

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

August 1,2007

Planning Commission County of Santa Cruz 701 Ocean Street Santa Cruz, **CA** 95060 Agenda Date: October **10,2007 APN: 105-301-06** Application: **07-0263** Item #: **13**

Subject: A public hearing to consider **a** proposal to rezone a single **lot** of record from the Agriculture with Open Space (A-0) zone district **to** the Timber Production (**TP**) zone district.

Members of the Commission:

On May 25, 2007, the County Planning Department accepted this application for a rezoning to Timber Production (TP). This is a proposal to rezone a 21-acre parcel from the Agriculture with Open Space Easement (A-O) zone district to the Timber Production (TP) zone district. The uses on the property consist of a single family residence. The Open Space Easement has been terminated.

Background

This project qualifies for a rezoning under California Government Code **Section 5**1113. 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.

Notwithstanding the provisions of Article 4 (commencing with Section

(4) The parcel shall be timberland as defined in subdivision (f) of Section 51104.

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.

⁽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 parce) 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) (}A1 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 Fie 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 subsequentlyzoned 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.

^{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.

⁽⁵⁾ The parcel shall be in compliance with the compatible use ordinance adopted by the board or council pursuant to Section 511 11

⁽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 he 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 α higher under

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. 07-0263 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
 - Timber Management Plan by Roy Webster RPF #1765, dated May 23,2007.

Maria Porcila Perez Project Planner Development Review

E.

Reviewed **By**:

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 No. 07-0263, involving property located on the south side of Haines Road (a private, unmarked right of way) approximately 0.75 miles east of the three-way intersection of Haines Road with Rider Road and Rider Ridge 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 Agriculture with Open Space Easement (**A-0**) zone district to the Timber Production with Open Space Easement (TP) 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 Cmz, State of California, this ______ day of _____, 2007, by the following vote:

AYES:COMMISSIONERSNOES:COMMISSIONERSABSENT:COMMISSIONERSABSTAIN:COMMISSIONERS

Chairperson

ATTEST:

MARK DEMING, Secretary

OVED AS, TO, FOR



ORDINANCE NO.

ORDINANCE AMENDING CHAPTER 13 OF THE SANTA CRUZ COUNTY CODE CHANGING FROM ONE ZONE DISTFUCT 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 on the south side of Haines Road (a private, unmarked right of way) approximately 0.75 miles east of three-way intersection of Haines Road with Rider Road and Rider Ridge 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 Supervisorshereby 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).



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
105-301-06	Agriculture with	
	Open Space Combining	ТР
	(A-O)	

SECTION IV

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

PASSED AND ADOPTED THIS _____ day of _____ 2007, **by** the Board of Supervisors of the County of Santa Cruz by the following vote:

SUPERVISORS
SUPERVISORS
SUPERVISORS
SUPERVISORS

Chairman of the Board **of** Supervisors

ATTEST:

Clerk of the Board

APPROVED AS TO FORM ount Counsel

Exhibit: Rezoning Map

DISTRIBUTION:

County Counsel Planning Assessor County

GIS











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: 07-0263

Assessor Parcel Number: 105-301-06

Project Location: Property located on the south side of Haines Road (a private, unmarked right of way) approximately 0.75 miles east of three-way intersection of Haines Road with Rider Road and Rider Ridge Road.

Project Description: Rezone a single parcel from the Agriculture with Open Space **Combining (A-0) zone district to the Timber Production (TP) zone** district.

Person or Agency Proposing Project: Roy Webster

Contact Phone Number: (831) 462-6237

- A. _____ B. _____ The proposed activity is not a project under CEQA Guidelines Section 15378.
- 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. <u>X</u> Statutory Exemption other than a Ministerial Project (CEQA Guidelines Section 15260 to 15285). [Section 17031

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

Maria Porcila Perez, Project Planner Date: 8/17/07



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

May 23, 2007

County of Santa Cruz Planning Department Attn.: Robin Bolster-Grant 701 Ocean Street, 4th Floor Santa Cruz, CA 95060

RE: TPZ Rezoning of Assessor's Parcel # 105-301-06

Dear Ms. Bolster-Grant,

This letter requests rezoning Santa Cruz County Assessor's Parcel # 105-301-06 (21 acres) from its current AO-Mountain Residential designation to the Timber Production Zone. The parcel is owned by Ron & Lois De Benedetti 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 Subdistrict 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 (THP) # 1-93-72/SCR (1993)
- 5. The parcel meets the minimum 5-acre size requirement (21 acres).

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

Sincerely,

Poy Webster

Roy Webster RPF # 1765

STOCKING ANALYSIS, APN 105-301-06

<u>Backwound:</u> 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.

<u>Analysis:</u> Field review of the property suggests that the average dominant redwood trees on the properly exhibit Site III characteristics. Site III characteristics are defined under CCR 1060 as lands capable of growing redwood tress of 135-154 feet in 100 years. The parcel has been selectively harvested in the past and has demonstrated the ability to sustain periodic harvests while maintaining the minimum basal area requirements cited above. Current stocking is 173 square feet of basal area per acre, well above the required standards.

WOOD FIBER ANALYSIS

<u>Background:</u> 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:** "Privatelyowned 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".

<u>Analysis</u> Field review of the property suggests that the parcel is capable of producing wood fiber in excess of 15 cubic feet/acre/year. Soil productivity analysis confirms this observation. The soil types are Lompico Variant **Loam** and Ben Lomond-Felton complex, which are well-suited to the production of redwood and Douglas-fir timber and based on field review, are currently producing well in excess of 15 cubic feet of wood fiber/acre/year.

COMPATIBLE USE ANALYSIS

The primary land use on the parcel over the last several decades has been commercial timber production with one single family residence.

COMBINED TIMBER MANAGEMENT PLAN

FOR

DUARD & KATHLEEN LA FRENTZ APN 105-301-05

WALTON HAINES-BARBARA NAINES APN 105-301-03

WALTON HAINES-RON & LOIS DE BENEDETTI APN 105-301-08

> RON & LOIS DE BENEDETTI APN 105-301-06

PREPARED BY ROY W. WEBSTER REGISTERED PROFESSIONAL FORESTER LICENSE NUMBER 1765

2007

TIMBER MANAGEMENT PLAN

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ADDENDUM

A. 1981 CFJP (California Forest Improvement Program) project description.

B. **1993** TIMBER HARVEST PLAN (includes APN 105-301-02&07 which are not part of **this** rezoning application).

C. Soil description

D. Tree Inventory







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PROPERTY DESCRIPTION

OWNER'S NAME - Duard & Kathleen La Frentz

ASSESSOR'S PARCEL NUMBER - 105-301-05

SIZE OF PARCEL – 17 acres

OWNER'S NAME - Walton Haines - Barbara Haines

ASSESSOR'S PARCEL NUMBER - 105-301-03

SIZE OF PARCEL – 23 acres.

OWNER'S NAME – Walton Haines – Ron & Lois De Benedetti

ASSESSOR'S PARCEL NUMBER - 105-301-08

SIZE OF PARCEL - 21 acres.

OWNER'S NAME – Ron & Lois De Benedetti

ASSESSOR'S PARCEL NUMBER - 105-301-06

SIZE OF PARCEL – 21 acres.

The parcels **are** located in the headwaters of the Valencia Creek watershed. There is one class 1 watercourse which extends from the northwest boundary of APN 105-301-05 down **to** the water diversion located near the southwest boundary of the same parcel. Below the diversion (off the property) it **is** a class 2 watercourse. There **is** a class 2 watercourse which is the east boundary of the unit. There are four class 3 watercourses as **well** as a pond adjacent to the DeBenedetti house. Refer to the 1993 THP map for locations.

ACREAGE IN DIFFERENT VEGETATION TYPES - The property is all redwoodtanoak type. There are some areas of grassland and/or brush within the **stand**.

SITE CLASS - Site Class III

SOILS

Subject parcels are of the Lompico Variant loam (# 145) and Ben Lomond-Felton complex (#114) per the Soil Survey of Santa Cruz County, California, USDA, Soil Conservation Service, issued August 1980. See Addendum C for a description of the soils.

PARCEL TIMBER HARVEST HISTORY

The parcels subject of this Timber Management Plan (TMP) were purchased by the Haines family in 1894. The redwood was clear-cut shortly after the tum of the century. Some residual. defective trees **were** retained. Since that time and **up** to the first selective harvest other wood products were harvested from the **tree** farm: cordwood, tanbark, fence posts and grape stakes were among the products. Selective timber harvests were conducted in 1958,1967,1978, and 1993.

APPROVED STATE OR COUNTY TIMBER HARVEST PLANS & HAUL ROUTE

A copy of the most recent THP is appended to this Plan (Addendum B). The haul route was from the property to Rider Road, south on Eureka Canyon Road, continue on W. Corralitos Road, northwest on Freedom Blvd. to Highway 1, then on to the sawmill.

MANAGEMENT OBJECTIVES AND GOALS

The objective and goal is to produce an even flow of high quality redwood logs through periodic harvesting and recommended forest improvement projects. Attached is a copy of the California Forest Improvement Project conducted in 1981 (Addendum **A**).

