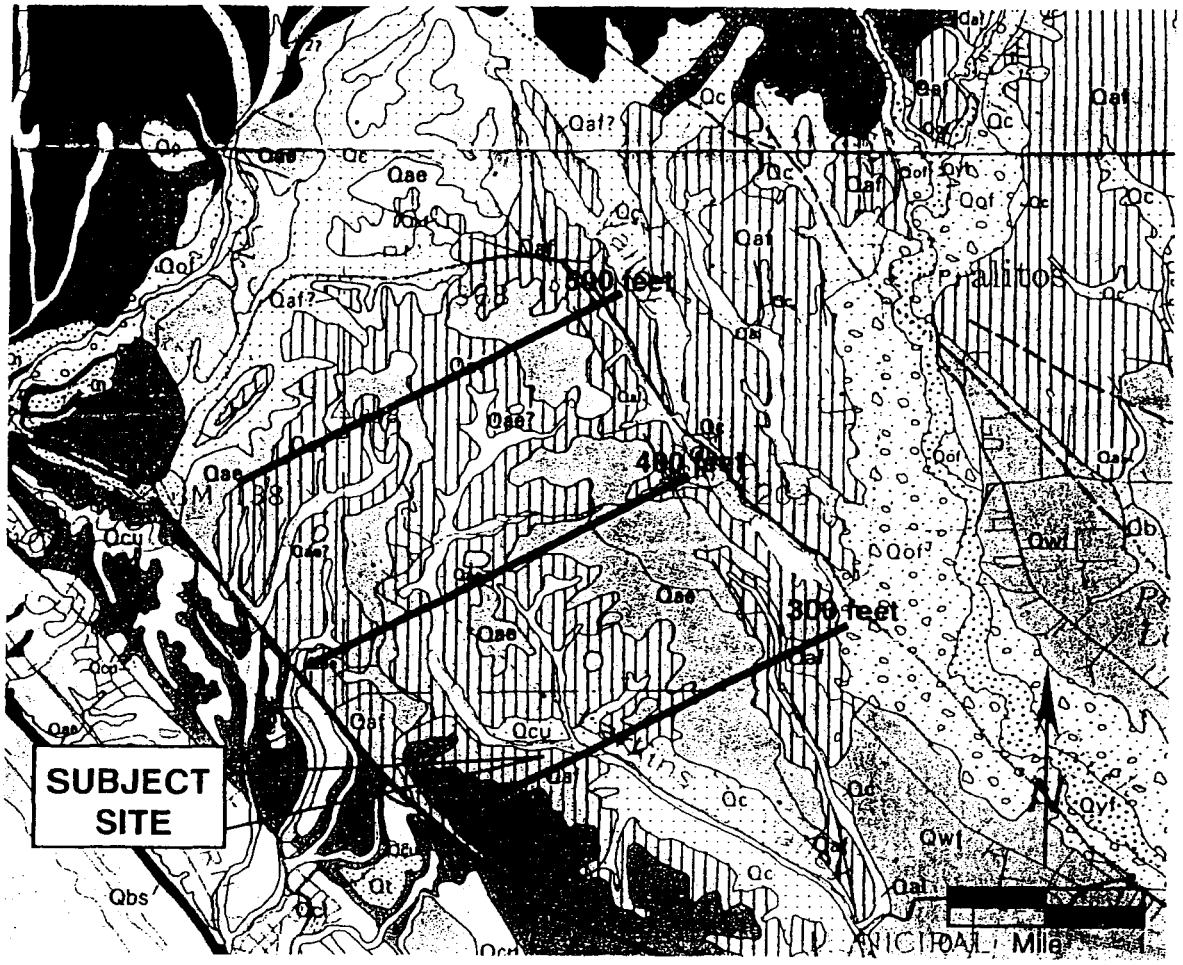
EXHIBIT F



BASE MAP: WATSONVILLE WEST, CALIFORNIA, 7.5' Quadrangle,
United States Geological Survey, 1954 (Photorevised 1980) Scale 1:24,000

ROGERS E. JOHNSON & **ASSOCIATES** Consulting Engineenng Geologists Santa Cruz, California 95062 1720 Seabright Avenue (831)425-1288 FAX (831)425-1136	**SITE LOCATION MAP** **APN** 049-021-41 Larkin Valley Road Watsonville, California	**FIGURE #** 1 JOB # H98056 - 76

EXHIBIT F



EXPLANATION

Qc	Colluvium
Qal	Alluvium
Qyf	Younger flood-plain deposits
Qof	Older flood-plain deposits
Qb	Basin deposits
Qbs	Beach sand
Qt	Terrace deposits, undifferentiated
Qwf	Terrace deposits of Watsonville - Fluvial facies
Qcu	Coastal terrace deposits, undifferentiated
Qcl	Lowest emergent coastal terrace deposits
Qa	Aromas sand, undivided
Qae	Aromas sand - eolian facies
Qaf	Aromas sand - fluvial facies
QTc	Continental deposits, undifferentiated
Tp	Purisima Formation
Tsc	Santa Cruz Mudstone
Tsm	Santa Margarita Formation

