July 16, 2020

CASE#: CDP_2018-0032
DATE FILED: 12/4/2018
OWNER/APPLICANT: JAMES B LEWIS & SUSAN E LEWIS
REQUEST: Standard Coastal Development Permit to construct a 4,762 sq. ft. single family residence, accessory structures, and ancillary uses on a 97.2 acre parcel.
LOCATION: In the Coastal Zone, 3± miles south east of the City of Point Arena, on the west side of Ten Mile Cut Off Road (CR 503A) and 0.3± miles south of its intersection with Schooner Gulch Road (CR 504) and located at 27201 Ten Mile Rd., Point Arena (APN: 027-462-01).
ENVIRONMENTAL DETERMINATION: Categorically Exempt
SUPERVISORIAL DISTRICT: 5
STAFF PLANNER: JULIANA CHERRY
RESPONSE DUE DATE: July 30, 2020

PROJECT INFORMATION CAN BE FOUND AT:
https://www.mendocinocounty.org/government/planning-building-services/public-agency-referrals

Mendocino County Planning & Building Services is soliciting your input, which will be used in staff analysis and forwarded to the appropriate public hearing. You are invited to comment on any aspect of the proposed project(s). Please convey any requirements or conditions your agency requires for project compliance to the project coordinator at the above address, or submit your comments by email to pbs@mendocinocounty.org. Please note the case number and name of the project coordinator with all correspondence to this department.

We have reviewed the above application and recommend the following (please check one):

☐ No comment at this time.

☐ Recommend conditional approval (attached).

☐ Applicant to submit additional information (attach items needed, or contact the applicant directly, copying Planning and Building Services in any correspondence you may have with the applicant)

☐ Recommend denial (Attach reasons for recommending denial).

☐ Recommend preparation of an Environmental Impact Report (attach reasons why an EIR should be required).

☐ Other comments (attach as necessary).

______________________________________________________________
______________________________________________________________
______________________________________________________________

REVIEWED BY:

Signature ___________________ Department ___________________ Date _______________
CASE: CDP_2018-0032 Standard Coastal Development Permit

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APN: 027-462-01-00

PARCEL SIZE: 97.18 acres

GENERAL PLAN: Coastal Element, Forest Lands (FL160:R*)

ZONING: Mendocino Coastal Zoning Code, Forest Lands (FL:160)

EXISTING USES: Vacant Land

DISTRICT: 5 (Williams)

RELATED CASES: CE_2018-0007 Test Well

ADJACENT GENERAL PLAN

ADJACENT ZONING

ADJACENT LOT SIZES

ADJACENT USES

NORTH: RMR 20 and RR5 RRS and UR 20 Varies 1 to 9 Acres Single-Family Residential

EAST: RMR 20 and RR5 RRS and UR 20 Varies 1 to 8 Acres Single-Family Residential

SOUTH: FL160 TP 350 Acres Forest Production

WEST: FL160 TP 494 Acres Forest Production

LOCAL

Agricultural Commissioner
Assessor’s Office
Building Division - Fort Bragg
County Addresser
Department of Transportation (DOT)
Environmental Health (EH)
Farm Advisor
Forestry Advisor

STATE

CALFIRE (Land Use)
California Coastal Commission
California Dept. of Fish & Wildlife

FEDERAL

US Department of Fish & Wildlife

TRIBAL

Cloverdale Rancheria
Redwood Valley Rancheria
Sherwood Valley Band of Pomo Indians

ADDITIONAL INFORMATION:

1. Application will be scheduled for Archaeological Commission following receipt of comments from the NWIC – CHRISS.


3. See revised Septic Design stamped received 4-27-2020. Please confirm leach field locations would be outside of riparian habitat buffers (Botanical Report Map 2, page 19).

4. See revised biological & botanical scoping survey report for information about PAMB (page 2), Bishop Pine Forest Alliance, Riverine, and proposed 50-foot buffer between Bishop Pine ESHA and driveway (page 12). 100-foot buffer between septic and riparian habitat areas. Soil type strongly correlates with areas with Bishop Pine trees. Suggested mitigation and avoidance measures begins on page 7. Documented pre-existing roads and skid trails included as Appendix A of report (beginning on page 90).

Please send comments to cherryj@mendocinocounty.org

STAFF PLANNER: JULIANA CHERRY

DATE: 7/14/2020
ENVIROMENTAL DATA

1. MAC: Gualala Municipal Area Council. See MISC Map
2. FIRE HAZARD SEVERITY ZONE: High Fire Hazard. See Fire Hazard Zones & Responsibility Areas Map
3. FIRE RESPONSIBILITY AREA: CalFire and Redwood Coast Fire Protection District
4. FARMLAND CLASSIFICATION: Grazing land. See Farmland Classifications Map and LCP Land Capabilities & Natural Hazards Map
5. FLOOD ZONE CLASSIFICATION: NO
6. COASTAL GROUNDWATER RESOURCE AREA: Critical Water Resources Bedrock. See Ground Water Resources Map
7. SOIL CLASSIFICATION: Western Soils 159, 174, and 177. See Local Soils Map
8. PYGMY VEGETATION OR PYGMY CAPABLE SOIL: See Mendocino Cypress Map & Botanical Survey Report
9. WILLIAMSON ACT CONTRACT: NO
10. TIMBER PRODUCTION ZONE: NO. See LCP Land Capabilities & Natural Hazards Map
11. WETLANDS CLASSIFICATION: Riverines. See Wetlands Map
12. EARTHQUAKE FAULT ZONE: NO
13. AIRPORT LAND USE PLANNING AREA: NO
14. SUPERFUND/BROWNFIELD/HAZMAT SITE: NO
15. NATURAL DIVERSITY DATABASE: YES
16. STATE FOREST/PARK/RECREATION AREA ADJACENT: NO
17. LANDSLIDE HAZARD: NO
18. WATER EFFICIENT LANDSCAPE REQUIRED: NO
19. WILD AND SCENIC RIVER: NO
20. SPECIFIC PLAN/SPECIAL PLAN AREA: NO
21. STATE CLEARINGHOUSE REQUIRED: NO
22. OAK WOODLAND AREA: NO
23. HARBOR DISTRICT: NO
24. LCP LAND USE CLASSIFICATION: Forest Lands. See LCP Land Use Map 27: Hall Gulch
25. LCP LAND CAPABILITIES & NATURAL HAZARDS: Timber production. See LCP Land Capabilities & Natural Hazards Map
26. LCP HABITATS & RESOURCES: Barren. See LCP Habitats & Resources. See also Biological and Botanical Survey Report (Revised)
27. COASTAL COMMISSION APPEALABLE AREA: Yes. Reduced Buffer proposed. See Appealable Areas Map
28. CDP EXCLUSION ZONE: YES
29. HIGHLY SCENIC AREA: HIGHLY SCENIC-CONDITIONAL
30. BIOLOGICAL RESOURCES & NATURAL AREAS: Bishop Pine Forest Alliance and Riverines. See Wetlands Map, Appealable Areas Map, and Biological and Botanical Survey Report (Revised)
31. BLUFFTOP GEOLOGY: NO
**COASTAL ZONE APPLICATION FORM**

**APPLICANT**

<table>
<thead>
<tr>
<th>Name</th>
<th>Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>James B Lewis and Susan E Lewis</td>
<td>574 May Street</td>
</tr>
<tr>
<td>City</td>
<td>State</td>
</tr>
<tr>
<td>Arroyo Grande</td>
<td>California</td>
</tr>
<tr>
<td>Zip Code</td>
<td>Phone</td>
</tr>
<tr>
<td>93420</td>
<td>805-235-3321</td>
</tr>
</tbody>
</table>

**PROPERTY OWNER**

<table>
<thead>
<tr>
<th>Name</th>
<th>Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>James B Lewis and Susan E Lewis</td>
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<td>805-235-3321</td>
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</tbody>
</table>

**AGENT**

<table>
<thead>
<tr>
<th>Name</th>
<th>Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>n/a</td>
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<tr>
<td>City</td>
<td>State</td>
</tr>
<tr>
<td></td>
<td>Zip Code</td>
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<tr>
<td></td>
<td>Phone</td>
</tr>
</tbody>
</table>

**PARCEL SIZE**

- **Square feet**: 97.2
- **Acres**: 0

**STREET ADDRESS OF PROJECT**

<table>
<thead>
<tr>
<th>Address</th>
<th>City</th>
<th>State</th>
<th>Zip Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>27201 Ten Mile Road, Point Arena, California</td>
<td>Arroyo Grande</td>
<td>California</td>
<td>95468</td>
</tr>
</tbody>
</table>

**ASSESSOR’S PARCEL NUMBER(S)**

- 027-46-201

---

I certify that the information submitted with this application is true and accurate.

Signature of Applicant/Agent: [Signature]

Date: 12/4/2018

Signature of Owner: [Signature]

Date: 12/4/2018

---

PBS Received 12-4-2018
COASTAL ZONE - SITE AND PROJECT DESCRIPTION QUESTIONNAIRE

The purpose of this questionnaire is to relate information concerning your application to the Planning and Building Services Department and other agencies who will be reviewing your project proposal. Please remember that the clearer picture that you give us of your project and the site, the easier it will be to promptly process your application. Please answer all questions. Those questions which do not pertain to your project, please indicate "Not Applicable" or "N/A".

**THE PROJECT**

1. Describe your project and include secondary improvements such as wells, septic systems, grading, vegetation removal, roads, etc.

   Propose to construct (1) single family residence and (1) detached garage as per the plans and specifications submitted. There is an existing domestic water test Well (permit # ww23279), a proposed engineered septic system + site evaluation report (submitted 9-20-18), a late season (10-29-18) biological and botanical scoping report (to be submitted with this CDP application). The project proposal includes a "CDF less than 3 acre conversion application" (submitted 7-30-18) for the proposed house pad, garage pad, defensible space, and domestic grounds. The existing roads, driveway, walking paths, etc. are as per the plan sheet "C-1a" attached. Propose to extend the existing driveway approximately 140' through proposed conversion area and as per CDF recommendations. Proposed to trim vegetation at driveway horizontal and vertical CDF recommended clearances. Propose to remove, chip, burn, collect existing dead vegetation as well as dead vegetation left behind (at transmission line easement) from PGE tree and brush clearing crews. Propose to trim lower fire ladder branches of existing trees. Propose to build 120 sq’ accessory buildings and 200 sq’ decks as allowed.

2. If the project is **residential**, please complete the following:

<table>
<thead>
<tr>
<th>TYPE OF UNIT</th>
<th>NUMBER OF STRUCTURES</th>
<th>SQUARE FEET PER DWELLING UNIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Family</td>
<td>1</td>
<td>4762</td>
</tr>
<tr>
<td>Mobile Home</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Duplex</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multifamily</td>
<td></td>
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</tr>
</tbody>
</table>

   If Multifamily, number of dwelling units per building: __________________________

3. If the project is **commercial**, **industrial**, or **institutional**, complete the following:

   - Total square footage of structures: __________________________
   - Estimated employees per shift: __________________________
   - Estimated shifts per day: __________________________
   - Type of loading facilities proposed: __________________________

4. Will the proposed project be phased?  □ Yes  □ No

   If Yes, explain your plans for phasing.
12. Utilities will be supplied to the site as follows:

A. Electricity
   - Utility Company (service exists to the parcel).
   - Utility Company (requires extension of services to site: 150 feet __ miles
   - On Site generation, Specify: Proposed ground mount PV array 7kW, Interactive micro inverters.
   - None

B. Gas
   - Utility Company/Tank
   - On Site generation, Specify: 
   - None

C. Telephone: □ Yes □ No

13. Will there be any exterior lighting? □ Yes □ No
   If yes, describe below and identify the location of all exterior lighting on the plot plan and building plans.

The proposed exterior site lighting is to be low voltage or solar powered. The exterior lighting attached to the SFR and Garage is included in the plan set. The complete exterior lighting/power and control plan set is available immediately upon request, all lighting used within the borders of the property are to be "California Title 24 compliant" and Mendocino County Planning and Building "Dark sky compliant".

14. What will be the method of sewage disposal?
   - Community sewage system, specify supplier ____________________________
   - Septic Tank
   - Other, specify ____________________________

15. What will be the domestic water source?
   - Community water system, specify supplier ____________________________
   - Well
   - Spring
   - Other, specify ____________________________

16. Is any grading or road construction planned? □ Yes □ No
   If yes, grading and drainage plans may be required. Also, describe the terrain to be traversed (e.g., steep, moderate slope, flat, etc.).

   For grading and road construction, complete the following:

   A. Amount of cut: ____________________________ cubic yards
   B. Amount of fill: ____________________________ cubic yards
   C. Maximum height of fill slope: ____________________________ feet
   D. Maximum height of cut slope: ____________________________ feet
   E. Amount of import or export: ____________________________ cubic yards
   F. Location of borrow or disposal site: ____________________________

   3/4" aggregate per CDF applied to driveway extension after the conversion area is cleared. All grades are 3%.
17. Will vegetation be removed on areas other than the building sites and roads? □ Yes □ No
   If yes, explain:
   Trimming of lower fire-ladder branches on some trees. Removal, burn (with permit), chip, clear dead vegetation in certain areas for fire safety, camping grounds, picnic benches, the small decks (if allowed) and the trimming of small branches/limbs overhanging at walking paths.

18. Does the project involve sand removal, mining or gravel extraction? □ Yes □ No
   If yes, detailed extraction, reclamation and monitoring may be required.

19. Will the proposed development convert land currently or previously used for agriculture to another use? □ Yes □ No
   If yes, how many acres will be converted? ___________ acres (An agricultural economic feasibility study may be required.)

20. Will the development provide public or private recreational opportunities? □ Yes □ No
    If yes, explain:
    The development will provide private recreational opportunities: Camping, Hiking, Running + Walking paths, Birdwatching, Mountain biking, picnicking.

21. Is the proposed development visible from:
    A. State Highway 1 or other scenic route? □ Yes □ No
    B. Park, beach or recreation area? □ Yes □ No

22. Will the project involve the use or disposal of potentially hazardous materials such as toxic substances, flammables, or explosives? □ Yes □ No
    If yes, explain:

23. Does the development involve diking, filling, dredging or placing structures in open coastal waters, wetlands, estuaries or lakes?
    A. Diking □ Yes □ No
    B. Filling □ Yes □ No
    C. Dredging □ Yes □ No
    D. Placement of structures in open coastal waters, wetlands, estuaries or lakes □ Yes □ No

    Amount of material to be dredged or filled? n/a

    Location of dredged material disposal site: n/a

    Has a U.S. Army Corps of Engineers permit been applied for? □ Yes □ No

If you need additional room to answer any question, attach additional sheets.
FIRE SAFETY REGULATIONS APPLICATION PACKAGE
INSTRUCTIONS FOR COMPLETION

To ensure that the California Department of Forestry and Fire Protection (CAL FIRE) can adequately identify which regulations apply to your project and/or respond to your inquiry we ask that you do the following:

1) Print neatly IN PEN or type application. Fill in ALL application information.

2) Be as thorough as possible within the space provided.

3) **Answer all questions-Failure to do so may result in your application being returned.**

4) Use the example in helping prepare your site plan on the provided 8-1/2 x 11” graph paper.

5) For residential dwellings, garages, and accessory buildings, do not supply architectural drawings, unless the size of the project requires it.

6) Subdivisions and parcel splits should include tentative parcel maps.

7) Show all existing and proposed roads, driveways, bridges, gates, setbacks, property lines and water systems and indicate distances between all buildings and property lines. Show widths, lengths, and steepness (in % grade) of proposed roads and driveways.

8) Make sure you have signed the application and mail or deliver to the address on the front page. Office hours are 8:00 A.M. to 5:00 P.M., Monday through Friday.

9) Your application will be held at the Howard Forest CAL FIRE Headquarters Office for pickup or mailed to: (1) The applicant/owner, or (2) Your agent, **PLEASE INDICATE WHICH YOU WOULD PREFER. Because of CAL FIRE’s response to emergency incidents and other routine responsibilities, please allow up to two weeks for processing your application.**

10) **Please make a copy of the completed application (with the attached “Conditions of Approval”) for your files before submitting to Mendocino County Planning & Building Services. Contact the CAL FIRE Headquarters Office to Request a Final Inspection when you have **COMPLETED** the criteria outlined in your Conditions of Approval.**

NOTE: PACKET MAILED TO CAL FIRE 11/30/18.

"CONDITIONS OF APPROVAL" TO BE DETERMINED.

CONSERVATION IS WISE-KEEP CALIFORNIA GREEN AND GOLDEN

PLEASE REMEMBER TO CONSERVE ENERGY. FOR TIPS AND INFORMATION, VISIT "FLEX YOUR POWER" AT WWW.CA.GOV.

PBS Received 12-4-2018

APN 027-462-01
STATE FIRE SAFE REGULATIONS APPLICATIONS FORM

Please complete the following and submit to the California Department of Forestry and Fire Protection (CAL FIRE). See the attached Homeowner's Summary of Fire Prevention and Loss Reductions Laws to ensure your plans will meet the requirements. If not, you will be required to propose and submit an exemption (Detailed in Item #19) for the Department's review. Failure to submit a proposed exemption when required will result in delays. CAL FIRE will strive to work with landowners who require an exemption, however, submitting an exemption in itself, does not guarantee it will be accepted by CAL FIRE.

1. Name, Mailing Address and Phone Number of Property Owner:

Jim and Susan Lewis
674 May Street
Arroyo Grande, CA 93420

Phone: 805.235.3321

2. Name, Mailing Address and Phone Number of Agent representing the Property Owner:

N/A

Phone: ____________________

Mail correspondence to:

☑ Owner   OR   ☐ Agent   OR   ☐ Pick-up at Howard Forest

3. Address/Location of proposed building site:

27201 Ten Mile Road
Point Arena, CA 95463

APN: 027.462.01
Is it accessible, gate, locked? If so, gate combination or instructions to access:

ACCESSIBLE (YES) GATE (YES) LOCKED (YES)

4. Type of Project - CHECK ONE

☐ Subdivision

Current acreage before split: __________________________

Number of new parcels to be created: ____________________

Acreage of newly created parcels: _______________________

☐ Use Permit

Describe your project, include dates, times, number of people, roads used or required, etc.

________________________________________________________________________

☐ Building Permit

☐ New building, ☐ Remodel, ☐ Class K, ☐ Replacement, ☐ Other

47102

Size in square feet of Single Family dwelling, if applicable.

________________________

Size in square feet of attached garage, if applicable.

1050

Size in square feet of proposed detached garage, if applicable.

Size in square feet of proposed accessory building(s), if applicable.

Size in square feet of other proposed structure, if applicable.

60418

TOTAL SQUARE FOOTAGE

Briefly describe the type of structure you will be building:

PROPOSE TO BUILD A 2-STORY SINGLE FAMILY RESIDENCE WITH A FOOTPRINT OF 40' X 60' ON A CONCRETE SLAB.

PROPOSE TO BUILD A 1-STORY GARAGE ON SLAB.

☐ Yes ☐ No -- Is project location map attached showing access to the site?

☐ Yes ☐ No -- Was the subject parcel created PRIOR to January 1, 1992?

IF NO please answer a & b below:

a. ☐ Yes ☐ No -- Is the structure within ½-mile driving distance of a working fire hydrant?

b. ☐ Yes ☐ No -- Is the structure within a 5-mile driving distance of a year round fire station?
Set Back Standard: If YES to # 7 and NO to # 8, an exemption will be required.

7. ☒ Yes ☐ No -- Is the subject parcel 1 acre or larger?

8. ☒ Yes ☐ No -- Will the proposed structure(s) be 30 ft. or more from ALL property lines?

Road and Driveway Standards - Roads or driveways deviating from the Standards will require an exemption.

9. ☐ Yes ☒ No -- Will your project require construction of a new road?
   If so, how long in feet or miles? __________________________
   If so, what is the maximum grade(%)? ________________________

10. ☐ Yes ☒ No -- Will your project require the extension of an existing road?
    If so, how long in feet or miles? __________________________
    If so, what is the maximum grade(%)? ________________________

11. ☐ Yes ☒ No -- Will your project require construction of a new driveway?
    If so, how long in feet or miles? __________________________
    If so, what is the maximum grade(%)? ________________________

12. ☒ Yes ☐ No -- Will your project require the extension of an existing driveway?
    If so, how long in feet or miles? APPROXIMATELY 140'
    If so, what is the maximum grade(%)? 6%

13. If NO to 9-12 above, Describe the existing road/driveway:

   THE EXISTING DRIVEWAY IS APPROXIMATELY 1100' LONG, THE WIDTH VARIES FROM 15' TO 30' AT WIDEST, THE DRIVEWAY GRADE: (2.4%) FIRST 500' (2.3%) SECOND 432' (3.6%) LAST 140'.