RECOMMENDED LOGGING SYSTEMS

The recommended logging system is crawler tractor and/or rubber tired skidder which has been utilized in the past harvests.

PRESENT AND FUTURE STAND CONDJTJONS

The present stand is a well spaced and stocked second growth redwood stand consisting of 5 age classes resulting from the previous harvest. The age classes **are** 90 years old, 50, 40, 30, and 15 years old. There are no ancient redwoods (200 years +) located on the tract.

A 2.1% timber cruise was conducted to ascertain stand conditions and growth (*see* Addendum D, Inventory). Jt shows trees per acre by DBH (diameter at breast height) class, basal area and board foot volume. We estimate that the stand currently has 61 trees **per** acre 12 inches or greater in diameter, 173 square feet of basal area per acre and 8,700 board feet per acre. It is estimated that there is a total volume of 670,646 board feet on the entire unit.

Growth was highly variable, ranging from 4 rings per inch to 13 rings **per** inch. The average was 8 **rings** per inch (i.e. the tree took 8 years to grow one inch in diameter). Growth was more dependent on location in the canopy then size class. Open grown *trees* or those which had been released by removal of competition grew the fastest. Total average annual growth is estimated to be 3% per year.

The future stand will be all-aged with a somewhat greater variety of tree sizes. The oldest trees will be in the 60 to 80 year age class. It will have a roughly equal number of crop trees in each age/size class. It will have a greater diversity of habitats.

PRESENT AND FUTURE GROWTH

Current growth is near optimum and will be maintained by periodic harvests leaving a well spaced; productive stand.

CUTTING PRESCRIPTION

The even flow **of** high quality redwood logs from any stand is guaranteed **by** doing nothing more than applying a simple cutting prescription. Cut 50 percent of the trees **18** inches in diameter and larger. Take the largest trees first.

HARVEST CYCLES

Don't cut again until some* dominant redwoods, not growing in advantageous habitat such as near a spring or **stream**, have grown **six** inches in diameter. (*A number equal *to* two trees for every 10 acres **is** enough.) This **will** work **out to** a cutting cycle of 10 to 15 years.

REGENERATION

Since redwoods sprout from the **stump**, regeneration is assured without any intervention

FUTURE GROWTH MODEL

The cutting prescription will produce an even flow of harvest trees, mostly 24 *to* 30 inches in diameter. **Assuming**just one replacement tree for each tree cut, ultimately the distribution of crop trees prior to each harvest will **look** something like this:

TREE DISTRIBUTION 50% CUT NUMBER DIAMETER

20%	24-30"
20%	18-24"
20%	12-18"
20%	6-1 2"
20%	0-6"

COMMENCEMENT OF HARVESTING

Harvesting should commence **as** soon as the landowner's economic needs and the market for timber **will** allow. but within the next five years.

MANAGEMENT UNITS

The entire property is one management unit

FOREST IMPROVEMENT

The stand will be monitored over time and forest improvement projects conducted if necessary to maximize growth.

SNAGS AND DOWNED WOOD INVENTORY.

There are no significant snags or downed wood. Those present will be retained.

FISH AND WILDLIFE MANAGEMENT

Fish and wildlife management is not proposed but will be maintained **as** a hi-product of this timber management plan.

FIRE PROTECTION PLAN

Maintain appropriate clearing for fire protection around the residences.

RECREATION

There is only private recreation on the parcel, such **as** hiking and horse back riding.

URBAN INTERFACE ISSUES

Parcels in the vicinity are mostly forested tracts on five acre and larger parcels. Timber harvesting is a periodic and accepted practice in this area. Minimal opposition to harvesting has occurred in the past and the same is expected in the future.

EROSION HAZARD INVENTORY AND PLAN

Only minimal erosion has occurred in the past due to suitable timber harvesting operations and continual maintenance of erosion control devices between harvests. The same is expected in the future.

PROPOSED DEVELOPMENT

There is a Granny Unit proposed for APN 105-301-03. Septic, water and soils test have been conducted. They are waiting for issuance of the building permit.

ANALYSIS OF ANY CONFLICTS BETWEEN PROPOSED DEVELOPMENT AND FUTURE HARVESTING There are none.

Roy W. Webster

5-15-2007

ADDENDUM A

CFIP PROJECT DESCRIPTION - 1981 H D RANCH

The HD Ranch is composed of 66 acres, 59 of which are forested with stands of second growth redwood and Douglas fir with a substantial hardwood component ranging from 30-100 percent locally. The remaining 7 acres are in grasslands being invaded by brush species. An area of 16.5 acres in the southern portion of the property is to be treated silviculturally to maximize conifer growth. The treatment area is composed of Lompico Variant loam and Ben Lomond-Felton complex soils. The acreage is on gently sloping terrain. No environmental damage will result from the proposed activities. The productive potential of the area has been determined to be Site 111. The 16.5 acres consists of locally variable conifer/hardwood stands which has been determined by ground investigation to be composed of 60 percent conifer and 40 percent hardwood trees. Thus overall 6.6 acres is in hardwoods and 9.9 acres is in conifers.

Site Preparation: 6.6 acres

Treatment on the hardwood areas consists of the felling and removal of most of the trees, allowing some leave trees for soil stability and site shading. The larger waste material generated by the recent conifer logging will be removed to leave room for planting the seedlings. The slash will be piled at a landing site for burning and the fuelwood generated will be removed from the property for sale.

Due to the expenses which will be incurred, far exceeding the ceiling price listed for site preparation, it is felt that a commercial fuelwood operation carried out simultaneously with site preparation would be most advantageous both from an economic and environmental standpoint. Costs would preclude the removal of the fallen hardwoods and logging slash unless added revenues could be realized by the sale of fuelwood. The removal of said debris would produce maximum acreage for planting, which would be impossible were the trees merely felled and lopped. The fallen hardwoods and combustible debris would pose a substantial fire hazard in the area. Thus the removal of this material will have an added effect of virtually eliminating the danger of a ground fire.

It is desirable to carry out the fuelwood and site preparations together both for economic and environmental reasons. If the operations were to be performed separately, the objectives of the plan would not be feasible. Removal of the fuelwood and subsequent cleanup (lopping) for inspection, and then re-entry for site preparation would greatly increase the cost of the operation and would nullify the possibility of the fuelwood operation financing a more complete cleanup of the area. From an environmental standpoint it is desirable to make one entry into the treatment area, minimizing soil disturbance and compaction. It should be stated here that this is an experimental operation designed to ascertain whether a clean, fully utilized planting area can be achieved economically.

Planting 6.6 Acres

The prepared area will subsequently be planted with conifer seedlings; bare root stock of 1-0 redwood and 2.0 Douglas fir. Seedlings will be planted at 9' x 9' spacing or 550 trees per acre. A total of **3.630** seedlings will be planted. If weather conditions permit planting will be carried out in the spring of 1981. Otherwise, planting will take place in the winter of 1981-1982.

Pre Commercial Thinning 9.9 Acres

The remainder of the treatment area consists of scattered redwood clumps and Douglas fir. The redwood clumps will be thinned so as to leave 2 to 5 healthy sprouts (5-10 years old) per stump, consistent with USDA Forest Service Research Note PSW-290 1974 as explained in the management plan. Larger saplings (to 10¹⁰ DBH) will also be thinned. The less vigorous and damaged trees in the clumps will be removed to reduce space and nutrients competition, maximizing growth. Dense stands of Douglas fir reproduction will be treated in a like manner. This operation will be carried out simultaneously with the site preparation/fuelwood operation so that the majority of the slash can be removed.

Erosion Control

To minimize soil erosion and stream siltation it will be necessary to place a culvert at the point where the road to be graveled (described in management plan) crosses the drainage from the pond. This area has washed out in the past and is partially eroded at present. The culvert wil be set and rock placed on the sides to prevent further damage.

To ascertain the amount of erosion on the two drainages flowing into Valencia Creek, described in the management plan, devices are to be installed to measure both vertical and lateral soil loss. Graduated steel bars provide the most economical measurement devices. Driven into the ground on the bottom and sides of the washouts, these bars can be periodically measured. In one or two seasons the erosive action taking place can be determined. Then if appropriate action is deemed necessary, an erosion control program can be put into effect.



