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: 106-141-40
Application: 07-0547
Item 24

Subject: A public hearing to consider a proposal to rezone a single lot of record from the Special Use (SU) zone district to the Timber Production (TP) zone district.

Members of the Commission:

On May 14, 2007, the County Planning Department accepted this application for a rezoning to Timber Production (TP). This is a proposal to rezone a 93.7 acre parcel from the Special Use (SU) zone district to the Timber Production (TP) designation. The uses on the property consist of vacant rural acreage.

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. 07-0547 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 October 10, 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

WHEREAS, the Planning Commission has held a public hearing on Application No07-0547, involving property located at the south end of Tindall Ranch Road, approximately two miles from the intersection with Eureka Canyon Road, 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 Special Use (SU) 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

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 at the south end of Tindall Ranch Road, approximately two miles from the intersection with Eureka Canyon Road; 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
106-141-40	Special Use (SU)	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

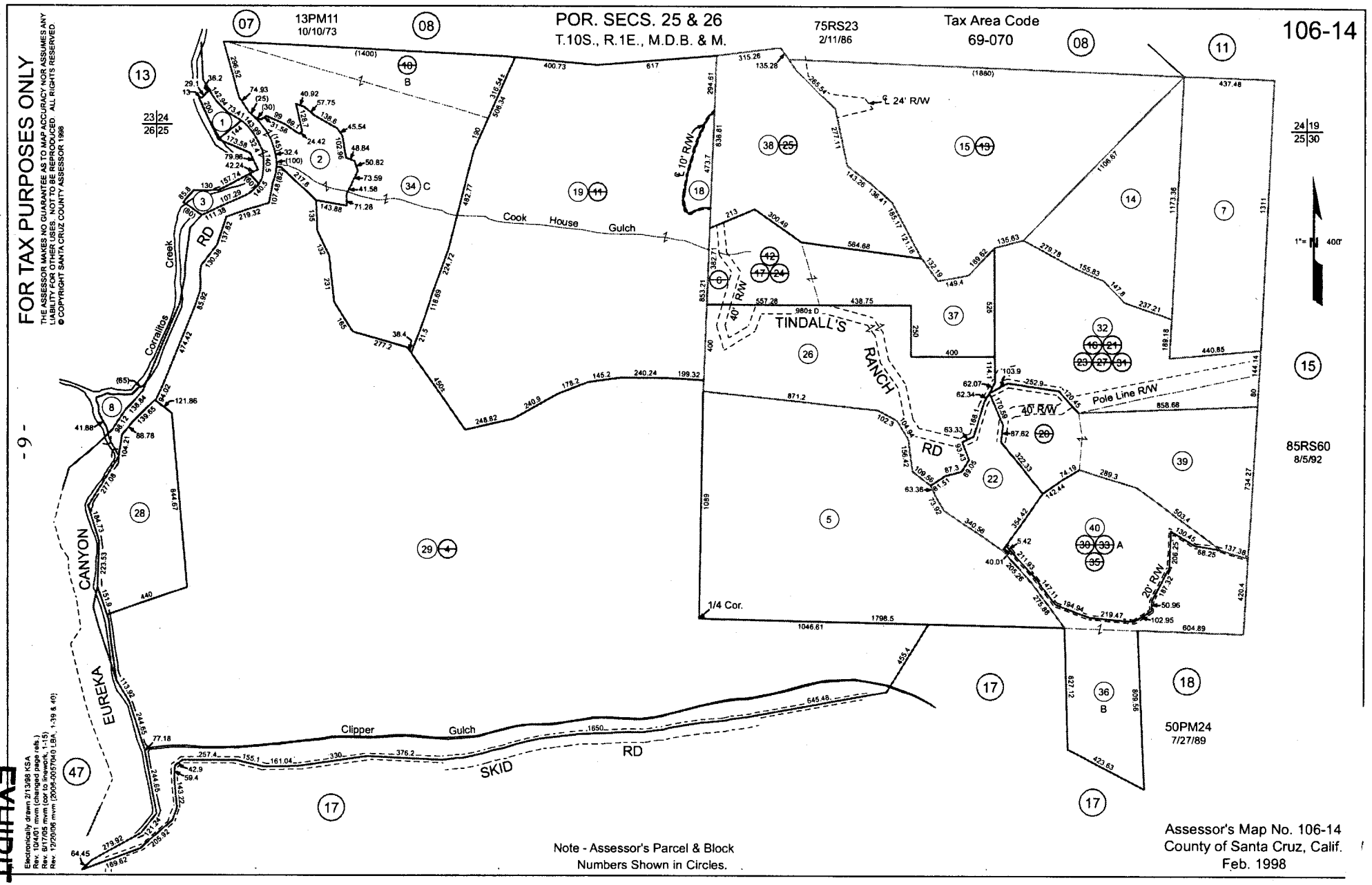
APPROVED AS TO FORM:

