

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: Powers Land Planning for Mattos and Wilson Families

APPLICATION NO.:_____08-0419

APN:______107-461-25______

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.
- <u>Environmental Impact Report</u> (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 Matt Johnston, Environmental Coordinator at (831) 454-3201, 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: JUNE 30, 2009

(Samantha Haschert

Staff Planner

Phone: ____(831) 454-3214___

Date: June 4, 2009

NAME: APPLICATION: A.P.N: Mattos and Wilson Families 08-0419 107-461-25

NEGATIVE DECLARATION MITIGATIONS

- A. In order to mitigate impacts to air quality, standard dust control Best Management Practices shall be implemented during all grading and demolition work. Notes reflecting this shall be included in the final project plans and shall include at a minimum the following measures:
 - 1. Water site as needed on a daily basis.
 - 2. Cover all inactive spoils piles.
 - 3. Refrain from grading on windy days (15 mph or more average wind speed)
 - 4. Install minimum 30 feet of 1-inch rock at site entrance and exit to prevent tracking sediment off site.
- B. In order to mitigate the impacts of temporary construction debris on landfill capacity, the applicant shall submit a plan to recycle and/or reuse excess post-construction and demolition materials, for review and approval by Planning Staff prior to building permit issuance.



Date: June 1, 2009 **Staff Planner**: Samantha Haschert

I. OVERVIEW AND ENVIRONMENTAL DETERMINATION

APPLICANT: Mattos & Wilson Families, **APN**: 107-461-25 c/o Powers Land Planning, Inc.

OWNERS: Janet L. Mattos Wilson Family Trust SUPERVISORAL DISTRICT: 2nd (Pirie)

LOCATION: Parcel located on the northeast corner of the intersection of Enos Lane and Hames Road in Corralitos at 350 Hames Road.

SUMMARY PROJECT DESCRIPTION: Proposal to divide a 20.35 acre parcel into two parcels of 10 acres and 10.35 acres and to install a 6 foot tall chain link fence within the front yard setback. Requires a Minor Land Division and a Residential Development Permit to construct a fence over 3 feet in height within the required 40' front yard setback.

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
	Hydrology/Water Supply/Water Quality	 Air Quality
<u></u>	Biological Resources	 Public Services & Utilities
	Energy & Natural Resources	 Land Use, Population & Housing
	Visual Resources & Aesthetics	 Cumulative Impacts
	Cultural Resources	 Growth Inducement
	Hazards & Hazardous Materials	 Mandatory Findings of Significance
	Transportation/Traffic	

County of Santa Cruz Planning Department 701 Ocean Street, 4th Floor, Santa Cruz CA 95060

DISCRETIONARY APPROVAL(S) BEING CONSIDERED

	General Plan Amendment	 Grading Permit
X	Land Division	 Riparian Exception
	Rezoning	 Other:
<u>X</u>	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.

 $\underline{\chi}$ 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.

Mátt Johnston

une Z, 2009

For: Claudia Slater Environmental Coordinator

II. BACKGROUND INFORMATION

EXISTING SITE CONDITIONS

Parcel Sizes: 20.35 acres/886,446 square feet Existing Land Uses: Residential Vegetation: Woodland/Grassland Slope in area affected by project: <u>80%</u> 0 - 30% <u>20%</u> 31 – 100% (approximate) Nearby Watercourse: Corralitos Creek located about 2000 feet east of the project site.

ENVIRONMENTAL RESOURCES AND CONSTRAINTS

Groundwater Supply: Mapped

Water Supply Watershed: Not Mapped Groundwater Recharge: Mapped Timber or Mineral: Not Mapped Agricultural Resource: None Mapped Biologically Sensitive Habitat: None Mapped Fire Hazard: Small portion at north end of site is a mapped fire hazard. Area mapped is not proposed for development, Floodplain: Not Mapped

Erosion: Not Mapped

Landslide: None Mapped

SERVICES

Fire Protection: CDF (CalFire) School District: Pajaro Valley USD Sewage Disposal: Septic System

PLANNING POLICIES

Zone District:Residential Ag (RA)SpGeneral Plan:Rural Residential (R-R)Urban Services Line:________ InsideCoastal Zone:________ Inside

Liquefaction: Partially mapped for high liquefaction potential on ridge. Fault Zone: Mapped (County) Scenic Corridor: Not Mapped Historic: None Mapped Archaeology: None Mapped Noise Constraint: None Electric Power Lines: Power pole located at southwest corner; none onsite. Solar Access: Excellent; primarily flat, open building pads Solar Orientation: N/A- rural land

division; no architectural plans required. Hazardous Materials: None

Drainage District: Zone 7 Project Access: Via Hames Road Water Supply: City of Watsonville

Special Designation: None

<u> X </u>	Outside
X	Outside

PROJECT SETTING AND BACKGROUND:

The subject property is located on the northeast corner of the Enos Lane - Hames Road intersection in Corralitos. The parcel to be divided is currently developed with an 1100 square foot single family dwelling, a 380 square foot detached garage, and a barn. The parcel takes access from Hames Road.

There is an existing City of Watsonville water tank located on parcel 107-461-02, which is completely enclosed within the boundaries of the subject parcel on the western portion of the parcel adjacent to Enos Lane.

There is a ridgeline located on the east side of the parcel which measures to a maximum height of about 600', about 100' - 130' above the lower portions of the parcel. The lower and flatter portion of the property occurs on the west side of the parcel and is comprised of gradual slopes equal to or less than about 15%.

The entire parcel is within a County mapped fault zone.

In 2008, the Board of Supervisor's approved a General Plan Amendment to revise the text of policy 6.1.12 (Minimum Parcel Size in Fault Zones) to change the density requirements for land divisions on parcels located within County mapped fault zones. The approved amended text reads as follows:

Require a minimum parcel of 10 gross acres for the creation of new parcels within the portions of the County designated seismic review zones that are not part of a State Alquist-Priolo Earthquake Fault Zone, and which lie outside of the Urban and Rural Services Lines and the Coastal Zone, if 25% or more of the parcel perimeter is bounded by parcels 1-acre or less in size.

The specificity of the amended language was intended to limit the application of the 10 acre reduced density to only 2 parcels within the County; the subject parcel being one of them.

Adjacent parcels to the east, north, and west are zoned Residential Agriculture (RA) and are developed with single family dwellings. One east adjacent parcel is zoned Residential Agriculture - Mobile Home Park (RA-MH) and is developed with the Rancho Corralitos Mobile Home Park. The south adjacent parcels are zoned R-1-15 (Single Family Residential - 15,000 square foot minimum) and are also developed with single family dwellings. All surrounding parcels are designated as Rural Residential (R-R) in the County General Plan.

DETAILED PROJECT DESCRIPTION:

The proposed project would create two parcels for the development of two new "primary" single family dwellings, 1 new second unit and a re-designation of the existing residence as a second unit. Parcel A would have two designated building envelopes and Parcel B would have a designated building envelope for a primary residence and would retain the existing single family dwelling for use as a second unit. The existing barn would be demolished.

A 6' tall black vinyl coated chain link fence is proposed along the south and west property lines of Parcel A for lengths of approximately 260 feet and 400 feet, respectively.

The subject parcel is approximately 20.37 acres, as shown on the plans. The proposed lots would be approximately 10 gross acres (Parcel A) and 10.35 gross acres (Parcel B); therefore, both of the proposed parcels meet the 10 gross acre minimum requirement for the RA zone district as per the policy amendment stated above.

The proposed private roadway would have a 40' right of way, and 18' and 12' paving widths. The first approximately 250' of the private roadway would be widened to 18' and the remaining 200' including the proposed fire truck turnaround, would be paved and widened to 12'. Portions of the additional pavement required to widen the roadway would be pervious.

Geotechnical and Geologic Report Reviews were conducted prior to the 2008 General Plan Policy amendment, under application 06-0175. Environmental Planning Staff accepted the reports and all recommendations of County Staff and the project Engineers would be included as conditions of approval of this project.

The proposed parcels would obtain water service from the City of Watsonville

This proposal requires a Minor Land Division and a Residential Development Permit.

Significant Or Potentially Significant Impact

Less than Significant Less than with Significant Mitigation Or Incorporation No Impact

Х

Not Applicable

III. ENVIRONMENTAL REVIEW CHECKLIST

A. Geology and Soils

Does the project have the potential to:

- 1. Expose people or structures to potential adverse effects, including the risk of material loss, injury, or death 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?

The subject parcel is located entirely within the County mapped Zayante fault zone; however, the Geologic Report prepared by Neilson and Associates, dated July 5, 2005 (Attachment 6) and letter of additional geologic comments dated October 2, 2006 (Attachment 7) concludes that onsite trenching at and around the proposed building sites, show no active faults on or within 25 feet of the building envelopes. County Code Section 16.10.070(b)(2) allows homesites to maintain a 25 foot setback from any active or potentially active fault traces with the submittal of paleoseismic studies that include observation trenches and approval from the County and Project Geologists, both of which have been completed with the above technical reports and report reviews. Therefore, the proposed project is in compliance with this requirement. Further, the associated geologic update letter states that their study has proven that the home sites are located in a 470 foot wide fault free zone and that, "...the Zayante fault is not considered by most professional geologists to be a highly active fault nor a prominent seismic source for ground rupture and ground shaking."

A Geotechnical Report was prepared for the proposed project by Redwood Geotechnical Engineering, Inc, dated March 2006 (Attachment 9) which provides recommendations for foundation designs for both parcels to ensure stability in the event of a fault rupture. Recommendations include using a drilled pier and grade beam foundation for the structure on Parcel A and conventional spread footing foundations for future structures on Parcel B.

Conditions of approval for this project would include the following to ensure that fault rupture is not a significant impact on the proposed development:

- Final plans shall reference the Geology and Geotechnical Reports and include a statement that the project shall conform to the reports' recommendations.
- Prior to building permit issuance, plan review letters/report updates shall be

6/85

Significant Or Potentially Significant Impact

Less than Significant Or No Impact

Х

Less than

Significant

Mitigation

Incorporation

with

Not Applicable

submitted to Environmental Planning from both the geotechnical engineer and engineering geologist. The authors of the reports shall write the plan review letters and each letter shall state that the project plans conform to the report's recommendations.

- Final building plans must show all construction/development located within the development envelope shown on the Geologic Map.
- All construction must comply with the requirements of the most current California Building Code to ensure public health and safety.
 - B. Seismic ground shaking?

The subject property will likely be subjected to strong seismic shaking based on the close proximity of the Zayante fault at .25 miles northwest of the subject parcel; however, the geologic report (Attachment 6) concludes that although the "homes will most likely experience moderate to severe ground shaking during their lifetimes", the effects of seismic ground shaking in this location can be mitigated though "strong foundation and structural design".

The Geotechnical Engineering Report submitted for the proposed project (Attachment 9), recommends that all planned improvements are designed to resist seismic shaking. Specific seismic design parameters for the proposed project are listed in the report and the applicant would be required to submit an update to the 2006 geotechnical investigation and the 2005 geologic report for review and approval by Environmental Planning Staff prior to building permit issuance that reflects the requirements of the most recent California Building Code and that ensures that the proposed development is in compliance with the reports' recommendations.

C. Seismic-related ground failure, including liquefaction?

Although the subject parcel is located in a County mapped area for high liquefaction potential; the geotechnical report (Attachment 9) indicates that borings taken at and around the proposed buildings site encountered highly permeable, sandy native soil which are medium dense at the upper levels and very dense at depth. No groundwater was encountered in the exploratory borings. The geologic report submitted for the project (Attachment 6) also indicates that based on the high permeability of the sands underlying the sites and their high suspected densities, liquefaction is not an area of concern for the project.

D. Landslides? X

The topography of the site is primarily flat at the lower western and southern portions of the site while the eastern and northern portion of the parcel has a ridge and slopes of 30% and greater. There are two proposed building sites to be located on the flat western and southern portions of the property and another proposed building site on

Significant Or Potentially Significant Impact

Significant Less than Significant Mitigation Or Incorporation No Impact

Х

Less than

with

Not Applicable

the south eastern portion of the property on slopes calculated between 15% - 30%. The potential for landslides was evaluated in the geologic report (Attachment 6) by first examining maps of landslide deposits and then performing a review of exploratory trenches at and around the proposed building sites. The report concludes that the trenches revealed no evidence of soil creep and that the "site examination revealed no evidence of landslides on the western or eastern slopes of the ridge, the most likely locations for landslides." In addition, there is a broad swale located above the proposed building site on Parcel B that was found to have been created by erosion and did not contain geomorphic features typically associated with landslides. Therefore, landslides are not an area of concern for the proposed project.

2. Subject people or improvements to damage from soil instability as a result of on- or off-site landslide, lateral spreading, to subsidence, liquefaction, or structural collapse?

As described in responses A.1-C and D above, both the geotechnical investigation (Attachment 9) and the geologic report (Attachment 6) submitted for the proposed project did not identify landslides or liquefaction as areas of concern due to the existence of dense, highly permeable, sandy soils and the lack of evidence of geomorphic features typically associated with landslides on and around the proposed building sites. The geotechnical report finds that the potential for lateral spreading, like liquefaction, is low due to the existence of unsaturated, well consolidated native materials at depth and the geologic report did not identify faults within 25 feet of the building sites, in accordance with County Code Section 16.10.070(b)(2).

The primary geotechnical and geologic concerns identified in the reports are strong, seismically induced ground shaking and drainage and erosion control; therefore, the reports provide the following recommendations (paraphrase):

- Geotechnical Engineer and Environmental Planning oversight of placement and compaction of engineered fill;
- Elevation of the finished pad grades slightly above surrounding grades; •
- Supporting structural foundations in firm native materials or compacted engineered fill:
- Provide firm, uniform subgrades below new pavements and concrete slab-on-• grade; and
- Provide positive site drainage.
- Building design should comply with the most current California Building Code to • resist seismic shaking and avoid structural collapse.

Both the geologic and geotechnical reports provide recommendations for grading, foundation design, drainage improvements, and building location; therefore, the applicant would be required to submit an update to both reports for review and

Significant Or Potentially Significant Impact

Less than Significant Less than with Significant Mitigation Or Incorporation No Impact

Х

Not Applicable

approval by Environmental Planning Staff prior to building permit issuance that reflects the requirements of the most current California Building Code and that ensures that final building plans comply with the reports' recommendations to resist seismic shaking and avoid structural collapse.

Develop land with a slope exceeding 30%?

The north eastern portion of the property consists of a large hill with steep slopes over 30% and a ridge about 120 feet above the flat, western portion of the property. The building sites on Parcel A are proposed on the western portion of the site where the topography is primarily flat. The proposed new building site on Parcel B is proposed on the south eastern portion of the site below the hillside on slopes ranging from 15% - 30%. Therefore, no new building site is proposed on land with a slope exceeding 30%.

Result in soil erosion or the substantial loss of topsoil?

