COUNTY OF SANTA CRUZ

PLANNING DEPARTMENT
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KATHLEEN MOLLOY PREVISICH, PLANNING DIRECTOR

NOTICE OF ENVIRONMENTAL REVIEW PERIOD

SANTA CRUZ COUNTY

APPLICANT: **Jerry L. Whitney (Owner: 3700 Hilltop, LLC)**

APPLICATION NO.: **05-0493**

PARCEL NUMBER (APN): **102-181-08**

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

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

XX Mitigations will be attached to the Negative Declaration.

_____ No mitigations will be attached.

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

As part of the environmental review process required by the California Environmental Quality Act (CEQA), this is your opportunity to respond to the preliminary determination before it is finalized. Please contact 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 7, 2010**

Annette Olson, staff planner

Phone: **(831) 454-3134**

Date: **May 7, 2010**

Environmental Review
Initial Study

Application Number: 05-0493

Date: April 26, 2010
Staff Planner: Annette Olson

I. OVERVIEW AND ENVIRONMENTAL DETERMINATION

APPLICANT: Jerry L. Whitney

APN: 102-181-08

OWNER: 3700 Hilltop, LLC

SUPERVISORAL DISTRICT: First

LOCATION: The property is located on the north side of Hilltop Drive about one-quarter mile west of Old San Jose Road (3700 Hilltop Drive).

SUMMARY PROJECT DESCRIPTION:

Proposal to create 9 parcels, to demolish three single-family dwellings, construct associated access roads and drainage improvements and to grade of approximately 6875 cubic yards of excavation and about 3215 cubic yards of fill to regrade an unpermitted cut/fill slope and for subdivision improvements and construct nine single-family dwellings. Requires a Subdivision Permit, Residential Development Permit Preliminary Grading Approval, Biotic Report Review, Archaeologic Site Review, Soils Report Review, Geologic Hazards Assessment, Geologic Report Review and a Roadside / Roadway Exception.

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
____ 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	

DISCRETIONARY APPROVAL(S) BEING CONSIDERED

____	General Plan Amendment	__X__	Grading Permit
__X__	Land Division	____	Riparian Exception
____	Rezoning	__X__	Other: Roadside / Roadway Exception
__X__	Development Permit	____	
____	Coastal Development Permit	____	

NON-LOCAL APPROVALS

No other agencies are required to issue permits or authorizations.
NPDES SWPPP from the Regional Water Quality Control Board

ENVIRONMENTAL REVIEW ACTION

On the basis of this Initial Study and supporting documents:

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

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

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

Matt Johnston

Date

For: Claudia Slater
Environmental Coordinator

II. BACKGROUND INFORMATION

EXISTING SITE CONDITIONS

Parcel Size: 3.47 acres (151,156 square feet)
Existing Land Use: Residential
Vegetation: Mature eucalyptus, acacia, oak, pear and several other tree species
Slope in area affected by project: X 0 - 30% X 31 – 100%
Nearby Watercourse: Soquel Creek
Distance To: 1600 feet

ENVIRONMENTAL RESOURCES AND CONSTRAINTS

Groundwater Supply: No Mapped Resource
Water Supply Watershed: No Mapped Resource
Groundwater Recharge: No Mapped Resource
Timber or Mineral: No Mapped Resource
Agricultural Resource: No Mapped Resource

Biologically Sensitive Habitat: Biotic report completed; no special status species found
Fire Hazard: Not Mapped
Floodplain: Not Mapped
Erosion: Not mapped, Preliminary Erosion Control Plan submitted.
Landslide: Not mapped

Liquefaction: Not Mapped
Fault Zone: Not mapped

Scenic Corridor: Not mapped
Historic: None
Archaeology: Survey Complete – no resources found
Noise Constraint: None

Electric Power Lines: N/A
Solar Access: Available
Solar Orientation: Available

Hazardous Materials: None

SERVICES

Fire Protection: Central Fire
School District: Soquel Union Elementary School District
Sewage Disposal: Public

Drainage District: Zone 5
Project Access: Hilltop Drive / Panorama Drive
Water Supply: Will-serve letter from Soquel Creek Water District

PLANNING POLICIES

Zone District: R-1-10 (Single-family residential, 10,000 square foot minimum parcel size)
General Plan: R-UL (Urban Low Density Residential)

Special Designation: None

Urban Services Line: X Inside ___ Outside
Coastal Zone: ___ Inside X Outside

PROJECT SETTING AND BACKGROUND:

The subject property is located on Hilltop Road, a County-maintained road, near its intersection with Panorama and Vista Drives. The parcel to be divided is currently developed with three single-family dwellings.

The subject parcel is zoned R-1-10,000 (single-family residential with a minimum parcel size of 10,000 square feet) and has a General Plan designation of R-UL (Urban Low Density Residential) which specifies one unit per 6,000 to 10,000 square feet. The parcel's zoning provides a transition between the denser R-1-6 (single-family residential with a minimum parcel size of 6,000 square feet) to the east and, to the west, a zone district with a minimum parcel size of one-acre. The subject site is located within the Urban Services Line.

The site has had extensive grading in the past, with some of the cut slopes exceeding 30% slope. Based upon a Historic Grading Report by Richard Irish, dated December 9, 2008, in which Mr. Irish uses aerial photos and Assessor's records to document the current topography, it appears that the parcel was graded in 1953 and 1955 when two chicken coops were constructed on the northern third of the property. The building pads for these coops are about 10,000 square feet each and although the structures are now gone, the two terraces and concrete pads are still present. The pads were cut into native soil on the uphill side creating surrounding steep cut slopes and the excavated soils were then pushed to the side, creating fill slopes. Since then, these fill slopes have been colonized by eucalyptus and acacia trees.

Along the eastern edge of the parcel is a very steep cut slope which is about 22 feet in height and located almost entirely on the neighboring property. This cut appears to have been done when the land to the east was divided. Directly below the cut, on the neighboring parcel, is a right-of-way serving three parcels.

The subject parcel has 45 mature trees. Around the two chicken coop areas are eucalyptus and acacia trees. Downslope of these are twenty-three additional trees, including Coast Live Oaks, a Redwood Tree, Big Leaf Maples and several avocado trees.

DETAILED PROJECT DESCRIPTION:

The project description is based on a Tentative Map prepared by Richard Irish, dated March 2010, a Landscape Plan prepared by Michael Arnone, Landscape Architect, dated March 25, 2010 and architectural plans prepared by West Sierra Design Group, undated.

The project consists of dividing a 151,156 square foot parcel into nine single-family parcels ranging in size from 10,001 to 18,637 square feet. The proposed single-family dwellings would all be accessed via a new internal loop right-of-way accessed off of Panorama Drive. Vehicles would enter at the southern end of the loop road and exit at the northern end. The interior road would be 40 feet wide and one-way, with parking

and a sidewalk on the right side of the roadway. A stop sign would be provided where the new loop exits onto Panorama Drive.

Off-site improvements include: relocating the existing stop sign (from where Hilltop Drive makes a 90 degree turn) uphill about 130 feet; a crosswalk at the relocated stop sign; 363 feet of new water main and a new sanitary sewer line in Panorama Drive; and approximately 500 feet of new sidewalk along the site frontage.

The proposed project includes 6875 cubic yards of excavation and 3215 cubic yards of fill. The majority of this grading is associated with removing the fill left over from the grading that occurred in the 1950s, with only 235 cubic yards of fill being the net grading occurring on the rest of the parcel.

The parcel is designated R-1-10,000 (single-family residential – 10,000 square feet minimum parcel size) and R-UL (Urban Low Density Residential) in the Santa Cruz County General Plan. The project is in compliance with the density requirements in the General Plan as shown in the following table:

Gross Area	Proposed Right-of-way	Area over 30% slope	Area Inaccessible due to 30% slope*	Net Developable Area	Units Proposed	R-UL Required Density	Proposed Project Density
151,156 s.f.	17,488 s.f.	24,294 s.f.	15,462	93,912	9	One unit per 6,000-10,000 s.f.	One unit per 10,434 s.f.

* General Plan Policy 6.3.9 (Site Design to Minimize Grading)(b) prohibits roads and driveways from crossing slopes greater than 30 percent.. Because this area cannot be accessed on the subject parcel without crossing 30% slopes, it is not counted towards the net developable area.

In broad strokes, the proposed stormwater management system would work in the following way. Runoff from the nine new roofs, in most cases, would be directed to splash blocks and landscape areas. For the upper lots, the roof runoff would drain into a perimeter storm drain system which would flow into the detention system located beneath the proposed new right-of-way. Most of the driveways would be constructed of pervious paving materials and would sheet flow to the right-of-way or into trench drains which would then flow to the detention area. The curb on the outside edge of the right-of-way and a bioswale on the interior edge, both of which would direct runoff into the detention area, would control runoff on the new right-of-way. The pre-development runoff rate would be maintained via a narrowing of the orifice where runoff leaves the property.

Along the eastern edge of the property, where the steep cut slope is, a three-foot grass-lined swale with an adjacent 12-inch pipe, would protect the slope and failure retreat zone from runoff. This swale would direct runoff to a cobble-lined swale and ultimately to the existing storm drain system in Hilltop Drive.

The subject parcel has 45 trees. Twenty-two of these trees are proposed for removal because of their location on unconsolidated fill left over from the grading that occurred in the 1950s. Of the remaining trees, five are proposed to stay and 18 additional trees are proposed for removal. The preliminary landscape plan shows that 94 replacement trees are proposed. Ellen Cooper, a landscape architect, provided an arborist report (Attachment 17).

This project has been reviewed by the County Sanitation District and it was determined that sewer service is available for the proposed project. Additionally, the project has obtained a will serve letter for water service from the Soquel Creek Water District (Attachment 16).

III. ENVIRONMENTAL REVIEW CHECKLIST

A. Geology and Soils

Does the project have the potential to:

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable
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?			X	
B. Seismic ground shaking?			X	
C. Seismic-related ground failure, including liquefaction?			X	
D. Landslides?			X	

An engineering geology report for the project was prepared by Zinn Geology, dated March 28, 2007 (Attachment 6). A geotechnical investigation was prepared by AMSO Consulting Engineers, dated July 29, 2005 with a January 18, 2006 supplemental evaluation (Attachments 7 & 8). These reports have been reviewed and accepted by the Environmental Planning Section of the Planning Department (Attachment 3).

The subject parcel is not located in a State or County fault zone and there are no known active faults in the area. Therefore the reports conclude that fault rupture would not be a potential threat to the proposed development.

Seismic shaking can be managed by following the recommendations in the engineering geology and geotechnical reports referenced above and by constructing the dwellings with either pier and grade beam foundation systems or by removing the loose surface soils, replacing them with engineered fill and then constructing conventional foundations. The relatively dense soils encountered on the site as well as a lack of a phreatic (groundwater) surface indicate that liquefaction is not expected to

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

be a concern.

The engineering geology report and the update to the Geotechnical report by Dees and Associates have identified an area along the eastern property line that is subject to failure. The engineering geologist delineated a failure retreat zone and all development has been setback behind this failure retreat zone. Additionally, a drainage swale is being proposed just west of the failure retreat zone. This drainage swale would help to control surface water and reduce the potential for the slope in this area to fail.

Implementation of the recommendations of the above-cited reports and the additional recommendations included in the review letter prepared by Environmental Planning staff (Attachment 3) are required by County Code section 16.10.070 and would serve to reduce the potential risk of seismic shaking impacts to less than significant.

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?	____	____	X	____

The reports cited above concluded that the project would not subject people or improvements to damage if the recommendations of the reports are followed. See above Section A.1 for more information.

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

There are slopes that exceed 30% on the property and in the area of the proposed development. However, these areas were the result of historic grading done to create the two terraces on the property. All development including roadways, driveways and building sites would be located off slopes that were found to be historically less than 30%. The slopes that are in excess of 30% that were artificially created would be re-graded to a more stable configuration and brought up to current engineering standards.

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

Some potential for erosion exists during the construction phase of the project, however, this potential is minimal because standard erosion controls are a required condition of the project. Prior to approval of a grading or building permit, the project must have an approved Erosion Control Plan, which would specify detailed erosion and sedimentation control measures. The plan would include provisions for disturbed areas to be planted with ground cover and to be maintained to minimize surface erosion.

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable
5. Be located on expansive soil, as defined in section 1802.3.2 of the California Building Code, creating substantial risks to property?			X	

The geotechnical report for the project determined that the site soils have low plasticity and a low potential for expansion.

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?				X

No septic systems are proposed. The project would connect to the Santa Cruz County Sanitation District, and the applicant would be required to pay standard sewer connection and service fees that fund sanitation improvements within the district as a Condition of Approval for the project.

7. Result in coastal cliff erosion?				X

B. Hydrology, Water Supply and Water Quality

Does the project have the potential to:

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

According to the Federal Emergency Management Agency (FEMA) National Flood Insurance Rate Map, dated March 2, 2006, no portion of the project site lies within a 100-year flood hazard area.

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

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.

3. Be inundated by a seiche or tsunami?			X	

The project site is located nearly one mile inland from the coast. The project

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

development is, at its lowest point, 170 feet above sea level and well above the level that a seiche or tsunami is projected to reach.

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

The project would obtain water from Soquel Creek Water District and would not rely on private well water. Although the project would incrementally increase water demand, Soquel Creek Water District has indicated that adequate supplies are available to serve the project as the project is required to participate in the District's offset program, which requires all new connections to offset 110% of anticipated new demand (Attachment 15). The project is not located in a mapped groundwater recharge area.

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

Runoff from this project may contain small amounts of chemicals and other household contaminants. No commercial or industrial activities are proposed that would contribute a significant amount of contaminants to a public or private water supply. Potential siltation from the proposed project would be mitigated through implementation of erosion control measures. A silt and grease trap, and a plan for maintenance, would be required to reduce this impact to a less than significant level.

6.	Degrade septic system functioning?	____	____	____	X

There is no indication that existing septic systems in the vicinity would be affected by the project. The only parcels in the area that use septic systems are uphill of the subject parcel in the Sea Crest subdivision.

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable
7. Alter the existing drainage pattern of the site or area, including the alteration of the course of a stream or river, in a manner which could result in flooding, erosion, or siltation on or off-site?	____	____	X	____

The proposed project is not located near any watercourses, and would not alter the existing overall drainage pattern of the site. Although, the storm drain into which the project's runoff would flow outlets in Soquel Creek, RI Engineering found no evidence of erosion or flooding in the creek or elsewhere on the runoff offsite path. Department of Public Works Drainage Section staff has reviewed and approved the proposed drainage plan.

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?	____	____	X	____

Drainage Calculations prepared by RI Engineering, dated June 4, 2009 and revised October 15, 2009, have been reviewed for potential drainage impacts and accepted by the Department of Public Works (DPW) Drainage Section staff. The calculations show that during a 10-year storm, there would be an increase in runoff of .44 cubic feet per second. The 25-year storm event would be detained and released at the 10-year pre-development release rate. The runoff rate from the property would be controlled by first facilitating on-site infiltration through the use of pervious paving, grading to promote infiltration and swales, and by, second, detaining the water to maintain the pre-development release rate through an appropriately sized orifice. DPW staff have determined that existing storm water facilities are adequate to handle the increase in drainage associated with the project. Refer to response B-5 for discussion of urban contaminants and/or other polluting runoff.

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

The project would maintain the pre-development runoff rate which means that the project would contribute runoff at the same rate after development as is the current runoff rate. In addition, the runoff connects to the storm drain system and does not discharge into any natural water course. Therefore, the project is not anticipated to contribute to flood levels or erosion in any natural water course.

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable
10. Otherwise substantially degrade water supply or quality?	____	____	X	____

A silt and grease trap, and a plan for maintenance, are proposed to minimize the effects of urban pollutants. In addition, the project utilizes "bioswales" which allow for on-site runoff filtering and infiltration/retention. The use of pervious paving for the seven of the nine driveways and the parking area portion of the new right-of-way would also increase on-site filtering and infiltration and retention.

C. Biological Resources

Does the project have the potential to:

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

A Biotic Report was prepared for this project by Jodi M. McGraw PhD, dated March 15, 2005 and July 11, 2005 (Attachment 13). This report has been reviewed and accepted by the Planning Department Environmental Section (Attachment 12). No special status species have been identified on the subject property in either the Biotic Repost or in site visits by Planning Department staff.

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

Although the California Natural Diversity Data Base (CNDDB), maintained by the California Department of Fish and Game shows that the Zayante band-winged grasshopper and the white-rayed pentachaeta are mapped as being on the subject and adjacent properties, these species are associated with sandhills habitat which is not present in the area.

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable
3. Interfere with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native or migratory wildlife nursery sites?			X	

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

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

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

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

Refer to C-1 and C-2 above.

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

County Code 13.11.075(a)2i requires the incorporation of mature trees over six inches in diameter (at five feet above ground level) into the site and landscape plans unless the tree(s): obstruct a prime building site; obstruct solar access to adjacent properties; are dead, dying or diseased; are nuisance trees; or are trees which threaten adjacent development due to instability.

An arborist's report, prepared by Ellen Cooper, revised to November 22, 2008 and addendum dated October 14, 2009 (Attachment 17), discusses the health of the trees and the proposed tree removals. Of the 45 trees on-site, 22 would be removed

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

because of their location on the steep fill slopes created when the two terraces were graded in the 1950s. Most of these are eucalyptus and acacia trees. Because this fill must be removed to create safe building sites, those 22 trees must be removed.

Of the remaining trees, Ellen Cooper recommends the preservation of five of the trees: two avocado trees, a Coast Live Oak, a Coastal Redwood and a Douglas fir tree. The remaining trees proposed for removal are: eight avocado trees, four Big Leaf Maples, two Malus (flowering crabapple), one Pittosporaceae eugeniodes (Pittosporum), one Prunus (flowering plum), one Washington robusta (Mexican fan palm) and a Coast Live Oak. The Coast Live Oak is identified by Ellen Cooper as appearing to be a victim of Oak Moth larvae in the summer of 2007. Note that five of these trees have a diameter at breast height of six inches or less.

Ellen Cooper has provided protection and care recommendations for the trees that are proposed to remain. In addition, to compensate for the tree removals, the project would install 94 replacement trees.

To mitigate the impact of these tree removals, 94 replacement trees shall be included in the landscape plan. In addition, the plans shall reflect the project arborist's tree protection recommendations and detail a monitoring program for the replacement trees. The monitoring program shall show that a qualified professional shall monitor the replacement trees for five years at six-month intervals. One hundred percent survival rate is required and shall be achieved according to the recommendations in the arborist's report.

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

D. Energy and Natural Resources

Does the project have the potential to:

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

There are no mapped "Timber Resources" on the subject property or in the vicinity. Therefore, the project would have no affect on any timber resource.

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable
2. Affect or be affected by lands currently utilized for agriculture, or designated in the General Plan for agricultural use?				X

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

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

The project would result in six additional dwellings (there are three existing and nine are proposed). These six additional dwellings are not anticipated to require large amounts of fuel, water or energy or use those resources in a wasteful manner.

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

E. Visual Resources and Aesthetics

Does the project have the potential to:

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

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

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

The project site is not located along a County designated scenic road or within a designated scenic resource area.

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable
3. Degrade the existing visual character or quality of the site and its surroundings, including substantial change in topography or ground surface relief features, and/or development on a ridge line?			X	

The existing visual setting is a parcel currently developed with three dwellings within an existing developed residential area. The proposed project is designed and landscaped as an infill project to fit into this setting.

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

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

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

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

F. Cultural Resources

Does the project have the potential to:

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

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

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

According to the Santa Cruz County Archeological Society site assessment, dated

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

10/7/05 (Attachment 11), there is no evidence of pre-historic cultural resources. However, pursuant to Section 16.40.040 of the Santa Cruz County Code, if archeological resources are uncovered during construction, the responsible persons shall immediately cease and desist from all further site excavation and comply with the notification procedures given in County Code Chapter 16.40.040.

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

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

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

G. Hazards and Hazardous Materials

Does the project have the potential to:

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

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

The project site is not included on the 7/31/09 list of hazardous sites in Santa Cruz County compiled pursuant to the specified code.

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

The project design incorporates all applicable fire safety code requirements and would 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

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)?			X	

The project would create a small incremental increase in traffic on nearby roads and intersections, approximately eight morning peak trips and 10 afternoon peak trips. However, given the small number of new trips created by the project, this increase is less than significant. Further, the increase would not cause the Level of Service at any nearby intersection to drop below Level of Service D (see Attachment 18).

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable
2. Cause an increase in parking demand which cannot be accommodated by existing parking facilities?			X	

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

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

The proposed project would comply with current road requirements to prevent potential hazards to motorists, bicyclists, and/or pedestrians.

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?			X	

See response H-1 above.

I. Noise

Does the project have the potential to:

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

The project would create an incremental increase in the existing noise environment. However, this increase would be small, and would be similar in character to noise generated by the surrounding existing uses.

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

Per County policy, average hourly noise levels shall not exceed the General Plan threshold of 50 L_{eq} during the day and 45 L_{eq} during the nighttime. Impulsive noise

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

levels shall not exceed 65 db during the day or 60 db at night. The project is not located near any known noise generation sources which would exceed the noise thresholds established in the County General Plan.

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

Noise generated during construction would increase the ambient noise levels for adjoining areas. Construction would be temporary, however, and given the limited duration of this impact it is considered to be less than significant.

J. Air Quality

Does the project have the potential to:

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

The North Central Coast Air Basin does not meet State standards for ozone and particulate matter (PM10). Therefore, the regional pollutants of concern that would be emitted by the project are ozone precursors (Volatile Organic Compounds [VOCs] and nitrogen oxides [NOx]), and dust.

Given the modest amount of new traffic that would be generated by the project 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 not be a significant contribution to an existing air quality violation. In addition, because this is in-fill development within the urban services line, the number of vehicle trips is anticipated to be fewer than would a similarly sized development outside of the urban services line.

Project construction may result in a short-term, localized decrease in air quality due to generation of dust. To mitigate for potential impacts due to dust, standard dust control best management practices, such as periodic watering and tarping of stockpiled spoils, would be required during construction to reduce impacts to a less than significant level.

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

The project would not conflict with or obstruct implementation of the regional air quality

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable
plan. See J-1 above.				
3. Expose sensitive receptors to substantial pollutant concentrations?	____	____	____	X
4. Create objectionable odors affecting a substantial number of people?	____	____	____	X

K. Public Services and Utilities

Does the project have the potential to:

1. Result in the need for new or physically altered public facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:				
a. Fire protection?	____	____	X	____
b. Police protection?	____	____	X	____
c. Schools?	____	____	X	____
d. Parks or other recreational activities?	____	____	X	____
e. Other public facilities; including the maintenance of roads?	____	____	X	____

While the project represents an incremental contribution to the need for services, the increase would be minimal. Moreover, the project meets all of the standards and requirements identified by the local fire agency and school, park, and transportation fees paid by the applicant would be used to offset the incremental increase in demand for school and recreational facilities and public roads.

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable
2. Result in the need for construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?			X	

Drainage analysis of the project RI Engineering, Inc. concluded that the existing storm drain system has adequate capacity for the increase in runoff from the proposed land division. Department of Public Works Drainage staff have reviewed and accepted the proposed drainage information (Attachment 14).

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

The project would connect to an existing municipal water supply. Soquel Creek Water District has determined that adequate supplies are available to serve the project (Attachment 15).

Municipal sewer service is available to serve the project, as reflected in the attached letter from the County of Santa Cruz Sanitation District (Attachment 16).

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

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

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

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

6. Result in inadequate access for fire protection?			X	

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

The project's road access has been accepted by the Department of Public Works, Road Engineering and approved by the local fire agency.

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

The project would make an incremental contribution to the reduced capacity of regional landfills. Although this contribution would be relatively small and would be of similar magnitude to that created by existing land uses around the project, demolition waste makes up about 22% of the waste stream entering the local landfill. To mitigate the impact of the construction waste generated by this project on the landfill's capacity, the applicant and/or property owner shall recycle and reuse materials, as appropriate, and to the maximum extent possible. Notes to this affect shall be included on the final building permit plan set. At a minimum, construction and demolition waste shall be processed through the Buena Vista Construction and Demolition Waste program.

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

L. Land Use, Population, and Housing

Does the project have the potential to:

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

See response C-6 above for information on tree removals.

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

See response C-6 above for information on tree removals.

3. Physically divide an established community?			X	

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

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable
4. Have a potentially significant growth inducing effect, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?			X	

The proposed project is designed at the density and intensity of development allowed by the General Plan and zoning designations for the parcel. Additionally, the project does not involve extensions of utilities (e.g., water, sewer, or new road systems) into areas previously not served. Consequently, it is not expected to have a significant growth-inducing effect.

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

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

M. GREENHOUSE GAS EMISSIONS

Would the project:

1. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			X	

All new construction would comply with the County's Green Building ordinance to reduce greenhouse gas emissions. The maximum increase in development potential would be six additional primary dwelling units and nine accessory dwelling units. As a result, cumulative impacts resulting from the project would be less than significant. The project site's location within the urban services line and its proximity to Soquel Village, Anna Jean Cummings Park and schools, would decrease the number of vehicle trips than would a similar project located outside of the urban services line.

2. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?			X	

See response 1 above.

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

N. Non-Local Approvals

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

Regional Water Quality Control Board SWPPP

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

O. 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? Yes ____ No X

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

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

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

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

TECHNICAL REVIEW CHECKLIST

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

Attachments:

1. Vicinity Map, Map of Zoning Districts, Map of General Plan Designations, Assessors Parcel Map
2. Tentative Map & Preliminary Improvement Plans prepared by Richard J. Irish, Registered Professional Engineer, of RI Engineering, Inc., dated March 10, 2010, Landscape Plan prepared by Michael Arnone, Landscape Architect, revised to March 25, 2010, & Architectural Plans prepared by West Sierra Design Group, undated.
3. County Acceptance Letter of Geotechnical and Geology Reports, prepared by Joe Hanna, County Geologist, dated July 17, 2007
4. Geotechnical Review Letter prepared by Rebecca L. Dees, Geotechnical Engineer, of Dees & Associates, Inc. dated March 25, 2010
5. Geologic Review Letter, prepared by Erik Zinn, Professional Geologist, of Zinne Geology dated March 24, 2010
6. Geologic Investigation (Report Summary, Conclusions, Recommendations, Map & Cross Sections) prepared by Erik Zinn, Professional Geologist, of Zinn Geology dated March 28, 2007
7. Geotechnical Investigation (Conclusions and Recommendations) prepared by Basil A. Amso, Registered Professional Engineer, of AMSO Consulting Engineers dated July 29, 2005
8. Supplemental Geotechnical Evaluation prepared by Basil A. Amso, Registered Professional Engineer, of AMSO Consulting Engineers dated January 18, 2006

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

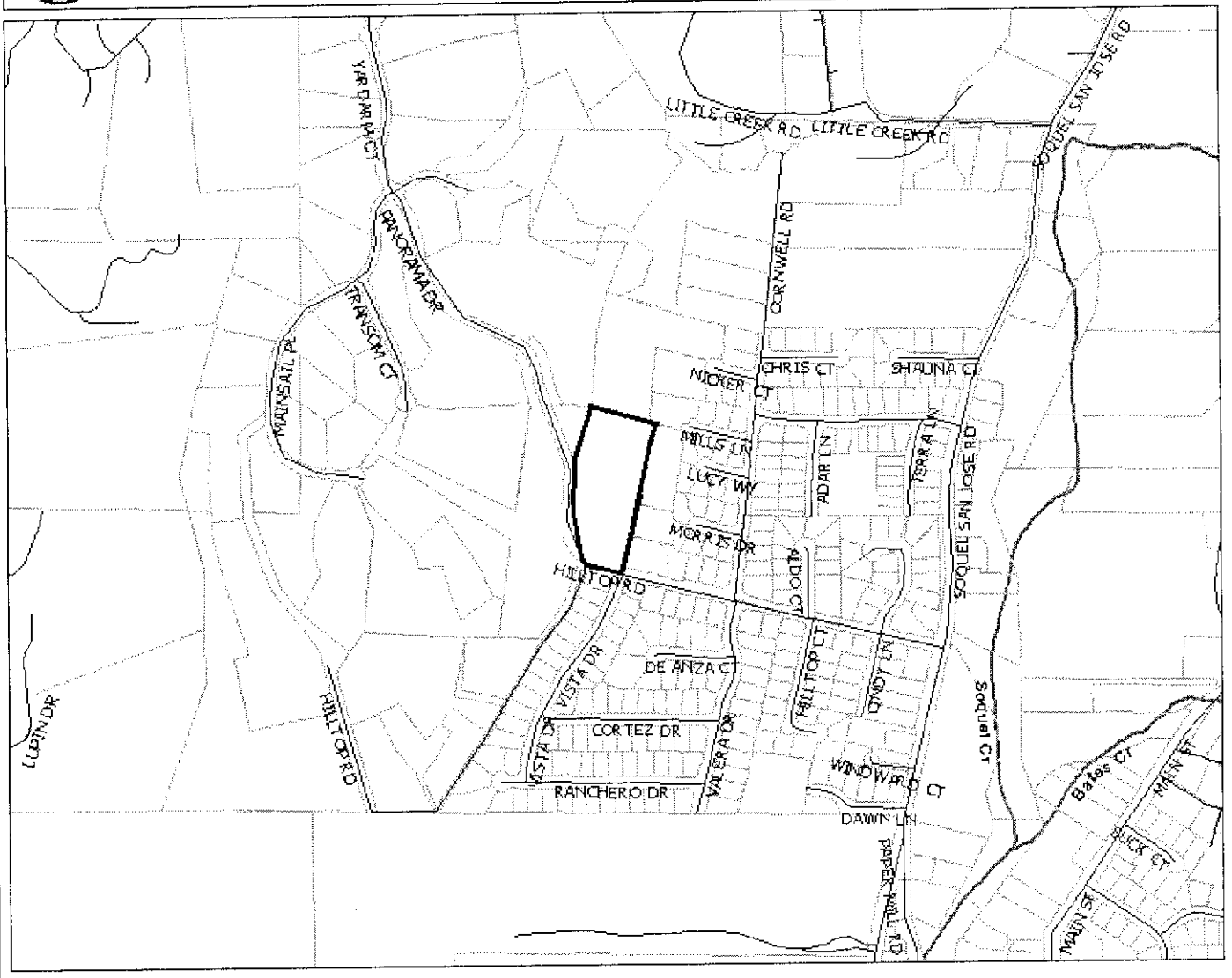
9. Historic Grading Report prepared by Richard J. Irish, Registered Professional Engineer, of RI Engineering, Inc., dated December 9, 2008
10. Drainage calculations prepared by Richard J. Irish, Registered Professional Engineer, of RI Engineering, Inc., revised to October 15, 2009
11. Archeological Reconnaissance Survey Letter dated October 7, 2005; Archeological Reconnaissance Survey prepared by Elizabeth Hayward, Planning Technician, dated October 19, 2005
12. Memo to file regarding Biotic Report from Paia Levine, Environmental Coordinator, dated March 9, 2007
13. Biotic Report prepared by Jodi McGraw, Population and Community Ecologist, dated March 15, 2005 and July 11, 2005
14. Discretionary Application Comments, various dates
15. Letter from Soquel Creek Water District, dated July 16, 2008
16. Memo (email) from Department of Public Works, Sanitation, dated March 9, 2010
17. Arborists Report prepared by Ellen Cooper, Revised to November 22, 2008; Addendum to arborist report dated October 14, 2009; and Utility Plan Review Letter dated December 23, 2009
18. Traffic Study (Conclusions and Recommendations) prepared by Higgins Associates, Civil & Traffic Engineers, dated July 11, 2008

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

County of Santa Cruz 1994.
1994 General Plan and Local Coastal Program for the County of Santa Cruz, California. Adopted by the Board of Supervisors on May 24, 1994, and certified by the California Coastal Commission on December 15, 1994.

Note that in the case where only an excerpt of a report is provided as an attachment, the full report is available on file in the Planning Department.

Location Map



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

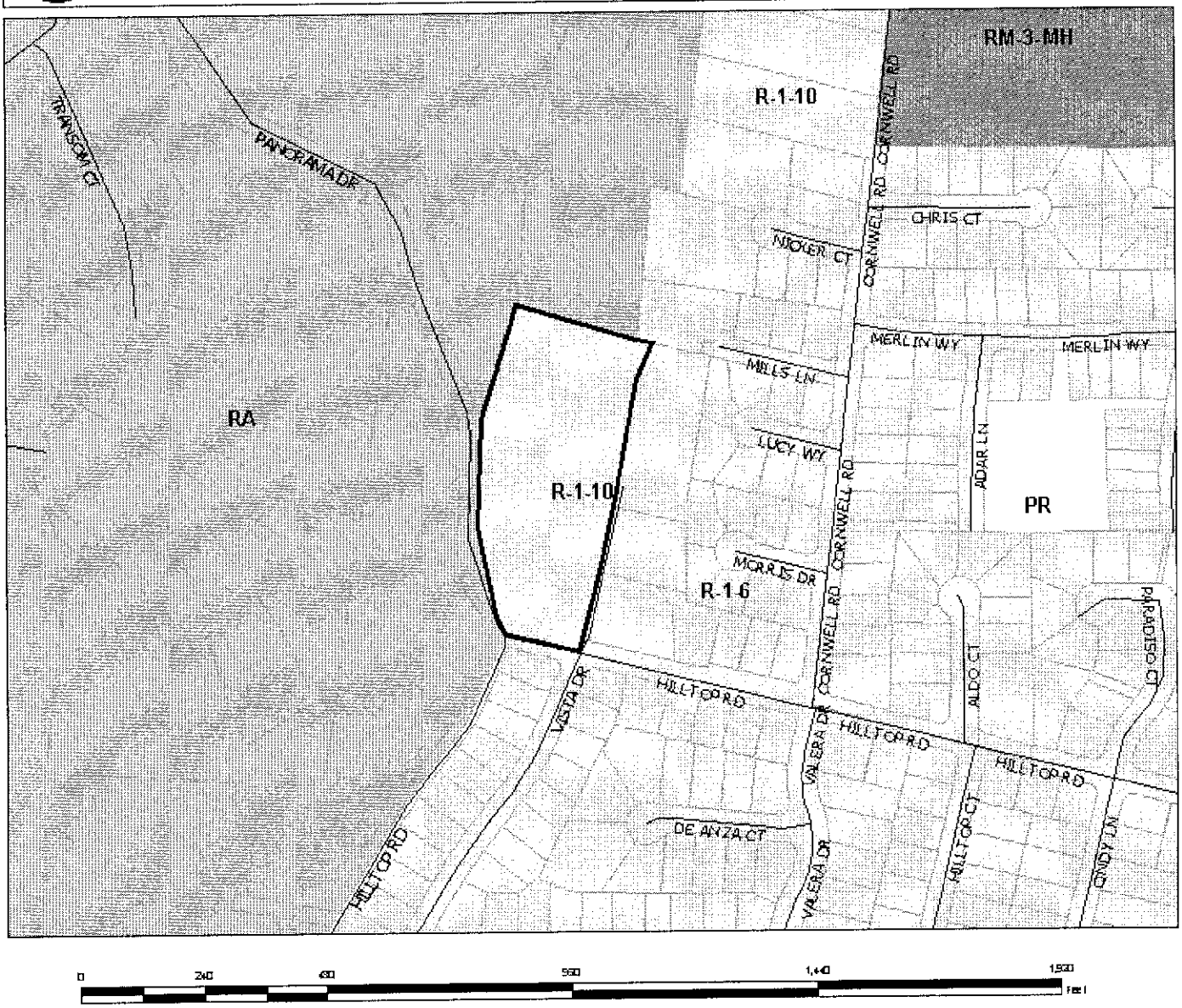
Legend

- APN 102-181-08
- Streets
- Assessors Parcels
- INTERMITTENT STREAM
- LAKE
- PERENNIAL STREAM

N
W E
S

Map Created by
County of Santa Cruz
Planning Department
August 2005

Zoning Map



0 240 480 960 1,440 1,920 Feet

Legend

- APN 102-181-08
- Streets
- Assessors Parcels
- RESIDENTIAL-SINGLE FAMILY (R-1)
- PARK (PR)
- RESIDENTIAL-MULTI FAMILY (RM)
- AGRICULTURE RESIDENTIAL (RA)

N
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Map Created by
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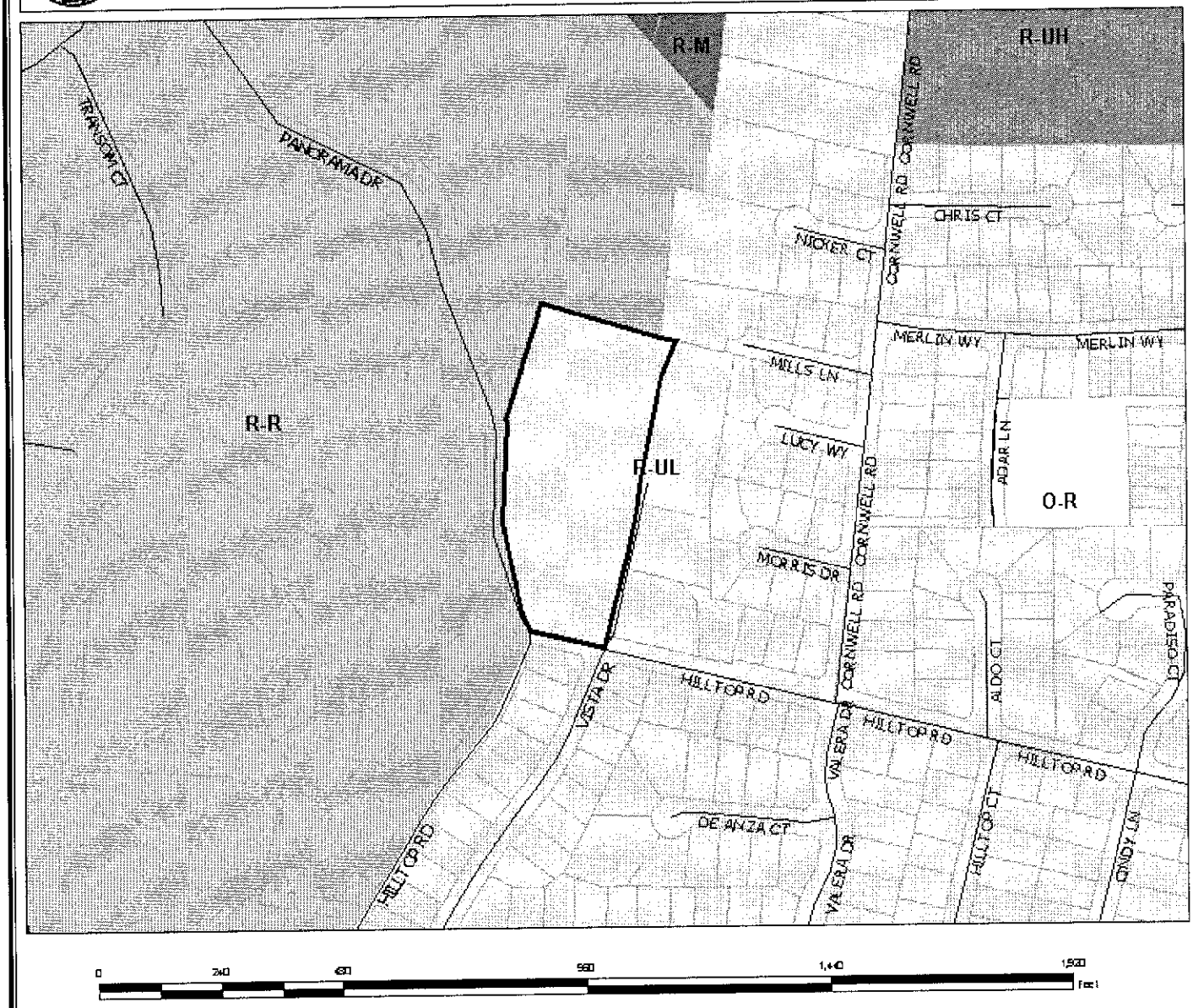
Planning Department
August 2005

General Plan Designation Map



0 240 480 960 1,440 1,920 Feet

Legend

- APN 102-181-08
- Streets
- Assessors Parcels
- Parks and Recreation (O-R)
- Residential-Mountain (R-M)
- Residential-Rural (R-R)
- Residential - Urban Low Density (R-UL)
- Residential - Urban High Density (R-UH)

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W E
S

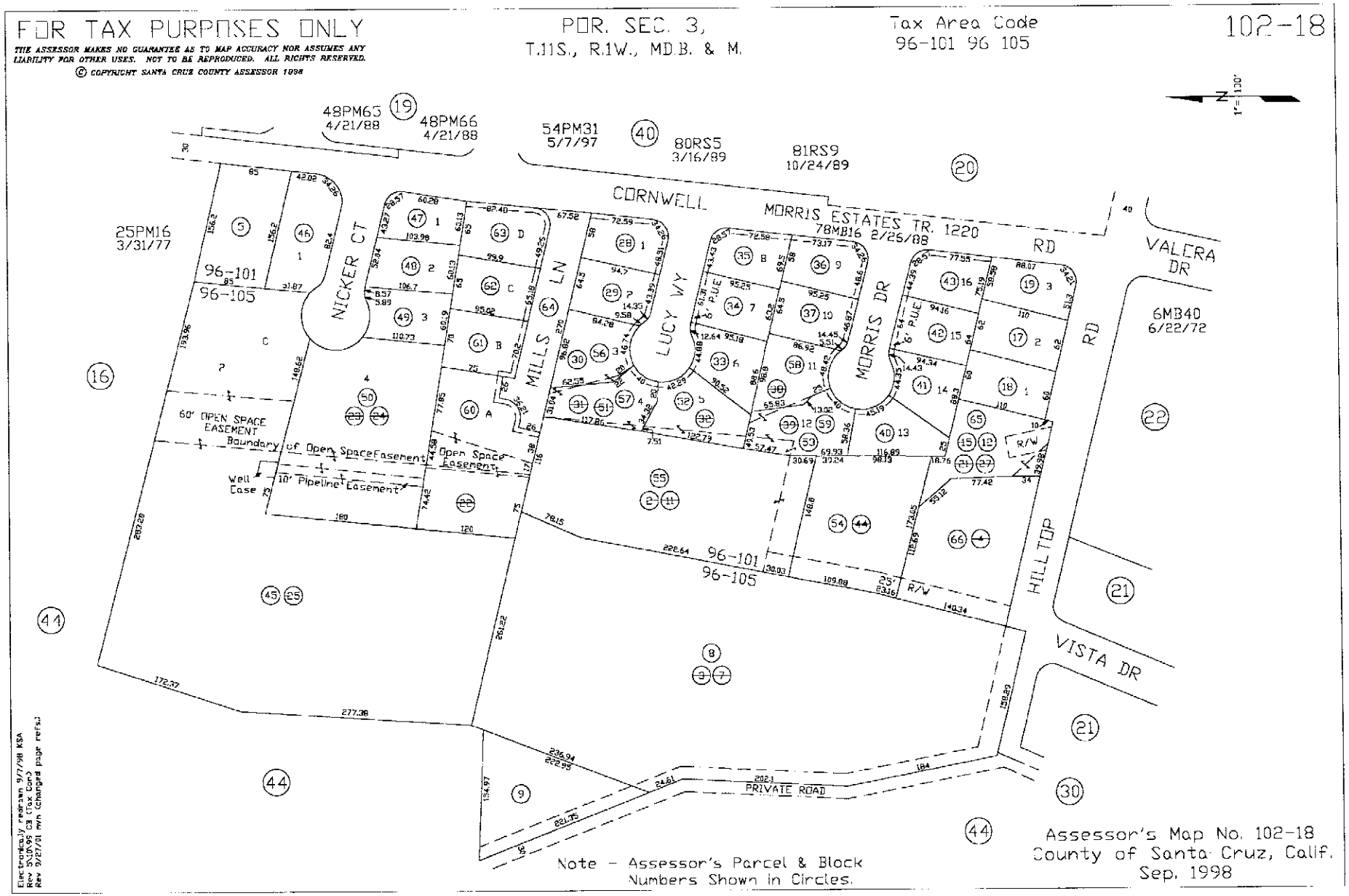
Map Created by
County of Santa Cruz
Planning Department
August 2005

FOR TAX PURPOSES ONLY

POR. SEC. 3,
T.11S., R.1W., MD.B. & M.