14. Describe the turnout locations, their spacing, and the turnaround or hammerhead “T” related to your project and the standards ensure it meets the required standard or an exemption will be needed.

   FIRST "TURNAROUND" IS AT 470' AND IS AT THE PG&E EASEMENT.
   SECOND "HAMMER HEAD" AT 432'.
   THIRD "TURNOUT" IS AT WELL-WATERTANK AREA 130'.
   FOURTH "TURNAROUND" IS AT THE PROPOSED S.F.R. AND GARAGE FRONT DRIVEWAY+ PARKING AREA. 120'

15. ☐ Yes ☒ No -- Are there existing bridges en route to the proposed project located on your property?

16. ☒ Yes ☐ No -- Will this project require any bridges to be constructed/installed?
Timber and Land Conversion Activities—FOR TIMBER RELATED QUESTIONS, PLEASE CALL 707-459-7440.

17. ☑ Yes ☐ No -- Will trees be cut and timber products sold, bartered, traded or exchanged?
If YES, may require a harvest permit from CAL FIRE Resource Management.

18. ☑ Yes ☐ No -- Will timberland be converted to non-timber growing use?
If YES, may require a harvest permit from CAL FIRE Resource Management.

Exemption Request

19. ☐ Yes ☑ No -- Are you requesting any exemptions to the Fire Safe Regulations?
If YES, attach a separate page identifying the applicable section of State Law pertinent to your request, material facts supporting the request, the details of the exemption or mitigation measures proposed, and a map showing the proposed location of the exemption or mitigation measure.

An exemption may be granted only if it is “necessary due to health, safety, environmental conditions, physical site limitations or other limiting conditions such as recorded historical sites” and if it “provides the same overall practical effect as these [fire safe] regulations towards providing defensible space.” (Cal. Code Regs., tit. 14, §§1270.07, 1271.00.) An exemption may not allow avoidance of the standards. An exemption is an “alternative...that provides mitigation of the problem.”

I hereby agree to maintain the property in compliance with the Fire Safe Requirements established in the Public Resources Code Section 4290.

SIGNATURE OF PROPERTY OWNER OR AGENT 

[Signature]

Print Name
LESS THAN 3 ACRE CONVERSION EXEMPTION

STATE OF CALIFORNIA
DEPARTMENT OF FORESTRY AND FIRE PROTECTION
NOTICE OF TIMBER OPERATIONS THAT ARE EXEMPT FROM CONVERSION AND TIMBER HARVESTING PLAN REQUIREMENTS
RM-73 (1104.1a) (11/12)

VALID FOR ONE YEAR FROM DATE OF RECEIPT BY CAL FIRE
TIMBER OPERATIONS CANNOT START UNTIL VALID COPY OF A NOTICE OF ACCEPTANCE IS RECEIVED FROM CAL FIRE

The Director of the Department of Forestry and Fire Protection (CAL FIRE) is hereby notified of timber operations under the requirements of 14 CCR § 1104.1(a): Harvesting of trees that is a single conversion to a non-timber growing use of timberland of less than three acres. (See 14 CCR § 1104.1(a) for a description of the conditions on the conduct of this type of timber operation and additional information that is required to be submitted.) Complete items 1 through 8 on both pages of this notice.

1. TIMBER OWNER(S) OF RECORD: Name: Jim and Susan Lewis
   Address: 1015 Green Oaks Drive
   City: Los Osos State: CA Zip: 93402 Phone: (805)-235-3321

   TIMBER TAX EXEMPTION: Timber owners owe yield tax when they harvest trees unless the harvest is exempt (Revenue and Taxation Code sec. 38116). Some small or low value harvests may be exempt from timber yield tax: Timber removed from an operation whose value does not exceed $3,000 within a quarter, according to BOE Harvest Value Schedules, Rule 1024. If you believe your harvest may qualify for this exemption, please complete items A and B below. For timber yield tax information or for further assistance with these questions call the State Board of Equalization, 1-800-400-7115, or write: Timber Tax Section, MIC: 60, State Board of Equalization, P.O. Box 942879, Sacramento, California 94279-0030; or contact the BOE Web Page on the Internet at http://www.boe.ca.gov.

   A. Circle the option that most closely estimates the total volume for this harvest, in thousands of board feet (mbf - Net Scribner short log):
      Under 8 mbf  8-15 mbf  16-25 mbf  Over 25 mbf

   B. Estimate the species composition of the timber that will be removed during this harvest (numbers should sum to 100%):
      Redwood ___  %; Ponderosa/Sugar pine ___  %; Douglas-fir ___  %; Fir ___  %;
      Port-Orofino Cedar ___  %; Cedar (IC, WRC) ___  %; Other conifer ___  %; Other hardwood ___  %.

2. TIMBERLAND OWNER(S) OF RECORD: Name: Jim and Susan Lewis
   Address: 1015 Green Oaks Drive
   City: Los Osos State: CA Zip: 93402 Phone: (805)-235-3321

   I certify, under penalty of perjury, that this is a one-time conversion to a non-timberland use and that there is a "bona fide intent" [14 CCR § 1100(b)] to convert to a home site and associated domestic grounds.

   SIGNATURE ______________________________ Date __________

3. LICENSED TIMBER OPERATOR(S): Name: H&M Logging Inc. Lic. No.: #A-9276
   Address: P.O. Box 2270
   City: Fort Bragg State: CA Zip 95437 Phone (707) 964-2340

   SIGNATURE ______________________________ Date __________

4. Designate the legal land description of the location of timberland conversion. A map showing the location of the timberland conversion MUST be attached. The map must show the ownership boundaries, the location of the timber operation, boundaries of the conversion, location and classification of all watercourses, and landing locations.

   Section Township Range Base & Meridian County Acresage to be Converted Assessors Parcel Number
   26 12N 16W MDB&M Mendocino 2.99 acre+/- 027-462-01

Page 1  NOTE: This form has two pages. Continue on and complete page 2. Read the instructions before attempting to complete.
5. The following are limitations or requirements for timber operations conducted under a Less Than Three Acre Conversion Exemption (Notice, Notice of Conversion Exemption, Conversion Exemption):
   A. Timber operations shall comply with all other applicable provisions of the Forest Practice Act and regulations, county general plans, zoning ordinances, and any implementing ordinances; copies of the state rules and regulations may be found on CAL FIRE's Web Page on the Internet at http://www.fire.ca.gov.
   B. All timber operations shall be complete within one year from the date of acceptance by CAL FIRE.
   C. All conversion activities shall be complete within two years from the date of acceptance by CAL FIRE unless under permit by local jurisdiction. Failure to complete the conversion requires compliance with stocking standards and stocking report requirements of the Forest Practice Act and Board of Forestry and Fire Protection regulations.
   D. The timber operator shall remove or dispose of all slash or woody debris in accordance with 14 CCR § 1104.1(a)(2)(D)(1)-(9). The timberland owner may assume responsibility for the slash treatment, provided the landowner acknowledges in writing to CAL FIRE such responsibility at the time of submission of this notice. The specific requirements shall be included with the acknowledgement.
   E. Timber operations may be conducted during the winter period. Tractor operations in the winter period are allowed under any of the conditions described in 14 CCR § 1104.1(a)(2)(E)(1)-3.
   F. No timber operations are allowed within a watercourse and lake protection zone unless specifically approved by local permit (e.g., county, city).
   G. No timber operations shall be conducted until CAL FIRE's notice of acceptance is received and a valid copy of this notice and CAL FIRE's acceptance shall be kept on site during timber operations.
   H. No sites of rare, threatened or endangered plants or animals or species of special concern shall be disturbed, threatened, or damaged.
   I. No timber operations are allowed on significant historical or archaeological sites.
   J. Within one month of the completion of timber operations, including slash disposal, the timberland owner shall submit a work completion report to CAL FIRE.
   K. A violation of the conversion exemption, including a conversion applied for in the name of someone other than the person or entity implementing the conversion in bona fide good faith, are violations of the Forest Practice Act and penalties may accrue up to ten thousand dollars ($10,000) for each violation pursuant to Article 8 (commencing with Section 4601).

6. __________________________________ ________________ declare as the authorized designee of the County Board of Supervisors that this conversion exemption is in conformance with all county regulatory requirements, including public notice. (If the county has authorized a designee this item MUST be completed. If it has not, see Item 7.)

SIGNATURE _______________________________ Date ________________

7. Registered Professional Forester preparing Notice: Name: Lee Susan Number: #2127

Address: 32280 Rivers End Road

City: Fort Bragg State CA Zip 95437 Phone: (707) 367-0906

I have, or my supervised designee has, (1) prepared this Notice of Conversion Exemption Timber Operations; (2) visited the site and flagged the boundaries of the conversion exemption, applicable WLPZs and equipment limitation zones; (3) prepared a Neighborhood Notice of Conversion Exemption according to 14 CCR § 1104.1(e)(3) to be mailed by the landowner to adjacent landowners; and (4) posted and dated a copy of the Neighborhood Notice of Conversion Exemption on the ownership, visible to the public, at least 5 days prior to the postmark date of submission of the Notice of Conversion Exemption. I certify that if the County Board of Supervisors has not designated a representative authorized to sign in Item 6 that I, or my supervised designee, contacted the county and the Notice is in compliance with county regulations.

This project is located within the coastal zone and the Landowner is in the process of obtaining a Coastal Development Permit. NO TIMBER OPERATIONS UNDER THIS CONVERSION EXEMPTION PERMIT ARE TO OCCUR UNTIL THE ABOVE REFERENCED CDP IS APPROVED AND IN HAND.

SIGNATURE of RPF _______________________________ Date ________________

8. NOTICE SUBMITTER(S): Name: Jim and Susan Lewis

Address: 1015 Green Oaks Drive

City: Los Osos State: CA Zip: 93402 Phone: (805)-235-3321

Submitter must be 1, 2, or 3 above, and must sign.

SIGNATURE _______________________________ Date ________________

PBS Received 12-4-2018

APN 027-462-01
Conversion Feasibility

The landowner intends to develop a house site and domestic grounds on his property. The site is located in an area of rural residential development which extends along Ten Mile County Road and the planned home site is consistent with existing development in this area. The conversion area is underlain my a soil type which is only nominally suitable for timber production. The following information is presented in regards to Title 14 CCR 1104.1a(6), establishing the feasibility of the intended land use.

1) Vegetation to be removed within the conversion area is expected to be up to 80%. Marketable timber is nominally present. Removal of vegetation necessary to accomplish the development of the home site and associated domestic grounds and can easily be accomplished on this site. Home site development and residential use routinely accomplished on numerous other similar sites. It is my opinion the amount of vegetation removal required will not render the proposed conversion infeasible.

2) Soils are considered to be of a sandy loam nature. Numerous home sites have successfully been established on the similar soil types in this area. It is my opinion that this soil type will not render the proposed conversion infeasible.

3) The average slope of the conversion area is less than 10%. Gentle slopes will aid in the establishment of a home site. It is my opinion that the slope of the conversion area will not render the proposed conversion infeasible.

4) The conversion area is located on a coastal terrace with a generally westerly aspect. It is my opinion that the aspect, will not render the proposed conversion infeasible.

5) The conversion area is located within a few miles of the Pacific Ocean and benefits from a mild climate which experiences neither extreme high or low temperatures. It is my opinion that the micro-climate associated with this area will not render the proposed conversion infeasible.
Winter period operating plan per 14 CCR 914.7(b):

(1) Erosion Hazard Rating: The Erosion Hazard Rating for the plan area is Moderate. The ground is gentle yet well drained with slopes typically being <15%.

(2) Mechanical Site Preparation Methods: Mechanical Site Preparation is limited to the establishment of a house site and associated domestic grounds. Heavy equipment use limitations relative to wet weather conditions and the winter period are specified under item 10 below.

(3) Yarding System: Yarding operations are proposed during the winter period. Tractor operations may occur as provided below under (4) operating period and (10) equipment use limitations.

(4) Operating Period: The following are the operating periods of various activities proposed. See also 'Equipment Use Limitations (#10 below).

- Fall Operating Period (FOP) October 15th through the end of November 14th:
  - Operations during dry and rainless periods on <3 acre clearing located on gentle ground, subject to the limitations of 14 CCR 916.9(l) and as provided under item 10 of this operating plan.

- Winter Period, November 15th to April 1st
  - Operations during dry and rainless periods on <3 acre clearing located on gentle ground, subject to the limitations of 14 CCR 916.9(l) and as provided under item 10 of this operating plan.

- Spring Operating Period (SOP) April 1 through end of April 30th:
  - Operations during dry and rainless periods on <3 acre clearing located on gentle ground, subject to the limitations of 14 CCR 916.9(l) and as provided under item 10 of this operating plan.

(5) Erosion Control Facilities Timing: Any required erosion control facilities will be installed every night. Access is a permanent road to the <3 acre clearing site.

(6) Consideration of form of precipitation-rain or snow: Any precipitation is expected to occur in the form of rain. Due to moderate climate of the area soil conditions are not expected to become hard frozen.

(7) Ground Conditions: Tractor use shall not occur during saturated soil conditions. Use of roads and landings shall not occur when saturated soil conditions exist on the road, or when stable operating surfaces do not exist on the road. Due to climate of the area, soil conditions are not expected to become hard frozen.

(8) Silvicultural system -ground cover: An area of <3 acre is being cleared on gentle ground to facilitate construction of a residence. No significant long-term change in ground cover is anticipated due to the nature, location and minimal size of this project.

(9) Operations within the WLPZ:
   No operations within any WLPZ are proposed.

(10) Equipment Use Limitations:
   - Fall Operating Period (FOP) (October 15th through the end of November 14th)
     - No tractor operations on slopes greater than 25%.
     - Operations during dry and rainless periods on <3 acre clearing located on nearly flat ground, subject to the limitations of 14 CCR 916.9(l).
     - Use of logging roads, tractor roads, or landings shall not take place at any location where saturated soil conditions exist, where a stable logging road or landing operating surface does not exist, or when visibly turbid water from the road, landing, or tractor road surface or inside ditch may reach a watercourse or lake. Grading to obtain a drier running surface more than one time before reincorporation of any resulting berms back into the road surface is prohibited.
     - Provided saturated soil conditions do not exist, use of tractor may occur during this period under the following conditions (to comply with 14 CCR 916.9(I)):
       - Where cumulative precipitation totals are 2" or more commencing October 15th, operations shall not commence until at least 24 hours have elapsed
with no measurable precipitation since the most recent ¼” or greater precipitation event.

- Logging roads, landings and tractor roads shall not be used when sediment from the logging road, landing or tractor road surface may be transported to a watercourse or a drainage facility in quantities sufficient to cause a visible increase in turbidity of downstream waters in receiving Class I, II, III or IV waters or that violate Water Quality Requirements.

- Logging roads and landings shall not be used for log hauling when saturated soil conditions may produce sediment in quantities sufficient to cause a visible increase in turbidity of downstream waters in receiving Class I, II, III or IV waters or that violate Water Quality Requirements specified in (3) above.

**Winter Period, November 15th to April 1st:**

- No tractor operations on slopes greater than 25%.
- Operations during dry and rainless periods on <3 acre clearing located on gentle ground, subject to the limitations of 14 CCR 916.9(f).
- Use of logging roads, tractor roads, or landings shall not take place at any location where saturated soil conditions exist, where a stable logging road or landing operating surface does not exist, or where visibly turbid water from the road, landing, or tractor road surface or inside ditch may reach a watercourse or lake. Grading to obtain a drier running surface more than one time before reincorporation of any resulting berms back into the road surface is prohibited.
- Provided saturated soil conditions do not exist, use of tractor may occur during this period under the following conditions (to comply with 14 CCR 916.9(f)):
  - Operations shall not commence until at least 24 hours have elapsed with no measurable precipitation since the most recent ¼” or greater precipitation event.
  - Logging roads, landings and tractor roads shall not be used when sediment from the logging road, landing or tractor road surface may be transported to a watercourse or a drainage facility in quantities sufficient to cause a visible increase in turbidity of downstream waters in receiving Class I, II, III or IV waters or that violate Water Quality Requirements.
  - Logging roads and landings shall not be used for log hauling when saturated soil conditions may produce sediment in quantities sufficient to cause a visible increase in turbidity of downstream waters in receiving Class I, II, III or IV waters or that violate Water Quality Requirements specified in (3) above.

**Spring Operating Period (SOP), (April 1 through end of April 30th):**

- No tractor operations on slopes greater than 25%.
- Operations during dry and rainless periods on <3 acre clearing located on gentle ground, subject to the limitations of 14 CCR 916.9(f).
- Use of logging roads, tractor roads, or landings shall not take place at any location where saturated soil conditions exist, where a stable logging road or landing operating surface does not exist, or where visibly turbid water from the road, landing, or tractor road surface or inside ditch may reach a watercourse or lake. Grading to obtain a drier running surface more than one time before reincorporation of any resulting berms back into the road surface is prohibited.
- Provided saturated soil conditions do not exist, use of tractor may occur during this period under the following conditions (to comply with 14 CCR 916.9(f)):
  - Operations shall not commence until at least 24 hours have elapsed with no measurable precipitation since the most recent ¼” or greater precipitation event.
  - Logging roads, landings and tractor roads shall not be used when sediment from the logging road, landing or tractor road surface may be transported to a watercourse or a drainage facility in quantities sufficient to cause a visible increase in turbidity of downstream waters in receiving Class I, II, III or IV waters or that violate Water Quality Requirements.
  - Logging roads and landings shall not be used for log hauling when saturated soil conditions may produce sediment in quantities sufficient to cause a visible increase in turbidity of downstream waters in receiving Class I, II, III or IV waters or that violate Water Quality Requirements specified in (3) above.

(11) Known Unstable areas:

No unstable areas are associated with the project area.
Notice of Intent to Harvest Timber

An application has been applied for to harvest timber on an area of <3 acre in size on a parcel of land located as described below and shown on the attached map. Timber is being harvested and vegetation cleared to develop a home site and domestic grounds. The maximum size for a conversion of this type is less than 3 acres. Additional required information which is pertinent to the proposed timber harvest is as follows:

**Landowner(s):**
Name: Jim and Susan Lewis  
Address: 1015 Green Oaks Drive  
City: Los Osos State CA Zip Code 93402  
Telephone: (805)-235-3321

**Timber Operator:**
Name: H&M Logging Inc. (tentative)  
Address: P.O. Box 2270  
City: Fort Bragg State CA Zip Code 95437  
Telephone: (707) 964-2340  
LTO #: A-9276

**County Agency Responsible for Land Use Changes:**
Name: Mendocino County Planning & Building Services  
Address: 790 S. Franklin Street  
City: Fort Bragg State CA Zip Code 95437  
Telephone: 707-964-5379  
Suggested Contact: Planning Staff

**Registered Professional Forester**
Name: Lee Susan  
Address: 32290 Rivers End Road  
City: Fort Bragg State CA Zip Code 95437  
Telephone: 707-357-0906  
RPF # 2127

**Project Location:**
Located off Ten Mile Road, approximately 5 miles southeast of Point arena.

Mendocino County Assessor's Parcel Number: 027-462-01

Legal Description: Portion Section 26, T12N, R16W, MDB&M.

Street Address: 27201 Ten Mile Road, Point Arena, CA 95468
Notices Sent to the following adjacent landowners on July 30th, 2018

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<thead>
<tr>
<th>APN</th>
<th>OWNER</th>
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<td>02746206</td>
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<td>Ukiah</td>
<td>CA</td>
<td>95482</td>
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<tr>
<td>Michael Hunter</td>
<td>Native American Heritage Commission</td>
<td>1550 Harbor Blvd., Room 100</td>
<td>West</td>
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<td></td>
<td>Coyote Valley Band of Pomo Indians</td>
<td>PO Box 39</td>
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<tr>
<td>Emily Luscumb</td>
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<td>Richard Campbell Jr.</td>
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<td>Ghaval Mahdavian</td>
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<td></td>
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<td>3000 Shanel Road</td>
<td>Hopland</td>
<td>CA</td>
<td>95449</td>
</tr>
</tbody>
</table>
Summit Forestry
Lee Susan
16575 Franklin Road
Fort Bragg, CA 95437
(707) 964-4566
summit@men.org

July 30, 2018

Planning and Building Services
120 West Fir Street
Fort Bragg, CA 95437

Dear Staff,

RE: Minor Conversion Mendocino
County Assessor's Parcel # 027-462-01

Enclosed is a CDF Minor Conversion Exemption permit application for an area located approximately 1 mile south of the Fort Bragg city center. The address is 27201 Ten Mile Road, Point Arena, CA. The purpose of this permit is to clear an area for a house site and associated domestic grounds. We understand that this area is within the Coastal Zone and that a coastal development permit is required. The landowner is in the process of applying for a Coastal Development permit (CDP). No conversion activity will occur until the CDP is approved and in hand along with required permits from CalFire.

