# COUNTY OF SANTA CRUZ

PLANNING DEPARTMENT

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

**TOM BURNS, PLANNING DIRECTOR**


February 12, 2008

Planning Commission
County of Santa Cruz
701 Ocean Street
Santa Cruz, CA 95060

**Agenda Date**: March 26, 2008
**APN: 064-041-06**
**Application: 07-0562**
**Item 33**

**Subject: A public hearing to consider a proposal to rezone a single lot of record from the Residential Agriculture(RA) zone district to the Timber Production (TP) zone district.**

Members of the Commission:

On September 19, 2007, the County Planning Department accepted this application for a rezoning to Timber Production (TP). This is a proposal to rezone a 7.6-acre parcel from the Residential Agriculture (RA) zone district to the Timber Production (TP) designation. The uses on the property consist of a single -family residence.

**Background**

This project qualifies for a rezoning under California Government Code Section 51113. This section allows a property owner to petition the County to rezone land to the TP zone. The requirements for this type of rezoning are listed in Government Code section 51113(c)[1]. The County may not place any additional requirements on this petition to rezone the property to TP. County Code Section 13.10.375(c) – "Zoning to the TP District" implements Government Code section 51113 and specifies the six criteria which must be met in order to rezone to TP.

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[1] c) On or before March 1, 1977, the board or council by ordinance shall adopt a list of criteria required to be met by parcels being considered for zoning as timberland production under this section.
The criteria shall not impose any requirements in addition to those listed in this subdivision and in subdivision (d). The following shall be included in the criteria:
(1) A map shall be prepared showing the legal description or the assessor's parcel number of the property desired to be zoned.
(2) A plan for forest management shall be prepared or approved as to content, for the property by a registered professional forester.
The plan shall provide for the eventual harvest of timber within a reasonable period of time, as determined by the preparer of the plan.
(3) (A) The parcel shall currently meet the timber stocking standards as set forth in Section 4561 of the Public Resources Code and the forest practice rules adopted by the State Board of Forestry and Fire Protection for the district in which the parcel is located, or the owner shall sign an agreement with the board or council to meet those stocking standards and forest practice rules by the fifth anniversary of the signing of the agreement. If the parcel is subsequently zoned as timberland production under subdivision (a), failure to meet the stocking standards and forest practice rules within this time period provides the board or council with a ground for rezoning of the parcel pursuant to Section 51121.
(B) Upon the fifth anniversary of the signing of an agreement, the board shall determine whether the parcel meets the timber stocking standards in effect on the date that the agreement was signed.
Notwithstanding the provisions of Article 4 (commencing with Section
51130), if the parcel fails to meet the timber stocking standards, the board or council shall immediately rezone the parcel and specify a new zone for the parcel, which is in conformance with the county general plan and whose primary use is other than timberland.
(4) The parcel shall be timberland, as defined in subdivision (f) of Section 51104.
(5) The parcel shall be in compliance with the compatible use ordinance adopted by the board or council pursuant to Section 51111.
(d) The criteria required by subdivision (c) may also include any or all of the following:
(1) The land area concerned shall be in the ownership of one person, as defined in Section 38106 of the Revenue and Taxation Code, and shall be comprised of single or contiguous parcels of a certain number of acres, not to exceed 80 acres.
(2) The land shall be a certain site quality class or higher under
Section 434 of the Revenue and Taxation Code, except that the parcel shall not be required to be of the two highest site quality classes.

In accordance with County Code Section 13.10.375(c), the project meets the following six criteria for rezoning to Timber Production:

1. A map has been submitted with the legal description or assessor's parcel number of the property to be rezoned.

2. A Timber Management Plan, undated, prepared by a registered professional forester has been submitted for the property (Exhibit E).

3. The parcel currently meets the timber stocking standards as set forth in Section 4561 of the Public Resources Code and the Forest Practice Rules for the district in which the parcel is located (see Exhibit E).

4. The parcel is timberland, as the entire parcel is capable of producing a minimum of 15 cubic feet of timber per acre annually and is almost entirely located within a mapped Timber Resource area.

5. The uses on the parcel are in compliance with the Timber Production Zone uses set forth in Section 13.10.372.

6. The land area to be rezoned is in the ownership of one person, as defined in Section 38106 of the Revenue and Taxation Code, and is comprised of at least five acres in area.

This project qualifies for a statutory exemption (Exhibit D) in accordance with the California Environmental Quality Act and the County Environmental Review Guidelines (Article 17, Section 1703).

**Conclusion**

All of the criteria have been met for rezoning this parcel to the Timber Production zoning designation. All required findings can be made to approve this application and the rezoning is consistent with the General Plan policies and land use designations.

## Recommendation

Staff recommends that your Commission adopt the attached Resolution (Exhibit A), sending a recommendation to the Board of Supervisors for approval of Application No. 07-0562 based on the attached findings (Exhibit B).

**EXHIBITS**

A. Planning Commission Resolution, with Ordinance/ Findings
B. APN Map
C. Location, Current Zoning and General Plan Designation Maps
D. Notice of Exemption from CEQA
E. Timber Management Plan by Roy Webster, RPF #1765, dated September 2007.

Maria Porcila Perez
Project Planner
Development Review

Reviewed By: Mark M. Deming
Mark Deming
Assistant Planning Director

BEFORE THE PLANNING COMMISSION
OF THE COUNTY OF SANTA CRUZ, STATE OF CALIFORNIA

RESOLUTION NO._____

On the motion of Commissioner
duly seconded by Commissioner
the following Resolution is adopted:

PLANNING COMMISSION RESOLUTION
SENDING RECOMMENDATION TO THE BOARD OF SUPERVISORS
ON PROPOSED AMENDMENT TO THE ZONING ORDINANCE

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WHEREAS, the Planning Commission has held a public hearing on Application No. 07-0562, involving property located on the north side of Orchard Road, approximately 1300 feet west of the intersection with Hillside Drive, and the Planning Commission has considered the proposed rezoning, all testimony and evidence received at the public hearing, and the attached staff report.

NOW, THEREFORE, BE IT RESOLVED, that the Planning Commission recommends that the Board of Supervisors adopt the attached ordinance amending the Zoning Ordinance by changing property from the Residential Agriculture (RA) zone district to the Timber Production zone district.

BE IT FURTHER RESOLVED, that the Planning Commission makes findings on the proposed rezoning as contained in the Report to the Planning Commission.

PASSED AND ADOPTED by the Planning Commission of the County of Santa Cruz, State of California, this _____ day of _____, 2008, by the following vote:

AYES: COMMISSIONERS
NOES: COMMISSIONERS
ABSENT: COMMISSIONERS
ABSTAIN: COMMISSIONERS

_____
Chairperson

ATTEST: _____
MARK DEMING, Secretary

APPROVED AS TO FORM:

_____
COUNTY COUNSEL



EXHIBIT A

**ORDINANCE NO. _____**

**ORDINANCE AMENDING CHAPTER 13
OF THE SANTA CRUZ COUNTY CODE
CHANGING FROM ONE ZONE DISTRICT TO ANOTHER**

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The Board of Supervisors of the County of Santa Cruz ordains as follows:

## SECTION I

The Board of Supervisors finds that the public convenience, necessity and general welfare require the amendment of the County Zoning Regulations to implement the policies of the County General Plan and Local Coastal Program Land Use Plan regarding the timber resource property located on the north side of Orchard Road, approximately 1300 feet west of the intersection with Hillside Drive; finds that the zoning to be established herein is consistent with all elements of the Santa Cruz County General Plan and the Santa Cruz County Code, as modified by the *Big Creek* decision; and finds and certifies that the project is subject to a statutory exemption under the California Environmental Quality Act.

## SECTION II

The Board of Supervisors hereby adopts the Zoning Plan Amendment as described in Section III, and adopts the findings in support thereof without modification as set forth below:

1. The proposed zone district will allow a density of development and types of uses which are consistent with the objectives and land use designations of the adopted General Plan; and

1. The proposed zone district is appropriate for the level of utilities and community services available to the land; and

2. The character of development in the area where the land is located has changed or is changing to such a degree that the public interest will be better served by a different zone district; and

3. The property meets the requirements of Government Code section 51113 or 51113.5 and County Code Section 13.10.375(c).

EXHIBIT A

## SECTION III

Chapter 13.10 - Zoning Regulations of the Santa Cruz County Code is hereby amended by amending Section 13.10.210 - Zoning Plan to change the following properties from the existing zone district to the new zone district as follows:

| Assessor's Parcel Number | Existing Zone District | New Zone District |
|---|---|---|
| 064-041-06 | Residential Agriculture (RA) | TP |

## SECTION IV

This ordinance shall take effect on the 31st day after the date of final passage.