_____
Assistant County Counsel

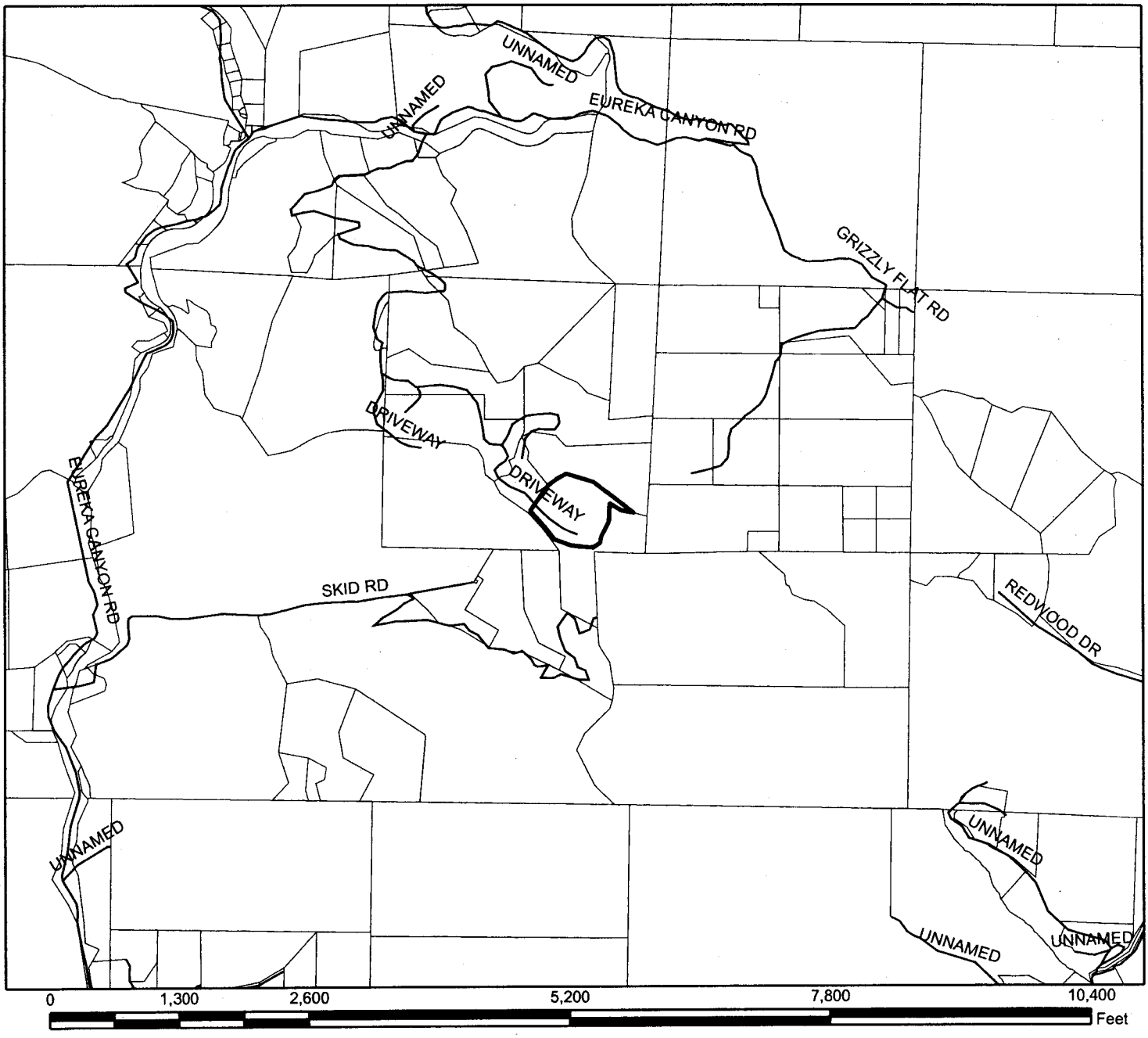
Exhibit: Rezoning Map

DISTRIBUTION: County Counsel
Planning
Assessor
County GIS

EXHIBIT A


FOR TAX PURPOSES ONLY
THE ASSESSOR MAKES NO GUARANTEE AS TO MAP ACCURACY NOR ASSUMES ANY LIABILITY FOR OTHER USES. NOT TO BE REPRODUCED. ALL RIGHTS RESERVED
© COPYRIGHT SANTA CRUZ COUNTY ASSESSOR 1998
13PM11
10/10/73
POR. SECS. 25 & 26
T.10S., R.1E., M.D.B. & M.
75RS23
2/11/86
Tax Area Code
69-070
106-14
Cook House Gulch
TINDALL'S RANCH RD
Pole Line R/W
40' R/W
20' R/W
Clipper Gulch
SKID RD
EUREKA CANYON
Corralitos Creek
1/4 Cor.
85RS60
8/5/92
50PM24
7/27/89
Note - Assessor's Parcel & Block Numbers Shown in Circles.
Assessor's Map No. 106-14
County of Santa Cruz, Calif.
Feb. 1998
- 9 -
EXHIBIT B