Some potential for erosion exists during the construction phase of the project and the submitted geologic (Attachment 6) and geotechnical (Attachment 9) reports provide recommendations to mitigate impacts of erosion such as minimizing grading, revegetation of disturbed ground surfaces, dispersion of increase storm runoff from roadway and rooftops, and the use of energy dissipater devices at points of runoff concentration. Prior to parcel map recordation, the applicant shall submit final Erosion Control Plans for review and approval by Environmental Planning and Department of Public Works Stormwater Management Staff. The plans must specify detailed erosion and sedimentation control measures and must comply with the recommendations of the approved technical reports; therefore, the impacts of construction and grading on site erosion will be less than significant.

 Be located on expansive soil, as defined in section 1802.3.2 of the California Building Code(2007), creating substantial risks to property?

According to the submitted technical reports for the project (Attachments 6 and 9), site borings encountered sandy soils, which are not expansive and would therefore not pose a substantial risk to property.

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

The proposed land division would require new septic systems; however, the County

Significant Or Potentially Significant Impact Less than Significant Less than with Significant Mitigation Or Incorporation No Impact

Not Applicable

Х

Х

Geologist has reviewed and approved the preliminary plans and the submitted soils and geologic reports and determined that the septic systems are not required to be constrained to location within the proposed building envelopes. In addition, the County Department of Environmental Health Services completed preliminary Site Evaluations for the two proposed parcels and both were determined to be feasible to support new septic systems. Therefore, although the applicant would be required to show septic system locations on the parcel map for review and approval by Environmental Planning Staff prior to recordation and obtain Septic Permits from Environmental Health Services prior to building permit issuance, it is not an area of concern for the project.

7. Result in coastal cliff erosion? _____ X

This is not applicable because the subject parcel is not located in the vicinity of an ocean bluff.

B. Hydrology, Water Supply and Water Quality

Does the project have the potential to:

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

This is not applicable because according to the Federal Emergency Management Agency (FEMA) National Flood Insurance Rate Map, dated March 2, 2006, no portion of the project site lies within a 100-year flood hazard area.

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

This is not applicable because according to the Federal Emergency Management Agency (FEMA) National Flood Insurance Rate Map, dated March 2, 2006, no portion of the project site lies within a floodway.

3. Be inundated by a seiche or tsunami? _____ X

This is not applicable because the subject parcels are not located in the vicinity of the ocean.

Significant Or Potentially Significant Impact Less than Significant I with S Mitigation Incorporation N

Less than Significant Or No Impact

Х

Х

Not Applicable

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?

The project is not located in a mapped groundwater recharge area and there are no existing or proposed commercial agricultural uses on site. Future single family dwellings would obtain water from the City of Watsonville and would not rely on private well water. The City of Watsonville has indicated that adequate supplies are available to serve the project. The City issued a conditional will-serve letter for the proposed parcel by way of Resolution 189-05 (Attachment 10) and water service is contingent upon the payment of groundwater impact fees; therefore, the proposed project will not significantly deplete groundwater supplies or interfere with groundwater recharge. As per General Plan Policies 7.18.1 & 2, prior to parcel map recordation, the applicant and/or property owner is required to obtain and submit to the Planning Department, final written approval of water service for the proposed new parcels from the City of Watsonville water department. The parcel map shall not be recorded without prior Planning Department approval of a final notice of water service for the project as approved in the tentative map. Implementation of this requirement will ensure that impacts to the available water supply are less than significant.

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

The proposed project would not degrade or contaminate a known public or private water supply in that none exist in the surrounding vicinity. The City of Watsonville serves the surrounding area and the closest waterway, Corralitos Creek, is located over 1800 feet to the east.

6. Degrade septic system functioning? X

A septic tank and leach lines currently exist on site to serve the one existing residence. The County Geologist has determined that based on the submitted soils and geology reports, there are several suitable locations on site for future septic systems; therefore, the applicant would be required to show proposed septic tank and leachfield locations on the plans prior to parcel map recordation for Environmental Planning Staff and Environmental Health Staff review and approval to ensure suitability of the future locations. County Environmental Health Services has performed an initial site

Significant Less than Significant Or Potentially Significant Mitigation Impact Incorporation

Less than Significant Ωr No Impact

Х

Х

with

Nat Applicable

evaluation to determine feasibility on site (Attachment 11) and Septic Permits shall be required prior to building permit issuance.

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?

The existing drainage pattern would be slightly altered by the addition of proposed improvements and the construction of future single family dwellings; however, portions of the new paved driveway surface would be permeable and the plans propose the use of percolation trenches to retain runoff on site. In addition, the closest stream is Corralitos Creek which is located about 2000 feet east of the subject parcel; therefore, the proposed altered drainage pattern would not alter the course of a stream or river or contribute to flooding, erosion, or siltation off-site. The Department of Public Works Stormwater Management Staff and County Environmental Planning Staff have reviewed and approved preliminary drainage plans and a condition of approval of the project would require the applicant to obtain Environmental Planning and DPW approval of final drainage and erosion control plans prior to parcel map recordation, which would reduce the possible impacts of flooding, erosion, or siltation off-site to less than significant.

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

Runoff from this project may contain small amounts of chemicals and other household contaminants; however, since no commercial or industrial activities are proposed, the contribution will be minimal. Preliminary drainage plans, drainage calculations, and an downstream impact assessment have been conceptually approved by Department of Public Works Stormwater Management Staff, Proposed new drainage facilities would likely include retention trenches that would be located near future homes and pervious pavement on the proposed widened driveway. There is an existing stormdrain that runs through the western portion of the property that is currently plugged but would remain to provide additional recharge. The geotechnical report (Attachment 9) supports the use of retention for groundwater recharge and to retain runoff onsite due to the permeable nature of the sandy soils on site. Prior to parcel map recordation, the applicant would be required to submit final drainage and erosion control plans for review and approval by Department of Public Works Stormwater Management and Environmental Planning Staff to ensure that runoff would be held on site and would not exceed the capacity of existing offsite facilities.

Environmental Review Initial Study Page 13		Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable
9.	Contribute to flood levels or erosion in natural water courses by discharges of newly collected runoff?			X	

Corralitos Creek is the closest natural water course, which is located about 2000 feet to the east. The geotechnical report (Attachment 9) supports the use of retention for groundwater recharge and to retain runoff onsite due to the permeable nature of the sandy soils on site. Prior to parcel map recordation, the applicant would be required to submit final drainage and erosion control plans for review and approval by Department of Public Works Stormwater Management and Environmental Planning Staff to ensure that runoff would be held on site and would not exceed the capacity of existing offsite facilities. Therefore, the creek would not be impacted by discharges of newly collected runoff as a result of the project.

10. Otherwise substantially degrade water supply or quality?

Few pollutants would be added to the existing water supply as a result of this project. Department of Public Works Stormwater Management Staff have reviewed and approved preliminary drainage plans and would review and approve final drainage plans prior to parcel map recordation to ensure that appropriate treatment methods are proposed to treat runoff prior to discharge off site and also to ensure the appropriate placement and design of treatment facilities, such as the retention trenches. This condition would ensure that the impacts of runoff on water quality are less than significant. See response B-4 regarding impacts to water supply.

C. Biological Resources

Does the project have the potential to:

 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?

There are no listed species on the subject parcel and none were identified on site by County Environmental Planning Staff. No trees are proposed to be removed; therefore, no impacts to raptors, bats, or migratory birds are anticipated.

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

Х

Х

Х

Significant Or Potentially Significant Impact

Significant Less than Significant Mitigation Or Incorporation No Impact

Х

Less than

with

Not Applicable

The subject parcels are not mapped for sensitive biotic communities and none were observed on site; therefore there would be no impact as a result of development.

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?

The proposed development would not interfere with the movement of any native resident, migratory fish or wildlife species in that there are no waterways on the subject parcel and no trees would be removed as a result of the project. The ridge located on the east side of the parcel is wooded and heavily vegetated; however, this area would not be disturbed or altered as a result of the project as development would be restricted to approved building envelopes and other site improvements outside of the building envelopes would require prior review and approval by Planning Staff.

4. Produce nighttime lighting that will Х illuminate animal habitats?

The subject property is located in an area developed with single family dwellings that currently generate nighttime lighting. County Environmental Planning staff concluded that there are no sensitive animal habitats within or adjacent to the project site that would be impacted by the additional nighttime lighting resulting from the proposed project; therefore, nighttime illumination impacts as a result of the project would be less than significant for surrounding animal habitats.

5. Make a significant contribution to the reduction of the number of species of plants or animals?

Х

Х

Refer to C-1, C-2, and C-3 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)?

manner?

Page 1	15	Or Potentially Significant Impact	Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable
No se devel on sil Planr	ensitive habitats were identified on the subj lopment areas and the project does not inc te. The applicant would be required to obta hing Staff prior to parcel map recordation a	ect parce lude the r in approv nd prior to	l or within th emoval of a al from Cou building pe	he propos any existin inty Enviro ermit issua	ed ig trees onmental ance.
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
This i Cons conse	is not applicable because there are no Hab ervation Easements, or other approval loca ervation plans that exist on the subject parc	itat Conse al, regiona cel.	ervation Pla al, or state h	ns, Biotic nabitat	
<u>D. E</u> Does	nergy and Natural Resources the project have the potential to:				
1.	Affect or be affected by land designated as "Timber Resources" by the General Plan?				X
This i Gene	s not applicable as the subject parcel is no ral Plan, nor are the adjacent and surround	t a desigr ding parce	nated Timbe els.	er Resour	ce in the
2.	Affect or be affected by lands currently utilized for agriculture, or designated in the General Plan for agricultural use?				<u> </u>
This i Reso proje propo	s not applicable because the project site is urce in the General Plan, nor are the adjac ct site is not currently being used for agricu osed on the site or in the project vicinity.	not a des ent and s lture and	signated Ag urrounding no agriculti	ricultural parcels. 1 ural activit	he ies are
3.	Encourage activities that result in the use of large amounts of fuel, water, or energy, or use of these in a wasteful				

Significant

Less than

Х

No proposed activities would result in the use of large amounts of fuel, water, or energy because the amount of water and energy required to construct and service the proposed development would be consistent with other developments of similar size and design. There are only two demolition projects included as a part of the proposed project: 1) the majority of the existing house would remain, with only a portion to be demolished to comply with second unit size restrictions and, 2) the existing barn would

Significant	Less than
Or	Significant
Potentially	with
Significant	Mitigation
Impact	Incorporatio

Less than Significant Or No Impact

Not Applicable

Х

Х

Х

Х

be completely demolished; therefore consumption of large amounts of fuel, water and energy would be less than significant.

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

This is not applicable because the subject parcels are not mapped for mineral resources and no natural resources will be used, extracted, or depleted as a result of this project.

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?

This is not applicable because the proposed project is not visible from a County designated scenic resource.

 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?

This is not applicable because the project site is not located along a County designated scenic road or within a designated scenic resource area.

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?

About 25% of the perimeter of the subject parcel consists of parcels less than 1 acre in size that are developed with single family dwellings and that receive urban services. The subject parcel is flat on the west side with a steep, vegetated, ridge on the east side. The building envelopes on proposed Parcel A are flat and the proposed building envelopes on Parcel B are located on slopes less than 30%; therefore, minimal grading would be required for construction of the homes and for driveway improvements. The applicant would be required to obtain approval of final grading plans by Environmental Planning Staff prior to parcel map recordation to ensure that site grading is minimal

Significant	Less than
Or	Significant
Potentially	with
Significant	Mitigation
Impact	Incorporation

Less than Significant Or No Impact

Not

Applicable

and does not impact the existing character of the site. In addition, a separate grading permit would be required for each proposed building on site. No proposed improvements or disturbance would occur on the ridgeline.

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

Lighting associated with the project shall be shown on building permit plans and would be required to be reviewed and approved by County Planning Staff prior to building permit issuance. A condition of the project would restrict outdoor lighting features to be directed downwards and utilize low rise light standards and be directed away from adjacent properties; therefore, new sources of light would not be a significant impact on day or nighttime views in the area.

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

This is not applicable because 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?

Х

Х

The existing residence and barn on the subject parcel are not classified as historic resources as defined in CEQA Guidelines 15064.5.

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

The subject parcel is not within or in the vicinity of a mapped archaeological resource area; therefore, no further archaeological studies were required as part of the application for development. 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.

Environmental Review Initial Study Page 18		Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable
3.	Disturb any human remains, including those interred outside of formal cemeteries?			X	

See response F-2. 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 sheriffcoroner 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 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____

The subject parcel is not within or in the vicinity of a mapped paleontological resource area; therefore, no further studies were required as part of the application for development.

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?

Not applicable because no hazardous materials will be stored, used, disposed of, or transported to and from the site.

Х

Х

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?

The project site is not included on the 12/1/2008 list of hazardous sites in Santa Cruz County compiled pursuant to the specified code and no listed sites are located in the vicinity.

Significant Less than Environmental Review Initial Study Significant Less than Or Page 19 Potentially with Significant Significant Mitigation Or Not Impact Incorporation No Impact Applicable 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 This is not applicable because there are no public or private airports located within 2 miles of the project site. 4. Expose people to electro-magnetic fields associated with electrical transmission lines? Х All new electrical transmission lines proposed as a part of the project would be located underground and no high voltage transmission lines exist on the subject parcel; therefore, exposure to electromagnetic fields would be less than significant. 5. Create a potential fire hazard? Х The project design incorporates all applicable fire safety code requirements and will include fire protection devices as required by the local fire agency. 6. Release bio-engineered organisms or chemicals into the air outside of project buildings? X This is not applicable because there will be no bio-engineered organisms or chemicals created or used at the proposed site. H. Transportation/Traffic Does 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)? Х

The project has the potential to increase traffic on Hames Road and surrounding intersections and roadways with the development of 2 new single family dwellings and 1 additional detached second unit; however, the increase is less than significant from a trip perspective, as determined by the Department of Public Works Road Engineering Staff and would not create congestion at any of the surrounding intersections, none of

Significant	Less than
Ōr	Significant
Potentially	with
Significant	Mitigation
Impact	Incorporation

Less than Significant Or No Impact

Not Applicable

which are currently congested intersections.

 Cause an increase in parking demand which cannot be accommodated by existing parking facilities?
X______X

A condition of the project would require the property owner to meet the County Code requirements for the required number of resident parking spaces; therefore, new parking demand would be accommodated by new on-site parking spaces.

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

The proposed project would not increase hazards to motorists, bicyclists, or pedestrians because the project would include improvements to widen and pave the intersection of the paved driveway (project access) and Hames Road and to install a stop sign and road markings for traffic control and to create awareness. Prior to parcel map recordation, the applicant would be required to submit final improvement plans for review and approval by Department of Public Works Road Engineering Staff to ensure compliance with County Design Criteria.

4. Exceed, either individually (the project alone) or cumulatively (the project combined with other development), a level of service standard established by the county congestion management agency for designated intersections, roads or highways?