Tax Area Code
96-101 96 105

102-18



Assessor's Map No. 102-18
County of Santa Cruz, Calif.
Sep. 1998

Electronically redrawn 9/7/98 KSA
Rev 5/10/99 CB (Tax Corr)
Rev 9/27/01 mvh (changed page refs)

ZONING & CODE COMPLIANCE:

ZONING	R1-10 SINGLE FAMILY - 10,000 SQ. FT. MIN. SITE AREA
GENERAL PLAN LAND USE	URBAN LOW RESIDENTIAL
PLANNING AREA	SOQUEL

SHEET INDEX

PRELIMINARY ARCHITECTURAL PLANS:

SEAVIEW ESTATES

A 9 LOT SINGLE FAMILY SUBDIVISION

AP NO. 102-181-08
3700 HILLTOP DRIVE, SOQUEL
SANTA CRUZ COUNTY, CALIFORNIA

OWNER- PROPERTY DEVELOPER

3700 HILLTOP, LLC

19770 GLEN UNA DRIVE
SARATOGA, CA. 95070

(408) 395-7799
(866) 202-3098 f

scott@seacoastpartner.us

DESIGNER:

WESTSIERRA DESIGN GROUP

NEVADA LICENSED RESIDENTIAL DESIGNER #1292

1950 Koopmans Ave.
SANTA CRUZ, CA. 954062

(831) 421-9700
(866) 648-0864 f

JerryWJWDesignGroup.net

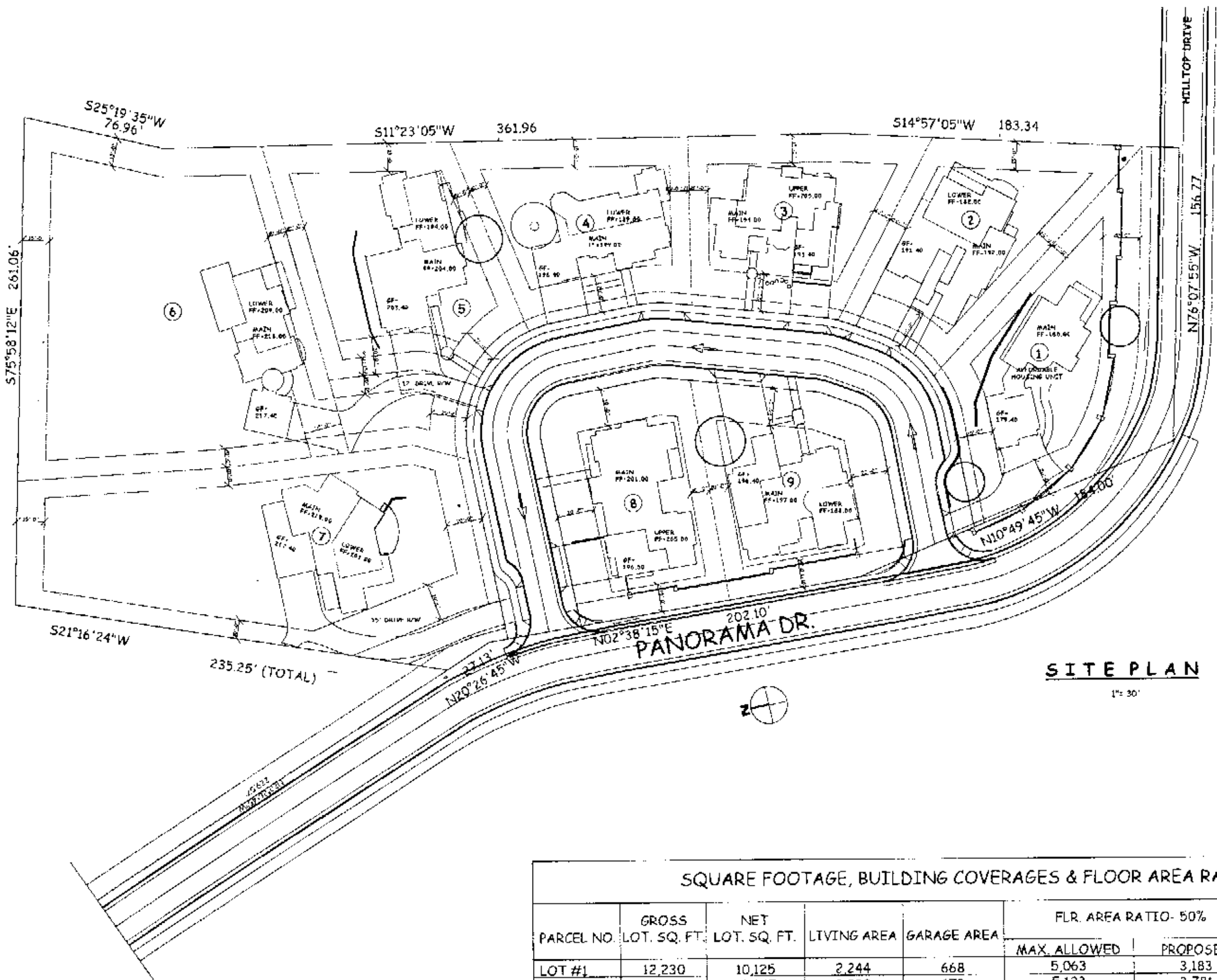
DESIGNER:
WEST SEIRRA DESIGN GROUP
1950 KOOPMANS AVE. SANTA CRUZ, CA. 95062
(831) 421-9700 (866) 648-0864 email: JerryWJWDesignGroup.net

OWNER:
3700 HILLTOP, LLC
19770 GLEN UNA DRIVE SARATOGA, CA. 95070
(408) 395-7799 f (866) 202-3098 email: scott@seacoastpartner.us

TITLE SHEET

SEAVIEW ESTATES
SANTA CRUZ CNTRY. CA.

SHEET
TS-101



SITE PLAN

1" = 30'

SQUARE FOOTAGE, BUILDING COVERAGES & FLOOR AREA RATIOS								
PARCEL NO.	GROSS LOT. SQ. FT.	NET LOT. SQ. FT.	LIVING AREA	GARAGE AREA	FLR. AREA RATIO- 50%		MAX. ALLOW. LOT COVERAGE- 40%	
					MAX. ALLOWED	PROPOSED	MAX. ALLOWED	PROPOSED
LOT #1	12,230	10,125	2,244	668	5,063	3,183	4,050	2,392
LOT #2	10,247	10,247	3,250	679	5,123	3,781	4,099	3,167
LOT #3	10,121	10,026	3,574	702	5,060	4,527	4,048	2,956
LOT #4	10,257	10,025	2,752	470	5,012	3,036	4,010	2,586
LOT #5	13,101	10,001	2,965	835	5,000	3,575	4,000	3,159
LOT #6	29,949	18,136	2,846	482	9,068	3,150	7,254	2,613
LOT #7	22,833	15,927	3,127	699	7,964	3,641	6,371	3,269
LOT #8	10,051	10,051	3,152	1,012	5,025	3,965	4,020	3,757
LOT #9	10,059	10,016	3,031	686	5,008	3,492	4,006	3,083

AFFORDABLE HOUSING UNIT DESIGNATED AS LOT #1

TITLE SHEET
SITE PLAN
SEAVIEW ESTATES
SANTA CRUZ CNTRY. CA.

OWNER:
3700 HILLTOP, LLC
19770 GLEN UNA DRIVE, SARATOGA, CA. 95070
(408) 395-7759 f (866) 202-3098 email- scott@seacoastpartners.us

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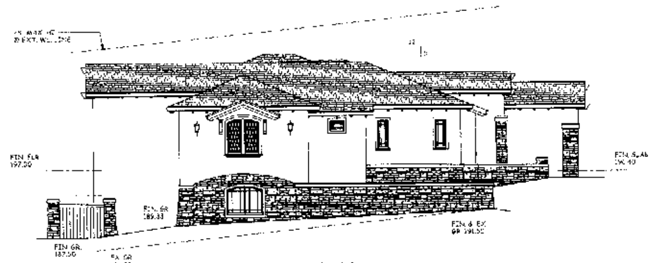
WEST SEIRRA
DESIGN GROUP
1950 KOOPMANS AVE., SANTA CRUZ, CA 95062
(831) 421-9400 f (866) 648-0664 email- JerrySJW@designgroup.net

SHEET
C-101

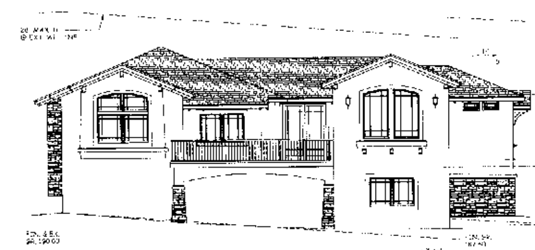
EXTERIOR ELEVATION MATERIAL

1. ROOF TO BE FLAT CONC. TILE
2. FASCIA @ EAVES- 6" GI FASCIA GUTTER OVER 2X8 RWD W 3X6 SHAPED OUTLOOKS @ 24" OC
3. FASCIA @ GABLE ENDS- 1X2 SHINGLE STOP o/ 2X8 RWD
4. EXTERIOR TO BE 7/8" SMOOTH FINISH STUCCO W/ 1" RADIUS BULLNOSE CORNERS
5. STONE VENEER @ WALLS, PLANTERS & BATTERED PEDESTALS TO BE MANU. CULTURED STONE W/ CAST STONE SHAPED CAPS
6. GARAGE DOORS TO BE OVERHEAD SECTIONAL WOOD TYPE CARRIAGE DOORS.
7. TERRACE & BALCONY GUARDRAILING TO BE DECORATIVE IRON @ 3'0" HI.
8. EXTERIOR SASH TO BE CLAD WOOD W/ PLASTER TRIM AND SILLS
9. GABLE END OUTLOOKS TO BE SHAPED 6X10 DF.

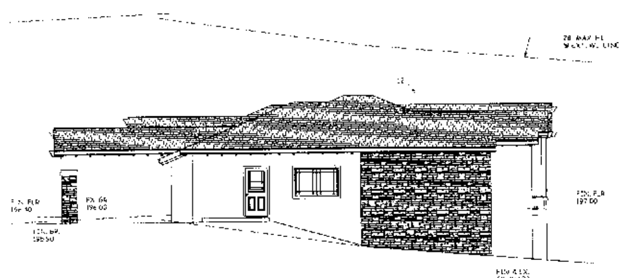
EAST



SOUTH



WEST



NORTH

EXTERIOR ELEVATIONS

1/8"=1'-0

EXTERIOR ELEVATIONS

LOT #9, SEAVIEW ESTATES
SANTA CRUZ CNTY. CA.

OWNER

3700 HILLTOP, LLC

19770 GLEN UNA DRIVE, SARATOGA, CA 95070
(408) 395-7799 f (866) 752-8098 email- scott@seacoastpartners.us

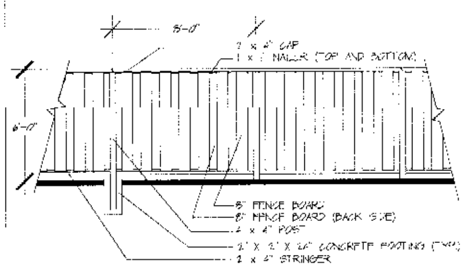
DESIGN BY:

WEST SEIRRA
DESIGN GROUP

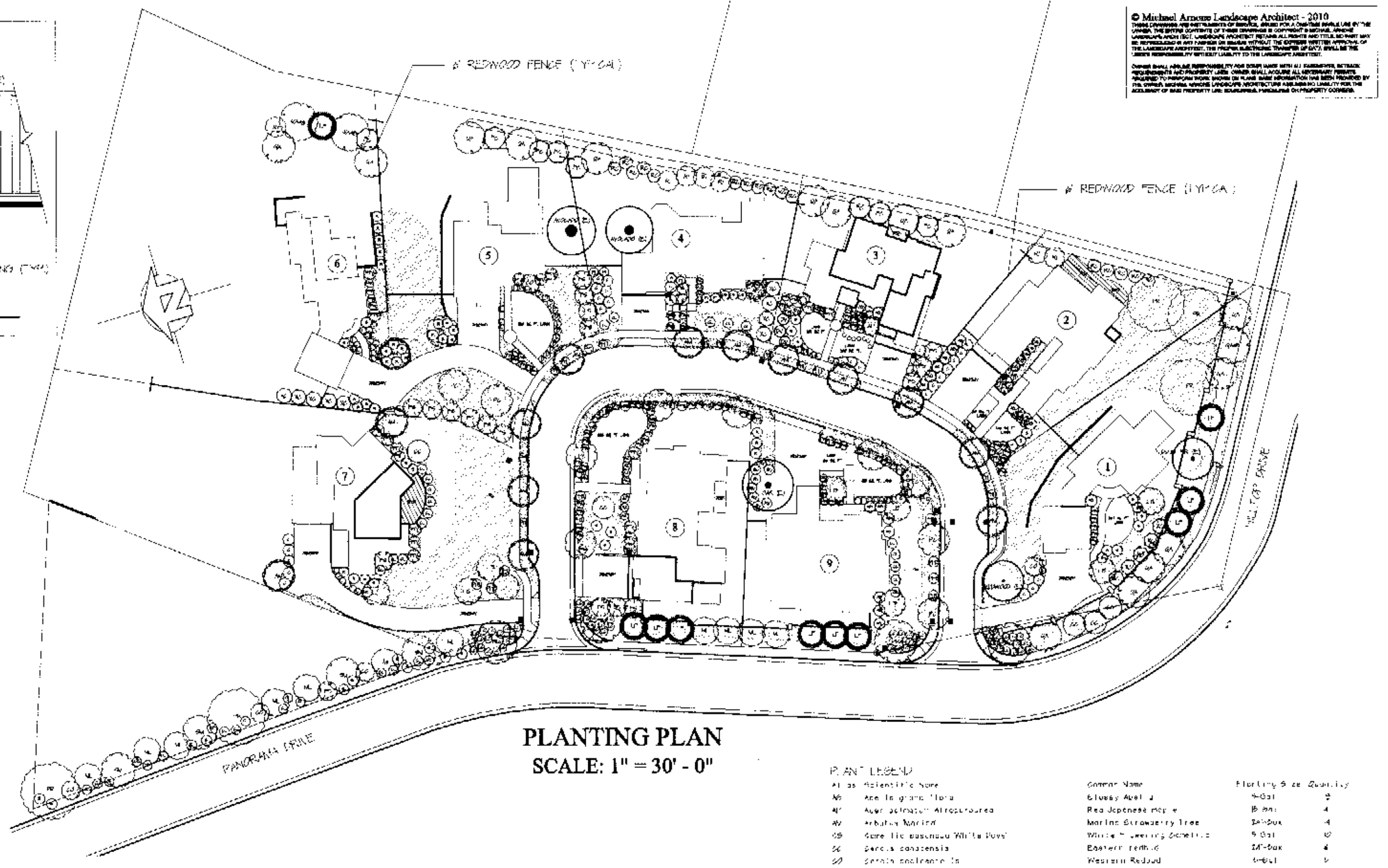
1950 KOOPMANS AVE SANTA CRUZ, CA 95062
(831) 421-9700 f (866) 648-2864 email- JErry@JWDesignGroup.net

SHEET

9A-202



6' REDWOOD BOARD ON BOARD FENCE
not to scale

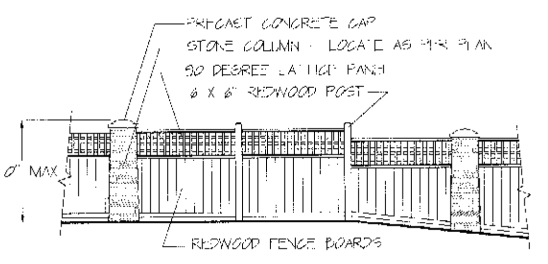


PLANTING PLAN

SCALE: 1" = 30' - 0"

NOTE: OWNER SHALL PROVIDE AN AUTOMATIC IRRIGATION SYSTEM TO EFFECTIVELY WATER ALL NEW PLANTS SHOWN ON THE LANDSCAPE PLAN. THE DESIGN OF THE IRRIGATION SYSTEM SHALL USE LOW FLOW SPRAY HEADS, BUBBLERS AND DRIP IRRIGATION EQUIPMENT SUITED TO THE NEEDS OF THE PLANT MATERIAL SELECTED FOR THE PROJECT. THE IRRIGATION PLAN, EQUIPMENT LIST AND DETAILS WILL BE PREPARED AS PART OF THE CONSTRUCTION DOCUMENTS FOR THE PROJECT.

(line)	PROPERTY LINE
(circle)	EXISTING TREE TO REMAIN
(heavy line)	6' BOARD ON BOARD REDWOOD FENCE - SEE ELEVATION ABOVE
(line with post)	ENTRY FENCE AND COLUMN SEE ELEVATION BELOW



ENTRY FENCE & COLUMN ELEVATION
SCALE: NOT TO SCALE

GROUND COVER LEGEND

Symbol	Scientific Name	Common Name	Size	Spacing
LAWN	Dwarf Fescue turf grass	Lawn	sod	7,550 sq. ft.
	Cotoneaster 'Lowfast'	Low Growing Cotoneaster	1-Gal	6' O.C.
	Erigeron karvinskianus	Santa Barbara Daisy	1-Gal	3' O.C.
	Arctostaphylos 'Pacific Mist'	Low Growing Manzanita	1-Gal	5' O.C.
	Heuchera sanguineum	Coral Bells	1-Gal	20" o.c.
	Strawberry Clover and Red Fescue	Hydroseed mix	seed	19,5[illegible] sq. ft.
	Carex tumulicola	Berkeley Sedge	plugs	20" o.c.
	Juncus patens	California Gray Rush	Flats	20" o.c.

PLANT LEGEND

Alias	Scientific Name	Common Name	Planting Size	Quantity
AG	Abelia grandiflora	Glossy Abelia	5-Gal	9
AP	Acer palmatum 'Atropurpurea'	Red Japanese Maple	15-Gal	4
AM	Arbutus 'Marina'	Marina Strawberry Tree	24"-Box	4
CS	Ceanothus 'Snow Flurry'	White Flowering Ceanothus	5-Gal	10
CC	Cercis canadensis	Eastern Redbud	24"-Box	4
CO	Cercis occidentalis	Western Redbud	5-Gal	[illegible]
CL	Cistus ladanifer	Crimson Spot Rockrose	5-Gal	55
C	Correa pulchella	Australian Fuchsia	1-Gal	[illegible]
D	Dietes vegeta	Fortnight Lily	1-Gal	[illegible]
DV	Dodonaea viscosa 'Purpurea'	Purple Hopseed	5-Gal	[illegible]
FS	Feijoa sellowiana	Pineapple Guava	5-Gal	15
FC	Fremontodendron 'California Glory'	Flannel Bush	5-Gal	[illegible]
LIR	Lagerstroemia indica 'Dynamite'	Red Crape Myrtle	24" Box	4
LIP	Lagerstroemia indica 'Seminole'	Pink Crape Myrtle	24"-Box	[illegible]
LIL	Lagerstroemia indica 'Zuni'	Lavender Crape Myrtle	24"-Box	[illegible]
LG	Lantana 'New Gold'	Yellow Trailing Lantana	1-Gal	56
L	Lavandula 'Intermedia Provence'	Provence Lavender	1-Gal	[illegible]
LF	Lyonothamnus floribundus	Catalina Ironwood	24" Box	[illegible]
MG	Magnolia grandiflora	Southern Magnolia	5-Gal	[illegible]
ML	Myoporum laetum	Salt Bush	24" Box	[illegible]
PG	Phormium 'Guardsman'	New Zealand Flax	5-Gal	14
PYG	Phormium tenax 'Yellow Wave'	Yellow Flax	5-Gal	[illegible]
PC	Pistacia chinensis	Chinese pistache	24"-Box	[illegible]
PT	Pittosporum tenuifolium 'Marjorie Channon'	Variegated Dwarf Pittosporum	5-Gal	[illegible]
PTV	Pittosporum tenuifolium variegatum	Variegated Pittosporum	5-Gal	15
PW	Pittosporum tobira 'Wheelers Dwarf'	Wheeler's dwarf tobira	1-Gal	[illegible]
PR	Platanus racemosa	California sycamore	24"-Box	[illegible]
PRC	Prunus cerasifera 'Atropurpurea'	Purple-leaf Plum	24" Box	[illegible]
QAMB	Quercus agrifolia	California live oak	48" Box	[illegible]
QA	Quercus agrifolia	California live oak	24"-Box	[illegible]
RC	Rhamnus californica	Coffeeberry	5-Gal	[illegible]
AZ	Rhododendron azalea 'Southern Indica'	Azalea	5-Gal	[illegible]
RI	Rhus integrifolia	Lemonade Berry	15-Gal	[illegible]
RV	Ribes viburnifolium	Evergreen Currant	1-Gal	[illegible]
R	Rosmarinus officinalis 'Collingwood Ingram'	Rosemary	1-Gal	[illegible]
S	Salvia leucophylla	Purple Sage	1-Gal	[illegible]
SM	Schinus molle	California pepper tree	24"-Box	4
XC	Xylosma congestum	Xylosma	5-Gal	14

Michael Arnone
Landscape Architect
3370 Samuel Place Santa Cruz, CA 95062 831.462.4988

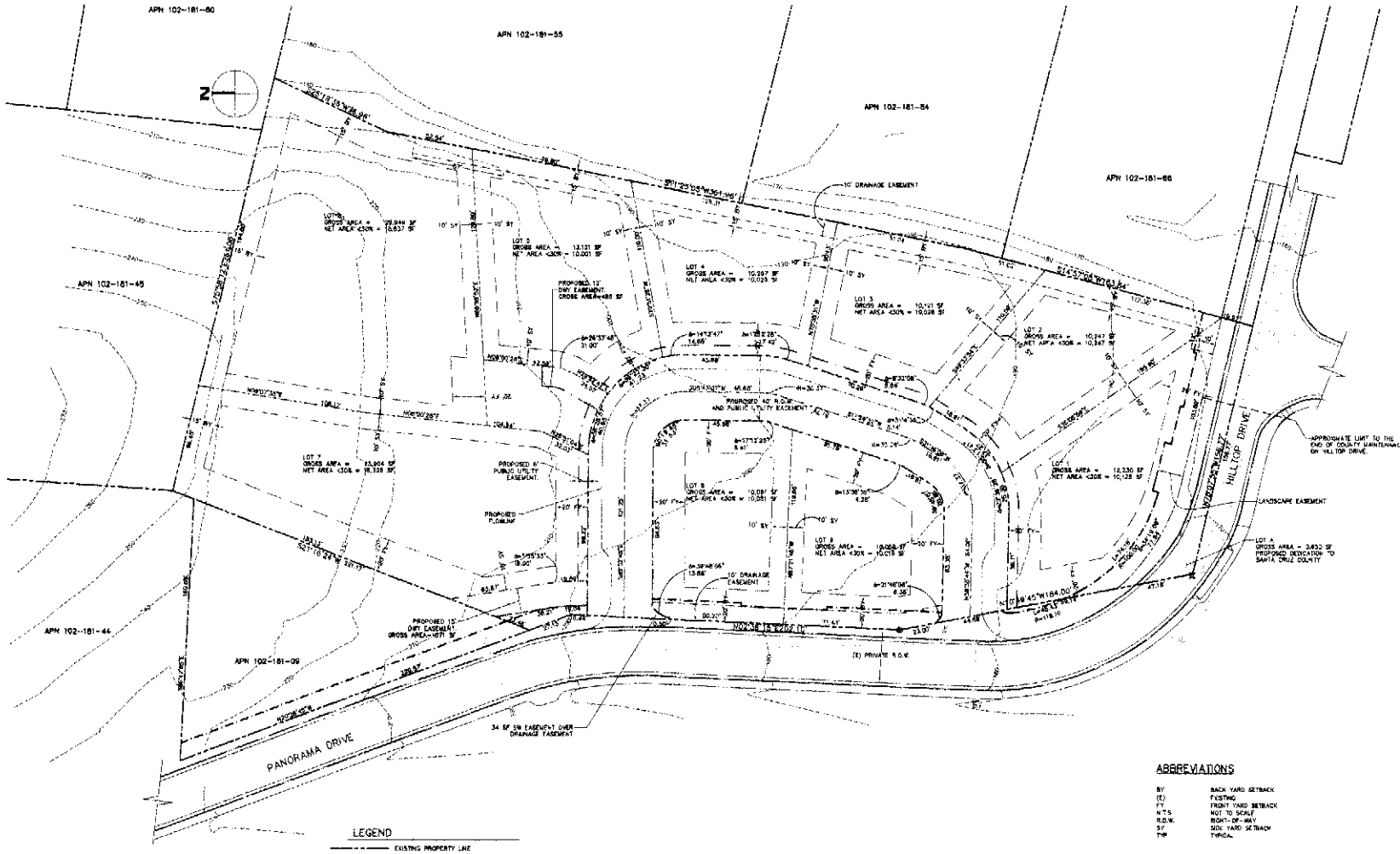
SEAVIEW ESTATES
HILLTOP DRIVE
SOQUEL, CALIFORNIA

DATE	PURPOSE	BY
5.26.09	first issue review	MAA
10.15.09	second issue review	MAA
11.23.09	second fence elevation	MAA
3.25.10	lot 4 revision	MAA

scale: 1" = 30' - 0"

sheet title: planting

sheet number: L - 1 of one



NOTES

1. GROSS AREA = SQUARE FOOTAGE OF ENTIRE LOT
2. NET AREA <30% = SQUARE FOOTAGE OF LOT THAT HAS LESS THAN 30% SLOPE.

TENTATIVE MAP SUBMITTAL

RI Engineering, Inc.
303 Potrero St. Suite 42-202, Santa Cruz, CA 95060
831-425-3901 www.riengineering.com

SEAVIEW TERRACE SUBDIVISION
FOR:
3700 HILLTOP LLC
3700 HILLTOP DRIVE
SANTA CRUZ COUNTY, CALIFORNIA
APN 102-181-09

TRACT NO. 1515

PRELIMINARY TENTATIVE MAP

project no. 09-0114
date MARCH 2010
scale AS SHOWN
dwg name TENTMAP2.dwg

T-1

GENERAL NOTES

1. ALL CONSTRUCTION SHALL COMPLY WITH APPLICABLE REQUIREMENTS IN THE CURRENT EDITION OF THE "COUNTY OF SANTA CRUZ DESIGN CRITERIA."

2. ALL FIGURE (FIG.) REFERENCES, UNLESS OTHERWISE SPECIFIED, REFER TO STANDARD DRAWINGS IN THE CURRENT EDITION OF THE "COUNTY OF SANTA CRUZ DESIGN CRITERIA."

3. NO CHANGES IN THE APPROVED IMPROVEMENT PLANS SHALL BE MADE WITHOUT PRIOR APPROVAL OF THE DEPARTMENT OF PUBLIC WORKS.

4. NO LAND CLEARING, GRADING OR EXCAVATING SHALL TAKE PLACE BETWEEN OCTOBER 15 AND APRIL 15 UNLESS A SEPARATE WINTER EROSION CONTROL PLAN IS APPROVED BY THE PLANING DIRECTOR.

5. BETWEEN OCTOBER 15 AND APRIL 15, EXPOSED SOIL SHALL BE PROTECTED FROM EROSION AT ALL TIMES. DURING CONSTRUCTION SUCH PROTECTION MAY CONSIST O MULCHING AND /OR PLANTING OF NATIVE VEGETATION OF ADEQUATE DENSITY. BEFORE COMPLETION OF THE PROJECT, ANY EXPOSED SOIL ON DISTURBED SLOPES SHALL BE PERMANENTLY PROTECTED FROM EROSION.

6. NO LAND DISTURBANCE SHALL TAKE PLACE PRIOR TO THE ISSUANCE OF BUILDING PERMITS, EXCEPT THE MINIMUM REQUIRED TO INSTALL STREET IMPROVEMENTS, PROVIDE ACCESS FOR COUNTY REQUIRED TESTS, OR TO CARRY OUT OTHER WORK SPECIFICALLY REQUIRED BY ANOTHER OF THESE CONDITIONS. IN ADDITION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A NPDES PERMIT FROM THE REGIONAL WATER QUALITY CONTROL BOAR PRIOR TO GRADING.

7. PURSUANT TO SECTIONS 16.40.040 AND 16.42.100 OF THE COUNTY CODE, IF AT ANY TIME DURING SITE PREPARATION, EXCAVATION, OR OTHER GROUND DISTURBANCE ASSOCIATED WITH THIS DEVELOPMENT, ANY ARTIFACT OR OTHER EVIDENCE OF AN HISTORIC ARCHEOLOGICAL RESOURCE OR A NATIVE AMERICAN CULTURAL SITE IS DISCOVERED, THE RESPONSIBLE PERSONS SHALL IMMEDIATELY CEASE AND DESIST FROM ALL FURTHER SITE EXCAVATION AND NOTIFY THE SHERIFF-CORONER IF THE DISCOVERY CONTAINS HUMAN REMAINS, OR THE PLANNING DIRECTOR IF THE DISCOVERY CONTAINS NO HUMAN REMAINS. THE PROCEDURES ESTABLISHED IN SECTIONS 16.40.040 AND 16.42.100, SHALL BE OBSERVED.

8. THE DIRECTOR OF PUBLIC WORKS, OR HIS AUTHORIZED REPRESENTATIVE, SHALL HAVE THE AUTHORITY TO "STOP WORK" IF THE WORK IS NOT BEING DONE IN ACCORDANCE WITH THE APPROVED IMPROVEMENT PLANS.

9. THE CONTRACTOR SHALL NOTIFY THE COUNTY CONSTRUCTION ENGINEER (831-454-2160) 24 HOURS PRIOR TO START OF CONSTRUCTION.

10. THE CONTRACTOR SHALL NOTIFY THE SANITATION DISTRICT INSPECTOR (831-454-2160) OR LEAVE A MESSAGE AT (831-453-2886) BEFORE 8:00 A.M AT LEAST 24 HOURS PRIOR TO THE CONNECTION OF ANY BUILDING SEWER TO THE SEWER LATERAL, OR TO THE ABANDONMENT THEREOF (IN CASE OF ABANDONMENTS, NO DEMOLITION PERMITS WILL BE ISSUED UNTIL SAID SEWER LINE HAS BEEN ABANDONED).

11. CONSTRUCTION OF IMPROVEMENTS SHALL COMPLY WITH THE REQUIREMENTS OF THE GEOTECHNICAL REPORTS PREPARED BY AMSO CONSULTING ENGINEERS DATED: JULY 29, 2005 AND APRIL 15 2005 AS SUPPLEMENTED BY THE LETTER REPORT BY DEES AND ASSOCIATES (THE GEOTECHNICAL ENGINEER OF RECORD) DATED JANUARY 23, 2008 AND THE GEOLOGY REPORT BY ZINN GEOLOGY DATED MARCH 26, 2007. THE GEOTECHNICAL ENGINEER SHALL INSPECT THE COMPLETED PROJECT AND CERTIFY IN WRITING THAT THE IMPROVEMENTS HAVE BEEN CONSTRUCTED IN ACCORDANCE WITH THE GEOTECHNICAL REPORT.

12. EACH NEW SANITARY SEWER LATERAL NOT IMMEDIATELY CONNECTED TO A DWELLING UNIT SHALL BE MARKED WITH A 2"x4"x8' REDWOOD STAKE MARKER TO 12" ABOVE FINISH GRADE AT THE END OF EACH NEW LATERAL SHALL BE PROPERLY CAPPED. ALL LATERALS INSTALLED IN NEW DEVELOPMENTS SHALL ALSO BE MARKED BY STAMPING AN "S" IN THE CURB JUST ABOVE THE LATERAL.

13. FOLLOWING THE SUCCESSFUL COMPLETION OF CLEANING AND TESTING, ALL SANITARY SEWER MAINS WHICH ARE TO BE COUNTY MAINTAINED, OR PRIVATE LINES AT THE DISCRETION OF THE PUBLIC WORKS INSPECTOR, SHALL FIRST BE FLUSHED, THEN TELEVISED AT THE DEVELOPER'S EXPENSE WITH VHS FORMAT VIDEO TAPE. SAID VIDEO TAPE AND ACCOMPANYING REPORT SHALL BE SUBMITTED TO THE SANITATION DISTRICT FOR REVIEW AND APPROVAL PRIOR TO THE ACCEPTANCE OF THE PROJECT AND ANY ASSOCIATED SIGN-OFFS FOR BUILDING OCCUPANCY. THE CONTRACTOR SHALL REFER TO PART 4 "SANITARY SEWER DESIGN" OF THE DESIGN CRITERIA FOR SPECIFICATIONS ON PIPE LAYING, PIPELINE TESTING, AND ALLOWABLE DESIGN TOLERANCES.

14. ALL UTILITIES SHALL BE INSTALLED UNDERGROUND

15. UNDERGROUND UTILITY LOCATIONS SHOWN ARE COMPILED FROM INFORMATION SUPPLIED BY UTILITY AGENCIES AND AREA APPROXIMATE ONLY. CONTRACTOR SHALL VERIFY LOCATIONS OF AFFECTED UTILITY LINES PRIOR TO ANY TRENCHING OR EXCAVATING FOR LOCATION, CALL USA (800-424-244).

16. ANY EXISTING UTILITIES THAT ARE REQUIRED TO BE RELOCATED AS A PART OF THIS CONSTRUCTION SHALL BE RELOCATED AT THE DEVELOPER'S EXPENSE.

17. ALL SANITARY SEWERS WITHIN THE ROADWAY OR UNDER CURB, GUTTER, OR SIDEWALK, SHALL BE IN PLACE, VIDEOTAPED, AND APPROVED FOR ACCEPTANCE PRIOR TO PLACING THE PERMANENT PAVING ON SAID ROADWAY OR PLACING ANY CURB, GUTTER, OR SIDEWALK THEREON.

18. REFER TO FIGURES SS-2A, SS-2B & EP-1 FOR BACKFILL REQUIREMENTS. REFER TO SS-11 FOR CONCRETE CAP AND ENCASEMENT REQUIREMENTS.

19. WATER SERVICES FOR SITE SHALL BE INSTALLED BY THE CONTRACTOR ACCORDING TO THE SOQUEL CREEK WATER DISTRICT REQUIREMENTS PER DETAILS BY ENGINEER AND THE WATER DEPARTMENT.

20. ALL REQUIREMENTS OF THE CENTRAL FIRE PROTECTION DISTRICT SHALL BE MET. THIS SHALL INCLUDE ALL REQUIREMENTS RELATING TO SMOKE DETECTORS, ADDRESS NUMBERS, FIRE ALARM, AUTOMATIC SPRINKLER SYSTEM, ACCESS WIDTHS, TURNAROUNDS, AND FIRE HYDRANTS.

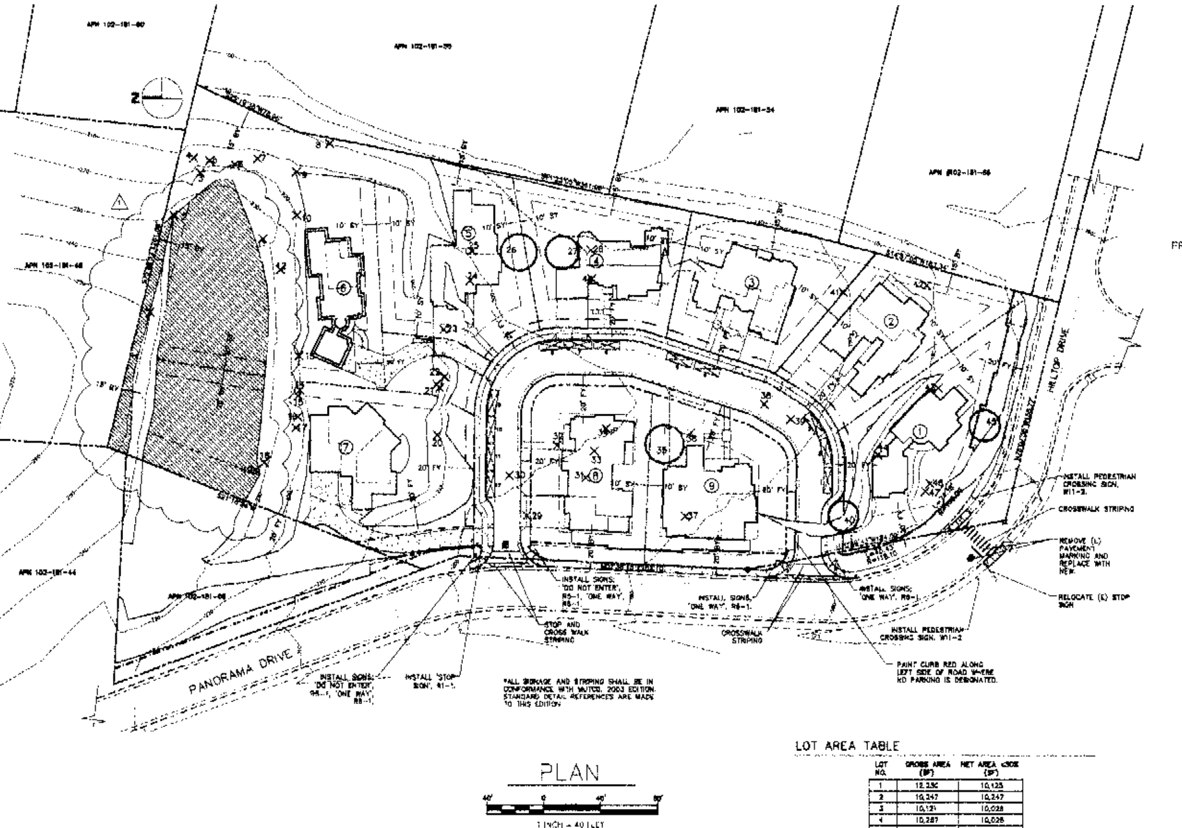
21. PVC SEWER PIPE SHALL BE MANVILLE "RING-TITE" OR EQUAL. PVC STORM DRAIN PIPE SHALL BE CLASS A. HDPE SHALL BE ADS (N-12) OR HANCOR (HI-Q)

22. FOR ROAD WORK INVOLVING A PAVEMENT CONFORM SECTION BETWEEN THE LIP OF GUTTER AND THE EXISTING PAVED ROAD, THE CONFORM SHALL BE EXTENDED AS FAR AS NECESSARY TO ACHIEVE A STREET CROSS SLOPE OF 2% - 4%.

23. THE CONTRACTOR SHALL OBTAIN AN ENCROACHMENT PERMIT FROM THE SANTA CRUZ COUNTY DEPARTMENT OF PUBLIC WORKS FOR ANY UTILITY WORK WITHIN COUNTY RIGHT-OF-WAY NOT SPECIFICALLY SHOWN ON THESE PLANS.