I would appreciate it if you could review this matter for me and give me your comments, if any. Thank you for your cooperation.

Sincerely yours,

Lee Susan
Forester #2127
Biological and Botanical Scoping and Survey Report

For
Jim & Susan
Lewis

Curtis Tyler and Lee Susan
SUMMIT FORESTRY
## Table of Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Summary</td>
<td>1</td>
</tr>
<tr>
<td>Environmental Evaluation</td>
<td>2</td>
</tr>
<tr>
<td>Mitigation and Disturbance Minimization Measures</td>
<td>5</td>
</tr>
<tr>
<td>Habitat Reduction Analysis (Pinus muricata Forest Alliance CNPS)</td>
<td>10</td>
</tr>
<tr>
<td>Vicinity Map</td>
<td>13</td>
</tr>
<tr>
<td>Report Map 1</td>
<td>14</td>
</tr>
<tr>
<td>Report Map 2</td>
<td>16</td>
</tr>
<tr>
<td>Photo Record</td>
<td>18</td>
</tr>
<tr>
<td>Tree Table</td>
<td>22</td>
</tr>
<tr>
<td>Soil Characteristics</td>
<td>23</td>
</tr>
<tr>
<td>SCS Soil Type Map</td>
<td>24</td>
</tr>
<tr>
<td>SCS Soil Type Descriptions</td>
<td>25</td>
</tr>
<tr>
<td>Biological Resources Scoping Lists</td>
<td>28</td>
</tr>
<tr>
<td>Birds</td>
<td>28</td>
</tr>
<tr>
<td>Mammals</td>
<td>42</td>
</tr>
<tr>
<td>Reptiles and Amphibians</td>
<td>47</td>
</tr>
<tr>
<td>Plants</td>
<td>48</td>
</tr>
<tr>
<td>Lichens</td>
<td>54</td>
</tr>
<tr>
<td>ESHTs</td>
<td>55</td>
</tr>
<tr>
<td>Floristic Survey Species List</td>
<td>56</td>
</tr>
<tr>
<td>CNDDB Map</td>
<td>59</td>
</tr>
<tr>
<td>CNDDB 9 Quad Species/Communities List</td>
<td>60</td>
</tr>
<tr>
<td>CNPS 9 Quad Plant List</td>
<td>74</td>
</tr>
<tr>
<td>CNDDB Eureka Hill Quad Element List</td>
<td>77</td>
</tr>
<tr>
<td>CNPS Alliances</td>
<td>78</td>
</tr>
<tr>
<td>Appendix A</td>
<td>88</td>
</tr>
<tr>
<td>1994 Timber Harvest Plan 1-94-337MEN</td>
<td></td>
</tr>
</tbody>
</table>
**Project Summary**

Jim and Susan Lewis are planning to construct a single family home located at 27201 Ten Mile Road, Point Arena CA (APN 027-462-01). The affected area is approximately 1.7 acres in size and centrally located within the 97 acre parcel (APN 027-462-01). The subject parcel is located approximately 5 miles Southeast of the City of Point Arena and 2.5 miles inland from the coast. (See Vicinity Map on page 13 of this report). An existing rocked road extending approximately 1100 feet from the Ten Mile Cutoff County Road to the project area is well suited to continue to serve as the primary access. The subject parcel is zoned Forestland 160 (FL160) and is bordered by Rural Residential (RR) and RMR to the North and East. Timber Production Zone (TPZ) parcels are located to the West and South.

The planned development consists of:

- Clearing vegetation from the home site and associated domestic grounds
- Construct two story single family residence
- Construction of garage
- Establish septic system and leach field
- Extend driveway 125 feet to house site
- Place underground utilities beneath existing access road
- Utilize existing test well as water supply for residence
- Designate alternate well replacement location for future contingency
Environmental Evaluation
An assessment of the project including the project area and adjoining lands within 150 feet of the project area and 100 feet on either side of the existing access road was conducted by our staff to determine what environmental impacts might be associated with the project. The botanical/biological survey area is as shown on the report map (see page 16 of this document). The purpose of this effort was to determine what if any environmental resources might be placed at risk as a result of the constructing the proposed single family residence. Included in this process is location and delineation of any Environmentally Sensitive Habitat Areas (ESHAs) including special status plants and animals, wetlands, riparian areas and any other environmental conditions that would warrant special consideration. Adjoining properties consist of both developed and undeveloped parcels of various sizes. Development in this area is limited to low density rural residential use. Undeveloped parcels in this area are typically held and managed for long term timber production.

Biological Review and Botanical Survey Discussion
The areas surveyed include the project area and surrounding areas within 150 of the project area as shown on the report map, existing access road and areas within 100 feet of the access road. Additional areas were reviewed and evaluated in association with our investigation of various alternatives discussed earlier in this report. This analysis has been performed by Summit Forestry and is the culmination of our professional opinion (50+ combined years), research, and data collection. Botanical survey efforts are consistent with CDFW “Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities” (CDFW 2018). Summit Forestry’s staff Curtis Tyler and Lee Susan conducted floristic wildlife and ESHA surveys on the following dates: 07/03/2018, 07/20/2018, 07/24/2018, 10/15/2018, 03/28/2019, 04/10/2019, 05/28/2019, 06/02/2019, 09/01/2019, 09/09/2019 for an excess of 45+ field hours.

Since this report was originally submitted, based on County Planning Staff input and additional field review the area extending eastward from the project area to the County road has been reconsidered to be Pinus muricata Forest Alliance habitat as defined by CNPS. No other ESHAs, riparian habitats, sensitive plant or animal species were identified in the study area.

Manzanita (Arctostaphylos nummularia) and Bishop Pine (Pinus muricata) were identified on site indicating a potential for pygmy habitats onsite, however, this is not the case as neither species are of the pygmy variety additionally redwood manzanita (Arctostaphylos columbiana), coast redwood (Sequoia sempervirens), Douglas-fir (Pseudotsuga menziesii), golden chinquapin (Chrysolepis chrysophyla) and tanoak (Nothokithocarpus densiflorus) were identified on site indicating a North Coast Coniferous Forest habitat type. As discussed in the preceding paragraph the entire ridge east of the project area is now considered to be Pinus muricata Forest Alliance habitat as defined by CNPS.

Through research and field work it has been determined that Point Arena Mountain Beaver (PAMB) (Aplodontia rufaphaesa) habitat is not present within the survey area due to the ridge-top setting and lack of riparian vegetation. Additionally, the project location is outside the known range of the PAMB. Both Lee Susan and Curtis Tyler are qualified PAMB surveyors with decades of experience and recently completed the PAMB training and certification with Greg Schmidt of the US Fish and Wildlife Service.
Existing development
An existing road and well for domestic water are associated with the planned single family home. 60KV high voltage power lines extend along the ridgeline between the home site and the County Road.

Biological Surveys Results
No legally listed plants or animals were identified within or adjacent to the project area. The project was sited so that and riparian habitats would be 100 feet or more distant from the project area. Pinus muricata Forest Alliance as it is defined by CNPS is associated with the project area as discussed below.

Environmentally Sensitive Habitat Areas (ESHA) Identified

Vegetation and Natural Communities
Further review and input from County Planning Staff has led us to revise initial forest habitat classifications as follows:

North Coast Coniferous Forest
The vegetation community occupying the project area remains best described as North Coast Coniferous Forest having a species composition of redwood (Sequoia sempervirens), Douglas-fir (Pseudotsuga menziesii), golden chinquapin (Chrysolepis chrysophyla), tanoak (Nothokithocarpus densiflorus) and Shatterberry (Arctostaphylos nummularia). The understory is dominated by dense undergrowth consisting principally of Vaccinium ovatum and Lithocarpus densiflorus.

Pinus muricata Forest Alliance
Poorer soil beginning immediately to the east of the project area and extending eastward to the County Road is lightly forested and in this area Bishop pine is the dominant tree species. Douglas-fir, golden chinquapin and tanoak are also present in the overstory. The understory is dominated by moderately dense undergrowth consisting principally of Arctostaphylos nummularia, Vaccinium ovatum, Lithocarpus densiflorus and Pinus muricata regeneration. Pinus muricata regeneration is robust and healthy with occurrences concentrated in disturbed areas where site vacancies have been created (adjacent to power line right-of-way for example).

The pine dominated stand extending eastward from the project area appears to generally meet the California Native Plant Society’s (CNPS) definition of a Pinus muricata Forest Alliance. CNPS ranks their Pinus muricata Forest Alliance as a “Global Rarity of G3” and a “State Rarity a S3.2”. CNPS states the following in regards to their rare plant rank 3: “Plants with a California Rare Plant Rank of 3 are united by one common theme – we lack the necessary information to assign them to one of the other ranks or to reject them ...”. CNPS assigns a threat rank of 2 to this habitat type. CNPS states the following in regards to their rare threat rank 2: “0.2—Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)”.

Since this project was initially designed significant modification has been made in the project design so that no Bishop pine trees will be cut and a buffer between the project area and Bishop pine dominated areas can be maintained. Please refer to the Mitigation discussion below for more information.
Riparian Habitat

The project is located on a ridge top far from the primary fluvial system.

To the north a small incised watercourse is located as shown on the report map. A thin intermittent band of riparian vegetation is associated with seasonally wet conditions immediately adjacent to the watercourse channel. A 100 foot buffer was established outward from this riparian habitat. The home site is located so that all associated improvements are located outside this riparian buffer.

To the southwest a small channel was observed. This channel is intermittent and minimal in nature appearing to only conduct overland flow in direct response to significant rainfall. No riparian vegetation or other riparian habitat characteristics are associated with this watercourse. A 100 foot buffer was established outward from this riparian habitat. The home site is located so that all associated improvements are located outside this 100 foot buffer.

No other riparian habitats are associated with the project area.

Considering project characteristics (single family residence on 97 acre lot), gentle slopes and dense vegetation associated with the buffer area and the nature of the resource to be protected no adverse effects to riparian or watershed resources are anticipated as a result of this project.
Mitigation and Disturbance Minimization Measures

Clearing for the home site will require removal of existing vegetation including a scattered overstory of golden chinquapin, tanoak, Douglas-fir and redwood. The understory in the area to be cleared consists of dense thickets of manzanita, huckleberry and tanoak. This area is clearly Northcoast Mixed Conifer Forest habitat. Please refer to the botanical survey summary for additional information concerning plant species located in this area. No riparian habitat is associated with the project area or within 100 feet of the project area (see page 33 Report Map). Review of the project with regard to botanical and biological resources of special concern (See preceding Biological Review and Botanical Survey Discussion) were negative with the exception of the Bishop pine dominated forest extending eastward from the project area.

Based on County Planning Staff input we revisited the project area to delineate those areas occupied by Bishop pine consistent with CNPS Pinus muricata Forest Alliance definitions from those areas occupied by North Coast Mixed Coniferous Forest habitats and develop measures to avoid significant impacts to Bishop pine.

Since this project was initially designed significant modification has been made in the project design so that no Bishop pine trees will be cut and a buffer between the project area and Bishop pine dominated areas can be maintained including:

- Move leach field(s) to western side of house site to a be located in northcoast mixed conifer forest habitat instead of Bishop pine dominated habitat.
- Re-route driveway extension to avoid removal of Bishop pine
- Reduce CalFire fire safe turn around at house from a 50 foot radius to a 40 foot radius to provide buffer to Pinus muricata Forest Alliance habitat.
- Reduce clearing limits along eastern project margin accordingly to provide buffer to Pinus muricata Forest Alliance habitat.

Bishop pine dominates the eastern ridge top portion of this property and gives way to northcoast mixed conifer forest along the break in slope where soil types change. Moving the entire project foot print westward was evaluated as a mitigation measure relative to Pinus muricata Forest Alliance habitat but shifting construction onto steeper slopes or into riparian habitat buffer areas was not, in our view, consistent with the desired least damaging feasible alternative outcome for the location of the residence.

Relocating the leach field westward but within the originally planned domestic grounds envelope combined with reducing the CalFire fire safe turn around at house from a 50 foot radius to a 40 foot radius provides for establishment of a 50 foot buffer between the clearing limits for the house site and Pinus muricata Forest Alliance habitat.

A reduced buffer analysis was conducted (See Reduced Buffer Analysis below) to determine if reducing the standard ESHA buffer from 100 feet to 50 feet would be appropriate in this case. This analysis shows that a 50 foot buffer would be effective in this situation based on:

- on site specific factors such as slope, soil, vegetation, etc.
- project plans, single family residence on 97 acre parcel
- resource to be protected, Bishop pine dominated habitat CNPS “G3”
The project area was redesigned to maintain a 50 foot buffer from Pinus muricata Forest Alliance habitat yet there are several associated appurtenances that are within 50 feet Pinus muricata Forest Alliance habitats. These exceptions to the 50 foot buffer are discussed individually below:

1 Existing Access Road
The existing access road extends approximately 1100 feet from the County Road westward to the vicinity of the land owner's well which is located on the western margin of the Pinus muricata Forest Alliance habitat type.

The existing road has long been in place, used and improved under 1994 Timber Harvest Plan 1-94-337MEN (See Appendix A) by a prior landowner. Continued use of this road poses little threat to adjoining Pinus muricata Forest Alliance habitats. Power is to be undergrounded in this road and this activity will be within the Pinus muricata Forest Alliance habitat area. Trees of this type are known to have root systems extending roughly in balance with their drip line and based on this damage to roots from trenching in the middle of the road is expected to be minimal.

The overall benefit of undergrounding utilities in the center of the existing road including reduced visual impact and reduced fire hazard outweigh costs associated with this activity.

Implementation mitigation:
- No equipment to leave established road surface.
- No excavated spoils to be placed off of established road surface.
- Compact back fill to avoid soft road situations.
- Limit construction to dry and rainless periods.
- Surface road with rock aggregate at completion so that sediment production does not occur.
2 Test Well Utilized as Water Supply
The well drilled by the landowner to establish the availability of water on the parcel was drilled under a permit. The location chosen was one where the drilling rig could access the project area without disturbing existing vegetation or other grading. This test well is located on the western edge of the Pinus muricata Forest Alliance habitat and as such is an activity conducted in exception to the 50 foot Pinus muricata Forest Alliance habitat buffer.

The well is located in a cleared road junction without any affect on adjacent vegetation. The landowner using the well as a temporary water source with water being drawn from the water table far below areas accessible to roots structures associated with vegetative cover. There is no sign of distress in vegetation adjacent to the test well.

Drilling another well outside the Pinus muricata Forest Alliance habitat area and buffer was evaluated as a possible alternative to keeping the existing location. This alternative is not favored for several reasons including:
- Current location minimizes site disturbance associated with water lines and utilities.
- Current location is existing and disturbance associated with drilling is complete.
- Alternative locations are unknown and if water is not found extensive drilling could be necessary and this disturbance would be cumulative.
- Drilling another well is expensive and in our view the economic and environmental costs of looking for water elsewhere are not offset by a benefit of abandoning the functioning well located on the edge of the Pinus muricata Forest Alliance habitat.

Implementation mitigation
- Trenching for water lines etc. to occur only in roadway
- No equipment to leave established road surface.
- No excavated spoils to be placed off of established road surface.
- Compact back fill to avoid soft road situations
- Limit construction to dry and rainless periods.
- Surface road with rock aggregate at completion so that sediment production does not occur.
3 Extension of Driveway from existing road to house site
The existing road extends toward the house site only to the location of the test well as shown on the report map. This location is also the western boundary of the Pinus muricata Forest Alliance habitat. 125 feet of driveway is to be constructed connecting the existing road to the house site. 50 feet of this new driveway crosses the 50 foot habitat buffer established for Pinus muricata Forest Alliance habitat and therefore is an exception to the maintenance of the to the 50 foot Pinus muricata Forest Alliance habitat buffer.

Alternative routes were evaluated to see if access could be provided without any driveway encroachment within the 50 foot Pinus muricata Forest Alliance habitat buffer. Bishop pine covers most of the ridge line east of the house site and this limits opportunities to provide access while completely avoiding this habitat type. One alternative identified and examined was to continue southwesterly on the existing road until departing Pinus muricata Forest Alliance habitat and looping the driveway below the ridge northward to the home site. This route was not considered to be in our view, consistent with the desired least damaging feasible alternative outcome for the location of the driveway because constructed road length would be at least doubled and would cross through the riparian habitat buffer.

Implementation mitigation
• Construct road within flagged limits avoiding all Bishop pine trees
• Maximum road width is limited to that specified in CalFire fire safe regulations
• Trenching for utilities to occur only in roadway
• No equipment to leave flagged road right-of-way
• No excavated spoils to be placed off of established road surface.
• Compact back fill in utility trench to avoid soft road situations
• Limit construction to dry and rainless periods.
• Surface road with rock aggregate at completion so that sediment production does not occur.

The project as redesigned and mitigated as described above is unlikely to have any significant adverse impact on Pinus muricata Forest Alliance habitat. However, since a 50 foot habitat buffer cannot rigorously be complied with in respect to extension of utilities, existing well location and driveway extension the landowner will plant 100 Bishop pine trees in Pinus muricata Forest Alliance habitat areas. Trees will be planted offset from other trees existing or planted a minimum of 10 feet.
Additional Mitigations:

Should any sensitive or special concern species begin to grow or otherwise be discovered in the area of operations then operations should cease and consultation with appropriate Agency Staff is to be sought.

Landscaping on the parcel should avoid use of invasive plants and should ideally consist of native plants compatible with the adjacent plant communities.

Landscaping on the parcel should avoid use of nursery grown Monterey pine (Pinus radiata) and Bishop pine (Pinus muricata) to avoid introduction of additional pathogens that might adversely affect adjacent Pinus muricata Forest Alliance habitats.

The bird breeding season typically extends from February to August. Ideally, the clearing of vegetation and the initiation of construction can be done in the non-breeding season between September and February. If this is the case then no additional surveys should be necessary. If the clearing of vegetation and the initiation of construction cannot be done in the non-breeding season, a qualified person will perform preconstruction breeding bird surveys within 14 days of the onset of construction or clearing of vegetation. If active breeding bird nests are observed, no ground disturbance activities shall occur within a minimum 100-foot exclusion zone. These exclusion zones may vary depending on species, habitat and level of disturbance. The exclusion zone shall remain in place around the active nest until all young are no longer dependent upon the nest. A qualified person will monitor the nest site weekly during the breeding season to ensure the buffer is sufficient to protect the nest site from potential disturbances.

Exterior lighting shall be downcast and shielded such that light does not shine beyond the boundaries of the property.
Pinus muricata Forest Alliance Environmentally Sensitive Habitat Area Reduced Buffer Analysis

Sec. 20.496.020 - ESHA—Development Criteria.

(A) Buffer Areas. A buffer area shall be established adjacent to all environmentally sensitive habitat areas. The purpose of this buffer area shall be to provide for a sufficient area to protect the environmentally sensitive habitat from degradation resulting from future developments and shall be compatible with the continuance of such habitat areas.

- An aggregation of Bishop pine (Pinus muricata) is located on the broad ridgeline extending from Ten Mile Cut-off County Road westward to the break in slope near the area of the proposed residence. The "Pinus muricata Forest Alliance" as defined by the California Native Plant Society (CNPS) is ranked by CNPS as having a "Global Rarity of G3" and a "State Rarity a S3.2". CNPS states the following in regards to their rare plant rank 3: "Plants with a California Rare Plant Rank of 3 are united by one common theme – we lack the necessary information to assign them to one of the other ranks or to reject them. Nearly all of the plants constituting California Rare Plant Rank 3 are taxonomically problematic." CNPS assigns a threat rank of 2 to this habitat type. CNPS states the following in regards to their rare threat rank 2: "0.2: Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)".

- Activity associated with this project as designed and modified will be implemented so that degradation of Bishop pine resulting from development does not occur and will result in the long term continuance of Bishop pine habitat areas. A combination of buffer zones and mitigations are to be utilized so that protection of Bishop pine forests are assured while at the same time allowing for the landowner's constructive use of their property which involves the establishment of a single family residence.