Х

None of the surrounding intersections and roads are currently congested; therefore, the addition of minimal traffic as a result of the proposed project would not reduce the level of service standard on surrounding roads and intersections because one single family dwelling that currently exists on-site would remain and only two new main dwellings and one additional second unit would be added to the site as a result of the project.

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?

Х

The project would minimally increase the ambient noise levels in the project vicinity above levels existing without the project given that only one single family dwelling

Significant Or Potentially Significant Impact

Less than Significant Or No Impact

Less than

Significant

with Mitigation

Incorporation

Not Applicable

currently exists on the subject property and approval of the project would create two new single family dwellings and one second unit; however, vehicular noise and conversational noise that would be generated by the proposed project would be similar in character to noise generated by surrounding single family dwelling uses in that the new residences would be located on a large 20 acre parcel and the parcel is located in a developed area. Therefore, impacts of noise as a result of the project would be less than significant given the location and size of the parcel and existing surrounding uses.

2. Expose people to noise levels in excess of standards established in the General Plan, or applicable standards of other agencies?

X

Х

Х

Per County General Plan Policies 6.9.1 and 6.9.2, new residential projects must maintain an indoor noise exposure standard of 45 dB L_{dn} . The subject parcel is surrounded by parcels developed with single family dwellings and is not located adjacent to a heavily traveled roadway or stationary noise source; therefore, the proposed project does not have the potential to expose people to level in excess of General Plan standards.

 Generate a temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Refer to I-1 and I-2.

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?

The North Central Coast Air Basin does not meet State standards for ozone and particulate matter (PM10); therefore, the regional pollutants of concern are ozone precursors (Volatile Organic Compounds [VOCs] and nitrogen oxides [NOx]), and dust. The Department of Public Works Road Engineering Division reviewed the conceptual improvement plans and determined that the amount of new traffic that would be generated by the project would not be substantial; therefore there is no indication that new emissions of VOCs or NOx would exceed Monterey Bay Unified Air Pollution Control District (MBUAPCD) thresholds for these pollutants and therefore there would

Significant Or Potentially Significant Impact Less than Significant Less than with Significant Mitigation Or Incorporation No Impact

Х

Not Applicable

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 and particulate matter (PM10). Standard dust control best management practices, such as periodic watering, shall be implemented during construction to reduce impacts to a less than significant level; therefore, air quality standards would not be violated as a result of new traffic or project construction.

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

The Department of Public Works Road Engineering Division has reviewed and approved conceptual improvement plans for the proposed project and has determined that the amount of traffic that would be generated by the proposed project is less than significant. In addition, the proposed project would create 2 single family dwellings and 1 new second unit on a parcel where a single family dwelling already exists (to be converted to a second unit) and the Monterey Bay Unified Air Pollution Control District (MBUAPCD) does not review projects for consistency with the Air Quality Management Plan (AQMP) unless the project proposes more than 16 new units; therefore, the amount of traffic generated by the 3 proposed new units would not exceed the goals of the AQMP for Santa Cruz County.

 Expose sensitive receptors to substantial pollutant concentrations?
X

See response J-1 regarding the impacts of temporary construction dust. The project has the potential to expose sensitive receptors in the surrounding residential neighborhood to pollutant concentrations during construction; however, dust is the only potential pollutant that would result from the project and the applicant shall be required implement standard dust control best management practices during construction which will reduce the impacts of pollutants on surrounding sensitive receptors is less than significant.

Create objectionable odors affecting a substantial number of people?
X

No objectionable odors will be created by the proposed use.

K. Public Services and Utilities

Does the project have the potential to:

Environmental Review Initial Study Page 23		Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable	
1.	Res phy cor sigi ord rati per put	sult in the need for new or vsically altered public facilities, the instruction of which could cause inificant environmental impacts, in er to maintain acceptable service os, response times, or other formance objectives for any of the plic services:	÷			
	a.	Fire protection?			<u> </u>	<u> </u>
	b.	Police protection?	<u> </u>		<u>X</u>	<u></u>
	C.	Schools?			X	
	ď.	Parks or other recreational activities?			<u>X</u>	
	e.	Other public facilities; including the maintenance of roads?			X	

While the project would contribute to the need for additional future services by increasing the general population served in the Watsonville area, the final development would meet all of the standards and requirements identified by CalFire. School, park, and transportation fees to be paid by the applicant would 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?

Х

The project requires the construction of a new stormwater drainage system to accommodate the increase in stormwater runoff as a result of new proposed impervious areas. An existing storm drain is located at the western side of the parcel, parallel to Enos Lane; however, this drainage line is plugged and would not meet current County Design Criteria requirements for best management practices or limiting post development runoff. Therefore, the project would implement a new stormwater drainage system that utilizes retention trenches to retain runoff and promote groundwater recharge and the existing plugged pipe would remain and would also promote groundwater recharge. Both methods for retention and recharge are

Significant 0r Potentially Significant Impact

Less than Significant Ог Incorporation No Impact

Х

X

Less than

Significant

Mitigation

with

Not Applicable

supported by the geotechnical and geologic investigations performed onsite for the proposed project due to the existence of highly permeable, sandy soils. Final design, sizing and location of the retention trenches shall be reviewed and approved by Department of Public Works Stormwater Management Staff prior to building permit issuance; however, the proposed conceptual stormwater management has been approved for feasibility and was determined to not cause significant environmental effects.

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?

The project would connect to an existing municipal water supply and the City of Watsonville has determined that adequate supplies are available to serve the project; therefore, although new connections would be required, no new or expanded water facilities would be required (Attachment 10). In addition, the proposed new dwellings would be served by new septic systems, the locations of which shall be reviewed and approved by both Environmental Health Services and County Environmental Planning Staff prior to parcel map recordation. The County Geologist has reviewed and accepted the submitted technical reports and has determined that there are several suitable locations on site for new septic systems that would not cause significant environmental effects. The applicant would be required to obtain a Septic Permit from Environmental Health Services prior to building permit issuance for each proposed structure.

Cause a violation of wastewater 4. treatment standards of the Regional Water Quality Control Board?

The County Department of Environmental Health Services has performed preliminary site evaluations for the proposed parcel which have determined the site to be suitable for individual sewage disposal systems (Attachment 11). The project's wastewater flows would not violate any wastewater treatment standards of the Regional Water Quality Control Board because the applicant shall be required to obtain Septic Permits from County Environmental Health Services prior to building permit issuance to ensure compliance with County and State requirements for wastewater treatment.

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

CalFire has reviewed and approved the conceptual improvements plans and shall

Significant Or Potentially Significant Impact Less than Significant Less than with Significant Mitigation Or Incorporation No Impact

Х

Х

Not Applicable

review and approve final improvement plans prior to parcel map recordation to assure conformity with fire protection standards that includes minimum requirements for water supply for fire protection. In addition, the City of Watsonville has determined that there is adequate water available to serve the proposed development (Attachment 10) and provide fire protection.

 Result in inadequate access for fire protection?

The project's driveway access and interior circulation pattern has been preliminarily reviewed by CalFire for feasibility and final improvement plans shall be reviewed and approved by CalFire prior to parcel map recordation to ensure that adequate access is provided for emergency vehicles during and after construction.

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

The project would make an incremental contribution to the reduced capacity of regional landfills as the single family dwellings and second units become occupied. In addition, the project would make a one time contribution to the landfill as a result of construction. However, there is one single family dwelling on the property which shall remain as a second unit with minor modifications and one existing barn of about 825 square feet to be demolished, therefore, in order to mitigate the impacts of temporary construction debris and demolition to less than significant, a mitigation will require the applicant to submit a plan to recycle and/or reuse excess post-construction materials, for review and approval by Planning Staff prior to building permit or demolition permit issuance. Implementation of this mitigation will maximize recycling and reuse of construction materials and will minimize contributions to the landfill.

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

Х

Solid waste accumulation is anticipated to increase slightly as a result of creating three new living units; however, residential daily trash accumulation is minimal and is not anticipated to result in a breach of federal, state, or local statutes and regulations.

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?

Х

Significant Or Potentially Significant Impact

Less than Significant Or Incorporation No Impact

Less than

Significant

with

Mitigation

Not Applicable

The proposed project would not conflict with any policies adopted for the purpose of avoiding or mitigating an environmental effect in that mitigations will be required as stated throughout the above document to ensure; public health and safety regarding geotechnical site conditions, structural safety, effective storm water management and minimization of impervious surfaces, reduced noise and air quality impacts, and minimization of nighttime lighting.

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

The proposed project would require minimal grading as the proposed building sites are primarily flat; however, final engineered grading plans would be required for review and approval by County Environmentally Planning Staff prior to building permit issuance to ensure consistency with Chapter 16.20 (Grading Regulations) of the County Code.

3. Physically divide an established community?

Х

Х

Х

The project would not include any element that would 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)?

The proposed project has been designed to meet the density and intensity of development allowed by the General Plan and zoning designations for the parcel. Surrounding parcels are currently developed with single family homes. Consequently, the proposed project 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 Х replacement housing elsewhere?

The proposed project would result in a net gain in housing units.

M. Non-Local Approvals

Significant	
Or	
Potentially	
Significant	
Impact	

Less than Significant with Mitigation Incorporation

Less than Significant Or No Impact

Not Applicable

Does the project require approval of federal, state, or regional agencies?

N. Mandatory Findings of Significance

- 1. 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?
- 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)
- 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)?
- 4. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

Yes	No	х	
	 -		

Yes No X Yes No X No X Yes

Yes

No X

Significant	Less than	
Ör	Significant	Less than
Potentially	with	Significant
Significant	Mitigation	Or
Impact	Incorporation	No Impact

Not Applicable

TECHNICAL REVIEW CHECKLIST

	REQUIRED	COMPLETED*	<u>N/A</u>
Agricultural Policy Advisory Commission (APAC) Review			<u>X</u>
Archaeological Review			<u> </u>
Biotic Report/Assessment			<u> </u>
Geologic Hazards Assessment (GHA)			<u> </u>
Geologic Report	XXX	July 2005	
Geotechnical (Soils) Report	XXX	March 2006	
Riparian Pre-Site			X
Sewage Disposal System Permit			
Other:			

Attachments:

- 1. Vicinity Map
- 2. Map of Zoning Districts
- 3. Map of General Plan Designations
- 4. Project Plans
- 5. Assessors Parcel Map
- 6. Geologic Investigation prepared by Nielsen and Associates, dated July 2005.
- 7. Letter of additional geologic comments prepared by Nielsen and Associates, dated October 2, 2006.
- 8. Technical Report Acceptance Letter, prepared by Joe Hanna, County Geologist, dated April 2006
- 9. Geotechnical Investigation prepared by Redwood Geotechnical Engineering, Inc., dated March 2006.
- 10. Water Will-Serve Letter and Policy Resolution submitted by the City of Watsonville, dated September 13, 2005.
- 11. Environmental Health Services Site Evaluation, dated October 2005.
- 12. Discretionary Application Comments



Location Map





Zoning Map





General Plan Designation Map














NIELSEN and ASSOCIATES

ENGINEERING GEOLOGY AND COASTAL CONSULTING

GEOLOGIC INVESTIGATION INCLUDING A SUBSURFACE FAULT STUDY FOR THREE PROPOSED SINGLE FAMILY HOMESITES

350 Hames Road at Enos Lane, Corralitos Santa Cruz County, California APN 107-461-25

Job No. SCr-1176-G

July 2005

Attachment 6

37/85

1070 W. Antelope Creek WayOro Valley, Arizona 85737@(831) 295-2081

NIELSEN and ASSOCIATES

5 July 2005

Job No. SCr-1176-G

Robert Mattos and Doug and Kim Mattos 140 Shamrock Place Watsonville, CA 95076

SUBJECT: Geologic Investigation including a Subsurface Fault Investigation of three proposed existing single family homesites.

REFERENCE. 350 Hames Road at Enos Lane, Santa Cruz County, California, APN 107-461-25

Dear Mssrs and Mrs. Mattos:

This report presents the results of our geologic study which addressed three proposed single family homesites which consisted of two main homesites and guest residence homesite for one of the main homesites. The homesites are situated in the Zayante fault zone; therefore, a detailed fault study was required to determine that no existing active or potentially active faults lie within 25 feet of the building envelope at the homesite. We conducted a subsurface fault investigation utilizing a backhoe trench. Our investigation did not reveal evidence for any fault traces in the three trenches that were excavated for this study.

The homes will most likely experience moderate to severe ground shaking during their lifetimes because the property is located in a high seismically active area. The effects of strong ground shaking are mitigated through strong foundation and structural design.

Because the homesite is located within the Zayante fault zone, we cannot guarantee that fault <u>rupture</u> will not adversely affect the proposed dwellings during their lifetime. However, our investigation shows that the designated building envelopes meets the current County requirements that no existing fault traces lie within 25 feet of the building envelopes.

Our study revealed no other significant potential geologic hazards that affect the homesites.

If the recommendations in this report are followed and if the homes are built according to modern seismic resistant standards, complying with the recommendations in this report will reduce the hazards to the proposed dwellings and the occupants within them to the "Ordinary Risks Level" in the "Scale of Acceptable Risks" contained in Appendix A of this report.

Sincerely, IANS NIELSEN ENGINEERING GEOLOGIS Hans Nielsen Certified Engineering Geologist 390 38/85

e.

1

and the second se

j,

States of the second se

))

No.

in the second se

5 July 2005 Santa Cruz County California

e

TABLE OF CONTENTS

-3-

INTRODUCTION
SITE CONDITIONS
SITE GEOLOGY
LANDSLIDES
DRAINAGE
FAULTS and EARTHQUAKE HAZARDS 11 Discussion of Regional Faults 11
SEISMIC HAZARDS 11 Surface Ground Rupture 12 Seismic Shaking 16 Seismically Induced Ground Failure 17
CONCLUSIONS
RECOMMENDATIONS
INVESTIGATION LIMITATIONS
REFERENCES
APPENDIX A - SCALES OF ACCEPTABLE RISKS
APPENDIX B - GEOLOGIC SITE MAP & LOGS OF EXPLORATORY TRENCHES

All in color

Baurward

2004 M

5 July 2005 Santa Cruz County California

INTRODUCTION

This report presents the results of our geologic investigation focusing on a subsurface fault study of three proposed existing single-family homesites on a 20.29 acre parcel of land. The property is located at the northeast corner of Hames Road and Enos Lane (Figure 1). The property is also known by the Assessors Parcel Number 107-461-25.

-5-

We conducted this investigation to evaluate the general geologic conditions at the homesites and to identify potential geologic hazards that may affect them. Because the homesites are situated in the Zayante fault zone, it was necessary to evaluate the earth materials near the homesite for the absence of evidence of faults within a distance of 25 feet of the building envelopes as required by the Santa Cruz County Planning Department. Included in this report are recommendations to reduce the risks associated with the geologic hazard of earthquakes and severe ground shaking at the homesite.