HD Ranch, Owners: W.P. Haines & Ron DeBendetti Por. Sec. 27 &28 T.10S. R.1E. Santa Cruz County Scale: 1" = 500' Contour Interval 40'

Prepared by D.W. Norris R.P.F. #1906 January **14, 1981**

Legend

Main road Secondary road Pond Untreated (steep) areas Local slide Treatmnt area



-28-

() ADDENDUM B	
Row Down	
STATE OF CALIFORNIA	FOR ADMINISTRATIVE USE ONLY
DEPARTHENT OF FORESTRY	TNP
HWDER HARVESHING PLAN	Date Recd
	Date Filed
*****	Date Approved
This Timber Harvesting Plan (THP) form, when properly completed, is designed Act (FPA) and Board of Forestry rules. See separate instructions for inf NOTE: The form must be printed legibly in ink or typewritten.	to comply with the Forest Practice ormation on completing this form.
1. TIMBER OWNER(S): Name Sequoia Forest Industries	
Address P. O. Box 305	
city Dinuba, state CA, zip 93618, Phone (20	09) 591-2000
2. TIMBERLAND OWNER(S): Name H-D Ranch (Haines-DeBenedett Ronald & Lois DeBenedetti; Daniel E. Ha Kathleen E LaFrentz.	ti) Walton P. Haines; ines; and Duard W. &
Address 731 Rider Road	
city Watsonville state CA, zip 95076. Phone (408	3) 688-6230
3. TIMBER OPERATOR(S): Name Dennis Pelphrey	
Address 15720 Stetson Road LICENSE	# A-3466
city ${f Los}$ Gatos, state CA, zip 95030, Phone (408)	353-3538
4. PLAN SUBMITTER(S): Name H-D Ranch (Same as # 2) If the plan submitter is different from 1,2, or 3 explain authority to s	u bmit plan:
<u> </u>	
5. Person to contact on-site who is responsible for the conduct of the oper	ration:
Name: Dennis Pelphrey	
Address 15720 Stetson Road	
city Los Gatos, state CA, zip 95030 , Phone (408)	353-3538
6. RPF preparing the THP: Name: Robert F. Krohn	
Address P. O. Box 305 Registration Number 10	49
City Dinuba, State CA, Zip 93618, Phone (209) 593	1-2000
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7. Expected commencement date of tinter operations: April 1st, 1993 for falling and April 15th, 1993 for skidding and hauling.

8. Expected completion date of tinter operations: Within one year Of plan approval.

9. Forest products to be harvested: Sawlogs

10. The timber operation is to be within: (check the appropriate boxes)

1.11 Coast Forest District	4. [X] southern Subdistrict of Coast Forest District
2.[] Northern Forest District	High-Use Subdistrict of Southern Forest District

3.1 1 Southern Forest District

11. Location of the timber operation by legal description:

Base and Meridian: [X] Mount Diablo, [] Humboldt [] San Bernardino Section Township Range Approximate Acreage County (Optional, Assessors Parcel No.) ====== FEFEEEEE *===== <u>27&28 105 1E</u> 133 * Santa Cruz 105-301-03,06&08 105-301-02&07 <u>105-301-05</u> *Property is in Soquel Augmentation Rancho-Sections are projected. There are homesites with homes on the property.

TOTAL ACREAGE 133

12.	[1	Yes	٤XJ	Nb	Is a timberland conversion permit in effect? If Yes, list permit number and date of expiration:
13.	[1	Yes	٤X	No	Is there a THP on file with CDF for any portion of the plan area for which a report of satisfactory stocking has not been issued by CDF? If yes, identify the THP number:
14.	ίX	1 Yes	I	1 No	Is any part of the plan within a special treatment area, Taboe Regional Planning Agency jurisdiction. or a county which has special rules? If Yes. identify the special area: Santa Cruz County.

SILVICULTURE

15. Check the method or treatments which are to be applied, and provide any other information required by the rules in an addendum:

 1[1 Clearcutting
 2[1 shelter — , preparatory step
 3[1 Shelterwood, seed step

 4[] Shelterwood, removal step
 5[1 seed tree, seed tree step
 6[] seed tree. seed tree removal

 step
 7[X] selection - designate basal area stocking standards to be met:
 100 sq.ft. Basal

 Area/acre, Site II, 913.8(a)
 .

8[1 Commercial thinning - designate basal area stocking standards to be met: _____

9[1 Sanitation salvage - when uill stocking be met: ____

10[] Special Treatment areas 11[1 Rehabilitation of understocked areas

12[1 Alternate prescription 13[] Transition method

NOTE: There are no publicly owned preserves or recreation areas adjacent to the property. Article 961.8, Buffer Zones, does not apply.

NOTE: Where the level of stocking is based upon timberland site, timberland rites must be shown on the map. 16.a. 11 Yes [X] No Are any exceptions to the standard silvicultural methods or treat — tspermitted in the rules proposed for this plan? If yes. explain and justify in an addendum. [X] No Will artificial regeneration be required to restock the logged area? b. 11 Yes Are broadleaf or optional species proposed for management? See item 18. 17. [I Yes [X] No 18. [1 Yes [X] No Are broadleaf or optional species to be used to meet stocking standards? If the answer to 17 or 18 is yes, list the species and provide the information required by the rules: N/AHARVESTING PRACTICES AND EROSION CONTROL **19.** Indicate the type of varding **systems** to be used this **plan**: 1[X] Tractor, skidder, forwarder 2[] Balloon, helicopter 3[] Cable. ground-lead 4[1 Cable, high-lead 51 1 Cable, skyline 61 1 Animal 711Other: ____ 20. [1 Yes [X] NO Will tractor constructed layouts be used? 21. [X] Yes [1 No Will tractors be used for directional tree pulling? We will be using jacks in most cases but an occasional tree nay have to be pulled with mobile equipment. Check items 22 through 25 that apply to the use of tractors. 22. [1 Yes [X] No Operations on unstable soils of slide areas? 23. 1x1 Yes [1 No Operations on slopes over 65%? 24. [X] Yes [I No Operations on slopes over 50% with high of extreme EHR? 25. [1 Yes [X] No Operations within cable yarding areas?

If any of items 22 through 25 are answered yes. explain and justify as are required by the rules:

Tractor Yarding is proposed for slopes over 50% and 65%. These are short slopes and equipment will use the established skidding pattern from prior harvest. Trees on these slopes will be felled toward trails and endlined out. Neither leaving these slopes out of the operation nor Cable logging them is feasible. Most of the topography on the operating area is fairly gentle. Skid trails, roads and landings are stable and in good Steep areas are around the perimeter of the shape. property where it slopes into the main drainages. These drainages also serve as the property boundary **so** there is no need to cross them. The areas adjacent to the creeks will be in WLPZ's (see # 50).

26. Indicate erosion hazard ratings present on this THP: I 1 Low, [1 Moderate. [X] High, [] Extreme

> Note: Erosion Hazard Rating shows some Moderate and some High determination. I believe the area should all be treated as if it were High and will do so.

27. Describe soil stabilization measures to be implemented or any additional erosim control measures proposed in this THP where required by the rules:

27.	Water	bars	will	be i	placed	on	all	skid	trail	s an	d s	<u>kid</u>
trai	ls will	be c	losed	off	with b	arr	iers	after	use.	Roa	ads	and
land	ings wi	ll be	shap	ed t	o drai:	n. 9	14.6	(hiqh). Are	eas c	of b	are
<u>qrou</u>	nd ove	<u>r 100</u>)0 squ	lare	feet	wil	<u>l be</u>	e see	ded,	stra	wed	or
slas	hed. A	ny sea	ction	of t	rail t	hat	can :	not be	e drai	ned v	vill	be
trea	ted in	the s	ame wa	ay.	Seed	8 50	#/ a	.cre,	straw	at 2	υ.	

28. [X] Yes [1 No Are any alternative practices or exceptions to the standard harvesting or erosion control practices permitted in the rules proposed for this plan? If yes. explain and justify:

28. Some trees on steep slopes will need to be felled up the slope and end-lined out of WLPZ's,

29. [X] Yes [1 No Are operations proposed for the winter period? If yes, provide a winter period plan in and addendum or specify compliance with 14 CAC 914.7(c), 934.7(c), or 954.7(c). No winter plan is needed for cable. helicopter, or balloon yarding.

29. Operations during the winter period will be limited to falling of timber and/or slash clean up. No skidding, loading or hauling will be done during winter period.

- ROADS AND LANDINGS 30. (X) Yes [1 No Will any roads or landings be constructed or reconstructed? If yes, check item 31 through 37 that apply: [X] No Will new roads be wider than single lane with turnouts? 31. 1 Yes 32. [1 Yes [X] No Uiil any lending exceed the maximum size specified in the rules? 33. [] Yes [X] No Are logging roads or landings proposed in areas of unstable soils or known slideprone areas? 34. [] Yes [X] No Will new roads exceed a grade of 15% or pitches of 20% for distance greeter than 500 feet7 35. [1 Yes [X] No Are roads to be constructed, other than crossings. within the watercourse and Lake protection zone of a class I or 11 watercourse? 36. 1 Yes [X] No Will roads and landings longer than 100 feet in length be located **m** slopes over 65%. or **on** slopes **over** 50% which are within 100 feet of the **boundary** of a water cwrse or lake protection zone? 37. [1 Yes [X] No Are exemptions proposed far flagging or otherwise identifying the location of roads to be constructed?
- 38. If any of items 31 through 37 are answered yes, explain. justify, and give site-specific measures to reduce adverse impacts or, if there is any additional or special information concerning the construction and/or maintenance of roads or landings, ifrequired by the rules. Provide necessary information in an addendum.