(1) Width. The width of the buffer area shall be a minimum of one hundred (100) feet. Unless an applicant can demonstrate, after consultation and agreement with the California Department of Fish and Game, and County Planning staff, that one hundred (100) feet is not necessary to protect the resources of that particular habitat area from possible significant disruption caused by the proposed development. The buffer area shall be measured from the outside edge of the Environmentally Sensitive Habitat Areas and shall not be less than fifty (50) feet in width. New land division shall not be allowed which will create new parcels entirely within a buffer area. Developments permitted within a buffer area shall generally be the same as those uses permitted in the adjacent Environmentally Sensitive Habitat Area.

As discussed below the project has been modified so that an effective buffer of 50 feet is maintained from Bishop pine forest as shown on the attached map. Within the 50 foot buffer project activity will be limited to the following:

- Use of the existing drilled well as shown on the attached map.
- Use of the existing road as shown on the attached map.
- Construction of 50 feet of driveway connecting the existing road to the building envelope allowing ingress/egress.
- Installation of underground utilities beneath said road.

Standards for determining the appropriate width of the buffer area are as follows:

(a) Biological Significance of Adjacent Lands. Lands adjacent to a wetland, stream, or riparian habitat area vary in the degree to which they are functionally related to these habitat areas. Functional relationships may exist if species associated with such areas spend a significant portion of their life cycle on adjacent lands. The degree of significance depends upon the habitat requirements of the species in the habitat area (e.g., nesting, feeding, breeding, or roosting).

Where a significant functional relationship exists, the land supporting this relationship shall also be considered to be part of the ESHA, and the buffer zone shall be measured from the edge of these lands and be sufficiently wide to protect these functional relationships. Where no significant functional relationships exist, the buffer shall be measured from the edge of the wetland, stream, or riparian habitat that is adjacent to the proposed development.

This buffer zone is not related to wetland, stream or riparian habitat and there are no clear functional relationships between the stand of Bishop pine and adjoining north coast coniferous forest habitats which adjoin them. The primary environmental factor defining the location of the Bishop pine forest is the soil type. Individual Bishop pine trees do occur in the north coast coniferous forest which is typical where forest soils adjoin areas dominated by Bishop pine.

(b) Sensitivity of Species to Disturbance. The width of the buffer zone shall be based, in part, on the distance necessary to ensure that the most sensitive species of plants and animals will not be disturbed significantly by the permitted development. Such a determination shall be based on the following after consultation with the Department of Fish and Game or others with similar expertise:

(i) Nesting, feeding, breeding, resting, or other habitat requirements of both resident and migratory fish and wildlife species;
(ii) An assessment of the short-term and long-term adaptability of various species to human disturbance;
(iii) An assessment of the impact and activity levels of the proposed development on the resource.

Species typically found in Bishop pine dominated habitats are common wildlife species not individually sensitive or protected. Rural residential use as planned is not inconsistent with the continued use of this area as habitat for wildlife. Since an upland habitat type is being evaluated aquatic species are unlikely to be impacted. Bishop pine itself has a long history of successful co-habitation with rural residential use. Much has been said about this species serotinous...
cones and the role fire places in regeneration of the species. While wildfire is clearly linked to this species survival strategy regeneration of Bishop pine in unburned areas is widespread. It is noted that vigorous Bishop pine regeneration is present in this area.

The planned single family residence located on a 95 acre parcel will not conceivably result in elevated levels of activity that would significantly adversely affect this resource.

(c) Susceptibility of Parcel to Erosion. The width of the buffer zone shall be based, in part, on an assessment of the slope, soils, impervious surface coverage, runoff characteristics, and vegetative cover of the parcel and to what degree the development will change the potential for erosion. A sufficient buffer to allow for the interception of any additional material eroded as a result of the proposed development should be provided.

This project has a low erosion potential due to gentle slopes (<10% typically), ridge top location and absence of watercourses. The project has a low potential for sediment production due to small project size and project design which includes rock aggregate on roads and mulching of soils disturbed by construction activity around the building site.

(d) Use of Natural Topographic Features to Locate Development. Hills and bluffs adjacent to ESFA shall be used, where feasible, to buffer habitat areas. Where otherwise permitted, development should be located on the sides of hills away from ESFA. Similarly, bluff faces should not be developed, but shall be included in the buffer zone.

There are no hills, bluffs or other topographic features which could serve as buffers to stands of Bishop pine associated with this project. The area of the residence actually slopes slightly away from the Bishop pine stand. Gentle slopes associated with the project area and buffer areas are considered to be a positive factor.

(e) Use of Existing Cultural Features to Locate Buffer Zones. Cultural features (e.g., roads and dikes) shall be used, where feasible, to buffer habitat areas. Where feasible, development shall be located on the side of roads, dikes, irrigation canals, flood control channels, etc., away from the ESFA.

Cultural features such as roads or dikes are not associated with this project. Concentrations of Bishop pine are closely associated with soil type in this area.

(f) Lot Configuration and Location of Existing Development. Where an existing subdivision or other development is largely built-out and the buildings are a uniform distance from a habitat area, at least that same distance shall be required as a buffer zone for any new development permitted. However, if that distance is less than one hundred (100) feet, additional mitigation measures (e.g., planting of native vegetation) shall be provided to ensure additional protection. Where development is proposed in an area that is largely undeveloped, the widest and most protective buffer zone feasible shall be required.

Rural residential use occurs all along Ten Mile County Road which traces the main ridge in this area. The uplifted marine terrace that forms the ridge often supports nutrient poor soils that support aggregations of Bishop pine. Residential use in these areas typically occurs with no offset from Bishop pine. My experience which includes 60+ years of cohabitating with Bishop pine in rural residential settings is that this species does well in the rural residential environment.

(g) Type and Scale of Development Proposed. The type and scale of the proposed development will, to a large degree, determine the size of the buffer zone necessary to protect the ESFA. Such evaluations shall be made on a case-by-case basis depending upon the resources involved, the degree to which adjacent lands are already developed, and the type of development already existing in the area.

The planned single family residence and associated infrastructure located on a 95 acre property is considered to be a very modest type of development in terms of both scale and impact. A larger buffer is not warranted based on the nature of the resource to be buffered or on the type and scale of the project planned.

(2) Configuration. The buffer area shall be measured from the nearest outside edge of the ESFA (e.g., for a wetland from the landward edge of the wetland, for a stream from the landward edge of riparian vegetation or the top of the bluff).

The buffer area is measured from the nearest edge of areas dominated by Bishop pine, Arctostaphylos and Vaccinium consistent with CNPS descriptions of Pinus muricata forest alliance.

(3) Land Division. New subdivisions or boundary line adjustments shall not be allowed which will create or provide for new parcels entirely within a buffer area.

No new subdivision or boundary line adjustment is proposed.

(4) Permitted Development. Development permitted within the buffer area shall comply at a minimum with the following standards:

(a) Development shall be compatible with the continuance of the adjacent habitat area by maintaining the functional capacity, their ability to be self-sustaining and maintain natural species diversity.

Avoidance of the Bishop pine dominated area as currently planned and mitigated accomplishes this objective by locating the residence in northcoast mixed coniferous forest type, use of buffers and locating other project infrastructure (utilities power and water) under existing roads in Bishop pine dominated areas.

(b) Structures will be allowed within the buffer area only if there is no other feasible site available on the parcel.

No structures are to be built in the buffer area.

(c) Development shall be sited and designed to prevent impacts which would degrade adjacent habitat areas. The determination of the best site shall include consideration of drainage, access, soil type, vegetation, hydrological characteristics, elevation, topography, and distance from natural stream channels. The term "best site" shall be defined as the site having the least impact on the maintenance of the biological and physical integrity of the buffer strip or critical habitat protection area and on the maintenance of the hydrologic capacity of these areas to pass a one hundred (100) year flood without increased damage to the coastal zone natural environment or human systems.
As described in the Biological Assessment report for this project the project has been designed and mitigated to meet these objectives.

(d) Development shall be compatible with the conservation of such habitats areas by maintaining their functional capacity and their ability to be self-sustaining and to maintain natural species diversity.

As previously described this project has been designed, modified and mitigated to provide the maximum possible avoidance of Bishop pine dominated areas.

(g) Structures will be allowed within the buffer area only if there is no other feasible site available on the parcel. Mitigation measures, such as planting riparian vegetation, shall be required to replace the protective values of the buffer area on the parcel, at a minimum ratio of 1:1, which are lost as a result of development under this solution.

No structures are to be built in the buffer area. No riparian areas are associated with the project area.

(f) Development shall minimize the following: impervious surfaces, removal of vegetation, amount of bare soil, noise, dust, artificial light, nutrient runoff, air pollution, and human intrusion into the wetland and minimize alteration of natural landforms.

No wetland is associated with this project. This single family residence located away from any riparian habitat one gentle ground in a ridge top setting is located, designed and mitigated so that creation of impervious surfaces, removal of vegetation, amount of bare soil, noise, dust, artificial light, nutrient runoff, air pollution and alteration of natural landforms is minimized.

(g) Where riparian vegetation is lost due to development, such vegetation shall be replaced at a minimum ratio of one to one (1:1) to restore the protective values of the buffer area.

No riparian vegetation will be lost due to this project.

(h) Aboveground structures shall allow peak surface water flows from a one hundred (100) year flood to pass with no significant impediments.

No watercourses or other drainage ways are associated with the project area.

(i) Hydraulic capacity, subsurface flow patterns, biological diversity, and/or biological or hydrological processes, either terrestrial or aquatic, shall be protected.

No wetlands, watercourses or other riparian areas are associated with this project. This single family residence located away from any riparian habitat one gentle ground in a ridge top setting is located, designed and mitigated so that potential for disruption of subsurface flow patterns, biological diversity, and/or biological or hydrological processes, either terrestrial or aquatic are minimized.

(j) Priority for drainage conveyance from a development site shall be through the natural stream environment zones, if any exist, in the development area. In the drainage system design report or development plan, the capacity of natural stream environment zones to convey runoff from the completed development shall be evaluated and integrated with the drainage system wherever possible. No structure shall intercept the flow of groundwater within a buffer strip. Foundations shall be situated with the long axis of interrupted impermeable vertical surfaces oriented parallel to the groundwater flow direction. Piers may be allowed on a case by case basis.

Design features and concerns itemized above are not applicable to the single family residence planned for the ridge top location.

(k) If findings we made that the effects of developing an ESHA buffer area may result in significant adverse impacts to the ESHA, mitigation measures will be required as a condition of project approval. Noise barriers, buffer areas in permanent open space, and dedication for erosion control, and wetland restoration, including off-site drainage improvements, may be required as mitigation measures for developments adjacent to environmentally sensitive habitats.

We believe that based on the project's design and the nature of the habitat type being buffered that no significant adverse effects to bishop pine dominated areas will occur as a result of the construction of this single family residence.
Jim and Susan Lewis 2019
27201 Ten Mile Road
Report Map 1

Area of Development
Driveway Extension (New Construction)
Well
40 Foot Turn Around Radius
Existing Seasonal Road
Potential Future Well Replacement Location
Pinus muricata Forest Alliance Buffer (50 Feet)
Potential Pinus muricata Alliance
Building Foot Print
Biological Survey Area
Riparian Habitat Buffer
Lewis_Property

Tree Map Key
Bishop pine 100% Retention
Bishop pine snag 100% Retention
Redwood to be cut
Redwood to be Retained

Relocated Leach Field

Portion Section 26, T12N, R16W, MDB&M
5 foot contour interval
Contours generated from USGS 3DEP 2018 LiDAR
PBS Received 9-19-2019

Note: Builder to stage materials in Turn Around Area Shown on Map

1:1,000
APN 029-462-01
Jim and Susan Lewis 2019
27201 Ten Mile Road
Report Map 1

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PBS Received 9-19-2019
Utilities to be undergrounded in existing road from Ten Mile Road to House Site.
Utilities to be undergrounded in existing road from Ten Mile Road to House Site
Access road – Bishop pine are regenerating well in this area.

Well and appurtenances neatly placed adjacent to road.
Bishop Pine Photo Record

Bishop pine map point 1

Bishop pine map point 3

Bishop pine map point 2

Bishop pine map point 4
Bishop pine map point 5 with 2 snags

Bishop pine map point 6 and one snag
Location previously mis-mapped actual location as currently mapped Report Map 1

Bishop pine snags map point 7

Bishop pine map point 8 and snag
<table>
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<th>Map Point</th>
<th>Species / Disposition</th>
<th>Notes</th>
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<tbody>
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<td>26&quot; x 95' young bp have mistletoe</td>
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<tr>
<td>1</td>
<td>Bishop pine no cut</td>
<td>21&quot; x 95'</td>
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<td>2</td>
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<td>21&quot; x 88'</td>
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<td>4</td>
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<td>18&quot; x 79'; also 3 Bishop pine snags in this area</td>
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<tr>
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<td>13&quot; x 88'</td>
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<td>24&quot;</td>
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<tr>
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</tr>
<tr>
<td>27</td>
<td>redwood no cut</td>
<td>24&quot;, 14&quot;</td>
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</table>
Soils and Topography
The project area is located on the western crest of the ridge which divides the Garcia River watershed from coastal tributaries specifically the Schooner Gulch watershed in this instance. Elevation in the project area range between 1,040’ and 1,080’ above Mean Sea Level (MSL) on gently sloping terrain with a Westerly aspect.

The soils types present in this area include [174] Irmulco-Tramway Complex, [159] Havensneck sandy loam and [177] Iversen sandy loam as listed in “Soil Survey of Mendocino County, California, Western Part”. Parent material is that of the Coast Belt Franciscan complex which is a mélange assemblage consisting of graywacke and sandstone. These soils were formed from marine sediments and potentially influenced by eolian sands deposited on terrace platforms. None of these soils are listed as hydric soils by the United States Department of Agriculture Natural Resources Conservation Service (NRCS) https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrceprd1316620.html. Sanitary engineers have evaluated soil profiles associated with the project area and found them to be compatible with standard leach field designs.
Soils Type Key

- [159] Havensneck sandy loam
- [174] Irmulco-Tramway Complex
- [177] Iversen sandy loam

Portion of Section 26, T12N, R16W, MDB&M
Eureka Hill 7.5' USGS Quad

Jim and Susan Lewis 2018
27201 Ten Mile Road
CNDBB Map

APN 027-462-01
Project Area
Soil Type
Existing Seasonal Road
Utility Line
159—Havensneck sandy loam, 15 to 30 percent slopes
This well drained soil is moderately deep to weathered bedrock. It is on ridgetops and the upper side slopes of coastal hills and mountains. It formed in material derived from interlayered sandstone and shale. The vegetation is mainly bishop pine and manzanita. Elevation ranges from 400 to 1,100 feet. The average annual precipitation is 45 to 55 inches, the average annual air temperature is about 54 degrees F, and the average frost-free period is 250 to 330 days.

Typically, the surface is covered with a mat of litter about 2 inches thick. The surface layer is yellowish brown and pale brown sandy loam about 7 inches thick. The upper 14 inches of the subsoil is pink sandy loam. The lower 11 inches is reddish yellow sandy clay loam. Soft sandstone and shale bedrock is at a depth of about 32 inches.

Included with this soil in mapping are small areas of Fishrock, Iversen, and Tramway soils. Also included are small areas that have slopes of 9 to 15 percent or 30 to 50 percent. Included areas make up about 15 percent of the total acreage of the unit. The percentage varies from one area to another.

Permeability is moderate in the Havensneck soil. Available water capacity is low. The effective rooting depth is limited by weathered bedrock at a depth of 20 to 40 inches. Surface runoff is rapid, and the hazard of water erosion is moderate if the surface is left bare.

This unit is used for homesite development, limited timber production, wildlife habitat, or watershed.

The main limitations affecting homesite development are the slope and the moderate depth to bedrock. The most favorable building sites are in the less sloping areas of this unit. Excavations for roads and buildings increase the hazard of erosion.

Revegetating disturbed areas around construction sites as soon as possible helps to control erosion. The design of access roads should control surface runoff and help to stabilize cut slopes. The moderate depth to bedrock increases the possibility of failure of septic tank absorption fields. The slope is also a concern affecting the installation of septic tank absorption fields. Alternative systems may be needed.

Bishop pine, Douglas-fir, and redwood are the main tree species on this unit. On the basis of a 100-year site curve, the mean site index for Douglas-fir is 102 and that for redwood is 101. The potential annual production from a fully stocked stand of Douglas-fir is 185 board feet per acre. Areas that are subject to strong, persistent winds, which limit tree height, are less productive than other areas of this unit. Trees of limited extent include Pacific madrone and tanoak. Stands of conifers commonly are small and widely scattered.

The main limitation affecting the harvesting of timber is the hazard of erosion in the steeper areas and seasonal wetness. Disturbance of the protective layer of duff can be minimized by the careful use of either wheeled and tracked equipment or cable yarding systems. Establishing plant cover on steep cut and fill slopes reduces the hazard of erosion.

Using wheeled and tracked equipment when the soil is wet produces ruts, compacts the surface, and can damage the roots of trees. Rock for construction of roads is generally not available in areas of this unit.

Revegetation can be accomplished by planting Douglas-fir or redwood seedlings. If seed trees are present, natural reforestation of cutover areas by Douglas-fir occurs infrequently. Redwood can regenerate by sprouting after cutting. These sprouts seldom provide optimum stocking.

Among the common forest understory plants are bishop pine, tanoak, California huckleberry, salal, and manzanita.

The capability classification is IVe-1(4), nonirrigated.
174—Irmulco-Tramway complex, 50 to 75 percent slopes
This map unit is on hills. The vegetation is mainly redwood and Douglas-fir. Elevation ranges from 10 to 800 feet. The average annual precipitation is 40 to 70 inches, the average annual air temperature is about 53 degrees F, and the average frost-free period is 290 to 365 days.
This unit is about 45 percent Irmulco loam and 35 percent Tramway loam. The Irmulco and Tramway soils occur as areas so intricately intermingled that it was not practical to map them separately at the scale used.
Included with these soils in mapping are small areas of Vandamme, Dehaven, and Hotel soils and small areas of soils that have been altered by skid trails, landings, and roads. Also included are small areas that have slopes of 30 to 50 percent or 75 to 99 percent. Included areas make up about 20 percent of the total acreage of the unit. The percentage varies from one area to another.
The Irmulco soil is deep to weathered bedrock and is well drained. It formed in material derived from sandstone. Typically, the surface is covered with a mat of leaves and twigs about 1 inch thick. The surface layer is pale brown loam about 6 inches thick. The subsoil is light brown, pink, and reddish yellow loam about 54 inches thick. Soft, fractured sandstone is at a depth of about 60 inches.
Permeability is moderate in the Irmulco soil.
Available water capacity is high. The effective rooting depth is limited by weathered bedrock at a depth of 40 to 60 inches. Surface runoff is very rapid, and the hazard of water erosion is very severe if the surface is left bare.
The Tramway soil is moderately deep to weathered bedrock and is well drained. It formed in material derived from sandstone. Typically, the surface is covered with a mat of leaves and twigs about 2 inches thick. The surface layer is light brownish gray loam about 7 inches thick. The upper 5 inches of the subsoil is pale brown loam. The lower 16 inches is light yellowish brown clay loam. Soft sandstone bedrock is at a depth of about 28 inches.
Permeability is moderate in the Tramway soil.
Available water capacity is low. The effective rooting depth is limited by weathered bedrock at a depth of 20 to 40 inches. Surface runoff is very rapid, and the hazard of water erosion is very severe if the surface is left bare.
This unit is used for timber production or as watershed.
Redwood and Douglas-fir are the main tree species on this unit. On the basis of a 100-year site curve, the mean site index for redwood is 165 on the Irmulco soil and 141 on the Tramway soil. On the basis of a 100-year site curve, the mean site index for Douglas-fir is 191 on the Irmulco soil and 161 on the Tramway soil. The potential annual production from a fully stocked stand of redwood is 1,545 board feet per acre on the Irmulco soil and 1,130 board feet Mendocino County, California, Western Part 83 per acre on the Tramway soil. Trees of limited extent include tanoak, grand fir, Pacific madrone, western hemlock, and red alder.
The main limitations affecting the harvesting of timber are the slope, the hazard of erosion, and seasonal wetness. When timber is harvested, the slope limits the use of wheeled and tracked equipment in skidding operations. Cable yarding systems generally cause less disturbance of the soil. Unless adequate plant cover or water bars are provided, steep yarding paths, skid trails, and firebreaks are subject to rilling and gullying. Harvesting systems that lift logs entirely off the ground minimize the disturbance of the protective layer of duff. Establishing plant cover on steep cut and fill slopes reduces the hazard of surface erosion. Roads may fail and landslides may occur following deep soil disturbance in the steeper areas. Roads are dusty when dry. Surface treatment may be desirable during periods of heavy use. Unsurfaced roads and skid trails are slippery when wet. They may be impassable during rainy periods. Suitable surfacing of roads is needed for use during wet seasons. Rock for construction of roads generally is not available in areas of this unit.
Plant competition is a concern affecting the production of timber. When openings are made in the canopy, invading brushy plants that are not controlled can delay the establishment of seedlings.
Reforestation can be accomplished by planting redwood and Douglas-fir seedlings. Natural reforestation by redwood sprouts and Douglas-fir seed trees provides variable stocking results. Both overstocked and understocked areas are common. Among the common forest understory plants are swordfern, rhododendron, California huckleberry, and oxalis.
The capability classification is VIIe(4), nonirrigated.
Mendocino County, California, Western Part

177—Iversen sandy loam, 2 to 15 percent slopes

This well drained soil is moderately deep to weathered bedrock. It is on ridgetops and the upper side slopes of coastal hills and mountains. It formed in material derived from coarse grained sandstone. The vegetation is mainly Douglas-fir and redwood. Elevation ranges from 600 to 1,300 feet. The average annual precipitation is 45 to 55 inches, the average annual air temperature is about 54 degrees F, and the average frost-free period is 250 to 320 days.