PASSED AND ADOPTED THIS _____ day of _____ 2008, by the Board of Supervisors of the County of Santa Cruz by the following vote:

AYES: SUPERVISORS
NOES: SUPERVISORS
ABSENT: SUPERVISORS
ABSTAIN: SUPERVISORS

_____
Chairman of the Board of Supervisors

ATTEST: _____
Clerk of the Board

APPROVED AS TO FORM:

_____
Assistant County Counsel

Exhibit: Rezoning Map

DISTRIBUTION: County Counsel
Planning
Assessor
County
GIS

EXHIBIT A

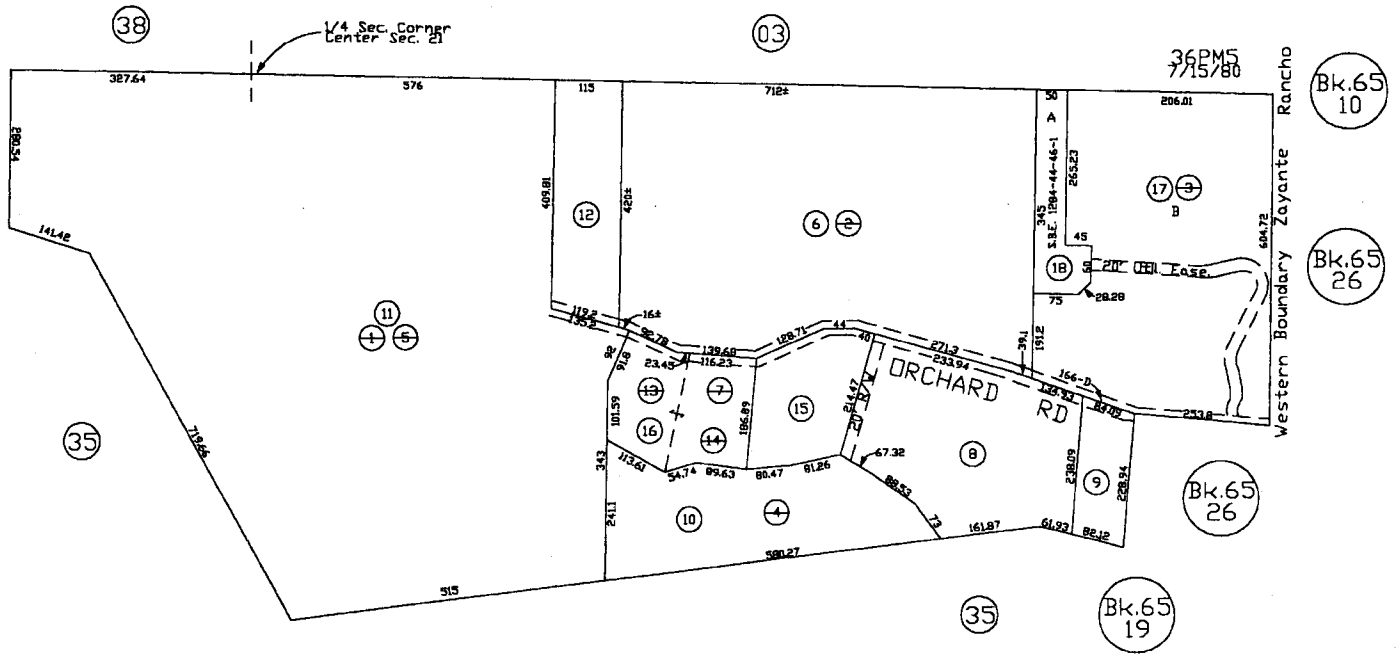
FOR TAX PURPOSES ONLY



S. 1/2, SEC. 21, T.10S., R.2W., M.D.B. & M.

Tax Area Code
90-045

64-04



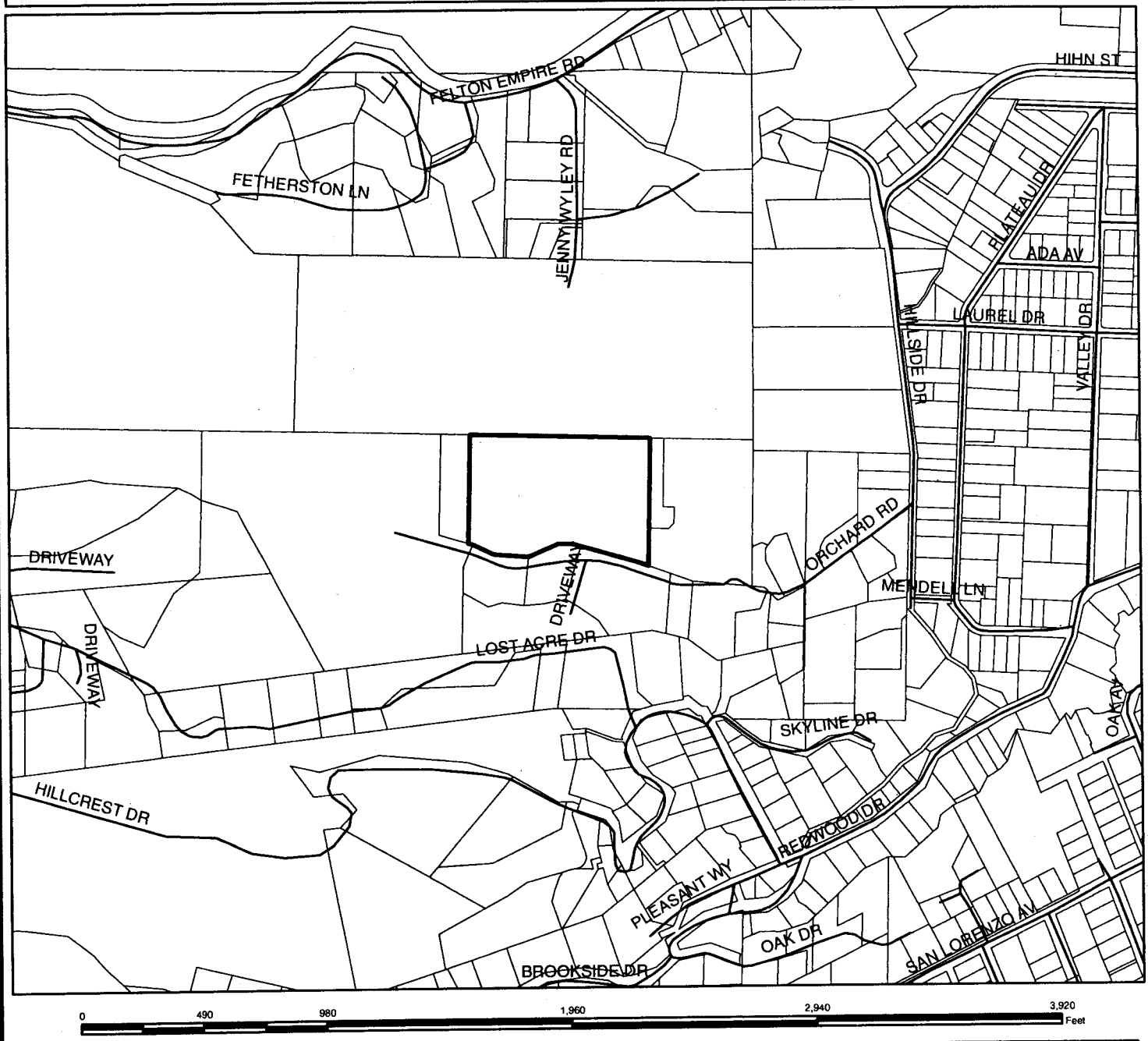

Note - Assessor's Parcel & Block Numbers Shown in Circles.

Assessor's Map No. 64-04
County of Santa Cruz, Calif.
Dec., 1999

Electronically Redrawn 12/9/99 kb
Rev. 7/12/01 mm (changed page refs.)