Location Map



LEGEND

- APN: 106-141-40
- Assessors Parcels
- Streets

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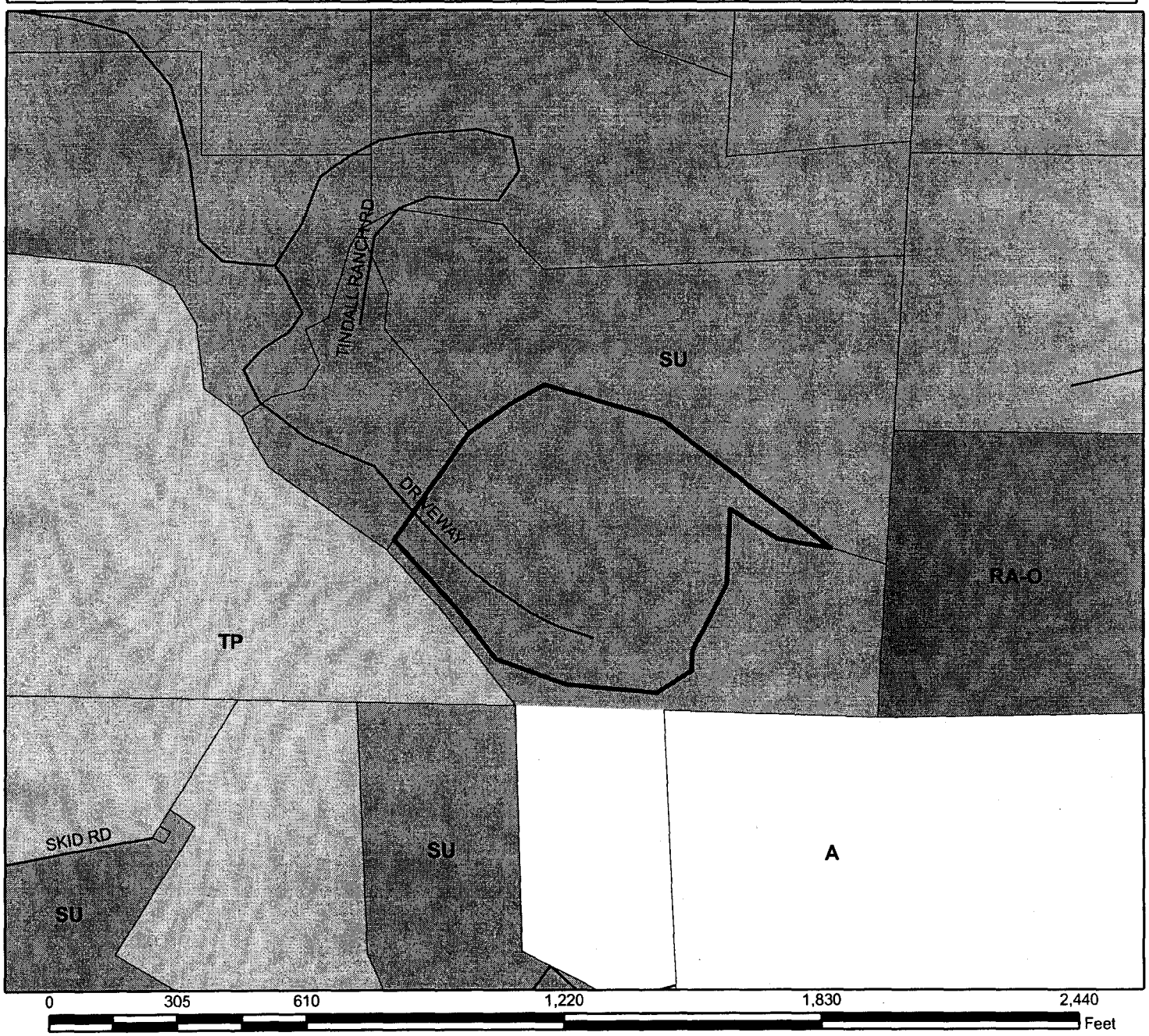
Map created by
County of Santa Cruz
Planning Department
August 2007

EXHIBIT C

Zoning Map



LEGEND

- APN: 106-141-40
- Assessors Parcels
- Streets
- AGRICULTURE
- AGRICULTURE RESIDENTIAL
- SPECIAL USE
- TIMBER PRODUCTION

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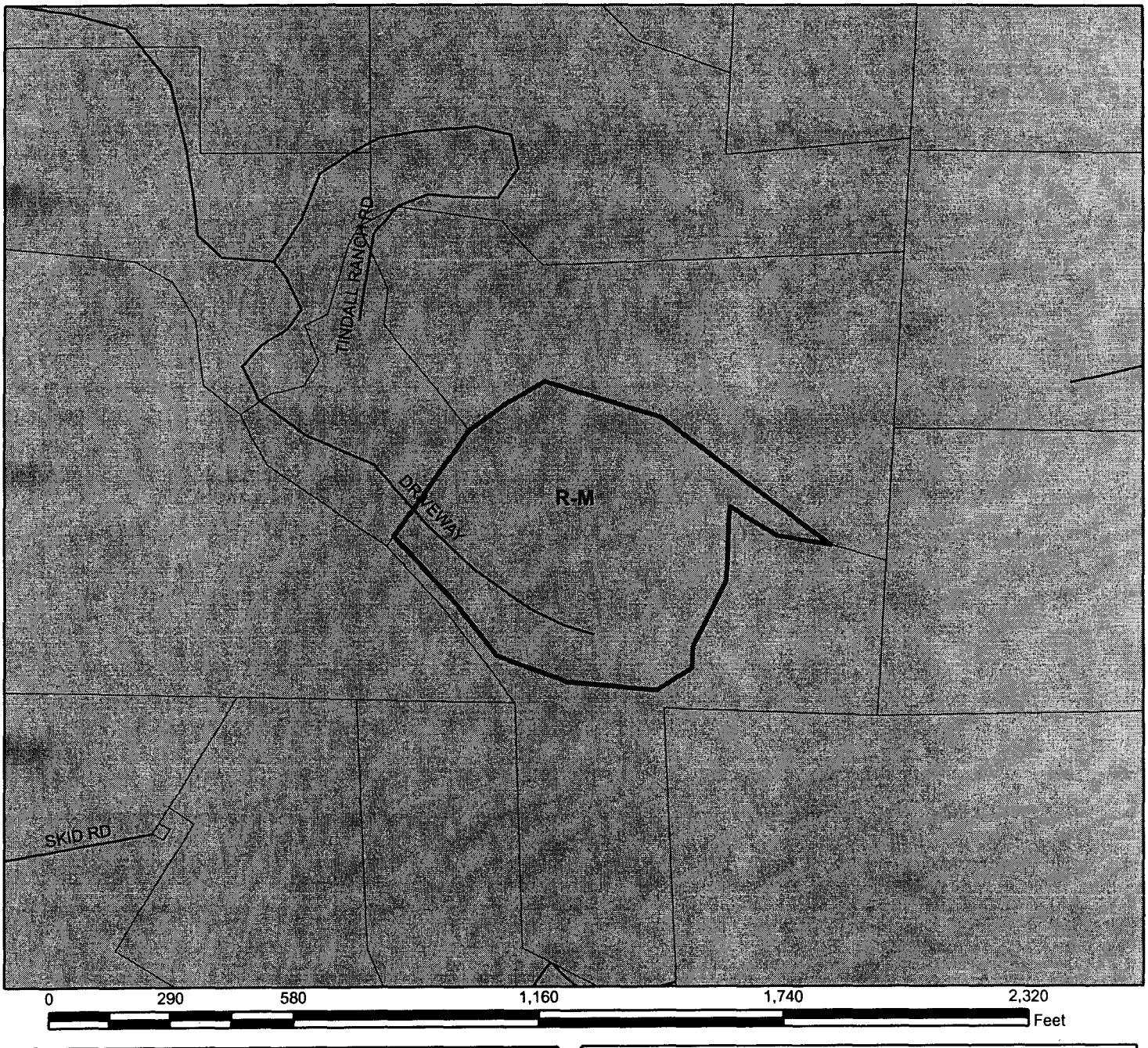
Map created by
County of Santa Cruz
Planning Department
August 2007