Typically, the surface is covered with a mat of litter about 1 inch thick. The surface layer is light gray sandy loam about 7 inches thick. The upper 13 inches of the subsoil is strong brown clay. The lower 15 inches is brownish yellow clay loam. Soft sandstone bedrock is at a depth of about 35 inches.

Included with this soil in mapping are small areas of Havensneck soils, small areas of soils that are deep or very deep to bedrock, and soils that have a subsoil of loam. Also included are small areas that have slopes of 15 to 30 percent. Included areas make up about 15 percent of the total acreage of the unit. The percentage varies from one area to another.

Permeability is slow in the Iversen soil. Available water capacity is moderate. The effective rooting depth is limited by weathered bedrock at a depth of 20 to 40 inches. Surface runoff is slow or medium, and the hazard of water erosion is slight or moderate if the surface is left bare.

This unit is used for homesite development, for timber production, or as watershed.

The main limitations affecting homesite development are the slope, low strength, the moderate depth to bedrock, and the slow permeability of the subsoil. Excavations for roads and buildings increase the hazard of erosion. Revegetating disturbed areas around construction sites as soon as possible helps to control erosion. The design of access roads should control surface runoff and help to stabilize cut slopes. The design of buildings and roads should offset the limited ability of the soil to support a load. The moderate depth to bedrock and the restricted permeability increase the possibility of failure of septic tank absorption fields. Alternative systems may be needed, such as those in which leach lines are placed in a mound above the soil surface.

Douglas-fir, redwood, and tanoak are the main tree species on this unit. On the basis of a 100-year site curve, the mean site index is 87 for Douglas-fir and 127 for redwood. The potential annual production from a fully stocked stand of Douglas-fir is 185 board feet per acre. Areas that are subject to strong, persistent winds, which limit tree height, are less productive than other areas of this unit. Trees of limited extent include Pacific madrone, chinkapin, and bishop pine.

The main limitations affecting the harvesting of timber are the erosion hazard and seasonal wetness. The surface layer is subject to sheet and rill erosion when exposed. Disturbance of the protective layer of duff can be minimized by the careful use of either wheeled and tracked equipment or cable yarding systems. Establishing plant cover on steep cut and fill slopes reduces the hazard of erosion. Another limitation is low bearing strength when the soil is saturated. Using wheeled and tracked equipment when the soil is wet produces ruts, compacts the surface, and can damage the roots of trees.

Unsurfaced roads and skid trails are slippery and soft when wet. They may be impassable during rainy periods. The design of roads should offset the limited ability of the soil to support a load. Roads on this soil are dusty when dry. Surface treatment may be desirable during periods of heavy use. Rock for construction of roads is generally not available in areas of this unit.

Plant competition is a concern affecting the production of timber. When openings are made in the canopy, invading brushy plants that are not controlled can prevent the establishment of seedlings. The surface layer has a low capacity to hold nutrients and water. As a result, the establishment of seedlings may be difficult. Reforestation can be accomplished by planting Douglas-fir or redwood seedlings. If seed trees are present, natural reforestation of cutover areas by Douglas-fir occurs infrequently. Redwood can regenerate by sprouting after cutting. These sprouts seldom provide optimum stocking.

Among the common forest understory plants are tanoak, brackenfern, salal, California huckleberry, and manzanita.

The capability classification is IIle-1(4), nonirrigated.
Scoping
Scoping tables were created for special-status plants and wildlife with the potential to occur on the area of interest by reviewing the most up-to-date species lists from CDFW, CNDDB and CNPS. Lists of species from the various databases and resources that have the potential to occur within the area of interest have been included in the appendixes. No special status wildlife species were identified during field biological surveys. Suitable habitat for special status wildlife does occur within the survey area. Descriptions below are for State and Federally Endangered or Threatened wildlife species with potential to occur in the area of interest.

Accipiter cooperii

The Cooper’s hawk is a forest hawk widely distributed throughout the United States year round. This species is present throughout most of California and is a fairly common accipiter in the coastal redwood eco-region. Cooper’s hawks feed on a variety of small animals including small mammals, rodents, birds, reptiles and amphibians. Cooper’s hawks frequently hunt in broken forested areas and in semi-open meadows and fields. This species may nest in either coniferous or deciduous forests where suitable platform structures to support a nest exist and near water sources. When in predominately coniferous forests, nests are typically located below the lowest live limbs. Cooper’s hawks also occur in urban parks and residential areas. Cooper’s hawks are highly adaptable and quickly acclimatize and thrive in human altered environments. Like many raptors, Cooper’s hawk populations were highly impacted by organochlorine pesticides. Since the ban on the use of DDT, their populations appear stable.

No nesting structures were observed by in the Area of interest that are attributable to this species. With the relative abundance and wide-spread distribution of this species, as well as standard WLPZ protection measures in the most likely habitat, no significant adverse impacts are expected.

Literature:


Accipiter gentilis

The northern goshawk is a forest hawk with a Holarctic distribution, occupying a wide variety of temperate and boreal forests in North America (Squires and Reynolds 1997). In California, northern goshawks occur in the Klamath, Cascade, Sierra Nevada, and North Coast Ranges. This species is listed as a Species of Special Concern by CDFW and is a Board of Forestry Sensitive Species.

At large spatial scales, the goshawk is a forest habitat “generalist”(e.g. occurring in a variety of coniferous, deciduous, and mixed forest types). Habitat requirements at the stand level are fairly narrow. Regardless of forest type, goshawks nest in large trees in forest stands containing a high density of large trees and high canopy closure. Nest sites tend to be located near water on north or west facing, gentle to moderate slopes and near small forest openings or habitat edges. Canopy overstory depth and percent shrub cover were the best variables in predicting goshawk occupancy in nesting stands in Washington. At the landscape scale, these researches found the best
variables predicting occupancy was proportion of late seral forest (60-75% of forests with >70% canopy closure of conifers and >10% of the canopy in trees >21 in.) and reduced landscape heterogeneity. No information on nesting habitat in coastal redwood forests is currently available, partly because of the low densities at which goshawks are found in this forest type.

Northern goshawks are generally associated with mature, unmanaged forests, although they will occupy residual mature stands in managed forests if the required habitat components are present. The typical suitable nesting habitat condition at ten nests in northwest California included a mature Douglas-fir stand within a young growth Douglas-fir tract with a scattered hardwood component.

Telemetry studies suggest that goshawks prefer to forage in areas with large trees, high basal area, and high canopy cover. However, goshawks have also been observed foraging in forest openings and clear-cuts. Goshawks in Nevada will forage in open sagebrush away from trees.

The lack of historical records in the coastal redwood region suggests that goshawks occurred there in low densities, perhaps due to the dense understory conditions typically found in this eco-region. Goshawks are also infrequently found on the Oregon Coast Range, which may be due to the dense understory vegetation occurring in that eco-region. The plan area is not believed to be habitat for the goshawk, due primarily to the density of the understory vegetation, relatively high densities of smaller conifer and hardwoods, and high landscape heterogeneity.

Reported References:


*Accipiter striatus*  
**Sharp Shinned Hawk**

The sharp shinned hawk is a forest hawk widely distributed year-round throughout much of North America. This species is present throughout the majority of California and is a fairly common accipiter in the coastal redwood eco-region. Nesting requirements usually include small or moderate-sized trees in coniferous or coniferous-hardwood mixed stands with dense branches, sparse ground cover and near water, though this is not exclusive (Wheeler 2003). The species may forage in open areas near the forests edge, in the upper canopy of tall trees, or beneath the canopy in small trees (Wheeler 2003).

No nesting structures were observed during extensive fieldwork conducted during plan preparation in the Area of interest that may be attributable to this species. With the relative abundance and widespread distribution of this species, the maintenance forest edges suitable for foraging, as well as standard WLPZ protection measures in the most likely habitat, no significant adverse impacts are expected.

Literature:


*Agelaius tricolor*  
**Tricolored Blackbird**

The tricolored blackbird is a year-round resident and its distribution in the United States is mostly restricted to California. It is considered locally common throughout the central valley and in coastal areas south of Sonoma County. This species is listed as a Species of Special Concern by the CDF&W. Tricolored blackbirds are associated with emergent wetlands for nesting and foraging. Nests are usually located in dense grasses, cattails, or dense shrubs near fresh water sources. Tricolored blackbirds are ground foragers, feeding on insects, grains, and weed seeds. Major threats to this species include urban development and wetland destruction. As the project doesn't propose any activity in riparian areas and will maintain upslope stands of conifers, no adverse impacts are expected for this species.

*Aquila chrysaetos*  
**Golden Eagle**

Golden eagles are widely distributed across North America during summer months and are year round residents throughout much of the western United States. The golden eagle is sparsely distributed throughout most of California, occupying primarily mountain and desert habitats. The largest populations in California are found in the interior Coast Ranges, particularly south of San Francisco Bay, and in the Great Basin habitats of northeastern California. Although they nest on the perimeters of the Central Valley in oak woodland habitats, none are known from the valley itself, with the exception of a historically active site on the Sutter Buttes. The lowest densities appear to occur in the Coastal Redwood eco-region. This species is listed as a Species of Special Concern by the CDF&W and a Board of Forestry Sensitive Species.

Golden eagle territories typically consist of a group of 1-13 nests and a surrounding hunting range. Golden eagles construct their nests on cliff ledges, on high rocky outcrops, or in large trees. In the interior Coast Ranges, tree nests are more commonly used. In the Great Basin and southern California desert regions, cliff-nesting habitat is more
available and is more commonly used by nesting eagles. Grassland, oak savanna, and open woodland and chaparral habitats provide suitable foraging habitat for golden eagles. Golden eagles are perch and aerial foraging opportunists with their diet consisting mainly of small mammals including jackrabbits, hares, and squirrels, such as the California ground squirrel and Belding’s ground squirrel (in northeastern California). In some regions, game birds and waterfowl are an important food source during the winter. Because cattle grazing promotes large populations of ground squirrels, open, grazed rangelands are also highly compatible golden eagle foraging habitat.

In western North America, the golden eagle population is estimated at 100,000 birds. Although populations in Alaska and Canada appear stable, some small but steady regional declines have been reported in southern California due to urbanization and in the intermountain West due to widespread fires altering foraging habitat for jackrabbits. However, declines in productivity have not been observed.

No golden eagle nests are known to occur in the planning area. Golden eagles are known to nest in Mendocino County, east of the planning area and along some of the major drainages such as the Navarro River. The Biological Assessment Area is generally considered too densely forested to support nesting golden eagles. However, because the species is wide-ranging, individuals may seek out foraging opportunities in grazing areas in the Biological Assessment Area, although this is unlikely. Because the plan will maintain suitable perch trees in timbered stands within WLPZ’s and adjacent areas, no significant adverse impacts are expected.

Literature:


**Ardea herodias**  
**Great Blue Heron**

Great blue heron range throughout North America except for extremely high latitudes and elevations. This species is found in a variety of aquatic habitat including salt and freshwater marshes, estuaries, mudflats, lagoons, lakes, rivers, and flooded fields. This species is listed as a Board of Forestry Sensitive Species.

Great blue herons nest from late February to July. Nesting usually occurs colonially or solitary in secluded groves of live or dead trees near shallow-water feeding areas. Throughout much of the species’ range, rookeries are found in riparian conifer and hardwood forests, usually in the tallest trees or shrubs available.

In the coastal redwood eco-region, great blue herons are thinly scattered over many aquatic habitats, including coastal rivers, forest ponds, lowland marshes, bottomland pastures, coastal bays, and lagoons (Harris 1991). One known rookery occurs near the mouth of the Ten Mile River. Other incidental sightings of great blue herons along Big River are common and blue herons can be observed at McGuire’s Pond. No rookeries have been observed or recorded in the Biological Assessment Area. No significant adverse impacts are expected.

Literature:

Brachyramphus maramoratus

Marbled Murrelet

Marbled murrelets (hereafter murrelets) are a small near-shore seabird distributed from Alaska to northern California. In California, murrelets occur from the Oregon border to the Santa Cruz Mountains. Although marbled murrelets live primarily in near-shore marine environments, during the nesting season they fly inland to nest in low-elevation old-growth and mature coniferous forests. Murrelets are listed as Federally Threatened, State Endangered, and are a Board of Forestry Sensitive Species.

The murrelet nesting period begins in late March, and most young fledge by mid-September. Murrelets incubate only one egg in each nesting attempt, however, there is some evidence that murrelets in California and Oregon may try to re-nest after a failed nesting attempt or may even try two clutches. Murrelets do not construct their nests, but use wide horizontal limbs located in the canopies of old growth or second growth coniferous forests as a nesting platform. Although most nests have been located in conifers, one nest was recently located in a hardwood in British Colombia.

The majority of existing data indicate that murrelets are found primarily in old-growth or mature forest conditions. Throughout its range, excluding Alaska, murrelet habitat can be generally characterized on several spatial scales. At the site (stand) scale the best variables predicting site occupancy are platform density, number of platform trees, greater tree heights and canopy complexity (including number of canopy layers), larger tree diameters, densities of large trees, proximity to other occupied sites, elevation, and slope. In California, the best predictors of stand occupancy were large trees (>39 in. DBH), low elevation slopes, and proximity to streams. In Douglas-fir stands in southern Oregon, murrelets mostly occupied stands in low-elevation slopes with west facing aspects. In both states, cool temperatures and high rainfall were found to be important climatic variables.

The only known study conducted at the microsite scale in California occurred in the Santa Cruz Mountains in Central California. Murrelets in this study area selected forested areas with greater basal area of trees >47 in. DBH and were located lower on slopes. Nest areas were also closer to streams; however, this variable and position on slope are likely highly correlated. In a study combining data from Washington and Oregon, including data from the Klamath Mountains in southwest Oregon, murrelets select areas within sites exemplified by many platform trees, high platform density, larger platforms, more moss, more horizontal cover, and increased flight access, including distance to edges.

At the nest tree scale, average nest tree characteristics in California appear to be similar to those found in Oregon and Washington with the exception that the majority of nest trees in California have been found in coast redwood. Nest tree characteristics may be summarized as follows:

- Located near openings (natural or man-made) in the canopy for access.
- Large potential nest platforms
- Substrate for nest cup
- Horizontal and/or vertical cover over nest limb
- Sufficient tree heights for murrelet take offs and stall landings

Nest limb descriptions in California show murrelets using large limbs with significant substrate depths and overhead cover. Habitat selection studies in Washington and Oregon confirmed that murrelets overwhelmingly select nest limbs with greater platform widths, extensive moss cover, greater substrate depths, and a high percentage of vertical
cover. As these variables appear biologically meaningful, it is logical to infer that they may be equally important for nesting murrelets in California.

Although there are several recorded instances of murrelets using a residual tree in otherwise younger stands for nesting, these residual trees are located in watersheds where other occupied sites are present, such as the residual tree in Big Creek Basin, Santa Cruz Mountains and the nest tree located in Alder Creek on Mendocino Redwood Company property. The Alder Creek tree is also located approximately 650 ft from suitable habitat, although occupancy status of this habitat is not yet known. Several researchers have suggested that use of residual trees is more likely if the stand is located near suitable old growth habitat (within 200 m.) and when the residuals are clustered within the stand. Use of residuals may also be more likely if they are located in watersheds where other occupied sites exist. Although reproductive success in these residuals is not well known, the murrelet nest located in the Big Creek Basin residual tree apparently failed. Landscape level studies have found that occupied sites across the species range are located in closer proximity to other occupied sites.

Because so few murrelet occupied sites have been found on managed forests in California, our understanding of the microhabitat requirements of the bird changes, as new occupied sites are located. The discovery of more nest and occupied sites will assist in the determination of the range and variability of microhabitat requirements of nesting marbled murrelets. The nests that have been measured across the species range (excluding Alaska) suggest that the number of potential nest sites on trees may one of the best predictors of stand occupancy. Murrelets require a broad flat surface (referred to as a platform) on a large lateral limb or other lateral structure; large lateral limbs are usually found on trees with larger diameters and/or on older-aged trees. Potential nest platforms include mistletoe blooms, deformed limbs, and areas where a tree may have been damaged.

Surveys for murrelets are currently required in all stands that support potential habitat. Here, potential habitat is defined as mature, old growth, or younger coniferous forests with multiple residual conifers in smaller clumps, which have deformations or other structures suitable for nesting. Although this definition is general, it encompasses some of the new information on murrelet nesting, including documented activity in younger forests (40-80 years) in the Oregon coast range and sites found in 1995 along Alder Creek. Nonetheless, nearly all marbled murrelet nest trees have been located in old growth and mature stands or stands with old-growth characteristics.

Marbled murrelet habitat was not found to be present within the Area of interest. Given the lack of habitat adverse impacts to this species are not expected as a result of the continued operation of this tree farm.

Literature:


*Casmerodius albus*  
Great Egret

Great egrets range throughout the United States during summer months except for extremely high latitudes and elevations. In California, great egrets occur as year round residents in the Sacramento Valley and along the coast in the north. This species is listed as a Board of Forestry Sensitive Species.

Great egrets are large, colonially nesting water birds that feed on fish, snakes, amphibians, snails, crustaceans, insects, and small mammals. This species is found in a variety of aquatic habitat including salt and freshwater marshes, estuaries, mudflats, lagoons, lakes, rivers, and flooded fields.

Great egrets nest in groves of large trees, usually near water, and often-in mixed colonies with great blue herons. Because great egrets are sensitive to disturbance during nesting, rookeries usually occur in isolated locations. Great egrets can be found foraging throughout the year in coastal lagoons, saltwater marshes, tidal mudflats, bays, estuaries, freshwater marshes, irrigation canals, flooded fields, and slow-moving water around lakes and streams.

Breeding occurs from March to July. Breeding occurs primarily in the Central Valley, the Sacramento-San Joaquin Valley Delta, around San Francisco Bay, and along the central coast. Additional nesting colonies occur around Humboldt Bay, on the Modoc Plateau, near the Salton Sea, and along the Colorado River. Great egrets disperse along the entire California coast during the winter.

Great egrets were hunted almost to extinction for their plumage in the late 19th and early 20th centuries. With passage of the Migratory Bird Act, populations increased dramatically throughout their range. The use of organochloride pesticides (DDT) caused population declines through eggshell thinning leading to lower reproductive success. As with most species in this Family, the greatest threat to great egrets today is localized agricultural expansion and wetland drainage for urbanization. Human intrusion often results in the abandonment of nests.

This species is common along the north coast in winter. Incidental sightings of this species have been reported along the Ten Mile and Big Rivers. No known rookeries occur within the Biological Assessment Area. No significant adverse impacts are expected.

Literature:


**Chaetura vauxi**  

Vaux’s swifts occur as a summer resident from southeast Alaska south to central California. The majority of nesting habitat for this species is natural and artificial cavities, although nesting does occur in other structures such as chimneys and smoke stacks. In coast redwood forests, the Vaux’s swifts roost and nest in large hollow trees. This species is listed as a Species of Special Concern by CDF&W. The main limiting factor for this species nesting on forested landscapes is the abundance of large, hollow trees or snags. In the vicinity of the project area there is an abundance of snags which will not change as a result of the project. No significant adverse impacts to this species are anticipated.