30 - 38. Roads. Existing seasonal and temporary roads are shown on the THP Map. For logging Purposes there are no permanent roads on THP area. Landings to be used are in place from prior harvest. Most will need to be reshaped and cleaned of brush to permit use. They will be kept to a minimum and closed with drainage structures when use is complete.

WATERCOURSE AND LAKES

39. [X] Yes [1 No Are there any watercourses or lakes which contain class I through 1V waters on or adjacent to the plan area? If yes, complete items 40 through 50.

40. [] Yes [X] No Are any in-lieu practices and/or alternate practices proposed for watercourse or lake protection? If yes, explain and justify:

 N/A

Are any <u>exceptions</u> proposed for the following watercourse and lake protection practices? Check items 41 through 48 that apply.

41. I 1 Yes (X) No Exclusion of the use of Watercourses, marshes, wet meadows, and other wet areas, for landings, roads, or tractor roads?

42. [1 Yes [X] No Retention of non-commercial vegetation bordering and covering meadows and wet areas?

43. I 1 Yes (X) No Directional felling of trees within the zone away from the watercourse or lake?

44. [X] Yes [] No Increase of decrease of width(s) of the zone(s)?

45. [] Yes [X] NO Protection of watercourses which conduct class IV waters?

- 46. [I Yes [X] No Exclusion of heavy equipment from the zone?
 - K (X) No Retention of 50% of the overstory canopy in the zone?
- 48. [] Yes [X] No Retention of 50% of the understory in the zone?

If any of items 41 through 48 are answered yes. explain and justify if required by the rules and provide necessary information in an addendum.

44. Width of zone will be increased when the break in slope into watercourse is well defined and distance is greater than required zone.

49. [X] Yes I } No Are residual trees or harvest trees going to be marked within the watercourse or lake protection zone? If no, explain:

49. Harvest trees are to be marked on the entire area.

50. In an addendum describe the protective measures and zone widths for the watercourse and Lake protection zones that are in the plan area.

50.	WLP2'	<u>s are</u>	flagged	with	red/white	striped	plastic
<u>flac</u>	<u>aing.</u>	Zones	<u>are flaaq</u>	ed as t	<u>Eollows:</u>		
			Cl	ass			
% S]	ope	I	II	III	-		
< 30)	75'	50'	NO			
30-8	50	100'	75'	ZOI	ne		
> 50)	150'	100'				
At I	least !	<u>50% of t</u>	<u>he tree c</u>	canopy	<u>and 50% of</u>	<u>other ve</u>	getation
pres	<u>sent be</u>	fore ope	erations s	hall be	<u>e left stan</u>	<u>ding and u</u>	<u>ndamaqed</u>
with	<u>in the</u>	<u>e WLPZ</u> ,e	, Strea	ms will	be.kept	<u>clear of</u>	logs and
slas	h.A	minimum	<u>of 75%</u> s	surface	cover and	<u>l undistur</u>	bed area
will	he re	stained	-				

WILDLIFE

- 51. [1 Yes {X] No Are any known rare or endangered species or species of special concern, including key habitat. associated uith the THP area? If yes. in an addendum identify the species and the provisions to be taken for protection of the species.
- 52. [X] Yes [1 Nb Are there any snags which must be felled for fire protection or other reasons? If yes, describe uhich snags are going to be felled:

52, Snaqs. Merchantable snags and snags that are a safety hazard to the logging operation or homesites or other improvements on the property will be felled and utilized when possible.

53. [1 Yes [X] No Are any other provisions for wildlife protection required by the rules? If yes, describe provisions:

53. Check Biotic Resource Diversity Maps and Santa Cruz County General Plan Species List. See report enclosed.

CULTURAL RESOURCES

- 54.a.[X] Yes [1 No Has an archaeological survey been made of the areas to be harvested?
 - b.[X] Yes [1 No Have the California Archaeological Inventory records been checked far any recorded archaeological or historical sites located in the area to be harvested?

54. Report is enclosed as part of this plan.

55. [] Yes [X] No Are there any **archaeological** or historical sites located in the area **to be** harvested? If yes, describe in **an** addendum how the sites **are** to be protected.

55. Cultural Resources. The area has been surveyed for cultural resources. Result is shown in Archeological addendum. If any Archaeological / Historical sites or evidence are found during operations, protection measures, (i.e.; avoidance, cessation of operations, reporting of site to CDF) will be initiated by the LTO. Required notice to Native American groups has been made. Any response will be forwarded when/if received.

HAZARD REDUCTION

56. What type of slash treatment uill be used in the fire protection zone?

1. [1 Pile and turn, 2. [X] Lopping, 3. [X] Other Removal, (200' of homes) 917.4(a)

4. [] Not applicable no fire protection zone present.

57. [] Yes [1 No If clearcutting method is used, uill broadcast burning be used for site preparation?
58. If piling and burning is to be used far hazard reduction, who uill be responsible for compliance?

 1_[1]Timber owner,
 2_[1]Tinter operator,
 3.[X]Timbertand owner.

 PUBLIC NOTICE

59. [X] Yes [1 No Are there ency ownerships within 300 feet of the plan boundary which arc owned by persons other than the persons executing this plan? If yes. a list of the names and addresses of the adjacent property owners and a Notice of Intent to Harvest Tihr must be included uith the plan.

59. Public Notice. The property is bordered by private land on all sides. There are 12 separate parcels of ownership shown by Santa Cruz assessors plats to be within 300 feet of the boundaries of the THP. A list of these owners showing county parcel numbers and addresses from the assessment roll is enclosed. Copies of the assessors maps and a set of addressed envelopes are also enclosed. Notice of intent has been sent to the list enclosed.

PESTS

60. [] Yes [X] No Are there any adverse insect, disease, or pest problems of significance in the planarea?
If yes. describe the mitigation measures, if any, to improve the health and productivity of the Stand in an addeendum.

OTHER INFORMATION

61. Are there any other existing or planned land use activities including but not limited to other THP's in the area of the proposed THP which may combine uith the effects of your timber harvesting operation to cause significant adverse cumulative environmental effects? [] Yes[X] No. If yes, please describe the other land use(s) and the likely effect as well as any mitigation which would reduce the negative effect in en addendum.

The plan preparer believes any significant impacts will be positive.

ATTACHMENTS

62. Check if the attachments listed are included with the plan:

- 1[] Notice of Stream Bed Alteration to Department of Fish and Game (A copy of this notice is attached to the instructions far. your use.)
- 2[X] Estimated Surface soil Hazard Calculations.

3[X] Notice of Intent to Harvest T i h r and a list of names a d addresses of adjacent property cwners. Set of stamped envelopes.

4 [X] naps.

5[1 Addendum for silvicultural information.

6[1 Written notice of plan to the timber operator. timberland owner, or timber owner that did not sign the THP.

REGISTERED PROFESSIONAL FWESTER

63. I have the following authority, responsibilities. a dlimitation for preparation or administration of the THP and timber operation:

Prepare plan, obtain signatures and provide copies and information to timber owner and licensed timber operator. Provide for administration of harvest. File completion notice.

 64. I have notified the timber owner and the timbertand owner;, 1.[X] Yes 2.[X] Yes 3.[X] Yes No The maintenance of erosion conditional structures. 	in writing, of their responsibilities for: he <i>rules</i> . htrol Structures requirements of the rules. hined in the rules.
65. [X] Yes [1 No I will provide the timber operator uit	h a copy of the approved THP.
 66. After considering the rules of the Board of Forestry and the determined that the timber operation: [] will have a significant adverse inpact on the environment of the operation will have a significant adverse impact on the operation will have a significant adverse inpact any alternatives or additional mitigation measures that 	ne mitigation measures I have proposed I have romment, environment, on the environment, in an eddendum explain why would reduce the inpact are nor feasible.
67. Registered Professional Forester: I certify that I, or my and the plan complies uith the Forest Practice Act and	designee, personally inspected the plan area, the Forest practice rules.
Signature:	Date:
68. CERTIFICATION	
The above conforms to my/our plan and , upon filing, !/we agree Consent is hereby given to the Director of Forestry, his ag inspect timber operation for compliance with the Forest Prac	to conduct harvesting in accordance therewith. Jents and employees, to enter the premises to ctice Act and forest practice rules.
Tihr Owner:Sequoia Forest Industries,By Steve Zieg	ler, Forester
Signature:	Date:
Printed Name:Steve Ziegler	
Timberland Owner:Walton P. Haines	
Signature:	Date:
Timberland Owner:Ronald and Lois DeBenedetti	
Signature: /	Date:
Timberland Owner:Daniel E. Haines	
Signature:	Date:
Timberland Owner: Duard W end Kathleen E LaFrentz	
Signature: /	Date:
limber Operator:Dermis Pelphrey	
Signature:	Date:
Printed Name:Dermis Pelphrey	
DIRECTOR OF FORESTR This limber Harvesting Plan conforms to the rules and regul Forest Practice Act. By:(Signature)	r ations of the βoard of Forestry a d uith the (Date)
(Printed Name)	(Title)