EXHIBIT B

# Location Map




LEGEND

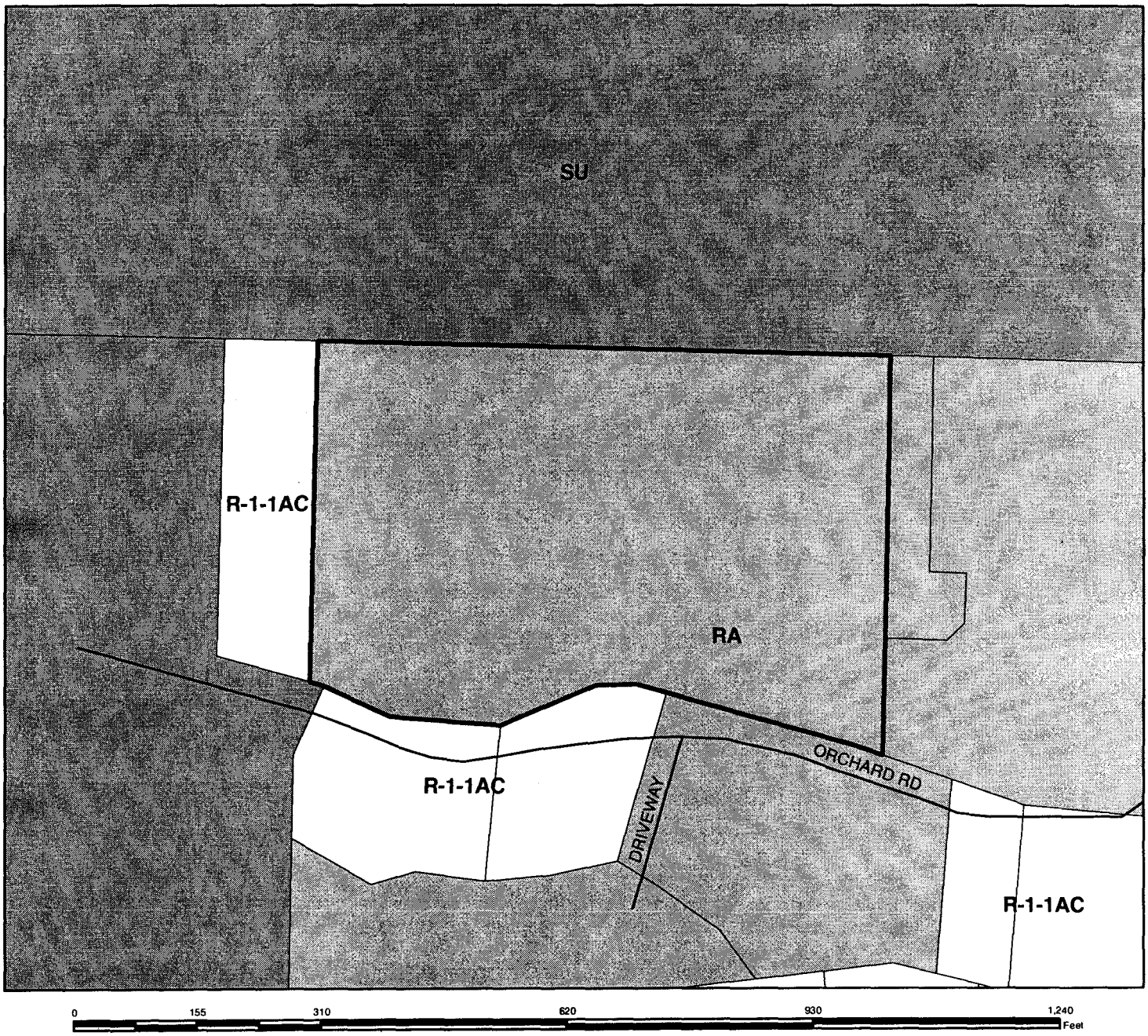
- APN: 064-041-06
- Assessors Parcels
- Streets

N
W E
S

Map created by
County of Santa Cruz
Planning Department
August 2007

EXHIBIT C

# Zoning Map




LEGEND

- APN: 064-041-06
- Assessors Parcels
- Streets
- RESIDENTIAL-SINGLE FAMILY
- SPECIAL USE
- AGRICULTURE RESIDENTIAL

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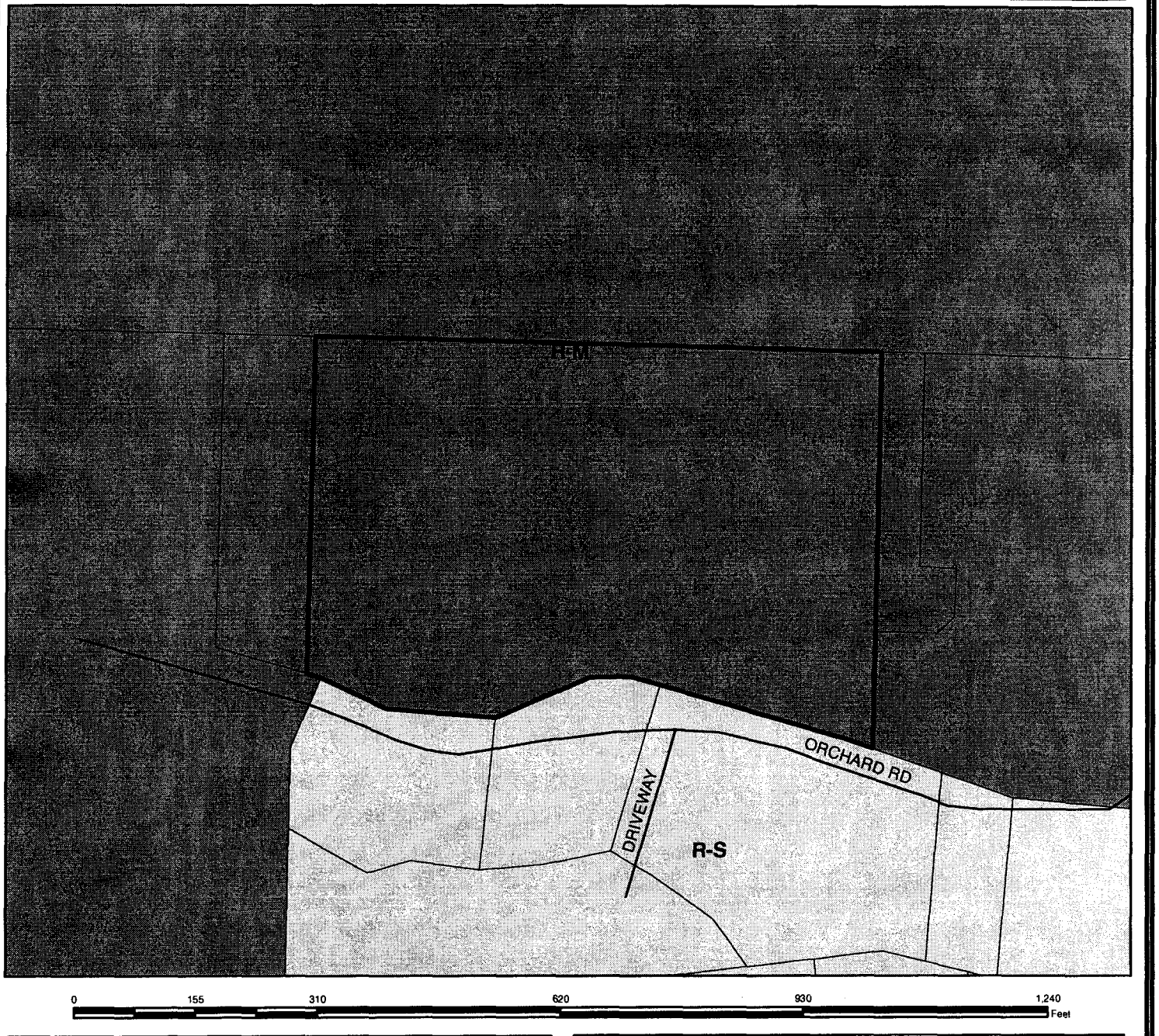
Map created by
County of Santa Cruz
Planning Department
August 2007

EXHIBIT C

# General Plan Designation Map




LEGEND

- APN: 064-041-06
- Assessors Parcels
- Streets
- Residential-Suburban
- Residential-Mountain

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Map created by
County of Santa Cruz
Planning Department
August 2007

EXHIBIT C

# CALIFORNIA ENVIRONMENTAL QUALITY ACT
# NOTICE OF EXEMPTION

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

Application Number: 07-0562
Assessor Parcel Number: 064-041-06
Project Location: Property located on the north side of Orchard Road, approximately 1300 feet west of the intersection with Hillside Drive.

**Project Description: Rezone a single parcel from the Residential Agriculture (RA) zone districts to the Timber Production (TP) zone district.**

**Person or Agency Proposing Project: Roy Webster**

**Contact Phone Number: (831) 462-6237**

**A.** _____ The proposed activity is not a project under CEQA Guidelines Section 15378.

**B.** _____ The proposed activity is not subject to CEQA as specified under CEQA Guidelines Section 15060 (c).

**C.** _____ **Ministerial Project** involving only the use of fixed standards or objective measurements without personal judgment.

**D.** __X__ **Statutory Exemption** other than a Ministerial Project (CEQA Guidelines Section 15260 to 15285). [Section 1703]

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

_____ Date:_____

Maria Porcila Perez, Project Planner



EXHIBIT D

LANDS OF WARMKESSEL
Santa Cruz County, California

# FOREST AND LAND MANAGEMENT PLAN

Webster and Associates
*Forestry Consultants*

Roy Webster, RPF #1765

September, 2007



EXHIBIT E

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EXHIBIT E

**Landowners**

Caroline & James Warmkessel
520 Orchard Road
Felton, CA 95018

**Property Location**

South ½ Section 21, Township 10S.R 2W, MDBM

APN 064-041-06

**General Description/Transportation system**

The property contains a total of 7.6 acres and is located in the Bull Creek watershed, which is a tributary to the San Lorenzo River watershed. Access to the property is by turning West off Highway 9 in Felton on Laurel Drive, at end go left on Hillside and right on Orchard Road to the end of the public road and a gate. Driveway and house are on the right (North). The owner's residence, well, holding tank and a small fruit orchard are located on the property. Elevations range from 480 feet on the northern boundary above Bull Creek to 535 feet at the ridge in the center of the property near the well and water tank

Approximately 1.6 acres of the parcel is in a fruit orchard, residence, driveway and other improvements. Six acres is a well-stocked second growth forest consisting of Redwood (Sequoia sempervirens) and Douglas fir (Pseudotsuga menziesii) in the over story and Tanoak (Lithocarpus densiflora) and Madrone (Arbutus menziesii) in the mid story. Undergrowth species are typical of the Santa Cruz Mountains and include Huckleberry (Vaccinium ovatum), Poison Oak (Toxicodendron diversiloba), Redwood Sorrel (Oxalis oregano), Hazelnut (Corylus cornuta), Sword Fern (Polystichum munitum), and Wood Fern (Dryopteris arguta). Several Coast Live Oak (Quercus agrifolia) and Bay Laurel (Umbellularia californica) were noted but were not present in the sample plots. There were many suppressed Tanoaks in the under story that were in shrub like form.