This investigation comprised: 1) a review of selected published and unpublished geologic information, 2) evaluation of the range of fault trace trends near the property, 3) examination and logging of three trenches excavated by backhoe for this study: a 220-foot long trench, a 160-foot long trench, and a 315-foot long trench, 4) discussions with Robert, Doug and Kim Mattos, and 5) preparation of this report and its accompanying graphics.

SITE CONDITIONS

The subject property is 20.29 acres in size according to a topographic map prepared by Mid Coast Engineers. The property occupies a broad valley bottom and a narrow ridge on the east side of the valley. An existing home on the south side of the property was not a part of this study. The remainder of the property was undeveloped at the time of our study excepting a small old wood barn. The property is shown on Plate 1, Appendix B.

A large part of the property is very gently sloping to nearly level. Two of the homesites are located on this gently sloping land, the main homesite and its associated guest residence. In the eastern part of the property a prominent ridge trends roughly north-south and rises from south to north. The third homesite is located on the crest of this ridge at its southern end. This homesite is setback over 25 feet from steep slopes with the steepest nearby slopes located off the eastern side of the ridge.

The property is accessed off Hames Road through an existing paved driveway. This driveway climbs very slightly off Hames Road and is essentially level as it enters the property.

There was no evidence of concentrated runoff on the property at the time of our study. However, the property owners told us of an old concrete drainage ditch in the western portion of the property that was built in the 1930's. There were many such drainage ditches built to mitigate erosion in the Corralitos area following the Great Depression. The ditch is presumably west of the main house homesite and runs down to the northern side of the large water tank at the southwest corner of the property whereupon it extends to the west and Enos Lane. We saw no evidence of this ditch, nor did we encounter it in any of our exploratory trenches.

5 July 2005 Santa Cruz County California

In general, the homesites appeared very well situated with regard to drainage and surrounding hillsides.

SITE GEOLOGY

The geology in the vicinity of the homesite is shown in Figure 2. The area is predominantly underlain by relatively young earth materials compared to many of the much older rock types that make up the Santa Cruz Mountains. Dupré and Tinsley show the entire property be underlain colluvium, but our exploratory trenches revealed that there are two much older geologic units underlying the property. The valley bottom in the western half of the property is underlain by sand of the Aromas Formation, and the ridge in the eastern part of the property is underlain by Continental Deposits, a slightly older geologic unit than the Aromas.

The Aromas is comprised of two distinctly different suites of earth materials called facies. One is a well sorted red brown sand (Qae) derived from ancient coastal sand dunes, and the other is a heterogenous fluvial unit (Qaf) containing interbedded and layered sands, silts, clays, and gravelly sands (Dupré, 1975; Dupré and Tinsley, 1980). The Aromas is geologically young at ½ to 1½ million years old. In a regional sense, contacts between various earth materials in the Aromas Formation are roughly flat lying but may be very gently inclined. Our exploratory trenches at the main homesite and the guest residence revealed that the valley bottom in the area of these two buildings sites is underlain by well sorted, red brown sand of the eolian facies. The sand was uncemented and exhibited no signs of bedding. The sand was overlain by a weakly developed soil.

Our exploratory trench on the ridge in the eastern part of the property revealed that it is underlain by a very light gray earth material composed of interbedded sand and silt. We refrain from calling them sandstone and siltstone since they are entirely uncemented. This earth material contained an abundance of bright orange color from oxidation of iron minerals giving it a 'rusted' appearance, a characteristic of the Continental Deposits according to Dupré and Tinsley (1980). In contrast to the Aromas, the Continental Deposits were bedded with bedding planes striking roughly east-west and inclined about 40 degrees to the south. Although the bedding planes are inclined downslope on the ridge, it is our opinion that they are not adverse because the formation is not cemented, and there was no evidence of parting along bedding contacts.

In general, the earth materials underlying each homesite appeared acceptable for the intended development of single family homes provided that a foundation engineer conducts an evaluation and develops foundation design criteria. We discuss some of the trench geology in greater detail in the Faults and Earthquakes Hazards section of this report.

LANDSLIDES

Landslides are common throughout the Santa Cruz Mountains, and are one of the dominant geologic forces shaping the modern landscape. Many landslides have occurred in recent years because of high intensity and long duration rainstorms (e.g., January 1982 storms). These rainfall-activated landslides are typically shallow debris flows and soil slides triggered by elevated hydraulic pore pressures, seepage pressures, and hydrostatic loads. The triggering conditions generally restrict these shallow landslides to the axis of shallow ravines and swales where surface and they concentrate ground waters.

41/85

-9-

5 July 2005 Santa Cruz County California

Large, deep-seated bedrock slides are also common in the Santa Cruz Mountains, and typically appear to be initiated or reactivated by strong ground motions during earthquakes (e.g., 1989 Loma Prieta earthquake). Noting that not all deep-seated landslides are seismically induced is important (i.e. Love Creek - 1982).

To help us evaluate landslides on and near the subject property, we first reviewed the map of landslide deposits in Santa Cruz County (Figure 3). The U.S. Geological Survey published the Map of Landslide Deposits in Santa Cruz County (Cooper-Clark and Associates, 1974) as a planning document. They constructed it from analysis of stereo aerial photographs. It is considered a good "first" tool when evaluating landslides. This map shows a possible soil creep symbol in the valley bottom at the property. However, our exploratory trenches revealed no reason to suspect soil creep, so we removed the symbol from our map.

Our site examination revealed no evidence of landslides on the western or eastern slopes of the ridge, the most likely locations for landslides. There is a broad swale on the hillside northeast of the main house, but this swale did not have the geomorphic features typically associated with landslides such as an over steepened head, steeper sides, and a topographic bulge at or near its toe which would have represented the slide deposit. This swale appeared to have been created by simple erosion. Certainly there were no steep areas within this swale that would have raised concerns on our part for a potential landslide hazard at the homesite.

DRAINAGE

Drainage around the homesites is generally by sheet flow. We saw no evidence of active erosion on the property. This is probably due in large part to the highly permeable nature of the earth materials underlying the site. However, the uncemented nature of the overlying surficial materials at the site coupled with the region's dry climate punctuated by occasional intense storms mandates the need for good drainage control. In general, the Aromas sand has proven to be extremely susceptible to erosion from concentrated runoff. Once erosion gullies form, they can be problematic to arrest and mitigate, so it is best to prevent them from forming. This is done through excellent drainage control and proper disposal of runoff.

Stripping and removal of vegetation, grading, and increasing or concentrating storm runoff commonly intensifies rates of erosion. Erosion control methods, including minimizing grading, revegetation of disturbed ground surfaces, dispersion of increased storm runoff from roadways and rooftops, and the use of energy dissipation devices at points of runoff concentration are effective methods of mitigating erosion hazards.

It is our understanding that Santa Cruz County requires that efforts be made to retain surface runoff from impermeable surfaces on-site. The Aromas sand underlying the property is excellent for subsurface discharge of runoff since it typically has a very high permeability. Each of the homesites is situated in an area where percolation trenches can be constructed to control runoff. We recommend that percolation trenches and leachfield trenches associated with the on-site sewage disposal septic system be separated by at least 50 feet to reduce the potential for either to affect the other. Our firm should review the chosen locations for both the leach trenches and percolation trenches prior to their finalization and approval $\frac{42}{85}$

Mattos Report Enos Land at Hames Road, APN 107-461-25 Job No. SCr-1176-G

July 2005 Santa Cruz County California

1974 LANDSLIDE MAP

Figure 3.





LARGE LANDSLIDE DEPOSIT

More than 500 feet in maximum dimension. Arrows indicate general downslope direction of movement. D: definite landslide deposit; P: probable landslide deposit; ?: questionable landslide deposit; R: possible rapid rate of landslide movement (several feet to over 100 feet per second). Hachured line shows approximate position of inferred main scarp.

SMALL LANDSLIDE DEPOSIT AND GULLY

50 to 500 feet in maximum dimension. Arrow indicates general direction of downslope movement and is centered over location of deposit. Included are gullies which exhibit observable side bank slumping.

SOIL CREEP

Areas of suspected soil creep, a gradual downslope movement of soil and loose rock material on a slope. Wiggly arrow indicates general direction of soil creep and is centered over location of creeping area.

Modified From: Cooper Clark and Associates (1974)

NIELSEN AI 43/85 OCIATES

-11-

Mattos Report 350 Hames Road APN 107-461-25

1000 - 100

5 July 2005 Santa Cruz County California

FAULTS and EARTHQUAKE HAZARDS

Discussion of Regional Faults

The subject property lies in a highly seismically active region of California. A broad system of interrelated northwest-southeast trending strike-slip faults represent a segment of the boundary between the Pacific and North American crustal plates. For approximately the past 15 million years (mid-Miocene) the Pacific plate has been slipping northwestward with respect to the North American plate (Atwater, 1970; Graham, 1978). The San Andreas fault has taken up most of the movement; however, many faults within this broad system have also experienced movement at one time or another. The faults of significance to the subject property include the San Andreas, Zayante, Hayward, and the offshore San Gregorio (Figures 4).

The distance to pertinent faults is as follows. The active San Andreas fault zone is located about three miles northeast the property. The potentially active Zayante fault pass very close to the property, most likely near its northeast corner based on the results of this study. The active San Gregorio fault lies about 23 miles to the southwest offshore, and the active Hayward fault lies about 14 miles to the north in the East San Francisco Bay Area.

The San Andreas, Hayward, and San Gregorio faults can generate 7+ magnitude earthquakes. The San Andreas and Hayward faults are currently considered to be the faults with the highest potential of generating the next large earthquake in the area. To a lesser extent, the San Gregorio is considered a significant seismic threat. The Zayante fault is a potential threat, but its history is much less understood than the other faults. Whereas the recurrence intervals of large magnitude earthquakes on the three active faults are measured in hundreds of years, the recurrence interval for the Zayante is currently estimated to be on the order of 8,800 years; however, there is no data confirming when the last major earthquake occurred on the Zayante (Frankel, 1996).

The San Andreas and Hayward faults are considered to have high probabilities of generating large magnitude earthquakes in the next 30 years. The most recent assessment of seismic hazards in California was published jointly by the U.S. Geological Survey and the California Division of Mines and Geology in December 1996 (Frankel and others). This document is the result of a combined effort by many geologists and seismologists and is considered the most up to date compilation of fault parameters in California. The report indicates that the San Andreas fault in the vicinity of the property is capable of generating a Moment Magnitude 7.9 earthquake. The Hayward fault may also generate an earthquake with a Magnitude in excess of 7, but the greater distance from the property indicates that the greatest ground shaking at the property will be generated by the San Andreas fault.

SEISMIC HAZARDS

Historic earthquakes along the San Andreas fault and its eastern branches have caused significant seismic shaking in the Santa Cruz County area. Significant earthquakes occurred on the San Andreas fault in 1838, 1865, 1906 and 1989 (Sykes and Nishenko, 1984); the 1865 event is thought to have occurred along the same segment of the fault that ruptured in 1989. The April 18, 1906 San Francisco earthquake caused severe ground shaking and structural damage to many buildings in the south Santa Cruz County area including the town of Watsonville (Lawson, 1908).

5 July 2005 Santa Cruz County California

The recent October 17, 1989 Loma Prieta earthquake (M=7.1) also caused severe ground shaking and structural damage in Santa Cruz County. The majority of damage was to unreinforced masonry structures, older buildings, buildings with inadequate foundations and construction defects, or a result of liquefaction and landsliding.

Seismic hazards near the subject properties can be placed in three general categories: (1) surface ground rupture, (2) seismic shaking, and (3) seismically induced ground failure. The following is an assessment of these hazards on the subject properties.

Surface Ground Rupture

Surface ground rupture occurs when fault movement breaks the ground surface. It is generally accepted that fault related surface rupture occurs most commonly on or close to preexisting active fault traces. This principle is based on the reasoning that pre-existing fault traces are zones of weakness in the earth's crust, and future tectonic stress is more likely to be relieved by fault rupture along a pre-existing zone of weakness rather than by a "fresh" rupture of historically strong material.

County regulations require all new homesites to be set back from any active or potentially active fault traces. In the Zayante fault zone, the setback distance is 25 feet. Therefore, the focus of our investigation was to evaluate a zone extending at least 25 feet on either side of the homesite. Figures 5 and 6 show that the homesite is located very close to what we would consider the heart of the Zayante fault zone. Near the homesite, the dominant trend of the fault traces within this zone range between N25W and N63W, a rather large envelope. One fault trace north of the property is oriented east-west, but such traces are rare. It is our opinion that investigating the envelope between N25W and N63W meets the standard of care for a fault investigation. These trends and their relationships to the building envelopes are shown on Plate 1.

To investigate the homesites, we excavated backhoe trenches that were oriented as close as possible to perpendicular to the trend of the traces of the Zayante fault near the property. The <u>position of the trenches relative to the building envelopes are shown on Plate 1 along with the two</u> dominant trends of the fault traces. The exploratory trenches were excavated 30-inches wide to a maximum depth of about eight feet; the trenches were excavated a sufficient depth to expose several feet of native earth materials. One wall of the trench was cleaned with hand mattocks to remove smeared earth materials created by the excavation process so as to provide a clean exposure for observation and analysis. A level reference line was then strung the length of the trench and a graphic log was produced of the cleaned trench wall. The graphic logs are presented on Plates 2, 3 and 4.

The trench at the guest residence homesite was excavated first. After excavating about 90 feet of this trench, the sidewalls began to collapse not only between the shores but behind the shores. We decided to close this trench and move about 10 feet to the east to excavate a new trench. We also decided that the trench was collapsing for two reasons - the trench was too deep for the earth materials to stand, and the shores were literally shearing the cohesionless sand when we pumped them up to the typical pressure of 1200 pounds. In the second trench, we shallowed the excavation to about 6.5 feet, which still allowed us to see several feet of Aromas sand, and we reduced the pressure to the lower end of the acceptable zone, about 800 pounds. The second trench was excavated 220

-15-

5 July 2005 Santa Cruz County California

feet long with only small area of sidewall collapse that did not affect our ability to examine the entire trench length. The log of this trench is presented on Plate 2, Appendix B.

This trench exposed a monotonous sequence of red brown, cohesionless eolian sand of the Aromas Formation. There was a weakly developed A-Horizon soil less than one foot thick across the entire length of the trench. There was also a slightly stiffer section between the soil and underlying sand that was most likely due to the vertical transport of silt from above. However, this zone was very subtle and recognized chiefly by its slightly more resistant nature to cleaning and scraping with the hand mattocks. The soil horizons provided a means to evaluate whether faults transected the trench. There was no evidence that the soil horizons were offset. Furthermore, if there had been significant ground displacement, particularly ground cracking from movement along a fault, the soil most likely would have fallen into the cracks thereby creating soil tongues. These are common features associated with ground cracking and faulting. We saw no soil tongues along the entire trench. The resulting building envelope is shown on Plate 1.

The second trench was dug on the ridge top in the eastern part of the property. It exposed a light gray, bedded sequence of sand and silt belonging to the geologic unit called Continental Deposits after Dibblee and Brabb (1980). The log of this trench is presented on Plate 3, Appendix B. The bedding provided excellent time lines from which to judge whether faults transected the trench. The bedding planes were consistent enough to cover the entire trench. None of the planes were offset in any degree indicating no existing fault trace transects this building envelope.