EROSION CONTROL MEASURES

1. EROSION IS TO BE CONTROLLED AT ALL TIMES ALTHOUGH SPECIFIC MEASURES SHOWN ARE TO BE IMPLEMENTED AT A MINIMUM BY OCTOBER 15.
2. UNLESS SPECIFIC MEASURES ARE SHOWN OR NOTED ON THIS PLAN, ALL COLLECTED RUNOFF SHALL BE CARRIED TO DRAINAGE COURSES IN LINED CONDUITS. DISCHARGE SHALL BE IN THE LOCATIONS SHOWN ON THE PLANS.
3. THE DESIRED END RESULT OF THESE MEASURES IS TO CONTROL SITE EROSION AND PREVENT SEDIMENT TRANSPORT OFF THE SITE. IT SHALL BE THE DEVELOPER'S RESPONSIBILITY TO SEE THAT ANY ADDITIONAL MEASURES NECESSARY TO MEET THIS GOAL ARE IMPLEMENTED. IF FAILED INSPECTIONS BY CITY STAFF SHOW THIS GOAL IS NOT BEING MET, ADDITIONAL MEASURES MAY BE REQUIRED.
6. ALL DISTURBED AREAS NOT CURRENTLY BEING USED FOR CONSTRUCTION SHALL BE SEEDED WITH THE FOLLOWING :
   HORDEUM SPP. (WINTER BARLEY) 35#/ACRE
6. AFTER SEEDING, STRAW MULCH WILL BE APPLIED IN 4" (AVG.) LAYERS.
7. AMMONIUM PHOSPHATE FERTILIZER, 6-3-3, SHALL BE APPLIED AT A RATE OF 30 LBS. PER ACRE. ON SLOPES GREATER THAN 20% EROSION CONTROL BLANKET (NORTH AMERICAN GREEN) SHALL BE APPLIED.
8. SILT BARRIERS SHALL BE PLACED END TO END AND STAKED DOWN ALONG THE BOTTOM OF ALL GRADED SLOPES.
9. ALL DITCHES SHALL BE LINED WITH GRASS OR 4" HAND PLACED COBBLE
10. A CONTINGENCY PLAN FOR DRAINAGE CONTROL DURING CONSTRUCTION PHASES SHALL BE SUBMITTED BY THE CONTRACTOR.



LOT AREA TABLE

LOT NO.	GROSS AREA (SF)	NET AREA <30% (SF)
1	12,336	10,125
2	10,247	10,247
3	10,121	10,028
4	10,287	10,026
5	13,101	10,001
6	29,849	16,138*
7	22,832	15,827*
8	10,061	10,051
9	10,059	10,016

1. AREA DOES NOT INCLUDE PORTION OF PROPERTY WITHIN THE DRIVEWAY EASEMENT.

* AN AREA OF APPROXIMATELY 15,460 SQUARE FEET IS LOCATED ON THE NORTH SIDE OF LOTS 6 AND 7 THAT IS INACCESSABLE DUE TO SURROUNDING 30% SLOPES.

LEGEND

	PERVIOUS CONCRETE, PAVEMENT OR PAVERS		CONCRETE
	PAVED ROAD SURFACE		8x18 PARKING SPACE
	PROPOSED BLDG	(1)	LOT NUMBER
X	TREE TO BE REMOVED		AREAS WITH SLOPES GREATER THAN 30%
	TREE PROTECTION		LIMIT OF AREAS WITH SLOPES GREATER THAN 30%
30	TREE NUMBER PER ARBORIST REPORT		PROPERTY LINE
	MUTCD FIGURE 3B-21.a		LOT LINE
	CROSSWALK STRIPING		AREA INACCESSABLE DUE TO 30% SLOPES
	CROSSWALK STRIPING		

FIRE SERVICE NOTES

1. THESE PLANS ARE IN COMPLIANCE WITH CALIFORNIA BUILDING AND FIRE CODES (2001) AND DISTRICT AMENDMENT.
2. FIRE FLOW REQUIREMENTS FOR THE SUBJECT PROPERTY ARE 1000 GALLONS. FIRE FLOW AVAILABLE ON FIRE HYDRANT #1118 IS 1,186 GPM.
3. THE BUILDING SHALL BE PROTECTED BY AN APPROVED AUTOMATIC FIRE SPRINKLER SYSTEM COMPLYING WITH THE CURRENTLY ADOPTED EDITION OF NFPA 13D AND ADOPTED STANDARDS OF THE APTOS/LA SELVA FIRE PROTECTION DISTRICT.
4. THE DESIGNER/INSTALLER SHALL SUBMIT THREE (3) SETS OF PLANS AND CALCULATIONS FOR THE UNDERGROUND AND OVERHEAD RESIDENTIAL AUTOMATIC FIRE SPRINKLER TO THE APTOS/LA SELVA FIRE PROTECTION DISTRICT FOR APPROVAL. INSTALLATION SHALL FOLLOW THE APTOS/LA SELVA FIRE PROTECTION DISTRICT GUIDE SHEET
5. UNDERGROUND FIRE PROTECTION SYSTEM WORKING DRAWING MUST BE PREPARED BY THE DESIGNER/INSTALLER. THE PLANS SHALL COMPLY WITH THE UNDERGROUND FIRE PROTECTION SYSTEM INSTALLATION POLICY HANDOUT. UNDERGROUND PLAN SUBMITTAL AND PERMIT, WILL BE ISSUED TO A CLASS B, CLASS C-16, CLASS C-36 OR OWNER/BUILDER. NO EXCEPTIONS.
6. BUILDING NUMBERS SHALL BE PROVIDED. NUMBERS SHALL BE A MINIMUM OF FOUR (4) INCHES IN HEIGHT ON A CONTRASTING BACKGROUND AND VISIBLE FROM THE STREET. WHERE NUMBERS ARE NOT VISIBLE FROM THE STREET, ADDITIONAL NUMBERS SHALL BE INSTALLED ON A DIRECTIONAL SIGN AT THE PROPERTY DRIVEWAY AND THE STREET.
7. THE INSTALLATION OF AN APPROVED SPARK ARRESTER ON THE TOP OF THE CHIMNEY. THE WIRE MESH NOT TO EXCEED 1/2-INCH.
8. THE ROOF COVERING SHALL BE NO LESS THAN CLASS "B" RATED ROOF.
9. A 30 FOOT CLEARANCE WILL BE MAINTAINED WITH NON-COMBUSTIBLE VEGETATION AROUND ALL STRUCTURES OR TO THE PROPERTY LINE WHICHEVER IS A SHORTER DISTANCE.
EXCEPTION: SINGLE SPECIMENS OF TREES, ORNAMENTAL SHRUBBERY OR SIMILAR PLANTS USED AS GROUND COVERS, PROVIDED THEY DO NOT FORM A MEANS OF RAPIDLY TRANSMITTING FIRE FROM NATIVE GROWTH TO ANY STRUCTURE.
10. THE JOB COPIES OF THE BUILDING AND FIRE SYSTEMS PLANS AND PERMITS MUST BE ON-SITE DURING INSPECTIONS.
11. THE SUBMITTER, DESIGNER AND INSTALLER CERTIFY THAT THESE PLANS AND DETAILS COMPLY WITH 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 THE APTOS/LA SELVA FIRE PROTECTION DISTRICT REVIEW, SUBSEQUENT REVIEW, INSPECTION OR OTHER SOURCE, AND, TO HOLD HARMLESS AND WITHOUT PREJUDICE, THE REVIEWER AND REVIEWING AGENCY.

WATER SERVICE

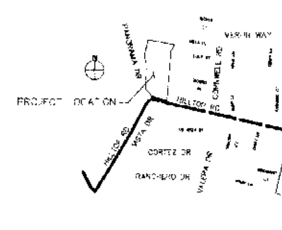
1. ALL WATER SERVICE WORK SHALL CONFORM TO THE REQUIREMENTS OF THE SOQUEL CREEK WATER DISTRICT.
2. SERVICE PIPE MATERIAL SHALL MEET THE REQUIREMENTS OF SECTION 302, "SERVICE PIPE MATERIAL" OF THE SOQUEL CREEK WATER DISTRICT STANDARD SPECIFICATIONS.
3. METER BOXES SHALL BE CHRISTY CONCRETE PRODUCTS MODEL B-9C.
4. BACKFILL OF WATER SERVICE TRENCHES WITHIN MARTIN DRIVE RIGHT-OF-WAY SHALL BE 2 SACK SAND/CEMENT SLURRY.
5. METER BOXES SHALL BE PLACED ON A 6" MINIMUM THICK BED OF CLASS 2 AGGREGATE BASE COMPACTED TO 95% RELATIVE COMPACTION.
6. WATER SERVICES FOR SITE SHALL BE INSTALLED BY THE CONTRACTOR ACCORDING TO SOQUEL WATER DISTRICT REQUIREMENTS PER DETAILS BY ENGINEER
7. CRITERIA FOR THE SEPARATION OF WATER MAINS AND SANITARY SEWERS SHALL MEET THE REQUIREMENTS OF SOQUEL CREEK WATER DISTRICT STD NO. S-22 AND TO THE STATE OF CALIFORNIA DEPARTMENT OF HEALTH SERVICES.

SANITARY SEWER

1. ALL SANITARY SEWER WORK SHALL CONFORM TO PART 4, "SANITARY SEWER DESIGN," OF THE SANTA CRUZ COUNTY DESIGN CRITERIA.
2. PIPE MATERIAL SHALL BE PVC SDR 35 OR EQUAL.
3. TRENCH BACKFILL SHALL BE PER SCCO FIGURES SS-2A, AND SS-2B.
4. BACK FLOW PREVENTION DEVICES SHALL BE INSTALLED ON ALL LATERALS WHERE THE FINISHED FLOOR ELEVATION IS LESS THAN ONE FOOT ABOVE THE RIM ELEVATION OF THE NEAREST UPSTREAM MANHOLE OR CLEAN OUT. THE VALVES SHALL BE LOCATED IN SUCH A WAY AS TO PREVENT ANY DAMAGE TO ADJACENT PROPERTY AS A RESULT OF SEWAGE RELEASED THROUGH THE DEVICE, AS NOTED ON FIGURE SS-14.
5. ALL UTILITIES SHALL BE INSTALLED UNDERGROUND
6. A BACKFLOW DEVICE IS REQUIRED ON THE PARCEL A LATERAL.
7. ALL LATERAL CLEANOUTS SHALL BE OUTSIDE OF THE PUBLIC RIGHT OF WAY.
8. LATERALS SHALL BE CONSTRUCTED PERPENDICULAR TO STREET NOT SKEWED.
9. THE EXISTING SEWER LATERAL MUST BE PROPERLY ABANDONED (INCLUDING INSPECTION BY SANTA CRUZ COUNTY SANITATION DISTRICT) PRIOR TO ISSUANCE OF DEMOLITION PERMIT OR RELOCATION OR DISCONNECTION OF STRUCTURE. AN ABANDONMENT PERMIT FOR DISCONNECTION MUST BE OBTAINED FROM THE DISTRICT.
10. SEWER MAINS WITHIN PROPOSED RIGHT-OF-WAY/PUBLIC UTILITY EASEMENT SHALL BE PUBLICLY MAINTAINED.
11. CRITERIA FOR THE SEPARATION OF WATER MAINS AND SANITARY SEWERS SHALL MEET THE REQUIREMENTS OF SOQUEL CREEK WATER DISTRICT STD NO. S-22 AND TO THE STATE OF CALIFORNIA DEPARTMENT OF HEALTH SERVICES.

STORM DRAINAGE NOTES

1. WORK WITHIN PANORAMA DRIVE RIGHT OF WAY SHALL CONFORM TO THE REQUIREMENTS OF THE COUNTY OF SANTA CRUZ PUBLIC WORKS & UTILITIES DEPARTMENT AS SPECIFIED IN THE LATEST EDITION OF THE COUNTY OF SANTA CRUZ STANDARDS, PART 6, DRIVEWAYS AND ENCROACHMENTS.
2. CULVERTS SHALL BE REINFORCED CONCRETE PIPE (RCP), POLYVINYL CHLORIDE (PVC), OR HIGH DENSITY POLYETHYLENE (HDPE) AND SHALL HAVE A SMOOTH INTERIOR CONFORMING TO PART 3 SECTION E - STORM DRAINAGE FACILITIES OF THE DESIGN CRITERIA.
3. INLETS SHALL BE CHRISTY V64 CONCRETE PRODUCTS OR APPROVED EQUAL UNLESS NOTED ON THE PLANS.
4. DISCHARGE ROOF GUTTERS ONTO SPLASH BLOCKS (TYP)



VICINITY MAP
NTS

SHEET INDEX

C-1	SITE PLAN
C-2	DEMOLITION & TREE REMOVAL/PROTECTION PLAN
C-3	GRADING AND DRAINAGE
C-4	UTILITY PLAN
C-5	PROFILE AND ROAD SECTIONS
C-6	CROSS SECTIONS
C-7	EROSION CONTROL

ABBREVIATIONS

AC	ASPHALT CONCRETE
AB	AGGREGATE BASE
BW	BOTTOM OF WALL
BY	BACK YARD
CB	CATCH BASIN
⌀	DIAMETER
DTL	DETAIL
DWY	DRIVEWAY
(E)	EXISTING
EOP	EDGE OF PAVEMENT
FF	FINISH FLOOR
FG	FINISH GRADE
FY	FRONT YARD
GF	GARAGE FINISH FLOOR
HI-PT	HIGHT POINT
INV	INVERT
LF	LINEAR FEET
MAX	MAXIMUM
N.T.S.	NOT TO SCALE
RIM	RIM ELEVATION
RW	RETAINING WALL
S	SLOPE
SCCO	SANTA CRUZ COUNTY
SCWD	SOQUEL CREEK WATER DISTRICT
SD	STORM DRAIN
SDCO	STORM DRAIN CLEANOUT
SDMH	STORM DRAIN MANHOLE
SS	SANITARY SEWER
SSMH	SANITARY SEWER MANHOLE
SSCO	SANITARY SEWER CLEANOUT
SHT	SHEET
SW	SIDEWALK
SY	SIDE YARD
TYP	TYPICAL
TW	TOP OF WALL
WM	WATER MAIN

BASIS OF BEARINGS

THE BASIS OF BEARINGS FOR THIS SURVEY IS A CALIFORNIA STATE PLANE NAD83 ZONE 3, (1991.35) EPOCH, BETWEEN HPGN 04AJ AND HGPN04AK WHICH BEARS N87°37'42"E WITH A DISTANCE OF 48,392.69'.

BASIS OF ELEVATIONS

THE BENCHMARK IS SOQUEL HPGN 04AJ - NGVD VERTICAL DATUM ELEVATION = 101.14

TOPOGRAPHIC SURVEY

THE TOPOGRAPHIC SURVEY AND BOUNDARY INFORMATION PROVIDED HEREON WAS COMPLETED BY GARY IFLAND & ASSOCIATES, INC. RI ENGINEERING INC. MAKES NO GUARANTEE AS TO THE ACCURACY OF BOTH. THE CONTRACTOR SHALL VERIFY THE BOUNDARY LOCATION AND TOPOGRAPHIC INFORMATION PRIOR TO COMMENCING WORK.

TENTATIVE MAP SUBMITTAL

1 REVISED FOR GEOLOGIC RETREAT ZONE, 3/23/2010

RICHARD J. IRISH No. 45920 Exp. 12-31-10 CIVIL — STATE OF CALIFORNIA — REGISTERED PROFESSIONAL ENGINEER

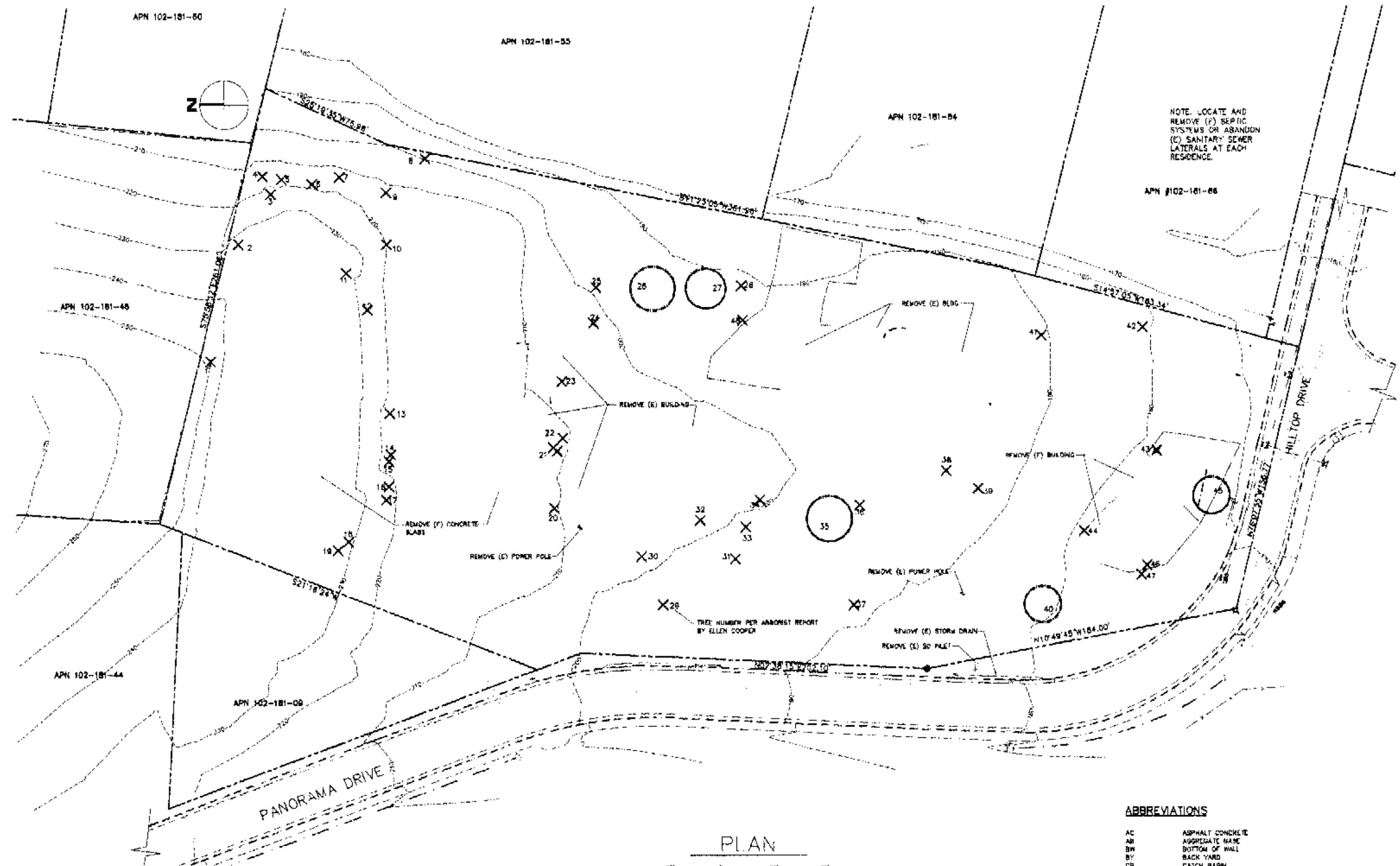
RI Engineering, Inc.
303 Potrero St., Suite 42-202, Santa Cruz CA 95060
831-425-3901 www.riengineering.com

SEAVIEW TERRACE SUBDIVISION
FOR
3700 HILLTOP LLC
3700 HILLTOP DRIVE
SANTA CRUZ COUNTY, CALIFORNIA
APN 102-181-68
TRACT NO. 1515

SITE STRIPING & SIGNIAGE PLAN

project no. 09-011-1
date JUNE 2009
scale AS SHOWN
dwg name CIVIL2.dwg

C-1



PLAN

1 INCH = 30 FEET

LEGEND

- TREE TO REMAIN
- X TREE TO BE REMOVED
- TREE PROTECTION
- 30 TREE NUMBER PER ARBORIST REPORT

EXISTING TREES

NUMBER	SPECIES	NUMBER	SPECIES	NUMBER	SPECIES	NUMBER	SPECIES	NUMBER	SPECIES	NUMBER	SPECIES
1	EUCALYPTUS GLOBULUS	9	EUCALYPTUS GLOBULUS	17	EUCALYPTUS GLOBULUS	25	PERSEA AMERICANA (AVOCADO)	33	TRACHYCARPUS FORTUNEI (REMOVED)	41	QUERCUS AGRIFOLIA (COAST LIVE OAK)
2	EUCALYPTUS GLOBULUS	10	EUCALYPTUS GLOBULUS	18	ACAIA BAILEYANA	26	PERSEA AMERICANA (AVOCADO)	34	ALBIZIA JULIBRISSIN	42	MALUS SP
3	EUCALYPTUS GLOBULUS	11	EUCALYPTUS GLOBULUS	19	ACAIA BAILEYANA	27	PERSEA AMERICANA (AVOCADO)	35	QUERCUS AGRIFOLIA (COAST LIVE OAK)	43	WASHINGTONIA ROBUSTA
4	EUCALYPTUS GLOBULUS	12	ACAIA BAILEYANA (REMOVED)	20	ALNUS CORDATA	28	PERSEA AMERICANA (AVOCADO)	36	ACER MACROPHYLLUM (BIG LEAF MAPLE)	44	ACER MACROPHYLLUM (BIG LEAF MAPLE)
5	EUCALYPTUS GLOBULUS	13	EUCALYPTUS GLOBULUS	21	ACAIA BAILEYANA	29	PERSEA AMERICANA (AVOCADO)	37	PERSEA AMERICANA (AVOCADO)	45	PSEUDOTSUGA MENZIESII (DOUGLAS FIR)
6	EUCALYPTUS GLOBULUS	14	EUCALYPTUS GLOBULUS	22	ACER MACROPHYLLUM (BIG LEAF MAPLE)	30	PERSEA AMERICANA (AVOCADO)	38	PITTOSPORUM EUGENIOIDES	46	ACER MACROPHYLLUM (BIG LEAF MAPLE)
7	EUCALYPTUS GLOBULUS	15	EUCALYPTUS GLOBULUS	23	ALBIZIA JULIBRISSIN	31	PERSEA AMERICANA (AVOCADO)	39	PRUNUS SP	47	ACER MACROPHYLLUM (BIG LEAF MAPLE)
8	EUCALYPTUS GLOBULUS	16	EUCALYPTUS GLOBULUS	24	PERSEA AMERICANA (AVOCADO)	32	MALUS SP	40	SEQUOIA SEMPERVIRENS (COASTAL REDWOOD)	48	PERSEA AMERICANA (AVOCADO)

ABBREVIATIONS

AC	ASPHALT CONCRETE
AB	AGGREGATE BASE
BW	BOTTOM OF WALL
BY	BACK YARD
CB	CATCH BASIN
Ø	DIAMETER
DTL	DETAIL
DWY	DRIVEWAY
(E)	EXISTING
EOP	EDGE OF PAVEMENT
FF	FINISH FLOOR
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TENTATIVE MAP SUBMITTAL

REVISED FOR GEOLOGIC RETREAT ZONE, 3/23/2010

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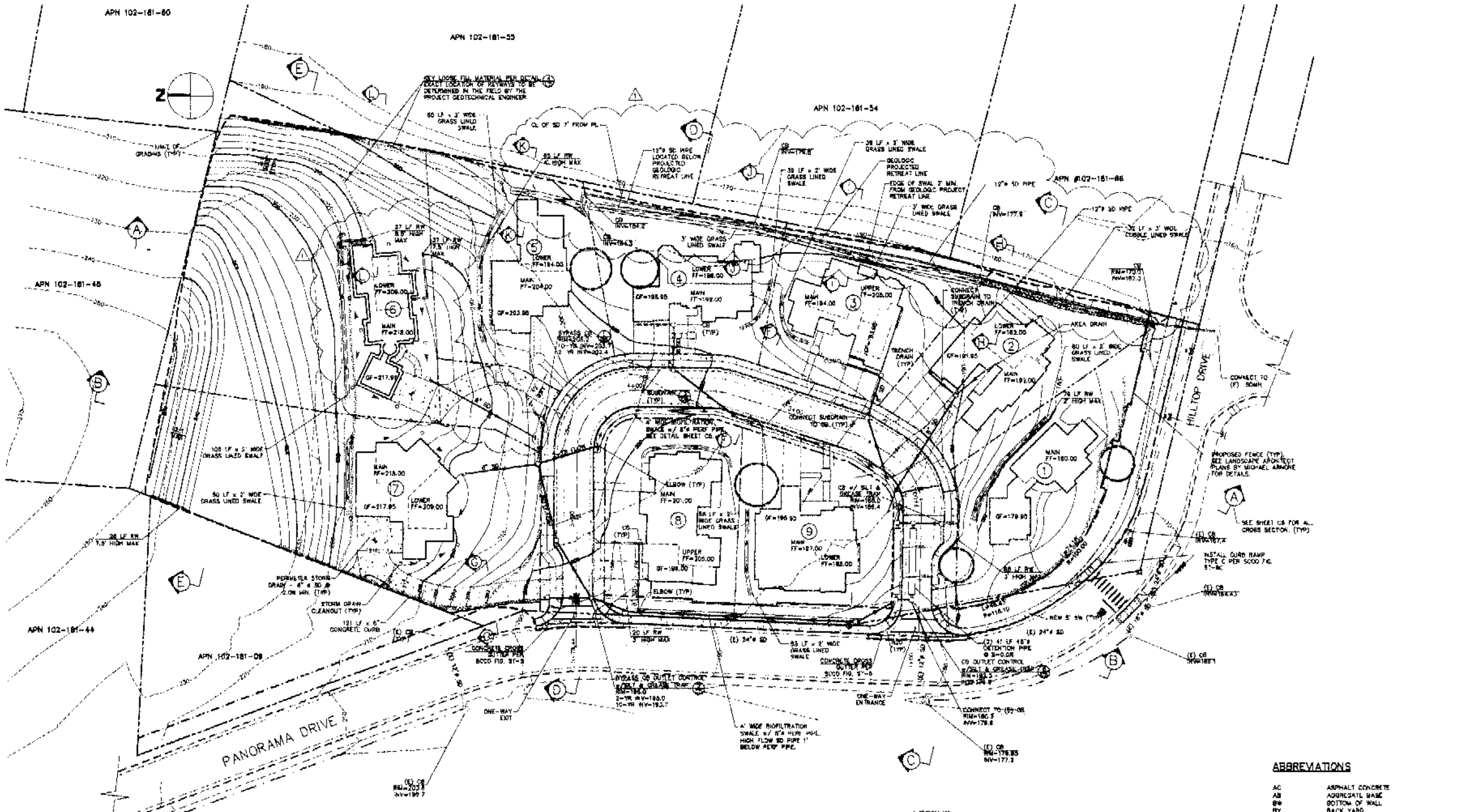
SEAVIEW TERRACE SUBDIVISION
FOR
3700 HILLTOP LLC
3700 HILLTOP DRIVE
SANTA CRUZ COUNTY, CALIFORNIA
APN 102-181-08 TRACT NO. 1515

DEMOLITION & TREE PRESERVATION PLAN

project no. 09-011-1
date JUNE 2009
scale AS SHOWN
dwg name CIVIL2.dwg

C-2



PLAN

1 INCH = 30 FEET

APPROXIMATE EARTHWORK QUANTITIES

(CUBIC YARDS)

	EXCAVATION	FILL	NET
ENTIRE SITE	6875	3216	3880 (EXC)
NORTHERN PORTION	5276	2200	3075 (EXC)
SOUTHERN PORTION	1625	2060	235 (FILL)

EXCAVATION & RECOMPACTION AT NORTHERN PORTION OF PROPERTY IS APPROXIMATELY 2200 CUBIC YARDS.

NOTES:
1. EARTHWORK QUANTITIES ARE APPROXIMATE AND SHALL BE INDEPENDENTLY VERIFIED BY THE CONTRACTOR FOR BIDDING PURPOSES.
2. EARTHWORK VOLUMES INCLUDE EXCAVATION TO ROUGH GRADE FOR CONSTRUCTION OF THE RESIDENCES.
3. EXCESS SOIL SHALL BE HAULED OR PLACED IN A COUNTY APPROVED LOCATION.

STORM DRAINAGE NOTES

1. ALL CATCH BASINS AND DRAIN BOXES SHALL HAVE CONCRETE BOTTOMS UNLESS OTHERWISE NOTED. PROVISION FOR PERMANENT BOLD MARKING AT EACH INLET THAT READ: "NO DUMPING – DRAINS TO BAY" SHALL BE PROVIDED.

2. ALL DOWN SPOUTS ON THE RESIDENCES AT LOTS 1–5, 8 AND 9 SHALL BE DISCHARGED ONTO SPLASH BLOCKS AND THEN INTO LANDSCAPING.

3. ALL DOWN SPOUTS ON THE RESIDENCES AT LOTS 6 AND 7 SHALL BE CONNECTED TO PERIMETER STORM DRAIN.

4. ALL STORM DRAINAGE PIPE SHALL BE ADS N12 –HDPE OR PVC SCH 40 PIPE UNLESS OTHERWISE NOTED.

5. SLOPE GROUND AWAY FROM ALL FOUNDATIONS @ 5% MIN FOR 10' EXCEPT @ PAVED SURFACES (2% MIN FOR 5')

LEGEND

- EXISTING SEWER MAIN
- EXISTING WATER MAIN
- EXISTING SD
- PROPOSED STORM DRAIN PIPE
- PROPOSED PERIMETER STORM DRAIN PIPE
- PROPOSED CATCH BASIN
- PROPOSED SWALE
- PROPOSED FIRE AND DOMESTIC WATER SERVICE
- PROPOSED RETAINING WALL (NOT TO SCALE)
- (E) SSMH
- PROPOSED SSMH
- SDCO
- FIRE HYDRANT
- WATER VALVE
- LIMIT OF GRADING
- LIMIT OF BENCH AND KEYWAY
- ASPHALT PAVING - 3" AC OVER 8" CLASS 2 AGGREGATE BASE
- CONCRETE PAVING
- PERVIOUS CONCRETE, PAVEMENT OR PAVERS
- TREE TO REMAIN
- TREE PROTECTION
- PROPERTY LINE
- LOT LINE
- (E) SANITARY SEWER EASEMENT
- PROPOSED EASEMENT
- LANDSCAPE EASEMENT
- SD EASEMENT
- SETBACK LINE FROM TOP OF BANK
- DETENTION PIPE
- PROPOSED SEWER LATERAL WITH CLEANOUT
- SS PRIVATE PUMP STATION
- LOWER LEVEL FINISH FLOOR AREA

ABBREVIATIONS

AC	ASPHALT CONCRETE
AB	AGGREGATE BASE
BW	BOTTOM OF WALL
BY	BACK YARD
CB	CATCH BASIN
Ø	DIAMETER
DTL	DETAIL
DWY	DRIVEWAY
(E)	EXISTING
EOP	EDGE OF PAVEMENT
FF	FINISH FLOOR
FG	FINISH GRADE
FY	FRONT YARD
GF	GARAGE FINISH FLOOR
HI-PT	HIGHT POINT
INV	INVERT
LF	LINEAR FEET
MAX	MAXIMUM
N.T.S.	NOT TO SCALE
RIM	RIM ELEVATION
RW	RETAINING WALL
S	SLOPE
SCCO	SANTA CRUZ COUNTY
SQWD	SOQUEL CREEK WATER DISTRICT
SD	STORM DRAIN
SDCO	STORM DRAIN CLEANOUT
SDMH	STORM DRAIN MANHOLE
SS	SANITARY SEWER
SSMH	SANITARY SEWER MANHOLE
SSCO	SANITARY SEWER CLEANOUT
SHT	SHEET
SW	SIDEWALK
SY	SIDE YARD
TYP	TYPICAL
TW	TOP OF WALL
WM	WATER MAIN

TENTATIVE MAP SUBMITTAL

REVISED FOR GEOLOGIC RETREAT ZONE, 3/22/2010

RI Engineering, Inc.
303 Potrero St., Suite 42-202, Santa Cruz, CA 95060
831-425-3901 www.riengineering.com

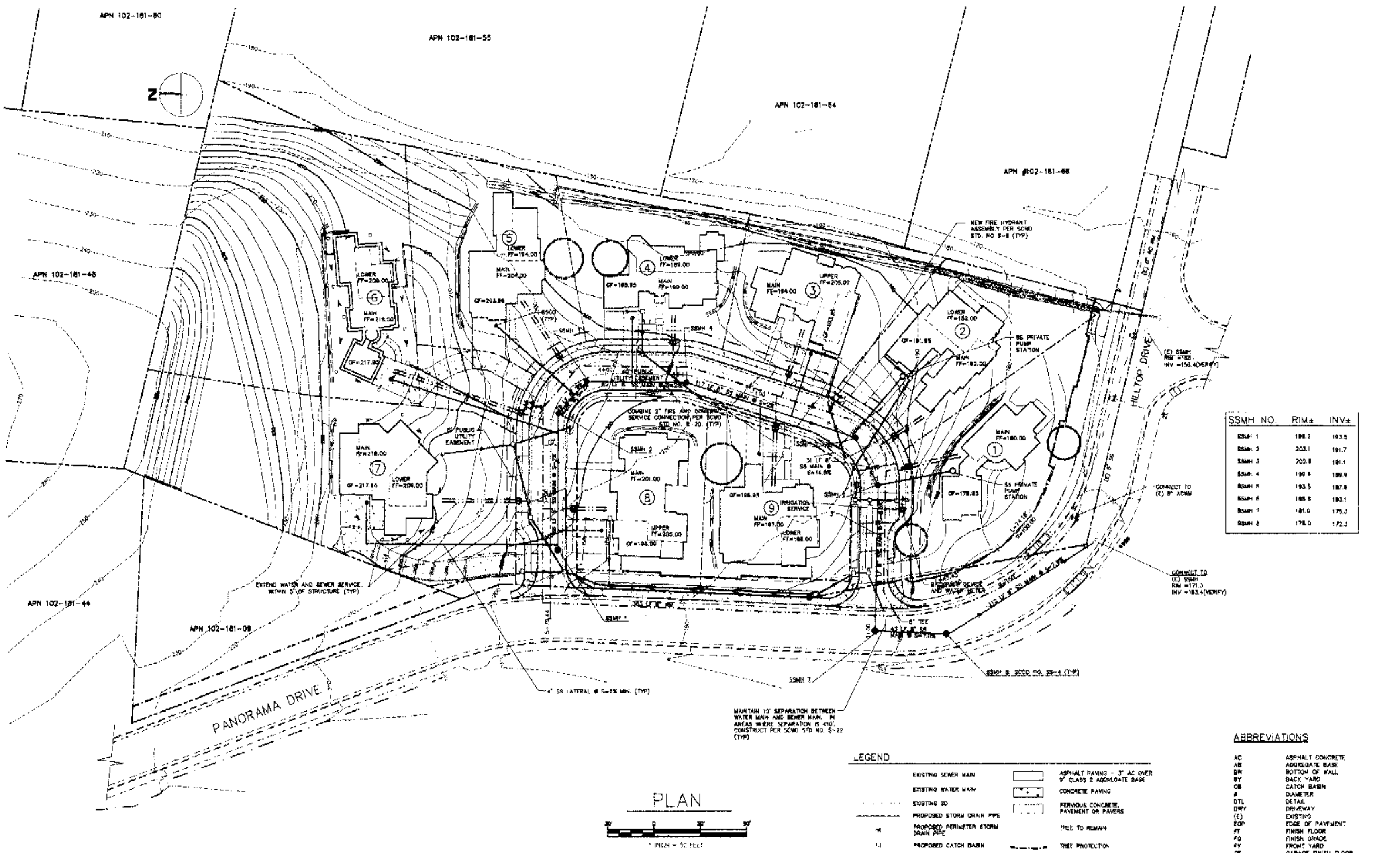
SEAVIEW TERRACE SUBDIVISION
FOR
3700 HILLTOP LLC
3700 HILLTOP DRIVE
SANTA CRUZ COUNTY, CALIFORNIA
APN 102-181-08

TRACT NO. 1515

GRADING AND DRAINAGE

project no. 09-011-1
date JUNE 2009
scale AS SHOWN
dwg name CIVIL 2.dwg

C-3



PLAN

1 INCH = 30 FEET

SANITARY SEWER

1. ALL SANITARY SEWER WORK SHALL CONFORM TO PART 4. "SANITARY SEWER DESIGN," OF THE SANTA CRUZ COUNTY DESIGN CRITERIA.
2. PIPE MATERIAL SHALL BE PVC SDR 35 OR EQUAL.
3. TRENCH BACKFILL SHALL BE PER SCCO FIGURES SS-24, AND SS-26.
4. BACK FLOW PREVENTION DEVICES SHALL BE INSTALLED ON ALL LATERALS WHERE THE FINISHED FLOOR ELEVATION IS LESS THAN ONE FOOT ABOVE THE RIM ELEVATION OF THE NEAREST UPSTREAM MANHOLE OR CLEAN OUT. THE VALVES SHALL BE LOCATED IN SUCH A WAY AS TO PREVENT ANY DAMAGE TO ADJACENT PROPERTY AS A RESULT OF SEWAGE RELEASED THROUGH THE DEVICE, AS NOTED ON FIGURE SS-14.
5. ALL UTILITIES SHALL BE INSTALLED UNDERGROUND.
6. A BACKFLOW DEVICE IS REQUIRED AND IS LOCATED AT THE ENTRANCE OF THE SUBDIVISION.
7. ALL LATERAL CLEANOUTS SHALL BE OUTSIDE OF THE PUBLIC RIGHT OF WAY.
8. LATERALS SHALL BE CONSTRUCTED PERPENDICULAR TO STREET NOT SKEWED.
9. THE EXISTING SEWER LATERAL MUST BE PROPERLY ABANDONED (INCLUDING INSPECTION BY SANTA CRUZ COUNTY SANITATION DISTRICT) PRIOR TO ISSUANCE OF DEMOLITION PERMIT OR RELOCATION OR DISCONNECTION OF STRUCTURE. AN ABANDONMENT PERMIT FOR DISCONNECTION MUST BE OBTAINED FROM THE DISTRICT.
10. SEWER MAINS WITHIN PROPOSED RIGHT-OF-WAY/PUBLIC UTILITY EASEMENT SHALL BE PUBLICLY MAINTAINED.
11. CRITERIA FOR THE SEPARATION OF WATER MAINS AND SANITARY SEWERS SHALL MEET THE REQUIREMENTS OF SOQUEL CREEK WATER DISTRICT STD NO. S-22 AND TO THE STATE OF CALIFORNIA DEPARTMENT OF HEALTH SERVICES.
12. MINIMUM PIPE COVER FOR PUBLIC SEWER IS 6-FT AND 3-FT FOR SEWER LATERALS.
13. MINIMUM SLOPE OF SEWER LATERAL IS 2%.

WATER SERVICE

1. ALL WATER SERVICE WORK SHALL CONFORM TO THE REQUIREMENTS OF THE SOQUEL CREEK WATER DISTRICT.
2. SERVICE PIPE MATERIAL SHALL MEET THE REQUIREMENTS OF SECTION 302, "SERVICE PIPE MATERIAL," OF THE SOQUEL CREEK WATER DISTRICT STANDARD SPECIFICATIONS.
3. METER BOXES SHALL BE CHRISTY CONCRETE PRODUCTS MODEL B-BC.
4. BACKFILL OF WATER SERVICE TRENCHES WITHIN MARTIN DRIVE RIGHT-OF-WAY SHALL BE 2 SACK SAND/CEMENT SLURRY.
5. METER BOXES SHALL BE PLACED ON A 6" MINIMUM THICK BED OF CLASS 2 AGGREGATE BASE COMPACTED TO 95% RELATIVE COMPACTION.
6. WATER SERVICES FOR SITE SHALL BE INSTALLED BY THE CONTRACTOR ACCORDING TO SOQUEL WATER DISTRICT REQUIREMENTS PER DETAILS BY ENGINEER.
7. CRITERIA FOR THE SEPARATION OF WATER MAINS AND SANITARY SEWERS SHALL MEET THE REQUIREMENTS OF SOQUEL CREEK WATER DISTRICT STD NO. S-22 AND TO THE STATE OF CALIFORNIA DEPARTMENT OF HEALTH SERVICES.