**Literature:**


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**Charadrius alexandrinus nivosus**  

**Western Snowy Plover**

This species is associated with sandy beaches at marine or estuarine shores. It is also found near salt pond levees and the shores of large alkali flats. It requires sandy, gravely or friable soils for nesting. This species is listed as Federally Threatened and Species of Special Concern by CDF&W. The major threats to the snowy plover are nest destruction/disturbance on beaches and coastal development. As no suitable habitat exists within the vicinity of the plan area, no significant adverse impacts are expected.

**Literature:**


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**Circus cyaneus**  

**Northern Harrier**

Northern harriers are distributed throughout North America during the breeding season, and throughout much of the United States year around, including the coastal redwood region. This species is listed as a Species of Special Concern by CDF&W. Northern harriers typically nest near ground level in moist open areas such as wet meadows, freshwater and saltwater marshes, abandoned fields etc. As the project does not propose any activity in riparian areas and will maintain stands of conifers, no adverse impacts are expected for this species.

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**Dendroica petechia brewsteri**  

**Yellow Warbler**

Yellow warblers are neotropical migrants widely distributed throughout North America during summer months. In California, yellow warblers occur in desert, montane, and coastal wooded or mixed conifer habitats with substantial shrubs. This species is listed as a Species of Special Concern by CDF&W. Yellow warblers commonly nest in riparian areas associated with willows and alders though both nesting and foraging can occur in upland forest
habitats. As the project does not propose any activity in riparian areas and will maintain stands of conifers, no adverse impacts are expected for this species.

_Falco peregrinus_  
**Peregrine Falcon**

Peregrine falcons are distributed worldwide, with the exception of Antarctica. The breeding range in California includes most of the Coast Range, inland north coastal mountains, Klamath Mountains, Cascade Ranges, and the Sierra Nevada. Although uncommon, wintering birds can be seen throughout California. This species is listed as federally and State Endangered and is a Board of Forestry Species of Special Concern.

Peregrines typically feed on highly mobile, flocking, and colonial nesting birds, such as shorebirds, waterfowl, and doves and pigeons. It has been suggested that the distribution of peregrines is limited by the distribution of prey species of this type.

Peregrine falcons nest on cliff ledges, small outcrops and in trees. Along coastal areas from California northward to British Columbia, nesting also occurs on “sea stacks”. A number of re-introduced pairs also nest on tall buildings and nests have been located on bridges and towers. Cliffs that provide ledges, potholes, or small caves, usually with an overhang, and that are relatively inaccessible to mammalian predators are required components of nesting habitat. Nest sites usually provide a panoramic view of open country, are near water, and are typically associated with local abundance of passerine, waterfowl, or shorebird prey.

Peregrine populations underwent massive declines throughout North America beginning in the early 1950s and reached a low point in the 1970s. The subsequent recovery has been very rapid, primarily as a result of reintroducing birds reared in captivity, protection from persecution under federal and state laws, and the ban on the use of pesticides.

One of the densest Peregrine falcon populations in the state is located along the coast from Sonoma County north. A Peregrine falcon nests are known to occur in the North Fork Usal Creek area, North Fork Noyo headwaters, Reeves Canyon and Rancheria Creek drainages.

Due to a lack of potential nesting locations and no historical or recent sightings within the Biological Assessment Area, it is expected that Peregrine falcon use of the plan area is transient at best. No significant adverse impacts are expected.

**Literature:**


_Fratercula cirrhata_  
**Tufted Puffin**

This species is a coastal shorebird distributed from Alaska to California and does not generally enter into forested regions. This species is listed as a Species of Special Concern by CDF&W. Because this species does not utilize the habitat present within or near the AOI, no significant adverse impacts are expected.
**Haliaeetus leucocephalus**  
Bald Eagle

Bald eagles are widely distributed across North America during summer months and are year-round residents throughout much of the United States. During summer months, bald eagles may be found across most of California with the exception of the southeastern portion and may be found year-round in the north-central portion of the state. This species is listed as State Endangered and is a Board of Forestry Sensitive Species.

Bald eagle nest sites are always associated with a lake, river, or other large water body that supports abundant fish and waterfowl prey items. In California, 70% of the breeding eagle population is associated with water bodies over 200 ha (494 ac). Nest trees are usually within 1 mile (1.6 km) of water and are typically in mature and old-growth conifer stands. Nests are constructed in trees that provide an unobstructed view of the water body and that are typically the dominant or co-dominant tree in the surrounding stand. Snags and dead-topped trees are important for perch and roost sites. Nest sites are usually located in areas lacking human disturbance, however, numbers of bald eagle territories are increasing in areas in close proximity to humans including urban parks, neighborhoods, and golf courses.

Historically, bald eagles bred in a variety of habitats in California, including offshore islands, on coastal cliffs and pinnacles, and along coastal rivers, interior valley streams and wetlands, and mountain lakes and rivers. Nest trees included a wide variety of hardwoods as well as conifers. However, most eagle nesting territories are now found in mountainous habitats in ponderosa pine and mixed conifer forests. Ponderosa pine is the tree most often used for nesting, although nest sites have been observed in a variety of tree species. The only known occurrence of a bald eagle nesting in a redwood is on the Mad River in Humboldt County on Green Diamond Resource Company (formerly Simpson) ownership.

Bald eagles are territorial during the breeding season, but densities and home range sizes are highly variable because of large variations in the dispersion and availability of potential nest sites and prey. For example, in western Washington, the mean density of occupied nests <2 km from 6416 km of forested marine shorelines was 1 nest/10.4 km while the density of occupied nests along 1728 km of inland waters in eastern Washington was 1 nest/34.6 km. These densities suggest that the Washington nesting population of bald eagles is near, or at, saturation. Other reported densities range from 0.08 nests per km of shoreline in British Columbia to 0.56 in Alaska. In Oregon, the average inter-nest distance among eight pairs was 3.2 km. Bald eagles winter communally along specific rivers, lakes, or reservoirs that support prey species and have large trees or snags for perch sites and night roosts.

Bald eagles were highly persecuted up until 1940, when they were afforded protection under the Bald Eagle Protection Act. Further dramatic declines in bald eagle populations occurred during the next 3 decades from the use of pesticides, especially organochlorine pesticides (DDT), which bio-accumulates through the food chain and causes eggshell thinning and breakage. DDT was banned in the U.S. in 1972, and since that time bald eagle populations have rebounded dramatically. For example, in 1963, a total of 417 active occupied sites were known in the lower 48 states, while in 1998, an estimated 5,748 breeding sites were reported. The bald eagle population in the lower 48 states has approximately doubled every 7 to 8 years during the past 30 years.

In 1999, 199 known nest sites were recorded in California, with most nest sites found in northern California. No bald eagle nests are known to occur in the planning area, and there are no records of bald eagles in the nine USGS 7.5 minute quad block encompassing the planning area in the NDBB. Two nests were reported along Big River and additional nests along the Ten Mile River in Mendocino County prior to 1940. The nearest record of nesting bald eagles is Booneville, from former CDF&W biologist Ted Wooster in 1999. Since nesting Bald Eagles are not known to occur within the assessment area and because the plan will maintain suitable perching trees in timber stands within WLPZs and adjacent areas, no significant adverse impacts are expected.

**Literature:**


_Icteria virens_  
Yellow Breasted Chat

Yellow breasted chats are neo-tropical migrants widely distributed throughout North America during summer months. In California, yellow breasted chats occur in both coastal and Sierran foothill riparian habitats, although they are uncommon along the coast in northern California. This species is listed as a Species of Special Concern by CDF&W. Yellow breasted chats are closely associated with dense thickets of willow and shrubs near watercourses for nesting and foraging. As the project will not impact such riparian areas, no significant adverse impacts are expected.

_Pandion haliaetus_  
Osprey

The osprey is a migratory, fish-eating hawk with one of the broadest geographic distributions of any bird. The species is widely distributed throughout Eurasia, the Americas, Africa, and Australia. In California, ospreys breed throughout northern California from the Cascade Range south to Marin County and throughout the Sierra Nevada. This species is listed as a Species of Special Concern by the CDF&W and is a Board of Forestry Sensitive Species.

Large river systems in northwestern California support numerous breeding pairs. The essential habitat requirements of osprey include a water body with abundant and accessible fish and a nearby nest site. Foraging almost exclusively on fish, ospreys are only found in association with lakes, reservoirs, coastal bays, ocean coastlines, or large rivers and deltas. Nests are usually within 1,000 ft of a food source, but are occasionally found as far away as 1 mile. Nests are typically constructed on top of tall, broken-top trees or snags, which are often taller than the surrounding vegetation. Nest sites are usually in open forest habitat or along the edge of a water body for easy accessibility. Artificial nest platforms are readily used and often result in higher productivity than natural nest sites.

Ospreys were highly impacted by organochloride pesticide (DDT) use from the late 1940’s to the mid-1970s, and pesticide poisoning extirpated smaller populations in several states. The ban on DDT lead to an explosion of osprey populations with numbers increasing in the U.S. alone from an estimated 8,000 pairs in 1981 to over 14,000 nesting pairs in 1994. The number of breeding pairs in California was estimated from 500-700 in 1994 and populations continue to grow.

Ospreys are readily observed along the Mendocino County Coastline. There are no known osprey nest sites within the proposed plan area. No significant adverse impacts are expected based on the above.

Literature:


_progne subis_  
**Purple Martin**

The purple martin is a neo-tropical migrant occurring throughout much of the United States. Purple martin are summer residents in California, utilizing a variety of open forest habitats (including redwood), woodlands, and riparian areas, and nesting mostly in woodpecker cavities. It feeds primarily on insects caught on the wing, but will also forage on the ground. It is listed as a Species of Concern by the CDF&W. The primary threats to this species are loss of riparian habitat, removal of snags, and competition for nest cavities with other species, including introduced European starlings and house sparrows. As described in Item #26 of the AOI, projecting within the Class II WLPZs will be limited. As such, there will be very little disturbance of riparian habitat as a result of operations on the plan. All snags will be retained except any that pose a safety hazard during operations, as described in Section II, AOI Item #33. Given these protection measures, no significant adverse impacts are expected.

_strix occidentalis caurina_  
**Northern Spotted Owl**

The northern spotted owl (hereafter spotted owl) is one of three spotted owl subspecies inhabiting western North America. The range of the spotted owl extends from southwestern British Columbia to Northwestern California south to Marin County, California. The eastern edge of its range corresponds roughly with the eastern periphery of the Cascade Range and the Central Valley in California. This sub-species is listed as Federally Threatened, a Species of Special Concern by CDF&W, and is a Board of Forestry Sensitive Species. During its December 11, 2013 meeting, the California Fish and Game Commission (Commission) adopted findings documenting its acceptance of a petition to list the Northern spotted owl (NSO) as a threatened or endangered species pursuant to Section 2074.2 of the Fish and Game Code. The Office of Administrative Law published these findings on December 27, 2013; therefore, a one-year “candidacy” period has begun. Throughout its range, the spotted owl is associated primarily with mature/old conifer forests. Studies of habitat use indicate that owls generally select mature/old forests for nesting, roosting, and foraging in an amount equal to or greater than expected, and younger forests in an amount less than expected. However, spotted owl populations in some physiographic provinces deviate from this general pattern.

Spotted owl home range sizes vary widely between forest type, physiographic province, and individual spotted owls. Spotted owl home range size in the California coast redwood zone averaged 1,476 ac [Irwin & Rock 2005], while home range sizes in the Eastern Cascade physiographic province in Washington averaged 8,072 ac. Several studies found a negative correlation between home range size and the proportion of mature/old forests in the home range and breeding densities negatively correlated with the amount of forest fragmentation. However, as spotted owls persist in relatively small home ranges in regions with little mature/old forests remaining, other factors likely influence home range size. For example, spotted owl home range sizes were smaller when wood rats were the primary prey, while spotted owl home range sizes were larger when flying squirrels dominated the spotted owl’s diet. In addition, spotted owl home range size tends to be negatively correlated with the abundance of wood rats.

Habitat use studies in many of the forest types and physiographic provinces across the spotted owl’s range have led to an emphasis on the importance of forest structure. Optimal spotted owl habitat has been characterized as uneven-aged forest with a multi-layered canopy, high canopy closure, large overstory trees, and a considerable degree of decadence, such as trees with broken tops and cavities for nesting, dead snags, decaying logs, and woody debris on the forest floor.

Deviations from the general patterns of mature/old forest habitat associations occur at both the individual and population levels. This is particularly true in the coastal redwood forest zone, where substantial spotted owl populations persist in forests much younger than those typically inhabited in other forest types and eco-regions. In the coastal redwood forest zone, spotted owls nesting and roosting occur in areas dominated by younger age classes, and relatively high breeding densities have been reported in managed forests from this region. Although spotted owls in the coastal redwood region use younger stands for nesting and roosting, several studies indicate that spotted owl use of nesting and roosting habitat may still be dependent on forest structural attributes associated with
mature/old forest. At the landscape level, habitat mosaics surrounding spotted owl nests in the coastal redwood zone contain a greater amount of younger 31-45 yr and 45-60 yr age class forest than unused sites.

The location and habitats of the spotted owls within the immediate area are well known due to extensive monitoring conducted since 1989. Given the habitat remaining offsite, in conjunction with the intensive monitoring these owls receive, no significant adverse impacts are expected.

Literature:


*Coronourhis townsendii*  
Townsend’s Big-eared bat

Townsend’s big-eared bats are candidates for listing under the California Endangered Species Act (CESA). The Townsend’s big-eared bat is a medium-sized bat that occurs throughout California and western North America, except at extreme high-elevations. Townsend’s big-eared bats use caves, mines, buildings and old growth conifers with large basal hollows (none of which are known to be present on this ownership) for roosting and maternity colonies. This species uses open areas including forest edges and riparian corridors along larger watercourses for foraging and is also known for picking prey off of vegetation.

Although Townsend’s big-eared bats occur throughout California, except at high elevations (e.g. alpine habitats), their occurrence is generally spotty, apparently limited by occurrence of roost opportunities. Roosting, maternity and hibernacula sites in California include limestone caves, lava tubes, abandoned mines, buildings, barns, and other abandoned anthropogenic structures (Williams 1986).

In the coastal forests of northern California, this species is known to roost in large basal hollows of old growth redwood trees (Fellers and Pierson 2002, Mazeurek 2004). Mazeurek (2004) confirmed the use of two old-growth trees with large basal hollows as Townsend’s big-eared bat maternity roosts in Grizzly Creek State Park, Humboldt County. These trees exhibited diameters at breast height (dbh) of approximately 10 feet and 15 feet with basal hollow openings of approximately 30 square feet (12 feet high x 2.5 feet wide) and 75 square feet, (15.4 feet high x 4.9 feet wide) respectively. Mazeurek (2004) further surveyed an additional 180 trees with basal hollows, of which 13 (7%) were likely used as maternity roosts based on guano DNA analysis. Average dbh of the 13 trees was approximately 9 feet; however, no range of dbh was provided. This study was located within old-growth forest where basal hollows occur in much higher densities than typically occur in industrial timberland forests. In Mendocino County, another study on industrial managed landscapes examining wildlife use of 15 isolated legacy trees with basal hollows compared to those without did not find any evidence of roosting by Townsend big-eared bats (Zielinski and Mazeurek 2004). Lastly, in a study of roosting and foraging behavior of Townsend’s big-eared bats in Sonoma County of coastal California, basal hollows in six redwood trees used by daytime roosting males had a minimum dbh of approximately 4 feet with basal hollow openings ranging between approximately 3 and 83 square feet, however these basal hollows were not used as maternity roosts (Fellers and Pierson 2002). Density of trees with basal hollows in the area was not indicated, however, the area was described generally as second growth redwood, and therefore the density of trees with basal hollows was likely low to moderate in occurrence. Frequency and intensity of use of isolated basal hollows by roosting Townsend’s big-eared bats, especially for maternity roosts or hibernacula is unknown, but based on the studies conducted to date, use of these basal hollow isolates may be low in Mendocino County and consist mainly of daytime roosting sources.

Colony size ranges from a few dozen to several hundred. Some colonies are known to change roosts during the maternity season based on changing thermal regimes within the roosts; using cooler roosts earlier in the year (Pierson et al. 1991) and warmer roosts after pups are born. These roost changes may depend on the type and structure of the roost itself (Sherwin et al. 2003). Maternal colonies form between March and June and one pup per female is born between May and July (Pearson et al. 1952; Harvey et al. 2011). Young begin to disperse in September and October (Pearson et al. 1952, Tipson 1983). Maternity roosts and hibernacula sites may be sensitive to anthropogenic disturbance, resulting in abandonment. However, types and frequency of disturbance leading to abandonment has not been documented in Townsend’s big-eared bat use of basal hollows. Mazeurek (2004) describes one of the basal hollows used as a maternity colony in Grizzly Creek occurring directly adjacent to a “high traffic foot trail”.

There are no known Townsend’s big-eared bat colonies and no known mineshafts or caves present on this property. Abandoned anthropogenic structures are not known to be present on the owner’s property within the Plan boundary.
or within 300 feet of the Plan boundary on the owner’s property. Large old-growth trees with basal hollows could be considered as cave (Mazurek 2004) and function as maternity roosts or hibernacula roosts. On the timberland owner’s property there are no known trees which have the characteristics required to provide maternity and/or hibernaculum colony roost habitats. Potential roost structures include large trees (>8 feet dbh; adapted from maternity roosts in large redwood trees with average dbh of 9 feet as described by Mazurek 2004) with large basal hollows and an internal roost area large enough for flying forays (larger than the entrance). The roost entrance in general must be at least 10 square feet in size with a minimum opening dimension of 2 feet. The roost ceiling must be dome-like (allowing for multiple bats to roost in clusters) and occur at least 1 foot above the top of the entrance (allows for better protection from predators and changing microclimates). The only light penetrating the roost area must originate from the roost entrances so that the internal roost area remains semi-dark to dark (Feilens and Pierson, 2002).

Trees with smaller basal hollows (e.g., in residuals <8 feet dbh) that are unlikely to serve as maternity roots or hibernacula but provide other roosting opportunities will be retained. Retention of roost trees based on these guidelines will likely avoid ‘take’ of this species. Because no habitat suitable for maternity roosts or hibernacula is known to occur in the Area of interest or within 300 feet of the Area of interest no significant adverse impacts are expected to this species.

**Literature Cited in regards to Townsend’s Big-eared Bat**


**Antrozous pallidus** Pallid Bat

The pallid bat is a common, widely distributed species throughout California. Day roost habitat includes caves, crevices, mines, and occasionally buildings and tree hollows. Habitat preferences appear to be rocky outcrops, cliffs, and crevices with open habitats for foraging. This species is listed as a Species of Special Concern by the CDF&W. The NDBB has no listing for the pallid bat in Mendocino County, although the species is known to exist in Sonoma & Marin Counties. The California Wildlife Habitat Relationship System suggests a low likelihood of occurrence in coastal redwood forests. Due to the lack of habitat in or around the project area no adverse impacts are expected.
Arborimus pomo  

Sonoma Tree Vole aka red tree vole

The Sonoma tree vole (Arborimus pomo) is an arboreal, small rodent restricted to coastal forests in the humid fog belt in northwestern California where their range extends from Sonoma County northward into Del Norte County. The red tree vole (A. longicaudus) and the Sonoma red tree vole were split in 1991 based on genetic studies. This species is listed as a Species of Concern by the CDF&W.

The Sonoma tree vole (hereafter tree vole) has a specialized diet consisting of the soft tissue of Douglas-fir needles. It will also feed on needles, buds, and bark of Douglas-Fir and other conifers. The tree vole is a nocturnal rodent that is active year round.

It has been suggested that old-growth forest appears to be optimum habitat due to tall, multi-layered canopies retaining humidity and intercepting fog, thereby functioning as both a source of free water and a climatic buffer and that red tree vole nests were most abundant in old-growth forests. However, recent findings suggest that red tree voles may not be old-growth dependent and occur in a variety of stand ages such as closed sapling-pole-saw timber, large saw timber, and old-growth coniferous forest stands. In a study on industrial timberlands, investigators found tree vole nest abundance increased with stand age, however none of the stands sampled were old growth. Another investigator found significantly more Sonoma tree voles nests in mature (>61 cm DBH) stands than in young or pole stands, although nests were found in younger stands. Basal area of Douglas-fir (75-90 m²/ha) and percent slope (25-37%) were the best variables explaining tree vole nest abundance. Hardwoods are not recognized as an important habitat component; however, nests have been located in tanoaks.