а

NOTICE OF INTENT TO HARVEST TIMBER

A linker Harvesting Plan or an amendment to an existing plan that may be of interest to you has been submitted to the California Department of Forestry for a determination as to whether the timber operation described in the plan or amendment complies with state laws and regulations. The following briefly describes the timber operation, how to obtain more details, and where and when to submit documents regarding the proposed tinter operation. If you uwild like more information about the plan or amendment, or about the Laws and regulations governing tinker harvesting in California please direct your questions to:

San Mateo-Santa Cruz Ranger Unit 6059 Highway 9 P. O. Drawer F-2 Felton. CA 95018 (408) 335-5355 (415) 592-2726

California Dept. of Forestry and Fire Protection California Department of Forestry & Fire Protection Region I Headquarters 135 Ridgeway Avenue P. 0. Box 670 Santa Rosa, California 95402 (707) 576-2275

The Jimber Harvest Plan or amendment is available far public review at the Departments Felton office. The cost to obtain a copy is \$3.00 for the first twenty pages (20) end 50.12 for each additional page. (Ictal cost is: .) 2

THE FOLLOWING IS A S M R Y OF THE INFORMATION CONTAINED IN THE PLAN OR AHENOMEWT:

1. Name of individual who submitted the plan or amendment: <u>H-D RANCH (HAINES/DeBENEDETTI)</u>

2. Timberland Owner where the timber operation is to occur: <u>H-D RANCH (HAINES/DeBENEDETTI).</u>

3. Location of plan area (county, section, township and range, and approximate direction and distance to the bian area from the nearest community or well-known landmark):

SANTA CRUZ COUNTY; PORTIONS OF SECTIONS 27 & 28, TOWNSHIP 10 SOUTH, RANGE 1 E T, MOUNT DIABLO BASE AND MERIDIAN. PROPERTY IS IN SOQUEL AUGMENTATION RANCHO; SECTIONS ARE PROJECTED. THE PROPERTY IS ABOUT 1 MILE NORTH OF BEAN HILL. IT IS SOME 4 MILES WORTH EAST OF CORRALITOS

4. Name of the nearest perennial stream flowing through or downstream from the plan area:

VALENCIA CREEK. Upper forks are boundary of Property.

5. Acres proposed to be harvested: 133 TOTAL, 100 acres to log.

7. Proposed harvesting method or treatment:

SELECTION, AS PRESCRIBED BY THE RULES OF THE SOUTHERN SUBDISTRICT OF THE COAST FOREST DISTRICT. (CCR <u>913.8(a)).</u>

The end of the public comment period and the earliest date for the Director, s determination on the plan is 45 days from the date of receipt of the plan by the Department. The estimated end of the public c m t period and the earliest date for the Director's determination is _

Ifyou originally received this notice by mail from the Registered Professional Forester, you can expect the Department to give you the following by mnil: the number of the THP or amendment, the date of its receipt by the Department, the filing date, and the date of any public hearing. You should check with the Department for dates of the Review Team meetings.

Ifyou would like to talk to the Registered Professional Forester who prepared the plan or amendment, please call:

Robert F. Krohn,	RPF #1049	(209) 591-2000.				
FOR DEPARTMENT USE ONLY						
TIMBER HARVESTING PLAN NO		DATE OF I	RECEIPT			

RANCH THP

I. SOIL FACIORS							FACTOR RATING BY AREA								
A.	SOIL TEXTURE	Fine		Medium		Coarse		e	A	в	С	A gene	is th ral a	e rea.	
1.	DETACHABILITY	Low		N	Ioderate]	High					B is short slope (WLPZ) into Valenci		
	Rating	1–9			10-18		1	9–30		25	25				PZ)
2.	PERMEABILITY	Slo	w	N	Ioderate		Ra	pid							ncia
	Rating	5-4			3–2			1		1	1		Cree	Creek.	
													All trea	will ted a	be s
		Shallo	W	N	/loderate		Ι	æер						L.	
		1"-1	9"		20"-39"		40"-	60"	(+)						
	Rating	15–9			8-4			3-1		2	2				
					Indarata			Jiah					ENC.	ם מראד	
		() 10-	-398	10	40_708		71 100%		<u>۵</u> ۶	0,			BY AREA		en tim En
Fating		10-6		5-3		2-1		1(10	10		Δ	в	c	
			-				SUBTOTAL		38	38					
	Slope	5-15%	16-308		31-40%	4	1–50%	51.	-708	71-	-80%	(+)			
	Fating	1–3	4–6	7-10 1		1–15 16–25		-25	26-35		5	18			
														•	
		La	W		•	iode	erate			Hic	ąh				
		0-40%			41-80%				ai-io08						
	Rating	15	-88	7–4			3-1			5	3				
Low				Moderate		High		Extreme							
		(-) 30-39		40-59		60–69			70-80 (+)		14 1	14			
	Fating	1-3	.	4-7		8–1 1			12–15				 		
													62	73	

	50-65	66-75	>75	_]		
LOW (L)	MODERATE (M)	HIGH (<u>H</u>)	EXTREME (E)	M	н	
	- 38 -	THE DETER	MINATION IS C	>		
,				754	0-130	-04





10== 71 T 5001 T foirly 10E re e 3T IJ 120 JE-15 SIEE CAL SKETCH MAP OF STREAM SURVEY By P.E. Emmer A ; л Д 1/27/43 - 卫 - 41 -13

STATE OF CALIFORNIA BOARD OF FORESTRY CUMULATIVE **IMPACTS ASSESSMENT CHECKLIST**

(1) Do the assessment area(s) of resources that may be affected by the proposed project contain any past, present, or reasonably foreseeable probable future projects?

- (2) Are there any continuing, significant adverse impacts from past land use activities that may add to the impacts of the proposed project?
 - Yes _____ No <u>_X</u>___
- (3) Will the proposed project, as presented;, in combination with past, present, and reasonably foreseeable probable future projects identified in items; (1) and (2) above, have a reasonable potential to cause or add to significant cumulative impacts in any of the following resource subjects?

-			<u>No Reasonably</u> potential
	Yes after mitieation (a)	<u>No after</u> <u>mitieation</u> (b)	significant effects (c)
1. Watershed	·	<u>X</u>	<u> </u>
2. Soil Productivity			<u> </u>
3. Biological		<u> </u>	<u> X </u>
4. Recreation			
5. visual			<u> </u>
6. Traffic	<u></u>		<u>X</u>
7. Other			<u> </u>

(4) If column (a) is checked in (3) above describe why the expected impacts can not be feasibly mitigated or avoided and what mitigation measures or alternatives were considered to reach this determination. If column (b) is checked in (3) above describe what mitigation measures have been selected which will substantially reduce or avoid reasonably potential cumulative impacts except for those mitigation measures or alternatives mandated by application of the **rules** of the Board of Forestry.

(5) The boundaries of the assessment areas are described for each item and shown on attached maps when required.

Februarv 9, 1993

(6) List of Contacts and Research Records:

Contacts:

Ms. Nancy Drinkard, Forester Calif Dept of Forestry P. O. Drawer F-2 Felton, CA 95018-0316 408-335-9148

Mr. Patrick Emmert, RPF **#1839** P. O. BOX **220** Aubeny, CA **93602 209-855-2215**

Daniel Haines and Ron DeBenedetti Owners of the **property.** *See* page 1 for address Mr. Edward A Tunheim Consulting Forester 123 Green Street Santa Cruz, CA 95060 408-426-6415

Mr. Roy Webster Consulting Forester 136 Rancho Del Mar Aptos, CA 95003 408-688-8787

Mr. Steve Ziegler Forester, RPF P. O. Box **305** Dinuba, CA **93618 209-591-2000**

Records Examined:

- 1. Aerial Photos of the project area.
- 2. U.S.G.S. Quadrangle Maps.
- 3. Assessors Plat Maps, Santa Cruz County.
- 4. Santa Cruz County assessors ownership records.
- 5. Archeological records check from California State Univ, Sonoma.
- 6. Archeological Reference Manual & Guide CLFA/CDF, 1992.
- 7. THP **#5-79-104/SC**, Prior **THP** on the **area**.
- 8. Various consultants reports from other THP's in Santa Cruz County.
- 9. Rainfall intensity maps from CDF.

<u>Project Description</u>: The project involves the harvest of timber using the selection method of harvest. Mature trees and immature trees that need to be thinned **will** be marked for removal and removed to continue development of an uneven aged structure on the property and to maintain optimum timber growth. Stocking will be in place following harvest.