EXHIBIT C

General Plan Designation Map



LEGEND

- APN: 106-141-40
- Assessors Parcels
- Streets
- 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: 07-0547
Assessor Parcel Number: 106-141-40
Project Location: Property located at the south end of Tindall Ranch Road, approximately two miles from the intersection with Eureka Canyon Road.

Project Description: Rezone a single parcel from the Special Use (SU) zone districts to the Timber Production (TP) zone district.

Person or Agency Proposing Project: Carl & Kelsey Taussig, H/W CP RS

Contact Phone Number: (660) 743-3000

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

WEBSTER & ASSOCIATES
2-2590 EAST CLIFF DRIVE
SANTA CRUZ, CA 95062
831-462-6237

October 10, 2007

County of Santa Cruz Planning Department
Attn.: Maria Perez
701 Ocean Street, 4th Floor
Santa Cruz, CA 95060

RE: TPZ Rezoning of Assessor's Parcel # 106-141-40

Dear Ms. Perez,

This letter requests rezoning Santa Cruz County Assessor's Parcel # 106-141-40 (9.7 acres) from its current Special Use (SU) designation to the Timber Production Zone. The parcel is owned by Carl and Kelsey Taussig and meets the following criteria:

1. The parcel currently meets 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 for the Southern Sub district of the Coast Forest District (see Forest Management Plan).

2. The parcel meets the definition of "Timberland" per Section 51104(f) of the Government Code (see FMP).

3. The parcel meets the permitted use requirements per County Code Section 13.10.372.

4. The parcel has been harvested previously under an approved Timber Harvesting Plan.

5. The parcel meets the minimum 5-acre size requirement (9.7 acres).

EXHIBIT E

Attached in the FMP is an Assessor's Parcel Map.

Sincerely,

Roy Webster

Roy Webster
RPF # 1765

EXHIBIT E

LANDS OF TAUSSIG
Santa Cruz County, California

FOREST AND LAND MANAGEMENT PLAN

Webster and Associates
Forestry Consultants

Roy Webster, RPF #1765

October, 2007

EXHIBIT E

Table of Contents

EXHIBIT E

Landowners

Carl and Kelsey Taussig
2295 Alameda De Las Pulgas
Redwood City, CA 94061

Property Location

Portion of NE ¼ of Section 25, Township 10 South, Range 1 East, MDBM.

APN 106-141-40.

General Description/Transportation system

The property contains a total of 9.7 acres and about one half is located in the Clipper Gulch watershed, which is a tributary to the Eureka Canyon watershed. The other half of the parcel is located in the Redwood Canyon watershed, which is tributary to the Browns Creek watershed. Access to the property is by turning East off Highway 1 at Freedom Blvd to Corralitos Road, then going North for 6.6 miles on Corralitos Road and continuing on Eureka Canyon Road to Tindall Ranch Road. Turn right on Tindall Ranch Road and continue 1.6 miles to the end of the road near 1580 Tindall Ranch Road which is adjacent and immediately north of the subject property. The parcel encompasses a ridge top which approximately bisects the property and side slopes located in two different drainages. Elevations range from 1620 at the ridge to 1480 feet at the northeast property line.

Approximately ½ of the parcel (4.7 acres) is a vineyard in Chardonnay grapes. It is on flat to gently sloping terrain on the Southwest portion of the tract. The Northeast ½ of the parcel (5 acres) is timberland with variable slopes ranging from about 30% to 75%. The dominant vegetation on the timberland is a well stocked commercial size second growth redwood forest (Sequoia sempervirens). There are occasional Douglas fir (Pseudotsuga menziesii). The mid story is composed primarily of Madrone (Arbutus menziesii) with some Tanoak (Lithocarpus densiflora) and occasional Coast Live Oak (Quercus agrifolia). Species noted in the understory were suppressed and shrub like Tanoak, Swordfern (Polystichum munitum), Wood Fern (Dryopteris arguta), Poison Oak (Toxicodendron diversiloba), California Blackberry (Rubus ursinus), California Hazelnut (Corylnus cornuta), and California Wild Rose (Rosa californica).

An old logging road forms the southeasterly boundary of the property and another runs between the vineyard and the timberland.

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 much of the Santa Cruz mountains. A well-stocked second growth redwood forest replaced the old growth clear-cut area.

This parcel was part of a larger ownership that was selectively logged around 1970 (plus or minus). The harvest removed about half or more of the larger trees on the tract.

The vineyard was planted ten to fifteen years ago.

EXHIBIT E

The general vicinity has been subdivided into five to forty acre parcels, many of which now have residences. The subject parcel does not contain any structures.

Management Objectives

The goal of the owner's property management is to continue operation of the vineyard while achieving an intermittent economic return from the timberland. The owners will take measures to maximize 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 these objectives.