Earth materials contact

Fault

Bedding attitude

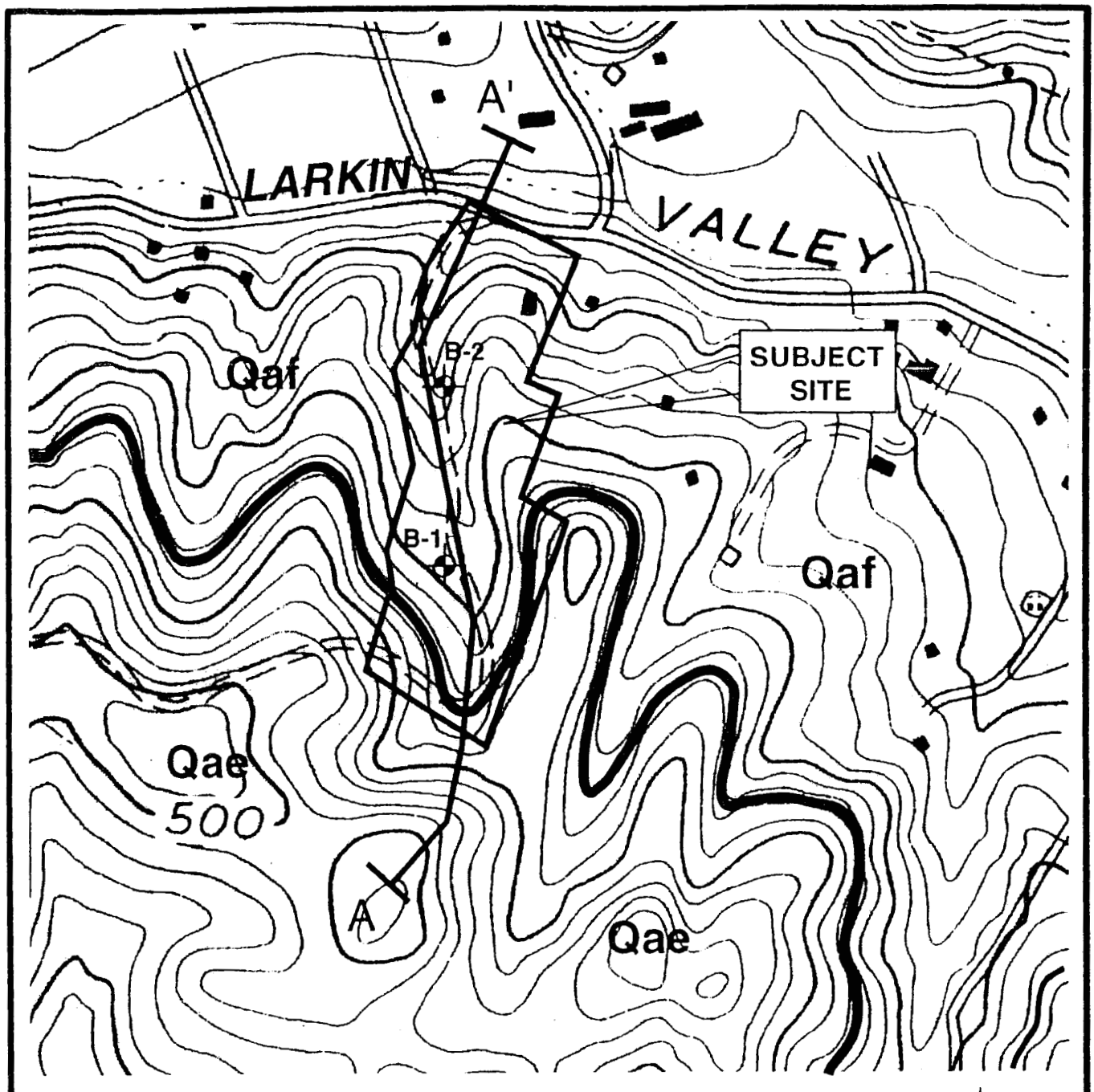
300 feet — Structure contour - on contact between eolian & fluvial facies of Aromas sand

contact oriented: N60-65E, **1.1 SE**

Base Map: "GEOLOGIC MAP OF SANTA CRUZ COUNTY, CALIFORNIA", by Earl E. Brabb, 1989, United States Geological Survey, Miscellaneous Investigation Series Map 1-1905, Scale 1:62,500

ROGERS E. JOHNSON & ASSOCIATES Consulting Engineering Geologists 1729 Seabright Avenue Santa Cruz , California 95062 (831)425-1288 FAX (831)425-1136	**GEOLOGIC MAP - Watsonville Lowlands** *King* APN 49-121-41 Larkin Valley Road Watsonville, California	**FIGURE #** *2* JOB # H98056 - 76

EXHIRIT F



BASE MAP: WATSONVILLE WEST, CALIFORNIA, 7.5' Quadrangle, United States Geological Survey, 1954 (Photorevised 1980) Scale 1:24,000

Note - Geologic contact from Dupre and Tinsley 1980

SIMPLIFIED GEOLOGIC MAP - Larkin Valley

FIGURE # 3

JOB # H98056 - 7

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APN 49-021-41
Larkin Valley Road
Watsonville, California

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Throughout most of the Larkin Valley area, the fluvial and eolian members of the Aromas Formation are separated by a distinct clay unit, 10 of more feet thick, which was probably deposited in a lagoonal environment. This clay unit is especially well exposed in the Cabrillo Sand **and** Gravel Quany on Freedom Boulevard, about 2 ½ miles north of the subject property (Dupre, 1971; Cotton, 1976). Less than a mile northeast of the subject site, our firm has detected the lagoonal clay in exploratory borings for previous hydrogeologic studies (Johnson, 1988, 1989, 1992).

REGIONAL GROUNDWATER

Significant amounts of groundwater are found in two geologic units in the vicinity of the subject property: 1) the Aromas Formation, and 2) the Pliocene Purisima Formation (marine sandstone and siltstone) which underlies the Aromas Formation at depth (Figure **4).** The Aromas Formation forms the major aquifer (water bearing unit) from which groundwater is extracted for general use. Based on a conversation with Doug Coty of the Pajaro Valley Water Management Agency, the regional water table is about 5 feet above mean sea level in the Larkin Valley area. Perched groundwater of limited horizontal extent is common throughout the fluvial facies of the Aromas Formation due to the presence of impermeable clay layers.