**Land Use History**

The property was clear cut of all merchantable timber in the late 1800's to early 1900's as would be typical of most of the San Lorenzo watershed. A well-stocked second growth Redwood and Douglas fir forest replaced the clear-cut area.

The general vicinity was subdivided into smaller parcels as Felton grew. The structure on the property appears to have been built in the early to middle 1900's.

Other than timber production, current land use is for the owner's residence with a well, water tank and driveway. A dirt road allows access to the well and water tank on the ridge top. There is also a fruit orchard of less than one acre immediately west of the residence. The landowners plan to build a new residence on the ridge top in the future

**Management Objectives**

EXHIBIT E

The purpose of the owner's property management is to allow a permanent residence to exist while achieving an economic return from the property and to maintain the growth and overall health of the forest for long-term timber production, and for reduction of fire hazard. The owner seeks to rezone the property to **Timber Production** in order to facilitate this objective.

The owner's overall objective is to make management a self-sufficient enterprise from a cost standpoint, while preserving the outstanding natural values of the property. All future activities will recognize the sensitive nature of the watershed and biotic diversity on the property. Future management objectives will be to develop the timber stand into an un-even aged character promoting growth and regeneration of timberland species while preserving the natural character of the property. Maintenance of existing improvements (roads, trails, clearings) will be given a high priority both to preserve their beneficial use and reduce impacts from their use. Preservation of biotic diversity on the property is an ongoing goal of management.

**Resources**

**Soils**

According to the Soil Survey of Santa Cruz County, the property is underlain by the Ben Lomond-Catelli-Sur complex soils. This complex is about 30 percent Ben Lomond sandy loam, 30 percent Catelli sandy loam, and 20 percent Sur stony sandy loam.

The Ben Lomond soil is deep and well drained. It formed in residuum derived from sandstone or quartz diorite. Depth of soil to weathered sandstone is typically 46 inches. Permeability is moderately rapid, runoff is rapid to very rapid, and the hazard of erosion is high to very high.

The Catelli soil is moderately deep and well drained. It formed in residuum derived from sandstone or granitic rock. Weathered sandstone is at a depth of 37 inches. Permeability is moderately rapid, runoff is rapid to very rapid, and the hazard of erosion is high to very high.

The Sur soil is moderately deep and somewhat excessively drained. It formed in residuum derived from sandstone, schist, or granitic rock. Unweathered granodiorite is at a depth of 35 inches. Permeability is moderately rapid, runoff is rapid to very rapid, and the hazard of erosion is high to very high.

These soils are well suited to timber production. Erosion hazard is high for most of the area, moderate along the ridge top and extreme on the steepest slopes. The site is generally stable. Slopes range from flat on the ridge to up to 60 percent as slopes fall off on either side.

**Watershed**

There are no watercourses on the property. Bull Creek, a year round watercourse, is located approximately 200 feet north of the northern property line. There was a low flow at the time of field work in September, generally less than 6 inches deep with occasional pools which could be good habitat for seasonal steelhead or salmon runs as well as other aquatic species such as insects that are a food source for salmonids. There is a six-inch water pipe running up Bull Creek, indicating its use as a water source and making this a class 1 watercourse. In planning any harvesting operation, great care must be taken to avoid erosion and siltation by treating bared soil and minimizing construction and use of skid trails and roads. Any winter operations, if permitted, should be done during dry, rainless periods. No significant erosion or siltation problems were observed during field review of the parcel.



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**Cultural**

No cultural or archaeological resources were discovered during the timber survey for this plan. A field survey and records search will be conducted during the preparation of any future Timber Harvest Plan. Due to the diverse nature of historic and pre-historic sites it can be presumed that some discoveries of historic artifacts might be made in the future. If these are found during any future management activity they should be preserved and the proper records of their discovery should be filed.

**Wildlife**

Redwood habitats provide food, cover, or special habitat elements for 193 wildlife species. This total is comprised of 12 reptiles, 18 amphibians, 109 birds, and 54 mammals. Moreover, a variety of sensitive species are found in this habitat. Species such as the red-legged frog, ensatina, osprey, ringtail, fisher and marbled murrelet show a relatively high preference for various redwood habitat phases and stages. To a minor extent, sensitive species such as the peregrine falcon, pileated woodpecker, spotted owl, and northern flying squirrel can be found, but are usually vagrants in the habitat. The endangered bald eagle can also be found in the habitat, but is usually not a common visitor. Not all of these species are found in the southern range (including Santa Cruz County).

Relatively high residential density and impact make the subject area less attractive as permanent habitat for many species, however the presence of abundant water nearby contributes to frequent use during some seasons of the year. Animals typical of the Santa Cruz Mountains frequent the area including deer, bobcat, squirrels, and raccoon. The area would fit with the classification of 5D in the wildlife habitat relationship classification system. This type has moderate to large size trees with dense spacing. Forest management directed at opening the canopy will improve forage and variety for small and large mammals as well as increase raptor use.

Large raptors may use the property for roosting and nesting with tall, dead topped conifers being particularly attractive. These will be preserved wherever feasible to promote this use where there is deemed to be minimal conflict with wildfire suppression.

Continuing maintenance of roads, trails, and any erosion control measures will protect Bull Creek and any current or future use of it and the San Lorenzo River as a fishery, insect habitat and a water source.

There were few snags observed during the timber inventory. Although often seen as a useless part of the landscape and a fire hazard, snags provide important habitat for numerous wild species. The same is true for large downed logs. Future management schemes should seek to preserve several prominent snags per acre and large downed logs to promote diversity.

**Ancient Trees**

No remnant old growth trees left from the original clear cut logging were observed during the timber cruise of the parcel.

**Recreation**

This parcel is privately owned and public use of the property is not allowed. Management activities will be designed to provide and maintain habitat diversity. Selective harvesting will be employed to preserve the



EXHIBIT E

aesthetics of the existing timber stand. This will provide high quality recreation for the landowners and their invited guests.

**Timber Inventory Results**

Coast Redwood dominates the existing timber stand on the property and Douglas fir intermixed with Tanoak and some Madrone. As is typical for the area, a range of micro-site factors predicates the distribution of conifers and hardwoods.

The property was first harvested around 100 years ago. This harvest was typical for the period, with evidence of clear cutting and burning remaining today. Stumps that survived the early harvest show the potential for growth of large diameter trees on most of the property. The resulting timber stand is even-aged, despite a large variation in diameter, and reflects a long period of suppressed growth. Some of the drier areas have regrown with a predominance of hardwoods, especially Tanoak. There is very little fire scarring in the existing stand.

In September, 2007, a cruise consisting of five- 1/5-acre circular plots was conducted to better assess stand conditions and growth. This comprises a 17% sample of the timber stand. Selected trees were cored to measure growth. A summary of the cruise is found in Appendix A. However, the trends will be discussed below.

Measured heights of typical second growth trees varied from 130' to 155', which indicates Site 3. This indicates average productivity compared to other Redwood stands along the Coast, and is typical for the Santa Cruz mountains. Estimated conifer volumes from these plots would predict an average standing volume of 76,000 board feet per acre. This is broken down into 33,000 board feet per acre of Redwood and 43,000 board feet per acre of Douglas fir. Average DBH (diameter at breast height) for commercial conifers is 27.5 inches. Total standing volume of conifers on the 6 acres of timberland is estimated at 455,000 board feet. Total basal area of conifers is 317 square feet per acre.

There are a total of 53 hardwoods per acre comprising 67 square feet of basal area per acre. This works out to almost 6 cords per acre of fuel wood.

By use of limited increment boring and a stand table projection, stand growth is estimated to be roughly 1.5% or 1,140 board feet per acre per year. Increased growth potential due to the reduction of competition from selective harvest and management is expected to be 2.5% to 3.0% per year, but growing on a reduced volume in the neighborhood of 40,000 board feet per acre.

**Management Practices**

**Timber management**

The stand, in general, has one age class, the trees that naturally regenerated or sprouted after the first clear cut logging in the late 1800's or early 1900's. These trees form the bulk of the commercial timber stand. There are other age and size classes that have naturally seeded since that time, but they are mostly suppressed and/or stunted from the excessive shade and competition provided by the older trees. A selective thinning will open up the stand and release many of the trees for more rapid growth.

The Douglas fir component of the stand is mature to over mature and has a high rate of defect. Visible conks can be seen on many of the fir, especially the older ones. These conks are the fruiting bodies of Phellinus pini, common name "Pine Conk". They are indicators of active decay. One of the goals in the first two thinnings of the timber (markets permitting) is to emphasize removal of the larger Douglas fir and encourage growth of the younger fir and Redwoods.