LEGEND

- EXISTING SEWER MAIN
- EXISTING WATER MAIN
- EXISTING SD
- PROPOSED STORM DRAIN PIPE
- PROPOSED PERIMETER STORM DRAIN PIPE
- PROPOSED CATCH BASIN
- PROPOSED SWALE
- PROPOSED FIRE AND DOMESTIC WATER SERVICE
- PROPOSED RETAINING WALL (NOT TO SCALE)
- (E) SSMH
- PROPOSED SSMH
- SCCO
- FIRE HYDRANT
- WATER VALVE
- LIMIT OF GRADING
- LIMIT OF BENCH AND KEYWAY
- ASPHALT PAVING - 3" AC OVER 9" CLASS 2 AGGREGATE BASE
- CONCRETE PAVING
- PERVIOUS CONCRETE, PAVEMENT OR PAVERS
- TREE TO REMAIN
- TREE PROTECTION
- PROPERTY LINE
- LOT LINE
- (E) SANITARY SEWER EASEMENT
- PROPOSED EASEMENT
- LANDSCAPE EASEMENT
- SS EASEMENT
- SETBACK LINE FROM TOP OF BANK
- DETENTION PIPE
- PROPOSED SEWER LATERAL WITH CLEANOUT
- SS PRIVATE PUMP STATION
- LOWER LEVEL FINISH FLOOR AREA

SSMH NO.	RIM±	INV±
SSMH 1	198.2	193.5
SSMH 2	203.1	191.7
SSMH 3	202.8	191.1
SSMH 4	199.8	189.9
SSMH 5	193.5	187.9
SSMH 6	188.8	183.1
SSMH 7	181.0	175.3
SSMH 8	178.0	172.3

ABBREVIATIONS

AC	ASPHALT CONCRETE
AB	AGGREGATE BASE
BW	BOTTOM OF WALL
BY	BACK YARD
CB	CATCH BASIN
Ø	DIAMETER
DTL	DETAIL
DWY	DRIVEWAY
(E)	EXISTING
EOP	EDGE OF PAVEMENT
FF	FINISH FLOOR
FG	FINISH GRADE
FY	FRONT YARD
GF	GARAGE FINISH FLOOR
HI-PT	HIGHT POINT
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N.T.S.	NOT TO SCALE
RIM	RIM ELEVATION
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SCCO	SANTA CRUZ COUNTY
SCWD	SOQUEL CREEK WATER DISTRICT
SD	STORM DRAIN
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SDMH	STORM DRAIN MANHOLE
SS	SANITARY SEWER
SSMH	SANITARY SEWER MANHOLE
SSCO	SANITARY SEWER CLEANOUT
SHT	SHEET
SW	SIDEWALK
SY	SIDE YARD
TYP	TYPICAL
TW	TOP OF WALL
WM	WATER MAIN

TENTATIVE MAP SUBMITTAL

REVISED FOR GEOLOGIC HETREAT ZONE 3/23/2010

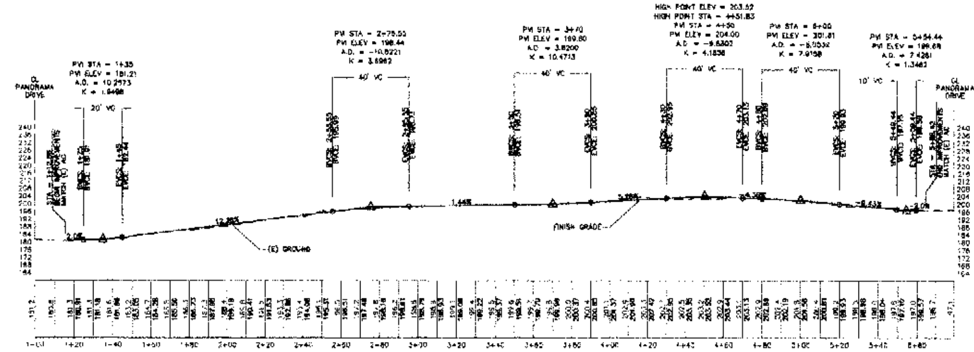
RI Engineering, Inc.
303 Potrero St., Suite 42-202, Santa Cruz, CA 95060
831-425-3901 www.riengineering.com

SEAVIEW TERRACE SUBDIVISION
FOR
3700 HILLTOP LLC
3700 HILLTOP DRIVE
SANTA CRUZ COUNTY, CALIFORNIA
APN 102-181-08
TRACT NO. 1515

UTILITY PLAN

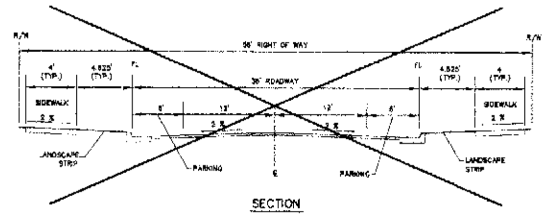
project no. 08-011-1
date JUNE 2009
scale AS SHOWN
dwg name CIVIL2.dwg

C-4



ONE-WAY ROAD PROFILE

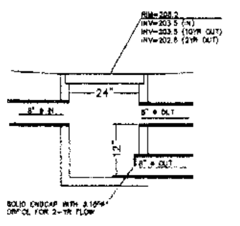
SCALE: 1" = 30'-0" H,V



SECTION

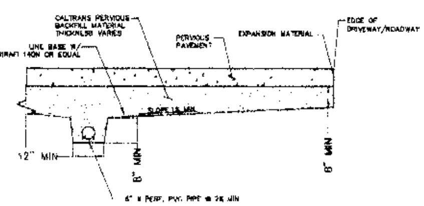
STANDARD URBAN LOCAL STREET WITH PARKING

N.T.S.



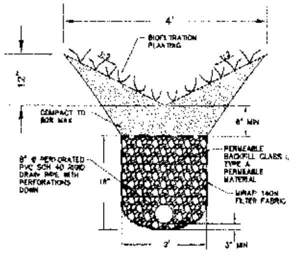
FLOW SPLITTER DETAIL

NTS



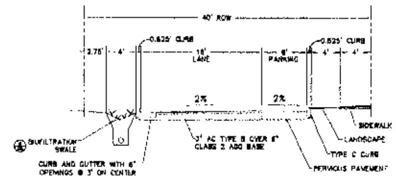
PERVIOUS PAVEMENT SUBDRAIN DETAIL

NTS



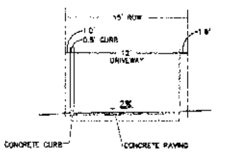
BIOFILTRATION SWALE DETAIL

NTS



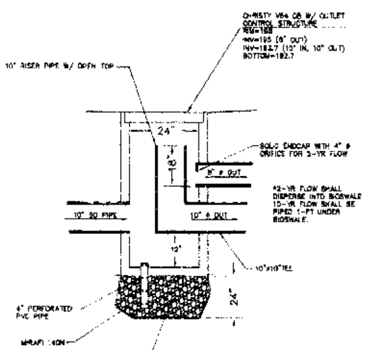
PROPOSED ONE-WAY ROAD SECTION F-F

NTS



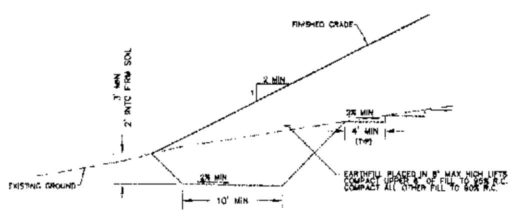
PROPOSED 12-FT DRIVEWAY SECTION G-G

NTS



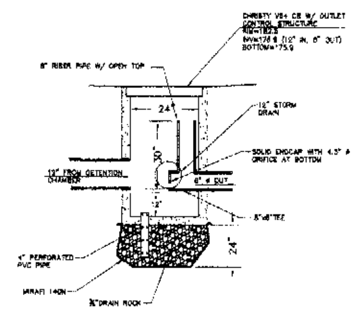
ORIFICE CONTROL SILT AND GREASE TRAP w/ FLOW SPLITTER DETAIL

NTS



FILL KEYWAY DETAIL

NTS



OUTLET CONTROL SILT AND GREASE TRAP STRUCTURE DETAIL

NTS

TENTATIVE MAP SUBMITTAL

REVISED FOR GEOLOGIC SETBACK ZONE, 3/23/2010	

RI Engineering, Inc.

303 Potrero St., Suite 42-202, Santa Cruz, CA 95060

831-425-3901 www.riengineering.com

SEAVIEW TERRACE SUBDIVISION
FOR
3700 HILLTOP LLC
3700 HILLTOP DRIVE
SANTA CRUZ COUNTY, CALIFORNIA
APN: 102-181-08

TRACT NO. 1515

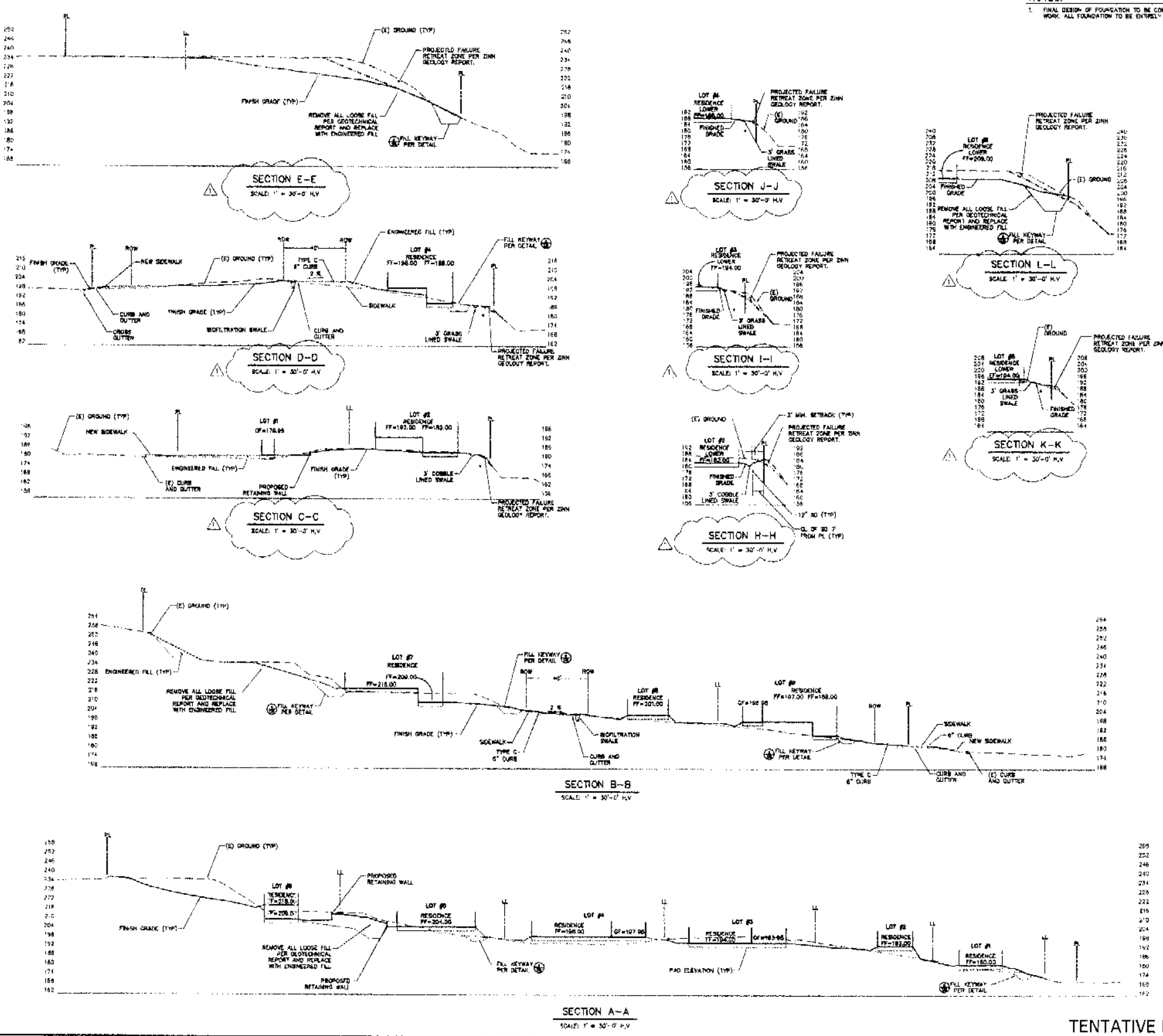
PROFILES

project no.	09-011-1
date	JUNE 2009
scale	AS SHOWN
dwg name	CIVIL2.dwg

C-5

NOTES:

1. FINAL DESIGN OF FOUNDATION TO BE COMPLETED DURING FINAL MAP PHASE OF WORK. ALL FOUNDATION TO BE ENTIRELY ON FILL OR NATIVE SOIL.



TENTATIVE MAP SUBMITTAL

REVISED FOR GEOLOGIC RETREAT ZONE 3/23/2010

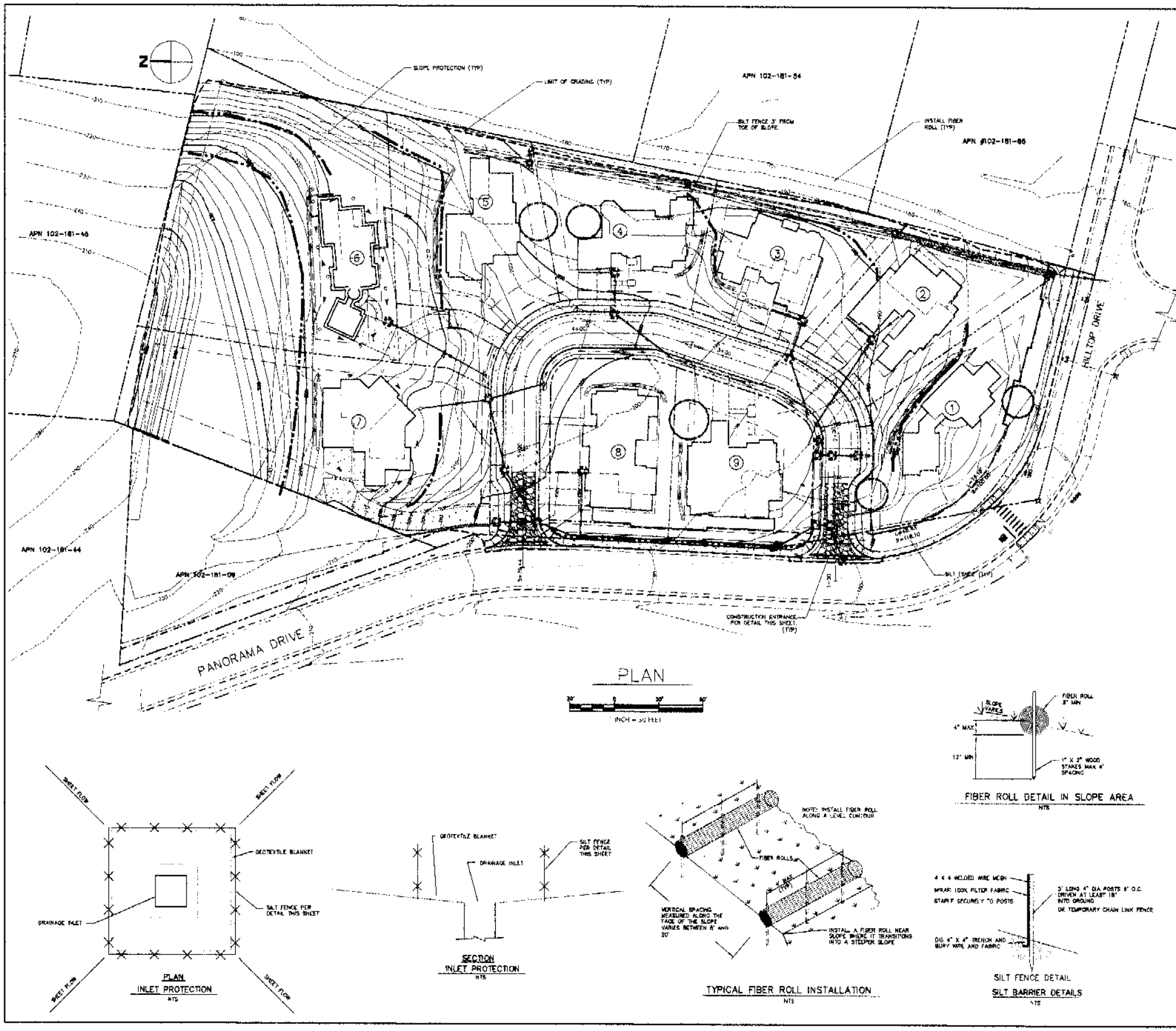
RJ Engineering Inc.
303 Potrero St., Suite 42-202, Santa Cruz, CA 95060
831-425-3901 www.rjengineering.com

SEAVIEW TERRACE SUBDIVISION
FOR
3700 HILLTOP LLC
3700 HILLTOP DRIVE
SANTA CRUZ COUNTY, CALIFORNIA
APN 102-161-08
TRACT NO. 1515

CROSS SECTIONS

project no.	09-011-1
date	JUNE 2009
scale	AS SHOWN
dwg name	CIVIL2.dwg

C-6



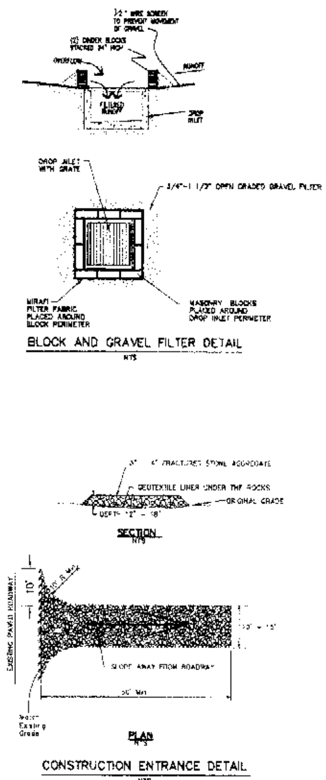
EROSION CONTROL MEASURES

1. EROSION IS TO BE CONTROLLED AT ALL TIMES ALTHOUGH SPECIFIC MEASURES SHOWN ARE TO BE IMPLEMENTED AT A MINIMUM BY OCTOBER 15.
2. UNLESS SPECIFIC MEASURES ARE SHOWN OR NOTED ON THIS PLAN, ALL COLLECTED RUNOFF SHALL BE CARRIED TO DRAINAGE COURSES IN LINED CONDUITS DISCHARGE SHALL BE IN THE LOCATIONS SHOWN ON THE PLANS.
3. THE DESIRED END RESULT OF THESE MEASURES IS TO CONTROL SITE EROSION AND PREVENT SEDIMENT TRANSPORT OFF THE SITE. IT SHALL BE THE DEVELOPER'S RESPONSIBILITY TO SEE THAT ANY ADDITIONAL MEASURES NECESSARY TO MEET THIS GOAL ARE IMPLEMENTED. IF FAILED INSPECTIONS BY CITY STAFF SHOW THIS GOAL IS NOT BEING MET, ADDITIONAL MEASURES MAY BE REQUIRED.
4. ALL DISTURBED AREAS NOT CURRENTLY BEING USED FOR CONSTRUCTION SHALL BE SEEDED WITH THE FOLLOWING:

   HORDEUM SPP. (WINTER BARLEY) 35#/ACRE
5. AFTER SEEDING, STRAW MULCH WILL BE APPLIED IN 4" (AVG.) LAYERS.
6. AMMONIUM PHOSPHATE FERTILIZER, 6-3-3, SHALL BE APPLIED AT A RATE OF 30 LBS. PER ACRE. ON SLOPES GREATER THAN 20% EROSION CONTROL BLANKET (NORTH AMERICAN GREEN) SHALL BE APPLIED.
7. SILT BARRIERS SHALL BE PLACED END TO END AND STAKED DOWN ALONG THE BOTTOM OF ALL GRADED SLOPES.
8. A CONTINGENCY PLAN FOR DRAINAGE CONTROL DURING CONSTRUCTION PHASES SHALL BE SUBMITTED BY THE CONTRACTOR.

EROSION CONTROL LEGEND

- TREE PROTECTION
- INSTALL SILT FENCE PER DETAILS THIS SHEET
- INSTALL FIBER ROLL PER DETAILS THIS SHEET
- INSTALL CATCH BASIN PROTECTION PER DETAIL THIS SHEET
- INSTALL STABILIZED CONSTRUCTION ENTRANCE PER DETAIL THIS SHEET
- SLOPE PROTECTION – NORTH AMERICAN GREEN S150 STRAW BLANKET OR APPROVED EQUAL



TENTATIVE MAP SUBMITTAL

REVISED FOR GEOLOGIC RETREAT ZONE, 3/24/2010

RI Engineering, Inc.
303 Potrero St., Suite 42-202, Santa Cruz CA 95060
831-425-3901 www.riengineering.com

SEAVIEW TERRACE SUBDIVISION
FOR
3700 HILLTOP LLC
3700 HILLTOP DRIVE
SANTA CRUZ COUNTY, CALIFORNIA
APN 102-181-06
TRACT NO. 1515

EROSION CONTROL

project no. 00-011-1
date JUNE 2009
scale AS SHOWN
dwg name CIVIL2.dwg

C-7

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

July 17, 2007

3700 Hilltop LLC etal
150 Almaden Blvd., Suite 700
San Jose, CA, 95113

Subject: **Review of Geotechnical Investigation by Amso Consulting Engineers Dated January 18, 2006 and July 29, 2005, Project No. 3312; and, Review of Engineering Geology Report by Zinn Geology Dated March 28, 2007; Project No. 2007009-G-SC;** ***APN: 102-181-08, Application No's: 05-0493***

Dear Applicant:

The purpose of this letter is to inform you that the Planning Department *has accepted* the subject reports. Our acceptance is based upon an understanding that the development will be located behind the Zinn Geology setback line as indicated in the attached diagram. With that understanding, 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. The authors of the reports shall write the *plan review letters*. The letters shall state that the project plans conform to the report's recommendations, and specifically approve the drainage plan including the drainage near the existing cut slopes. The engineering geologist's must review the concept of the attached diagram and complete any additional work necessary he deems necessary to accept the design indicated in the diagram.

4. The project geotechnical engineer, or a similar qualified testing laboratory, must be employed to inspect and test all the fill material placed on the site. The relative compaction tests' location must be noted on a copy of the approved grading plans, and all related test data must be included in a table with a reference number that correlates the table data to the test location indicated on the grading plan. This testing includes the

backfill to the retaining walls. Failure to complete the required documentations will require destructive testing after the completion of the project.

5. Before final inspection, the geotechnical engineer and engineering geologist must confirm in writing that all of the construction complies with the recommendations of the approved reports Before building permit issuance *plan review letters* shall be submitted to Environmental Planning.

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

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

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

Sincerely,

Joe Hanna
County Geologist

Cc: ACE
Zinn Geology
File

NOTICE TO PERMIT HOLDERS WHEN A SOILS REPORT AND ENGINEERING GEOLOGY REPORT HAVE BEEN PREPARED, REVIEWED AND ACCEPTED FOR THE PROJECT

After issuance of the building permit, the County requires your soils engineer and engineering geologist to be involved during construction. Several letters or reports are required to be submitted to the County at various times during construction. They are as follows:

1. **When a project has engineered fills and / or grading,** a letter from your soils engineer must be submitted to the Environmental Planning section of the Planning Department prior to foundations being excavated. This letter must state that the grading has been completed in conformance with the recommendations of the soils report. Compaction reports or a summary thereof must be submitted.

2. **Prior to placing concrete for foundations,** letters from the soils engineer and engineering geologist must be submitted to the building inspector and to Environmental Planning stating that the soils engineer and engineering geology have observed the foundation excavation and that it meets the recommendations of the soils engineering report and engineering geology reports.

3. **At the completion of construction,** *final letters* from your soils engineer and engineering geologist are required to be submitted to Environmental Planning that summarizes the observations and the tests the soils engineer and engineering geology have made during construction. The final letter must also state the following: "Based upon our observations and tests, the project has been completed in conformance with our geotechnical and engineering geologist recommendations."

   If the *final soils letters* identifies any items of work remaining to be completed or that any portions of the project were not observed by the soils engineer or engineering geologist, you will be required to complete the remaining items of work and may be required to perform destructive testing in order for your permit to obtain a final inspection.

Dees & Associates, Inc.
Geotechnical Engineers
501 Mission Street, Suite 8A Santa Cruz, CA 95060 Phone (831) 427-1770 Fax (831) 427-1794

March 25, 2010 Project No. SCR-0281

3700 HILLTOP, LLC
% Jerry Whitney
1950 Koopmans Avenue
Santa Cruz, California 95062

Subject: Geotechnical Plan Review #6

Reference: Proposed Land Division
3600 Hilltop Drive, Soquel
APN 102-181-08
Santa Cruz County, California

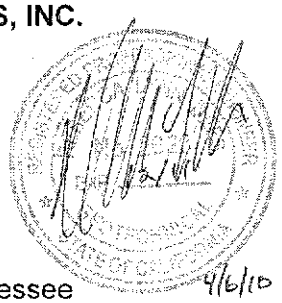
Dear Mr. Whitney:

As requested, we have reviewed the revised grading, drainage and erosion control plans, Sheets C-1 to C-7, for the 9 lot land division proposed at the referenced site. The plans were prepared by R.I. Engineering and are last dated March 23, 2010. Geotechnical recommendations for the project were presented in our letter, last dated June 26, 2008.

The aforementioned plans are in general conformance with our recommendations. If you have any questions, please call our office.

Very truly yours,

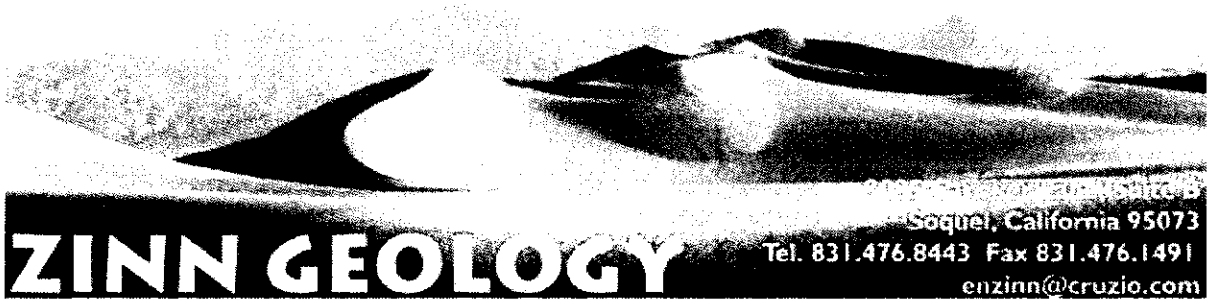
DEES & ASSOCIATES, INC.



Rebecca L. Dees
Geotechnical Engineer
G.E. 2623

4/6/10

Copies: 4 to Addressee
1 to R.I Engineering
1 to Zinn Geology



ZINN GEOLOGY
Soquel, California 95073
Tel. 831.476.8443 Fax 831.476.1491
enzinn@cruzio.com

24 March 2010 Job #2007009-G-SC

3700 Hilltop, LLC
c/o Scott Eschen
19770 Glen Una Drive
Saratoga, CA 95070

Re: Review of revised civil engineering plans for proposed Seaview Terrace subdivision
3700 Hilltop Drive
Soquel, California 95073
County of Santa Cruz APN 102-181-08

Dear Mr. Eschen:

We have reviewed the recently revised sheets of civil engineering plans submitted to our firm via email on 24 March 2010, Sheets C-3 and C-6, scales as shown, with a revised date of 23 March 2010, prepared by R.I. Engineering, Inc.

The purpose of our review was to ascertain if the plans are in general conformance with the geologic conditions encountered during our original geological investigation and with conclusions and recommendations issued in said report.

Prior to this review of these plans, we worked closely with R.I. Engineering and drew some additional geological cross sections, most of which coincide with the R.I. Engineering sections (see Plates 1 and 2 attached to this letter). Our cross sections also depict our proposed long term retreat line for the easternmost cut slope in section, utilizing the geological retreat criteria issued by our firm in our original report dated 27 March 2007. The following excerpt from that report outlines the criteria: "assuming that the cut slope along the eastern margin of the property would eventually lay back to an angle of 1:1 (h:v) until it intersected the colluvium, at which point the slope would flatten to a lower angle of 2:1 (h:v). It is important to note that it is our opinion that this process of the cut slope retreating to a shallower angle will occur over time through erosion and small, shallow, incremental failures, rather than through one catastrophic event." The attached maps and sections reflect this criteria in the new work with the resultant revised retreat line in plan view and section view.

It is our opinion that the geological aspects of sheets C-3, and C-6 are in general conformance with the geological conditions encountered during our original geological investigation and with the recommendations issued in our original report dated 27 March 2007.

LIMITATIONS

Our review was performed in accordance with the usual and current standards of the profession, as they relate to this and similar localities. No other warranty, expressed or implied, is provided as to the conclusions and professional advice presented in this review.

Our review of the plans cited at the beginning of this letter was limited to the **geological aspects only**. Review of all other aspects of the plans was beyond our purview on the project and are specifically excluded from the scope of this review. Our firm makes no warranty, expressed or implied, as to the adequacy of other aspects of the plans.

Conditions revealed during construction may vary with respect to the findings in the original investigation. Should this occur, the changed conditions must be evaluated by the Project Geologist Of Record and revised recommendations provided as required.

This letter is issued with the understanding that it is the responsibility of the Owner, or his Representative, to ensure that the information and recommendations presented herein are brought to the attention of the Architect and Engineers for the project and incorporated into the plans, and that the Contractor and Subcontractors implement such recommendations in the field.

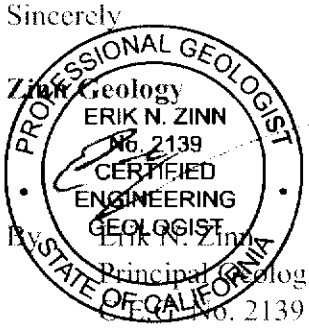
This firm does not practice or consult in the field of safety engineering. We do not direct the Contractor's operations, and we are not responsible for other than our own personnel on the site; therefore, the safety of others is the responsibility of the Contractor. The Contractor should notify the Owner if he considers any of the recommended actions presented herein to be unsafe.

The findings of this review are considered valid as of the present date. However, changes in the conditions of a site can occur with the passage of time, whether due to natural events or human activity on this or adjacent sites. In addition, changes in applicable or appropriate codes and standards may occur as a result of legislation or a broadening of knowledge. Accordingly, this review may become invalidated, wholly or partially, by changes outside our control. Therefore, this plan review is subject to review and revision as changed conditions are identified.

If you have any questions regarding this letter, please do not hesitate to contact our office.

Sincerely

Zinn Geology



By: Erik N. Zinn
Principal Geologist
C.E.G. No. 2139

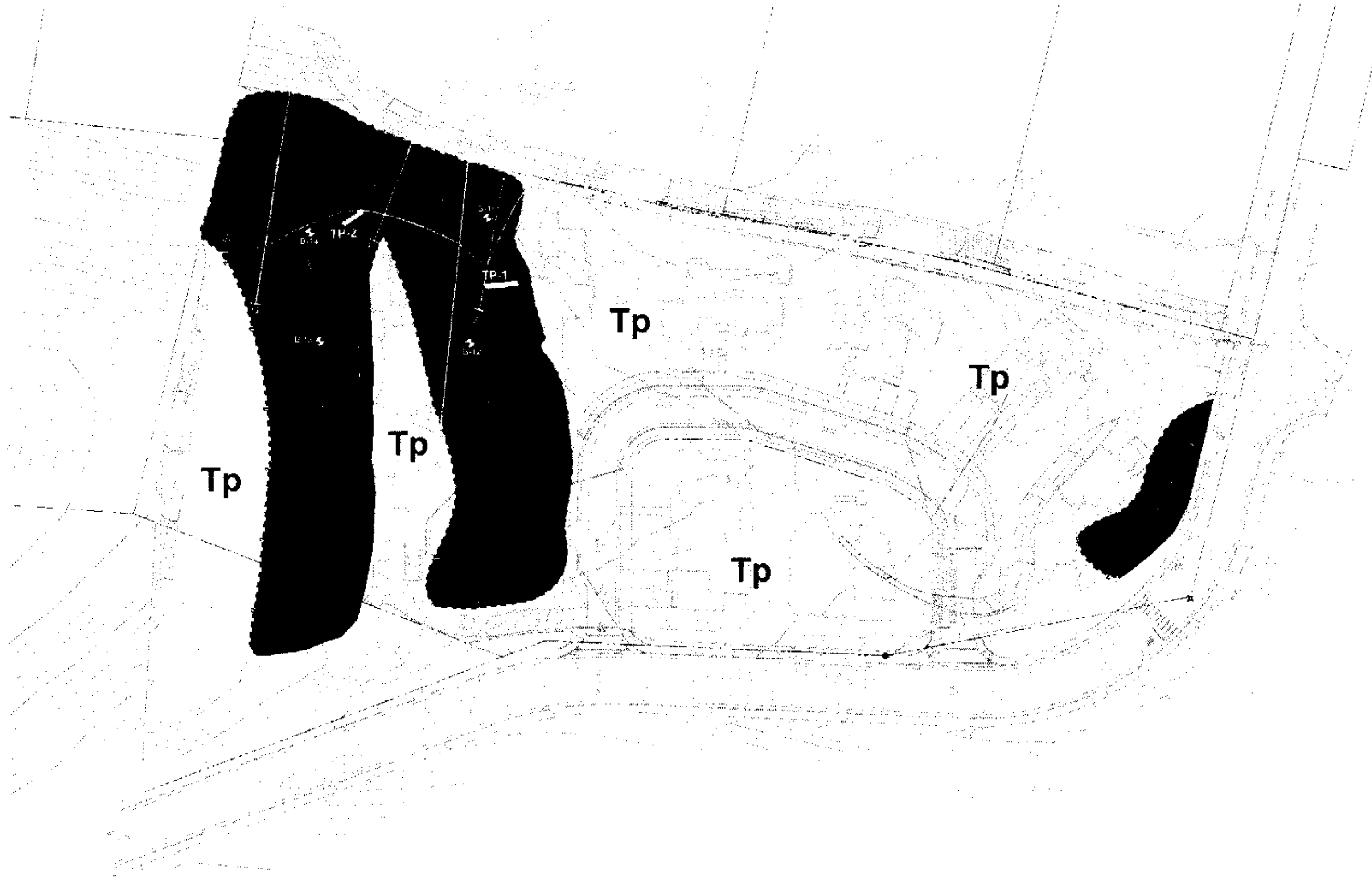
ec: Richard Irish - R.I. Engineering, Inc.
Becky Dees - Dees & Associates
Jerry Whitney - West Sierra Design Group

Attachments: Plate 1 - Geologic Site Map
Plate 2 - Geologic Cross Sections

ZINN GEOLOGY

GEOLOGIC SITE MAP

Plate 1



BASE MAP: Derived from digital map Sheet C Grading And Drainage - Seaview Terrace Subdivision For 3700 Hilltop LLC - 3700 Hilltop Drive - Santa Cruz County, California. APN 102-181-06, prepared by R.I. Engineering, dated June 2009, Project No. 09-011-F. Intended scale for publication one inch equals thirty feet.

EXPLANATION

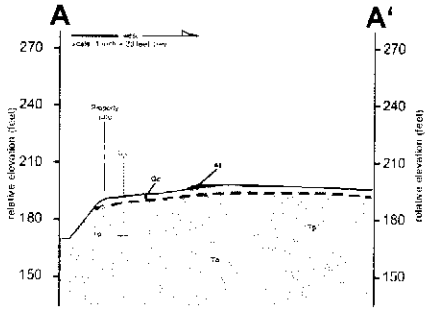
EARTH MATERIALS

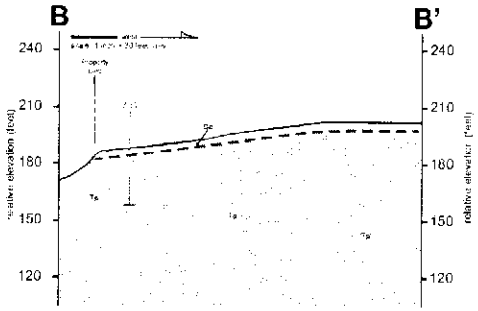
Af	Artificial fill
Tp	Purisima Formation sandstone bedrock

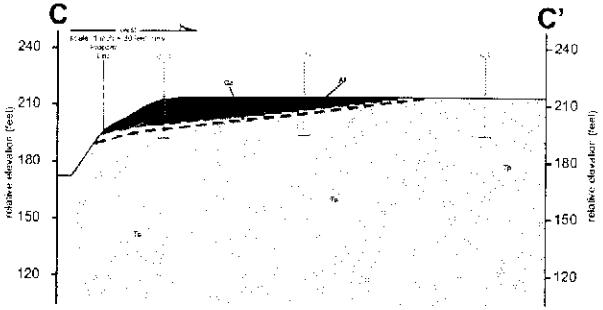
SYMBOLS

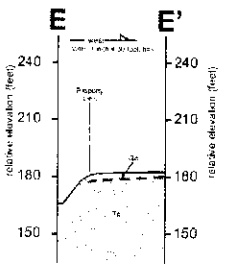
Location of geologic cross section (see Plate 2)

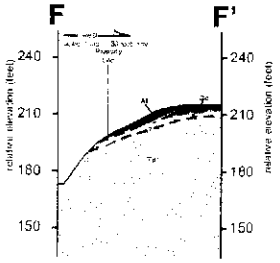
Earth materials contact, queried where approximate, dashed where uncertain

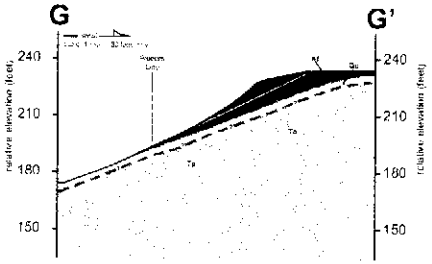


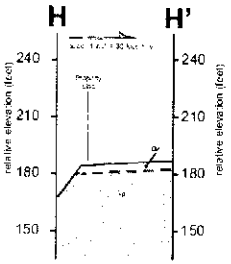


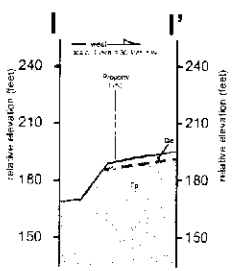


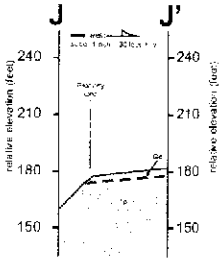


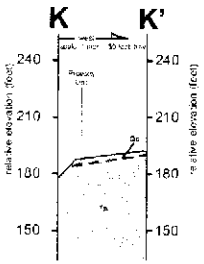


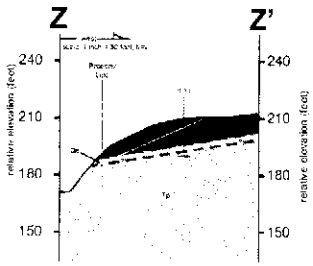


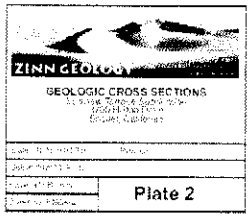












EXPLANATION

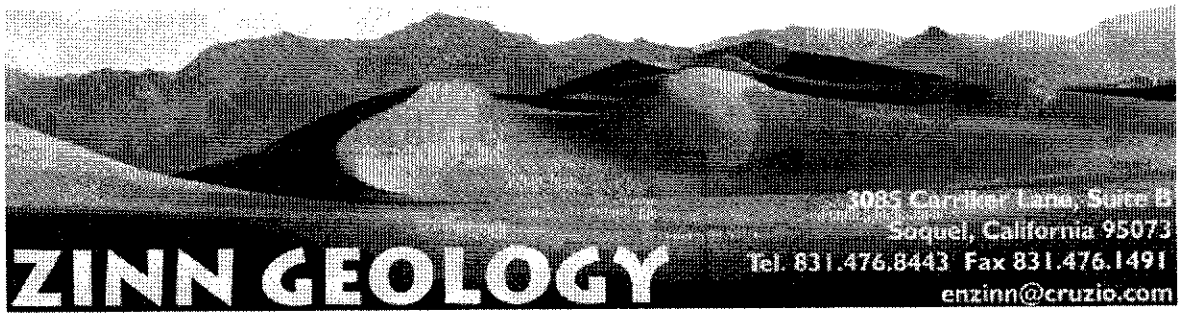
EARTH MATERIALS

Af

Qc

Tp

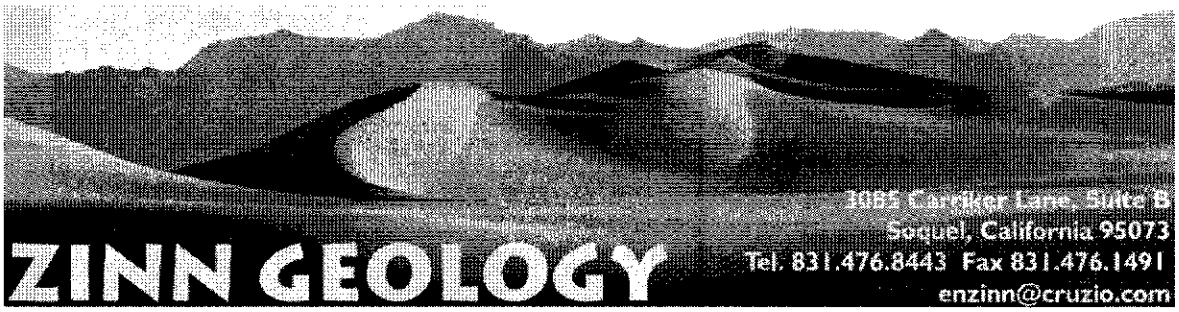
SYMBOLS



GEOLOGIC INVESTIGATION FOR PROPOSED SUBDIVISION
Lands of Sea Coast Partners
3700 Hilltop Drive
Soquel, California 95073
County of Santa Cruz APN 102-181-08

Job #2007009-G-SC
28 March 2007

Engineering Geology ⚒ Coastal Geology ⚒ Fault & Landslide Investigations



28 March 2007 Job #2007009-G-SC

Sea Coast Partners
Attention: Scott Eschen
c/o Fortune Contract
1110 La Avenida
Mountain View, CA 94043

Re: Geologic investigation for proposed subdivision
3700 Hilltop Drive
Soquel, California 95073
County of Santa Cruz APN 102-181-08

Dear Mr. Eschen:

Our geologic report on the property referenced above is attached. This report documents geologic conditions on the subject property and addresses potential hazards and attendant risks to the developments being proposed for this subdivision. The geological hazards identified for this project include landsliding, erosion, differential bearing conditions, and seismic shaking. Based on the information gathered and analyzed, it is our opinion that the proposed subdivision and development will be geologically suitable and subject to an ordinary risk, provided our recommendations are followed. Appendix B should be reviewed in detail by the property owner, to determine whether an "ordinary risk" as defined in the appendix is acceptable. If this level of risk is unacceptable to the property owner, then the risk should be further mitigated to an acceptable level.

In our opinion, the pivotal hazard and risk posed to the proposed developments is the future retreat of the cut slope located along the eastern property margin. The risk related to this hazard is greater than ordinary for Lots 6, 7 and 10 if left unmitigated. We have met with the design team prior to issuance of this report to discuss this hazard. The consensus at that time was that the most prudent and economical solution for this project would be to protect the development on Lots 6, 7 and 10 from the predicted retreat of the cut slope through the installation of an engineered pin pile wall in conjunction with the originally proposed grading plan.

The net effect of the proposed hybrid plan of grading and construction of a pin pile wall will be to remove a portion of the surcharge load of earth materials at the top of the cut slope, thereby

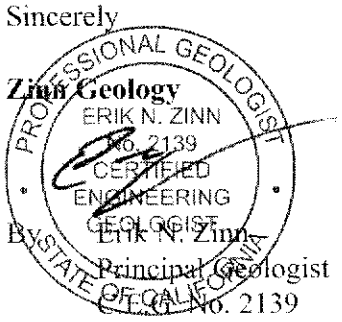
lowering the likelihood (or at the very least raising the threshold) of future failures. Additionally, the engineered drainage that will presumably accompany future civil engineering plans will serve to improve the existing drainage and erosion problems stemming from surface drainage that is currently allowed to flow over the top of the cut slope. In essence, the project will improve the existing slope conditions, as it is currently conceptually proposed. Although we haven't assessed the potential geologic hazards and attendant risks posed to existing residences downslope from the subject property by landsliding and drainage issues, we feel it is fair to say that the proposed development will lower the potential for those hazards to impact the residences in the future.