LOCAL GEOLOGY

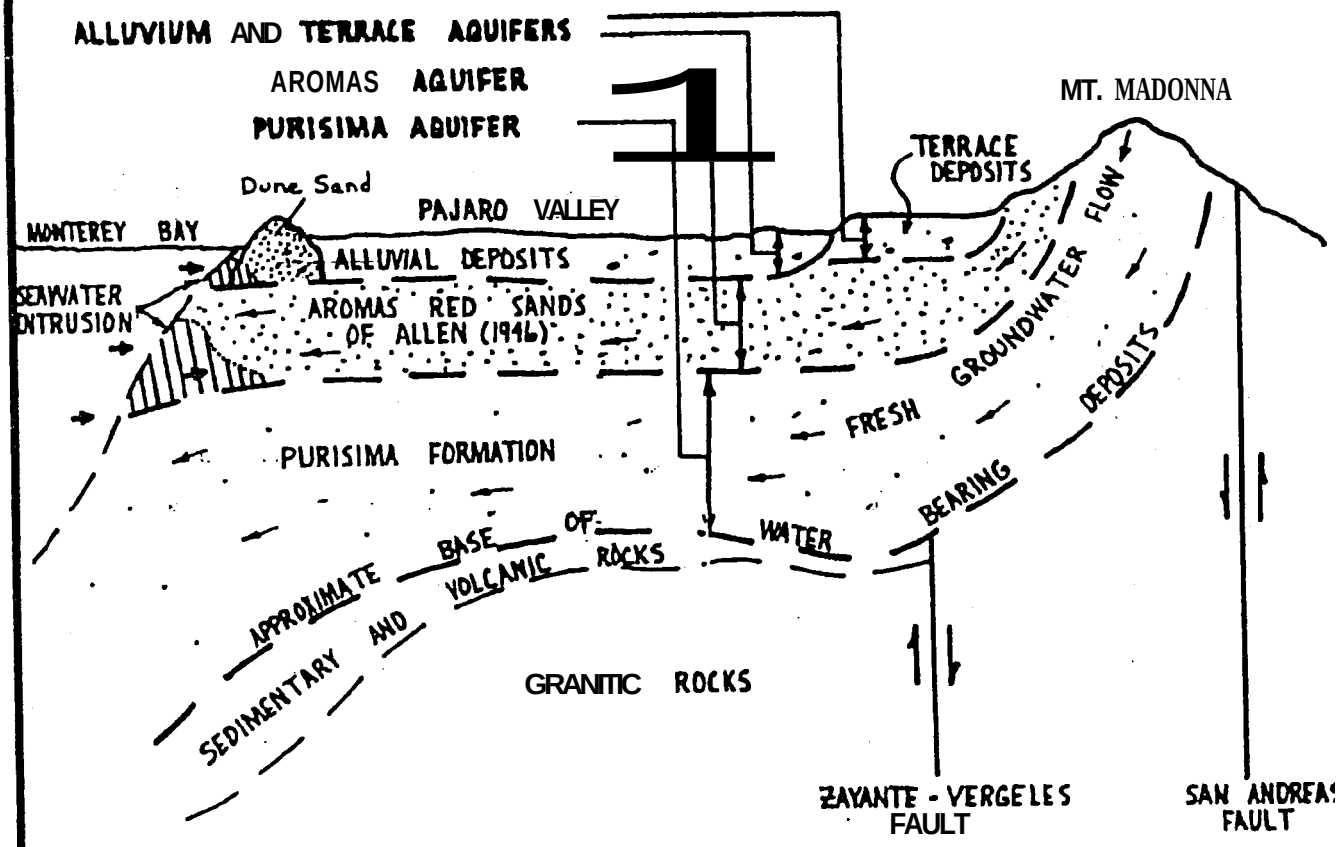
The subject property is almost entirely underlain by the fluvial facies of the Aromas Formation, with the contact between the upper, eolian member and the lower, fluvial member about 300 feet in elevation near the top of the property (Figures 3 and 5). We drilled two 6-inch flight-auger borings on the property, both 100 feet deep, to characterize the subsurface distribution of earth materials (see Appendix **A,** Logs of Exploratory Borings). For additional subsurface information, we consulted existing well data and the logs of exploratory borings from a nearby geotechnical report (Raas, 1989; see Appendix B).

The borings advanced for this study encountered red-brown sands and silty sand with intervals of lagoonal clays found at varying elevations (see Appendix A, Logs of Exploratory Borings). Boring **1** encountered perched groundwater **24** feet below the ground surface. The water is perching on a silty clay unit located between 25 and 28 feet below the ground surface. Boring 2, which is located downslope about 600 feet horizontal distance and about 65 feet lower than Boring 1, encountered perched water 7.5 feet below the ground surface. More clay was encountered at 16 feet below the ground surface and again at between 63 and 67 feet below the ground surface. **A** small spring is located near the intersection of the driveway on the property **and** Larkin Valley Road. This spring lies at an elevation of about +160 feet MSL which roughly corresponds with the elevation of the top of the clay layer encountered at a depth of 63 feet below the ground surface in Boring 2.

Unfortunately, we were unable to drill deep enough in Boring 1 to determine if the clay layer, encountered at 63 feet below the ground surface in Boring 2, was continuous across the entire

EXHIBIT F

SCHEMATIC CROSS SECTION OF THE **PAJARO** VALLEY **AREA** SHOWING:
Location of aquifers, general groundwater flow,
and schematic presentation of seawater intrusion



Modified from Styles, 1977

no scale

ROGERS E. JOHNSON & ASSOCIATES Consulting Engineering Geologists 1729 Seabright Avenue Santa Cruz, California 95062 (831)425-1288 FAX (831)425-1136	REGIONAL CROSS SECTION-Pajaro Valley *King* **APN** 49-121-41 Larkin Valley Road Watsonville, California	**FIGURE #** 4 JOB # H98056 - 76

EXHIBIT F

See Figure **3** (S

FIGURE # 5
JOB # H98056 - 76

GEOLOGIC CROSS SECTION
King
APN 49-121-41
Larkin Valley Road
Watsonville, California

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EXHIBIT F

property. We can state, however, that we encountered relatively impermeable clay layers throughout the property.

Review of logs of borings for a geotechnical investigation by Steven Raas and Associates (1989), done for a 4-lot subdivision located about 1,000 feet northeast of the subject property, encountered clay layers 4 to 7 feet thick; the elevations of the top of these clay layers ranged between 107 and 122 feet MSL.

The logs of a water well, drilled in the vicinity of the subject property, also encountered a clay layer 20 to 30 feet thick, as described below.

LOCAL GROUNDWATER

information obtained from the Pajaro Valley Water Management Agency indicates that groundwater levels in the Larkin Valley area have been "hovering around sea level" for the past several years. **A** well, drilled in 1983, located adjacent to the west side of the subject property, encountered water 90 feet below the ground surface (see Appendix B). The elevation of the well head is approximately 180 feet, putting the water level at +90 feet MSL. The well log shows a 22-foot thick layer of "blue sand and clay" between 90 and 112 feet below the ground surface. This water is perched on the clay layer and does not represent the regional ground water table.

Thus, the subsurface data indicates the property is underlain by fluvial facies Aromas Formation containing numerous interbeds of clay that perch groundwater at various intervals before the regional water table is reached, approximately 150 to 400 feet below the ground surface. Both of our test borings encountered water perched on clay units. In addition, seeps noted adjacent to Larkin Valley Road and the clays encountered in test borings just northeast of the subject property attest to the numerous layers of clay (between **4** and 20 feet thick) that are found in the fluvial facies of the Aromas Formation in the immediate vicinity of the subject property.

SEPTIC EFFLUENT

Our investigation indicates that he building sites on the subject property are separated from the Aromas aquifer by numerous layers of clay. Subsurface borings on and near the property indicate the presence of numerous impermeable clay layers ranging between 4 and 20 feet thick at a depth of 90 feet of less; while the regional water table is at a depth ranging between 150 and 380 feet below the subject property. The layers of clay serve as iinpenneable barriers that interrupt the downward migration of groundwater from the ridge top. The perched water slowly flows over the clay layers until it presumably emerges as distributed seepage or discrete springs.

The question now arises whether septic effluent from the two building sites might contaminate the perched groundwater that eventually issues to the ground surface as seeps and springs. Based on the literature reviewed below, we do not believe this effluent will cause a problem.

EXHIBIT F

In the early 1960s, Romero (1970) compiled data from several studies in Colorado to evaluate the characteristics of earth materials capable of adequately filtering septic effluent. Romero found that sediments with particle sizes less than 0.08 millimeters (mostly coarse silt and finer) demonstrate nearly complete removal of pathogens in the first 5 feet of travel distance. Sediments with particle sizes between 0.08 and *0.25* millimeters (mostly fine sand) demonstrate nearly complete removal with effluent travel of 5 to 20 feet. The sands, silts and clays that comprise a significant percent of the native material fluvial Aromas Formation beneath the proposed homesites is very effective in removing pathogens. Moreover, Franks (1972) argues that the finest 10 percent (by weight) of any sediment is most critical in determining its filtering properties. Most pathogens then will be removed within 5 to 10 feet of travel distance.