EXHIBIT E

Future selective harvesting to promote an uneven-aged pattern of stocking and growth is expected to occur on a roughly fifteen-year cycle. A goal of these harvests will be to balance tree size classes throughout the stand and, over time, create the classic **Inverse J curve** (see Exhibit B). When the fully regulated forest is achieved a graph of number of trees per acre by size class should show number of trees declining as size increases. This will be achieved by using the following marking criteria. Emphasize removal of larger Douglas fir, improved spacing, removal of slower growing and defective trees. While the goal is to achieve a balance of all size classes, marking should also focus on removing the larger, over story trees which will allow more sunlight into the mid and under story and increase growth of residuals. Based on this analysis future harvests should be directed at trees in the 28 inch and above size class for Redwood and 34 inch and above for Douglas fir to achieve the optimal uneven-aged size class distribution. Where beneficial, group selection will be used as a cutting practice to allow increased light into suppressed under story, or to create large enough openings to facilitate tree planting. Due to the complete over story occupation, and limited light in the under story, there is minimal recruitment and light reaching the smaller trees. The stand table shows a lack of smaller tree diameters in the stand. Group selection and harvesting dominant slow growing trees will help to alleviate this condition.

**Timber Stand Improvement**

Intermediate treatments to foster the health and growth of the stand will include sprout thinning and selected hardwood removal. Multiple sprouts resulting from harvesting will be thinned to an average of 2 to 4 healthy sprouts per stump. This practice will be conducted immediately after harvest. This removal of competition will produce healthier and more vigorous young trees in the under story. During this thinning, dead and unhealthy small trees and sprouts will also be removed to reduce fire hazard and competition. This should be done to further improve spacing and promote the health of remaining trees. All thinnings will be removed or lopped to within 30" of the ground.

Additional release can be achieved by hardwood removal where needed and practical. This is particularly important for this property due to current abundant hardwood growth on the property. This activity will be non-commercial, however, it could be combined with a timber harvest to allow for reduced cost. Sometimes the hardwood removal can be economically accomplished with the timber harvest by trading the fuel wood for the increased clean up cost of slash and debris disposal. Removal of the affected tanoaks and madrones would be beneficial both to reduce the ongoing infestation and to allow light into the under story and remove competition from regrowing conifers. Resulting hardwood stump sprouts will provide important deer browse. Where conducting hardwood removal for stand improvement, emphasis should be on removal of hardwoods closest to and competing with the conifers.

**Tree planting**

While not required, post harvest management can include planting of conifer seedlings within one year of harvest. This should be a mix of Coast Redwood and Douglas fir. The redwood should be 2-0 stock (or 1-0 redwood inoculated with mycorhizae) and Douglas fir should be either 1-0 or 2-0. Seed sources should be selected to match the seed zone as closely as possible. Plantings should be limited to those areas that have been opened sufficiently to allow for a reasonable chance of establishment and growth. Coast Redwood should be planted nearest existing Redwood sites and the Douglas fir nearest existing Douglas fir sites. This is based on the theory that existing trees grow in those micro habitats most conducive to their growth. Trees should be planted on an approximate 8' spacing (430 per acre). Browse protection may be necessary due to the large deer population and, although it will increase the cost of the practice, it is likely to increase the chances of seedling survival. This need should be evaluated prior to planting. A "clean and release" around established seedlings should be conducted by hand within the first three years after planting.



EXHIBIT E

**Fire Protection**

The property is located near relatively dense residential development. The major threat to the property from a fire protection standpoint appears to be the possibility of fire spreading into the property from Orchard Road or a residential escape to the wild land. There is also the possibility of ignitions due to trespass. The trespass issue can be handled by limiting access. The owner resides on the property and limits public trespass.

The biggest potential problem from a fire standpoint is the large number of small hardwoods present that would provide fuel if fire started on the property. These potential fuels can be lopped and scattered or chipped as part of stand improvement measures. Roads on the parcel provide good access for fire fighting equipment. Overhanging vegetation should be cleared periodically to make access for this equipment easier on the primary access road to the residence and ridge. A minimum 30' clearing should be maintained around any structures to provide protection from wildfires.

When harvesting occurs, to reduce fire hazards and provide more efficient firebreaks, treatment of slash should be done as follows:

> The areas within 50 feet of the edge of Orchard Road should be kept free of slash greater than 1 inch in diameter. Slash between 50 and 100 feet of Orchard Road and all permanently located structures should be treated by piling and burning, chipping, burying, removal, or lopping to within 12 inches above the ground no later than April 1 of the year following its creation.



EXHIBIT E

**References**

U.S.D.A. Soil Conservation Service, Soil Survey
Santa Cruz County, 1979.

California Wildlife Habitat Relationships System, California Department of Fish and Game.

California Natural Diversity Data Base (Maps and listings).

Arvola,T.F. 1978. California Forestry Handbook. State of California, Dept of Forestry. 232. pp.

Cooper, Clark, and Associates. Preliminary Map of Landslide Deposits in Santa Cruz County.

Santa Cruz County Biotic Resource Maps.

Crustali 4.0, Resource Consulting International (A timber inventory program).

Log Scaling and Timber Cruising, Bell and Dillworth, 1997 revised edition.

Forest Mensuration, Husch, Miller and Beers, The Ronald Press Company, 1972.



EXHIBIT E

# WARMKESSEL

**Product: LUMBER** **Species: REDWOOD** **9/21/2007**

.2 Acre PLOT CRUISE M & G Form Class Bd.Ft.-V" top

| | Per Acre | | | 6 Acres | |
|---|---|---|---|---|---|
| **DBH** | **Trees** | **Basal Area** | **BOARD** | **Trees** | **BOARD FEET** |
| 12 | 2.0 | 1.6 | 61.97 | 12 | 371.84 |
| 14 | 1.0 | 1.1 | 74.01 | 6 | 444.04 |
| 16 | 4.0 | 5.6 | 478.48 | 24 | 2870.87 |
| 18 | 1.0 | 1.8 | 183.54 | 6 | 1101.24 |
| 20 | 4.0 | 8.7 | 1081.92 | 24 | 6491.50 |
| 22 | 3.0 | 7.9 | 1119.62 | 18 | 6717.70 |
| 24 | 6.0 | 18.8 | 3013.20 | 36 | 18079.21 |
| 26 | 2.0 | 7.4 | 1351.68 | 12 | 8110.07 |
| 28 | 7.0 | 29.9 | 5706.66 | 42 | 34239.97 |
| 30 | 5.0 | 24.5 | 5293.67 | 30 | 31762.01 |
| 32 | 4.0 | 22.3 | 4956.00 | 24 | 29735.98 |
| 34 | 4.0 | 25.2 | 6158.08 | 24 | 36948.48 |
| 36 | 2.0 | 14.1 | 3596.76 | 12 | 21580.55 |
| | 45.0 | 168.9 | 33075.59 | 270 | 198453.50 |



EXHIBIT E

**Product: LUMBER** **Species: DOUGLAS fIR** **9/21/2007**

.2 Acre PLOT CRUISE M & G Form Class Bd.Ft.-V" top

| | Per Acre | | | 6 Acres | |
|---|---|---|---|---|---|
| **DBH** | **Trees** | **Basal Area** | **BOARD** | **Trees** | **BOARD FEET** |
| 12 | 2.0 | 1.6 | 75.39 | 12 | 452.32 |
| 14 | 4.0 | 4.3 | 293.92 | 24 | 1763.53 |
| 16 | 3.0 | 4.2 | 562.59 | 18 | 3375.55 |
| 18 | 3.0 | 5.3 | 779.47 | 18 | 4676.81 |
| 20 | 1.0 | 2.2 | 343.43 | 6 | 2060.59 |
| 22 | 1.0 | 2.6 | 537.79 | 6 | 3226.73 |
| 24 | 2.0 | 6.3 | 1344.16 | 12 | 8064.99 |
| 26 | 2.0 | 7.4 | 1646.11 | 12 | 9876.64 |
| 28 | 1.0 | 4.3 | 1082.41 | 6 | 6494.48 |
| 30 | 3.0 | 14.7 | 3841.87 | 18 | 23051.24 |
| 32 | 1.0 | 5.6 | 1639.84 | 6 | 9839.03 |
| 34 | 2.0 | 12.6 | 3779.06 | 12 | 22674.37 |
| 38 | 2.0 | 15.8 | 5137.98 | 12 | 30827.87 |
| 42 | 1.0 | 9.6 | 3366.39 | 6 | 20198.36 |
| 44 | 1.0 | 10.6 | 3468.56 | 6 | 20811.38 |
| 46 | 1.0 | 11.5 | 3850.48 | 6 | 23102.90 |
| 48 | 1.0 | 12.6 | 4576.95 | 6 | 27461.70 |
| 56 | 1.0 | 17.1 | 6537.08 | 6 | 39222.47 |
| | 32.0 | 148.3 | 42863.48 | 192 | 257181.00 |

**Warmkessel** — **Plot Cruise Volume Statistics-95%** — **9/21/2007**

| Product | Plots | Size | Cruise% | Samp Err% | CoeffVar% | StdError |
|---|---|---|---|---|---|---|
| LUMBER | | | | | | |
| REDWOOD | 5 | 0.20 | 16.7 | 103.8 | 83.6 | 12360.80 |
| DOUGLAS fIR | 5 | 0.20 | 16.7 | 106.2 | 85.5 | 16395.54 |
| **LUMBER** | **5** | **0.20** | **16.7** | **35.6** | **28.6** | **9723.89** |