Yardine Methods and Topographic Conditions: The plan area consists of six assessors parcels with a total area of 133 acres. Some 100 acres will be harvested. The property is located West of the West end of Rider Road about one half mile north of Bean Hill in Santa Cruz County, Talifornia. It is near the top of the divide between Valencia Creek and Aptos Creek with a South facing aspect. The property is a relatively gentle bench, bounded on the East, South and West by two forks of upper Valencia Creek. It is bounded by the Fern Flat county road on the North. Most of the property has been logged at least twice and some of it three times. The area with merchantable timber Will be logged. Skid trails and landings from prior harvest are in place and in good condition these facilities will be reopened and reused. The entire area will be logged with tractor and/or skidder. Steeper slopes adjacent to Valencia Creek will be end lined to existing skid trails. There is a gentle ridge on the West that drops off to the West into the West fork of the Valencia Creek drainage. The same ridge drops off a longer distance to the East into the East fork of Valencia Creek This are the upper forks of Valencia Creek The topography adjacent to the stream on three sides of the property is characterized by a short steep slopes into the stream. The entire length of both streams has been walked and will be described in Watershed Assessment. Elevation of the property ranges from some 800 feet on the South to the highest point on the North at some 1,500 feet. The stream drop some 600 feet in a little less

February 9, 1993

than a mile through the property. The gentle areas have weathered into a deep well drained soil that supports very good timber generally throughout. This plan area is mostly site 11 & 111 timberland. Site has not been mapped.

Veeetation and Stand Conditions:

The timber stand is Redwood forest with a light mix of Douglas Fir, 90% Redwood and 10% Fir is estimated, hardwood are mixed throughout with a few patches of predominantly hardwoods. The stand has developed from early day logging, late 19th century, of the original growth timber followed by burning. Sprouts and seedlings followed the logging and have grown up to a mature second growth forest. The current stand is composed of residual trees that have been growing following latest timber harvest some 12 years ago, 24 years on a third of the area, and a prior harvest 12 years before. Trees left at that time have continued to grow rapidly, sprouts have formed and young trees have become established where there were openings. The selection system of silviculture being applied will continue the growth on the property. It will be beneficial to open up the areas and get an increase in variety of vegetation as more sunshine is allowed to reach the forest floor. Young trees will have more room and moisture to grow faster and streamside riparian type vegetation will find conditions under which it can increase following harvest. There is no Old Growth nor is there any "Ancient Forest" on the property.

Watershed and Stream Conditions:

The stream course that surrounds three sides of the property was walked by RPF Patrick Emmert and the property line was flagged. These two forks of Valencia Creek that come together at the

<u>H-D RANCH • THP</u>

February 9, 1993

Southwesterly corner of the property delineate the boundary of property on the East, South and West. Both are headwater forks of Valencia Creek. Valencia Creek **flows** Westerly for about a mile and then Southerly for some three **miles**, it is joined by several small side drainage and then by Trout Creek and Aptos creek just before it flows directly into the Monterey Bay. It is some 7 miles from the junction on the South point of the property to the beach. For most of their length both forks nest to the logging are undisturbed in modem time. Effects of logging from the 1800's is evident. Short portions, perhaps 10%, of the East fork is disturbed by slides. Otherwise, stream conditions are stable with minimal bank cutting or downcutting. Pools are clear except for organic debris, fern and alder. The main stream below the junction traverses a deep relatively -accessible canyon. A sketch map is enclosed, page 13, showing some of the characteristics observed about the stream during the walk of the stream.

The East fork stream bed is composed of gravel rock and sandstone sediment and old fallen logs that create pools between deeply cut channel areas. There are smail areas with up to 18" of sediment from recent storms (40" of rainfall by the 1st of February 1993). Vegetation consists of ferns, conifers, tan oak and small plants. Deep litter exists in some locations. The stream were not running at all in November but are active at this time. Past slides and slumps are evident. These are relatively stable during good weather. Slide noted on the 1979 THP map were observed and are noted on the stream sketch map. On the East fork there are two on the property and *two* across the stream on the adjacent property. A large concentration of woody debris (trees) exists at one slide area from the opposite bank. This was probably a result of an older slide of soil and trees. There are a couple of small water falls. At a point just above the junction there is a 100'+ vertical cliff on the opposite side of the creek. On the West fork, Bear

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. . . Spring Gulch, there is a steep gulch just above the junction, an old skid **comes** down to the creek at this location. The creek is stable with pools formed by sandstone, logs, debris, etc. A gravel - sediment stream **bed** with ferns, conifers, oaks, herbs throughout. There is one new slide/slump on this fork at the approximate location shown on the sketch map. The owners have a domestic water diversion above the road that crossed the West fork The stream above this point will he treated at Class I. Harvesting will be done from the WLPZ but equipment will be kept out of the zone.

Past and Present Activities

Past Activities: The property had a heavy harvest in the late 1800's that removed much of the timber that was marketable and accessible at the time. Ground lead cable logging was used, pulling logs up or down the hill with bull teams and steam equipment Old skidways can still be found but evidence on the ground shows that the forest has responded by regenerating profusely and continuing to grow. The property was also cut over some 12 years ago, in 1980 with a light selective removal. Residual timber from the previous logging and regeneration resulting from all the logging activity has been **growing** and the owners now believe it is time for another harvest. Adjacent ownership is all private and has **similar** young growth timber. Adjacent ownership to the West and North has been divided into lots, some have homes on them. Property to the East and South is in a larger ownership and is devoted to production of timber. It has had a recent selective harvest. THP records show the date **cf** the latest harvest **to** have been in the mid **1970's.**

February 19,1993

<u>Present Activities</u>: No known harvesting is planned for the adjacent properties at this time. There are three residences on the property. **These** are occupied **by some** of the owners who live on the site. **A** small amount of cutting of hardwoods for use as firewood is done annually. Space free of encroaching native vegetation is maintained around homes **for** fire protection, sunlight, air flow and safety. **A few** trees encroaching on the space will he removed as part of the logging operation. There is a power line traversing the property which will need to be protected during the harvest activity.

<u>Future Projects</u>: Owners will continue to use the property as a residence. Following harvest under this THP they will continue to grow timber. Growth on the residual trees will he enhanced. A future harvest can be expected as volume removed is replaced hy growth. This pattern has continued of the **past** decades.

II. The following resources were assessed

<u>A. Watershed Impact Assessment:</u> The watershed assessment area is the Valencia Creek drainage. The *two* upper forks of Valencia Creek are small seasonal streams, #1 and #2 on the THP map. They both originate near the North boundary of the property. They are both Class 11 stream adjacent to the harvest except the West fork which is classed as Class I from the North property boundary to the location of water diversion of domestic use. Since they comprise the property boundary there will be no need to cross them to get timber. Trees growing on the slopes adjacent to the stream will be felled up the hill away form the stream and end lined out of streamside zone.

February 19, 1993

The property is a gentle bench below the steeper slopes higher up on the ridge and has developed deep productive timber soils. Elevation ranges **from** 800 to the highest point at 1,500 feet. The streams drop some **600** feet in a little less than a mile through the property- The gentle areas on **soft** parent material have weathered into a deep well drained soil that supports timber generally throughout. This plan area is mostly site II & III timberland. Site has not been mapped. The two drainage that form the property boundaries are headwater **forks** of Valencia Creek. These forks of Valencia Creek, the east branch about .8 **miles** long and the west branch about .7 miles join at the southern edge of the property. The 100 acre project will treat some 1.25% of the total 8,000 acres in the watershed assessment area, see map attached. The selective harvest, using well stabilized, existing roads, landings and skid trails will not have a significant impact on the watershed.

<u>B. Soil Productivity:</u> The area of the project was selected as the assessment area.

These are very deep well drained sandy loam soils. Formed on generally very very deep soft sandstone they are typical of the most productive timber **soils** in the world

<u>Growing area losses</u>: There will not be any significant loss is soil productivity from the harvest. Growth potential of the soil vvil be shifted from larger trees and crowded trees in clumps and dense patches with relatively slow individual growth on each tree to better growth on fewer trees. Open space for younger trees and other species of vegetation will be provided by the removal of some timber. Biodiversity vvil be enhanced in the area being treated with timber harvest. Growth under the selected method will be comparable to current growth in the long run.

February 19. 1993

<u>Compaction losses</u>: Negligible loss will result from compaction. These well drained soils will withstand the proposed activity without any significant adverse effect. Disturbance of duff layer will create seed bed for tree seedlings and seedling of other **types** of vegetation.

TOP soil losses due to erosion: No significant losses are expected. This is not a change from present condition.

<u>Nutrient loss due to erosion or fire</u>: Minor amounts of nutrients will be removed in the sawlog material to be taken **from** the site. The effect on the nutrient regime of the area will not be significant. Annual rainfall carries nitrogen onto the site in larger amounts than is expected to be removed.

Nutrient loss form biomass removal: Thinning for biomass in not planned at this time.

Mitieation: None over and above normal care under THP and Forest Practice Rules.

<u>C. Biological:</u> The Bean Peak, upper Valencia Creek watershed area was chosen as the assessment area.

The property is in the Coast Redwood timber **type.** The property is good conifer soil There is considerable acreage like **this** in the assessment area with various stages of forest stocking and age. Adjacent ownership is in a larger block on the east and south and is devoted to the production of timber. Property to the west and north has been divided into smaller parcels and many have **heres** or seasonal vacation homes on them. The **property** is similar in nature, Redwood forest.