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, vineyard and 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 timberland portion of the property is underlain by the Ben Lomond-sandy loam. This deep, well drained soil is on long and complex or convex side slopes. The soil formed in residuum derived from sandstone or granitic rock. Typically the soil is covered by a 2-inch mat of partially decomposed needles and twigs. The surface layer is dark grayish brown, slightly acid and neutral sandy loam about 19 inches thick. The subsoil is brown, medium acid sandy loam about 11 inches thick. The substratum is pale brown, medium acid sandy loam about 16 inches thick. Weathered sandstone is at a depth of 46 inches.

Permeability of this soil is moderately rapid. Effective rooting depth is 40 to 60 inches. Available water capacity is 4 to 8.5 inches. Runoff is very rapid, and the hazard of erosion is very high. The soil is used mainly for timber production.

Watershed

There are no watercourses on the property. The timbered portion drains to Redwood Canyon, a year round watercourse in its lower reaches. Redwood Canyon drains to Browns Creek. Browns Creek is tributary to Corralitos Creek which is part of the Pajaro River Watershed. The Pajaro River drains directly to the Pacific Ocean. Both steelhead and a remnant population of Brown Trout from fish plantings are present in Browns Creek. Coho Salmon were historically present in Browns Creek but no longer. In the past the County of Santa Cruz along with the Department of Fish and Game and other government agencies have spent money to upgrade stream crossings on Browns Creek to facilitate fish passage.

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.

EXHIBIT E

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).

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 all erosion control measures will protect Redwood Canyon and any current or future use of it and associated watersheds 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 aesthetics of the existing timber stand. This will provide high quality recreation for the landowners and their invited guests.

EXHIBIT E

Timber Inventory Results

Coast Redwood dominates the existing timber stand on the property, with a few Douglas fir intermixed. Hardwoods were primarily Madrone and some Tanoak. 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. A crop of thirty year old sprouts was initiated by the selective harvest in 1970. Thus there are mostly two age classes present. Many of the young saplings are suppressed and growth would be augmented by another selective harvest. Some of the drier areas have regrown with a predominance of hardwoods, especially Madrone. There is evidence of defect in some of the older trees with broken tops and forked stems where breakage occurred.

In October, 2007, a cruise consisting of four-1/5-acre circular plots was conducted to better assess stand conditions and growth. This comprises a 16% 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 150', which indicates Site 3. This is average site 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 54,044 board feet per acre. This is broken down into 51,598 board feet per acre of Redwood and 2,446 board feet per acre of Douglas fir. Average DBH (diameter at breast height) for commercial conifers is 25 inches for redwood and 35 inches for Douglas fir. Total standing volume of conifers on the 5 acres of timberland is estimated at 270,221 board feet. Total basal area of conifers is 362 square feet per acre.

There are a total of 23 hardwoods per acre comprising 56 square feet of basal area per acre. This works out to almost 12 cords per acre of fuel wood.

By use of limited increment boring and a stand table projection, stand growth is estimated to be roughly 1.8% or 973 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 35,000 board feet per acre.

Management Practices

Timber management

The stand, in general, has two age class, the trees that naturally regenerated or sprouted after the first clear cut logging in the late 1800's or early 1900's and those generated by the 1970 harvest. 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.

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: Maximize spacing between residual trees and remove 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 26 inch and above size class to achieve the optimal uneven-aged size class distribution. Thinning of trees 20 inches and under should only be done if spacing is overly crowded or where defective. Where beneficial, group selection will be used as a cutting practice to allow increased light into a 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.

Current stand conditions call for a volume removal of 73,000 board feet every 15 years on a sustainable basis.

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 tanoaks and madrones would be beneficial 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. The redwood should be 2-0 stock (or 1-0 redwood inoculated with mycorhizae). 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. 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.

Fire Protection

The major threat to the property from a fire protection standpoint appears to be the possibility of fire spreading into the property from Tindall Ranch Road or adjacent houses 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. An adjacent owner monitors the property and controls trespass to a large extent.

EXHIBIT E

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 equipment easier on the primary access road to the parcel.

When harvesting occurs, to reduce fire hazards slash and debris should be loped and scattered to within 30 inches of the ground.

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

CRUISE INFORMATION

Dataset Name: TAUSSIG 10/8/2007

Tract: TAUSSIG	**Tally:** Cruise Tally		**Acres:** 5
Cruise: Plot Cruise	**Plot Size:** 0.2		**Plots:** 4

Products :	LUMBER	LUMBER	HARDWOOD	HARDWOOD
Measure :	BOARD FEET	BOARD FEET	CORDS	CORDS
Species :	1	1	1	1

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EXHIBIT E

TAUSSIG **Plot Cruise Volume Summary** **10/8/2007**

	Per Acre			5 - Acres		Ave Tree		Cruise		
Product	**Volume**	**Trees**	**BA**	**Volume**	**Trees**	**Volume**	**DBH**	**Plts**	**Size**	**%Cr**
LUMBER	**BOARD**									
REDWOOD	51598.07	71.2	248.4	257990	356	724.69	25.3	4	0.20	16.0
LUMBER	**51598.07**	**71.2**	**248.4**	**257990**	**356**	**724.69**	**25.3**	**4**	**0.20**	**16.0**
LUMBER	**BOARD**									
DOUGLAS fIR	2446.25	1.2	7.9	12231	6	2038.54	34.7	4	0.20	16.0
LUMBER	**2446.25**	**1.2**	**7.9**	**12231**	**6**	**2038.54**	**34.7**	**4**	**0.20**	**16.0**
HARDWOOD	**CORDS**									
MADRONE	11.00	16.1	48.9	55	81	0.68	23.6	4	0.20	16.0
HARDWOOD	**11.00**	**16.1**	**48.9**	**55**	**81**	**0.68**	**23.6**	**4**	**0.20**	**16.0**
HARDWOOD	**CORDS**									
TANOAK	1.25	7.3	6.9	6	37	0.17	13.2	4	0.20	16.0
HARDWOOD	**1.25**	**7.3**	**6.9**	**6**	**37**	**0.17**	**13.2**	**4**	**0.20**	**16.0**
STAND		**95**	**312**		**478**		**24.5**	**4**	**0.20**	**16.0**