Tree vole nests occur in the Biological Assessment Area. When nest trees are located they are marked for retention with additional screen trees also being retained. Generally, it has been found that the tree vole is fairly common in young stands of Douglas-fir, which is a vegetative component that is wide-spread throughout the proposed project area and BAA. Since Douglas-fir is a minor component of the AOI coupled with the retention of adjacent areas, no significant adverse impacts are expected.

Literature:


**Martes pennant**  
**Pacific Fisher**

On 5/9/2016 the Fish and Game Commission found that the Northern California Evolutionarily Significant Unit of fisher does not warrant listing.

The Pacific fisher is a large member of the weasel family occurring in Canada and the U.S., including portions of the Pacific Northwest into northern California. According to CAL FIRE and DFG range maps (CAL FIRE, August, 2009; DFG CWHR, Version 8.2) fishers are considered rare or absent in the coastal redwood forests of Mendocino County, and are based on limited anecdotal sightings occurring in this region. These un-sustantiated sightings should be viewed with caution as they are inherently unreliable. According to range maps produced by Bill Zelinski and Keith Slauzon, foremost experts on fisher in California, the fisher’s range based on verifiable records includes eastern Mendocino County but excludes the coastal region. Substantial survey effort in coastal Mendocino County supports this observation as track plate surveys and camera surveys have failed to provide physical evidence of fisher in coastal redwood forests. Meso-carnivore track plate surveys conducted by the prior landowner Georgia-Pacific in the 1990s failed to detect fisher, as well as camera surveys conducted in 2003 on the adjacent ownership of Jackson State Demonstration Forest. The most comprehensive and systematic meso-carnivore surveys conducted to date were on the adjacent Mendocino Redwood Company ownership wherein surveys conducted from 2004-2010 failed to detect fisher. In terms of anecdotal evidence, the hundreds of field hours spent by biologists during 20 years of northern spotted owl surveys on this tract have failed to sight fisher. The lack of fisher detections during meso-carnivore surveys in the region and the lack of sightings by biologists in the assessment area suggest that fisher are either absent, or are so rare as to escape detection.

There have been limited fisher habitat studies on coastal redwood managed forests in northern California. These studies, conducted in Del Norte and Humboldt County, only examined habitat where fisher were detected and were not directed at characterizing den or rest sites, therefore, they are of limited utility when characterizing a range of fisher habitat requirements in the coastal redwood region. These detection surveys suggest fishers occur less commonly (e.g. significantly lower detection rates) in coast redwood forests closer to the coast than in Douglas-fir/hardwood forests dominating more xeric inland sites. Fisher detection rates were positively correlated with stands of large diameter mixed Douglas-fir and hardwood, elevation, log volume, and moderate slopes. Fisher may generally be associated with either late-successional forests or second growth forests containing late-successional structural elements such as high densities of large conifer (esp. Douglas-fir) and hardwood, snags, deformed trees, large woody debris, high canopy closure, etc. Fisher use cavities in large diameter trees and snags for natal and maternal dens and more rarely, downed logs and brush piles. For resting sites fisher will also use large limbs (platforms), tree cavities, rock piles, and sub-nivean cavities. The fisher is an opportunistic hunter and feeds on a variety of vertebrates, including birds, rabbits, and rodents, including wood rats.

Although the range of habitat requirements for fisher in coastal redwood forests is unknown, the typically described habitat for fishers is not generally present the assessment area. Green Diamond Resources, which manages redwood/Douglas-fir in northern California has conducted several studies regarding fishers on their ownership, and states “Green Diamond’s work on this species demonstrated that most of the same conservation measures developed for the owls were also beneficial for fishers.”

managed landscapes. With the likely absence of fisher in the biological assessment area and the maintenance of late successional elements, where they exist, including large woody debris, snags, large hardwoods and conifers, and structurally complex wildlife trees and screen trees, WLHZ protection measures, as well as single and grouped leave trees in even aged management units for future snag recruitment, no significant further adverse impacts are expected to this species.

*Myotis lucifugus*  
**Little Brown Myotis**

This species of bat has a moderate range, but is locally common within its range. This species is listed as a Species of Special Concern by the CDF&W. Populations appear to be limited by the availability of roosting sites, which are primarily buildings, trees, rocks, wood, and occasionally caves. The little brown myotis may roost in cavities and fire scars present on some residual wildlife trees. Because the assessment area does not contain the highest use habitats, and potential roosting sites will not be significantly affected (retaining of culls and residual trees), no significant adverse impacts are expected.

*Myotis yumanensis*  
**Yuma Myotis**

The Yuma Myotis appears to prefer open forests and woodlands adjacent to water sources to forage over. This species will roost in buildings, mines, caves, or crevices. A lack of suitable roosting locations within the assessment area indicates that the area may not be heavily used by this species. This species is listed as a Species of Special Concern by the CDF&W. Considering that potential water sources over which they feed will be protected, there are no significant adverse impacts expected.

**Humboldt Martin**  
*(Martes Americana humboldtensis)*

This species is not known to be present in the Manchester area. According to the Ecology of American Martens in Coastal Northwestern California, Progress Report II, by K. Slauson, W. Zielinski, and J. Hayes, this species inhabits two major vegetation types associated with serpentine and non-serpentine soils. On serpentine soil types, this species occupies areas of rock outcrops with a moderate to heavy understory component. On non-serpentine soils, this species occupies mainly late seral and old growth structure (dense shrub layers, large diameter trees, snags, and logs). According to the above cited study, the decline of this species is mainly due to historic trapping for its fur and loss of old growth forests. These habitat types are not associated with the project area.

**Point Arena Mountain Beaver (PAMB)**  
*(Aplodontia rufa nigra)*

The PAMB is a locally restricted subspecies with a small range occurring in the coastal vicinity of Point Arena in Mendocino County. Mountain beavers are active year round. They breed from December through March in burrows in deep soils and thickets adjacent to streams and springs. Nest chambers are 1-4.5 feet under the ground. Young are born from February to June. This species feeds and vegetative parts of plants: mostly berries, salal, ferns, lupine, willows, and grasses. Mountains beavers forage on the ground and up to 15 feet in trees and shrubs, and store food in or around the burrow. This species typically utilizes dense riparian understory vegetation for cover, but can be found in areas with open or intermediate canopy coverage as well. Mountain beavers need fresh, abundant drinking water throughout the year. There are no PAMBs known to be associated with the project area nor is there habitat associated with the project area.
Canis lupus  (Gray Wolf) **Federal Endangered, State Endangered.**

One June 4th, 2014 the gray wolf became listed as endangered under the California Endangered Species Act (CESA). The plan and assessment areas include habitat for gray wolves. A Gray wolf (OR7) was tracked through Northern California, including areas Northwest of Yreka, as recently as February 2014. Historically, wolves inhabited California, but were extirpated. Before OR7, the last confirmed wolf in California was here in 1924 and since then, investigated “sightings” have turned out to be coyotes, dogs, wolf-dog hybrids, etc.

This species is unlikely to occur in the area. No significant adverse impacts are expected to this species.

**Fish:**

The project area is located on a gentle ridge top many hundred feet removed from any fish bearing streams.

*Ascaphus truei*  
**Coastal Tailed Frog**

The coastal tailed frog is a stream-breeding frog generally associated with high gradient, cold, permanent headwater streams. This species is occurs in British Columbia, Washington, Oregon, and Northern California primarily west of the Cascade crest. Species distribution in California includes Humboldt and Mendocino counties. This species is listed as a Species of Special Concern by CDFG. The coastal tailed frog lays its eggs in cold, fast-flowing streams and tadpoles attach themselves to the underside of rocks. Tailed frogs are dependent on permanent stream flow because the tadpoles require several years to metamorphose into adults. Research in Oregon suggests that streams with substrates with low amounts of fine sediments are preferred for breeding habitat. Since there are no watercourses nearby there is no habitat for this species.

*Plethodon elongatus*  
**Del Norte salamander**

The Del Norte salamander is a woodland salamander found in coastal forests under woody substrate and in rock rubble and talus. The range of this species includes Northern California and Southern Oregon. Records for this species in California include locations in Del Norte, Siskiyou, Trinity, and Humboldt counties, but not Mendocino County. This species is listed as Species of Special Concern by CDFG. The Del Norte salamander is considered to have a life history similar to other Plethodontid salamanders: egg clutches laid under moist substrate and protected by females until hatching, and relatively small home ranges. No adverse impacts are expected for this species due to the project being located outside the normal range of this species and absence of riparian habitat.

*Rana aurora aurora*  
**Northern Red-legged Frog**

The northern red-legged frog is a pond-breeding frog usually associated with ponds, wetlands, and other lentic aquatic habitat, and adjacent terrestrial areas. The northern red-legged frog is a subspecies of the red-legged frog and occurs in British Columbia, Washington, Oregon, and the northwest coast of California. This subspecies is listed as a Species of Special Concern by CDFG. The red-legged frog lays egg masses in still water in the spring. Larvae hatch and metamorphose in a single season. Adults have been known to travel long distances in upland forest but return to breeding sites to reproduce. Since this project does not propose any activity in riparian areas no adverse impacts are expected for this species.

*Rana boylii*  
**Foothill Yellow-legged Frog**

The foothill yellow-legged frog is a stream-breeding frog associated with permanent streams. This frog is distributed from western Oregon to southern California in the coast range and the west side of the Cascade and Sierran crests. This species was recently accepted as a “Candidate Species” by the Fish and Game Commission. The yellow-legged frog lays egg masses in pools in streams in the spring. Larvae hatch and metamorphose in a single season. Adults appear to remain close to aquatic habitat, probably because of the dry upland conditions in their range. Since this project does not propose any activity in riparian areas no adverse impacts are expected for this species.
**Rana draytonii**  
California Red-legged Frog  
The California red-legged frog is remarkably similar to the northern red-legged frog. This pond-breeding frog usually associated with ponds, wetlands, and other lentic aquatic habitat, and adjacent terrestrial areas. The northern red-legged frog is a subspecies of the red-legged frog and occurs in British Columbia, Washington, Oregon, and the northwest coast of California. This subspecies is listed as Federally Threatened and Species of Special Concern by CDFG. The red-legged frog lays egg masses in still water in the spring. Larvae hatch and metamorphose in a single season. Adults have been known to travel long distances in upland forest but return to breeding sites to reproduce. Since this project does not propose any activity in riparian areas no adverse impacts are expected for this species.

**Rhyacotriton variegatus**  
Southern Torrent Salamander  
The southern torrent salamander is a stream-breeding salamander that occurs in cold, permanent headwater streams and seeps. This salamander occurs in western Oregon and northwestern California south to Mendocino County. This species is listed as a Species of Special Concern by CDFG. The southern torrent salamander lays eggs in the interstitial spaces between gravel in the water and may be sensitive to excessive fine sediments in the stream. This salamander is dependent on permanent water because larvae take several years to metamorphose into adults. Adults of this species remain close to cold permanent water throughout its life probably because of dry conditions in adjacent upland areas. Since this project does not propose any activity in riparian areas no adverse impacts are expected for this species.

**PLANTS and PLANT COMMUNITIES:**

**Abronia umbellata ssp breviflora**  
Pink Sand Verbena  
CNPS List 1B. This species is associated with coastal dunes and strands. As these habitat types do not generally occur in conjunction with coniferous forest areas, and as no dunes or strands are located in the Area of interest, no significant adverse impacts are expected.

**Agrostis blasdalei**  
Blasdale’s Bent Grass  
CNPS List 1B. This species is associated with coastal bluffs, scrub and coastal prairies. This habitat type does not exist within the project area or within 100 feet of it. A botanical survey has been conducted and this species was not found to occur in the project area.

**Alisma gramineum**  
Narrow-Leaved Water Plantain  
CNPS List 2. This perennial herb inhabits assorted shallow freshwater marshes and swamps in elevation ranges of 3500 to 5600 feet. This habitat type does not exist within the project area or within 100 feet of it. The plan area is below the elevational range of this species.

**Arctostaphylos mendocinensis**  
Pygmy Manzanita  
CNPS List 1B. This species is associated with the Pygmy Forest habitat community. As this habitat community does not exist within or near the Area of interest, no adverse impacts are expected.

**Astragalus aegicidus**  
Humboldt Milk-vetch  
CNPS List 1B, California Endangered. This species is found in broadleaved upland forest and north coast coniferous forest habitat types. This species has never been found in the vicinity of the plan area and therefore it is anticipated that the species will not be affected by the proposed operation. A botanical survey has been conducted and this species has not been found to occur in the project area.

**Blechnum nudum var. robustum**  
Point Reyes Blechnusperma  
CNPS List 1B. This species is found in coastal scrubs and prairies. Microsites are usually open coastal hills in sandy soil. It is associated with coastal lupines and Mendocino County Indian Paintbrush. A botanical survey has been conducted and this species was not found to occur in the project area.
**Boschniakia hookeri**
CNPS List 2. This parasitic perennial herb is limited to North America and more specifically a redwood forest type. A botanical survey has been conducted and this species was not found to occur in the project area.

**Calamagrostis crassiglumis**
CNPS List 2. This species is commonly generally found in coastal scrub and freshwater marshes. Microsites may include marshy swales within grassland or coastal scrub. This habitat type does not exist within the project area or within 100 feet of it. A botanical survey has been conducted and this species was not found to occur in the project area.

**Calamagrostis foliosa**
CNPS List 4, California Rare. This species is found in coastal bluff scrub and north coast coniferous forest habitat types. A botanical survey has been conducted and this species was not found to occur in the project area.

**Campanula californica**
CNPS List 1B. The preferred habitat is bogs, fens, and other wet meadow areas in and around coastal prairie, freshwater marsh, closed cone coniferous forest and north coast coniferous forest habitat, including along the western edge of the redwood forest type. This habitat type does not exist within the project area or within 100 feet of it. A botanical survey has been conducted and this species was not found to occur in the project area.

**Carex arcta**
CNPS List 2. This species is found in bogs, fens and North coast coniferous forest habitat types. This habitat type does not exist within the project area or within 100 feet of it. A botanical survey has been conducted and this species was not found to occur in the project area.

**Carex californica**
CNPS List 2. This species is associated with closed cone coniferous forests, coastal prairies, meadows, marshes, and swamps. This habitat type does not exist within the project area or within 100 feet of it. A botanical survey has been conducted and this species was not found to occur in the project area.

**Carex livida**
CNPS List 1A. This species is associated with bogs and fens. It has not been observed in Mendocino County since 1866. The NDDB cites “Smith & Wheeler” as being doubtful that this species will ever be found in California again. This habitat type does not exist within the project area or within 100 feet of it. Since this project does not propose any activity in riparian areas and will maintain stands of conifers outside the AOI no adverse impacts are expected for this species.

**Carex lynchbyei**
CNPS List 2. This perennial herb is associated with both freshwater and brackish marshes and swamps located at or near sea level. This habitat type does not exist within the project area or within 100 feet of it. A botanical survey has been conducted and this species was not found to occur in the project area.

**Carex saligniformis**
CNPS List 1B. This species is found in moist to wet open areas, such as meadows in close proximity to the coast. This habitat type does not exist within the project area or within 100 feet of it. A botanical survey has been conducted and this species was not found to occur in the project area.
Carex viridula var. Viridula  
**Green Sedge**  
CNPS List 2. This species is usually found in freshwater bogs, fens and marshes within the North Coastal Coniferous forests. A botanical survey has been conducted and this species was not found to occur in the project area.

Castilleja affinis ssp. Litoralis  
**Oregon coast Indian paintbrush**  
CNPS List 2. This herb inhabits coastal dunes, scrub and bluff scrub. The proposed AOI is not located within or near these types of coastal habitat, therefore no significant impacts are expected.

Castilleja ambigua ssp. humboldtiensis  
**Humboldt Bay Owl's Clover**  
CNPS List 1B. This species is found in salt marshes, primarily in the Humboldt Bay region. Because there are no salt marshes within or near the Area of interest, no significant impacts are expected.

Castilleja mendocinensis  
**Mendocino Coast Indian Paintbrush**  
CNPS List 1B. This species is associated with coastal bluffs, scrub, closed cone forests and prairies. A botanical survey has been conducted and this species was not found to occur in the project area.

Chorizanthe howellii  
**Howell's Spineflower**  
CNPS List 1B, California Threatened, Federal Endangered. This species is associated with coastal dunes and scrub. Because these habitats are not located within or adjacent to the Area of interest, no significant adverse impacts are expected.

Clarkia amoena ssp. whitneyi  
**Whitney's Farewell-to-Spring**  
CNPS List 1B. This species is found in coastal bluff scrub and coastal scrub habitats less than 100m. Because these habitats are not found within or adjacent to the Area of interest, there are no significant impacts expected.

Collinsia corymbosa  
**Round-headed Chinese Houses**  
CNPS List 1B. This species is found in coastal sand habitat. Because there is no coastal sand habitat within or adjacent to the Area of interest, there are no significant impacts expected.

Cupressus goveniana ssp. pigmea  
**Pygmy Cypress**  
CNPS List 1B. This species is associated with Mendocino Pygmy Cypress Forest. This species is associated with the Mendocino Pygmy Forest habitat type and since this habitat type is not associated with the project area, impacts to this species are not anticipated.

Erigeron bialetii  
**Streamside Daisy**  
CNPS List 3. This species is found in broadleaved upland forest, cis-montane woodland, and North coast coniferous forest habitat types. A botanical survey has been conducted and this species was not found to occur in the project area.

Erigeron supplex  
**Supple Daisy**  
CNPS List 1B. This species is found on coastal areas and coastal bluffs. Because there are none of these habitat types on or near the Area of interest, no significant adverse impacts are expected.
**Erysimum menziesii ssp. menziesii**  
Menzies Wallflower  
CNPS List 1B, California Endangered, Federal Endangered. This species is found in coastal strands and dunes. Microsites are dunes and coastal strand from 0-35 meters. It is associated with coastal lupines and Mendocino Coast Indian Paintbrush. As the habitat that this species is associated with is not located within or near the AOI, no significant adverse impacts are expected.

**Erythronium revolutum**  
Coast Fawn Lily  
CNPS List 2. This species is found on stream banks and in wet places in woodlands. This habitat type does not exist within the project area or within 100 feet of it. A botanical survey has been conducted and this species was not found to occur in the project area.

**Fritillaria roderickii**  
Roderick's Fritillary  
CNPS List 1B, California Endangered. This species is found in coastal bluff scrub, coastal prairie, and valley foothill grassland habitat types. This habitat type does not exist within the project area or within 100 feet of it. A botanical survey has been conducted and this species was not found to occur in the project area.

**Gilia capitata ssp. Capitata**  
Pacific Gilia  
CNPS List 1B. This species is found in coastal dune areas. Because there are no coastal dunes within or adjacent to the project area, no significant adverse impacts are expected.

**Gilia millefoliata**  
Dark-eyed Gilia  
CNPS List 1B. This species is found in coastal dune areas. Because there are no coastal dunes within or adjacent to the project area, no significant adverse impacts are expected.

**Glyceria grandis**  
American Manna Grass  
CNPS List 2. This species is found in bog, fen, meadow, marsh, swamp, stream bank and lake margin habitat types. This habitat type does not exist within the project area or within 100 feet of it. A botanical survey has been conducted and this species was not found to occur in the project area.

**Hemizonia congesta ssp. leucocephala**  
Hayfield Tarplant  
CNPS List 3. This species is found in coastal scrub and valley foothill grassland habitat types. Because there are no such habitat types within or adjacent to the project area, no significant adverse impacts are expected.

**Hesperolinon adenophyllum**  
Glandular Western Flax  
CNPS List 1B. This annual herb occupies chaparral sites, foothill woodland forest types, valley grassland plant communities, and usually on serpentine soils. None of these habitats exist within, or adjacent to, the project area. Because there is no appropriate habitat for this species associated with this project area, no significant adverse impacts to this species or its habitat are expected.

**Horkelia marinensis**  
Point Reyes Horkelia  
CNPS List 1B. The preferred habitat of this species is sandy coastal flats less than 100 feet in elevation. Because there are no such habitat types within or adjacent to the project area, no significant adverse impacts are expected.