Even if we assume the unlikely, Olivieri and Roche (1979) have shown that whatever small amounts of bacterial and viral waste might reach the perched water will be removed after 100 feet of lateral travel distance. The leach field for any potential homesite on the subject property can be positioned and designed to allow for greater than 10 feet of separation between the invert of the leach lines and any perched water.

CONCLUSIONS AND RECOMMENDATIONS

1. The proposed homesites on the subject property should be removed from the Primary Groundwater Recharge constraint list because they lie above several impermeable clay layers (at a depth of 90 feet or less) which isolates the sites hydrologically from the regional water table at a depth ranging between 150 and 380 feet.

2. Septic effluent from the proposed ridge top homesites will not contaminate the seasonal perched water table forming over the clay layers.

3. Proposed septic leach fields should be investigated by a Registered Environmental Health Specialist or other licensed professional approved by the Santa Cruz County Environmental Health Service. This report should be carefully reviewed by the person designing the sewage disposal systems.

INVESTIGATION LIMITATIONS

1. This report is not an engineering geologic report. It is limited to the hydrogeology of the subject property and in no way implies the sites will not be subjected to ground failure or seismic shaking so intense that structures will be severely damaged or destroyed.

2. This report is issued with the understanding that it is the duty and responsibility of the owner or her 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.

EXHIBIT F

REFERENCES

Aerial Photographs

October **14,** 1975, Frames SZCZO, black and white, nominal scale 1:12,000, American Aerial Surveys, Sacramento, California.

Maps and Reports

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Olivieri, **A.W.** and Roche, R.J., (eds.), 1979, Minimum Guidelines for the Control of Individual Wastewater Treatment and Disposal Systems, California State Water Quality Control Board.

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Wastewater Treatment and Disposal Systems, California State Water Quality Control Board, 1979.

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EXHIBIT F 1

APPENDIX A

Logs of Exploratory Borings

EXHIBIT F

Log of Boring

ROGERS E. JOHNSON & ASSOCIATES
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1729 Seabright Avenue, Suite D
Santa Cruz, California 95062
e-mail: reja@bigfoot.com
Ofc (831) 425-1288 • Fax (831) 425-1136

Job No. G98056 **Date:** 08/07/98

Client: Katy King **Logged by:** JAO

Location: APN 049-121-41, Watsonville, California

Boring

Depth (ft)	Blow Counts/ Graphic Log	Description	Sample
	Sand	Dark red brown, fine to med. sand with trace silt, mod. well rounded to subrounded, loose, moist	
- 5	L - 4, 7•, 7	Medium brown sand, less dark with depth	X
- 10			
- 15	L - 7. 10•, 11	Sand with trace aravel and clav. wet	X
- 20			
	▼	Water at 24' and slightly harder drilling	
- 25	T 10, 13, 15	Interbedded clayey sill and medium to coarse sand, light green gray and light red brown,	Bag
		respectively; wet. harder "chunky" drilling at 28'; caving sands to 18'; no samples retrievable	
- 30			
		Coarse sand with some sill, wet	
- 35			
- 4c		Sand with some silt	
		Dense sand with some silt	
- 45			
		Very dense sands with intermittent qravel lavers	
- 50			
		Sand "feels silty"	
- 55			
		Continued dense sands with some silt	
- 60			
- 65			
		Continued dense sands with some silt	
- 70			
		Very dense sands, gravel at 72	
- 75			
		Very dense sands	
- 80			
		Very dense sands	
- 85			
		Very dense .sands	
- 90			
		Very dense sands	
- 95			
		Very dense sands	
100	Sand	Boring terminated at 100'	

• Sampled interval ▼ Water table

Sheet 1 of 1

EXHIBIT F

APPENDIX B

Existing Well Data and Logs of Offsite Exploratory Borings

Existing Well Data and Logs of Offsite Exploratory Borings

King Property Well Log Review
August 4,1998

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835 Larkin Valley Road
Property West of King Property
North End of Property (seen from driveway)

Drill date: 6/27/83 **Water:** 90' bgs **UTM grid card:** 043 899

Log:		
	0 - 2 feet	Top soil
	2 - 22 feet	Fine yellow sand
	22 - 48 feet	Coarse yellow sand
	48 - 68 feet	Fine yellow sand
	68 - 90 feet	Coarse brown sand
	90 - 112 feet	Blue sand and clay
	112 - 135 feet	Brown sand
	135 - 261 feet	Fine brown sand

---

719 Larkin Valley Road

Drill date: **11/94** **Water:** Level unknown

Log:		
	0 - 4 feet	Sand
	4 - 35 feet	Brown sandy clay
	35 - 43 feet	Gravel and sand
	43 - 130 feet	Gravel
	130 - 140 feet	Gravel
	140 - 200 feet	Gravel and sand
	200 - 220 feet	Sand and gravel
	220 - 240 feet	Sand
	240 - 260 feet	Sand and gravel
	260 - 300 feet	Gravel and sand
	300 - 320 feet	Sand

FXHIBIT F

Exhibit 5

EXHIBIT F

RURAL RESIDENTIAL SITING AND DENSITY

Objective 2.3 Rural Land Divisions and Density

(LCP) To establish a clear set of land use suitability criteria for determining rural residential density within the General Plan density ranges, giving consideration to site resources, environmental constraints and the availability of public services and facilities.

Policies

23.1 Rural Density Matrix

(LCP) **Maintain** a "matrix system" to determine the allowable residential density on lands designated Mountain. Rural. or Suburban Residential. The specific numerical values and the **maps used** in this evaluation system should be refined periodically as new information becomes available. but the matrix system shall generate an actual distribution of parcel densities over the full range of the appropriate land use designation. Specific requirements for updating maps are described in chapter 1: Introduction. The system includes mitigation measures to be included in development proposals to alleviate adverse conditions. Factors included in the point/matrix system are described below. Generally, higher point scores generated for a particular parcel would result in higher density development, within the allowed density range for the General Plan designation. A full description of the Matrix criteria and allowable parcels sizes in each land use category *can* be found in The Rural Residential Density Determination ordinance of the Santa Cruz County Code. The specific standards contained in that ordinance are incorporated into this element by reference, and shall not be amended without a General Plan and LCP Land Use plan amendment.