The third trench was excavated across the main homesite building envelope on the valley floor. The log of this trench is presented on Plate 4, Appendix B. This trench exposed a similarly monotonous red brown sand as that seen in Trench 1. The trench was dug to a similar depth, about 6½ feet, to reduce the potential for collapse. However, this trench appeared much more stable, probably due to a lesser moisture content of the earth materials. An A-Horizon soil with a weakly developed ped structure was present along the majority of the trench. There were also several slightly darker, slightly 'stiffer', discontinuous zones about one foot thick along the length of the trench. We interpreted these to represent ancient soil horizons which we termed 'buried soils' because they were overlain or buried by Aromas-sand. If one looks a modern sand dune field, particularly along the coast near Marina and Seaside in the Monterey Bay, it is readily apparent that sections of the dunes are covered in vegetation. These vegetative covers, where soil undoubtedly forms, can become buried by shifting sand. The result is a thin horizon of soil buried or encased in dune sand. These horizons provided another means by which to evaluate faulting, and none of these were offset in the trench.

There was no evidence suggestive of a fault in Trench 3. There were no soil tongues or displaced buried soils.

Based on the results of the fault study and an examination of Figure 6, which is a detailed map of suspected traces of the Zayante fault near the property, the Zayante may pass just north and just south of the property. No geologists have been able to map fault traces near the property due to the absence of geomorphic features typically associated with faults such as linear valleys, notches in ridges, sag ponds. In our opinion, the best geomorphic features along the Zayante fault just northwest and just southeast of the property. To the northwest on Corralitos Ridge (in the area of the word "Zayante" on Figure 6), there is a sag pond $\frac{6}{46/85}$ valleys and notches in ridges that allowed

-16-

5 July 2005 Santa Cruz County California

Coppersmith (1979) to confidently map traces of the Zayante fault there. To the southeast on Poppy Hill (in the area of the word "fault" on Figure 6), there are two linear valleys that most geologists ascribe to the Zayante fault. If one projects the southeastern faults towards the property, it would appear that the fault would pass south or through the property. In contrast, projection of the traces to the northwest of the property suggests that fault passes to the north or through the property. It is possible that there is a step in the Zayante fault near the property such that the southeastern traces 'step' past the property. One can speculate on all sorts of possibilities, but it is clear from the three exploratory trenches that no fault traces transect the three building envelopes.

We are compelled to caution that we cannot guarantee that new fault traces will not occur within the homesite area given the fact that the homesite is situated in the heart of the Zayante fault zone. We have shown that no existing fault traces pass within 25 feet of the home, so based on current County guidelines for geologic fault studies, the homesites are acceptable. But we cannot rule out the possibility that new fault traces may occur in the future in the homesite areas. This is a fact of life when dealing with potentially active faults in the world.

Seismic Shaking

Strong ground shaking is associated with large magnitude earthquakes, and ground shaking affects structures and the stability of landslide masses and hillsides. A number of different parameters may be used to characterize ground motion for the purpose of seismic design. Typically, these include (but are not limited to) peak horizontal acceleration, peak horizontal velocity, and duration of motion. Most emphasis in engineering practice has been placed on peak horizontal ground acceleration. Empirically derived attenuation relationships for average peak horizontal ground acceleration (PHGA) have been developed over the past decade by numerous researchers. Typically, these relationships relate PHGA in terms of a percentage of the force of gravity (g) to the distance from the causative fault for a specified magnitude earthquake. It has also been recognized that the attenuation relationships differ depending upon the soil conditions underlying the site.

We used the recent attenuation equations developed by Abrahamson and Silva (1997) to estimate the ground motion parameter of horizontal ground acceleration at the properties. These attenuation equations are relative to the type of bedrock or thickness of recent sediments covering bedrock. We consider the earth materials present in the hillside at the properties to be soft rocks or deep soil because of their uncemented character.

The two faults of interest are the San Andreas and Zayante faults. The San Andreas is much more active than the Zayante; however, the Zayante is much closer to the property than the San Andreas. The Zayante is only 0.25 mile (0.4 kilometers) to the northwest whereas the San Andreas is 3 miles (4.9 kilometers) to the northwest. The currently accepted maximum Moment Magnitude Earthquake on the San Andreas is 7.9 and on the Zayante is 6.8.

Using Abrahamson and Silva's (1997) attenuation equations, the estimated mean peak horizontal ground acceleration for sites underlain by deep soil-type earth materials are:

e dimensioners

5 July 2005 Santa Cruz County California

SAN ANDREAS FAULT

0.49g Mean 0.76g Mean + 1 standard deviation

ZAYANTE FAULT

0.53g Mean 0.81g Mean + 1 standard deviation

The Zayante values are slightly greater than the San Andreas values due to the proximity of the former fault. On the other hand, we think the probability of an earthquake occurring on the San Andreas is far greater than one occurring on the Zayante during the lifetime of the proposed home.

Seismically Induced Ground Failure

Seismically induced ground failures is a result of strong ground motions experienced at the site during earthquakes. These failures include liquefaction, ridge top cracking, seismically induced landsliding, and differential settlement.

Liquefaction is a phenomenon associated with earthquakes whereby a rapid buildup in pore pressure created by ground shaking results in a loss of strength in the earth materials. The earth materials typically liquefy, shifting into a slightly denser configuration, and structures settle differentially, which often results in severe structural damage to the structures. Lateral spreading is the gravitational displacement of liquefied soils towards an unconfined slope or incised free face as a result of liquefaction. We are of the opinion that liquefaction and lateral spreading are not a concern in the area of the homesite based on the high permeability of the sands underlying the sites in combination with their relatively high suspected densities.

During the 1989 Loma Prieta earthquake, a number of sites situated on ridge line or hilltops in the Santa Cruz Mountains experienced a phenomenon termed "ridge top cracking" which is a function of intense ground acceleration amplified due to the topographic constraint of the ridge and a lower lateral confining pressure on either side of the ridge line. Ridge top cracking commonly resulted in shallow (typically <5' deep) tensional ground failures along the crest of the ridge. The mechanics of movement are not well understood. During our site traverse of the subject property, we did not observe any sufficial evidence of open fissures or ground cracks, nor were we told of any associated with the 1989 Loma Prieta Earthquake. Furthermore, we did not find any evidence in our trench on the ridge line that would suggest that ground cracking had occurred in the past in the vicinity of the building envelope.

Our study also revealed no concern with seismically induced landsliding at any of the three homesites. It is certainly not an issue at the valley homesites, and the ridge top homesite is located well away from steep slopes where such landsliding may occur.

CONCLUSIONS

- 1. The subject property is located in the Zayante fault zone. It occupies a broad valley bottom and a narrow ridge to the east. This study investigated three proposed single family homesites.
- 2. The subject property is underlain by two geologic units. The majority of the property is underlain by ancient dune sand of $t_{48/85}$ nas Formation, a red brown, well sorted,

5 July 2005 Santa Cruz County California

uncemented, highly permeable sand. The ridge in the eastern part of the property is underlain by the slightly older Continental Deposits which are composed of interbedded fine to coarsegrained sand and silt, some of which has been highly oxidized to a distinctive rust orange color. This formation is also uncemented and appeared quite permeable.

- 3. There are no indications of slope instability or landsliding on the property that affects the proposed building sites.
- 4. The property is located in the Zayante fault zone. However, the results of this study indicate that no existing fault traces pass within 25 feet of the designated building envelopes.

We are compelled to caution that we cannot guarantee that new fault traces will not occur within the homesite area given the fact that the homesite is situated in what appears to be the heart of the Zayante fault zone. We have shown that no existing fault traces pass within 25 feet of the home, so based on current County guidelines for geologic fault studies, the homesites are acceptable from a geologic standpoint. But we cannot rule out the possibility that new fault traces may occur in the future in the homesite area. This is a fact of life when dealing with one of the most active faults in the world.

- 5. Severe ground shaking is likely at the site within the next 50 years if a large magnitude earthquake occurs on a nearby fault trace. Due to the proximity of the fault, the homesite may experience extreme ground motions in the event of a large magnitude earthquake on the portion of the fault near the homesite.
- 6. We observed no surficial evidence of past liquefaction, lateral spreading, differential settling, or "ridge top shattering" in the vicinity of the homesite nor in our exploratory trench in the area of the building envelope.
- Surface runoff at this property is principally by sheetwash. However, the earth materials underlying the property are very permeable, so much of the rainfall landing on the property probably soaks into the ground.
- 8. Erosion is high potential hazard at the property. Stripping and removal of vegetation, grading, and increasing or concentrating storm runoff might intensify rates of erosion unless precautions, including revegetation, energy dissipation and runoff dispersion are taken.
- 9. Groundwater was not observed in the vicinity of the home site nor in any of our exploratory trenches. The groundwater table is probably near sea level, several hundred feet beneath the property.

RECOMMENDATIONS

1. The proposed homes shall be located wholly within the confines of the building envelopes designated on Plate 1 of this report unless additional work is done by an engineering geologist.

49/85

5 July 2005 Santa Cruz County California

2. A registered civil and/or geotechnical engineer should conduct an analysis of the earth materials underlying the home and provide foundation criteria. Special consideration should be given to strengthening the foundation and building against severe ground shaking which the site will probably experience during the life time of the structures.

It is possible that extreme ground motions may occur at the homesites due to their proximity of the fault zone. Such forces could generate damage to the homes that is unrelated to ground rupture, and it is important that the design professionals associated with the home realize and understand the extreme magnitude of strong ground shaking that could occur at the property. The homes and their foundations should be constructed to the most stringent modern seismic resistant design parameters. The homes should be securely attached to their foundations, and the structures themselves built to withstand extreme ground motions. These aspects of the home should be addressed by the appropriate engineer, either foundation or structural. It is advisable, though not necessary, to limit the homes to single story, woodframe structures since these have been recognized as the most seismic resistant structures.

- 3. Runoff from impermeable surfaces should be well controlled. Concentrated runoff should not be allowed to occur due to the highly erodible nature of the earth materials. The earth materials are excellent for percolating storm runoff into the ground.
- 4. If any unexpected variations in soil conditions, or if any unanticipated geologic conditions are encountered during further evaluation of the property, or if the project will differ from that discussed or illustrated in this report, we require to be notified so supplemental recommendations can be given.
- 5. If all recommendations in the geologic report and geotechnical reports are closely followed and properly implemented during the design and construction, and maintained for the lifetime of the residence, then in our opinion, the occupants within the residence should not be subject to risks from geologic hazards beyond the "Ordinary Risks Level," in the "Scale of Acceptable Risks" contained in Appendix A.

NIELSEN and ASSOCIATES ENGINEERING GEOLOGY AND COASTAL CONSULTING M 10/23 witz

October 2, 2006

Job No. SCr-1176-G

Tom Burns, Planning Director County Government Center 701 Ocean Street. 4th floor Santa Cruz, CA 95060

Comments on the issue of the property being considered to be in the SUBJECT: Zayante Fault Zone.

350 Hames Road at Enos Lane, Santa Cruz County, California, APN 107-REFERENCE: 461-25

Dear Mssrs and Mrs. Mattos:

We have reviewed the response by Tom Burns to a request by Ron Powers for a reconsideration of the interpretation by the County in regards to reducing the hazards from faults and earthquakes to new single family homes on the subject property by limiting the parcel size of new parcels associated with a proposed minor land division. We understand that the County General Plan and the Geologic Hazards Ordinance stipulate a minimum parcel size of 20-acres for new parcels lying within State Alquist-Priolo Earthquake Fault Zones and County Seismic Review Zones.

First and foremost, the property is NOT located within a State Alquist-Priolo Fault Zone. By way of explanation, these are regulatory zones along active faults according to the California Geological Survey.

In regards to whether the property is located in a zone of known or suspected fault traces, we offer the following. Our subsurface fault investigation of three proposed building sites on the property involved the excavation of three separate trenches. The position of these trenches is such that they covered an area 470 feet wide in which we found no evidence of faulting. The age of the earth materials exposed in our trenches ranged from one-half million to several million years old. This is clear and indisputable evidence that no existing fault traces transect the zone of investigation. Therefore, there are no faults in this zone. This is supported by the fact that the property lies in an area where no traces of the Zayante fault have been identified and mapped, a zone labeled "insufficient data" on a map of fault traces in Santa Cruz County published by the U.S. Geological Survey (Hall and others, 1974).

Attachment 7

Mattos - letter on fault zone issue Job No. SCr-1176-G

-2-

The Zayante fault, along whose general trend the property lies, is a relatively poorly understood fault. In a recent assessment of faults in the State of California by a group of geologists and geophysicists from both the California Geological Survey and the U.S. Geological Survey, the activity level of the fault was defined as very low based on the recurrence interval of earthquakes on it, that being on the order of 8,800 years. Admittedly, there is no evidence that we are aware of as to when the last earthquake occurred on this fault. Even after studying it for several years as part of his Doctoral Thesis work at the University of California Santa Cruz, Kevin Coppersmith (1979) found no unequivocal evidence that the fault exhibited evidence of activity. The best guess by professional geologists is that the fault should be considered potentially active which under current fault classification guidelines means that it could have moved in the last two million years or more specifically in Pleistocene or younger time. In other words, the Zayante fault is not considered by most professional geologists to be a highly active fault nor a prominent seismic source for ground rupture and ground shaking.

We believe that this is an important point relative to the reasoning provided by Mr. Burns to defend the 20-acre minimum parcel size under the heading "Intent of the Decision Makers" in his letter of 14 June 2006. He states therein "(a)lthough a setback from fault traces is intended to limit exposure to ground rupture, lower density within the fault zone is intended to limit exposure to both rupture and severe seismic shaking." We believe that had this been the true intent of the General Plan Study Group and the resultant general plan and geologic hazard ordinance, then they would have made the 20-acre minimum parcel size requirement applicable to ALL new parcels within fault zones, not just those 'outside the urban or rural services lines.' Ground rupture, which in our opinion is the most significant potential seismic hazard relative to fault zones, is not specific to areas *not* served by 'service lines'. And in regards to ground rupture hazards, our more sufficient data developed through detailed geologic investigative work proved that there is a *zone* 470 feet wide in which there are no existing fault traces. If the true intent of the County General Plan and the County Geologic Hazards Ordinance is to reduce exposure to the potential geologic hazard of ground rupture, then our study has accomplished that goal. Furthermore, our work has raised a valid question as to whether the property is located in the Zayante fault zone.