**Stand Level Statistics are computed using Minor Form Class 77 (Cu. Ft.) volumes of all species**

| | | | | | | |
|---|---|---|---|---|---|---|
| **STAND** | **5** | **0.20** | **16.7** | **30.2** | **24.4** | **1510.20** |

**Warmkessel** **Plot Cruise Volume Summary** **9/21/2007**

| | Per Acre | | | 6 - Acres | | Ave Tree | | Cruise | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Product | Volume | Trees | BA | Volume | Trees | Volume | DBH | Plts | Size | %Cr |
| LUMBER | BOARD | | | | | | | | | |
| REDWOOD | 33075.59 | 45.0 | 168.9 | 198454 | 270 | 735.01 | 26.2 | 5 | 0.20 | 16.7 |
| DOUGLAS fIR | 42863.48 | 32.0 | 148.3 | 257181 | 192 | 1339.48 | 29.1 | 5 | 0.20 | 16.7 |
| **LUMBER** | **75939.08** | **77.0** | **317.2** | **455634** | **462** | **986.22** | **27.5** | **5** | **0.20** | **16.7** |
| **STAND** | | **77.0** | **317.2** | | **462** | | **27.5** | **5** | **0.20** | **16.7** |



EXHIBIT E

**Product: cords** **Species: Madrone** **9/21/2007**

SELECTIVELY MARKED M & G Form Class Cords -V" top

| | Per Acre | | | 1 Acres | |
|---|---|---|---|---|---|
| **DBH** | **Trees** | **Basal Area** | **Cords** | **Trees** | **Cords** |
| 12 | 2.0 | 1.6 | 0.16 | 2 | 0.16 |
| 14 | 0.0 | 0.0 | 0.00 | 0 | 0.00 |
| 16 | 1.0 | 1.4 | 0.13 | 1 | 0.13 |
| 18 | 2.0 | 3.5 | 0.32 | 2 | 0.32 |
| 20 | 1.0 | 2.2 | 0.20 | 1 | 0.20 |
| 22 | 2.0 | 5.3 | 0.46 | 2 | 0.46 |
| 24 | 0.0 | 0.0 | 0.00 | 0 | 0.00 |
| 26 | 1.0 | 3.7 | 0.31 | 1 | 0.31 |
| 28 | 1.0 | 4.3 | 0.36 | 1 | 0.36 |
| | 10.0 | 22.0 | 1.94 | 10 | 1.94 |



EXHIBIT E

**Product: cords** **Species: Tanoak** **9/21/200**

SELECTIVELY MARKED M & G Form Class Cords -V" top

| | Per Acre | | | 1 Acres | |
|---|---|---|---|---|---|
| **DBH** | **Trees** | **Basal Area** | **Cords** | **Trees** | **Cords** |
| 8 | 5.0 | 1.7 | 0.20 | 5 | 0.20 |
| 10 | 6.0 | 3.3 | 0.33 | 6 | 0.33 |
| 12 | 7.0 | 5.5 | 0.50 | 7 | 0.50 |
| 14 | 14.0 | 15.0 | 1.28 | 14 | 1.28 |
| 16 | 5.0 | 7.0 | 0.57 | 5 | 0.57 |
| 18 | 3.0 | 5.3 | 0.42 | 3 | 0.42 |
| 20 | 2.0 | 4.4 | 0.34 | 2 | 0.34 |
| 22 | 1.0 | 2.6 | 0.20 | 1 | 0.20 |
| | 43.0 | 44.8 | 3.84 | 43 | 3.84 |



EXHIBIT E

Hardwoods-Warmkessel MARKING Volume Summary

| | Per Acre | | | 1 - Acres | | Ave Tree | | Cruise | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Product | Volume | Trees | BA | Volume | Trees | Volume | DBH | Plts | Size | %Cr |
| cords | cubic feet | | | | | | | | | |
| Madrone | 1.94 | 10.0 | 22.0 | 2 | 10 | 0.19 | 20.1 | 1 | 1.00 | 100.0 |
| Tanoak | 3.84 | 43.0 | 44.8 | 4 | 43 | 0.09 | 13.8 | 1 | 1.00 | 100.0 |
| **cords** | **5.78** | **53.0** | **66.8** | **6** | **53** | **0.11** | **15.2** | **1** | **1.00** | **100.0** |
| STAND | | 53 | 67 | | 53 | | 15.2 | 1 | 1.00 | 100.0 |



EXHIBIT E

**Dataset: WARMKESSEL** 9/26/2007

| PLOT | PRODUCT | SPECIES | DBH | HEIGHT | TREES |
|---|---|---|---|---|---|
| 1 | LUMBER | REDWOOD | 34.0 | 8.0 | 1 |
| 1 | LUMBER | REDWOOD | 36.0 | 8.0 | 1 |
| 1 | LUMBER | REDWOOD | 20.0 | 3.0 | 1 |
| 1 | LUMBER | DOUGLAS fIR | 56.0 | 9.0 | 1 |
| 1 | LUMBER | DOUGLAS fIR | 46.0 | 8.0 | 1 |
| 1 | LUMBER | DOUGLAS fIR | 38.0 | 8.0 | 1 |
| 1 | LUMBER | DOUGLAS fIR | 12.0 | 1.0 | 1 |
| 1 | LUMBER | DOUGLAS fIR | 14.0 | 1.0 | 1 |
| 1 | LUMBER | DOUGLAS fIR | 14.0 | 1.0 | 1 |
| 1 | LUMBER | DOUGLAS fIR | 44.0 | 8.0 | 1 |
| 1 | LUMBER | DOUGLAS fIR | 26.0 | 6.0 | 1 |
| 2 | LUMBER | REDWOOD | 12.0 | 1.0 | 2 |
| 2 | LUMBER | REDWOOD | 30.0 | 7.0 | 2 |
| 2 | LUMBER | REDWOOD | 28.0 | 6.0 | 4 |
| 2 | LUMBER | REDWOOD | 26.0 | 6.0 | 1 |
| 2 | LUMBER | REDWOOD | 32.0 | 7.0 | 1 |
| 2 | LUMBER | REDWOOD | 24.0 | 5.0 | 2 |
| 2 | LUMBER | REDWOOD | 22.0 | 5.0 | 1 |
| 2 | LUMBER | REDWOOD | 16.0 | 3.0 | 1 |
| 3 | LUMBER | REDWOOD | 24.0 | 5.0 | 4 |
| 3 | LUMBER | REDWOOD | 16.0 | 3.0 | 1 |
| 3 | LUMBER | REDWOOD | 22.0 | 4.0 | 2 |
| 3 | LUMBER | REDWOOD | 28.0 | 6.0 | 2 |
| 3 | LUMBER | REDWOOD | 30.0 | 7.0 | 3 |
| 3 | LUMBER | REDWOOD | 34.0 | 8.0 | 2 |
| 3 | LUMBER | REDWOOD | 36.0 | 8.0 | 1 |
| 3 | LUMBER | REDWOOD | 14.0 | 2.0 | 1 |
| 3 | LUMBER | REDWOOD | 32.0 | 7.0 | 2 |
| 3 | LUMBER | REDWOOD | 26.0 | 6.0 | 1 |
| 3 | LUMBER | DOUGLAS fIR | 34.0 | 8.0 | 1 |
| 4 | LUMBER | DOUGLAS fIR | 20.0 | 4.0 | 1 |
| 4 | LUMBER | DOUGLAS fIR | 18.0 | 4.0 | 1 |
| 4 | LUMBER | DOUGLAS fIR | 32.0 | 8.0 | 1 |
| 4 | LUMBER | DOUGLAS fIR | 22.0 | 6.0 | 1 |
| 4 | LUMBER | DOUGLAS fIR | 28.0 | 7.0 | 1 |
| 4 | LUMBER | DOUGLAS fIR | 48.0 | 9.0 | 1 |
| 4 | LUMBER | DOUGLAS fIR | 30.0 | 7.0 | 3 |
| 4 | LUMBER | DOUGLAS fIR | 38.0 | 9.0 | 1 |
| 4 | LUMBER | DOUGLAS fIR | 24.0 | 6.0 | 1 |
| 4 | LUMBER | DOUGLAS fIR | 26.0 | 6.0 | 1 |
| 5 | LUMBER | DOUGLAS fIR | 34.0 | 8.0 | 1 |
| 5 | LUMBER | DOUGLAS fIR | 16.0 | 4.0 | 3 |
| 5 | LUMBER | DOUGLAS fIR | 42.0 | 9.0 | 1 |



EXHIBIT E

| PLOT | PRODUCT | SPECIES | DBH | HEIGHT | TREES |
|---|---|---|---|---|---|
| 5 | LUMBER | DOUGLAS fIR | 24.0 | 6.0 | 1 |
| 5 | LUMBER | DOUGLAS fIR | 18.0 | 4.0 | 2 |
| 5 | LUMBER | DOUGLAS fIR | 12.0 | 1.0 | 1 |
| 5 | LUMBER | DOUGLAS fIR | 14.0 | 2.0 | 2 |
| 5 | LUMBER | REDWOOD | 20.0 | 4.0 | 3 |
| 5 | LUMBER | REDWOOD | 34.0 | 7.0 | 1 |
| 5 | LUMBER | REDWOOD | 18.0 | 3.0 | 1 |
| 5 | LUMBER | REDWOOD | 16.0 | 2.0 | 2 |
| 5 | LUMBER | REDWOOD | 32.0 | 7.0 | 1 |
| 5 | LUMBER | REDWOOD | 28.0 | 6.0 | 1 |
| 5 | LUMBER | REDWOOD | 12.0 | 0.0 | 0 |



EXHIBIT E

# EXHIBIT B

## Typical Inverse J Curve



In an uneven-aged forest, the trees in the crown canopy are of many heights, resulting in an irregular stand profile as viewed from a vertical cross-section. The more shade-tolerant species tend to form uneven-aged stands. Cutting methods which remove only scattered trees at short intervals maintain forest conditions favorable to shade-tolerant species and an uneven-aged stand.