(a) Road Access: Access is one of the most important factors after water availability in assessing density in rural areas, and shall be weighted higher than most other factors. Matrix ratings reflect the ability of the road system to meet the service requirements of the proposed development. Type of access is dependent upon the existing County road network and the level of improvements that will be supplied by the development.

(b) Water Supply: Water supply determination involves the adequacy of a project's source of water including the type of supply system, availability and quality of the water. Matrix ratings reflect both the adequacy of the water supply and the general availability of water sources in the area.

(c) Water Resource: The type of sanitation system utilized by developments can have *great* effects on overall water quality in water supply watersheds and this factor is reflected in matrix ratings for *this* category.

(d) Timber Resources: The evaluation of timber resources involves assessment of the opportunities for long-term *sustained* timber yield and disturbance to existing residential development. Matrix ratings reflect the viability of timber harvest based on parcel size and distance to urban areas. The development potential of a parcel is related to its potential for timbering, with those parcels not designated as a timber resource receiving a higher rating for development than those parcels which are designated as a Timber Resource.

EXHIBIT F

(e) Sensitive Habitat: Matrix ratings are based on the ability to avoid critical or important biotic resource areas. The matrix is designed so that a developer may improve the initial "Score" by relocating development activities away from designated habitat areas. While population growth in general inevitably impacts an area's vegetation and wildlife resources. only the most important or unique County habitats are incorporated into this analysis and designated on the County Resources and Constraints maps. See policy 5.1.2 of the Conservation and Open Space Element for a definition of Sensitive Habitats.

(f) Erosion: The evaluation of erosion potential is based on the degree of erodability associated with various surface and bedrock formations and slope criteria. Erosion hazard may increase dramatically with increases in slope, and also varies according to rock type. By limiting the degree of land disturbance in highly erodable areas, erosion related adverse impacts *can* be controlled.

(g) Seismic Activity: Evaluation of seismic hazards weighs the relative risks from actual surface rupture, ground shaking and liquefaction during seismic events. A major seismic event in Santa Cruz County (Loma Prieta Earthquake, 1989) resulted in extensive damage to structures and loss of life. The density of development in areas of high seismic activity can be correlated to the mount of damage to property and personal injury. Matrix values are derived from data gathered by the United States Geological Survey (USGS) based on past activity, and depend on the activity of the fault zone and *the* mapped potential for liquefaction and ground shaking.

(h) Landslides: The matrix ratings regarding landslides are developed from detailed research done by the United States Geological Survey, and from a statistical analysis of known slope failures in the Santa Cruz mountains. Ratings reflect a combination of geologic bedrock types and slope.

(i) Fire Hazards: Due to the relative importance of fire safety considerations, this factor shall be weighted more heavily than other concerns. Criteria for response times. secondary access roads, dead-end mads and road design standards are presented as part of the County's Fire Safety policies, and are included in this rating along with the location of the project relative to Critical Fire Hazard *Areas*. Critical Fire Hazard Areas are those locations in which a fire could, under certain conditions, spread uncontrollably.

23.2 Special Land Division and Density Requirements

(LCP) Maintain special land division and density requirements based on resources and constraints shown in Figure 2-2. Utilize these criteria in conjunction with the Rural Density Matrix system outlined in policy 2.3.1.

EXHIBIT F

Figure 2-2 (page 1 of 2)
Special Land Division end Density Requirements (1)

Type of Resource	Land Division Requirements (Minimum average area required PER PARCEL) (2)	Density Requirements (Minimum average site area required PER RESIDENTIAL UNIT) (3)
AGRICULTURAL LANDS (Section 5.13):	(only under special conditions)	
Type 1 Commercial Agricultural land	10 arable acres	1 unit per parcel
Type 2 Commercial Agricultural land	20 arable acres	1 unit per parcel
Type 3 Commercial Agricultural land	20 arable acres	1 unit per parcel
NONCOMMERCIAL AGRICULTURAL LANDS (Section 5.14): Land designated Agricultural on land use maps, not designated as Agricultural Resource land	10 - 40 net developable aues, or 2 1/2 - 20 net developable acres with Special Findings; based on Rural Density Matrix	10-40 net developable acres or 2 1/2-20 net developable acres with Special Findings; based on Rural Density Matrix
SPECIAL FORESTS (Section 5.1)	No division of mapped special forest habitat	The lowest density in the range allowable by the applicable General Ran designation for land outside mapped habitat area. Otherwise 1 unit per parcel.
*MAPPED GRASSLANDS in the Coastal Zone (Sections 5.1 and 5.10)	No division of mapped grassland habitat	The lowest density in the range allowable by the applicable General Plan designation for land outside mapped habitat area. Otherwise 1 unit per parcel.
MINERAL RESOURCE LANDS (Section 5.16)	40 gross acres	40 gross acres
TIMBER RESOURCE LANDS (Section 5.12):		
'Lend with limber Production Zone District inside the Coastal Zone	160 gross acres, or 40 gross acres if dustered and a joint Timber Management plan has been approved	160 gross acres. or 40 gross acres if clustered and a joint Timber Management Plan is approved
Land with Timber Production Zone District outside the Coastal zone	40 gross acres, or 10 gross acres if clustered and a joint Timber Management Plan has been approved	40 gross acres unless clustered, then 10 gross acres
Parcels over 20 acres in size in designated timber resource areas, not zoned Timber Production	Same requirements as Timber Production zoned lands if found to have equivalent resources	same density as Timber Production zoned Lands if found to have equivalent resources
WATERSHEDS (Section 5.5):		
Water supply watersheds in Coastal Zone	20 gross acres	20 gross acres
Water supply watersheds outside Coastal Zone (except San Lorenzo River watershed and under other circumstances)	10 gross acres	10 gross acres
Least disturbed watersheds	40 gross acres	40 gross acres
Proposed reservoir protection areas	No division of parcel	1 unit per parcel
GROUNDWATER RECHARGE AREAS (Section 5.8)	10 gross acres	10 gross acres

• Denotes policies which only apply inside h e Coastal Zone.

(1) This table summarizes special land division and density requirements of General Plan and LCP Resources and Constraints policies. More specific requirements are found in the General Plan and LCP Land Use Plan sections noted.

(2) These acreages are expressed as minimums. The maximum number of parcels resulting from any land division shall not exceed the total number of allowed units on one parcel based on this fable and the Rural Residential Density Determination Matrix.

(3) These acreages are expressed as minimums. The maximum number of dwelling units on an existing parcel shall not exceed the total number of potential parcels and/or units as determined by this table and the Rural Residential Density Determination Matrix.