I have worked in Santa Cruz County for the past 26 years and have had numerous opportunities to evaluate the Zayante fault zone. I have examined historical stereo aerial photographs for evidence of traces of the Zayante fault in the vicinity of the property. Stereo aerial photographs are one of the most valuable and useful tools geologists use to locate possible fault traces. I have also reviewed published maps and read Kevin Coppersmith's PhD thesis entitled Activity Assessment of the Zayante-Vergeles fault, the result of several year's worth of detailed investigative work. I have also conducted numerous subsurface fault studies along the Zayante fault during that time. Coppersmith's map of the fault zone shows the most likely fault traces located on Corralitos Ridge a short distance northwest of the property and in two linear valleys on Poppy Hill southeast of the property. In fact, these are the only two areas along the entire length of the Zayante Fault where there is reasonably good geomorphic (surface features) evidence of fault traces. The best-fit line or 'zone' connecting these two areas passes near the northeast corner of the property about 900 feet from the closest proposed homesite. My

NIELSEN and ASSOCIATES 52/85

Mattos - letter on fault zone issue Job No. SCr-1176-G

subsurface studies have never revealed excellent and unequivocal evidence for the Zayante fault. Let me be clear on this point. I have found features in exploratory trenches that were best interpreted as evidence of faults given that we were in the Zayante fault zone, but none of these were as definitive and spectacular as faults that I've exposed in the nearby San Andreas fault zone, one of the most active faults in the world. Most importantly, I found no evidence of faults at the subject property.

-3-

In conclusion, the combined evidence of fault traces of the Zayante fault zone near the property strongly suggests that the 'main' zone of the Zayante fault zone passes to the northeast of the proposed homesites. We can state with a high degree of confidence that the proposed homesites are not located in a zone of fault traces even though we cannot re-map the boundaries of the Zayante fault zone, even based on our extensive experience. Again if the true intent of the County General Plan and the County Geologic Hazards Ordinance is to reduce exposure to the potential geologic hazard of ground rupture, then our study has accomplished that goal.

We truly believe that granting the minor land division will not expose the proposed homes and the occupants thereof to a level of risk beyond an 'ordinary level of risk' as defined in Appendix A of our geologic report for this property. Nor will it create a level of density inconsistent with the surrounding neighborhood. And lastly and most importantly, our study has proven that the home sites are located in a 470-foot wide fault-free zone.

We would welcome an opportunity to discuss our data and interpretations with both Mr. Burns and Joe Hanna, the County Geologist, in an effort to clarify anything in this letter. Thank you for your further consideration.

Sincerely,

Hans Nielsen _____ Certified Engineering Geologist 1390

copies to: Joe Hanna, County Geologist Ron Powers Ellen Pirie, Supervisor Tony Campos, Supervisor Robert, Doug and Kim Mattos

NIELSEN and ASSOCIATES 53/85



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

April 19, 2006

Eloise L. Wilson 296 Hames Road Watsonville, CA 95076

And,

Mrs. Janet Mattos 140 Shamrock Place Watsonville, CA 95076

Subject: Review of Engineering Geology Report, by July 2005, Project # 1176-G; and Geotechnical Report by Redwood Geotechnical Dated March 2006 Project #: 1856SCR, APN 107-461-25, Application #: 06-0175

Dear Eloise L. Wilson,

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

- 1. All construction shall comply with the recommendations of the reports.
- 2. Final plans shall reference the reports and include a statement that the project shall conform to the reports' recommendations.
- 3. Before building permit issuance, *plan-review letters* shall be submitted to Environmental Planning from both the geotechnical engineer and engineering geologist. The authors of the reports shall write the *plan review letters*. Each letter shall state that the project plans conform to the report's recommendations.
- 4. All habitable construction shall be located within the development envelope shown on the Geologic Map. Before the recordation of the a parcel map, or the approval of a building permit, the septic system locations must be identified on the geologic map, and the engineering geologist must approve these locations with regards to slope stability concerns.
- 5. The project proposes a building site off the ridge-top, but still on a hillstope. To access this site, a new drive way must be grading along slopes that are approximately 30%. Before completeness of the tentative map, the applicant must demonstrate that the driveway to the hillslope building site will not cross slopes over 30 %.

Attachment 8

Review of Engineering Geo Report, and Geotechnical APN 107-461-25, Application +: 06-0175 Page 2 of 3

6. The application for a building permit shall include an engineered grading and drainage plan. The grading plans must include an erosion control plan.

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 call the undersigned at (831) 454-3175, email pln829@co.santa-cruz.ca.us if we can be of any further assistance.

Sincerely,

Joseph L. Hanna CEG 1313 County Geologist

/Cc:

Robert Loveland, Resource Planner Randall Adams, Planner Ron Powers, Consulting Planner Redwood Geotechnical Nielsen and Associates Geotechnical Investigation for 350 Hames Road APN 107-461-25 Santa Cruz County, California

for

Mr. & Mrs. Doug & Kim Mattos Watsonville, California

Ву

REDWOOD GEOTECHNICAL ENGINEERING, INC.

Soil, Foundation & Forensic Engineers

Project No. 1856SCR

March 2006

Attachment 9



REDWOOD GEOTECHNICAL ENGINEERING, INC.

CONSULTING SOIL, FOUNDATION & FORENSIC ENGINEERS

Mr. & Mrs. Doug & Kim Mattos 140 Shamrock Place Watsonville, California 95076 Project No. 1856SCR March 23, 2006

Subject: Geotechnical Investigation

Reference: Proposed New 3-Lot Subdivision 350 Hames Road at Enos Lane Santa Cruz County, California APN 107-461-25

Dear Mr. & Mrs. Mattos:

As requested, we completed a geotechnical investigation for the referenced site. Proposed improvements would include two new primary residences, a new quest residence, and new access driveways. A geologic report for this project was completed by Nielsen & Associates, (5 July 2005). The geologic report mapped geologically older terrace deposits with a south trending ridge spur on the property and more recent aeolian sand deposits on the flatter portions of the site. Exploratory borings and test pits within the south-trending ridge crest encountered dense to very dense silty sand below the surficial soil profile. Exploratory borings and test pits within the lower, flatter portions of the site encountered sandy native soil to the depths explored. A drilled pier and grade beam foundation is recommended for the proposed residence along the south-trending ridge crest. Foundations should be extended into firm native soil. On the flatter portions of the site, conventional spread footing foundations are recommended for proposed structures. To accommodate conventional foundation construction, we recommend that the sandy native soil be subexcavated at least four, (4), feet below the finish pad grade and replaced in lifts of compacted engineered fill. Subexcavation should extend at least ten (10) lateral feet beyond the proposed building envelopes. The finish pad elevation should be slightly higher than the surrounding finish grade to promote positive drainage.

Project No. 1856SCR Transmittal Letter Page No. 2

¢.

Primary geotechnical considerations will include subexcavating and recompacting the sandy native soil within the proposed building pads; elevating the finish building pad grade slightly for positive drainage; embedding foundations into firm native soil or compacted engineered fill; providing uniform subgrade support for proposed concrete slabs-on-grade and pavements; and providing positive site drainage. These geotechnical aspects of the project should be observed and, where necessary, tested by the geotechnical engineer. We request the opportunity to review project plans prior to construction and to observe geotechnical aspects of the project during construction.

If you have additional questions regarding this report, please call our office.

Very truly yours,

REDWOOD GEOTECHNICAL ENGINEERING, INC., No. 2115 Exp. 6/06 N. Joseph Rafferty G.E. 2115

Copies: 2 to Addressee

2 to Mr. Ron Powers

2 to Mr. Hans Nielsen

TABLE OF CONTENTS

¢

Page No.

Ø

LETTER OF TRANSMITTAL

GEOTECHNICAL INVESTIGATION

Introduction	1	
Purpose and Scope	1	
Site Location and Description	2	
Field Investigation and Laboratory Testing	3	
Subsurface Conditions	3	
Seismicity	4	
DISCUSSIONS, CONCLUSIONS, & RECOMMENDATIONS	7	
Site Grading	8	
Foundations	10	
Spread Footings	10	
Drilled Piers & Grade Beams	11	
Retaining Walls and Lateral Pressures	12	
Concrete Slabs-on-Grade	13	
Site Drainage	14	
Plan Review, Construction Observation, and Testing	15	
LIMITATIONS AND UNIFORMITY OF CONDITIONS	16	
REFERENCES	17	
LIST OF FIGURES	18	
Figure 1. Site Vicinity Map		
Figure 2. Site Plan Schematic		
Figure 3 6. Logs of Test Borings		

GEOTECHNICAL INVESTIGATION

(P

Introduction

This report presents the results of our geotechnical investigation for proposed improvements at 350 Hames Road in Santa Cruz County, California, as shown on our Site Vicinity Map (Figure 1) and our Site Plan Schematic, (Figure 2). Two new primary residences and a guest residence are proposed on the property. A geologic report for this site was completed by Foxx, Neilsen & Associates. We were provided with a copy of this geologic report prior to completing our subsurface investigation.

Purpose and Scope

The purpose of our investigation was to evaluate the surface and subsurface conditions in the vicinity of the proposed improvements, and to develop geotechnical recommendations for design and construction of the project. The specific scope of our work included the following:

- 1. A review of available data in our files pertinent to the site and vicinity. This included published geologic maps and other work by our firm in the site vicinity.
- 2. Four exploratory borings about14 to 18½ feet deep drilled with a truck mounted power-driven auger.
- Laboratory testing of selected samples to determine pertinent engineering index properties.
- 4. Evaluation of the field and laboratory data to develop geotechnical recommendations for site grading, building foundations, concrete slabs-on-grade, and site drainage.
- 5. Presentation of the results of our investigation in a written report.

1

Project No. 1856SCR 350 Hames Road at Enos Lane Page 2

Site Location and Description

The property is situated near the intersection of Hames Road and Enos Lane as shown on the attached Site Plan Schematic, (Figure 2). To the southwest is a large water tank at the intersection. An existing graded road traverses the southern margin of the site. As shown on the Site Plan Schematic, the property would be split into three parcels. An existing residence on Parcel 1 would remain. The scope of our investigation did not include an evaluation of Parcel 1. A south-trending ridge crosses Parcels 2 and 3 along the eastern portion of the property. The gently sloped ridge crest descends to moderately steep slopes. The remainder of the property is situated in a broad valley bottom with gentle to nearly level topography. A small barn has been built on parcel 3 near an existing graded ranch road. The remainder of the parcel 3 is vacant. We anticipate that the new construction would incorporate lightweight frame construction. Building plans for proposed improvements were not available at the time of our investigation.

The surface drainage appears to be primarily sheet runoff following the natural topography. No significant erosion was observed or reported on the property. The sandy native soil appears to be highly permeable. Along the western portion of the property is an abandoned drainage ditch. We understand that the ditch was constructed in the 1930's. No abandoned improvements were found in the geologic exploratory trenched in the vicinity of the proposed new building envelopes.

A new primary residence is proposed along the crest of the ridge on Parcel 2. The building envelope for the proposed new residence would have a minimum setback of at least 25 feet from the steeper slopes below the ridge crest. A new primary residence and new guest residence are proposed on the gently sloped portion of Parcel 3. New access driveways would generally follow the alignment of existing ranch roads or extend from the existing ranch roads.

61/85

C

Field Investigation and Laboratory Testing

A

We completed a field reconnaissance and subsurface exploration at this site on February 10, 2006. Four exploratory test borings were drilled to depths of about 14 to 18½ feet. Three exploratory backhoe test pits were previously logged on 24 June 2005 for the geologic investigation. The approximate locations of the exploratory borings and backhoe pits are shown on the Site Plan Schematic (Figure 2). Subsurface conditions were logged in accordance with the Unified Soil Classification System (ASTM D2487). The boring logs are presented as Figures 3 through 6. The logs denote subsurface conditions encountered at the locations and dates indicated. This does not warrant that they are representative of subsurface conditions at other locations or times.

The focus of our laboratory testing program was to evaluate pertinent engineering index properties. Samples were collected at selected depths for testing. The results of the laboratory testing are shown on the test pit logs. The natural moisture content was measured on selected samples. The natural moisture content provides a rough indicator of compressibility, strength, and potential expansion characteristics.

Subsurface Conditions

Our investigation encountered firm, predominantly sandy native soils across the site. Within the higher topographic elevations along the ridge crest, the native soil graded into very dense sandy materials consistent with geologically older terrace deposits. Within the lower, gently sloped portions of the site, the native soil graded into medium dense aeolian sand deposits.

P

Along the ridge crest, the sandy native materials encountered in the exploratory boring were medium dense within the upper five feet and then dense to very dense at depth. The surficial topsoil was about one to two feet thick. The sandy native materials exposed in the geologic test pit exposed interbedded layers of coarse to fine sand and occasional thin layers of well consolidated silt.

Within the lower, flatter portions of the site, the exploratory borings encountered about 3 to 6 feet of loose, uniform sandy materials underlain by medium dense sandy native materials at depth. These native materials appear consistent with aeolian sand deposits. Within the two geologic test pits, the upper topsoil profile and the native material at depth did not exhibited very little binder or cohesion. At an intermediate depth of about one to three feet, the sandy native material displayed a minor amount of stiffness or cohesion. These soil properties appear to be consistent with geologically older aeolian sand deposits of sufficient age to begin developing a surficial and intermediate soil profile and an undifferentiated soil profile at depth.

We did not encounter static ground water at the time of our investigation. It should be noted that ground water levels may fluctuate due to variations in rainfall, stratification, construction activity, or other factors not evident during our investigation.

Seismicity

A general discussion of seismicity is presented below. A detailed discussion of faulting, seismicity, and geologic hazards is beyond the scope of this report. The site is located within the seismically active Monterey Bay Region. Based on the 1997 Uniform Building Code, the site is within Seismic Zone 4. As outlined in Table 16-J of the UBC, the native soil corresponds to a stiff soil profile, S_p .

Large fault systems in the region have generated moderate to major earthquakes on several occasions during the recorded history of the area. Recent studies have concluded that there is a high probability (on the order of 62%) that at least one magnitude 6.7 or greater earthquake will occur in the greater San Francisco Bay Region within the next 30 years (2002-2031) (Working Group, 2003). Smaller fault systems may also be capable of generating strong to severe ground shaking at this site. Faults mapped in the region are listed in the following table. The seismic source type is based on Table 16-U of the 1997 Uniform Building Code. No mapped fault traces are known to cross this site.

Fault	Distance to proposed building sites	Direction to fault	Seismic Source Type
San Andreas (Santa Cruz)	5 km (3 mi)	northeast	A
Zayante	<2 km (<1 mi)	northeast	В

Our investigation indicates that the San Andreas fault and Zayante fault systems are both associated with equivalent seismic design criteria as outlined below for a stiff soil profile S_{D} , within seismic zone 4. Recommended seismic design parameters for the proposed project are listed below.

	Seismic Coefficient Ca	Seismic Coefficient Cv	Near-Source Factor, Na	Near-Source Factor, Nv
San Andreas Fault@ 5 km	.44	.64	1.2	1.6
Zayante Fault @ <2 km	.44	.64	1.3	1.6

The California Geological Survey, formerly the California Division of Mines and Geology, has established Alquist-Priolo Earthquake Fault Zones, formerly Special Studies Zones,

6

along all faults considered to have been active during Holocene time (past 11,000 years) and to have a relatively high potential for surface rupture. These faults are generally categorized as A or B depending on their relative activity. Faults with a C designation are generally not designated as special studies zones. Our review indicates that the project site does not fall within an Earthquake Fault Zone (California Division of Mines and Geology, 1982). The potential for surface faulting within the proposed building envelopes appears very low.