EXHIBIT E

Product: LUMBER **Species: REDWOOD** **10/8/2007**

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

	Per Acre			5 Acres	
DBH	**Trees**	**Basal Area**	**BOARD**	**Trees**	**BOARD FEET**
12	6.2	4.9	218.39	31	1091.95
14	3.8	4.0	196.02	19	980.09
16	5.0	7.0	596.25	25	2981.23
18	2.5	4.4	518.50	12	2592.51
20	3.8	8.2	1190.25	19	5951.23
22	11.2	29.7	4568.17	56	22840.86
24	5.0	15.7	2836.09	25	14180.46
26	7.5	27.7	5210.79	38	26053.95
28	8.8	37.4	8035.01	44	40175.05
30	8.8	43.0	9537.64	44	47688.20
32	5.0	27.9	6955.59	25	34777.95
34	0.0	0.0	0.00	0	0.00
36	0.0	0.0	0.00	0	0.00
38	0.0	0.0	0.00	0	0.00
40	1.2	10.9	3222.26	6	16111.31
42	0.0	0.0	0.00	0	0.00
44	1.2	13.2	4034.15	6	20170.77
46	1.2	14.4	4478.96	6	22394.78
	71.2	248.4	51598.07	356	257990.30

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EXHIBIT E

EXHIBIT A

Product: LUMBER **Species: DOUGLAS fIR** **10/8/2007**

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

	Per Acre			5 Acres	
DBH	**Trees**	**Basal Area**	**BOARD**	**Trees**	**BOARD FEET**
34	1.2	7.9	2446.25	6	12231.27
	1.2	7.9	2446.25	6	12231.27

EXHIBIT E

Product: HARDWOOD **Species: MADRONE** **10/8/2007**

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

	Per Acre			5 Acres	
DBH	**Trees**	**Basal Area**	**CORDS**	**Trees**	**CORDS**
12	1.2	1.0	0.09	6	0.43
14	2.5	2.7	0.22	12	1.11
16	1.2	1.7	0.24	6	1.20
18	0.0	0.0	0.00	0	0.00
20	1.2	2.7	0.49	6	2.43
22	0.0	0.0	0.00	0	0.00
24	2.5	7.9	1.89	12	9.46
26	2.5	9.2	2.24	12	11.18
28	1.2	5.3	1.31	6	6.53
30	3.8	18.4	4.52	19	22.62
	16.1	48.9	11.00	79	54.96

Product: HARDWOOD **Species: TANOAK** **10/8/2007**

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

	Per Acre			5 Acres	
DBH	**Trees**	**Basal Area**	**CORDS**	**Trees**	**CORDS**
6	2.5	0.5	0.06	12	0.29
8	1.2	0.4	0.04	6	0.22
10	0.0	0.0	0.00	0	0.00
12	1.2	1.0	0.14	6	0.71
14	0.0	0.0	0.00	0	0.00
16	1.2	1.7	0.31	6	1.57
18	0.0	0.0	0.00	0	0.00
20	0.0	0.0	0.00	0	0.00
22	1.2	3.3	0.70	6	3.50
	7.3	6.9	1.25	36	6.29

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EXHIBIT E

Species: REDWOOD **Product: LUMBER**

DBH: 12 - 46 by 2 **HGT:** Logs/Bolts 1 - 8 by 1 - 16 Logs

Volume Equation: M & G Form Class Bd.Ft.-V" top **Form Class:** 70 **Log Rule:** Scribner

	Height Classes							
DBH	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
12	5	0	0	0	0	0	0	0
14	3	0	0	0	0	0	0	0
16	0	4	0	0	0	0	0	0
18	0	0	2	0	0	0	0	0
20	0	0	0	3	0	0	0	0
22	0	0	0	9	0	0	0	0
24	0	0	0	0	4	0	0	0
26	0	0	0	0	6	0	0	0
28	0	0	0	0	0	7	0	0
30	0	0	0	0	0	7	0	0
32	0	0	0	0	0	0	4	0
34	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0
38	0	0	0	0	0	0	0	0
40	0	0	0	0	0	0	0	1
42	0	0	0	0	0	0	0	0
44	0	0	0	0	0	0	0	1
46	0	0	0	0	0	0	0	1

Species: DOUGLAS fIR **Product: LUMBER**

DBH: 34 - 34 by 2 **HGT:** Logs/Bolts 1 - 8 by 1 - 16 Logs

Volume Equation: M & G Form Class Bd.Ft.-V" top **Form Class:** 73 **Log Rule:** Scribner

	Height Classes							
DBH	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
34	0	0	0	0	0	0	0	1

Species: MADRONE **Product: HARDWOOD**

DBH: 12 - 30 by 2 **HGT:** Logs/Bolts 1 - 5 by 1 - 16 Logs

Volume Equation: M & G Form Class Cords -V" top **Form Class:** 63 **Log Rule:** Cords

	Height Classes				
DBH	**1**	**2**	**3**	**4**	**5**
12	1	0	0	0	0
14	2	0	0	0	0
16	0	1	0	0	0
18	0	0	0	0	0
20	0	0	1	0	0
22	0	0	0	0	0
24	0	0	0	0	2
26	0	0	0	0	2
28	0	0	0	0	1
30	0	0	0	0	3

EXHIBIT E

Species: TANOAK **Product: HARDWOOD**

DBH: 6 - 22 by 2 **HGT:** Logs/Bolts 1 - 5 by 1 - 16 Logs

Volume Equation: M & G Form Class Cords -V" top **Form Class:** 63 **Log Rule:** Cords