EXHIBIT F 1

Figure 2-2 (page 2 of 2)
Special Land Division and Density Requirements (1)

Type of Constraint	Land Division Requirements (Minimum average area required PER PARCEL) (2)	Density Requirements (Minimum average site area required PER RESIDENTIAL UNIT (3)
'COASTAL HAZARD AREAS - bluffs and beaches (Section 6.2)	New parcels must provide building sites outside areas of coastal hazards	Density consistent with General Plan designation
CRITICAL FIRE HAZARD AREAS (Section 6.5):		
Building site in Critical Fire Hazard Area		
- with through road or secondary access	• Parcel size consistent with the lowest density in the range allowable by the applicable General Plan Designation	- The lowest density in the range allowable by the applicable General Plan Designation
- with dead end road	- No division allowed	- 1 unit per parcel
Mitigable Critical Fire Hazard Areas if all mitigations approved	Parcel size consistent with General Plan land use designation	Density consistent with General Plan Land Use designation
100 YEAR FLOODPLAIN (Section 6.4)	Permitted only under special conditions	Density consistent with General Plan designation excluding floodway area
SEISMIC REVIEW ZONES - fault zones (Section 6.1)	20 net developable acres outside USL. Consistent with General Plan designation inside USL	Density consistent with the General Plan designation and Geologic Report

• Denotes policies which only apply inside the Coastal Zone.

(1) This table summarizes special land division and density requirements of General Plan and LCP Resources and Constraints policies. More specific requirements are found in the General Plan and LCP Land Use Plan sections noted.

(2) These acreages are expressed as minimums. The maximum number of parcels resulting from any land division shall not exceed the total number of allowed units on one parcel based on this table and the Rural Residential Density Determination Matrix.

(3) These acreages are expressed as minimums. The maximum number of dwelling units on an existing parcel shall not exceed the total number of potential parcels and/or units as determined by this table and the Rural Residential Density Determination Matrix.

EXHIBIT F 1

ective 5.8a Groundwater Protection

CP) To protect the quantity and quality of the County's groundwater resources through an integrated program of land use regulation and runoff management in groundwater recharge areas, careful water quality monitoring and management of extractions consistent with long-term sustainable water supply yields.

bjective 5.8b Overdrafted Groundwater Basins

CP) To act directly and coordinate and work with relevant water purveyors and agencies to eliminate long-term groundwater overdraft in all water basins where overdraft has been documented.

olicies

5.1 Primary Groundwater Recharge Area Designation

CP) Designate on the General Plan Resource Maps those areas where local soil conditions and underlying geologic formations allow for infiltration and percolation of rainfall and runoff into groundwater basins.

5.2 Land Division and Density Requirements in Primary Groundwater Recharge Areas

CP) Require new parcel sizes to be an average of at least 10 gross acres for parcels with building sites located in primary groundwater recharge areas and allow a maximum average residential density of one dwelling unit per 10 gross acres for parcels which are not divided. Allow exceptions only where the development is:

(a) located within the Rural Services Line or within the Urban Services Line; and

(b) served by a sewage disposal system operated by a County Service Area or public services district which provides at least secondary treatment with nitrogen removal or which disposes of effluent outside the primary groundwater recharge area.

5.3 Uses In Primary Groundwater Recharge Areas

CP) Prohibit any land use in a Primary Groundwater Recharge Area which would allow the percolation of pollutants into the groundwater system.

5.4 Drainage Design in Primary Groundwater Recharge Areas

CP) Require retention of stormwater runoff from impervious surfaces for all new development in Primary Groundwater Recharge Areas through on-site percolation methods so as not to exceed predevelopment runoff levels. Utilize on-site detention methods where percolation methods are not feasible; either system should be designed for a minimum design storm as determined by the County Design Criteria.

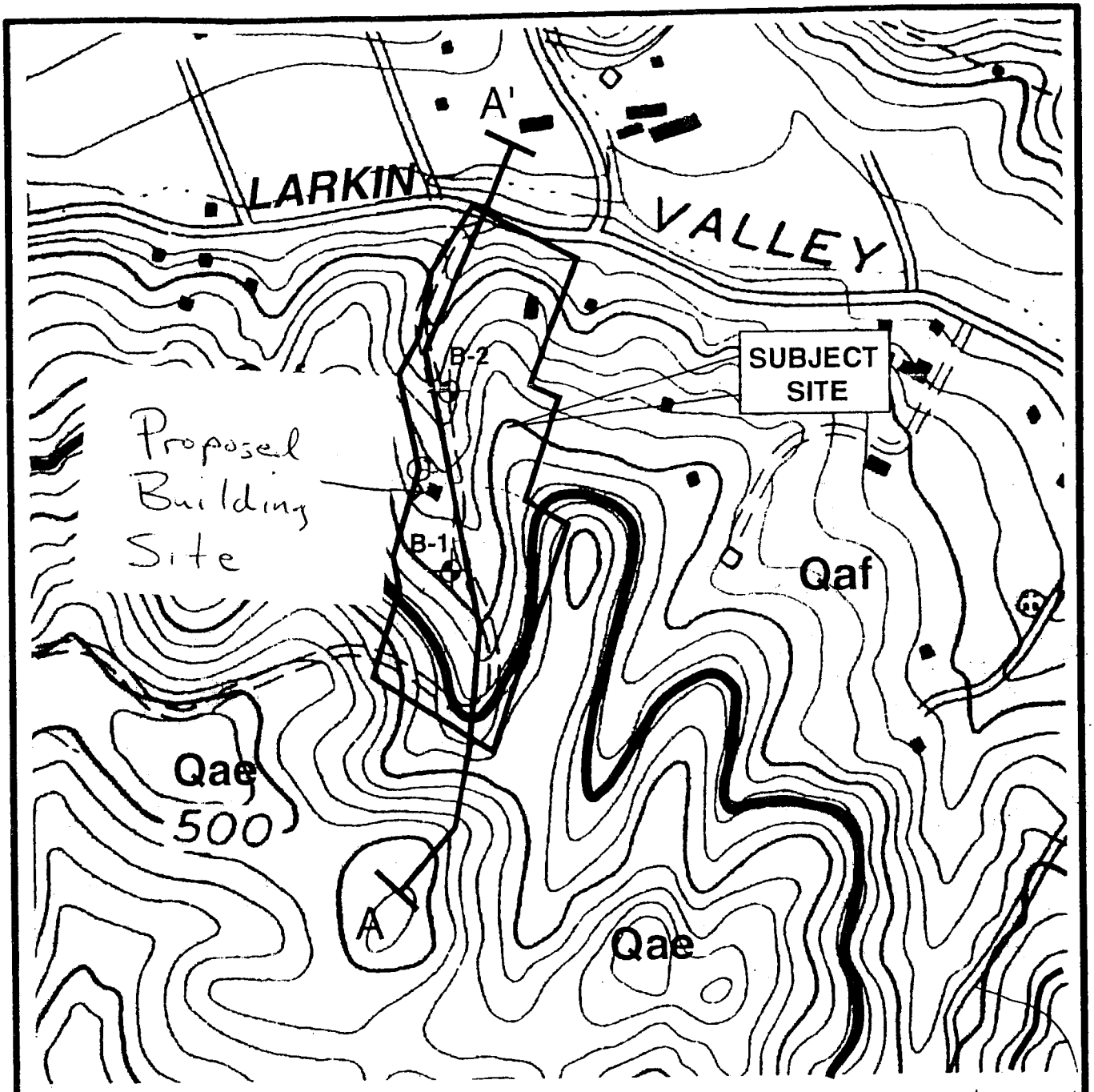
5.5 Developing Groundwater Resources

CP) Allow development of groundwater resources when consistent with sustainable yield, protection of stream flows, and maintenance of groundwater quality. Require water systems serving new development to meet applicable standards for yield to ensure a reliable water supply is provided to its users.