As noted above we also identified other more ubiquitous hazards, such as erosion, differential settlement (triggered by differential bearing conditions), and seismic shaking. These hazards and their attendant risks are covered in greater detail in the body of the report. We have issued mitigation recommendations where warranted to reduce any elevated risks to ordinary.

This report should be distributed to all the pertinent project design professionals. The project geotechnical, civil and structural engineers, as well as the project architect should read this report prior to finalizing their respective investigations, plans and reports and incorporate our recommendations where warranted. We look forward to interacting with design team while they are finalizing their plans and reviewing the forthcoming plans issued by the project civil and structural engineers and project architect.

If you have any questions or comments regarding this report, please contact us at your earliest convenience.

Sincerely



Zinn Geology

By Erik N. Zinn
Principal Geologist
C.E.G. No. 2139

"repeatable high ground acceleration" (after Ploessel and Slossen, 1974) and is generally considered to represent the large number of lower amplitude peaks on an accelerogram recording. This suggests that the mean peak horizontal ground acceleration of 0.54 g would generate an EPA of approximately 0.41 g.

The duration of strong shaking is dependent on magnitude. Dobry et al. (1978) have suggested a relationship between magnitude and duration of "significant" or strong shaking expressed by the formula:

Log D = 0.432 M - 1.83 (where D is the duration and M is the magnitude).

On the basis of the above relationship, the duration of strong shaking associated with a magnitude 7.0 earthquake (the characteristic earthquake for the Zayante fault zone) is estimated to be about 16 seconds. In contrast, the duration of strong shaking associated with a magnitude 7.9 earthquake (the characteristic earthquake for the San Andreas fault) is estimated to be about 38 seconds. Considering the recurrence intervals of the San Andreas and Zayante faults, the residence is much more likely to experience the characteristic event on the San Andreas, with lower peak accelerations than the design earthquake on the Zayante but lasting more than two times as long. Bear in mind that the duration of strong seismic shaking may be even more critical as a design parameter than the peak acceleration itself.

REVIEW OF SOIL INVESTIGATION REPORT

As noted in prior sections, we have reviewed the soil investigation report and supplemental letters issued by Amso Consulting Engineers for this project. Their report is in general conformance with our conclusions and recommendations issued for this report, with some minor exceptions.

We agree with the substance of the Amso Consulting Engineers report and letters - the layout of the proposed subdivision is suitable, provided that the foundations are adequately designed and embedded, and that all non-engineered fills are removed or replaced with properly engineered fill and associated cuts and a properly designed drainage scheme is installed.

We do disagree with Amso Consulting Engineers' assessment of the landsliding hazard for the project, as noted in the prior sections. As noted previously, this partially stems from the results of our qualitative analysis, as well as our experience in assisting geotechnical engineers in the Monterey Bay area with selecting the appropriate quantitative analyses for specific geological settings and providing them with the appropriate geological parameters for the model. We have discussed the results and implications of our investigation with Basil Amso, and he has concluded that our geological approach to predicting future retreat of the cut slope along the eastern property margin is prudent and feasible from a geotechnical engineering perspective.

We would like to take this opportunity to comment on the controversial topic of the appropriate seismic site coefficient to utilize for the psuedostatic model for quantitative slope stability analyses of ***soils***. For this type of geological setting, we typically recommended that the project geotechnical engineer follow the simplified method prescribed in the paper by Ashford and Sitar (2002) using our calculated estimated mean peak ground acceleration. Although their method is prescribed for central California coastal bluff settings, steep cut slopes with mostly Tertiary-age sedimentary bedrock exposed closely mimic that geological setting, particularly when one considers that they are set in identical seismotectonic settings. Therefore, if any future quantitative slope stability analyses are performed, we recommend that the project geotechnical engineer utilize geological parameters provided by our firm and that they derive the seismic site coefficient utilizing the method prescribed by Ashford and Sitar (2002).

CONCLUSIONS

Based on the information gathered and analyzed, it is our opinion that the proposed subdivision layout and building envelopes shown Plate 1 will be geologically suitable and subject to an "ordinary risk", provided our recommendations are followed. Appendix B should be reviewed in detail by the property owner, to determine whether an "ordinary risk" as defined in the appendix is acceptable. If this level of risk is unacceptable to the property owner, then the risk should be further mitigated to an acceptable level. It is important to note that the envelopes portrayed upon Plate 1 are only geologically viable if our recommendations are followed.

It appears that there are several potential landsliding "hot spots" on the subject property that need to be mitigated. All but one area appear to be adequately mitigated by the proposed conceptual layout of grading and retaining walls portrayed by SSA Landscaping Architects on their "Site Plan" (used as the base map for our Plate 1). The unretained steep cut slope exposing colluvium and Purisima Formation sandstone bedrock abutting the eastern property line poses a prospective hazard with a greater than ordinary risk to the proposed development on Lots 6, 7 and 10. This hazard is directly linked to the fact that the cut slope on the adjacent property is overly steep for the exposed earth materials and has inadequate drainage control. The project design team, consisting of Basil Amso of Amso Consulting Engineers (the project geotechnical engineer), Mark Baginski of SSA Landscape Architects (the project architect), and Peter Haas of Fall Creek Engineering (the project civil engineer) appears to unanimously approve of our approach at assessing this hazard from their respective areas of expertise. It was concluded by the design team at a meeting earlier this winter that the hazard and greater than ordinary risk associated with future retreat of the cut slope would be best mitigated through the design and installation of a pin pile wall in the vicinity of Lots 6, 7 and 10, in concert with the grading recommendations originally issued by Amso Consulting Engineers that require removal of all non-engineered fill and loose soils under the proposed developments. In our opinion, this recommendation will adequately mitigate the hazard and reduce the risk to ordinary.

The net effect of the proposed hybrid plan of grading and construction of a pin pile wall will be to remove a portion of the surcharge load of earth materials at the top of the cut slope, thereby

lowering the likelihood (or at the very least raising the threshold) of future failures. Additionally, the engineered drainage that will presumably accompany future civil engineering plans will serve to improve the existing drainage and erosion problems stemming from surface drainage that is currently allowed to flow over the top of the cut slope. In essence, the project will improve the existing slope conditions, as it is currently conceptually proposed. Although we haven't assessed the potential geologic hazards and attendant risks posed to existing residences downslope from the subject property by landsliding and drainage issues, we feel it is fair to say that the proposed development will lower the potential for those hazards to impact the residences in the future.

Gullies and rills commonly develop in the Purisima Formation bedrock in this area, particularly when water perches seasonally on top of the relatively denser and less permeable bedrock, saturating the overlying colluvium and flowing downhill along the contact between the two units. Hence, it is important that our recommendations regarding drainage be followed to prevent the formation of these erosional features.

The proposed conceptual grading plan presented by SSA Landscaping Architects will result in multiple compound cut-fill pads that are slated to replace the poorly constructed existing cut-fill pads that are scattered across the property. It is important to note that the foundation design is critical for residences that derive support from both cuts and fills. Such a condition may result in differential consolidation of the underlying earth materials, which in turn will result in differential settlement under the foundation. If this process is not taken into account for the project design and construction, significant damage may occur to the foundation and residence. It appears that the project geotechnical engineer anticipated this problem and has proposed several foundation systems, consisting of conventional shallow footings in conjunction with over- excavation or pier and grade beam systems, to mitigate this prospective hazard (Amso Consulting Engineers, 2005). Either foundation system is geologically suitable for this setting in our opinion. We might add further recommendations to the pier and grade beam foundation system by requiring that the project geologist and the project geotechnical engineer observe the drilling of the piers and solely determine the location of competent bedrock to be used for the embedment depth.

The proposed home site is located in an area of high seismic activity and will be subject to strong seismic shaking in the future. The controlling seismogenic source for the subject property is the Zayante fault, 7.0 kilometers to the northeast. The design earthquake on this fault should be a M_w 7.0. Deterministic analysis for the site yields a mean peak ground acceleration of 0.54 g and a mean peak ground acceleration plus one dispersion of 0.82 g.

We agree with the substance of the Amso Consulting Engineers report and letters - the layout of the proposed subdivision is suitable, provided that the foundations are adequately designed and embedded, and that all non-engineered fills are removed or replaced with properly engineered fill and associated cuts and a properly designed drainage scheme is installed. However, we disagree Amso Consulting Engineers' assessment of the landsliding hazard for the project, specifically for the cut slope along the eastern margin of the property, as noted in the prior sections. We have

resolved this discrepancy by qualitatively assessing the slope stability of the cut slope along the eastern property margin. We have discussed the results and implications of our investigation with Basil Amso, and he has concluded that our geological approach to predicting future retreat of the cut slope along the eastern property margin is prudent and feasible from a geotechnical engineering perspective.

Finally, we would like to take this opportunity to comment on the controversial topic of the appropriate seismic site coefficient to utilize for the psuedostatic model for quantitative slope stability analyses of ***soils***. For this type of geological setting, we typically recommended that the project geotechnical engineer follow the simplified method prescribed in the paper by Ashford and Sitar (2002) using our calculated estimated mean peak ground acceleration. Although their method is prescribed for central California coastal bluff settings, steep cut slopes with mostly Tertiary-age sedimentary bedrock exposed closely mimic that geological setting, particularly when one considers that they are set in identical seismotectonic settings. Therefore, if any future quantitative slope stability analyses are performed, we recommend that the project geotechnical engineer utilize geological parameters provided by our firm and that they derive the seismic site coefficient utilizing the method prescribed by Ashford and Sitar (2002).

RECOMMENDATIONS

1. We recommend that the project geotechnical engineer of record review our report and issue an letter acknowledging our qualitative slope stability analysis and ascertaining if they agree with our conclusions and recommendations regarding our predicted retreat of the cut slope along the eastern property margin. In our opinion, there is no need for the project geotechnical engineer to update the analyses, conclusions and recommendations for the project, aside from accepting our analysis of the cut slope and acknowledging that their assessment of that slope is superceded by our analysis. All other recommendations in their reports and letters are geologically suitable in our opinion.

2. We recommend that the project civil engineer develop a comprehensive set of plans, including foundation, grading, drainage and erosion control plans. The project civil engineer should work closely with project geotechnical engineer and geologist to develop plans that reflect the actual conditions on site, and show where the existing grading, construction and drainage needs to be modified.

The principal hazard to be addressed by the grading plans will be the design and installation of the proposed pin pile wall that takes into account our predicted retreat of the existing cut slope below Lots 6, 7 and 10. We recommend that we be retained to assist the design team with the necessary geological parameters to be considered for the design of the pin pile wall.

3. We recommend that all drainage from improved surfaces such as walkways, patios, roofs and driveways be collected in impermeable gutters or pipes and carried to the appropriate drainage facilities. At no time should any concentrated discharge be allowed to spill directly onto the

ground adjacent to the proposed developments. Any water landing on paved areas should not be allowed to flow toward the proposed developments. The control of runoff is essential for erosion control and prevention of ponding water against the foundation.

A comprehensive engineered drainage system should be developed by the project civil engineer, terminating in a disposal system that ties into the local storm drains. **We will not approve any drainage plans that have concentrated disposal on rock dissipaters.** Concentrated disposal of water is inappropriate for this site and will likely lead to future problems with erosion and possibly landsliding.

On a final note regarding drainage, we would like head off any future drainage recommendations that might be issued by the County of Santa Cruz Department of Public Works Drainage Division that will require runoff from all added impervious areas to be retained on site. This type of recommendation is in direct conflict with the general standard of care in engineering geology for hill side drainage mitigation. In light of this observation, we feel that we should be emphatic with our drainage recommendations. Our recommendation is as follows: We do **not** recommend that any groundwater recharge structures be constructed on the subject property, as injecting all the drain water from the development into a point source at depth will create an **unnatural** condition that may trigger future landsliding on the subject property. The preferred method on this project is for all drainage from improved surfaces such as walkways, patios, roofs and driveways to be collected in impermeable gutters or pipes and carried to the slope below the existing leach field.

4. If the residences will be founded on conventional shallow foundations, we recommend that the project engineers develop a foundation and grading scheme that will create uniform bearing conditions for the structural foundation elements on the site in order to mitigate the differential settlement hazard. All existing non-engineered fill and loose soil under the proposed development should be removed and replaced as an engineered fill, as called out in the original report and letter by Amso Consulting Engineers.

5. If pier and grade beam foundations are utilized for the residences, the recommendations issued by Amso Consulting Engineers in their reports and letters should be followed. We also recommend that the project geologist and the project geotechnical engineer observe the drilling of the piers and solely determine the location of competent bedrock to be used for the embedment depth.

6. The mean peak horizontal acceleration that should be used for specific engineering evaluation or structural design is 0.54 g. Project engineers may use an effective peak acceleration (EPA) of 0.41 g for site-specific evaluation or structural design if they consider it a more appropriate design parameter.

7. If any future quantitative slope stability analyses are performed, we recommend that the project geotechnical engineer perform said analyses utilizing geological parameters provided by our firm and that they derive the seismic site coefficient utilizing the method prescribed by Ashford and Sitar (2002).

8. We request the opportunity to review the forthcoming civil engineering plans showing grading, drainage and the structural details for the foundations and retaining walls for consistency with our geologic findings and recommendations.

9. We recommend that a representative from our firm be retained to inspect any future cuts made during grading for the foundation, prior to placement of the fill and construction of the footings. It is important for grading contractors to note that this includes observation of any keyways constructed for the fill, as well as for drilled piers.

10. We strongly recommend that home owners implement the simple safety procedures outlined by Peter Yanev in his book, *Peace of Mind in Earthquake Country*. This book contains a wealth of information regarding earthquakes, seismic design, and precautions that the individual home owner can take to reduce the potential for loss of life, injury and property damage.

INVESTIGATIVE LIMITATIONS

1. Our services consist of professional opinions and recommendations made in accordance with generally accepted engineering geology principles and practices. No warranty, expressed or implied including any implied warranty of merchantability or fitness for the purpose is made or intended in connection with our services or by the proposal for consulting or other services, or by the furnishing of oral or written reports or findings.

2. The analysis and recommendations submitted in this report are based on the geologic information derived from the steps outlined in the scope of services section of this report. The information is derived from necessarily limited natural and artificial exposures. Consequently, the conclusions and recommendations should be considered preliminary.

3. The conclusions and recommendations noted in this report are based on probability and in no way imply the site will not possibly be subjected to ground failure or seismic shaking so intense that structures will be severely damaged or destroyed. The report does suggest that building structures at the subject site, in compliance with the recommendations noted in this report, is an "ordinary" risk as defined in Appendix B.

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

AMSO CONSULTING ENGINEERS
SOILS, FOUNDATIONS & ENVIRONMENTAL ENGINEERING
1478 B STREET, SUITE 1C, HAYWARD, CALIFORNIA 94541
Phone (510) 690-0714, Fax: (510) 690-0721, email: basil@amsoconsulting.com

July 29, 2005
Project 3312

Mr. Jim Weaver
Water Fund Management, LLC
101 Cooper Street
Santa Cruz, California 95060

Subject: Geotechnical Investigation
Residential Subdivision at 3700 Hilltop Road
Soquel, California

Dear Mr. Weaver:

This report presents the results of our geotechnical investigation for the 3700 Hilltop Road property located at the northwest corner of the intersection of Hilltop Drive and Vista Drive in Soquel, California. We understand that this property will be subdivided into eleven residential lots. Two of the three existing houses that presently occupy part of the site will remain. Access to the new lots will be provided through paved roads from Hilltop Drive.

Information Provided

The project architect, SSA, provided us with a reduced copy of a site plan that shows the existing structures and the proposed new subdivision. This site plan was used to produce our Site Plan (Figure 3) that shows the location of the exploration drill holes that were drilled as part of this investigation.

SCOPE OF WORK

We performed the following work for this geotechnical investigation.

1. Reviewed geologic and geotechnical information in our files pertinent to the site and the surrounding area.

2. Explored, sampled and classified foundation soils by means of 9 small diameter exploration drill holes.

3. Performed laboratory test on selected soil samples obtained from the exploration holes to determine their index and engineering characteristics.

4. Reviewed and analyzed of the information collected above.

5. Developed site seismic characteristics, zone factor (Z) and seismic near-source factors (N_a and N_v) for site structure resonance in accordance with the 1997 Uniform Building Code.

6. Prepared this report summarizing our findings, conclusions, and geotechnical recommendations.

FINDINGS

Surface Conditions

The site is located along the northeast corner of the intersection of Hilltop and Panorama Drives just north of the intersection of Vista Drive with Hilltop in Soquel, California.

In general, the original ground at the property slopes down gently to the south and to the east at an average elevation of about 15 percent based on the USGS Topographic Maps, Soquel, California and Laurel California Quadrangles (see figure 2 attached).

Steep cut and fill slopes (about 40 to 50 percent) were observed near the north portion and the south portion of the property. A very steep cut slope (in excess of about 100 percent) was observed along the eastern property line. This slope was free from any erosion gullies and appears to be stable. Based on the results of the exploration drilling (borings 1, 2 and 3), including the depth of fill that we penetrated in our exploration holes, and projecting this fill to extend down to the toe of the steep portion of the slope (see attached section, Figure 3), the calculated steepness of the original ground was estimated to be 17 percent. This estimated ground inclination agrees with the information presented in the USGS Topographic Maps.

At the time of our subsurface exploration in March 2005, the site was occupied by three single family homes with garages and sheds, along with two abandoned barns along the north side of the property. The building pads of the barns appear to have been constructed by cutting and filling along the side of the hill side. Asphalt concrete paved driveways currently provide access to the various on-site structures.

Subsurface Conditions

The descriptions given below pertain only to the subsurface conditions found at the site at the time of our subsurface exploration in March of 2005. Subsurface conditions, particularly ground water levels and the consistency of the near-surface soils, will vary with the seasons.

Subsurface conditions at the site were explored by means of nine small diameter exploration borings ranging in depth between 20 feet and 35 feet below existing ground surface. Within the depth of exploration, the native soils at the site consist of silty and clayey sand (SM) of low plasticity and low potential for expansion. This sand layer range in thickness between 3 and 7

feet was found in general to be of medium dense consistency except for the portion of the site located in the vicinity of borings B-1, B-3 and B-4 where surface soils are loose.

Below this layer of medium dense sand, the site is underlain by very dense to hard silty and clayey sand (weathered sandstone), which extends to the maximum depth of our explorations.

No ground water was encountered in the exploration holes at the time of the site exploration in March of 2005. Wet soils, however were observed in the majority of the near surface soils resulting from the recent heavy rains in the past few months. Particularly wet soils were found in boring B-3.

Detailed descriptions of the materials encountered in the borings are given on the appended boring log together with the results of the laboratory tests performed on selected samples obtained from the boring.

Seismic Considerations

This site is located within the seismically active San Francisco Bay region but outside any of the Alquist-Priolo Earthquake Fault Zones. Type A and Type B faults close to the site are listed in the following table.

TABLE 1 – TYPES A AND B FAULTS CLOSE TO THE SITE

Fault	Type	Maximum Moment Magnitude	Slip Rate (mm/yr)	Distance (miles)	(km)	Peak Site Acceleration (g)
SAN ANDREAS (1906)	A	7.9	24	8	12	0.46
SAN GREGORIO	A	7.3	5	14	22	0.24
ZAYANTE-VERGELES	B	6.8	0.1	4	7	0.45
SARGENT	B	6.8	3	9	15	0.26
MONTEREY BAY - TULARCITOS	B	7.1	0.5	10	16	0.32
MONTE VISTA - SHANNON	B	6.8	0.4	16	25	0.17
PALO COLORADO - SUR	B	7.0	3	17	28	0.15

Seismic hazards can be divided into two general categories, hazards due to ground rupture and hazards due to ground shaking. Since no active faults are known to cross this property, the risk of earthquake-induced ground rupture occurring across the project site appears to be remote.

The majority of the site is underlain by an average of about 3 feet of loose silty and clayey sand. If left untreated, this loose sand will experience ground settlement in response to applies structural loads.

To minimize the potential of building settlement, we recommend that the loose soils should be excavated and re-placed as structural fill as described in the following section for site preparation, grading and compaction. Conventional shallow foundations may be used in conjunction with this alternate. Alternatively, the proposed homes should be supported on reinforced concrete piers and grade beam foundations with the piers embedded at least 10 feet into competent soils or bedrock.

The site is suitable for the proposed development provided the recommendations presented in this report are followed during design and construction.

The following recommendations, which are presented as guidelines to be used by project planners and designers, have been prepared assuming AMSO CONSULTING ENGINEERS will be commissioned to review the grading and foundation plans prior to construction, and to observe and test during site grading and foundation construction. This additional opportunity to inspect the project site will allow us to compare subsurface conditions exposed during construction with those that were observed during this investigation.

Site Preparation, Grading and Compaction

Buildings and other structures designated for removal on the Project Plans should be demolished and their foundations and associated Substructures should be dug out and removed.
Utility lines, leach lines, sanitary sewers and storm drains designated for abandonment on the Project Plans, should be either dug out and removed or filled sold with lean concrete. All debris and materials arising from demolition and removal operations should be wasted off-site.

Areas of the site that will be built on or paved should be stripped to remove surface vegetation and organics. Soils containing more than 2% by weight of organic matter should be considered organic.

If conventional shallow foundations are preferred for buildings support, then loose soils below areas of the site to be built on should be excavated. The depth and horizontal limits of these excavations should be determined in the field by the Soils Engineer at the time of excavation. For planning purposes, however, it may be assumed that these excavations will extend to an average depth of about 3 feet below existing grade under proposed buildings. Subexcavation of loose soils should extend at least 5 feet horizontally beyond building lines. Soil from these excavations may be stockpiled for subsequent use as structural fill otherwise the excavated soil should be wasted off-site.

In pavement areas, loose soils below areas of the site to be paved should be excavated. The depth and horizontal limits of these excavations should be determined in the field by the Soils Engineer at the time of excavation. For planning purposes, however, it may be assumed that these excavations will extend to an average depth of about 18 inches below existing grade. Subexcavation of loose soils should extend at least 3 feet horizontally beyond edge of pavements. Soil from these excavations may be stockpiled for subsequent use as structural fill otherwise the excavated soil should be wasted off-site.

Soil surfaces exposed by removal of loose soils should be scarified to a depth of 8 inches, conditioned with water (or allowed to dry, as necessary) to produce a soil water content of about 2 percent above the optimum value and then compacted to at least 90 percent relative compaction based on ASTM Test D1557-91.

Structural fill may then be placed up to design grades in the proposed building and pavement areas. Structural fill using on-site inorganic soil, or approved import, should be placed in layers, each not exceeding 8 inches thick (before compaction), conditioned with water (or allowed to dry, as necessary) to produce a soil water content of about 2 percent above the optimum value, and then compacted to at least 90 percent relative compaction based of ASTM Test D1557-91. The upper 8 inches of pavement subgrades should be compacted to about 95 percent relative compaction based on ASTM Test D1557-91.

Structural fill placed on sloping ground should be keyed in accordance with the CALTRANS STANDARD SPECIFICATIONS, latest edition. The following excerpt from subsection 19-6.01 of those specifications is pertinent:

> "When embankment is to be made and compacted on hillsides....the slopes of original hillsides....shall be cut into a minimum of 6 feet horizontally as the work is brought up in layers. Material thus cut out shall be compacted along with the new embankment material....."

The toe key for structural fill placed on sloping ground should be at least 8 feet wide with its base horizontal or gently sloping back into the hillside.

Cut and fill slopes should be constructed no steeper than 2:1 (horizontal to vertical).

On-site soils proposed for use as structural fill should be inorganic, free from deleterious materials, and should contain no more than 15% by weight of rocks larger than 3 inches (largest dimension) and no rocks larger than 6 inches. The suitability of existing soil for reuse as a structural fill should be determined by a member of our staff at the time of grading. We expect that most of the existing soil will be suitable for reuse as structural fill. If import is required for use as structural fill, it should be inorganic, should preferably have a low expansion potential and should be free from clods or rocks larger than 4 inches in largest dimension. Prior to delivery to

the site, proposed import should be tested in our laboratory to verify its suitability for use as structural fill and, if found to be suitable, further tested to estimate the water content and density at which it should be placed.

Building Foundations

The proposed homes may be supported on conventional shallow foundations bearing on competent in-place native soil or on compacted structural fill placed as described in the previous section, otherwise the homes should be supported on piers and grade beam foundations. The bottom of proposed conventional building foundations should be set back at least 10 feet away from the face of cut and fill slopes and at least 20 feet away from the top of the existing cut slope along the east side of the property.

Conventional Shallow Foundations

Continuous, reinforced concrete foundations may be designed to impose pressures on foundation soils up to 2000 pounds per square foot from dead plus normal live loading. Continuous foundations should be at least 15 inches wide and should be embedded at least 18 inches below rough pad grade or adjacent finished grade, whichever is lower.

Interior isolated foundations, such as may support column loads, may be designed to impose pressures on foundation soils up to 2500 pounds per square foot from dead plus normal live loading. Interior foundations should be embedded at least 18 inches below rough pad grade.

Lateral forces on the proposed building may de resisted by passive pressure acting against the sides of footings and by friction between the soil and the bottom of the footing. An equivalent fluid pressure of 300 pounds per square foot per foot of depth may be used to calculate the ultimate passive resistance to lateral loads. A coefficient of friction of 0.30 may be used to calculate resistance to lateral loads at the base of foundations.

The allowable foundation pressures given previously may be increased by one-third when considering additional short-term wind or seismic loading.

During foundation construction, care should be taken to minimize evaporation of water from foundation and floor subgrades. Scheduling the construction sequence to minimize the time interval between foundation excavation and concrete placement is important. Concrete should be placed only in foundation excavations that have been kept moist, are free from drying cracks and contain no loose or soft soil or debris.

Pier and Beam Foundations

To minimize the amount of grading, the proposed building may be supported on reinforced concrete "pier and beam" foundations with the piers deriving their vertical support from "skin friction" or adhesion. Piers should embedded at least 8 feet into competent material or bedrock. Piers should be spaced at least 3 diameters apart (center to center) but no more than 8 feet apart.

The allowable load-carrying capacity (dead plus normal live loads) of each pier may be calculated assuming "skin friction" or adhesion of 400 psf between the shaft of the pier and the adjacent soil, but ignoring the upper 2 feet of embedment of the pier below the lowest adjacent grade. "End bearing" of the pier should also be ignored.

Reinforced concrete foundation beams should be embedded at least 12 inches below lowest adjacent grade and should be designed to safely transmit all imposed loads to the supporting piers.

The allowable foundation pressures given previously may be increased by one-third when considering additional short-term wind or seismic loading.

Concrete Slabs-On-Grade

Concrete floor slabs should be constructed on compacted soil subgrades prepared as described in the section on Site Preparation, Grading and Compaction.

To minimize floor dampness, a section of capillary break material at least five inches thick and covered with a membrane vapor barrier should be placed between the floor slab and the compacted soil subgrade. The capillary break should be a free-draining material, such as 3/8" pea gravel or a permeable aggregate complying with CALTRANS Standard Specifications, Section 68, Class 1, Type A or Type B. The material proposed for use as a capillary break should be tested in our laboratory to verify its effectiveness as a capillary break. The membrane vapor barrier should be a high quality membrane such as Moistop (by Fortifiber Corporation) or similar. A protective cushion of sand or capillary break material at least two inches thick should be placed between the membrane vapor barrier and the floor slab.

If floor dampness is not objectionable, concrete slabs may be constructed directly on the water-conditioned and compacted soil subgrade.

Retaining Walls

The following may be used in the design calculations of reinforced concrete and segmental (such as Keystone) retaining walls.

1. The average bulk density of material placed on the backfill side of the wall will be 120 pcf and an angle of internal friction of 30 degrees may be used in the design calculations of segmental walls.

2. The vertical plane extending down from the ground surface to the bottom of the heel of the wall will be subject to pressure that increases linearly with depth as follows.

Condition	Design Pressure
Active, level backfill	40 pcf
Active, with a 2:1 backfill	55 pcf
At-rest, level backfill	60 pcf

   The above values are non-seismic conditions. Active pressures should only be used for walls that are not restrained to move. At-rest pressures should be used for the design of the basement walls.

3. The effects of earthquakes may be simulated by applying a horizontal line load surcharge to the stem of the wall at a rate of 13 H^2 lb/horizontal foot of wall, where H is the height of the surface of the backfill above the base of the wall. This surcharge should be applied at a height of 0.6H above the base of the wall.

4. A coefficient of "friction" of 0.3 may be used to calculate the ultimate resistance to sliding of the wall base over the ground beneath the base.

5. An equivalent fluid pressure of 300 psf/ft may be used to calculate the ultimate passive resistance to lateral movement of the ground in front of the toe of the wall.

6. A maximum allowable bearing pressure of 2000 psf may be used for the ground beneath the toe of the wall. This value is for non-seismic conditions and may be increased to 2500 psf when considering additional loads on the wall resulting from earthquakes.

A zone of drainage material at least 12 inches wide should be placed on the backfill side of walls designed for drained condition. This zone should extend up the back of the wall to about 18 inches down from the proposed ground surface above. The upper 18 inches or so of material above the drainage material should consist of clayey soil.

The drainage material and the clayey soil cap should be placed in layers about 6 inches thick and moderately compacted by hand-operated equipment to eliminate voids and to minimize post-construction settlement. Heavy compaction should not be applied; otherwise, the design pressure on the wall may be exceeded.

The drainage material should consist of either Class 2 Permeable Material complying with Section 68 of the CALTRANS Standard Specifications, latest edition, or 3/4 to 1½ inch clean, durable coarse aggregate. If the coarse aggregate is chosen as the drainage material, it should be separated from all adjacent soil by Mirafi 700X or a similar filter fabric approved by the project Soil Engineer.

Any water that may accumulate in the drainage material should be collected and discharged by a 4-inch-diameter, perforated pipe placed "holes don" near the bottom of the drainage material. The perforated pipe should have holes no larger that 1/4-inch diameter.

Vehicle Pavements

Near-surface soils across the site have a good pavement-supporting capacity. The R-value of the site soils has not been measured. Based on our experience of this soils, we estimated an R-value of 15 for use in pavement design calculations of pavement sections. The actual R-value of the pavement subgrades should be tested prior to pavement construction.

Recommended minimum sections for pavement areas are presented in Table 1. A pavement section based on a Traffic Index of at least 5 should be selected for areas where traffic includes occasional light trucks.

TABLE 1 - RECOMMENDED MINIMUM ASPHALT CONCRETE PAVEMENT SECTIONS

Traffic Index (T.I.)	Asphalt Concrete (inches)	Class 2 Aggregate Base (inches)	Total Thickness (inches)
4.5	2.5	8.0	10.5
5.0	3.0	9.0	12.0
5.5	3.5	9.0	12.5
6.0	4.0	10.0	14.0

Pavement subgrades should be compacted to at least 95 percent relative compactions as described above in the section for Site Preparation Grading and Compaction.

Pavement construction should comply with the requirements of the CALTRANS Standard Specifications, latest editions, except that compaction requirements for pavement soil subgrades and aggregate base should be based on ASTM Test D1557-91, as described in the part of this report dealing with "Site Preparation, Grading and Compaction."

Utility Trenches

The attention of contractors, particularly the underground contractor, should be drawn to the requirements of California Code of Regulations, Title 8, Construction Code Section 1540 regarding Safety Orders for "Excavations, Trenches, Earthwork".

For purposes of this section of the report, bedding is defined as material placed in a trench up to 1 foot above a utility pipe and backfill is all material placed in the trench above the bedding.

Unless concrete bedding is required around utility pipes, free-draining sand should be used as bedding. Sand proposed for use in bedding should be tested in our laboratory to verify its suitability and to measure its compaction characteristics. Sand bedding should be compacted by mechanical means to achieve at least 90 percent compaction density based on ASTM Tests D1557-91.

Approved, on-site, inorganic soil, or imported material may be used as utility trench backfill. Proper compaction of trench backfill will be necessary under and adjacent to structural fill, building foundations, concrete slabs and vehicle pavements. In these areas, backfill should be conditioned with water (or allowed to dry) to produce a soil-water content of about 5 percent above the optimum value and placed in horizontal layers not exceeding 6 inches in thickness (before compaction). Each layer should be compacted to 85-90 percent relative compaction based of ASTM Test D1557-91. The upper 8 inches of pavement subgrades should be compacted to about 95 percent relative compaction based on ASTM Test D1557-91.

Where any trench crosses the perimeter foundation line of any building, the trench should be completely plugged and sealed with compacted clay soil for a horizontal distance of at least 2 feet on either side of the foundation.

Surface Drainage

Surface drainage gradients should be planned to prevent ponding and to promote drainage of surface water away from top of slopes, building foundations, slabs, edges of pavements and sidewalks, and towards suitable collection and discharge facilities.

Water seepage or the spread of extensive root systems into the soil subgrades of foundations, slabs, or pavements, could cause differential movements and consequent distress in these structural elements. This potential risk should be given due consideration in the design and

ACE

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January 18, 2006
Project 3312

Mr. Jim Weaver
Waters Fund Management, LLC
101 Cooper Street
Santa Cruz, California 95060

Subject: Supplemental Geotechnical Evaluation
3700 Hilltop, APN 102-181-09
Soquel, California

Dear Mr. Weaver:

This report presents the results of our supplemental geotechnical evaluation of the property located at 3700 Hilltop Road in Soquel, California. The purpose of these geotechnical evaluations is to address the County of Santa Cruz staff's concerns regarding stability of the steep cut slopes along the east boundary line of the property and to estimate original slope gradients along the eastern portion of the building pads for the existing barns.

We performed the following work for this geotechnical evaluation

- Explore, sample and classify soils along the eastern side of the property be means of three additional exploration holes to evaluate the stability of the eastern slopes.
- Explore, sample and classify soils along the central portion of the property by means of two additional borings to estimate original slope gradients prior to original grading and to evaluate the stability of the slopes.
- Perform laboratory test on selected soil samples to measure its pertinent index and engineering properties.
- Perform static and seismic slope stability analysis along four sections.
- Estimate original ground gradients.
- Prepare a written report presenting the results of our supplemental investigation and analysis.

The gradients of the original ground were calculated to be between 14 and 16 percent in sections 1 and 2 respectively. This calculated estimate of original ground inclination agrees with the existing ground inclination of about 15 percent across the majority of the site.

Static and Seismic Slope Stability Analysis

Static and seismic slope stability analyses were performed to evaluate the effects of the proposed development on the stability of existing slopes. The stability analyses were performed using the computer program Stable For Windows. This computer program uses as an engine the PCSTABL slope stability analysis program from Purdue University. It allows calculations using Bishop's Simplified, Janbu's and Spencer's methods.

Static Analysis

The static stability analysis involves the estimation of a safety factor for an assumed critical failure surface through the slope. The static safety factor is defined as the ratio of forces that act to preserve stability in a slope (resisting forces) with the forces and moments that act to make the slope unstable (driving forces). A safety factor near 1.0 indicates a condition of impending slope failure. A static safety factor of 1.5 is generally the minimum acceptable value for long-term stability.

We have included the following excerpt from the Guidelines for Evaluation and Mitigating Seismic Hazards in California, Special Publication 117, Last Updated: 05/28/02.

Pseudo-Static Analysis

"The ground-motion parameter used in a pseudo-static analysis is referred to as the seismic coefficient "k". The selection of a seismic coefficient has relied heavily on engineering judgment and local code requirements because there is no simple method for determining an appropriate value. In California, many state and local agencies, on the basis of local experience, require the use of a seismic coefficient of 0.15, and a minimum computed pseudo-static factor of safety of 1.0 to 1.2 for analyses of natural, cut, and fill slopes."

Special Publication 117 "Guidelines for Evaluation and Mitigating Seismic Hazards in California" cautions that the seismic coefficient "k" is not equivalent to the peak horizontal ground acceleration value, either probabilistic or deterministic; therefore PGA should not be used as a seismic coefficient in pseudo-static analyses. The use of PGA will usually result in overly conservative factors of safety (Seed, 1979; Chowdhury, 1978). Furthermore, the practice of reducing the PGA by a "repeatable acceleration" factor to obtain a pseudo-static coefficient has no basis in the scientific or engineering literature.

Stability analyses were performed on four sections selected along the steep cut slope located along the eastern boundary line. The effect of the proposed buildings was simulated by an external load applied at the ground surface. The results of our stability analysis are summarized in the following table and are attached to this report in appendix B.

Analysis Location	Safety Factor for Static Condition	Pseudo-Static
Section 1	1.66	1.34
Section 2	1.94	1.55
Section 3	1.51	1.21
Section 4	1.51	1.18

CONCLUSIONS AND RECOMMENDATIONS

Based on the results of our subsurface exploration the existing steep slopes in the north and eastern portions of the site are the result of grading operation for the construction of the level building pads for the two barns and to create the building pads and driveway for the neighboring property along the east side of the property. Considering the thickness of fill encountered in our exploration holes and the existing ground elevations, it may be concluded that the original ground inclination was between 14 and 16 percents which is in general conformance with the current average inclination of the rest of the site of about 15 percent.

Based on the results of our static and Pseudo-Static stability analysis, cut slopes along the eastern boundary line of the property is stable under both conditions. The sandy nature of the on-site soils, however, exhibit high potential for erosion and subsequent slope failures. To maintain the stability of this slope under static and seismic loading condition, we recommend that proposed structures be set back a minimum of 15 feet away from the top of this cut slope.

The most geotechnical concern about this site is the steep nature of the cut slopes along the east perimeter of the property and the presence of considerable thickness of loose, surface and near surface sandy soils around the site.

To minimize the potential for slope failure that may be caused by erosion due to surface water runoff, recommendations for site drainage presented in our original reports should be followed. We also recommend that a lined v-ditch should be constructed along the top of slopes to intercept and direct surface water away for the top of slopes.

Existing fill slopes near the north and south sides of the property should subexcavated and reconstructed with proper keying and compaction as described in the "Site Preparation, Grading and Compaction" section of the project soil report.

LIMITATIONS

The recommendations contained in this report are based on certain plans, information and data that have been provided to us. Any change in those plans, information and data will render our recommendations invalid unless we are commissioned to review the change and to make any necessary modifications and/or additions to our recommendations.

Subsurface exploration of any site is necessarily confined to selected locations. Conditions may, and often do, vary between and around such locations. Should conditions different from those encountered in our explorations come to light during project development, additional exploration, testing and analysis may be necessary; changes in project design and construction may also be necessary.

Our recommendations have been made in accordance with the principles and practices generally employed by the geotechnical engineering profession. This is in lieu of all other warranties, express or implied.

All earthwork and associated construction should be observed by our field representative, and tested where necessary, to compare the generalized site conditions assumed in this report with those found at the site at the time of construction, and to verify that construction complies with the intent of our recommendations.

Report prepared by:

AMSO CONSULTING ENGINEERS

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December 9, 2008

Sheila McDaniel
Project Planner
County of Santa Cruz, Planning Department
701 Ocean Street – 4th Floor
Santa Cruz, CA 95060

RE: 07-040-1 Historic Grading Report

Dear Ms. McDaniel,

The following report is to provide evidence for the determination of the historical topography for the property at 3700 Hilltop Road in Soquel, California. Currently the property has a natural gradient towards the south of the property of approximately 15% with the exception of two large building pads along the northern portion.

According to the Santa Cruz County Assessor's record (Exhibit A), the building pad grading took place in 1953 and 1955 when two chicken coops were built. The building pads are approximately 10,000 square feet each, a total of 0.43 acres, and are relatively flat (varies 0.5' in height). Based on review of the site and technical reports completed for the project, the building pads were cut into native soil on the uphill side of the pad creating surrounding steep cut slopes. The excavated soils were then pushed over the outboard sides of the cuts to create the pads, and also creating fill slopes. At the time of grading, the current Santa Cruz County grading codes and regulations were not established therefore no permits (records) were filed or grading standards followed.

The enclosed Projected Historical Grades Plan and Cross Sections (Exhibit 2.A and 2.B) were created by RI Engineering, Inc. showing the existing topography preceding the grading prior to 1953. The contours were produced based on the surrounding topography and drainage patterns, Assessor's record, aerial photos from 1948 and 1956 and reports completed by the project geologist and project geotechnical engineers.

Geological test pit logs were completed by Zinn Geology and are attached as Exhibit 3.B and 3.C. The top 6-ft of test pit 1 and top 16-ft of test pit 2 are categorized as 'Artificial Fill' with evidence of a concrete slab, drain and sharp layer marked by topsoil to separate the artificial fill with the next soil layer.

The Geologic Site Map (Exhibit 3.A) shows two plan view boundaries (north and south boundary) defined as 'Artificial Fill' by the geologist. The down gradient elevation of the northern artificial fill boundary line is determined to be the area where the previous grading stopped and matches existing grade as shown in 1948 aerial photo. The artificial fill lines are

also referenced cut/fill contact points which were used to determine historic elevations at those locations.

RI Engineering, Inc. completed earthwork calculations comparing the current topography of the site with the projected historic grades. The earthwork calculations were completed using AutoCAD software. The calculations show approximately 4,680 cubic yards (cy) of excavation and 4,300 cy of fill. The net difference is 360 cy. This essentially shows a balanced site which is in keeping with construction process that was employed from the construction of the building pads for the chicken coops. The difference is less than 10% and is well within expected the margin error.

Analytical reviews (Letters A and B, enclosed) were provided by the project geologist and current project geotechnical engineer in response to Exhibit 2.A. Letter A (Zinn Geology) provides aerial photos taken in 1948 and 1956 (Figure 1 and 2 in Letter A) verifying the time frame of the building pad grading. It should also be noted that Panorama Drive is shown in both the 1948 and 1956 aerial photos. The attached Assessor's record (Exhibit 1) corroborates the evidence found on the aerial photos. The projected existing grades shown in Exhibit 2.A illustrate that Panorama Drive's existing grades correlate to the natural gradient prior to the building pad grading.