The typical diameter distribution for an uneven-aged stand is a large number of small trees with decreasing frequency as the diameter increases, as shown in Fig. 17–2. The diameter distribution for small areas

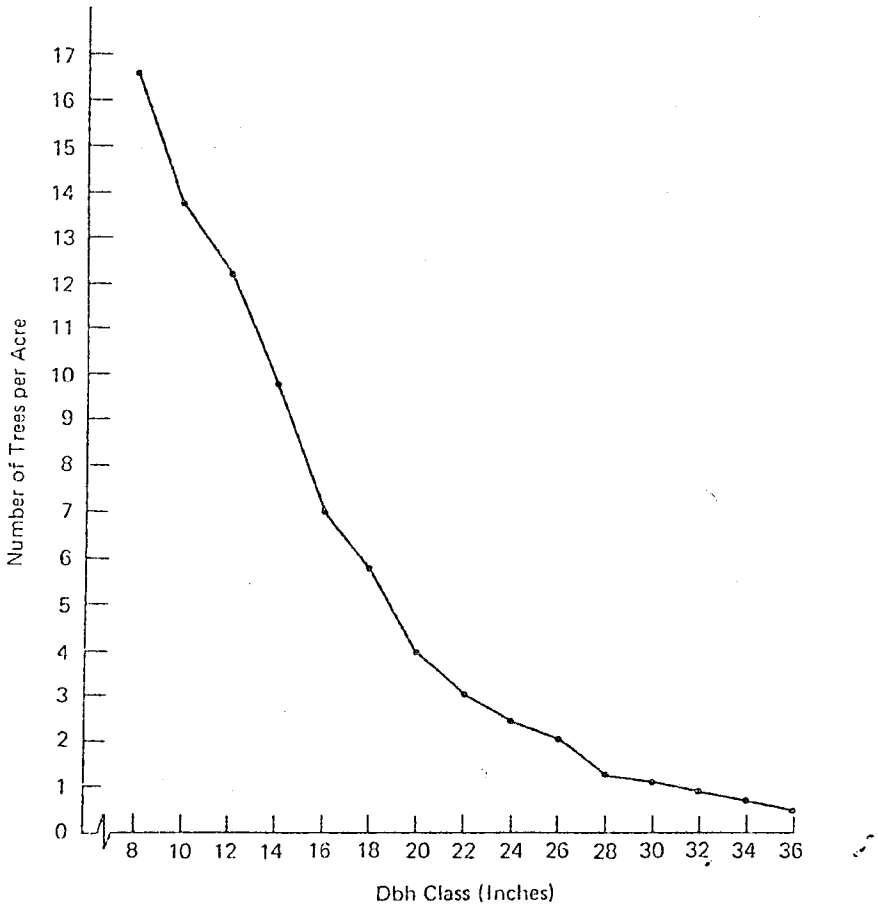



Fig. 17–2. Diameter distribution per acre for an uneven-aged virgin stand of beech–birch–maple–hemlock (adapted from Meyer and Stevenson, 1943).



EXHIBIT E

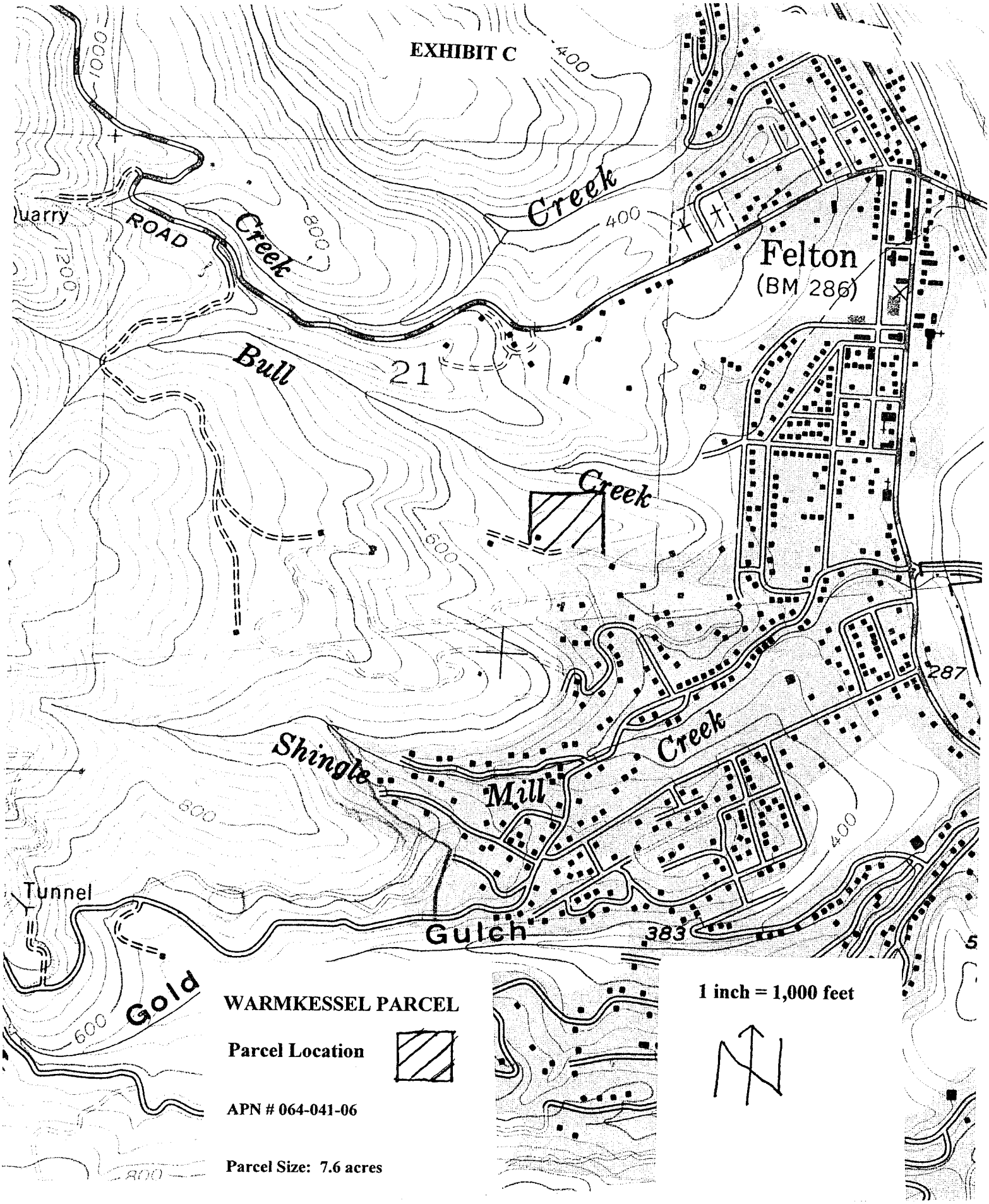


EXHIBIT C
Quarry
ROAD
Creek
Creek
Felton
(BM 286)
Bull
21
Creek
Shingle
Mill
Creek
Tunnel
Gulch
383
Gold
287
1000
800
600
400
WARMKESSEL PARCEL
Parcel Location
APN # 064-041-06
Parcel Size: 7.6 acres
1 inch = 1,000 feet



EXHIBIT E

EXHIBIT E

R TAX PURPOSES ONLY

ESSOR MAKES NO GUARANTEE AS TO MAP ACCURACY NOR ASSUMES ANY FOR OTHER USES. NOT TO BE REPRODUCED. ALL RIGHTS RESERVED.
PYRIGHT SANTA CRUZ COUNTY ASSESSOR 1999