EXHIBIT F

Exhibit 6

EXHIBIT F 1



EXPLANATION

Qae	Aromas sand - eolian facies	A — A'	Earth materials contact
Qaf	Aromas sand - fluvial facies		Geologic cross section
			Exploratory boring

N

0 **Feet** 500

C.I. 20 **Feet**

BASE MAP: WATSONVILLE WEST, CALIFORNIA, 7.5' Quadrangle, United States Geological Survey, 1954 (Photorevised 1980) Scale 1:24,000

Note - Geologic contact from Dupre and Tinsley 1980

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SIMPLIFIED GEOLOGIC MAP - Larkin Valley
King
APN 49-121-41
Larkin Valley **Road**
Watsonville, California

FIGURE# 3
JOB # H98056 - 76

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Attachment B

EXHIBIT F 1

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Miriam Celia Gordon

August 24,2006

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RE: Application No. 05-0246., APP 049-121-78
Quail Canyon and Larkin Valley Roads
Applicant: King
Current APN: 049-121-78
Former APN: 049-121-41

Dear Mssrs. Deming, Burns, Ricker, and Ms. Levine:

This office represents John Aschoff, Marcy Aschoff, and Stephen Gettel, neighboring property owners to the above-described Land Division Application. The purpose of this letter is to support the County Environmental Coordinator's letter dated July 7,2006 regarding the above and to reply to the letter, dated July 20, 2006, but submitted on July **3 1,2006 by Gerald Bowden** for his client, Katy King (Applicant). In brief, we submit that the assertions in the Applicant's letter are without merit. Thus, the Department's September 24,2001 review regarding Application No. 00-0387 should **not,** as the Applicant claims, be regarded as final for the purposes of Application No. 05-0246 because (1) the 2001 review related to a different project at different "homesites"; (2) the Applicant's geologic testing is invalid under Santa Cruz Code

EXHIBIT F

§16.10.060(d) because five years have elapsed and because the building sites have changed significantly; and (3) per the County's recent letter, to overturn the **PGR,** General Plan, and LCP designation there must be site-specific soil analysis and County supervision. The Applicant here has not provided the County with suitable data to overturn said PGR designation.

1. The 2000 Soil Tests Do Not Suffice for a Substantially Different Location

Application 00-0387 called for a specific development plan that involved ridge top "homesites." The Rogers E. **Johnson** & Associates (J & **A)** review from March of 2000 specifically assumed the proposed ridge top homesites in reaching their "conclusion" that the PGR designation could be removed for those "homesites" (p.9). Joe Hanna stated in his letter to the Applicant, **dated** September **24,** 2001, that he agreed with the "conclusions" of the J & **A** review. Thus, the Applicant incorrectly assumes that the PGR review in September of 2001 is binding as to completely different "homesite" locations.

Moreover, under Section 16.10.060(d) of the Santa **Cruz** County Code, the 2000 J & A study has been rendered invalid by both changed conditions and the passage of time. The Code states "[t]he exception to the three year period of validity is where a change in site conditions, development proposal, technical information or County policy significantly affects the technical data, analysis, conclusions or requirements of **the** assessment or report; in which **case the Planning Director may require a new *or* revised assessment or report."** In this case, five years have elapsed and there has been a change in the development proposal in that the homesite has been moved to another, substantially different location.

The Applicant abandoned the 2000 application before it went through environmental review or any other public review process. However, if the 2000 application had gone through environmental review with a public hearing, the conclusions of the J & **A** review may well have been challenged and rejected on the merits. Thus, Applicant's claim that the 2001 review should be binding because it successfully completed the permit application process will not withstand scrutiny. It would be more appropriate to **say** that in 2001 the Applicant took some steps **regarding** their application and then abandoned the project (Application No. 00-0387).

A. Standards for Demonstrating that **PGR** Designation Should be Removed

According to the Planning Department letter of July 7, 2006, there are specific procedures which **must** attend every **PGR** reconsideration. In this letter, the Planning Department stated that, among other requirements, soil samples must be taken from "at least six **soil** pits, three in each of the development and building envelopes." Planning Dept. Letter, p.2. In 2000, J & **A** took **two** boring samples which were/are not both within the development and building envelopes of the 2005 Application. Additionally, according to the standards set forth by

EXHIBIT F

the Planning Department, the J & **A** review also places far too much emphasis on finding clay deposits when the applicable test for PGR is whether the soil has permeability exceeding two inches per hour. Department Letter, p.2.

Along these same lines, Applicant assumes that the 2001 review by the County applies to the entire parcel. In fact, the 2001 review refers to the specific homesite proposed in Application 00-0387. See Hanna Letter of September 24, 2001 (referring to how specific sites may be removed from PGR). The site Mr. Hanna was referring **to** is/was on the ridge top and not in the swale of the canyon. Thus, there **is** no basis for Applicant's claim that the County concluded that the entire 12-acre parcel was no longer a PGR area. The Department's July 7,2006 **letter** sets forth procedures and standards that ensure there is **good** scientific basis prior to changing the PGR designation.'

Here, those procedures have not been followed and those standards have not been met. Hence, for all the **forgoing** reasons, the Applicant has failed to establish any basis for any change to the Planning Department's conclusions as they are set forth in the July 7,2006 letter to the **Applicant.**

B. The County May Change the Law

The Applicant claims that she has "been repeatedly assured by [Planning Department] staff that this issue cannot be reopened without a change in the General Plan or some other legislative change." Applicant letter ¶2, **p.**1. The Applicant proffers no documentation whatsoever for this claim, nor does it seem likely given the change **of** building site locations. However, even if we assume some assurance was given, it **is** not accurate to characterize a new project as a "reopening" of an old issue. **A** new project, involving a different building site is simply a different and new endeavor which would not **be** a "reopening."