	Height Classes				
DBH	1	2	3	4	5
6	2	0	0	0	0
8	1	0	0	0	0
10	0	0	0	0	0
12	0	1	0	0	0
14	0	0	0	0	0
16	0	0	1	0	0
18	0	0	0	0	0
20	0	0	0	0	0
22	0	0	0	1	0

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

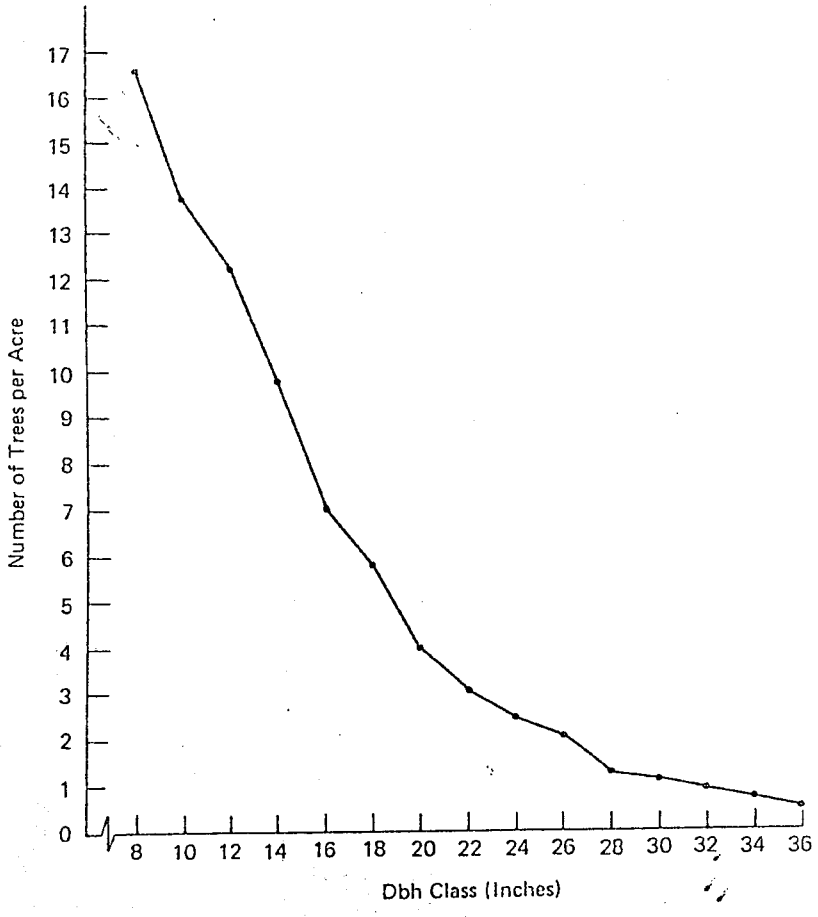

Fig. 17–2. Diameter distribution per acre for an uneven-aged virgin stand of beech–birch–maple–hemlock (adapted from Meyer and Stevenson, 1943).

EXHIBIT E1

TAUSIG PROPERTY

EXHIBIT C

Parcel Location  **1"=1 mile**

APN # 106-141-40

Parcel Size: 9.7 acres

EXHIBIT E

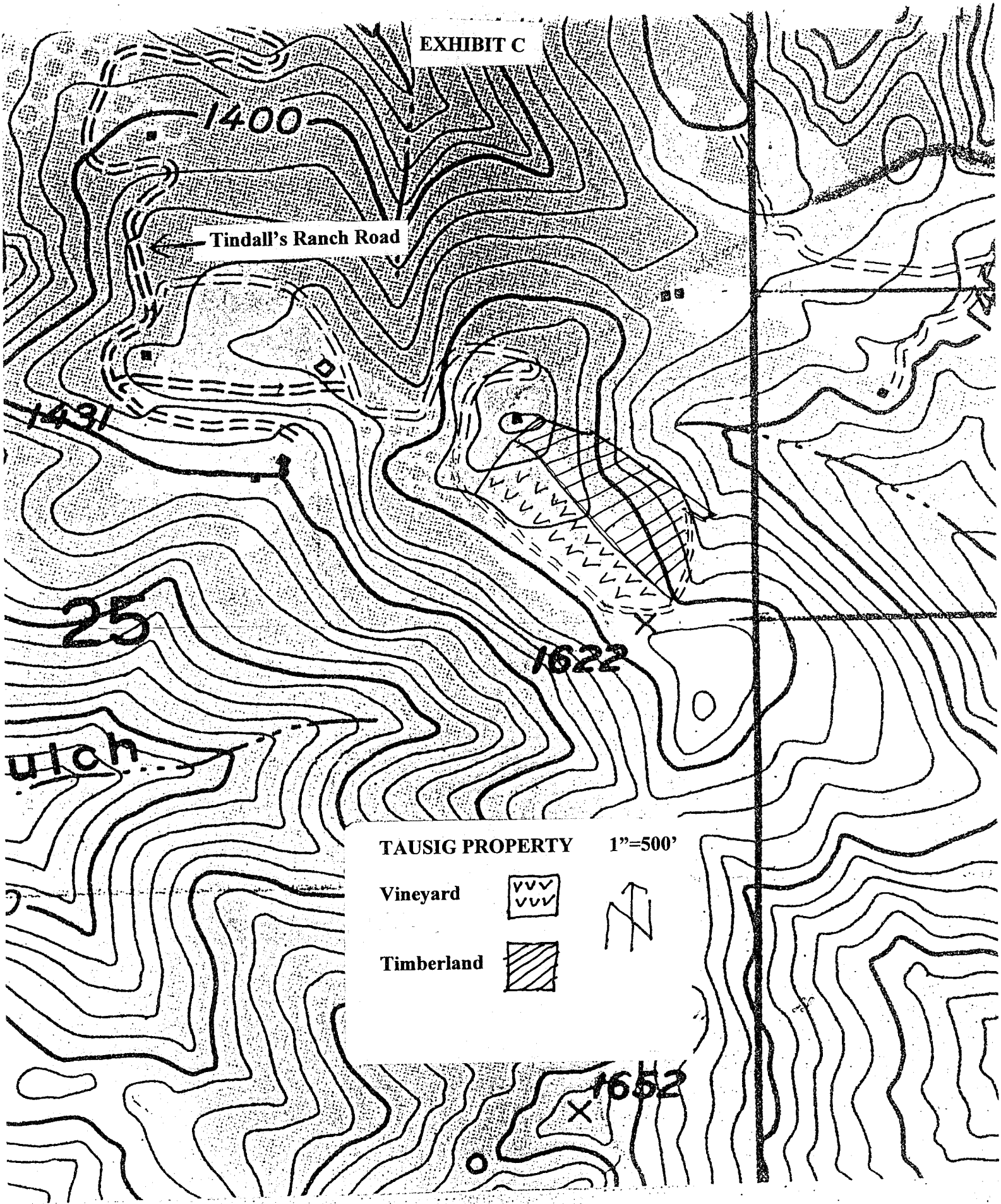
EXHIBIT C
1400
Tindall's Ranch Road
1431
25
1622
ulch
TAUSIG PROPERTY
1"=500'
Vineyard
Timberland
1652