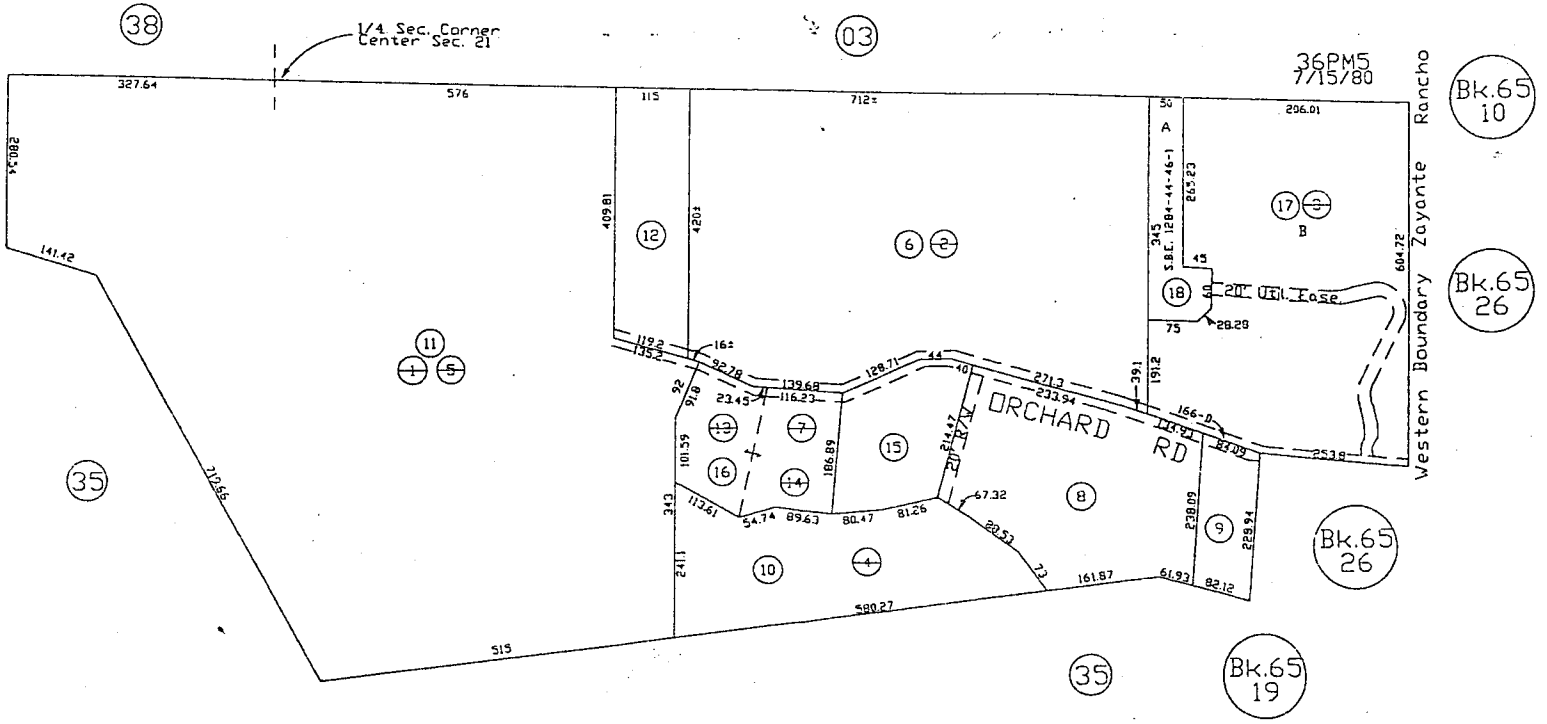
S. 1/2, SEC. 21, T.10S., R.2W., M.D.B. & M.

Tax Area Code
90-045

64-04

N

1"=300'




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

Assessor's Map No. 64-04
County of Santa Cruz, Calif.
Dec., 1999

EXHIBIT C

# EXHIBIT C

## WARMKESSEL PARCEL

**Parcel Location**

**APN # 064-041-06**

**Parcel Size: 7.6 acres**

**1 inch = 1,000 feet**

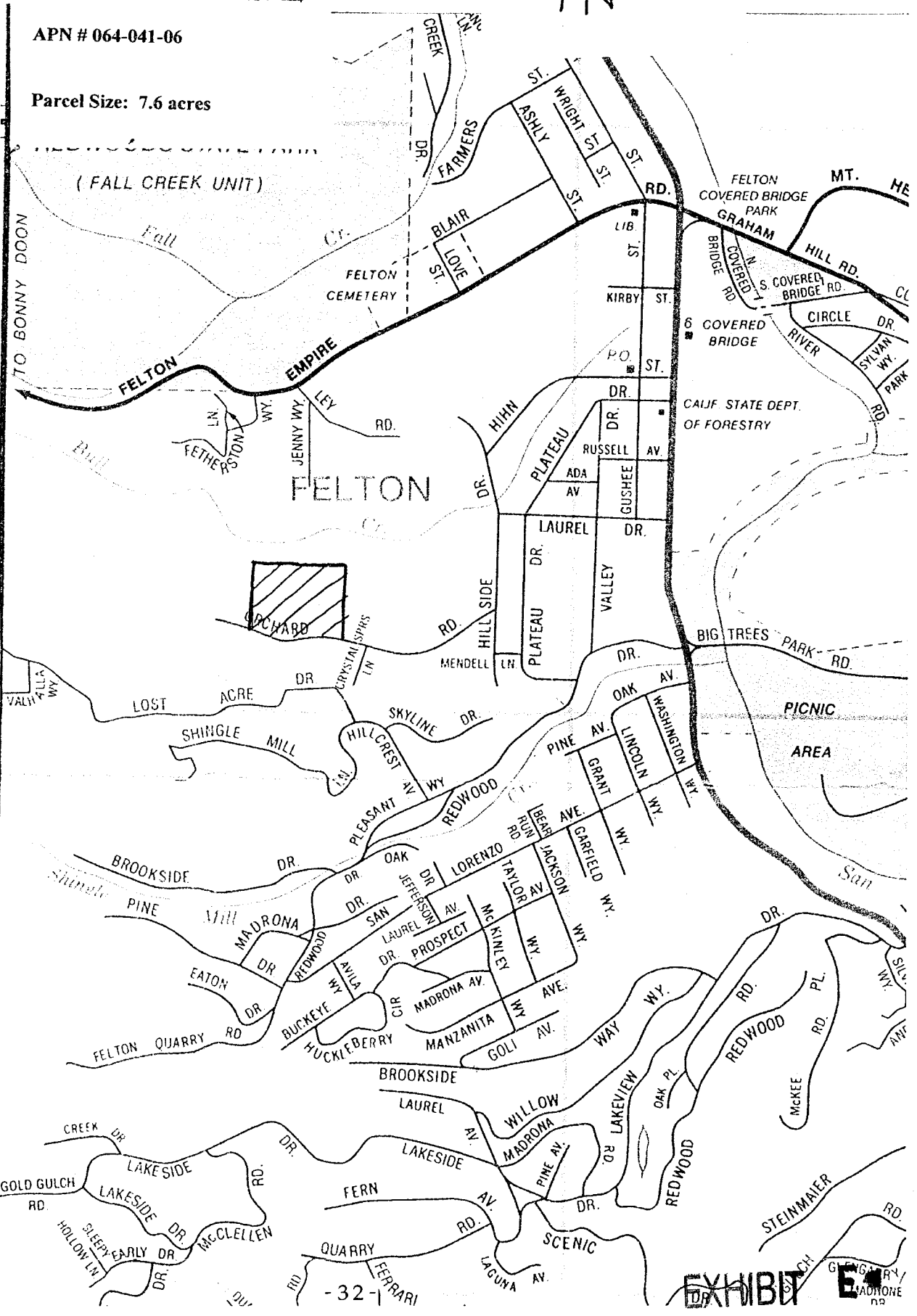





EXHIBIT E

# EXHIBIT D

## ANALYSIS OF LEGAL REQUIREMENTS FOR TP REZONING

### STOCKING ANALYSIS

Background: Government Code Section 51113(c)(3)(A) requires that parcels meet the timber stocking standards set forth in Section 4561 of the Public Resources Code and Section 913.8(a)(1) of the California Code of Regulations (CCR). The timber stocking standards pertaining to CCR Section 913.8(a) are met if the timberland contains an average, minimum post-harvest basal area of at least 75 square feet/acre for Site III land. The requirements of PR C 4561 are less stringent.

Analysis: The timber cruise of the parcel revealed an average basal area of 317 square feet per acre. This is over four times the requirements of the applicable code section. There will be no problem maintaining the basal area requirements after future timber harvests.

### WOOD FIBER ANALYSIS

Background: Government Code Section 51113(c)(4) requires that parcels zoned timber production must meet the definition of "Timberland" which is defined in Government Code Section 511 04(f) as: "Privately owned land, or land acquired for state purposes, which is devoted to and used for growing and harvesting timber, or for growing and harvesting timber and compatible uses, and which is capable of growing an average annual volume of wood fiber of at least 15 cubic feet per acre".

Analysis: Field review of the property suggests that the parcel is capable of producing wood fiber in excess of 15 cubic feet/acre/year. Timber cruise and growth corings indicate that the parcel is currently growing about 1,140 board feet per acre per year. There are twelve board feet in a cubic foot of lumber. This is conservative as that does not account for the slabs created in squaring up a log. Therefore the stand is currently producing in excess of 95 cubic feet of wood per acre, over six times state requirements

### COMPATIBLE USE ANALYSIS

The historic land use of the parcel has been residential, agricultural (fruit orchard) and timber growing and harvesting. Timber harvesting is feasible under the current home site location. If the residence is moved to the ridge, timber harvesting will still be possible, though it may require some additional skid trail construction.



EXHIBIT E