February 9. 1993

The harvest operation **will** be in the rather dense pockets of timber on the flatter areas with deeper soils and on the **slopes** adjacent to the stream. The effect of the removal of part of the trees in this area will be to increase the biological diversity. The small watercourses will benefit from the decrease in biomass. Stream flow should show a small temporary increase after harvest, this will drop **as** biomass increases over the years. Short term, there will be more forbs and grasses, more rodents and **insects** and more riparian type vegetation with the increase **in** light to the forest floor. The area to be treated is small enough that the environmental effects not be significant. If there is any effect the trend will be positive for most species of wildlife. Deer and raptors **will** benefit. This harvest will help maintain environmental characteristics these and most other species prefer. Harvest will *induce* the diversity and density of wildlife species using the area.

<u>D. Recreation Resources:</u> The area of the project plus a 300' buffer was chosen as the Recreation assessment area.

This is private property and recreation is restricted to the owners and their **guests**. The property is posted. Pubic **access** is restricted by posting. The owners use of the property will benefit from the harvest in having greater water yield and reduced fire hazard due to the removal of some of the biomass on the property. There will be a more open sunny aspect on the area being logged. Safety and enjoyment will both be enhanced. There **vvill** be better hunting. **A** more open stand **will** encourage additional early serial stage vegetation and enhance the area for most forms of wildlife.

E. Visual: Assessment area is the property itself.

The timbered bench is only readily visible from the Fern Flat public road. This is a very low standard road only used by the residents of the area to the North and West, only a few people come this far. There is no travel corridor through the property. The only view would be from some distance. This will show a stocked stand of young timber, healthy, green and growing.

<u>F. Vehicular Traffic Impacts</u>: The transportation route from the landing to the west end of the county road **up** Rider Creek

Logs will be hauled over low standard **spurs** of native surface to a medium standard graveled road that leads easterly to the west end of Rider Creek Road, a Santa Cruz County Road. Except for the **spurs** the route is in use by the owners on **a** regular **basis**. It will be maintained during haul. It will be graded to drain again when log haul **use** is complete. Water will be used for dust abatement when and if needed to maintain the road. The operation will last four to *six* weeks at **6** to 8 loads **per** day. The additional traffic from the operation will be insignificant. Traffic loads are light and there will be minimal impact. **The** amount of traffic created by the harvest operation will not have a significant adverse impact on traffic or the environment.

Conclusion

It has been some time since this property has had any timber harvest. Trees have been growing and closing in since the last logging over twelve years ago. A harvest will yield timber that will help the economy and some income for the owner. It will reduce the biomass and lower the fire hazard. It will open up the stand and improve the bio-diversity which will improve the carrying capacity of the area for many types of wildlife. Harvest will improve the visual characteristics **c** the area by creating more vistas and open sunny spots in the forest. The Valencia Creek drainage will be more open and will develop more riparian types of vegetation. The growth of residual trees will improve with the https://ditional.spece and sunlight provided by opening up the stand. Water yield from the property into these forks of Valencia Creek will increases because of more rain reaching the ground and less transpiration from the ground water. Less water will be used by the vegetation because of the temporary decrease in biomass using water from the aquifer. The harvest will manage and improve the area to be treated.

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Special Rules

All of the plan area is within Santa Cruz County which has special rules (CCR 296, 296.1-296.19). County rules requiring explanation are listed and discussed below.

- **926.1** The RPF(s) signing this plan will monitor progress of the timber harvest and advise the plan submitter and LTO on compliance with plan provisions and the Forest Practice Act.
- **296.2** Prior to the start of operations, the RPF and the LTO will meet in the field to review the specifics of the THP. CDF will be given advance notice of the meeting and invited to participate.
- 926.3 The special distribution of the Notice of Intent is detailed in Item 59.
- **926.8** The harvest of fuelwood will be limited to incidental trees damaged in falling and yarding.
- **926.9** Operation of chainsaws is restricted to the hours of 7:00 A M. and 9:00 P.M. and is prohibited on Saturdays, Sundays, and nationally designated legal holidays. Operation of other power equipment, except licensed highway vehicles, within 300 feet of an occupied dwelling shall be restricted to the hours between 6:00 A M. and 900 P.M. and shall be prohibited on Saturdays, Sundays and nationally designated legal holidays. An exception to this rule can be granted by the Director under certain conditions.
- **926.10** No logs will be hauled on public roads on Saturdays, Sundays or nationally designated legal holidays.
- **926.11** The creek forming the Property boundary on the East, South and West has been flagged. The North boundary is the Fern Flat Road. This will be flagged prior to operations.
- 926.14 Item 51 includes consideration of locally unique plant and animal species.
- **926.15** No new **roads** are going to be constructed for this plan. Old existing roads are in place, are stable and will be cleaned and reused.
- **926.16** Most roads and landings to be reused have been flagged. Balance will be flagged prior to preharvest. There are no **new** constructed tractor roads or watercourse crossings proposed **for** the area.
- 926.18 The winter period is October 15 through April 15.

926.19 The plan submitter will maintain erosion control structures required by the rules or provided in the plan for one winter after completion of timber operations.

ADDRESSES FOR "NOTICE OF **INTENT** TO HARVEST TIMBER"

Adjacent owners:

Parcel #	Owner
105-021-08	SMITH, ALBERT B. 14561 WINCHESTER BLM. LOS GATOS CA 95030
105-421-27	MAYER, JOHN B. 7143 FERN FLAT ROAD APTOS CA 95003
105-412-28	PETERSON, KEITH C/O OCCIDENTAL PETROLEUM 1500 635-8 AVENUE SW CALGARY ALBERTA CANADA T2P-3Z1 00000
105-421-29	OGLESBY, TERRY L. & KATHLEEN L. (JT) 520 SAND HILL ROAD SCOTT VALLEY CA 95066
105-421-31	CAROTHERS, JOHN H. 625 WALNUT STREET SANTACRUZ CA 95060
105-421-40	BRJDGEMAN, CHARLES F. & AMY R. (Trustees) 7773 STARLIGHT DRIVE LAJOLLA CA 92037
105-421-37	ROWLAND, RALPH H. & KAREN R. (H/W,JT) 6950 FERN FLAT ROAD APTOS CA 95003
105-421-22	PEDERSON, WM J. 23370 DEERFIELD ROAD LOS GATOS CA 95030
105-421-23	WILSON, JOSEPH B. 5886 FERN FLAT ROAD APTOS CA 95003
105-421-24	COX, CYNTHIA P. O. BOX 534 APTOS CA 95001

ADDRESSES FOR "NOTICE OF INTENT TO HARVEST TIMBER"

Adjacent owners (cont'd):

105-421-15	HASSETT, DANIEL T. & SANDRA G.
	5858 fern FLAT road
	APTOS CA 95003

105-401-02 B O W , DAVID B. (S/M,ET.EL. ALL JT.) C/O 3266 DELA CRUZ BOULEVARD SANTA CLARA CA 95054

Owners within **300'** of private haul route:

- 106-131-07 GEORGE, ROBERT AND MARY (H/W JT) 190 BROADMORE DRIVE SANTACRUZ CA 95060
 - 131 13 KANE, CARYL J. 782 RIDER ROAD CORRALITOS CA 95076
- 107-011-05 TELFORD, INC., C/O E. SMITH 7166 OVERLOOK DRIVE SANTAROSA CA 95409

Others:

THE HONORABLE RAY BELGARD, SUPERVISOR COUNTY OF **SANTA** CRUZ - COUNTY BLDG. ROOM 500 **701** OCEAN STREET SANTACRUZ CA 95060

PAJARO VALLEY SCHOOL DISTRICT 165 BLACKBURN WATSONVILLE CA 95076

CITY OF WATSONVILLE WATER DEPARTMENT ATTN. MR. BILL BROWN P. O. BOX 149 WATSONVILLE CA 95077

I hereby certify that on or about 2/18/93 I have sent a "Notice of intent to Harvest Timber" (page 9) with a map attached (similar to page 11) to the persons on this list. R. F. Krohn, RFF # 1049

A set of envelopes, addressed and stamped is also enclosed with this plan.













capacity is 5.5 to 10.0 inches. Runoff is very rapid, and the hazard of erosion is very high.

These soils are used mainly for timber, recreation, wildlife habitat, and watershed. They are also used for firewood production.

These soils are well suited to the production of Douglas-fir. The Lompico soil is capable of producing 10,350 cubic feet, or 43,560 board feet (International rule), of merchantable timber per acre from a fully stocked, even-aged stand of SO-year-old trees. The Felton soil is capable of producing 13,360 cubic feet, or 70,000 board feet (International rule), of merchantable timber per acre from a fully stocked, even-aged stand of SO-year-old trees. The hazard of erosion is the major limitation of these soils in timber production. Care must be taken during harvesting to minimize erosion. The Lompico soil produces more timber than the Felton soil because the Lompico soil has weathered bedrock at a depth of 20 to 40 inches.

This complex provides habitat for band-tailed pigeon, jay, hawk, deer, raccoon, coyote, bobcat, rabbit, squirrel, mice, salamander, tree frog, lizard, and snake.

These soils are poorly suited to building site development and onsite sewage disposal because of their very steep slopes. Capability subclass VIIe(4), nonirrigated; Storie index 20.