EXHIBIT E

TAUSIG PROPERTY

APN # 106-141-40 **1"=600'**

Parcel Size: 9.7 acres

EXHIBIT E

106-11

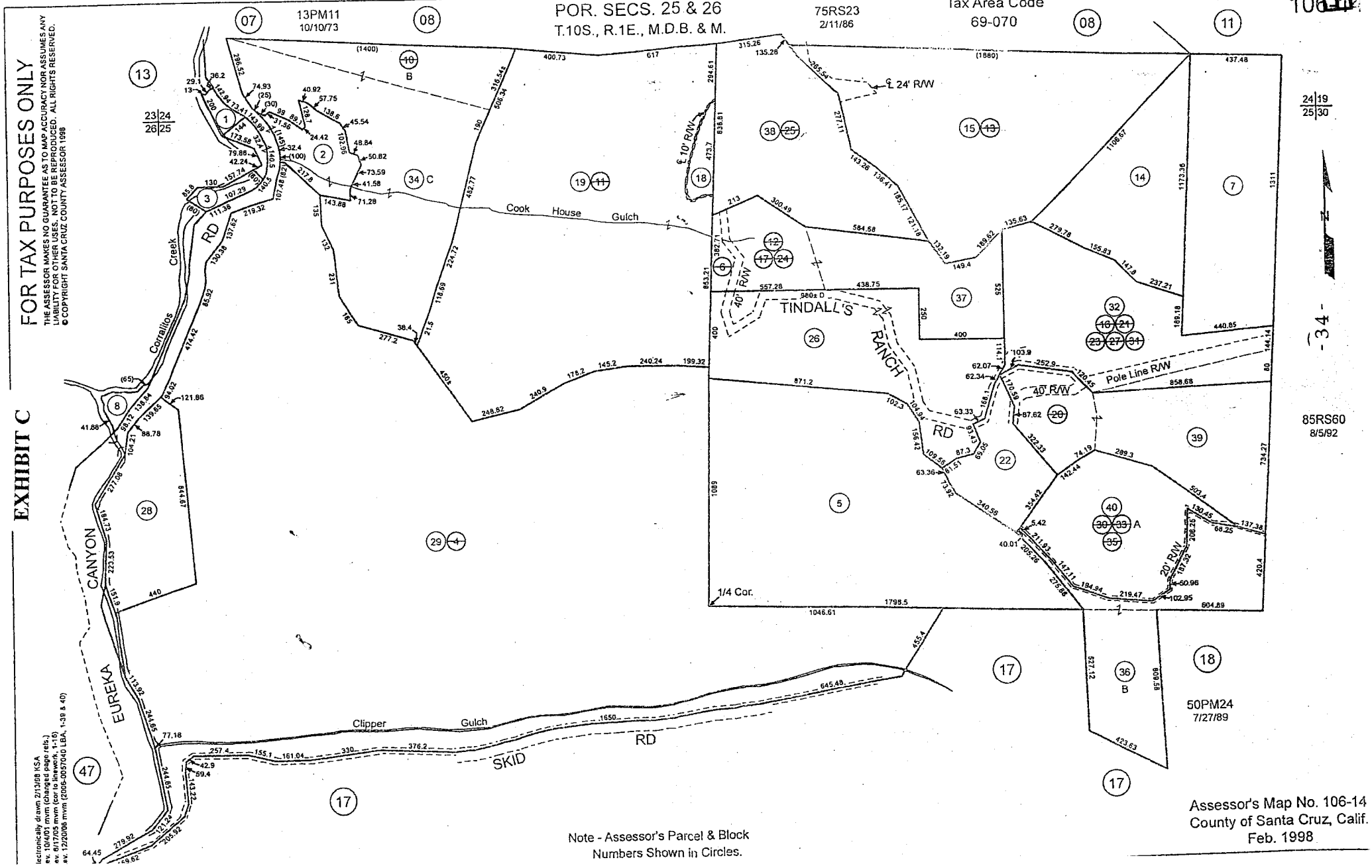

EXHIBIT D

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: Current stocking is 256 square feet of basal area per acre of conifers, well above the required standards. There will be no problem in leaving 75 square feet of basal area per acre after each selective harvest.

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. The timberland is currently growing 973 board feet per acre per year. One cubic foot equals 12 board feet. Therefore the timberland is growing 81 cubic feet per acre per year.

COMPATIBLE USE ANALYSIS

The primary land uses on the parcel have been commercial timber production and a vineyard. These are compatible uses.

EXHIBIT E