Zinn Geology and Dees & Associates, Inc. both agree that the Projected Historical Grades Plan prepared by RI Engineering, Inc. best demonstrates the existing topography prior to the building pad grading.

Itemized below are the results for the determination of historical grades at 3700 Hilltop Road, Soquel, California.

1. Timing of Grading
    a. Aerial photos (Letter A; Figure 1 & 2) support the declaration that the building pad construction for the chicken coops took place during 1948-1956.
    b. Assessor record's (Exhibit 1) prove the chicken coops were constructed in 1953 and 1955.

2. Slope Configuration
    a. The 1948 aerial photo illustrates the presence of a farm that encompassed the property on a consistent gradient.
    b. The 1956 aerial photo illustrates two large building pads which has disturbed the natural grade of the land.
    c. The area of disturbance on the 1956 photo corresponds with the results of field investigations by the geologist and geotechnical engineers.
    d. The Geological Site Plan (Exhibit 3.A) and test pit cross sections (Exhibit 3.B and 3.C) identified areas of artificial fill and contact locations between cut and fill slopes. This is consistent with the cut/fill construction method that would have been used to construct the pads.

e. The grades determined on the Project Historical Grades Plan (Exhibit 2.A) show slopes that are consistent with the undisturbed topography to the north and south of the area of disturbance.

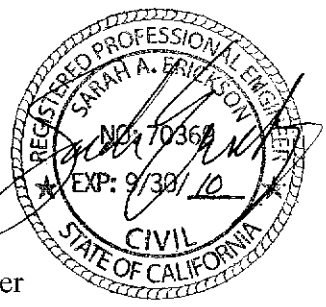
f. The earthwork quantities were used as a comparison between the existing topography and the projected historic grades and show a balanced site.

g. Reviews by the project geologist and the project geotechnical engineer of the Projected Historic Grades Plan verify that the grades shown are consistent with the results of their investigation.

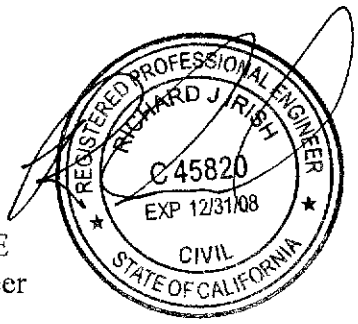
Based on the above results it is our professional opinion that the grading for the chicken coops took place in 1953 and in 1955 and the configuration of the slopes prior to grading very closely resembled those shown in the exhibits by RI Engineering, Inc.

Please feel free to contact us if you have any questions or comment regarding this letter.

Sincerely,
RI Engineering, Inc.



Sarah Erickson, PE
Associate Civil Engineer



Richard Irish, PE
Principle Engineer

Enclosed: Exhibit 1 – Assessor's Record, Sheet 3 of 5
Exhibit 2.A – Projected Historic Grades Plan, RI Engineering, Inc., November 2008
Exhibit 2.B – Cross Sections Plan, RI Engineering, Inc., November 2008
Exhibit 2.C – Historical and Existing Topography Plans, RI Engineering, Inc.
Exhibit 3.A – Geological Site Plan, Zinn Geology, March 2007
Exhibit 3.B – Test Pit #1, Zinn Geology, March 2007
Exhibit 3.C – Test Pit #2, Zinn Geology, March 2007
Letter A – Geomorphic analysis and review of RI Engineering Slope Map, Zinn Geology, December 3, 2008
Letter B – Geotechnical Plan Review No. 3, Dees & Associates Inc., December 8, 2008

Cc: file
Scott Eschen, Owner
Deidre Hamilton, Hamilton-Swift LUDC
Jerry Whitney, WestSierra Design Group
Eric Zinn, Zinn Geology
Rebecca Dees, Dees & Associates Inc.

RI Engineering, Inc.

DRAINAGE CALCULATIONS

For

A 10 LOT SUBDIVISION

At

3700 Hilltop Drive
Soquel, California
APN 102-181-08

Date: June 4, 2009
Revised: October 15, 2009

Prepared For:
3700 Hilltop LLC

Prepared By:
RI Engineering, Inc.
Project No. 09-011-1

Seaview Terrace Subdivision
3700 Hilltop Drive, Soquel, CA
June 2009

Design Criteria/Design Approach

Storm drainage improvements described in this document have been designed with Santa Cruz County criteria using the Santa Cruz County Design Criteria, June 2006 Edition, Part 3, "Stormwater Management." Hydrologic calculations have been completed in conformance with Section C, "Hydrology." All drainage improvements have been designed to convey a 10-year design storm. Flows were calculated using the Rational Method as described in the above noted Design Criteria.

- Use 2006 Edition of the County of Santa Cruz Design Criteria.
- Use County of Santa Cruz Figure SWM17 to determine peak storage for detention
- Use 10-year storm to determine peak runoff for existing conditions.
- Use 10-year storm to determine peak runoff for proposed conditions.
- Control runoff that does leave the site with an orifice control to maintain predevelopment rates for small storms up to the 10-yr storm event

Project Description

The proposed project is a 10-lot land division. The existing 3.47-acre parcel is in a residential area at 3700 Hilltop Drive, Soquel, CA. There are three existing residences with associated improvements. The associated improvements include two very large concrete slabs, fences, and two access roads from Panorama Drive that lead to the aforementioned homes and slabs currently situated on the property.

The proposed land division calls for the removal of the existing residences, concrete slabs, roads, driveways, and associated improvements. Nine new single family homes and their associated improvements including retaining walls, pathways, decks, driveways and sidewalks will be constructed.

Existing Conditions

The lot consists of 2.47-acres of pervious surface and 1-acre of impervious surface. It should be noted that approximately 0.18 acres of off site property has been added to the calculations for the Entire Project drainage report. This area affects the design for the drainage system and has been added accordingly.

Therefore the Entire Project Site for drainage purposes is considered to be 3.65 acres. The average C-value of the entire project site is 0.49. The peak runoff for a 10-year storm event for the existing conditions is approximately 3.18 cfs (see table 1) for the entire project site.

According to the USDA-NRCS "Santa Cruz County, California," the project site is mapped in two soil types. Most of the site is covered by soil type "136 Elkhorn Pfeiffer Complex" with a permeability range of approximately 0.3 in/hr the first 24-60 inches of soil depth. The Southwest corner of the property contains soil type "171 Soquel Loam" with a permeability range of 0.3 in/hr the first 24-60 inches of soil depth.

The property is located on a flat crest above a steep sloping hillside to its east. There are two other steep cut slopes, one at the North end of the lot and a shorter one on the south edge of the property. The naturally

occurring slope of the terrain is generally from northwest to southeast. To the West side of the property abuts Panorama Drive and beyond that is another steep sloping hillside leading to another flat crest above.

On Site
Runoff currently generally drains from northwest to southeast. There are three existing catch basins on the west side of the lot and one catch basin on the South side of the lot. There is an existing swale located on the west side of Panorama Drive which connects into the storm drain beneath Panorama Drive. The Northern most catch basin is connected to the existing 24" storm drain underneath Panorama Drive. The remaining two catch basins on the lower West side of the lot are connected to a catch basin on the West side of where Panorama Drive begins to meet Hilltop Road. From here, another 24" storm drain runs to a catch basin on the south side of Hilltop Road where the remaining catch basin on the South side of the lot is also connected via a 12" storm drain.

Downstream
The 30" storm drain beneath the center of Hilltop Road and parallel to the Southern edge of the property runs easterly the length of Hilltop Road, underneath Soquel/San Jose Road, and empties into the Soquel creek via a 30" outlet pipe. This outlet for the site was observed on August 5, 2008 (see Appendix A) and no erosion or flooding was found here or anywhere else downstream of the proposed site. County staff has also noted that the system has the capacity for the increased runoff from the proposed land division.

Proposed Development

The proposed land division consists of 9 new single family dwellings and associated improvements. This proposed development consists of 2.63 acres of pervious area and 1.02 acres of impervious area. The average C value for the proposed land division will be 0.47. The peak runoff from the entire site from a 10-year storm event will be 3.62 cfs (see table 2). Storm drain runoff will be conveyed to the existing drainage system in Panorama Drive and Hilltop Road via new storm drains and swales.

Low Impact Development (LID)
In order to prevent runoff from impervious areas directly connecting to storm drains, the plan was developed using low impact development designs including: two bio swales, a detention system, pervious driveways and pathways, and grading that promotes slope infiltration.

The following descriptions are based on the Drainage Basin Map D-2 (attached).

Basin A
Runoff along Basin A will continue its natural path of travel and flow offsite. This runoff will not contribute to the proposed storm drainage system. See Tables 10b for flow data.

Basin B and E
Storm water runoff from Basins B and E, will be conveyed from north to south in a grass lined swale located along the bluff on the east side of the property. The swale will be lined with grass from the northern most point to approximately 300 feet south then will be lined with gravel/cobble for approximately 220 feet to accommodate the much steeper slope (approximately 15%). The estimated 10-yr post development flow rate for the swale is 0.71 cfs (See Table 10c) and the 10-yr predevelopment flow rate for Basins B and E are 0.50 cfs. The peak runoff will flow to a proposed catch basin at Node 5 at the end of the swale and conveyed to the existing 30" storm drain pipe under Hilltop Road.

Due to the steep nature of the cut slope along the east of the property, two catch basins and storm drain pipe have been added in the eastern swale. These catch basins will provide extra support to capture storm water from large storm events. The inlets of these basins are designed to be approximately 1-2" above the 10-yr storm surface elevation in the swale. Runoff from storm events over a 10-year storm will flow into the basins and be transported to the proposed catch basin at the end of the swale at Node 5.

Basin D and G
Water captured in Basin D, will be conveyed to a catch basin via overland flow and storm drain pipes to Node 1 near the roadway. The catch basin at Node 1 will have an orifice control riser (Orifice A, Table 3). From this control box, peak runoff with pre-existing development runoff amounts of a 2-yr storm or less will travel south through a storm drain pipe and discharge into the bio-swale alongside the roadway to the east of Lots 8 and 9. Predevelopment peak runoff with peak rates greater than a 2-yr storm will flow out of the orifice control riser in the westward direction towards the proposed catch basin at Node 6.

Peak runoff in Basin G will be captured by catch basins and trench drains in the roadway and driveways. This flow will be carried to the above mentioned bio-swale to the east of Lots 8 and 9 which leads to a catch basin at Node 2.

Runoff from Basin D and G contribute to the total peak runoff that is directed to the detention system. See below the storm drain flow rates.

Basin C, F and J
The storm water runoff from Basin C will flow south via overland flow or directed by an AC berm to a proposed catch basin that is transported to Node 6. A portion of the runoff from Basin F also flows to the catch basin at Node 6. The catch basin at Node 6 will have an orifice control riser (Orifice B, Table 4). From this control box, peak runoff with pre-existing development runoff amounts of a 2-yr storm or less will travel south through a storm drain pipe and discharge into the bio-swale alongside the west side of Lots 8 and 9. Predevelopment peak runoff with peak rates greater than a 2-yr storm will flow out of the orifice control riser to the south in a storm drain pipe and transported to a catch basin at Node 3. The runoff in Basin F not directed towards Node 6 naturally flows overland towards the above referenced western bio-swale which leads to a catch basin at Node 3. Runoff from Basin J is captured by the catch basins at Node 4 where the detention system is.

The peak runoff from the above discussed Basins D, G, C, F and J (See Table 10e) has an estimated 10-yr post-development flow rate of 1.65 cfs and a 10-yr predevelopment flow rate of 1.58 cfs.

Basin H, I, L and K
Peak runoff from Basin H will be conveyed mostly using the slope infiltration method and the remaining peak runoff will both be conveyed to the proposed catch basin at Node 5 or travel to the existing curb and gutter along Hilltop Drive and be captured by an existing catch basin.

Basin I, L and K will all flow along the existing curb and gutter along Panorama Drive or Hilltop Drive and be captured by an existing catch basin.

The peak runoff from Basins H, I, L and K (See Table 10d) has an estimated 10-yr post-development flow rate of 0.39 cfs and a 10-yr predevelopment flow rate of 0.32 cfs.

Detention System
Detention has been sized for a developed 25-year storm event. The total detention volume for the project was calculated using the modified rational method (Table 11). Detention volume required by the project will be approximately 1,024 cubic feet. Peak runoff will be discharged from the detention system at the pre-development 10-yr storm rate by a 4.3-inch diameter orifice control (Orifice C, Table 5). The peak runoff will be discharged from the orifice to the existing 24" storm drain along Panorama Drive.

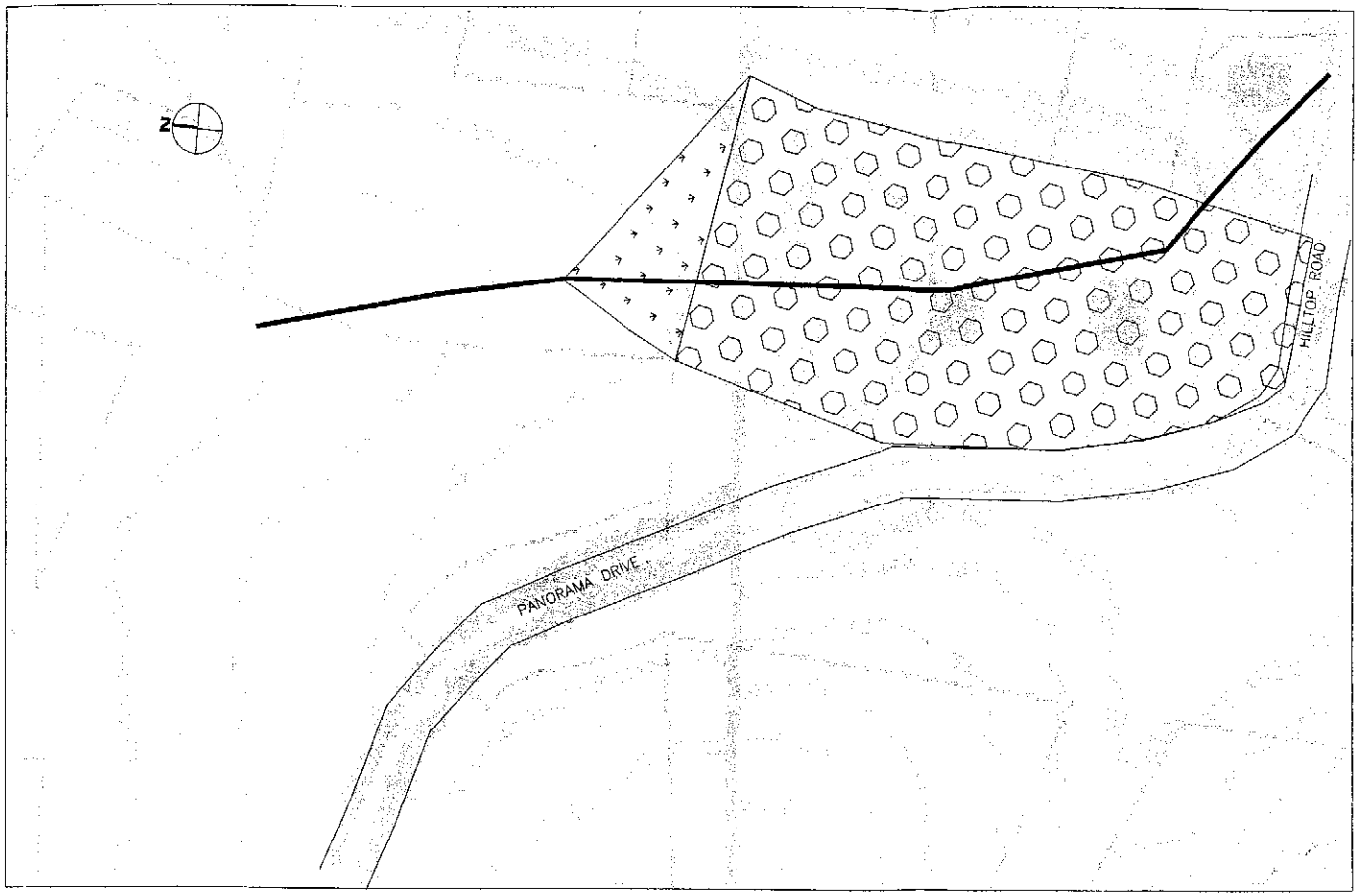
Itemize impervious area for entire project:	
Homes	24,652 sf
Road, Pathways, Sidewalks	16,146 sf
Driveways	3,532 sf
Total impervious area	**44,330 sf**

Existing and Proposed Drainage Basin Flow

Drainage Basin	Total Area (ft^2)	Existing Impervious (ft^2)	Proposed Impervious (ft^2)	Existing 10-Yr Flow (cfs)	Proposed 10-Yr Flow (cfs)
A	12,226	1,419	0	0.13	0.09
B	15,994	7,345	2,266	0.40	0.30
C	7,060	3,543	2,195	0.17	0.17
D	20,931	9,416	4,594	0.42	0.44
E	37,584	5,958	11,287	0.62	0.87
F	25,232	6,256	8,241	0.47	0.61
G	16,035	7,095	7,246	0.37	0.44
H	16,006	4,994	2,163	0.32	0.30
I	848	618	334	0.03	0.02
J	1,235	336	1,131	0.02	0.05
K	2,768	2,073	2,768	0.09	0.12
L	2,986	1,162	2,105	0.07	0.10
Total	**158,905**	**50,215**	**44,330**	**3.18**	**3.62**

Conclusion

The proposed impervious area represents approximately 27.9% of the area of the lot. There will be an increase in peak runoff for a 10-yr storm event due to the construction of the new homes, roadway, sidewalks, and the driveways. This increase is 0.44 cfs. A detention is proposed to detain a developed 25-yr storm event and release at a predevelopment 10-yr storm peak flow rate. The peak runoff will be infiltrated into the ground from the north and retained away towards the southeast by using a combination of catch basins, swales, orifice controls, a detention pipe, and slope infiltration. The storm water from the retaining devices is brought to an existing 30" diameter Storm Drain on Hilltop Road next to the Southeast corner of the lot. The 30" diameter storm drain continues down Hilltop Road and outlets into the Soquel Creek. There is no evidence of erosion or flooding found in the creek or elsewhere on the runoff offsite path.



LEGEND

APP. AREA OF UP-STREAM RUNOFF TO SITE

APP. SITE AREA

RIDGE LINE

PLAN

NOT TO SCALE

ATTACHMENT 1.6

BEAVIEW TERRACE SUBDIVISION
FOR
9700 HILLTOP LLC ET AL
9700 HILLTOP DRIVE
SANTA CRUZ COUNTY, CALIFORNIA
APN 102-161-05

EXISTING DRAINAGE

R.I Engineering, Inc.

303 Potrero St., Suite 42-202, Santa Cruz, CA 95060
831-425-3901 www.rlengineering.com

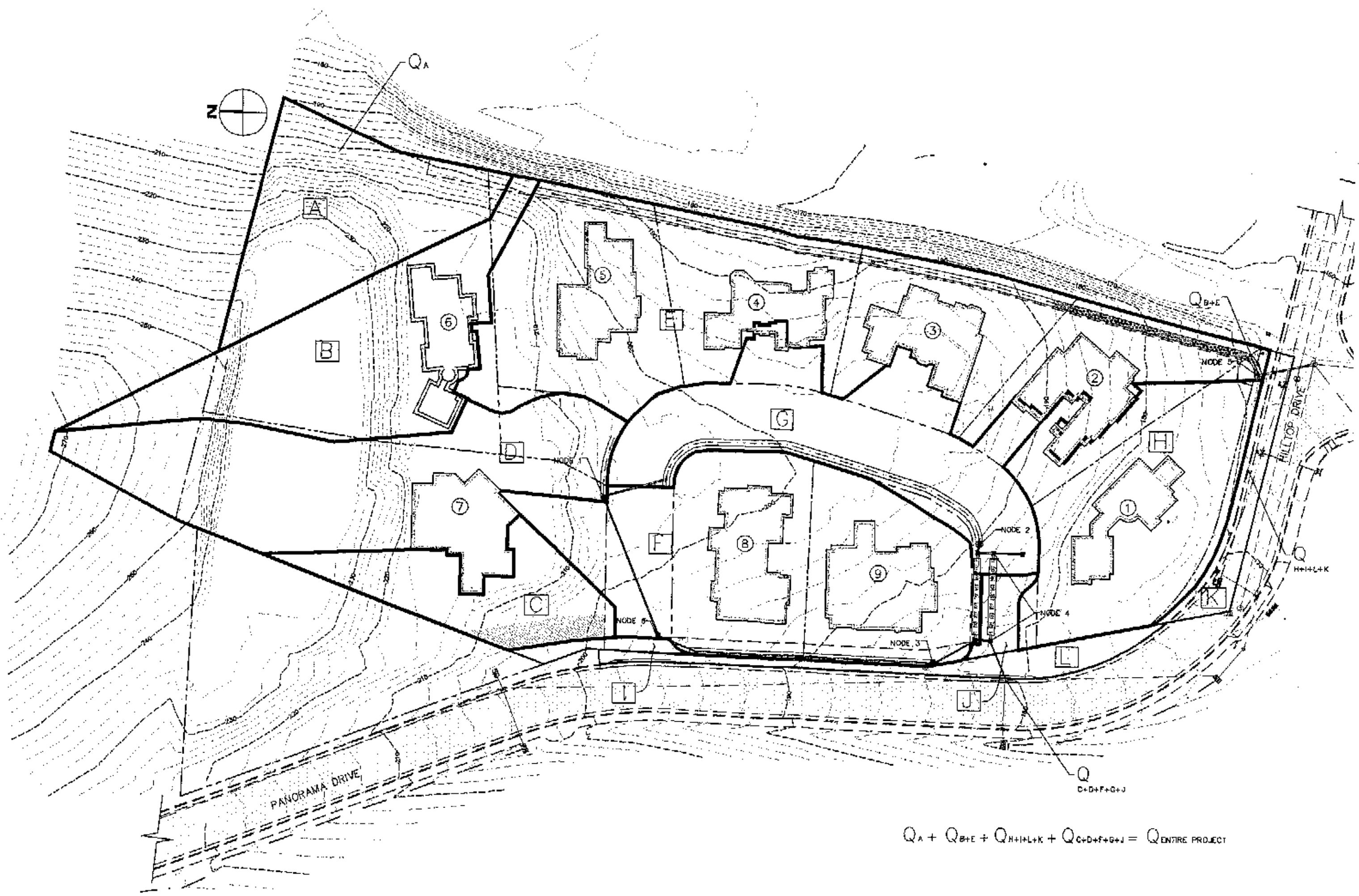
project no.
09-011-1

date
JUNE 2009

scale
AS SHOWN

dwg name
DRAINMAP.dwg

D-1



$Q_A + Q_{B+E} + Q_{H+I+L+K} + Q_{C+D+F+G+J} = Q_{ENTIRE\ PROJECT}$

PLAN

NOT TO SCALE

RICHARD J. IRISH No. 45020 Exp. 12-31-10 CIVIL

RI Engineering, Inc.

303 Potrero St., Suite 42-202, Santa Cruz, CA 95060
831-425-3901 www.riengineering.com

SEAVIEW TERRACE SUBDIVISION
FOR
3700 HILLTOP LLC ETAL
3700 HILLTOP DRIVE
SANTA CRUZ COUNTY, CALIFORNIA
APN 102-161-08

PROPOSED DRAINAGE BASINS

project no. 09-011-1
date JUNE 2009
scale AS SHOWN
dwg name DRAINMAP.dwg

ATTACHMENT 10

D-2

Santa Cruz County Survey Project

Exhibit B

Santa Cruz Archaeological Society
1305 East Cliff Drive, Santa Cruz, California 95062

Preliminary Cultural Resources
Reconnaissance Report

Parcel APN: 102-181-08 SCAS Project number: SE- 05-1038

Development Permit Application No. 05-0493 Parcel Size 3.619 acres

Applicant: 3700 Hilltop LLC etal

Nearest Recorded Cultural Resource: 1.5 miles SE

On 10/7/05 (date) 2 (#) members of the Santa Cruz Archaeological Society spent a total of 1½ hours on the above described parcel for the purpose of ascertaining the presence or absence of cultural resources on the surface. Though the parcel was traversed on foot at regular intervals and dilignetly examined, the Society cannot guarantee the surface absence of cultural resources where soil was obscured by grass, underbrush, or other obstacles. No core samples, test pits or any subsurface analysis was made. A standard field form indicating survey methods, type of terrain, soil visibility, closest freshwater source, and presence or absence of prehistoric and/or historic cultural evidence was completed and filed with this report at the Santa Cruz County Planning Department.

The preliminary field reconnaissance did not reveal any evidence of cultural resources on the parcel. The proposed project would therefore, have no direct impact on cultural resources. If subsurface evidence of such resources should be uncovered during construction the County Planning Department should be notified.

Further details regarding this reconnaissance are available from the Santa Cruz County Planning Department or from Rob Edwards, Director, Cabrillo College Archaeological Technology Program, 6500 Soquel Drive, Aptos, CA 95003, (831) 479-6294, or email redwards@cabrillo.edu.

Cathleen

COUNTY OF SANTA CRUZ

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

October 19, 2005

3700 Hilltop LLC
3700 Hilltop Road
Soquel, CA 95073

SUBJECT: Archaeological Reconnaissance Survey for APN 102-181-08

To Whom It May Concern,

The County's archaeological survey team has completed the Phase 1 archaeological reconnaissance for the parcels referenced above. The research has concluded that pre-historical cultural resources were not evident at the site. A copy of the review documentation is attached for your records. No further archaeological review will be required for the proposed development.

Please contact me at 831-454-3372 if you have any questions regarding this review.

Sincerely,

Elizabeth Hayward
Planning Technician

Enclosure

COUNTY OF SANTA CRUZ | Planning Department

MEMORANDUM

Date: May 9, 2007

To: Files

From: Paia Levine

Re: Biotic Review # 05-0493

The biotic review for this parcel has been completed (Jodi McGraw, letters of March 15, 2005 and July 11, 2005). The project botanist has confirmed that there are no special status species on the property. Therefore, no conditions regarding biotic resources need to be added to the permit.

Jodi M. McGraw, Ph.D.
Population and Community Ecologist
PO Box 883 Boulder Creek, CA 95006
phone/fax: 831-338-1990 • jodimcgraw@sbcglobal.net

July 11, 2005

Jim Weaver
Project Manager
Waters Fund
101 Cooper Street
Santa Cruz, CA 95060

RE: Results of Biotic Reconnaissance for 3700 Hilltop Road (APN: 102-181-08)

Dear Mr. Weaver:

Thank you for the opportunity to conduct a biotic reconnaissance of Santa Cruz County parcel 102-181-08, which is located at 3700 Hilltop Road in Soquel, California. The 3.6 acre parcel is near the mitigation areas for the Sea Crest development, which support remnant patches of coastal terrace prairie and populations of three plants species recognized as rare or endangered by Santa Cruz County and afforded protection through its Sensitive Habitat Ordinance: Santa Cruz tarplant (*Holocarpha macradenia*), Gairdner's yampa (*Perideridia gairdneri*), and Santa Cruz clover (*Trifolium buckwestiorum*). Based its proximity to these occurrences, the northwestern portion of the parcel is mapped as "Biotic" in the Santa Cruz County Planning Department's GIS. Per your request, I conducted a series of reconnaissance surveys between March 10 and July 6, to determine whether the parcel supports sensitive plants species. This letter describes the methods and results of this effort.

Methods

To determine whether the parcel in question supports sensitive habitats or plant species, I surveyed the site four times during the flowering season of native herbaceous plants in the region: March-July. The precise timing of the surveys was based on the observed phenology during the previous survey(s), and the phenology of plants within three reference sites containing coastal terrace prairie and populations of sensitive plants: Arana Gulch (Santa Cruz), Woods Cove mitigation land (Santa Cruz), and Santa Cruz Gardens Unit #12 (Soquel). The four surveys occurred on March 10, May 10, June 16, and July 6.

Prior to each survey, I visited one or more of the three reference sites listed above to determine whether the sensitive plants with some potential to occur at the site were in flower. During my surveys, I walked throughout undeveloped portions of the 3.6 acre parcel, using a

series of overlapping paths that provided complete coverage of the site. Each survey required 1-1.5 hours.

Results

Development: At the time of the first survey (March 10, 2005), the parcel contained three houses, two large buildings (approx. 12,000 ft^2 and 8,000 ft^2), several small outbuildings (e.g. sheds), and a series of paved driveways. An estimated 40% of the 3.6 acre parcel is covered by buildings or pavement.

Soils: The parcel contains two soil types, as mapped by the U.S. Soil Conservation Service (1984). The northern approximately 85% of the parcel is mapped as containing the Elkhorn-Pfeiffer complex on 30-50% slopes, with the southern 15% containing Soquel loam on 2-9% slopes. Both soil types are very deep, well drained loams, with the Elkhorn sandy loam containing a higher proportion of sand particles than the Soquel loam. Prior grading of the parcel for construction of the existing structures and driveways disturbed the soil and removed some of the topsoil. Meanwhile, soil amendments associated with backyard gardening and driveway gravelling/paving has further altered the soils on the site.

Vegetation: The vegetation has been greatly altered as a result of the residential and industrial uses of the parcel, including landscaping activities. Three main vegetation types are presently found at the site: planted landscapes, Eucalyptus series, and California annual grassland series.

Approximately 60% of the unpaved portion of the parcel contains ornamental or landscape plants which were deliberately planted or spread from initial plantings, including a variety of ornamental herbs, shrubs, vines, and trees. The parcel supports approximately 0.5 acre of Eucalyptus series, which is dominated by blue gum (*Eucalyptus globulus*) but also includes silver wattle (*Acacia dealbata*). These exotic trees were likely planted several decades ago to create a windrow around the two industrial buildings on the northern half of the parcel, which they surround. The understory of this series is primarily comprised of exotic herbaceous plants including milkthistle (*Silybum marianum*) and Bermuda buttercup (*Oxalis pes-caprae*); however, a few native species such as miner's lettuce (*Claytonia perfoliata*) and poison oak (*Toxicodendron diversilobum*) were found in low abundance.

The remaining 40% of the undeveloped portion of the parcel supports highly disturbed California annual grassland, which is dominated by exotic annual grasses including *Bromus* spp., *Avena* spp., *Hordeum murium*, and *Vulpia* spp., among others. Several species of exotic forbs are also common, including radish (*Raphanus sativus*), filaree (*Erodium* spp.), bur clover (*Medicago polymorpha*) and chickweed (*Stellaria media*). In other areas of the Santa Cruz County, remnant patches of native perennial grasses and forbs characteristic of coastal terrace prairie series are found within California annual grasslands. My survey of this site revealed only a few native forbs, including California poppy (*Eschscholzia californica*), red maids (*Calandrinia ciliata*), and coast tarweed (*Madia sativa*), but no perennial grasses such as California oatgrass (*Danthonia californica*) and purple needle-grass (*Nasella pulchra*) or native forbs such as yellow mariposa lily (*Calochortus luteus*) indicative of coastal terrace prairie. The current observed low diversity and abundance of native grasses and herbs on the site is likely the result of grading

for prior development and other anthropogenic impacts associated with residential and industrial uses of the property, including repeated mowing.

Sensitive Species: I did not observe any special status plant species at the site during my thorough searches of the entire property conducted when Gairdner's Yampah, Santa Cruz clover, and Santa Cruz Tarplant were in flower.

To summarize, results of my surveys of 3700 Hilltop, Soquel, CA indicate that the undeveloped portions of the site primarily supports non-native vegetation, including ornamental plants, Eucalyptus series, and California annual grassland series, and does not contain special status habitats or plant species.

This completes my examination of the site conducted per your request. Please do not hesitate to contact me if you have any questions regarding my findings.

Sincerely,

Jodi M. McGraw

Reference

USDA. 1984. Soil Survey of Santa Cruz County. Soil Conservation Service. 148 pages + figures

Jodi M. McGraw, Ph.D.
Population and Community Ecologist
PO Box 883 Boulder Creek, CA 95006
phone/fax: 831-338-1990 • jodimcgraw@sbcglobal.net

March 15, 2005

Jim Weaver
Project Manager
Waters Fund
101 Cooper Street
Santa Cruz, CA 95060

RE: Results of initial Biotic Reconnaissance for 3700 Hilltop Road (APN: 102-181-08)

Dear Mr. Weaver:

Thank you for the opportunity to conduct a biotic reconnaissance of 3700 Hilltop Road in Soquel, California. This letter provides you with the results of my database search and initial site reconnaissance conducted on March 10, 2005 to examined the vegetation and soils and determine the potential for sensitive plant species occurrences at the site.

Soils: The 3.6 acre parcel contains two soil types, as mapped by the U.S. Soil Conservation Service (1984). The northern approximately 85% of the parcel is mapped as containing the Elkhorn-Pfeiffer complex on 30-50% slopes, with the southern 15% containing Soquel loam on 2-9% slopes. Both soil types are very deep, well drained loams, with the Elkhorn sandy loam containing a higher proportion of sand particles than the Soquel loam. Prior grading of the parcel for construction of the existing 5 structures likely disturbed the soil and removed some of the topsoil. Meanwhile, soil amendments associated with backyard gardening and driveway gravelling/paving has further altered the soils on the site.

Vegetation: Three main vegetation types are presently were found at the site: planted landscapes, Eucalyptus series, and California annual grassland series. Approximately 30% of the parcel contains ornamental or landscape plants which were deliberately planted, including a variety of ornamental herbs, shrubs, vines, and trees, most of which are located within 10m of the three residences.

Approximately 30% of the parcel supports the Eucalyptus series, which is dominated by blue gum (*Eucalyptus globulus*) but also includes silver wattle (*Acacia dealbata*). These exotic trees were likely planted several decades ago to create a windrow around the two industrial buildings on the northern half of the parcel, which they surround. The understory of this series is primarily comprised of exotic herbaceous plants including milkthistle (*Silybum marianum*) and Bermuda buttercup (*Oxalis pes-caprae*); however, a few native species such as miner's lettuce (*Claytonia perfoliata)* and poison oak (*Toxicodendron diversilobum*) were found in low abundance.

J. McGraw
March 15, 2005

The remaining approximately 40% of the parcel supports highly disturbed California annual grassland, which is dominated by exotic annual grasses including *Bromus* spp., *Avena* spp., *Hordeum murium*, and *Vulpia* spp., among others. Several species of exotic forbs are also common in this series, including radish (*Raphanus sativus*), filaree (*Erodium* spp.), bur clover (*Medicago polymorpha*) and chickweed (*Stellaria media*). In other areas of the Santa Cruz County, remnant patches of native perennial grasses and native forbs characteristic of native coastal terrace prairie series are often found within California annual grasslands. My initial reconnaissance of this site revealed very few native forbs, most of which are characteristic of highly disturbed sites, including California poppy (*Eschscholzia californica*) and red maids (*Calandrinia ciliata*). However, additional native species might be detected during surveys later in the season (May-July), when many native herbs and grasses are in flower. The current observed low diversity and abundance of native grasses and herbs on the site may be the result of grading for prior development and other anthropogenic impacts associated with residential and industrial uses of the property, including repeated mowing.

Sensitive Plant Species: Three native herbaceous plants which are recognized as sensitive species by the County of Santa Cruz are known to occur in the Sea Crest subdivision (aka Tan Heights Development) located to the west and north of the parcel (Habitat Restoration Group 1996). They are Gairdner's Yampah (*Perideridia gairdneri*), Santa Cruz clover (*Trifolium buckwestiorum*), and Santa Cruz Tarplant (*Holocarpha macradenia*). These plants occur in grasslands and coastal terrace prairies within the region, and have been previously mapped as occurring within several patches in the adjacent development, the closes of which is 750 feet from the parcel (Habitat Restoration Group 1996). The intact vegetation in which these species occur is characteristic of coastal terrace prairie which is less degraded than that which occurs at 3700 Hilltop, likely due to the absence of prior grading. I did not detect vegetative individuals of these or other sensitive plant species during my initial reconnaissance; however, surveys for these species must be conducted between May and July, when they are in flower and therefore more visible. This is especially important given the density and height of the annual grasses found in the California annual grassland of the site.

To summarize, results of my initial reconnaissance of 3700 Hilltop, Soquel, CA indicate that the undeveloped portions of the site primarily supports non-native vegetation, including ornamental plants, Eucalyptus series, and California annual grassland series. The latter community has some potential to support populations of three sensitive plant species which are known to occur in the adjacent subdivision. I recommend the site be further evaluated for the presence of these and other sensitive species through a series of brief surveys spanning the spring and early summer (mid-April to July), to capture the complete phenology of the plants at the site.

Please do not hesitate to contact me if you have any questions regarding my initial findings or recommendations.

Sincerely,

Jodi M. McGraw

References

Habitat Restoration Group 1996. Habitat Mitigation Plan for the Tan Heights Development, Soquel, CA. Felton, CA.

COUNTY OF SANTA CRUZ
DISCRETIONARY APPLICATION COMMENTS

Project Planner: Annette Olson
Application No.: 05-0493
APN: 102-181-08

Date: April 19, 2010
Time: 09:53:55
Page: 1

Environmental Planning Completeness Comments

========= REVIEW ON AUGUST 26, 2005 BY ANDREA M KOCH =========
========= UPDATED ON AUGUST 29, 2005 BY KENT M EDLER =========

In general the grading plan does not meeet the requirements for a grading plan and is not reviewable at this time. The grading plan must show ON ONE SHEET : all existing and proposed contours (clearly labelled), all proposed improvements (roadways, driveways, drainage facilities, structures, etc.), property lines, limits of grading, heights of all proposed walls (include top of wall and bottom of wall elevations), a vicinity map, names and locations of existing adjacent streets, driveway profile(s), etc.

Reference the Count's Website for grading plan requirements:
http://www.sccoplanning.com/grading.htm

The grading plan should also include details for all over-excavation and recompaction required as well as the quantities for such.

Cut and fill slopes must not be steeper than 2:1 (H:V).

The plan must also show all existing trees and clearly indicate the trees to be removed.

A Geologic Hazards Assessment (GHA) will be required for this project. The application can be made at the Zoning Counter M-F 8-noon. 2 copies of the site plan must be submitted as well as the associated fees.

The soils report review will be completed once the GHA has been completed. At a minimum, the soils report will need additional borings on the eastern portion of the site as well as stablility analyses of the steep slopes.

Tne soils engineer must also provide specific recommendations for drainage along the eastern portion of the site so as to prevent slope instability.

Please note that upon completion of the GHA and review of the soils report (and Engineering Geology Report if required), the layout and design of the project may be required to change significantly.

The grading plans will also be reviewed for minimizing grading policies which include the use of stepped foundations, designing grading to the exiting topography and balance of cut and fill volumes.

More comments will follow once a complete set of plans and associated reports are submitted.
========= UPDATED ON AUGUST 29, 2005 BY ANDREA M KOCH =========
1) A portion of the property is shown as a potential archaeologic resource area on County resource maps. Therefore, an Archaeologic Site Assessment is required. County staff coordinates preparation of the Archaeologic Site Assessment. If evidence of archaeologic resources is found during this investigation, a full archaeologic

report prepared by a qualified archaeologist will be required.

2) Please show on the plans all existing trees over 6 inches in diameter. Indicate their species. Also indicate trees proposed for removal.

3) Please submit a report prepared by a certified arborist that: indicates numbers and types of trees found on the parcel; evaluates the health of the existing trees; and recommends measures for tree protection.

4) Once the soils report and geologic report have been accepted, and all necessary revisions have been made to the project plans, please submit plan review letters from both the soils engineer and the geologist. The plan review letter from the soils engineer should state that the final plans are in conformance with the recommendations of the soils report. The plan review letter from the geologist should state that the final plans are in conformance with the recommendations of the geologic report.

5) Please design the subdivision to preserve as many trees as possible. One of the proposed cul de sacs, for example, appears to be located where a large, mature oak now stands. If feasible, this cul de sac should be relocated to preserve the tree.

6) Part of the property is mapped as a possible biotic resource. Santa Cruz tarplant and coastal terrace prairie could possibly exist on this parcel. Please submit a biotic report prepared by a qualified consultant that addresses any sensitive species or habitats on the property.
========= UPDATED ON APRIL 11, 2006 BY KENT M EDLER =========

Please note that the GHA has not yet been completed for this parcel and that additional comments may arise upon completion of the GHA.

1) The soils report will be reviewed once the GHA has been completed. Please note that the soils report will have to specifically state what seismic coefficient was used in the pseudo-static slope stability analysis. It is not clear from the report whether or not the Recommended Procedures for Implementation of SP 117 were used or not.In addition, the Soils Engineer will need to address the suitablility of placing fill adjacent to the slopesalo ng the eastern property line and the affect on slope stability (the civil plans show fill to be placed there).

2) As stated in my first comment of 8/29/05, the grading plan must show the location of the drainage facilities.

3) The grading plan must clearly show how / where drainage for the houses will be handled. It also appears that there are numerous locations where drainage will pond adjacent to the houses (driveway drainage at lots1,2,3,4, 6 & 7 is not clear and also northern sides of lots 7 & 8). Please also note that drainage dissipators (if used) shall not be located in fill and must also be directed away from fill slopes and the slopes along the eastern property line.

4) Some of the proposed contours cross onto adjacent existing parcels. If grading is proposed on adjacent properties, Owner-Agent froms must be submitted from the adjacent property owners.Note: the toe and top of slopes must be set back from

propoerty lines in accordance with section 16.20.160 of the County Grading Ordinance.

5) The are numerous locations where slopes exceed 2:1 (H:V) - especially near some of the retaining walls. Revise plans so that slopes do not exceed 2:1.- Also see eastern portion of lot 7.

6) The existing 200 contour appears to be missing. Revise plans accordingly.

7) Some of the TOW / BOW elevations appear to be incorrect. (The BOW elev. is higher than the TOW elev.)