ĉ

Liquefaction and lateral spreading are associated with improvements supported on saturated, loose sands and silts. Unsaturated or well-consolidated soils and bedrock typically have very low liquefaction potential. Our exploratory excavations encountered well-consolidated native materials at depth. We did not encounter ground water in our exploratory borings, drilled to depths of up to 18¹/₂ feet.

The primary seismic hazard at this site appears to be from strong ground shaking. The proposed new structures would be situated on new building pads graded onto the gently slope ridge crest or onto gently sloped topography. Within the proposed building envelopes, the native materials encountered in our investigation appear very unlikely to experience ground failure from surface fault rupture, liquefaction, lateral spreading, landsliding, or other seismically induced ground failure.

Ô

DISCUSSIONS, CONCLUSIONS, AND RECOMMENDATIONS

1

Based on the results of our investigation, the site appears compatible with the proposed improvements, provided the following recommendations are incorporated into the design and construction of the site improvements. Our firm must be provided the opportunity for a general review of the final project plans and specifications prior to construction so that our geotechnical recommendations may be properly interpreted and implemented.

The exploratory borings and test pits at this site encountered firm predominantly sandy native soils at depth across the site. The surficial sandy topsoil and the near-surface sandy materials on parcel 3 are not considered sufficiently consolidated to support the proposed site improvements. Along the ridge crest, where foundation support can be extended into the firm native materials at depth, a drilled pier and grade beam foundations is recommended. Within the lower, gently sloped portions of parcel 3, we recommend that the proposed building pads be subexcavated and replaced with at least 4 feet of engineered fill placed in compacted lifts. Conventional spread footing foundations are recommended for these two building pads.

Recommended site work would include clearing the proposed building sites, constructing new driveways, and establishing positive drainage gradients. On parcel 3, we recommend subexcavating the proposed building pads at least four feet below the finish pad grades, (extending at least 10 lateral feet beyond the proposed building envelopes).

Thorough control of runoff and positive site drainage will be critical both during construction and after the project is completed. Finish grades and subsurface drainage systems should promote positive drainage away from the proposed improvements. We recommend elevating the building pad slightly above surrounding yard areas to promote positive

Ø

drainage away from the new residence. The pavements and driveways should also be positively sloped for drainage. The final grading and landscaping should not obstruct the site drainage or allow moisture to accumulate adjacent to foundations, slabs, pavements, or other improvements.

C

Critical geotechnical considerations for this project will include; placement and compaction of engineered fill; elevating the finish pad grades slightly above surrounding grades; supporting structural foundations in firm native materials or compacted engineered fill; providing firm, uniform subgrades below new pavements and concrete slabs-on-grade; and providing positive site drainage. These critical aspects of the project must be observed by the soils engineer during construction.

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

Site Grading

The soil 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 soil engineer will perform required testing and observation during grading and construction. It is the owner's responsibility to make the necessary arrangements for these required services.

Areas to be graded should be cleared of all obstructions including disturbed soil, loose fill, and other debris or unsuitable material. Depressions or voids created during site clearing should be backfilled with engineered fill. Cleared areas should be stripped of organic-laden

1

Project No. 1856SCR 350 Hames Road at Enos Lane Page 9

topsoil. Stripping depth is typically about 2 to 4 inches. Actual depth of stripping should be determined in the field by the soil engineer. Strippings should be wasted off-site or stockpiled for use in landscaped areas if desired.

After clearing and stripping, the building envelopes on Parcel 3 should be subexcavated at least 4 feet below the finish pad grade to expose firm native soil. Subexcavation should extend at least ten (10) feet horizontally beyond proposed new building envelopes. The final depth of subexcavation should be determined in the field by the soil engineer. Areas to receive engineered fill should then be scarified to a depth of 6 inches, moisture conditioned, and compacted to at least 90 percent relative compaction. Portions of the site may need to be moisture conditioned to achieve a moisture content suitable for effective compaction.

Engineered fill should be placed in thin lifts not exceeding 8 inches in loose thickness, moisture conditioned, and compacted. Moisture content should be about 2 to 6 percent above the optimum moisture content. The upper 6 inches of pavement subgrades should be compacted to at least 95 percent relative compaction. The aggregate base below pavements should likewise be compacted to at least 95 percent relative compaction. Where referenced in this report, Percent Relative Compaction and Optimum Moisture Content shall be based on ASTM Test Designation D1557-91.

If grading is performed during or shortly after the rainy season, the grading contractor may encounter compaction difficulty, due to excessive moisture in the subgrade soil. If compaction cannot be achieved by adjusting the soil moisture content, it may be necessary to over excavate the subgrade soil and replace it with select import angular crushed rock to stabilize the subgrade. The depth of over excavation is typically about 12 to 24 inches under these adverse conditions. Specialized grading procedures will require observation by the soil engineer or his representative.

Materials used for engineered fill should be non-expansive, free of organic material or debris, and contain no rocks or clods greater than 4 inches in diameter. The predominantly sandy soil encountered at this site generally appears suitable for use as engineered fill. We estimate shrinkage factors of about 20 to 30 percent for the on-site sandy materials when used in engineered fills.

Following grading, all disturbed areas should be planted as soon as possible with erosion-resistant vegetation. After the earthwork operations have been completed and the soil 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 soil engineer.

Foundations

Recommended foundation alternatives include drilled piers embedded into firm native soil and conventional footings embedded into compacted engineered fill as outlined below. All foundation excavations should be kept moist and be thoroughly cleaned of all slough or loose materials prior to pouring concrete. The foundation excavations must be observed by the soil engineer or his representative during drilling and prior to placing steel or concrete. If unusual or unforeseen soil conditions are found during construction, additional recommendations may be required.

Spread Footings

Conventional spread footings are recommended where foundation support can be embedded into compacted engineered fill. Continuous interior footings or tie beams are recommended below all interior shear walls, concentrated point loads, and bearing walls. Isolated footings should generally be limited to exterior decks, and other lightly loaded structures.

69/85

Spread footings should extend at least 12 inches below the lowest adjacent grades. Actual footing depths should be determined in accordance with anticipated use and applicable design standards. Continuous footings and tie beams should be 12 inches wide. Isolated footings for exterior deck foundations should be at least 18 inches in diameter. The footings should be reinforced as required by the structural designer based on the actual loads transmitted to the foundation. As a minimum, we recommend No. 4 bars in both the top and the bottom of all continuous footings and tie-beams. Footings located adjacent to other footings or utility trenches should have their bearing surfaces founded below an imaginary 1.5:1 plane projected upward from the bottom edge of the adjacent footings or utility trenches.

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. For lateral loads, a friction coefficient of 0.35 may be assumed at the base of the footing. Additional passive resistance may be assumed where footings are poured neat against compacted engineered fill. An equivalent passive fluid pressure of 500 pcf may be applied to the sidewalls of the footings when poured against compacted engineered fill. Total and differential settlements under the proposed light building loads are anticipated to be less than ½ inch and 1 inch respectively.

Drilled Pier and Grade Beams

Drilled pier and grade beam foundations are recommended where foundations can be embedded into firm native soil. Drilled piers should be tied to continuous grade beams below all shear walls and bearing walls. Isolated piers should be limited to floor loads, exterior decks, or other lightly loaded structures.

70/85
Drilled piers should be at least 8 feet deep, 18 inches in diameter, and be embedded at least 6 feet into well-consolidated native materials, below all fill and unconsolidated soil. Anticipated pier depths would be on the order of 8 to 12 feet. Final pier depths should be determined in the field by the soils engineer. Piers should be spaced at least 3 diameters from center to center. Grade beams should be at least 8 inches wide.

Piers constructed in accordance with the above may be designed for an allowable skin friction of 500 psf. The upper 2 feet of embedment, topsoil, and all fill materials should be neglected when computing skin friction. For passive lateral resistance, an equivalent fluid pressure of 500 pcf may be assumed to act against 2 pier diameters within the undisturbed native materials. The upper 2 feet of embedment and topsoil should be neglected when computing passive lateral resistance.

Piers should be vertically reinforced the full length. The vertical reinforcement should be lapped and tied each way to the upper grade beam reinforcement. Actual reinforcement requirements should be determined by the structural designer in accordance with anticipated use and applicable design standards.

Retaining Walls and Lateral Pressures

New retaining walls, where required, should be designed to resist both lateral backfill pressures and any additional surcharge loads. Backfill materials should be placed as compacted engineered fill. Structurally restrained walls should be designed to resist a uniformly applied wall pressure of 25 H psf. Active soil pressures may be assumed for free standing retaining walls backfilled with granular native soil. Walls up to 8 feet high should be designed to resist an active equivalent fluid pressure of at least 40 pcf for level backfills, and 65 pcf for sloping backfills no steeper than 2:1 (horizontal:vertical). Retaining walls should also be designed to resist one half of any surcharge loads imposed on the backfill

8 ° g

behind the walls. These lateral pressures are based on granular backfills. The materials encountered at this site appear suitable for use as backfill material.

The above lateral pressures assume that all retaining walls are **fully drained** to prevent hydrostatic pressure behind the walls. Drainage materials behind the wall should consist of filtered drain rock (Class 2 permeable material, Caltrans Specification 68-1.025; or an approved equivalent). Retaining wall backdrain sections should be at least 12 inches wide. The drain section should extend from the base of the walls to within 12 inches of the top of the backfill. A rigid perforated pipe should be placed (holes down) about 4 inches above the bottom of the wall and tied to a suitable drain outlet. Wall backdrains should be sealed at the surface with concrete slabs, clay, or other impermeable material to minimize infiltration of surface runoff into the backdrains. Surface runoff should be diverted away from backdrains and collected in separate drain lines or channels. New foundations should not bear on new retaining wall backdrains or drain pipes.

Concrete Slabs-on-Grade

Concrete slabs-on-grade should be supported on at least 4 inches of non-expansive granular material. Prior to construction of each slab, the subgrade surface should be thoroughly moisture conditioned and then proof rolled to provide a smooth, firm, uniform surface for slab support.

In areas where floor wetness would be undesirable, a blanket of 4 inches of clean free-draining gravel should be placed beneath the floor slab to act as a capillary break. In order to minimize vapor transmission, a durable 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.

To minimize random slab cracking, new garage slabs and exterior slabs should be divided with joints into smaller, approximately square, sections. Control joints or expansion joints should be provided at maximum spacings of 10 feet on center. Control joints should also be provided at corners or other discontinuities. Slab reinforcing should be provided in accordance with the anticipated use and loading of the slab.

Exterior concrete slab-on-grade sections should be founded on firm, uniformly moisture conditioned and compacted subgrades. Reinforcing should be provided in accordance with the anticipated use and loading of the slab. The reinforcement **should not** be tied to the building foundations. These exterior slabs can be expected to suffer some cracking and movement. However, thickened exterior edges, a well-prepared subgrade including premoistening prior to pouring concrete, adequately spaced expansion joints, and good workmanship should minimize cracking and movement.

Site Drainage

Positive site drainage will be essential. Finish pad grades should be elevated slightly above surrounding yard areas for positive drainage. Diligent maintenance of completed drainage improvements is required for the life of the improvements. The drainage improvements should be both durable and easily accessible to promote frequent routine maintenance. Collected runoff should be discharged in a controlled fashion. Runoff must not be allowed to sheet flow over graded slopes.

Finish grading and landscaping must include provisions for positive slope gradients so that surface runoff flows away from the foundations, driveways, and other improvements. Minimum positive slope gradients of two percent are recommended for all concrete and landscape surfaces in the vicinity of the site improvements. Surface drainage must be directed away from the building foundations and concrete slabs.

Full roof gutters should be placed around all eaves. Discharge from the roof gutters should be conveyed away from the downspouts by splash blocks, lined gutters, pipes or other positive drainage. Collected roof runoff should be discharged away from the building foundations and other improvements.

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

Our firm must be provided the opportunity for a general review of the final project plans and specifications 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 also require 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.

CITY OF WATSONVILLE

Conservation the sector sectory of the busies of our conservation



网络约米 新闻 计无比约约的 2. Billio en Suddi

21 1 **58** 15 18 en a Margan

11 28301

ate set 1070 Constant Constant

85 DER 5100 00 M 2000 (02000288

200 v.z., Street

COVERS

网络白垩合白头 i stinde

September 13, 2005

Doug & Kim Mattos 1550 Green Valley Road Watsonville, CA 95076

Subject: Water Service for 350 Hames Road, APN: 107-461-25

Dear Mr. & Ms. Mattos:

This letter is to inform you that City of Watsonville (City) water may be provided to serve the proposed development, which includes a lot split, a lot line adjustment, and construction of three new dwelling units, provided the following conditions are met:

- 1. Total unit count shall be at least 5 units: Two new primary dwelling units, one new accessory dwelling unit, conversion of one existing dwelling unit to an accessory dwelling unit, and one existing unit to remain as is;
- 2. Accessory dwellings shall be constructed and available for occupancy concurrent with the primary dwellings;
- 3. Accessory units shall be deed restricted as affordable per Santa Cruz County requirements;
- 4. Monthly rental rates shall be based on City of Watsonville Median Income; and
- 5. Complete and submit a water service application to the City of Watsonville. Pay construction, connection, and groundwater impact fees.

Please contact me at (831) 768-3077 if you have any questions or concerns.