145—Lompico Variant loam, 5 to 30 percent slopes. This moderately deep, well drained soil is on terraces and mountains. It is mainly on ridges and in small benchlike areas. It formed in residuum derived from sandstone, shale, or mudstone. Slopes are slightly convex. Elevation ranges from 400 to 2,000 feet. The mean annual precipitation is about 40 inches, and the mean annual air temperature is about 56 degrees F. The frost-free season ranges from 220 to 250 days.

Typically, the surface layer is dark grayish brown, slightly acid and medium acid loam and clay loam about 14 inches thick. The upper part of the subsoil is mixed grayish brown and dark yellowish brown, dark brown, and strong brown, medium acid and strongly acid clay about 9 inches thick. The lower part is variegated yellowish brown and brown, very strongly acid clay about 5 inches thick. Highly weathered shale is at a depth of 28 inches.

Included with this soil in mapping are areas of Aptos fine sandy loam and Felton sandy loam. Also included are small areas of Lompico loam, Madonna loam, Nisene loam, soils that are similar to this Lompico soil but are less than 20 inches or more than 40 inches deep to weathered bedrock, and soils that are similar to this soil but have slopes of less than 5 percent or more than 30 percent.

Permeability of this Lompico soil is slow. Effective rooting depth is 20 to 40 inches. Available water capacity is 3.0 to 6.5 inches. Runoff is medium or rapid, and the hazard of erosion is moderate or high.

This soil is used mainly for timber, recreation, wildlife habitat, and watershed. It is also used as homesites and for firewood production, pasture, and apple orchards.

This soil is well suited to the production of Douglas-fir. It is capable of producing 9,000 cubic feet, or 33,100 board feet (International rule), of merchantable timber per acre from a fully stocked, even-aged stand of SO-year-old trees. The soil is limited for this use by the ciaypan at a depth of 10 to 20 inches and weathered bedrock at a depth cf 20 to 40 inches.

r'orested areas of this soil provide habitat for bandtailed pigeon, jay, hawk, deer, raccoon, coyote, bobcat, rabbit, squirrel, mice, salamander, tree frog, lizard, and snake.

The potential of this scil for apple orchards is poor. The claypan at a depth of **20** to 40 inches restricts root growth and lowers both tree survival and production.

Rapid population growth in the county has resulted in increasedstruction of homes on this soil. The slow permeability and depth to bedrock severely limit the use of this soil as septic tank absorption fields. Shrink-swell potential and low strength severely limit the use of this soil as homesites. Only the part of the site used for construction should be disturbed. Topsoil should be stockpiled and used to reclaim areas disturbed by cutting and filling. Capability unit IVe-1(4), nonirrigated; Storie index 47.

146-Los Osos loam, 5 to 15 percent slopes. This moderately deep, well drained soil is on hills and mount+?. It is dominantly on wide ridges. It formed in material weathered from sandstone, siltstone, mudstone, or shale. Elevation ranges from 100 to 2,000 feet. The mean mean precipitation is about 32 inches, and the mean annual air temperature is about 55 degrees. The frost-free season ranges from 245 to 270 days.

Typically, the surface layer is dark grayish brown, medium acid learn and sandy loam about 11 inches thick. The upper part of **the** subsoil is brown, slightly acid sandy day loam about 8 inches thick. The lower part is brown and pale brown, slightly acid heavy clay loam and clay about 17 inches thick. Weathered sandstone is at a depth of 36 inches.

Included with this soil in mapping are areas of a soil that, is similar to this Los Osos soil but has a major texture change between the surface layer and the subsoil. Also included are areas of Bonnydoon loam and small areas of Aptos loam, warm; Pinto loam; Watsonville loam; and soils that are similar to this Los Osos soil but have slopes of lass than 5 percent or more than 15 percent.

Permeability of this Los Osos soil is slow. Available water capacity is 3.0 to 6.5 inches. Effective rooting depth is 20 to 40 inches. Runoff is medium, and the hazard of erosion is moderate.

This soil is used mainly for range. A few areas are being developed as homesites.

If this soil is used for range, the native vegetation should be managed *to* increase the production of soft chess an: wild oats. if the soil is continuously overgrazed, the condition of the range deteriorates; the proportion of desirable plants decreases, and the proportion of undesirable plants increases. Control of silver hairgrass,

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These soils are poorly suited to building site develop. ment and onsite sewage disposal because of their steep and very steep slopes. Capability subclass VIIe(4), nonirrigated; Storie index 20.

114—Ben Lomond-Felton complex, 30 to 50 percent slopes. This complex consists mainly of soils in concave areas near drainageways. Elevation ranges from 400 to **3,000** feet but is dominantly less than 2,000 feet. The mean annual precipitation is about 45 inches, and the mean annual air temperature is about 56 degrees F. $T_{\rm He}$ frost-free season ranges from 220 to 245 days.

This complex is about 35 percent Ben Lomond sandy loam and **35** percent Felton sandy loam.

Included with these soils in mapping are areas of Nisene loam, Aptos sandy loam, and Lompico loam. Also included are small areas of Catelli sandy loam, Hecker gravelly sandy loam, and soils that are similar to these Ben Lomond and Felton soils but have slopes of less than 30 percent or more than **50** percent.

The Ben Lomond soil is deep and well drained. It. formed *in* residuum derived from sandstone or granitic rock. Typically, the soil has 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 the Ben Lomond soil is moderately rapid. Effective rooting depth is 40 to 60 inches. Available water capacity is 4.0 to **7.5** inches. Runoff is rapid, and the hazard of erosion is high.

The Felton soil is deep and well drained. It formed in residuum derived from sandstone, shale, schist, or siltstone. Typically, the surface layer is dark grayish brown and brown, slightly acid sandy lcam about 11 inches thick. The suhsoil is brown and yellowish red, slightly acid and strongly acid sandy elay loam and clay loam about 32 inches thick. The substratum is variegated light brownish gray and light olive brown, strongly acid loam and sandy loam about 20 inches thick. Weathered sandstone is at a depth of 63 inches.

Permeability of the Felton soil is moderately slow. Effective rooting depth is 40 to 72 inches. Available water capacity is 5.5 to 10.0 inches. Runoff is rapid, and the hazard of erosion is high.

These soils are used mainly for timber, recreation, wildlife habitat, and watershed. They are also used for firewood production and as homesites.

This complex is well suited to the production of redwood. It is capable of producing **13,360** cubic feet, or 70,000 board feet (International rule), of merchantable timber per acre from a fully stocked, even-aged stand of SO-year-old trees.

This complex provides habitat for band-tailed pigeon, jay, hawk, deer, raccoon, coyote, bobcat, rabbit, squirrel, mice, salamander, tree frog, lizard, and snake.

These soils are poorly suited to building site development and onsite sewage disposal because they have steep slopes. Capability subclass VIe(4), nonirrigated; Storie inuex 32.

115—Ben Lomond-Felton complex, 50 to 75 percent slopes. This complex is dominantly in concave areas near drainageways. Elevation ranges from 400 to 3,000 feet. The mean annual precipitation is about 45 inches, and the mean annual air temperature is about 56 degrees F. The frost-free season ranges from 220 to 245 days.

This complex is about 35 percent Ben Lomond sandy loam and 35 percent Felton sandy loam.

Included with these soils in mapping are areas of Niscing loam. Aptos sandy loam, and Lompico loam. Also included are small areas of Catelli sandy loam, Hecker gravely study loam, and soils that are similar to the Ben Lomond and Felton soils but have slopes of 75 to 90 percen

...? Ben Lomond soil is deep and well drained. It 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 gravish brown, slightly acid and neutral sandy loam about 10 inches thick. The subsoil is brown, medium acid sandy been 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 the Ben Lomond soil is moderately rapid. Effective rooting depth is 40 to 60 inches. Available water capacity is 4.0 to 8.5 inches. Runoff is very rapid, and the hazard of erosion is very high.

The Follon soil is deep and well drained. It formed in residuum derived from sandstone, shale, schist, or siltstone. Typically, the surface layer is dark grayish brown and brown, slightly acid sandy loam about 11 inches thick. The subsoil is brown and yellowish red, siightly acid and strongly fid sandy clay loam and clay loam about 32 inches thick. The substratum is variegated light brownish gray and light olive brown, strongly acid loam and ssndy loam about 33 inches thick. Weathered sandstone is at a depth of 63 inches.

Permeability of the Felton soil is moderately slow. Effective rooting depth is 40 to 70 inches. Available water capability is 5.5 to 10.0 inches. Runoff is very rapid, and the hazard of erosion is very high.

These solic are used mainly for timber, recreation, wildlife habitat, and watershed. They are also used for firewood production.

These soils are well suited to the production of redwood and Douglas-fir. From a fully stocked, even-aged star- of 80-year-old trees, the soils are capable of producing about 13,360 cubic feet, or 70,000 board feet (International rule) of merchantable redwood timber. The production of merchantable Douglas-fir timber is slightly lower of these soils.

This ecolex provides habitat for band-tailed pigeon, jay, hawk, de , raccoon, coyote, bobcat, rabbit, squirrel, mice mander, tree frog, lizard, and snake.

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