8) The toe of fill slopes must be set back 12' horizontally from the top of cut slopes. Revise plans or show details as to how the cut slopes will really be constructed as fill slopes. 16.20.150(b)

9) A plan review letter from the soils engineer will be required prior to this application being considered compelte. The plan review letter must state that the grading and drainage plan as well as building setbacks (from slopes) are in conformance with their report.
========= UPDATED ON APRIL 19, 2006 BY ANDREA M KOCH =========
1) Please show on the Preliminary Grading Plan (Sheet C.2.1) all trees proposed for retention, as well as tree protection fencing prohibiting grading within the driplines. Tree retention shown on the grading plan should be in accordance with the Tree Mitigation Plan on Sheet L-3.0.
========= UPDATED ON OCTOBER 21, 2008 BY KENT M EDLER =========

Updated Completeness Comments on Soils and Grading Issues:

1. On lot 8, there are 3 retaining walls that appear to be shown on the NW corner of the property. Indicate the height of these walls. Also note that some of the grades are too steep in this area.

2. Many of the finish floor elevations shown on C-4 do not match the cross-sections shown on sheets C-7 and C-8. Finish floor elevations and pad elevation do not match on many lots from x-sections on sheets C-7 to C-8 as well. For instance lot 3 shows FF elevation of 196 on C-4, 192.62 on C-7 and 197.62 on C-8. Pad elevation on C-7 is 190.12 and 195.12 on C-8. Clarify what is really being proposed so that grading for the project can be reviewed for compliance with the applicable codes.

3. Indicate the over-excavation and re-compaction grading quantities.
========= UPDATED ON OCTOBER 22, 2008 BY ANTONELLA GENTILE =========
Additional completeness comments regarding biotic resources:

1. Update the tree removal and protection plan to coordinate with the revised grading plan as requested by Kent Edler.

2. Indicate on C-3 whether trees 7, 37, 42, 43, 44, 46,and 47 will be removed or retained.

2. The arborist's report states that tree 34 has been removed, although sheet C-3

shows the tree being protected. Please clarify.

3. Please update the arborist's report to reflect the responses to the above comments dated 10/21/08 from Kent Edler and 10/22/08 from Antonella Gentile.

4. The arborist's report makes recommendations for the location of structures a minimum distance from the root crown of trees, however, effects of grading should be discussed as well. Please revise the arborist's report to include recommendations for areas to be graded and/or overexcavated and recompacted in the vicinity of trees to be protected.

5. Show trees to be protected and protection areas on the grading and drainage plan (sheet C-4).
========= UPDATED ON JULY 23, 2009 BY K. EDLER AND A. GENTILE =======

New completeness comments based upon substantially re-designed plans:

1. Label existing contours on sheet C-3.

2. Provide proposed pad elevations in plan view on Sheet C-3 and show outlines of the pad elevations in the building footprint.

3. Several of the structures extend eastward of the predicted failure retreat zone as developed by Zinn Geology. Provide cross sections through Lots 2-6 showing that the structures are founded below the predicted failure retreat zone. The cross sections should be drawn through the worst case scenarios for each structure.

4. Include the species of the trees to be retained on the landscape and civil plans.

========= UPDATED ON NOVEMBER 10, 2009 BY K. EDLER AND A. GENTILE ======== 1. Previous comment #1 has been addressed.

2. More information regarding finish floor elevations have been provided. Pad elevations were not provided, however it appears that grading in these areas will work. Please note that the improvement plans will need to make sure that the pad elevations are designed so that the 28' maximum height of the structures is not exceed. At this time in the review, it appears that this requirement is and can be met.

3. Previous comment #3 not addressed. Cross sections were provided on sheet C-6 with a failure retreat zone label included in the cross sections, however the cross section does not show the failure retreat zone per Zinn Geology. Therefore this comment remains.

4. Previous comment #4 has been addressed.
========= UPDATED ON JANUARY 20, 2010 BY KENT M EDLER =========

No Completeness comments.

Environmental Planning Miscellaneous Comments

========= REVIEW ON AUGUST 29, 2005 BY KENT M EDLER =========

Plans are too incomplete to review to make comments. See completeness comments.
========= UPDATED ON AUGUST 29, 2005 BY ANDREA M KOCH =========
========= UPDATED ON APRIL 11, 2006 BY KENT M EDLER ========= 1) An erosion control plan must be submitted that show locations and details of erosion and sediment control measures to be implemented during construction.

2) A plan review letter from the soils engineer will be required prior to approval of the improvement plans for the sub-division.

3) Details of all drainage devices must be shown on the plans.

========= UPDATED ON APRIL 19, 2006 BY ANDREA M KOCH ========= 1) No additional comments.
========= UPDATED ON OCTOBER 21, 2008 BY KENT M EDLER =========

Following are compliance comments for grading and soils issues:

1. The slope between the retaiing walls on lot 9 (along the northern property line) is steeper than 2:1. The soils engineer must address the adequacy of this design with regards to stability and erosion potential. It is recommended to increase the height of the lower wall was acheive a 2:1 slope behind the wall.

2. The soils engineer must address the potential for differential settlement on Lot 7. Consider over-excavation of more soil on the nothern portion of the structure to reduce the potential for diff. settlement. Show over-ex limits on section A-A.

3. Note 2 on sheet C-4 states that "all down spouts on the residences shall be discharged onto splash blocks and then into landscaping. The soils engineer and engineering geologist must comments as to the adequacy of the this for lot 3, 6, 7 and 10 in regards to slope stability.

4. The soils engineer and engineering geologist must comment on the adequacy of the biofiltration swale along the eastern property line in regards to slope stability.

5. X-section G does not properly show slope grading east of Lot 10.

6. The grading design should do a better job at balancing cut and fill quantities.

7. A plan review letter from the soils engineer and engineering geologist must be submitted that states that the prelinimary plans are in conformance with their recommendations.

8. The soils engineer must fill out and submit a Transfer of Responsibility form.

Following are misc. comments to be addressed with the improvement plans:

1. Plan review letters from the soils engineer and engineering geologist must be submitted to Environmental Planning for review.

2. The erosion control plan dated July 2008 shuold be modified as follows:

a) add another rocked construction entrance between lot 8 and lot 5.

b) eliminate the silt fence along the west side of lots 8 & 9 (the way it's drawn serves no purpose).

c) eliminate the silt fence on the west side of lots 4 & 5 and replace with a straw roll (wattle).

d) if a silt fence is to be used along the eastern property line, the silt fence must be set back 3' from the toe of the slope.

e) the erosion control plan must include a a contingency plan to control drainage if the permanent drainage system is not installed.

f) it is recommended to change the seed mix on the erosion control plan to an annual winter barley.
========= UPDATED ON OCTOBER 21, 2008 BY KENT M EDLER =========
========= UPDATED ON OCTOBER 22, 2008 BY ANTONELLA GENTILE =========
Compliance comments regarding biotic/archeological resources:

1. The results of the archeological reconnaissance are negative. Additional review is not necessary.

2. Per the memo from Paia Levine dated 5/9/07, no special status species exist on the property, and therefore conditions are not required.

3. Replacement of trees shall be required on a 3 to 1 basis, with the exception of tree 41 which shall be replaced with 5 coast live oaks. ========= UPDATED ON JULY 23, 2009 BY JOSEPH L HANNA =========
========= UPDATED ON JULY 23, 2009 BY KENT M EDLER ========= New Comments based upon substantially revised plans:

Compliance Comments

1. Grades are too steep at the east side of the lot 7 retaining walls. It appears that the upper wall will need to be extended further to the east or additional grading in this area will be needed.

2. It appears that there is an area where the reconstructed fill between lot 6 and APN 102-181-55 is so close to the property line, that when the keyway is constructed it will cross the property line. Revise the plans to accommodate the construction of the keyway so that it does not cross the property line. Alternatively, provide an owner-agent form from the adjacent property owner that specifically approves of the work on their property.

3. County Code Section 16.20.150 (b) requires the toes of fills to be setback 12 feet horizontally from the top of existing cut slopes. Revise the plans to meet this requirement. Alternatively, provide input from the soils engineer addressing the adequacy of the proposed reduced setback. The area of concern regarding this setback is the reconstructed fill along the eastern property line and the cut on the adjacent parcel.

4. The driveway to lot 7 where it crosses parcel 102-181-09, is located on undocumented fill. Revise the plans to show the extent of grading in this area to remove and replace the fill as engineered fill.

5. Lot 1 contains undocumented that is at least partially shown to be removed and replaced on section A-A. It appears that the keyway will need to be moved to the toe of the slope and may extend beyond the property line into the County right of way in some locations. Revise the plans to show the entire extent of removal and replacement of this fill. Please note that tree 45 will need to be retained and that grading in this area should be designed to retain the tree. An arborist should be consulted to make recommendations for retention of tree 45.

6. Once the compliance comments have been addressed, provide plan review letters from the soils engineer and engineering geologist.

Misc. Comments / Conditions of Approval

1. The improvement plans will need to show key and benching for the fill on cross-section E-E near the eastern property line.

2. Conditions of Approval will be provided once compliance comments have been addressed.
========= UPDATED ON JULY 27, 2009 BY ANTONELLA GENTILE =========
Misc. comment: Overexcavation and recompaction on lot 1 may require removal of tree 40 and/or tree 45. Provide comments from the arborist with the revised grading plan. If removal cannot be avoided, revise the plans (grading, demo, landscape and site plans) to reflect the changes. Include additional replacement trees as necessary to meet the 3:1 replacement criteria.

Condition: Prior to improvement plan approval, a plan review letter shall be required from the arborist.

Condition: Prior to improvement plan final, a final letter shall be required from the arborist, detailing her observations. ========= UPDATED ON JULY 29, 2009 BY KENT M EDLER =========
========= UPDATED ON NOVEMBER 11, 2009 BY KENT M EDLER =========

November 11, 2009 Compliance Comments

1. Although the failure retreat zones are not shown on the plans, it appears that Lot 5 proposes to use pier foundations to get below the failure retreat zone, in conflict with County Code Section 16.10.070(e)2(iii). Also note that if the plan is to use a swale to control drainage onsite, it too should be located outside of the failure retreat zone.

2. Once all compliance and completeness comments have been addressed, please submit updated review letters from the soils engineer and engineering geologist.

3. This project includes the removal of 16 eucalyptus, 3 acacia, 1 italian alder, 5 big leaf maple, 2 persian silk, 1 New Zealand lemonwood, 1 Mexican fan palm, 9 avocado, 2 apple, 1 plum, and 1 coast live oak. Descriptions of these trees can be

found in the arborist's report dated 6/27/08 and revised 11/22/08. These trees will be replaced with a combination of native and landscape trees, totaling 133 new trees.

4. Please provide a plan review letter from the project arborist that references the utility plan, as requested in her 10/14/09 letter. The utility plan must be reviewed prior to Development Permit approval, rather than Building Permit approval.
========= UPDATED ON JANUARY 20, 2010 BY KENT M EDLER =========

1. We have received the latest revised plans by RI Engineering and letters from Zinn Geology and have re-looked at the previous submitted cross sections. It is now apparent that RI Engineer did attempt to show the failure retreat zone in the previous submittal, however the shading of the zone on the plans was so light it was overlooked. Thank you submitting the response from Zinn Geology which clarifies that the previous cross section (K-K) showing the projected failure retreat zone at lot 5 submitted by RI Engineering was incorrectly drawn. But based upon the failure retreat zone shown on Plate 1 of Zinn Geology-s March 28, 2007 report, the failure retreat zone at lot 5 does encroach into the footprint of the proposed structure on that lot. Therefore the proposed structure at lot 5 must be revised to be behind the failure retreat zone.

With respect to the drainage swale being located out of the failure retreat zone, it appears that both Zinn Geology and RI Engineering have misinterpreted the comment. The previous comment stated, -if the plan is to use a swale to control drainage on-site, it too should be located outside of the failure retreat zone.- The comment did not require the swale to be removed. We realize that the swale is a necessary design feature to benefit the stability of the slope and to protect it against erosion. It is not an -adequate engineering standard of care- to propose a drainage swale that will take roof runoff from 5 houses, runoff from site swales as well as adjacent slopes in an area where that is projected to fail and /or erode and pass on the maintenance on to future property owners. In addition, the use of a grass-lined swale (in conflict with the 3rd paragraph of recommendation #3 of the engineering geology report dated March 28, 2007) only compounds the problem by introducing run-off into the upper colluvium of the failure retreat zone. This is not good engineering or planning. If a failure was to occur along this swale that renders it so that it no longer functions, a damaged swale cannot be simply rerouted around the resulting scar as Zinn Geology suggests, when in some locations there is only 3 feet (or less in the case of lot 5) between the project failure retreat zone and the proposed structures (based upon RI Engineering-s cross-sections J-J, I-I, H-H, L-L and K-K) and the location of the swale is several feet below the elevation of the top of the projected failure zone. In some cases the swale may only need to be relocated a few feet to the west to be located out of the failure retreat zone. In other locations (lot 3 & lot 4) there does not appear to be enough room between the failure retreat zone and the proposed structures, so the structures must be pulled away from the failure retreat zone to allow room for the swale to be located outside of the failure retreat zone.

2. Future revisions to the civil engineered plans need to include a revision date on the plans, or be signed by the civil engineer with a date that the plans were signed.

3. Please submit an updated plan review letter from the soils engineer and engineering geologist once the above comments have been addressed. Please note that the current routing did not include a plan review letter from the soils engineer.

Housing Completeness Comments

========= UPDATED ON DECEMBER 17, 2009 BY PATRICK J HEISINGER =========
NO COMMENT
Developer will be required to enter into a Measure J Participation Agreementlining the affordable housing obligations required for this project. The rdable housing obligation for this project will be all In-Lieu payments on er the fully entitled lot, or the constructed unit.

Long Range Planning Completeness Comments

========= REVIEW ON AUGUST 16, 2005 BY GLENDA L HILL =========
1. Location of required affordable housing not shown on plans. 2. The frontage and site width for proposed Lot 3 is shown as 33.59 feet on the Tentative Map. This is less than the required 40-foot minimum site frontage and 60-foot site width required by the R-1-10 site standards. This design can be considered as a corridor access lot with the area having a width less than 60 feet being deducted from net developable land and the required front yard setback being measured from the point the site becomes 60 feet wide. This may result in the lot not meeting the minimum 10,000 square foot lot size. A Variance may be requested or the lot configuration may be redesigned. ========= UPDATED ON APRIL 17, 2006 BY GLENDA L HILL =========
1. The gross and net building areas shown on Sheets 1.0 and C.1.0 are inconsistent with each other and need to be corrected. 2. The location of the affordable housing is not indicated on the plans.

========= UPDATED ON JULY 20, 2009 BY GLENDA L HILL =========
The revised tentative map indicates that Lots 6 and 7 will be served by newless than 40-foot rights-of-wayand will not meet the required 60-foot frontage requirement for new lots. A Development Permit is required for the creation of a new less than 40-foot right-of-way. The net site area of Lots 5 and 8 should include the reduction of the rights-of-way areas. Either a Variance or a redesign is needed for Lots 6 and 7 to address the proposed 12-foot site widths.

Long Range Planning Miscellaneous Comments

========= REVIEW ON AUGUST 16, 2005 BY GLENDA L HILL =========
1. Careful review of the submitted plans is needed to ensure that new roads and structures are not proposed on slopes of greater than 30% (General Plan Policies 6.3.1 and 6.3.9). 2. Considerable grading to change existing landforms is proposed. General Plan Policies 6.3.9 and 8.2.2 require the project to be sited and designed to minimize grading. Findings of consistency with these policies must be made in order to approve the project. ========= UPDATED ON APRIL 17, 2006 BY GLENDA L HILL =========

This reviewer is still concerned that the project does not appear to be minimizing grading, as required by the General Plan. Of particular concern are Lots 8 and 9 which the submitted plans show as fairly flat and are proposed to be graded to

create sloping building sites.Policy Section will defer to Environmental Planning on this matter but currently finds the proposed grading to be inconsistent with the General Plan policy to minimize grading. ========= UPDATED ON JULY 20, 2009 BY GLENDA L HILL =========
The project redesign has addressed the Policy Section's concerns about slopes over 30% and the amount of proposed grading. General Plan findings regarding prohibition on development on>30% slopes and minimizing grading will still need to be made in order to approve the project.

Dpw Drainage Completeness Comments

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

========= UPDATED ON MAY 31, 2009 BY LOUISE B DION =========

Summary of meeting held between Consultant (Richard Irish, Sarah Erickson) and County DPW Drainage (Rachel Fatoohi, Louise Dion) on May 8th 2009.

1) Install check dams on swale along east side of property. Provide capacity calculations for water storage behind dams.

2) Install porous pavement for 6- parking strip along east side of road.

3) Okay to balance total Q predevelopment (i.e. Q pre from east will b higher than allowable Q pre, Q from west side (from detention) will be released at a lower Q pre such that total Q run off from site is equal to Q pre).

4) Providing adequate grading for parcels 2-5 such that drainage reaches swale.

5) Drainage fees are currently $1.03 and will increase to $1.06 in August.

6) Engineer highpoint in road to maximize runoff directed to porous pavement strip.

7) Install swale along west side behind proposed homes 9-10.

8) Regarding previous drainage comments #7 - "It is unclear how the plan sheets have been revised to address this comment. Please clarify." The original comment from D. Sims was "The function of the channel drains needs to be better communicated."

Richard Irish indicated that the design has been modified and the channel drains were removed. Louise indicated she would look at the originals while reviewing the next submittal to confirm.

========= UPDATED ON JULY 29, 2009 BY LOUISE B DION =========

4th review -

Revised plans June 2009 and revised drainage calculations dated June 4, 2009 by RI Engineering have been received.

Prior item 1) Deferred to miscellaneous comment.

Prior items 2, 5 and 7 are complete.

Our concerns regarding feasibility for proposed drainage system have been addressed and the application is deemed complete with respect to the discretionary permit application stage.

Please see miscellaneous comments for additional ance.

Dpw Drainage Miscellaneous Comments

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

========= REVIEW ON AUGUST 30, 2005 BY DAVID W SIMS =========
Applicant should provide drainage information to a level addressed in the "Drainage Guidelines for Single Family Residences" provided by the Planning Department. This may be obtained online: http://sccounty01.co.santa-cruz.ca.us/planning/brochures/drain.htm

Construction activity resulting in a land disturbance of one acre or more, or less than one acre but part of a larger common plan of development or sale must obtain the Construction Activities Storm Water General NPDES Permit from the State Water Resources Control Board. Construction activity includes clearing, grading, excavation, stockpiling, and reconstruction of existing facilities involving removal and replacement. For more information see:
http://www.swrcb.ca.gov/stormwtr/constfaq.html

A drainage impact fee will be assessed on the net increase in impervious area. The fees are currently $0.90 per square foot, and are assessed upon permit issuance. Reduced fees are assessed for semi-pervious surfacing to offset costs and encourage more extensive use of these materials.

Because this application is incomplete in addressing County development policies, resulting revisions and additions will necessitate further review comment and possibly different or additional requirements. The applicant is subject to meeting all future review requirements as they pertain to theapplicant's changes to the proposed plans.

All resubmittals shall be made through the Planning Department. Materials left with Public Works may be returned by mail, with resulting delays.

Please call the Dept. of Public Works, Stormwater Management Section, from 8:00 am to 12:00 noon if you have questions. ========= UPDATED ON APRIL 24, 2006 BY DAVID W SIMS =========
Miscellaneous:

A) Can the lower stormwater treatment system discharge be connected to the existing nearby street manhole, avoiding an unnecessary cut into the existing main storm drain system?

B) Could the lower stormwater treatment system serve the entire development by allowing runoff from the upper end of Seaview Place to route around the curb return and travel a short distance down Panorama Drive entering inlet CB-E2?

C) Could pipe layouts within Seaview Dr. be simplified to reduce the number of manholes?

D) Wouldn't the existing stormdrain lateral at the lower entrance to Seaview Dr. need to be removed to assure site runoff flows to the filtration system, or will elevation of this pipe cause it to function as an overflow route?

E) How much upper watershed runoff could enter CB-A2 without overwhelming the filtration unit? Do the existing inlets above CB-A2 successfully capture curbside runoff from the above watershed?

F) The architect's plans indicate many surfaces built of interlocking pavers, such as: the street parking lane; the long common driveway serving lots 9 and 10; various patios and walkways. Are any of these surfaces intended to be permeable? Only the private driveways are clearly labeled as permeable, and it is not clear whether just these driveways would be sufficient to meet mitigation requirements. Most new pavements appear to be directly connected to stormdrain systems, whereas this was less true before. See comment for items 1 and 2.

G) Method of discharge of retaining wall subdrains should be noted or shown.

H) Please provide notation for permanent bold markings at each street inlet that read: "NO DUMPING - DRAINS TO BAY". ========= UPDATED ON JULY 29, 2009 BY LOUISE B DION =========

In addition to all previous miscellaneous comments, as well as completeness comments deferred to miscellaneous comments, please note the following:

1. The existing and proposed impervious areas calculation have changed significantly. June 2009 report indicates a reduction in impervious area. Please provide all documentation for existing permitted impervious area. Based on our review, the requirement for detention may be reduced or eliminated.

2. Drainage fees are currently $1.03 and will increase to $1.06 in August.

3. It is not clear that roadway has been engineered to maximize runoff towards porous pavement strip as the high point in the roadway is at the edge of the proposed porous pavement.

Dpw Road Engineering Completeness Comments

======== REVIEW ON AUGUST 30, 2005 BY GREG J MARTIN ========
Show both sides of Hilltop Drive and Panorama Drive along the frontage of the proposed project and for 100 feet in either direction from the property line. These roads should meet current County standards.

The tentative map improvement plans are incomplete. A site plan which shows the improvements is required. The site plan should show curb, gutter, sidewalk, new pavement, stationing for each new road. Additional sheets should show typical sections, sections, and profiles for each road. The structural section should be shown for each new road and driveway. Reference to standard figures for improvements should be made to the County Design Criteria when appropriate. The new proposed roads do not meet County Standards. The right-of-way recommended for the new roads is 56 feet.

Label the radii for the curb faces for returns at the intersections of the new access roads and Panorama Drive.

The edge of pavement for the driveway for Lots 10 and 11 is not defined at the end of the driveway. We do not recommend shared access.

The driveway for Lot 6, 10, and 11 should allow for turning around on site. The minimum inside radius for the driveway is 15 feet.

The driveway for Lot 9 should be at least 8 feet from the beginning of the return for the intersection of the new road and Panorama Drive.

Each required parking space should be numbered and dimensioned on the plans.

If you have any questions please call Greg Martin at 831-454-2811.
========= UPDATED ON APRIL 24, 2006 BY GREG J MARTIN =========
Show both sides of Hilltop Drive and Panorama Drive along the frontage of the proposed project and for 100 feet in either direction from the property line. These roads should meet current County standards.

The tentative map improvement plans are incomplete. A site plan which shows the improvements is required at a scale which shows the entire site. The site plan should show curb, gutter, sidewalk, new pavement, stationing for each new road. Additional sheets should show typical sections, sections, and profiles for each road. The structural section should be shown for each new road and driveway. Reference to standard figures for improvements should be made to the County Design Criteria when appropriate. The new proposed roads do not meet County Standards. The right-of-way recommended for the new roads is 56 feet. Mountable curbs are not recommended.

Label the radii for the curb faces for returns at the intersections of the new access roads and Panorama Drive.

The shared access layout for Lots 10 and 11 is not recommended.

Each required parking space should be numbered and dimensioned on the plans. Additional comments may be provided once the previous comments have been addresses.

Please contact Greg Martin at 831-454-2811 to meet to discuss these comments.
========= UPDATED ON OCTOBER 15, 2008 BY JACK R SOHRIAKOFF =========
NO COMMENT
========= UPDATED ON JULY 27, 2009 BY GREG J MARTIN =========

---------- 1. A cross-walk and handicapped ramps are recommended at the stop sign near the limits maintained by the County of Santa Cruz to provide a pedestrian connection to the County sidewalk. ----------
---------- 2. The internal loop road proposed for the development does not meet County design criteria standards, and the civil plans include the required information to request the exception. The exception must be advertised as part of the project description. DPW cannot recommend the exception since the roadway serves more than five units, and the applicant has rot specified why it is necessary.

---------- 3. Pervious paving has been proposed within the road section. The county-s standard is to use asphalt concrete paving within the road section including parking areas. We do not recommend the use of an alternative material. The use of an alternative structural section should be evaluated from a safety, structural, maintenance, and longevity standpoint. What are the specifications of the material to be used? If the surface is uneven this may be a safety concern. Will the structural section have the equivalent strength as a standard section? What provisions are there to address cracking if pervious concrete?

---------- 4. If the loop road is approved with parking only on one side the local fire department will be responsible for enforcing the restriction since the new road will not be a publicly maintained roadway.

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5. Transportation Improvement Area (TIA) fees are required for each new lot created. Credit can be given for each legal residential unit currently occupied. =========
UPDATED ON NOVEMBER 12, 2009 BY GREG J MARTIN =========
1. The stop sign, stop bar, and crosswalk are correctly shown on the plans.
---------- 2. 2. In the County Design Criteria under Part 2. Street Design and Section A - Street Widths it discusses the recommended standard and minimum rights-of-way and road elements as shown in Figure ST-1a. The minimum standard for a two-way urban local street is 30 feet curb to curb with Type A (Fig ST-4a) curb and gutter on both sides. A sidewalk and four foot landscape strip is on one side.
---------- Th The project is proposing to meet the minimum standard required elements by providing the following:
---------- A. A. an 18 foot wide one-way road
----------Th exceeds the recommended 15 feet of width required per travel lane in the County Design Criteria. Public Works does not believe an exception is required for a one-way road versus a two-way road as each element required is provided (JRS). It should be noted

that if an exception was required, given 1) the geometry of the project parcel which facilitates two access points to the existing road and 2) the steep topography which would require significantly more grading of the parcel to provide a two-way road, we would have no objections.
---------- B. B. a 4 foot sidewalk which matches the recommendations
---------- Th This meets the recommended sidewalk element in the County Design Criteria.
---------- C. C. a 4 foot landscape strip adjacent to the sidewalk
---------- Th This meets the recommended landscape element in the County Design Criteria.
---------- D. D. Type A curb and gutter on both sides of the road.
---------- Th This meets the recommended landscape element in the County Design Criteria.
---------- E. E. A buffer of four feet with a swale is recommended.
---------- Th This swale is not a flat element as recommended by the County Design Criteria. However provided the flowline of the swale is no more than 6 inches from the top of the curb it should perform satisfactorily. Vehicles will not be high sided if they go over the curb.
---------- 3. 3. The use of pervious concrete for the parking area falls under the discretion of the Director of Public Works. Public Works believes this structural section to be adequate (JRS).

Dpw Road Engineering Miscellaneous Comments

======== REVIEW ON AUGUST 30, 2005 BY GREG J MARTIN ========
======== UPDATED ON APRIL 24, 2006 BY GREG J MARTIN ========
======== UPDATED ON OCTOBER 15, 2008 BY JACK R SOHRIAKOFF ========
1. The project plans should indicate the end point of County maintenance of Hilltop Road in order to identify the road segments that are private vs. public maintenance. The stop sign issue identified in the neighborhood meeting notes refers to a stop sign that is not maintained by the Department of Public Works and is the responsibility of the home owners association. The traffic analysis by Higgins Associates dated July 11, 2008, makes recommendations that DPW periodically check this stop sign since it gets removed on a continuous basis. Again, this is the responsibility of the home owners association. 2. The internal loop road proposed for the development does not meet County design criteria standards, and the civil plans include the required information to request the exception. The exception must be advertised as part of the project description. DPW cannot recommend the exception since the roadway serves more than five units, and the applicant has not specified why it is necessary. 3. If the loop road is approved with parking only on one side the local fire department will be responsible for enforcing the restriction since the new road will not be a publicly maintained roadway. 4. The Higgins traffic analysis did not identify any impacts due to the proposed project. However, it did not evaluate the sight distance for the new loop road intersections. Since the southernmost intersection of the loop road is near the horizontal curve it may be necessary to make this part of the loop road one-way in only, unless a sight distance analysis confirms it

meets standards and it would be safe to exit the loop road. 5. The traffic analysis included a -sampling- of speed surveys. This sampling is not adequate to make any conclusions and needs to be disregarded. Speed surveys are required to have at least a minimum of 50 readings in one direction to be a valid survey. The recommendation in the analysis for the County to provide more speed enforcement is not appropriate since the California Highway Patrol is the enforcement agency. The neighbors can contact the CHP directly to report problems and to request additional enforcement. DPW will notify the CHP as well that the residents have concerns about speeding and enforcement. 6. The installation of road bumps was mentioned in the neighborhood meeting minutes. Hilltop Road is not eligible for road bumps due to the insufficient distances between side streets. The side streets are 200-400 feet apart and DPW recommends at least 700 feet apart in order to place two road bumps within one segment and to meet the required offsets from the side streets. 7. Transportation Improvement Area (TIA) fees are required for each new lot created. Credit can be given for each legal residential unit currently occupied. ========= UPDATED ON JULY 27, 2009 BY GREG J MARTIN =========
========= UPDATED ON NOVEMBER 12, 2009 BY GREG J MARTIN ========

Dpw Sanitation Completeness Comments

Sewer service is available for the subject development upon completion of the following conditions. This notice is effective for one year from the issuance date to allow the applicant the time to receive tentative map, development or other discretionary permit approval. If after this time frame this project has not received approval from the Planning Dept. the applicant must obatin a new sewer service availability letter. Once a tentavive map is approved this letter shall apply until the tentative map approval expires.

Lots 1 and 2 will require residential pumps stations and they shall conform to the provisions of the Santa Cruz County Design Criteria Figure SS-13 and to the Uniform Plumbing Code. A sanitary sewer cleanout is required at every change in direction or slope of the collector. Revise Sanitary Sewer Note 8, Laterals shall be constructed perpendicular to the sewer main. For Note 2 - it is recommended that the pipe material be PVC SDR 26 or equal.

Sewer service is not available for the subject development. Please note that this notice does not reserve service availability. Only upon completion of an approved preliminary sewer design submitted as part of a tentative map development or other discretionary permit approval process shall the District reserve sewer service availability.

Lateral slope shall have a minimum slope of 2% Some of the lots will require private residential pump stations and they shall conform to the provisions of the Santa Cruz County Design Criteria and to the Uniform Plumbing Code. Include details of the proposed pump stations.

Show portions of sewer mains to be publicly or privately maintained.

Sewer mains shall be installed on the centerline of the roadway

The easements shall be shown on either the final map or the parcel map and shall be offered for dedication to the Sanitation District as part of the Owner's certificate. Easements shall be for public use for sanitary sewers and necessary appurtenances on or under the land so designated.

Sewer easements shall be provided for all District maintained sewers. All easements shall be improved to a width of at least 12 feet, shall be fully accessible to all District maintenance vehicles and shall be no less than 20 feet in width.

========= REVIEW ON OCTOBER 15, 2008 BY BEATRIZ - BARRANCO =========

Sewer service is not available for the subject development. Please note that this notice does not reserve sewer service availability. Only upon completion of an approved preliminary sewer design submitted as part of a sewer amine publicly or privately maintained.

Show finished floor elevations on utility plan.

Some of the lots will require private residential pump stations and they shall conform to the provisions of the Santa Cruz County Design Criteria and to the Uniform Plumbing Code.

The minimum pipe diameter shall be 8-inch for public collector lines.

Sewer mains shall conform to current State of California Department of Health Services criteria regarding separation between sewer and water mains.

Show if sewer mains will be publicly or privately maintained.

The sewer main in Road B shall be an 8-inch collector line.

Label the sewer in the road as sewer mains and not sewer laterals.

A cleanout is required at every change in direction or slope of the sewer lateral. Sewer laterals shall be connected perpendicular to the sewer mains.

The minimum slope for the sewer laterals shall be 2.0%.

A manhole will be required at the upstream end of Road A.

A cul-de-sac manhole will be required at the end of Road B.

A manhole will be required where the sewer main in Road B intersects the sewer main in Road A.

Minimum pipe cover for public sewers is 5 feet.

Minimum pipe cover for sewer laterals is 3 feet. ========= UPDATED ON JULY 23, 2009 BY BEATRIZ - BARRANCO =========
========= UPDATED ON JULY 23, 2009 BY BEATRIZ - BARRANCO =========
========= UPDATED ON JULY 23, 2009 BY BEATRIZ - BARRANCO =========
========= UPDATED ON JULY 23, 2009 BY BEATRIZ - BARRANCO =========
========= UPDATED ON NOVEMBER 3, 2009 BY BEATRIZ - BARRANCO =========
========= UPDATED ON NOVEMBER 3, 2009 BY BEATRIZ - BARRANCO =========

Dpw Sanitation Miscellaneous Comments

See completeness comments submitted November 3, 2009.

Sewer service is not available for the subject development. Please note that this notice does not reserve sewer service availability. Only upon completion of an approved preliminary sewer design submitted as part of a tentative map development or other discretionary permit approval process shall the District reserve sewer service availability.

Sanitary sewer manhole depth shall not excedd 20 feet without written approval of the District Engineer.

A sanitary sewer manhole shall be provided at all changes in horizontal or vertical alignment, and at the end of all public sewer mains.

Lateral from Lot 5 shall be constructed perpendicular to the sewer main.

Correct item 6 in the sanitary sewer notes. ========= REVIEW ON OCTOBER 15, 2008 BY BEATRIZ - BARRANCO =========

Sewer service is not available for the subject development. Please note that this notice does not reserve sewer service availability. Only upon completion of an approved preliminary sewer design submitted as part of a tentative map development or other discretionary permit approval process shall the District reserve sewer service availability. ========= UPDATED ON JULY 23, 2009 BY BEATRIZ - BARRANCO =========
========= UPDATED ON JULY 23, 2009 BY BEATRIZ - BARRANCO =========
========= UPDATED ON NOVEMBER 3, 2009 BY BEATRIZ - BARRANCO =========

Environmental Health Completeness Comments

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

========= REVIEW ON AUGUST 23, 2005 BY JIM G SAFRANEK =========
NO COMMENT

Environmental Health Miscellaneous Comments

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

========= REVIEW ON AUGUST 23, 2005 BY JIM G SAFRANEK ========= EHS fee should be for minor subd, w/ public services (not a subd. served by onsite sewage disposal).

CENTRAL
FIRE PROTECTION DISTRICT
of Santa Cruz County
Fire Prevention Division

930 17th Avenue, Santa Cruz, CA 95062
phone (831) 479-6843 fax (831) 479-6847

Date: July 14, 2009
To: 3700 Hilltop LLC
Applicant: ***same***
From: Tom Wiley
Subject: **05-0493**
Address **3700 Hilltop Rd.**
APN: 102-181-08
OCC: 10218108
Permit:

We have reviewed plans for the above subject project.

The following NOTES must be added to notes on velums by the designer/architect in order to satisfy District requirements when submitting for **Application for Building Permit**:

NOTE on the plans that these plans are in compliance with California Building and Fire Codes (2007) and District Amendment.

NOTE on the plans the OCCUPANCY CLASSIFICATION, BUILDING CONSTRUCTION TYPE-FIRE RATING and SPRINKLERED as determined by the building official and outlined in the 2007 California Building Code (e.g., R-3, Type V-N, Sprinklered).

The FIRE FLOW requirement for the subject property is 1000 gallons per minute for 120 minutes. NOTE on the plans the REQUIRED and AVAILABLE FIRE FLOW. The AVAILABLE FIRE FLOW information can be obtained from the water company.

SHOW on the plans, DETAILS of compliance with District rural Water Storage Requirements. Please refer to and comply with the diagram on Page 5.

NOTE ON PLANS: New/upgraded hydrants, water storage tanks, and/or upgraded roadways shall be installed PRIOR to construction (CFC 508.5).

SHOW on the plans DETAILS of compliance with the District Access Requirements outlined on the enclosed handout. The roadway(s) are required to be designated as fire lanes, and painted with a red curb with FIRE LANE NO PARKING in contrasting color every 30 feet on the top of the red curb. If the roadway is 27' or less, both sides of the street/roadway shall be painted, 35' and down to 28' in width, the roadway curbs shall be painted on one side, and 36' and wider no red curb is required. All cul-de-sacs shall be fire lane, red curbed.

The roadway profile with grade percentages shall be shown on the plans. These plans shall be wet stamped and signed by the Engineer/Designer/Survey of the roadway. The Central Santa Cruz Fire District shall inspect the finished grade prior to the installation of the permanent driving surface.

Bridge must be "Certified" by a Registered Civil or Structural Engineer. See District Bridge Load Limit Sign Specification.

NOTE on the plans that the building shall be protected by an approved automatic sprinkler system complying with the edition of NFPA 13D currently adopted in Chapter 35 of the California Building Code.

NOTE on the plans that the designer/installer shall submit two (2) sets of plans, calculations, and cut sheets for the underground and overhead Residential Automatic Sprinkler System to this agency for approval. *Installation shall follow our guide sheet.*

Show on the plans where smoke detectors are to be installed according to the following locations and approved by this agency as a minimum requirement:

- One detector adjacent to each sleeping area (hall, foyer, balcony, or etc).
- One detector in each sleeping room.
- One at the top of each stairway of 24" rise or greater and in an accessible location by a ladder.
- There must be at least one smoke detector on each floor level regardless of area usage.
- There must be a minimum of one smoke detector in every basement area.

NOTE *on the plans where address numbers* will be posted and maintained. Note on plans that address numbers shall be a minimum of FOUR (4) inches in height and of a color contrasting to their background.

NOTE on the plans the installation of an approved spark arrestor on the top of the chimney. Wire mesh not to exceed ½ inch.

NOTE on the plans that the roof coverings to *be no less than Class "**B**" rated roof.*

NOTE on the plans that a 100-foot clearance will be maintained with non-combustible vegetation around all structures.

Submit a check in the amount of $115.00 for this particular plan check, made payable to Central Fire Protection District. A $35.00 **Late Fee** may be added to your plan check fees if payment is not received within 30 days of the date of this Discretionary Letter. INVOICE MAILED TO APPLICANT. Please contact the Fire Prevention Secretary at (831) 479-6843 for total fees due for your project.

If you should have any questions regarding the plan check comments, please call me at (831) 479-6843 and leave a message, or email me at tomw@centralfpd.com. All other questions may be directed to Fire Prevention at (831)479-6843.

CC: File & County

As a condition of submittal of these plans, the submitter, designer and installer certify that these plans and *details comply with 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. Further, the submitter, designer, and installer agrees to hold harmless from any and all alleged claims to have arisen from any compliance deficiencies, without prejudice, the reviewer and the Central FPD of Santa Cruz County.
10218108-071409

SOQUEL CREEK WATER DISTRICT

Board of Directors
Bruce Daniels, *President*
Dr. Thomas R. LaHue, *Vice President*
Dr. Don Hoernschemeyer
Dr. Bruce Jaffe
Daniel F. Kriege

Laura D. Brown, *General Manager*

July 16, 2008

Mr. Jerry Whitney
303 Potrero St., Ste 43-104
Santa Cruz, CA 95060

SUBJECT: Conditional Water Service Application – 3700 Hilltop Drive, Soquel, APN 102-181-08

Dear Mr. Whitney:

In response to the subject application, the Board of Directors of the Soquel Creek Water District at their regular meeting of July 15, 2008 voted to grant you a conditional Will Serve Letter for your proposed 10-lot subdivision project so that you may proceed through the appropriate planning entity. An Unconditional Will Serve Letter cannot be granted until such time as you are granted a Final Discretionary Permit on your project. At that time, an Unconditional Will Serve Letter will be granted subject to your meeting the requirements of the District's Water Demand Offset Program and any additional conservation requirements of the District prior to obtaining the actual connection to the District facilities subject to the provisions set forth below.

Possible Infrastructure Check List	yes	no
1. LAFCO Annexation required		✓
2. Water Main Extension required off-site	✓	
3. On-site water system required	✓	
4. New water storage tank required		✓
5. Booster Pump Station required (upgrade)	✓	
6. Adequate pressure		✓
7. Adequate flow		✓
8. Frontage on a water main		✓
9. Other requirements that may be added as a result of policy changes.		✓

This present indication to serve is valid for a two-year period from the date of this letter; however, it should not be taken as a guarantee that service will be available to the project in the future or that additional conditions, not otherwise listed in this letter, will not be imposed by the District prior to granting water service. Instead, this present indication to serve is intended to acknowledge that, under existing conditions, water service would be available on condition that the developer agrees to provide the following items without cost to the District:

1) Destroys any wells on the property in accordance with State Bulletin No. 74;
2) Satisfies all conditions imposed by the District to assure necessary water pressure, flow and quality;
3) Satisfies all conditions of Resolution No. 03-31 Establishing a Water Demand Offset Policy for New Development, which states that all applicants for new water service shall be required to offset expected water use of their respective development by a 1.2 to 1 ratio by retrofitting existing developed property within the Soquel Creek Water District service area so that any new development has a "zero impact" on the District's groundwater supply. Applicants for new service shall bear those costs associated with the retrofit as deemed appropriate by the District up to a maximum set by the District and pay any associated fees set by the District to reimburse administrative and inspection costs in accordance with District procedures for implementing this program;
4) Satisfies all conditions for water conservation required by the District at the time of application for service, including the following:
    a) Plans for a water efficient landscape and irrigation system shall be submitted to District Conservation Staff for approval. Current Water Use Efficiency Requirements are enclosed with this letter, and are subject to change;
    b) All interior plumbing fixtures shall be low-flow and all Applicant-installed water-using appliances (e.g. dishwashers, clothes washers, etc.) shall have the EPA Energy Star label plus new clothes washers also shall have a water use factor of 8.5 or less;
    c) District Staff shall inspect the completed project for compliance with all conservation requirements prior to commencing domestic water service;
5) Completes LAFCO annexation requirements, if applicable;
6) All units shall be individually metered with a minimum size of 5/8-inch by ¾-inch standard domestic water meters;
7) A memorandum of the terms of this letter shall be recorded with the County Recorder of the County of Santa Cruz to insure that any future property owners are notified of the conditions set forth herein.