Yours truly,

" B" EXHIBIT_ 1_____1 Pane

Joy Bader, Assistant Engineer Community Development Department

Cc: Robert & Jan Mattos, 140 Shamrock Place, Watsonville, CA 95076

Attachment 10

Attachment/Exhibit to Resolution No. 189-05 (CM)

PAENGINEERUBO BOX 50009 WATSONVILLE, COA 95077 5000 75/85

3 M. 1324 8 81 163 1022 aa 63 1728 6 73 1.480 81. T 65 97 51 NAME THE ARES うい いいさ やいか 松 糸 1111116 35 - 68 E.CD See 41 - 163 4066 10500A8655 83. 168 qz.č. ag 的 口的 化硫 SERVER STREET 85 768 3080 「火服」 (名もと)(人

> 4.490.80 CC Aviation Way EGE - GRUMAEC 18x 801,060 4058

1.22 1 i Satona Shaqi 8311683250 高速 相关的 经注入分约 9.03.ma=85.am R9 168(17/00 109 BB (165 KD (5

REAR & COLVENT PARAVICE 1915 Marsha Avenani 451 - 168 N2K0 그곳만 안에서 왜

WATER SERVICE - WHILE SEAT TO LETTER

RESOLUTION NO. 189-05 (CM)

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF WATSONVILLE APPROVING THE REQUEST FROM DOUG, KIM, ROBERT, AND JANET MATTOS FOR A WATER AVAILABILITY LETTER ("WILL SERVE") FOR A PROPOSED RESIDENTIAL PROJECT ON 350 HAMES ROAD (APN: 107-461-25), WATSONVILLE, CALIFORNIA; AND AUTHORIZING AND DIRECTING THE PUBLIC WORKS AND UTILITIES DIRECTOR TO ISSUE SAID LETTER

WHEREAS, on December 10, 2002, the City Council adopted Resolution No. 303-02 (CM) Establishing and Adopting the "Outside City of Watsonville Water Connections-Goals, Objectives, and Policies" to further implement the Watsonville 2005: General Plan; and

WHEREAS, Chapter 3 "Growth and Conservation Strategy" of the Watsonville 2005: General Plan adopted in 1994, includes goals and policies to encourage "City centered" growth for those areas outside the City and to implement livable community concepts; and

WHEREAS, on July 27, 2005, Doug, Kim, Robert, and Janet Mattos submitted an application requesting City Council authorization to issue a Water Availability Letter for a proposed residential project on 350 Hames Road (APN: 107-461-25) outside the City limits, but within the City's water service area; and

WHEREAS, Policy 1.4 of the Outside City of Watsonville Water Connections Goals, Objectives, and Policies authorizes the Council to issue a Water Availability Letter to projects not meeting the density requirements subject to four findings; and

WHEREAS, staff recommends the Council find that the proposed project does satisfy the findings established in Policy 1.4.

1

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF WATSONVILLE, CALIFORNIA, AS FOLLOWS:

1. That Good cause appearing upon the Findings, a copy of which is attached hereto and incorporated herein as Exhibit "A," therefor the Council hereby approves the request from Doug, Kim, Robert, and Janet Mattos for issuance of a Water Availability Letter ("Will Serve").

2. That the Public Works and Utilities Director be and is hereby authorized and directed to issue said letter, a copy of which is attached hereto and incorporated herein as Exhibit "B."

The foregoing resolution was introduced at a regular meeting of the Council of the City of Watsonville, held on the <u>13th</u> day of <u>September</u>, 2005, by Member <u>Rios</u>, who moved its adoption, which motion being duly seconded by Member <u>Skillicorn</u>, was upon roll call carried and the resolution adopted by the following vote:

AYES:COUNCIL MEMBERS:Gomez, Rios, Skillicorn, Rivas, PharesNOES:COUNCIL MEMBERS:NoneABSENT:COUNCIL MEMBERS:BersaminABSTAIN:COUNCIL MEMBERS:Doering-Nielsen

🥤 Ana Ventura Phares, Mayor

ATTEST:

City Clerk

APPROVED AS TO FORM:

City Attorney

1

Reso No. <u>189-05</u> (CM) L:\COUNCIL\2005\091305\Water Mattos.doc bvf 9/16/2005 11:26:37 AM 3

CITY COUNCIL CITY OF WATSONVILLE

APN: 107-461-25 Applicant: Doug, Kim, Robert & Janet Mattos Meeting Date: September 13, 2005

WATER "WILL SERVE" FINDINGS

1. The proposed project, notwithstanding Policy 1.2a., is consistent with the goals, policies and objectives of the City of Watsonville General Plan;

Supportive Evidence

Urban utilities and infrastructure do not exist to accommodate urban development.

2. The proposed project is designed at the highest allowable density under the County General Plan including the State density bonus; and

Supportive Evidence

The project has been designed at the highest approvable density under the current General Plan and zoning designation utilizing accessory dwelling unit provisions to increase the overall density.

3. There are unique site characteristics including but not limited to size, shape, and topography that limit the development of the site;

Supportive Evidence

The subject parcel is designated as a Primary Groundwater Recharge Area by the County of Santa Cruz. Designation as a Primary Groundwater Recharge Area reduces the allowable density of a parcel to one dwelling unit per 10 acres and sets the minimum parcel size at 10 acres.

4. The project complies with Policy 1.2 b. relative to inclusionary unit provisions.

Supportive Evidence

The applicant proposes and has been conditioned to provide inclusionary units within the project that exceed the City's 20-percent provision.

	A	
6 (v ¹ , v = 200, 000,000		-
	1	

Attachment/Exhibit to

Resolution No. 1847-55 (CM)

79/85

FRE - SEPTIC EVALUATION	
SANT. CRUZ COUNTY HEALTH SERVICE' GENCY ENVIRONMENTAL HEALTH SERVICE 701 Ocean Street - Room 312, Santa Cruz, CA 95060 (831) 454-2022	# 05-009 Sr# 3342
SITE EVALUATION	peyora
PRELIMINARY LOT INSPECTION REPORT	
MLD# PROPOSED LOT AV LOT SIZE 14, 181 SITE LOCATION 550 HOT ICS FOR	
APN 10 14 61 25 WATER SUPPLY CITCHE WATER SUPPLY OIL WITTEN PERMISSI	ION ATTACHED YES NO
SITE EVALUATION OFULL OSOIL OGROUNDWATER OPERCOLATION OREPAIR DALTERNATIVE SYSTEM CASE	NTION TO
O OTHER CONSULTATION	
REQUESTED BY. KIM MATTOS ISSU Green Valley	761-4725
(ADDRESS)	(PHONE)
OWNER: JAN MATTOS 140 Shaverck Place.	722-9829
(NAME) (ADDRESS)	(PHONE)
Item/s checked below do not meet present sewage disposal requirements or require further t	esting.
Reill's checked below so not meet present sowage disposal requirements of require ratiner t	comg.
Soli lesis malcale solis not suitable.	ank
Lot slope excessive, area has been graded; and/or unable to provide setback notification	dik
Winter water table testing required.	1
Tests indicate failure to provide required separation of leaching and seasonal high grou	indwater.
Unable to provide a 100 foot separation between a septic system and a well, spring, str	eam, or waterway.
Inadequate space for both the sewage disposal system and the required future expansion	on area.
Septic area in floodplain.	
O Other	
2 Preliminary inspection of this lot indicates suitability for individual sewage disposal using	g conventional septic
Water supply must be developed	
Q water supply must be developed.	
Site conditions may be mitigated by alternative technology. Further testing and evaluation	is needed.
Design Parameters	30/6
Percolation Rate (1-5) 6-30 30-60 60-120 Groundwater Depth for Design F	urposes <u>a (E)</u>
REMARKS: Batic NIA 10	5,106,107
(Cry Sand (Sort Sand Silves 15-2	0%;
(F) 0-14 Sand (F)	
A Dry (3 0.4 Dry Fercs: 6)	in 9/22/05
NOTE: Preliminary inspections and evaluations do not take into account all factors which are considered in the	issuance of a sewage
design; the possible presence of geologic hazards, biotic resources, or other site constraints, and, the pre-	ovisions of the Sewage
Disposal Ordinance in effect at the time of permit application.	Attachment 11
RST 80/85% CULEAUM	10/3/05 N
ENVIRONMENTAL HEALTH SPECIALIST DATE SUPERVISOR	DATE V

	SANTA CRUZ COUNTY HEALTH SERV ENVIRONMENTAL HEALTH SE 701 Ocean Street - Room 312, Santa Cruz, CA 9	ices agency RV = 5060 (831) 454-2022	784.6
64	SITE EVALUATION		SR 4067
🗇 PREL	IMINARY LOT INSPECTION REPORT	350 L. R.	V.2. + + U +
MLD #	# PROPOSED LOT B_ LOT SIZE SHE LOCATIC	OWNER'S WRITTEN PERMISSION A	
SITE I	EVALUATION	08725475 12 - 77 08725475 12 - 77 PL 7079 \$545	PH DODA#2323 00 - 00
О отне	ER CONSULTATION	-> 4201/1	1330
REQUESTE	DBY: Kim Mattos 1550 Green Vally	RI, WATS. 7	61-4725
	TAN MATTAS 140 SNAMROCK P	WATS. 7.	(PHONE) 22-1829
OWNER:	(NAME) (ADDRESS)		(PHONE)
	l salad halaw da ast most propert sawage disposal requireme	nts or require further testi	ıσ [.]
	s checked below do not meet present sewage disposal requirements	ins of require further testing	* 5.
	Lot slope excessive, area has been graded; and/or unable to prov	ide setback from cut bank	
	Winter water table testing required.		
	Tests indicate failure to provide required separation of leaching	and seasonal high groundv	vater.
D (Unable to provide a 100 foot separation between a septic system	and a well, spring, stream	, or waterway.
	nadequate space for both the sewage disposal system and the re	quired future expansion ar	ea,
	Septic area in floodplain.		
	Other		
Prelin techn	minary inspection of this lot indicates suitability for individual ology under standards currently in effect, subject to any limitati	sewage disposal using cor ons identified below.	ventional septic
Wate	r supply must be developed.		
- Site a	conditions may be mitigated by alternative technology. Further	testing and evaluation is r	needed.
<u>Design Pa</u>	arameters		$2n^{2}(E)$
Perco	blation Rate $(1-5)$ 6-30 30-60 60-120 Groundwa	ter Depth for Design Purp	oses <u>30 C</u>
<u>REMARK</u>	<u>S</u> :		
B	T, 0-14 Sand Dry		
· •	51-125 15-2010	111 in 9/22	705
NOTE:	Preliminary inspections and evaluations do not take into account all factors we disposal permit. An application for sewage disposal will be subject to further design; the possible presence of geologic hazards, biotic resources, or other Disposal Ordinance in effect at the time of permit application.	which are considered in the issu r evaluation based on the specif site constraints; and, the provisi	ance of a sewage ic sewage disposal ons of the Sewage
	2455 10/6/05 CL	Xiam 1	0/0/05 7
0HD 11 (95)	ENVIRONMENTAL HEALTH SPECIALIST 81/85	SUPERVISOR	

COUNTY OF SANTA CRUZ DISCRETIONARY APPLICATION COMMENTS

Project Planner: Samantha Haschert Application No.: 08-0419 APN: 107-461-25 Date: May 26, 2009 Time: 11:55:05 Page: 1

Environmental Planning Completeness Comments

NO COMMENT

Environmental Planning Miscellaneous Comments

====== REVIEW ON OCTOBER 2, 2008 BY ROBERT S LOVELAND =======

Conditions of Approval:

1. The project geologist and geotechnical engineer shall submit "Plan Review Letters" to Environmental Planning Department for review and approval. The letters shall state that the project plans conform to the report's recommendations.

2. All habitable construction shall be located within the development envelopes shown on the approved geologic report map. Prior to the recordation of the parcel map or the building permit, the septic system locations shall be identified on the plans and the project geologist must approve the locations in regards to slope stability concerns.

3. Submit a detailed grading and drainage plan completed by a licensed civil engineer for review and approval.

4. Submit an erosion/sediment control plan for review and approval.

Dpw Drainage Completeness Comments

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

Application with plans dated February 6, 2006 has been received. Not enough drainage information has been given to consider acceptance of this application. To be approved by this division at the discretionary application stage, all potential off-site impacts and mitigations must be determined and compliance with the County Design Criteria (CDC) and County General Plan policies (GPP) demonstrated.

Please address the following items:

1) Please specify on the civil plans the amount of impervious surface that will result from the proposed development.

2) (GPP #7.23.1 - New Development) Projects are required to maintain predevelopment rates where feasible. Mitigating measures should be used on-site to limit increases in post- development runoff leaving the site. Best Management Practices should be employed within the development to meet this goal as much as possible. Such measures include limiting impervious areas, using pervious or semi- pervious pavements, run-off surface spreading, discharging runoff from impervious areas into landscaping, retention facilities, etc. Please show proposed mitigations on the plans and account for the affects in stormwater calculations.

Discretionary Comments - Continued

Project Planner:	Samantha Haschert	Date: Time:	May 26, 2009
Application No.: APN:	107-461-25	Page:	2

3) Show how site runoff is proposed to be handled until it reaches a safe point of release such as an adequate drainage system or a water course. Provide downstream impact assessment identifying capacity restrictions in existing drainage facilities receiving site runoff and identify the water body receiving the flow.

4) Quantify the flow from offsite upstream drainage areas draining toward the site and show how the flow will be handled. Include the drainage area map used to quantify the flow. provide clear topo information per County Design Criteria Part 1, Section A.1.g as applicable.

5) As indicated in the CDC (County Design Criteria). Runoff from parking and driveways are required to go through water treatment prior to discharge. Consider outsloping areas to drain to landscaped areas for filtering prior to discharge from the site. If use of landscaped areas is not feasible and structural treatment is proposed, recorded maintenance agreements are required. Please clarify on the plans the method used for treatment.

The comments above are general and more detailed comments will be made once we receive the engineered plans and the downstream assessment.

All submittals for this project should be made through the Planning Department. For questions regarding this review Public Works stormwater management staff is available from 8-12 M-F.

If you have questions, please contact me at 831-233-8083.

======= UPDATED ON JANUARY 24, 2009 BY LOUISE B DION ========

Plans dated December 24, 2008 have been received. The application is deemed complete with respect to the discretionary permit application stage. Please address outstanding miscellaneous comments prior to recording of final map.

Dpw Drainage Miscellaneous Comments

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

======= REVIEW ON SEPTEMBER 21, 2008 BY LOUISE B DION ======== MISCELLANEOUS COMMENT: The following should be addressed prior to recording of map:

1) Zone 7 drainage fees will be assessed on the net increase in permitted impervious area due to this project.

2) All proposed inlets should include signage stating "No Dumping Drains to Bay" or equivalent. This signage is to be privately maintained.

3) Provide recorded maintenance agreement(s) for each facility proposed and identify who is responsible for maintenance of each facility on the final plans.

Project Planner: Samantha Haschert Application No.: 08-0419 APN: 107-461-25

Date: May 26, 2009 Time: 11:55:05 Page: 3

4) Include maintenance recommendations for each facility on the final plans

Dpw Road Engineering Completeness Comments

----- REVIEW ON SEPTEMBER 29, 2008 BY RODOLFO N RIVAS ----- NO COMMENT

Dpw Road Engineering Miscellaneous Comments

----- REVIEW ON SEPTEMBER 29, 2008 BY RODOLFO N RIVAS ------

Environmental Health Completeness Comments

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

======== REVIEW ON SEPTEMBER 29, 2008 BY JIM G SAFRANEK ========= Septic evaluations have been reviewed and approved by EHS staff; project is approved.

Environmental Health Miscellaneous Comments

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

----- REVIEW ON SEPTEMBER 29, 2008 BY JIM G SAFRANEK -----

Cal Dept of Forestry/County Fire Completeness Comm

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

Add the appropriate NOTES and DETAILS showing this information on your plans and RESUBMIT, with an annotated copy of this letter:

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.

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.

All road requirements and building requirements pertaining to the fire code will be reviewed during the building permit phase.

Cal Dept of Forestry/County Fire Miscellaneous Com

Project Planner: Samantha Haschert Application No.: 08-0419 APN: 107-461-25 Date: May 26, 2009 Time: 11:55:05 Page: 4