Additionally, even if the Applicant's 2001 correspondence with the Planning Department is read in the most favorable light to the Applicant, the Applicant never attained a vested interest in building the **project** described in Application 00-0387 (much less for the different **sites** sought in Application 05-0246). In California, vested interests attach when building permits are issued and the land-owners spend substantial sums of money in reliance on the permit. **Avco**

[1] Furthermore, the Planning Department's **July** 7, 2006 letter identifies potential environmental impacts related to Sari Andreas Live Oak Woodland. According to the Santa Cruz County **GIS** website, the area is also designated **as** a "Special Forest." The website defines special forest "as defined in General Plan adopted **May 24,** 1994. Forest areas, designated on the General Plan and Local Coastal Program Biotic Resources Maps, which are unique natural communities, limited in supply and distribution, threatened by substantial disturbance from **human** activities, and which provide habitat for rare, endangered and/or locally unique species of plants and animals. Examples of Special Forests include San Andreas Live Oak Woodlands, Valley Oak, Santa Cruz Cypress, indigenous Ponderosa and Monterey Pine, and ancient **forests."** http://gis.co.santa-cruz.ca.us/internet/Metadata/14.xml (emphasis added).

EXHIBIT F

Community Developers, Inc. v. South Coast Regional Commission (1976) Cal 3d 785, 790-791; Spindler Realty Corp. v. Monning (1966) 243 Cal. App. 2d 255,264; Anderson v. City Council (1964) 229 Cal. App. 2d 79, 90. Under the facts here, the Applicant never completed the permit process for 00-0387, APN 049-121-78 has not been subdivided, a building permit was never issued, and no construction work was done. Thus, because the Applicant here never had a vested interest, the County may apply different and more appropriate standards for reconsidering the PGR designation to this particular parcel.

C. Applicant May not Claim Administrative Res Judicata Because There was No Notice and Process Hearing and the Public Never had Opportunity to Appeal

The Applicant states that "[t]here must be an end to the review of old issues." Applicant's Letter of July 31 (20?), 2006. p.2. This sentiinent is misplaced here. Section 18.10.320(a) of the Santa **Cruz** County Code states (emphasis added):

> (a) Who May Appeal. Any decisions or actions of any staff person charged with the administration of this chapter may be administratively appealed to the Planning Director. Such an appeal may be initiated by the applicant by submitting a written request to the Planning Director within fourteen (14) calendar days of the decision, in the case of permits issued pursuant to Level I (No Plans) through Level III (Field Visit), and by any aggrieved person or the applicant by submitting a written request to the Planning Director within fourteen (14) calendar days from the date of the publication of the notice of pending action, or the date the notices arc mailed, whichever is later, in the case of permits issued pursuant to Level IV (Public Notice).

Under this section, to claim that this matter has been administratively adjudicated, the Applicants must show that the PGR review **was** an action or decision which reached Level IV (Public Notice) because only at this level is public notice given, a public hearing available, and the review appealable. In contrast, only the applicant may appeal administrative decisions at Levels I-III. In this case, the Applicant abandoned Application 00-0387 well before Level IV so the public never had an opportunity to be heard on the matter or appeal. Therefore, the decision was never binding and the matter was not adjudicated in the sense that the Applicant can reasonably claim administrative res judicata or that this is a further review of an old issue.

2. The Experts Have Disagreed About This Application and Hence (at a Minimum) an EIR Addressing the Potential Impact is Required

The Applicants claim that there was no disagreement about removing the PGR designation. This is patently incorrect because, right off the bat, the 2000 Application disagreed with the USDA geological experts who tested and mapped the soils of the area; the USDA experts found that the Baywood Loamy Sand and Elkhorn-Pfeiffer Complex were/are soils that

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ought to be designated as PGR because of the rate of percolation. Department Letter, **p.2** (refemng to Soil Survey **of** Santa Cruz County by the **USDA** Soil Conservation Service in 1980).[2] Furthermore, as stated in our letter of May 23, 2006, county Staff Mike Cloud and Bruce Leclergue openly disagreed with the conclusion that the ridge top homesite should be exempt fiom PGR.

Moreover, Applicants state that the **support** of Rogers E. Johnson was unequivocal. This is inaccurate as well. In Mike Cloud's Memorandum ***of*** July 13,2001, Mr. Cloud stated that after meeting with Mr. Johnson to review boring samples both were not convinced that there was a layer of impermeable clay to **stop the** water or shunt it to the creek without recharging the **aquifer.** Mr. Cloud wrote, "[w]e both noted that we could not see a meaningful correlation. Based on the cross-section, I indicated that we did not have sufficient grounds to remove the **[PGR]** designation **from** this parcel." Mike Cloud July **13,** 2001 Memorandum; Exhibit **3** of our May 23,2006 letter. Therefore, the Applicant's assertion that "pivotal experts agreed on the **PGR issue"** is inaccurate in light **of** all the discourse surrounding the ridge **top** site and the USDA's soil tests of the County back in 1980. If anything, the expert opinions favor the conclusion that the soils **of** the area allow groundwater to recharge and that the subsurface clay is not continuous and **or** a meaningful obstacle to **the** percolating water.

There **is,** at the very least, a difference of opinion among experts and County Staff. **As** our May **23,2006** letter **sets** forth, under these circumstances there is a fair argument requiring preparation of an EIR.

3. Factual Basis For PGR Analysis

The Department stated that the **PGR** analysis will be confined to a comparison of **the** published permeability of **the soil** on **the** property **(from the 1980** Soil Survey of Santa **Cruz** County by the **USDA)** and the criteria adopted by the Board of Supervisors **in** the Santa Cruz County Growth Management **Report.** The Applicant claims that their 2000 review should trump the data collected **by** the County. The Department's July 7,2006, letter lists procedures which the County has **deemed** necessary for an objective determination as to whether the County should change **its** PGR map. Since the most fundamental question regarding whether an area is a primary groundwater recharge is the rate of groundwater percolation into the soil, it is very appropriate for **the** County to use the 1980 Soil Survey from **the USDA,** Moreover, because the PGR designation protects **an** important natural resource, **it** is also appropriate to seek definitive proof that the **PGR** designation **should** be removed.

[2] **Applicant's biggest difference with the USDA was Applicant's emphasis on the alleged presence of underlying impermeable clay. The USDA focused** on **soil-types and rate of percolation on the basis** that **the water would eventually reach** the **aquifer.**

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Conclusion

In conclusion, we submit that the Planning Department's decision of July 7,2006 was correct. The Applicant may still have the PGR designation reconsidered but to do so will require a far more site-specific data set and County oversight. The County explained this process in the letter to the Applicant.

Very truly yours,

WITTWER & PARKIN, LLP

/s/

Jonathan Wittwer

cc: John and Marcy Aschoff
Stephen W. Gettel
Ellen Pirie, District Supervisor

EXHIBIT F 1

Attachment C

EXHIBIT F 1

Attachment C

Photos of *Oak* Grove Within Building Envelope

EXHIBIT F