Future conditions which negatively affect the District's ability to serve the proposed development include, but are not limited to, a determination by the District that existing and anticipated water supplies are insufficient to continue adequate and reliable service to existing customers while extending new service to your development. In that case, service may be denied.

You are hereby put on notice that the Board of Directors of the Soquel Creek Water District is considering adopting additional policies to mitigate the impact of new

development on the local groundwater basins, which are currently the District's only source of supply. Such actions are being considered because of concerns about existing conditions that threaten the groundwater basins and the lack of a supplemental supply source that would restore and maintain healthy aquifers. The Board may adopt additional mandatory mitigation measures to further address the impact of development on existing water supplies, such as the impact of impervious construction on groundwater recharge. Possible new conditions of service that may be considered include designing and installing facilities or fixtures on-site or at a specified location as prescribed and approved by the District which would restore groundwater recharge potential as determined by the District. The proposed project would be subject to this and any other conditions of service that the District may adopt prior to granting water service. As policies are developed, the information will be made available at the District Office.

Sincerely,
SOQUEL CREEK WATER DISTRICT

for

Jeffery N. Gailey
Engineering Manager/Chief Engineer

Enclosures: Water Use Efficiency Requirements & Sample Unconditional Water Service Application

Annette Olson

From: Beatriz Barranco
Sent: Tuesday, March 09, 2010 9:45 AM
To: Annette Olson
Subject: 05-0493 5th routing.doc

Comments saved 10/29/09

Sewer service is available for the subject development upon completion of the following conditions. This notice is effective for one year from the issuance date to allow the applicant the time to receive tentative map, development or other discretionary permit approval. *If after this time frame this project* has not received approval from the Planning Department, the applicant must obtain a new sewer service availability letter. Once a tentative map is approved this letter shall apply until the tentative map approval expires.

Lots 1 and 2 will require private residential pump stations and they shall conform to the provisions of the Santa Cruz County Design Criteria Figure SS-13 and to the Uniform Plumbing Code.

A sanitary sewer cleanout is required at every change in direction or slope of the collector.

Revise Sanitary Sewer Note 8, Laterals shall be constructed perpendicular to the sewer main.

Note 2- It is recommended that the pipe material shall be PVC SDR 26 or equal.

Scott Eschen
Seacoast Partners LLC

June 27, 2008
Revised November 22, 2008

Project : 3700 Hilltop Drive Subdivision
3700 Hilltop Drive
Soquel, Ca

Arborist Report

June 26, 2008, I made a site visit to prepare an addendum to the existing arborist report prepared for this site . All the existing trees to be removed and existing trees to remain and be protected are indicated and numbered on the Preliminary Grading Plan prepared by R.I. Engineering. The numbers correspond to the tree numbers in the arborist report.

An arborist report was prepared for the original subdivision for his site by ValleyCrest Tree Care Services, dated March 14, 2006. All the trees on the site were evaluated at that time. An addendum to that report, dated March 10, 2007 was prepared to address several completeness issues outlined in a memo from the County of Santa Cruz Planning department dated April 3, 2006. One of the completeness issues raised in the memo refers to the language in the report used to justify removal of a grove of eucalyptus trees. The language is as follows: "removal of this tree is recommended due to the proposed development". The memo instructs that this language be eliminated. These trees are located in the northern portion of the property where there are 2 flat terraces with steep slopes above and below the terraces. The terraces were graded in the 1950's for large chicken coops and then used more recently for a boat building operation. There are Eucalyptus globules (Blue Gum) trees and Acacia baileyana (Acacia) trees, numbers 1-19, located on the steep slopes along the northern property line and the northeast

corner of the property, and on the steep slope below the first flat terrace. In addition, trees of various species numbers 19-23, are located on the slope below the second terrace. These slopes were improperly graded leaving nonengineered, uncompacted fill that is unstable and potentially hazardous. The trees will need to be removed in order to remove the fill, regrade and stabilize these slopes.

Following is a brief description of the significant trees on the site:

Tree #26 a Persia americana (Avocado) tree located on Lot 7. It is a multi-trunked tree that has 9 standard limbs, with diameters measured at breast height (DBH) of between 15" and 18". The tree is approximately 40' tall with a 35' average crown spread. The tree is in fair condition with heart rot evident in many limbs and die back in the canopy. The tree should be pruned to eliminate dead and dying twigs and branches. I recommend that any structure be at least 10' from the root crown (base of the trunk) of this tree

Tree #27 is a Persia americana (Avocado) located on Lot 6. This tree is a multi-trunked tree with 6 standard limbs with DBH's between 14" and 18". It is approximately 30' tall with an average crown spread of 35'. The tree is in fair condition. The tree will need to be removed to accommodate the site plan as drawn.

Tree #35 is a Quercus agrifolia (Coast Live Oak) located on Lot 4. It is approximately 50' tall with a DBH of 29" and an average crown spread of 40'. The tree is in good condition. I recommend that any structure be a minimum of 12' from the root crown of this tree.

This corner of the adjacent proposed house is a one story garage and will thus have a slab footing. I recommend that the trench for the slab edge should be hand dug with the project arborist on site to supervise.

Tree #36 is an Acer macrophyllum (Big Leaf Maple) located on Lot 3. It is approximately 45'tall with a DBH of 34" and an average crown spread 25'. There was a large diameter trunk removed at some time in the past. The cavity that has resulted from this removal is full of heart rot. This tree is located 11' from Tree #6. The canopies of the two trees are crowding one another, shading interior branches and reducing air circulation. . Tree # 35 would benefit from the removal of Tree #36. I recommend that Tree #36 be removed.

Tree #40 is a Sequoia sempervirens (Coast Redwood). It is approximately 35' tall with a DBH of 24" and an average crown spread of 17'. The tree is in good condition. I recommend that any structure be 10' from the root crown of this tree. The retaining walls

should be engineered so that the footings for the retaining walls are only oriented away from the tree.

Tree #41 is a Quercus agrifolia (Coast Live Oak) located on Lot 3. It has a single trunk of 24" to approximately 3' above grade where it splits into 5 standard leaders with DBH's between 22" and 30". Several of the limbs are nearly parallel to the ground, as low as 4' above grade. Most Live Oaks in the area were completely defoliated by Oak Moth larvae in the summer of 2007. Many trees have put on new growth but this tree has very little foliage at this time.

This tree is mature having reached a stage of reduced shoot elongation. The rounded crown suggests that apical control has lessened. Many of the standard scaffold limbs are nearly horizontal and originate at the same location on the trunk putting great stress on the tree. These limbs are long and heavy and have a high likelihood of failure. The tree is not vigorous due to the total defoliation from the Oak Moth larvae in 2007. Most oaks in the area have fully recovered while this tree remains very sparsely foliated. The impacts of construction activities near this tree will push this tree into a mortality spiral from which it will not recover. I recommend that the tree be replaced with 10 –48" Box Quercus agrifolia (Coast Live Oak) trees on the site in locations agreed on by the landscape architect and the project arborist.

Tree #45 is a Pseudotsuga menziesii (Douglas Fir) located on Lot 1. It is approximately 50' tall with an average crown spread of 20'. It has a single trunk to 6' above grade with a DBH of 22" and then splits into 2 parallel trunks. The tree is in fair condition. The crown is misshapen due to pruning for the adjacent utility pole and wires.

I recommend that any structure be 10' from the root crown of this tree.

Following is a list of all 48 existing trees on the site with their sizes. Tree diameter at breast height (DBH), approximate average crown spread and height were omitted from the original report prepared by VallyCrest Tree Services.

Tree #1 is a Eucalyptus globulus that is approximately 60' tall with 2 trunks with DBH's of 18" & 19" and an average crown spread of 25'. This tree should be removed to facilitate the regrading of the unstable slope.

Tree #2 is a Eucalyptus globulus that is approximately 70' tall with 7 trunks with DBH's between 13" and 22" and an average crown spread of 40'. This tree should be removed to facilitate the regrading of the unstable slope.

Tree #3 is a Eucalyptus globulus that is approximately 75' tall with a DBH of 17" and an average crown spread of 15'. This tree should be removed to facilitate the regrading of the unstable slope.

Tree #4 is a Eucalyptus globulus that is approximately 70' tall with 4 trunks with DBH's between 12" and 16" and an average crown spread of 30'. This tree should be removed to facilitate the regrading of the unstable slope.

Tree #5 is a Eucalyptus globulus that is approximately 70' tall with 3 trunks with DBH's between 9" and 24" and an average crown spread of 40'. This tree should be removed to facilitate the regrading of the unstable slope.

Tree #6 is a Eucalyptus globulus that is approximately 65' tall with a DBH of 22" and an average crown spread of 25'. This tree should be removed to facilitate the regrading of the unstable slope.

Tree #7 is a Eucalyptus globulus that is approximately 60' tall with 2 trunks with DBH's of 12" & 9" and an average crown spread of 25'. This tree should be removed to facilitate the regrading of the unstable slope.

Tree #8 is a Eucalyptus globulus that is approximately 75' tall with a DBH of 45" and an average crown spread of 30'. This tree should be removed to facilitate the regrading of the unstable slope.

Tree #9 is a Eucalyptus globulus that is approximately 65' tall with a DBH of 13" and an average crown spread of 12'. This tree should be removed to facilitate the regrading of the unstable slope.

Tree #10 is a Eucalyptus globulus that is approximately 70' tall with a DBH of 30" and an average crown spread of 35'. This tree should be removed to facilitate the regrading of the unstable slope.

Tree #11 is a Eucalyptus globulus that is approximately 40' tall with a DBH of 19" and an average crown spread of 15'. This tree should be removed to facilitate the regrading of the unstable slope.

Tree #12 is an Acaia baileyana that has been removed.

Tree #13 is a Eucalyptus globulus that is approximately 50' tall with 5 trunks with DBH's between 9" and 26" and an average crown spread of 30'. This tree should be removed to facilitate the regrading of the unstable slope.

Tree #14 is a Eucalyptus globulus that is approximately 40' tall with 3 trunks with DBH's between 10" and 13" and an average crown spread of 15'. This tree should be removed to facilitate the regrading of the unstable slope.

Tree #15 is a Eucalyptus globulus that is approximately 45' tall with 2 trunks with DBH's of 9" & 10" and an average crown spread of 15'. This tree should be removed to facilitate the regrading of the unstable slope.

Tree #16 is a Eucalyptus globulus that is approximately 45' tall with 4 trunks with DBH's between 12" and 20" and an average crown spread of 20'. This tree should be removed to facilitate the regrading of the unstable slope.

Tree #17 is a Eucalyptus globulus that is approximately 45' tall with 2 trunks with DBH's of 25" and 26" and an average crown spread of 25'. This tree should be removed to facilitate the regrading of the unstable slope.

Tree #18 is an Acaia baileyana that is approximately 25' tall with a DBH of 10' and an average crown spread of 20'. This tree should be removed to facilitate the regrading of the unstable slope.

Tree #19 is an Acaia baileyana that is approximately 25' tall with 2 trunks with DBH's of 6" and 8" and an average crown spread of 20'. This tree should be removed to facilitate the regrading of the unstable slope.

Tree #20 is an Alnus cordata that is approximately 22' tall with a DBH of 17" and an average crown of 20'. This tree should be removed to facilitate the regrading of the unstable slope.

Tree #21 is an Acaia baileyana that is approximately 20' tall with 2 trunks with DBH's of 6" and 9" and an average crown spread of 20'.

Tree #22 is a Acer macrophyllum that is approximately 20' tall with 2 trunks with DBH's of 6" and 10" and an average crown spread of 20'.

Tree #23 is an Albizia julibrissin that is approximately 22' tall with 3 trunks with DBH's between 5" and 8" and an average crown spread of 25'.

Tree #24 is a Persea Americana that is approximately 15' tall with a DBH of 7" and an average crown spread of 15'.

Tree #25 is a Persea Americana that is approximately 17' tall with a DBH of 11" and an average crown spread of 40'.

Tree #26 is a Persea Americana that is approximately 35' tall with 9 trunks with DBH's between 16" and 19" and an average crown spread of 35'.

Tree #27 is a Persea Americana that is approximately 40' tall with 6 trunks with DBH's between 14" and 19" and an average crown spread of 40'.

Tree #28 is a Persea Americana that is approximately 25' tall with a DBH of 19" and an average crown spread of 25'.

Tree #29 is a Persea Americana that is approximately 12' tall with a DBH of 5" and an average crown spread of 8'.

Tree #30 is a Persea Americana that is approximately 13' tall with 2 trunks with DBH's of 4" and 9" and an average crown spread of 12'.

Tree #31 is a Persea Americana that is approximately 12' tall with 2 trunks with DBH's of 3" and 4" and an average crown spread of 12'.

Tree #32 is a Malus sp. that is approximately 13' tall with a DBH of 7" and an average crown spread of 12'. This tree has been removed.

Tree #33 is a Trachycarpus fortunei that has been removed.

Tree #34 is a Albizia julibrissin that has been removed.

Tree #35 is a Quercus agrifolia that is reviewed above.

Tree #36 is an Acer macrophyllum that is reviewed above.

Tree #37 is a Persea Americana that is approximately 20' tall with with a DBH of 6" and an average crown spread of 20'. This tree has been removed .

Tree #38 is a Pittosporum eugeniodes that is approximately 15' tall with 4 trunks with DBH's between 7" and 10" and an average crown spread of 12'.

Tree #39 is an Prunus sp. that is approximately 9' tall with a DBH of 5" and an average crown spread of 7'.

Tree #40 is a Sequoia sempervirens that is reviewed above.

Tree #41 is a Quercus agrifolia that is reviewed above.

Tree #42 is a Malus sp. That is 12' tall with a DBH of 6" and an average crown spread of 7'.

Tree #43 is a Washingtonia robusta that is approximately 32' tall with a DBH of 15" and an average crown spread of 8'.

Tree #44 is an Acer macrophyllum that is approximately 20' tall with 4 trunks with DBH's between 6" and 8" and an average crown spread of 20'.

Tree #45 is a Pseudotsuga menziesii that is reviewed above.

Tree #46 is an Acer macrophyllum that is approximately 22' tall with 4 trunks with DBH's between 6" and 9" and an average crown spread of 17'.

Tree #47 is an Acer macrophyllum that is approximately 22' tall with 5 trunks with DBH's between 6" and 11" and an average crown spread of 19'.

Tree #48 is a Persea Americana that is approximately 25' tall with 2 trunks with DBH's of 7" and 18" and an average crown spread of 18'.

Regarding the tree protection measures outlined in the addendum to the arborist report by Valley Crest Tree Care Services dated March 10, 2007, I recommend that the protective fencing be portable chain link fencing on concrete footings. The fencing should be placed as diagramed on the Preliminary Grading Plan prepared by R.I. Engineering. Protective fencing should be in place prior to commencement of any grubbing or clearing of the site and should stay in place through final inspection by the County of Santa Cruz Building Department. The other tree protection measures listed in the addendum should be followed and periodically inspected by a licensed arborist.

There are 42 trees to be removed. I recommend that they be replaced at a ratio of 3 to 1. Currently there are 133 trees indicated on the Preliminary Landscape Plan prepared by Michael Arnone Landscape Architect.

Utility plans should be reviewed by the project arborist prior to submittal for building permits. .

No grading shall take place with in the minimum distances given from individual root crowns to structures. Adjacent areas shall not be over excavated. If roots 3" in diameter are exposed they should be cut cleanly by hand and not ripped. The exposed ends should be wrapped in burlap secured with string and kept moist until the area can be backfilled.

Thank you,

Ellen Cooper
Arborist WCISA # 0848

County of Santa Cruz Planning Department
701 Ocean Street
Santa Cruz , CA

October 14, 2009

Project : Seaview Estates
3700 Hilltop Drive
Soquel, Ca

To Whom It May Concern

In Response to the County of Santa Cruz 'Incomplete Application –Additional Information Required' document dated August 7th, 2009.

On October 14th, 2009 I reviewed the revised grading plan for the Seaview Estates project in Soquel. The project is currently a 9 unit subdivision. The arborist report dated June 27, 2008, revised November 22, 2008 and the arborist letter amended May 22, 2009 proposed that 4 trees be saved. The trees are numbered and shown with protective fencing on the Grading and Drainage Plan prepared by R.I Engineering Inc.. The trees to remain and be protected during grading and construction are Tree #26 on Lot 5 a Persia americana (Avocado), Tree #45 on Lot 1 a Pseudotsuga menziesii (Douglas Fir), Tree #40 on Lot 1 a Sequoia sempervirens (Coast Redwood), and Tree #35 on Lot 9 a a Quercus agrifolia (Coast Live Oak). These are the original tree numbers from the arborist report.

The Grading Plan dated June 2009, indicates that the grading has been modified adjacent to Tree #40 and #45 on Lot 1 as requested by the County of Santa Cruz Planning Department. This has moved the limits of grading further from the trunks and root crowns of these trees. The 3' retaining wall north and east of Tree #40 is located 12' from the trunk of the redwood. Care shall be taken to protect the tree during construction of this retaining wall. Protective fencing shall remain in place as possible and moved only to allow minimal access to the base of the retaining wall to minimize compaction. Fill shall not be placed until after the wall has been constructed.

Trees #27 & #28 are Persia amercicana (Avocado). These is not native trees.

I recommend that the protective tree fencing, for all trees to be saved, be portable chain link fencing on concrete footings. The fencing should be placed as diagramed on the Grading and Drainage Plan prepared by R.I. Engineering. Protective fencing should be in

place prior to commencement of any grubbing or clearing of the site and should stay in place through final inspection by the County of Santa Cruz Building Department.

No grading shall take place within the fenced areas. Adjacent areas shall not be over excavated. If roots 3" in diameter are exposed during grading they should be cut cleanly by hand and not ripped. The exposed ends should be wrapped in burlap secured with string and kept moist until the area can be backfilled.

Changes to the site plan have not affected the other protected trees to remain. All other recommendations made in the arborist report remain unchanged.

There are 42 trees to be removed. I recommended in the arborist report that they be replaced at a ratio of 3 to 1. Currently there are 133 trees indicated on the Preliminary Landscape Plan prepared by Michael Arnone Landscape Architect.

Utility plans should be reviewed by the project arborist prior to submittal for building permits. .

Thank you,

Ellen Cooper
Arborist WCISA #0848

County of Santa Cruz Planning Department
701 Ocean Street
Santa Cruz , CA

December 23, 2009

Project : Seaview Estates
3700 Hilltop Drive
Soquel, Ca

To Whom It May Concern

On December 22th, 2009 I reviewed the Utility Plan for the Seaview Terrace Subdivision at 3700 Hilltop Drive in Santa Cruz. The project is currently a 9 unit subdivision. The arborist report dated June 27, 2008, revised November 22, 2008 and the arborist letter amended May 22, 2009 proposed that 4 trees be saved. The trees are numbered and shown with protective fencing on the Grading and Drainage Plan prepared by R.I Engineering.

In my letter dated October 14, 2009, I recommended that the project arborist review the final utility plan by Richard Irish Engineering. I have reviewed that plan dated June 2009 and have determined that no utility trenching will take place near the trees to be saved and protected. The root zones of these trees will not be impacted by utility construction.

All protection measures outlined in the review letter dated October 14, 2009 and in the arborist report dated June 27, 2008 and revised November 22, 2008 shall be followed.

Thank you,

Ellen Cooper
Arborist WCISA #0848

HIGGINS ASSOCIATES
CIVIL & TRAFFIC ENGINEERS

July 11, 2008

Mr. Jerry Whitney
303 Potrero Street, Suite 43-104
Santa Cruz, CA 95060

Re: Seaview Estates Subdivision, Santa Cruz County, California

Dear Mr. Whitney,

Higgins Associates has performed a traffic analysis for the proposed Seaview Estates subdivision, a residential development in the community of Soquel in Santa Cruz County, California. The project is composed of 10 residential units, to be located on Panorama Drive near its intersections with Hilltop Road and Vista Drive. The project location is depicted in **Exhibit 1**, while the project site plan is included as **Exhibit 2**.

This traffic analysis has been conducted in response to concerns raised by neighbors in the vicinity of the project site. The scope of work for this analysis covers the following four project-related issues:

1. Project Trip Generation;
2. Parking Analysis;
3. Project Responsibility towards Existing Traffic Issues; and
4. Project Impacts at Soquel-San Jose Road/Hilltop Road intersection.

A. Project Trip Generation

Exhibit 3 contains the trip generation estimate for the study project. This estimate utilized trip generation rates provided by the Institute of Transportation Engineers within its publication *Trip Generation*, 7th Edition, 2003. The study project would generate 96 daily trips, of which 8 trips (2 in, 6 out) would occur during the AM peak hour, and 10 trips (6 in, 4 out) during the PM peak hour. This small level of trip activity would not impact operations within the area street system. The Santa Cruz County Public Works Department agrees with this assessment of the trip generation, deeming the project of small enough size to not require any traffic analysis for this project.

B. Parking Analysis

A parking demand and supply analysis has been performed for the study project. **Exhibit 4** contains a parking demand estimate for the project, utilizing rates from the Institute of Transportation Engineers publication *Parking Generation*, 3rd Edition, 2004. The project would have an estimated parking demand of 24 vehicles.

A review has also been performed of the project site plan, in order to determine if the project provides a sufficient parking supply to accommodate the estimated parking demand. Both off- and on-street parking is proposed within the project site. Each of the ten units on the project site would feature a three-car garage. Also, each driveway can accommodate a minimum of one parked vehicle. Therefore, a maximum of 40 vehicles could be parked off of the street. However, it is acknowledged that it is common practice that garages are not always used by residents for vehicle storage; instead, they are commonly used for storage of other items. To be conservative, it is assumed that only three vehicles can be stored off of the street per unit (including garages and driveways), for a total off-street parking supply of 30 vehicles. In addition, up to twelve vehicles would be able to park on the internal loop street. In total, 42 vehicle spaces would be provided on the project site. This would provide a surplus supply of 18 vehicles, representing a sizable cushion in vehicle supply for the project site.

With regard to on-street parking along the internal loop road, this analysis assumes that the on-street parking is only allowed on the outside frontage of the loop. As the proposed loop road would be less than the standard County width of 56 feet, the Santa Cruz County Public Works Department is requiring on-street parking be provided only in one direction of the roadway. Allowing parking on the outside frontage of the loop would discourage on-street parking in the wrong direction of the street, an event that would be frequent if on-street parking were allowed along the inside loop frontage. In addition, with parking allowed on the outside loop frontage would mean that on-street parking would be located to the right of vehicle entering via the southern project access, which is anticipated to be the busier of the two accesses. Such a location for the on-street parking is a more standard situation than parking on the left side of the street.

C. Project Responsibility towards Existing Traffic Issues

Neighbors within the vicinity of the project site have raised concerns regarding two existing traffic concerns within the area street system:

1. Excessive speeding on Hilltop Road; and
2. Vandalism of existing stop sign on Panorama Drive approaching Hilltop Road.

Each issue is discussed in the following paragraphs.

1. Hilltop Road Vehicle Speeds:

   One concern presented by area neighbors is with regard to vehicle speeding along Hilltop Road. A site visit was made to Hilltop Road in April 2008, in order to observe traffic operations. As reference, the speed limit on Hilltop Road is 25 miles per hour (mph).

As part of the site visit, a sample speed survey was conducted along Hilltop Road. Over the course of the site visit, observations and speed survey results on Hilltop Road west of Valera Drive found that the stop signs in the eastbound direction and the roadway upgrade in the westbound direction directly affected travel speeds. Therefore, this analysis focuses on the section of Hilltop to the east of Valera Drive.

Exhibit 5 contains a summary of the results from the vehicle speed survey along Hilltop Road between Valera Drive and Soquel-San Jose Road. The results found that vehicle speeds varied from a low of 27 mph (two vehicles) to a high of 35 (two vehicles). All vehicles surveyed (nine eastbound and three westbound) traveled above the posted speed limit of 25 mph. In fact, the 85th percentile speed in the eastbound direction was 35 mph.

While the number of vehicles surveyed is only a small sample, it does indicate that speeding along Hilltop Road may be a problem. However, as the highest travel speed was 35 mph – only 10 mph over the posted speed limit – a simple corrective measure (like increased speed enforcement) may be enough to reduce speeding. Santa Cruz County should consider increasing speed enforcement along Hilltop Road. The project would have no responsibility towards this issue.

2. Panorama Drive Stop Sign Vandalism:

Residents in the vicinity of the project site have also raised concerns regarding past vandalism of the existing stop sign on southbound Panorama Drive at Hilltop Road. This vandalism included removal of the sign. At the time of the aforementioned site visit in April 2008, the stop sign was present and was being followed by vehicles approaching it. It is recommended that Santa Cruz County Public Works staff considers periodically visiting the Panorama Drive/Hilltop Road intersection to verify the status of the sign, and correct any issues at the site. Area residents, including those of the future project site, are encouraged to contact the Santa Cruz County Public Works Department if future acts of vandalism occur to the stop sign. The project applicant, any associated representative, or anyone associated with the construction of the site infrastructure or units should do the same. Otherwise, the study project would have no other responsibility towards correcting any future vandalism to the stop sign.

D. Project Impacts at Soquel-San Jose Road/Hilltop Road Intersection

Concerns have been raised regarding whether or not the study project would impact operations at the Soquel-San Jose Road/Hilltop Road intersection. The traffic report for the nearby subdivision off of Panorama Drive was utilized in evaluating if the study project would impact the intersection in question. The aforementioned traffic report, titled *Traffic Impact Study of the Tan Property Residential Development*, by TJKM Transportation Consultants in 1989, contains a Buildout traffic scenario that projects traffic volumes at buildout of the Santa Cruz County General Plan. That report found that operations of the Soquel-San Jose/Hilltop intersection with

buildout of the county general plan would operate at an acceptable overall LOS A, with acceptable side-street operations of LOS D (left turn) and LOS B (right turn), during the PM peak hour. This is within the Santa Cruz County overall level of service standard of LOS C. The addition of the study project's 10 PM peak hour trips would result in a minimal impact on intersection operations, and would not cause intersection operations to degrade into unacceptable conditions.

E. Conclusion

In summary, the project would generate only 8 AM and 10 PM peak hour trips, a low enough volume of traffic that the project would not impact operations within the surrounding area street network. The parking supply proposed within the project site would be of sufficient size to accommodate the anticipated parking demand for the project. On-street parking within the project site is recommended only along the outside frontage of the internal loop road. Santa Cruz County should consider increasing speed limit enforcement along Hilltop Road, as well as verifying the status of the stop sign on Panorama Drive at Hilltop Road through periodic visits. Area residents, the project applicant, any associated representative, or anyone associated with the construction of the site infrastructure or units, should consider informing Santa Cruz Public Works Department regarding any future vandalism of the aforementioned Panorama Drive stop sign. The study project would have no other responsibility towards either the vehicle speed or Panorama Drive stop sign issues.

If you have any questions regarding this proposal, please do not hesitate to contact me or Jeff Waller of my office.

Respectfully submitted,

Jeff Waller

for Keith B. Higgins, CE, TE
President

kbh:jmw

Enclosures

Cc: Deidre Hamilton, Hamilton-Swift

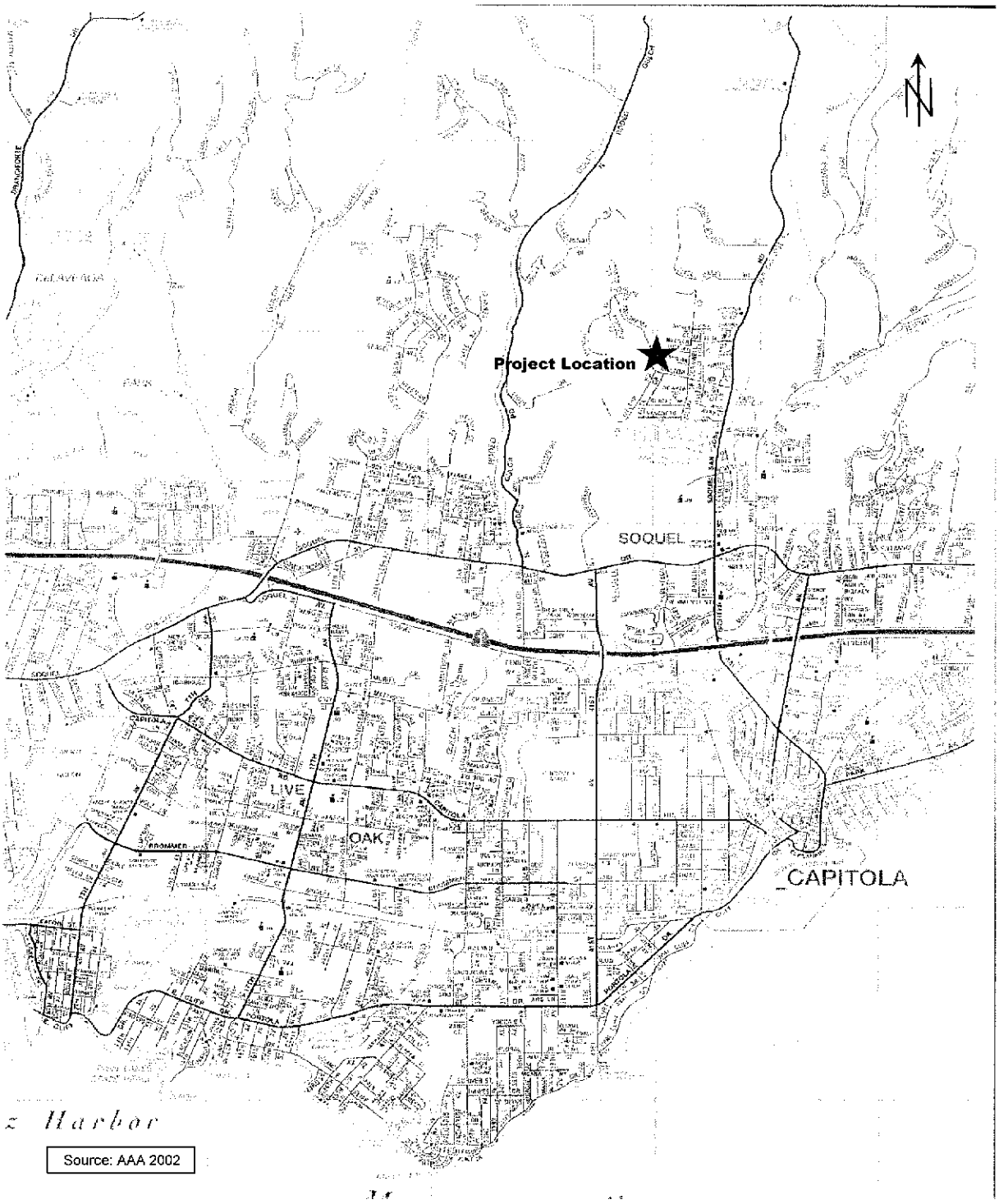
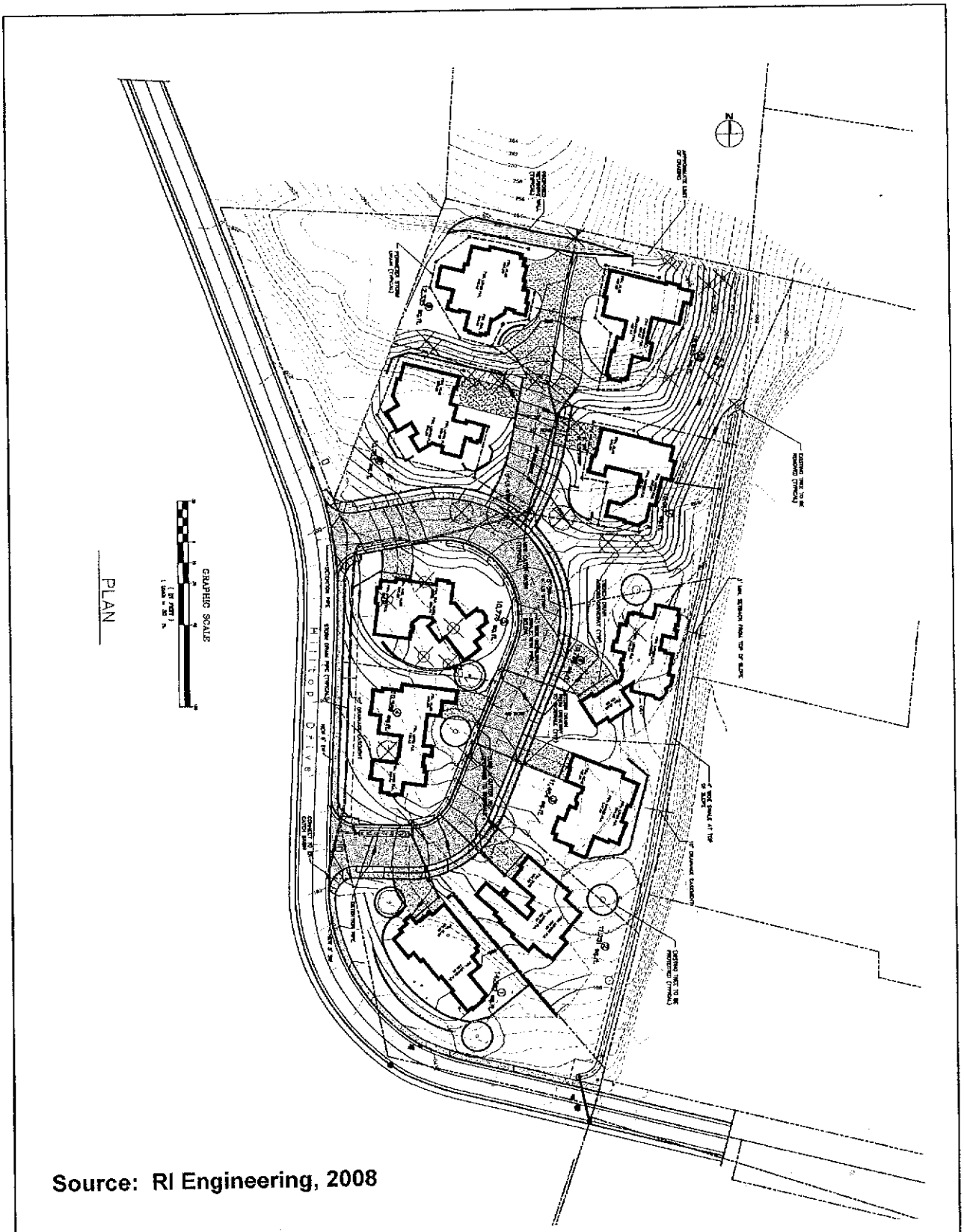


EXHIBIT 1
Project Location Map



Source: RI Engineering, 2008

EXHIBIT 2
PROJECT SITE PLAN

TRIP GENERATION SUMMARY
SEAVIEW ESTATES

PROJECT TRIP GENERATION

	ITE LAND USE CODE	PROJECT SIZE	WEEKDAY DAILY TRIPS	AM PEAK HOUR TOTAL PEAK HOUR	AM PEAK HOUR % OF ADT	AM PEAK HOUR IN	AM PEAK HOUR OUT	WEEKEND PEAK HOUR TOTAL PEAK HOUR	WEEKEND PEAK HOUR % OF ADT	WEEKEND PEAK HOUR IN	WEEKEND PEAK HOUR OUT
TRIP GENERATION RATES[1]											
Single-Family Dwelling Unit (per unit)	210		9.57	0.75	8%	25%	75%	1.01	11%	63%	37%
Single-Family Dwelling Unit (per unit)	210	10 units	96	8	8%	2	6	10	11%	6	4

Notes:
1. Trip generation rates published by Institute of Transportation Engineers (ITE), *Trip Generation* , 7th Edition, 2003, except where otherwise noted.

PARKING GENERATION SUMMARY
SEAVIEW ESTATES

PROJECT PARKING GENERATION

	ITE LAND USE CODE	PROJECT SIZE	WEEKDAY PARKING DEMAND
TRIP GENERATION RATES[1]			
Single-Family Dwelling Unit (per unit)	210		2.40
Single-Family Dwelling Unit (per unit)	210	10 units	24

Notes:
1. Parking generation rates published by Institute of Transportation Engineers (ITE), *Parking Generation* , 3rd Edition, 2004, except where otherwise noted.
2. Parking generation utilizes regression equation; parking rate cited above is equalent rate for the project size.

EXHIBIT 4
Project Parking Generation

Location: **Hilltop Road, Valera Drive to Soquel-San Jose Road**

Number of Vehicles Surveyed:		Eastbound:	9
		Westbound:	3
Highest Speed:	35 mph	(2 vehicles)	
Lowest Speed:	27 mph	(2 vehicles)	
85th Percentile Speed:		Eastbound:	35 mph
		Westbound:	32 mph

EXHIBIT 5
Summary of
Speed Survey
along Hilltop Road

APPENDIX A

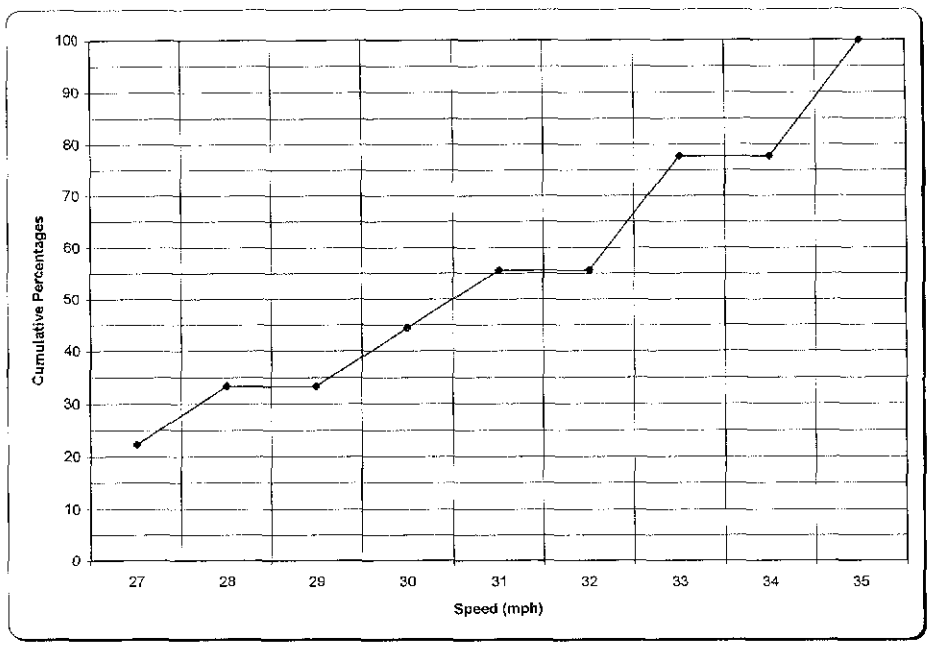
SPEED SURVEY DATA

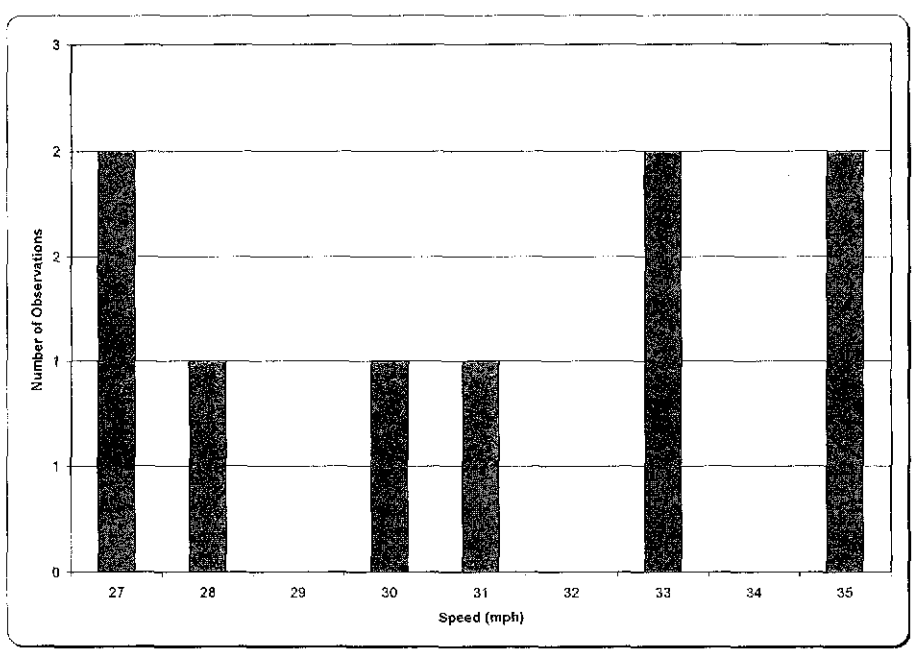
Speed Study Analysis

Location:	**Hilltop Drive, S. of Valera**				
Direction:	**EB**	50th percentile speed (median):	31 mph	Average Speed:	31 mph
Day of the Week:	Tuesday	*85th percentile speed (critical)*:	35 *mph*	*Standard Deviation:*	3 mph
Date:	April 8, 2008	10 mph pace speed[2]:	27 to 36	Mode[1]:	35 mph
Time of Day:	7:30 AM - 8:15 AM	Percent in pace speed:	100 %	% Exceeding Speed Limit:	100 %
Posted Speed Limit[3]:	25 *mph*	*Range of speeds:*	27 to 35		
Vehicles Observed:	9				

Survey Data

Speed (mph)	Number of Obs.	Percent. of Total	Cumul. Percent.
27	2	22	22
28	1	11	33
29	0	0	33
30	1	11	44
31	1	11	56
32	0	0	56
33	2	22	78
34	0	0	78
35	2	22	100





Notes:

[1] If there is more than one mode, the highest speed is presented in the summary.

[2] If there is more than one 10 mph pace speed, the average is presented in the summary

[3] *Refers to speed limit as posted on day* and at the location of the speed survey