**Horkelia tenuiloba**  
Thin-Lobed Horkelia  
CNPS List 1B. This species is found in broadleaved upland forest and chaparral habitat types. Because there are no such habitat types within or adjacent to the project area, no significant adverse impacts are expected.
**Juncus supiniformis**
CNPS List 2. This species is found in bog, fen, marsh, and swamp habitat types near the coast. Because there are no such habitat types within or adjacent to the project area, no significant adverse impacts are expected.

**Lasthenia macrantha ssp. bakeri**
CNPS List 1B. This species is found in closed-cone forest opening and coastal scrub habitat types. A botanical survey has been conducted and this species was not found to occur in the project area.

**Lasthenia macrantha ssp. macrantha**
CNPS List 1B. This species is found in coastal scrub, coastal bluff scrub, and coastal dune habitat types. Because there are no such habitat types within or adjacent to the project area, no significant adverse impacts are expected.

**Lilium maritimum**
CNPS List 1B. This plant species is a Federal Species of concern. The general habitat type is closed-cone coniferous forest, coastal prairie, coastal scrub, north coast coniferous forest, broadleaved upland forest, and marsh and swamp. Historically the microhabitat for the coast lily has been in sandy soil, often on raised hummocks or bogs. A botanical survey has been conducted and this species was not found to occur in the project area. Efforts to locate the population noted in the CNDB within the parcel, but outside the area of interest were successful. The plants are located more than 500 feet from the project area adjacent to the County Road.

**Limnanthes bakeri**
CNPS List 1B, California Rare. This annual herb inhabits wet, open areas such as meadows, seeps, marshes, swamps, and grasslands. This habitat type does not exist within the project area or within 100 feet of it. A botanical survey has been conducted and this species was not found to occur in the project area.

**Lupinus miolo-bakeri**
CNPS List 1B, California Threatened. This endemic, annual herb is most commonly found in Foothill Woodland and Valley Grassland plant communities. This species is listed as rare and threatened by the State. Because the project is dominated by north coast coniferous forest, habitat for this species does not exist within the project area, and no significant adverse impacts to this species or its habitat are expected.

**Lycopodium clavatum**
CNPS List 2. This species is found in marsh, swamp, and North coast coniferous forest habitat types. A botanical survey has been conducted and this species was not found to occur in the project area.

**Microseris borealis**
CNPS List 2. This species is associated with bogs, fens and maybe wet areas. The Inglenook Fen is located inside MacKerricher State Park, many miles North of the Area of interest. This habitat type does not exist within the project area or within 100 feet of it. A botanical survey has been conducted and this species was not found to occur in the project area.

**Monardella villosa ssp. globes**
CNPS List 1B. This species is found in chaparral, cismontane woodland, and coastal scrub habitat types. Because there are no such habitat types within or adjacent to the project area, no significant adverse impacts are expected.

**Northern Microseris**

**Robust Monardella**
**Navarretia leucocephala ssp. Bakeri**

CNPS List 1B. This species is associated with vernal pools of meadows and low flats within foothill woodland regions, with alkali or adobe soils. The primary sites in which this species would be found are protected by WLPZs or EEZs. However, nearly all of the Area of interest is on slopes; flat areas are primarily confined to ridge tops, and there are no vernal pools and no alkali or adobe soils within the project area. Because appropriate habitat for this species does not exist in the project area, no significant adverse impacts to this species or its habitat are expected.

**Phacelia insularis var. continensis**

CNPS List 1B. This species is found in coastal scrub and dunes. Microsites are open maritime bluffs with sandy soil less than 200 feet in elevation. It is associated with coastal lupines and Mendocino Coast Indian Paintbrush. Because appropriate habitat for this species does not exist in the project area, no significant adverse impacts to this species or its habitat are expected.

**Pinus contorta ssp. bolanderi**

CNPS List 1B. This species is associated with Pygmy Forest habitat. Because appropriate habitat for this species does not exist in the project area, no significant adverse impacts to this species or its habitat are expected.

**Pleurogonon hooverianus**

CNPS List 1B, California Threatened. This species is associated with moist grassy areas, vernal pools in broadleaf upland forests and north coast coniferous forests. The primary sites in which this species is found are protected by WLPZs or EEZs. A botanical survey has been conducted and this species was not found to occur in the project area.

**Potamogeton epihydrus ssp. Nuttallii**

CNPS List 2. This perennial herb prefers freshwater wetlands under natural conditions and in shallow waters. This native to California has been observed in El Dorado, Modoc, Mariposa, Plumas, and Shasta Counties. CNPS has ranked this species as very rare. No Freshwater Marsh exists within the plan area. Impacts to this plants habitat type are not anticipated from the proposed project based on non-occurrence of the habitat type in or around the plan area and on the use of modern projecting procedures, which minimize impacts to the fluvial system.

**Puccinellia pumila**

CNPS List 2. This species is associated with coastal salt marshes and swamps. Impacts to this plants habitat type are not anticipated from the proposed project based on non-occurrence of the habitat type in or around the plan area and on the use of modern projecting procedures, which minimize impacts to the fluvial system.

**Rhynchospora alba**

CNPS List 2. This species is associated with bog and fen, meadow, marsh, and swamp habitat types. A botanical survey has been conducted and this species was not found to occur in the project area.

**Sanguisorba officinalis**

CNPS List 2. This species is associated with bogs, fens and seepage areas along stream borders, often in serpentine soils. The areas where this species may occur does not occur within the project area. A botanical survey has been conducted and this species was not found to occur in the project area.
**Senecio bolanderi var. bolanderi**  
Seacoast Ragwort  
CNPS List 2. This species is associated with coastal scrub and north coast coniferous forest. This species has a potentially wide range of distribution but is expected to be more likely to occur near the coast. A botanical survey has been conducted and this species was not found to occur in the project area.

**Sidalcea calycosa sp. prhizomata**  
Point Reyes Checkerbloom  
CNPS List 1B. This species is associated with marshes and swamps near the coast below 30m elevation. These habitat types are not present in the Area of interest, and this species is not expected to exist in the Area of interest. No significant adverse impacts are expected.

**Sidalcea malachroides**  
Maple-Leaved Checkerbloom  
CNPS List 1B. This plant has a wide distribution of habitat preferences, with a preferred microhabitat of woodlands and clearings near the coast, often in disturbed areas. A botanical survey has been conducted and this species was not found to occur in the project area.

**Sidalcea malviflora ssp. Purpurea**  
Purple-stemmed Checkerbloom  
CNPS List 1B. This perennial endemic herb is typically found in broadleaved upland forests and coastal prairie. Historically this species has been commonly located in San Francisco and San Mateo with few observations in southern Mendocino. A botanical survey has been conducted and this species was not found to occur in the project area.

**Tracynina rostrata**  
Beaked Tracynina  
CNPS List 1B. This species is found in cismontane woodland and valley/foothill grassland habitat types. Because there are no such habitat types within or adjacent to the project area, no significant adverse impacts are expected.

**Trichodon cylindrus**  
Cylindrical Trichodon  
CNPS List 2. This species is found in broadleaved upland forest and upper montane coniferous forest habitat types. Because there are no such habitat types within or adjacent to the project area, no significant adverse impacts are expected.

**Triquetrella californica**  
Coastal Triquetrella  
CNPS List 1B. This byrophyte is found in coastal scrub and coastal bluff scrub. Because there are no such habitat types within or adjacent to the project area, no significant adverse impacts are expected.

**Viburnum ellipticum**  
Oval-Leaved Viburnum  
CNPS List 2. This species is found in chaparral, cismontane woodland, and lower montane coniferous forest habitat types. Because there are no such habitat types within or adjacent to the project area, no significant adverse impacts are expected.

**Viola palustris**  
Marsh Violet  
CNPS List 2. This species is associated with wet, brushy areas in coastal scrub or coastal bogs. There are no coastal scrub or coastal bog habitats within the plan area. Given these factors, no significant adverse impacts are expected.

**LICHENS:**

**Usnea longissima**  
Methuselah’s Beard Lichen  
This lichen is usually associated with overstory canopies of mature forests. However, occurrences have been detected in a variety of stands. The occurrence of this species was not detected in this area.
**Environmentally Sensitive Habitat Types:**

**Coastal and Valley Freshwater Marsh**
Impacts to this habitat type are not anticipated from the proposed project based on non-occurrence of the habitat type in or around the plan area and on the use of modern projecting procedures, which minimize impacts to the fluvial system.

**Coastal Brackish Marsh**
Because there are no brackish marshes within or associated with this Area of interest, no significant adverse impacts are expected for this habitat type. Impacts to this habitat type are not anticipated from the proposed project based on non-occurrence of the habitat type in or around the plan area and on the use of modern projecting procedures, which minimize impacts to the fluvial system.

**Coastal Terrace Prairie**
Because there are no coastal terrace prairies within or associated with this Area of interest, no significant adverse impacts are expected for this habitat type.

**Fen**
A fen is typically defined as a lowland area that is wet or marsh-like. The Inglenook Fen is located inside MacKerricher State Park which is described as the best example of a fen in the region. Some components of the Inglenook Fen include saturated soils and heavy riparian vegetation. Since there are no habitat types in or directly adjacent to the plan area that meet the definition of this type of habitat, no adverse impacts are expected.

**Grand Fir Forest**
Grand fir trees do not exist within the area of interest. Based on the non-occurrence of this pure grand fir habitat type no adverse impacts to this habitat type are foreseen.

**Mendocino Pygmy Cypress Forest**
This habitat community is associated with Blacklock soils on gentle sloping marine terraces. Because there are no locations within or adjacent to the area of interest which support the Pygmy Cypress Forest, no significant adverse impacts are expected.

**Northern Coastal Salt Marsh**
Impacts to this habitat type are not anticipated from the proposed project based on non-occurrence of the habitat type in or around the plan area and on the use of modern projecting procedures, which minimize impacts to the fluvial system.

**Pinus muricata – Pinus muricata Forest Alliance**
This habitat type extends eastward from to the project area to the County Road covering hundreds of acres located on poor soils found along the main ridge separating coastal tributaries in this area from the Garcia River drainage to the East.

**Sphagnum Bog**
Sphagnum bogs are generally associated with Mendocino Pygmy Forest areas. This habitat type is not present in the Area of interest, and therefore no significant adverse impacts are expected to this habitat type or species utilizing this habitat type are anticipated.
Floristic Species List

Agoseris heterophylla var. heterophylla  Annual agoseris
Agrostis idahoensis  Bent-grass
Agrostis gigantia  Creeping bentgrass
Aira caryophyllea  Silvery hairgrass
Anisocarpus madioides  Woodland madia
Anthoxanthum occidentale  California sweet grass
Aquilegia formosa  Crimson columbine
Arbutus menziesii  Pacific Madrone
Arctostaphylos columbiana  Redwood manzanita
Arctostaphylos nummularia  Shatterberry
Artemisia douglasiana  California mugwort
Avena fatua  Wildoats
Baccharis pilularis  Coyote brush
Bellis perennis  English daisy
Berberis aquifolium  Oregon grape
Briza maxima  Rattlesnake grass
Bromus sp.  Brome grass
Calypso bulbosa  Fairy slipper orchid
Calystegia silvatica  Shortstalk false bindweed
Cardamine californica  Milk maids
Cardamine oligosperma  Idaho bittercress
Carduus pybocephalus  Italian thistle
Ceanothus thyrsiflorus  Blueblossom
Chrysolepis chrysophylla  Golden chinquapin
Cirsium arvense  Canada thistle
Cirsium brevistylum  Indian thistle
Cirsium vulgare  Bullthistle
Claytonia sibirica  Candy flower
Clinopodium douglasii  Yerba buena
Clintonia andrewsian  Clintonia
Cynoglossum grande  Houndstongue
Cynosurus echinatus  Dogtail grass
Cytisus scoparius  Scotch broom
Deschampsia cespitosa  Tufted hairgrass
Festuca myuros  Rattle sixweeks grass
Festuca perennis  Rye grass
Frangula californica  Wild strawberry
Galium porrigens var. porrigens  California coffeeberry
Gaultheria shallon  Salal
Geranium dissectum  Wild geranium
Gladiolus sp.  Bedstraw
Heteromeles arbutifolia  Toyon
Hieracium bolanderi  Bolander’s hawkweed
Holcus lanatus  Common velvetgrass
Hypericum perforatum  Klamath weed
Iris douglasiana  
Lathyrus torreyi  
Leucanthemum vulgare  
Lonicera hispidula  
Lotus corniculatus  
Lupinus bicolor  
Lysimachia arvensis  
Lysimachia latifolia  
Lythrum hyssopifolia  
Mentha pulegium  
Mimulus aurantiacus  
Morella californica  
Myosotis latifolia  
Notholithocarpus densiflorus  
Oxalis oregana  
Pentagramma triangularis  
Phacelia bolanderi  
Pinus muricata  
Plantago lanceolata  
Plantago major  
Polypodium calirhiza  
Polystichum munitum  
Prunella vulgaris ssp. lanceolata  
Pseudotsuga menziesii  
Pteridium aquilinum var. pubescens  
Pyrola picta  
Rhamnus californica  
Rhododendron macrophylllum  
Rosa gymnocarpa  
Sanicula laciniata  
Sarothamnus scoparius  
Scolioipus bigelovii  
Senecio jacobaea  
Senecio sylvaticus  
Sequoia sempervirens  
Stellaria crispa  
Toxicodendron diversilobum  
Toxicoscordion fremontii  
Trifolium campestre  
Trifolium cernuum  
Trifolium dubium  
Trifolium repens  
Trifolium striatum  
Trillium ovatum  
Trisetum canescens  
Tsuga heterophylla  
Vaccinium ovatum

Douglas iris  
Redwood pea  
Oxe eye daisy  
Pink honeysuckle  
Birdsfoot lotus  
Miniature lupine  
Scarlet pimpernel  
Pacific starflower  
Hyssop loosestrife  
Pennyroyal  
Sticky monkeyflower  
California wax myrtle  
Forget me not  
tanoak  
Redwood sorrel  
Gold back fern  
Bolander’s phacelia  
Bishop pine  
English plantain  
Common Plantain  
Common polypody  
Western sword fern  
Mountain selfheal  
Douglas-fir  
Western bracken fern  
Wintergreen  
California coffeeberry  
Western rhododendron  
Wood rose  
coast sanicle  
Scotch broom  
Fetid adder’s tongue  
Tansy ragwort  
Woodland ragwort  
Coast redwood  
Hedge nettle  
Poison oak  
Fremont’s seath camas  
Hop clover  
Nodding clover  
Shamrock clover  
White clover  
Knotted clover  
Western trillium  
Nodding oatgrass  
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### CNDDB 9-Quad Species List

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Biological & Botanical Survey Report, Revised
CDP_2018-0032

PBS Received 9-19-2019
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### Plant List

**Inventory of Rare and Endangered Plants**

54 matches found.  *Click on scientific name for details*

#### Search Criteria

Found in Mendocino County, Found in Quads 3912316, 3912315, 3912314, 3812386, 3812385, 3812384, 3812376, 3812375 and 3812374;

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<th>Common Name</th>
<th>Family</th>
<th>Lifeform</th>
<th>Blooming Period</th>
<th>CA Rare Plant Rank</th>
<th>State Rank</th>
<th>Global Rank</th>
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<td><strong>Abronia umbellata var. breviflora</strong></td>
<td>pink sand-verbena</td>
<td>Nyctaginaceae</td>
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<td>Jun-Oct</td>
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<td>Blasdale's bent grass</td>
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<td>May-Jul</td>
<td>1B.2</td>
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<td>G2</td>
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<td><strong>Astragalus agnicidus</strong></td>
<td>Humboldt County milk-vetch</td>
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<td>Apr-Sep</td>
<td>1B.1</td>
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<td><strong>Bryoria pseudocapillaris</strong></td>
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<td>S4</td>
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<td><strong>Calystea purpurata ssp. saxicola</strong></td>
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<td>S2S3</td>
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<td>G3</td>
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<td>2B.3</td>
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<td>G5</td>
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<td>Apr-Aug</td>
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<td>G5</td>
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<td>S2</td>
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<tr>
<td><strong>Castilleja ambigua var. ambiguа</strong></td>
<td>Johnny-nip</td>
<td>Orobanchaceae</td>
<td>annual herb (hemiparasitic)</td>
<td>Mar-Aug</td>
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<td>S4</td>
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<td><strong>Castilleja ambigua var. humboldtensis</strong></td>
<td>Humboldt Bay owl's-clover</td>
<td>Orobanchaceae</td>
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<td>Apr-Aug</td>
<td>1B.2</td>
<td>S2</td>
<td>G4T2</td>
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<td><strong>Castilleja mendocinensis</strong></td>
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<td>Apr-Aug</td>
<td>1B.2</td>
<td>S2</td>
<td>G2</td>
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<tr>
<td><strong>Ceanothus gloriosus var. exaltatus</strong></td>
<td>Glory brush</td>
<td>Rhamnaceae</td>
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<td>Mar-Jun(Aug)</td>
<td>4.3</td>
<td>S4</td>
<td>G4T4</td>
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<td>Point Reyes ceanothus</td>
<td>Rhamnaceae</td>
<td>perennial evergreen shrub</td>
<td>Mar-May</td>
<td>4.3</td>
<td>S4</td>
<td>G4T4</td>
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<tr>
<td><strong>Coptis laciniata</strong></td>
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<td>Ranunculaceae</td>
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<td><em>Cuscuta pacifica var. papillata</em></td>
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<td>annual vine (parasitic)</td>
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<td>3</td>
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<td>S2</td>
<td>G3</td>
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<tr>
<td><em>Erythronium revolutum</em></td>
<td>coast fawn lily</td>
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<td>Mar-Jul(Aug)</td>
<td>2B.2</td>
<td>S3</td>
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<td>S2</td>
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<td>2B.3</td>
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<td>G5</td>
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<td><em>Hesperocyparis pygmaea</em></td>
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<td>1B.2</td>
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<td>S2</td>
<td>G2</td>
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<td>S1S2</td>
<td>G4?</td>
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Suggested Citation


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<td><em>Darlingtonia californica</em></td>
<td>California pitcher plant fens</td>
<td>Herb</td>
<td>S3</td>
<td>G4?</td>
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<td><em>Deschampsia cespitosa</em></td>
<td>Tufted hair grass meadows</td>
<td>Herb</td>
<td>S4?</td>
<td>G5</td>
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<td><em>Distichlis spicata</em></td>
<td>Salt grass flats</td>
<td>Herb</td>
<td>S4</td>
<td>G5</td>
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<td><em>Eleocharis macrostachya</em></td>
<td>Pale spike rush marshes</td>
<td>Herb</td>
<td>S4</td>
<td>G4</td>
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<tr>
<td><em>Elymus (elymoids, multisetus)</em></td>
<td>Squirreltail patches</td>
<td>Herb</td>
<td>S4?</td>
<td>G4</td>
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<td><em>Eschscholzia (californica) - Lupinus (nanus)</em></td>
<td>California poppy - lupine fields</td>
<td>Herb</td>
<td>S4</td>
<td>G4</td>
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<td><em>Eucalyptus spp. - Ailanthus altissima - Robinia pseudoacacia</em></td>
<td>Eucalyptus - tree of heaven - black locust groves</td>
<td>Tree</td>
<td>SNR</td>
<td>GNR</td>
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<td>Festuca rubra</td>
<td>Red fescue grassland</td>
<td>Herb</td>
<td>S3?</td>
<td>G4</td>
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<td>Frangula californica</td>
<td>California coffee berry scrub</td>
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<td>S4</td>
<td>G4</td>
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<td>Frankenia salina</td>
<td>Alkali heath marsh</td>
<td>Herb</td>
<td>S3</td>
<td>G4</td>
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<td>Fraxinus latifolia</td>
<td>Oregon ash groves</td>
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<td>S3.2</td>
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<td>Garrya elliptica</td>
<td>Coastal silk tassel scrub</td>
<td>Shrub</td>
<td>S3?</td>
<td>G3?</td>
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<td>Glyceria × occidentalis</td>
<td>Northwest manna grass marshes</td>
<td>Herb</td>
<td>S3?</td>
<td>G3?</td>
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<td>Grindelia (camorum, stricta)</td>
<td>Gum plant patches</td>
<td>Herb</td>
<td>S3?</td>
<td>G3?</td>
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<td>Hesperocyparis macnabiana</td>
<td>McNab cypress woodland</td>
<td>Tree</td>
<td>S3.2</td>
<td>G3</td>
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<td>Hesperocyparis pigmaea</td>
<td>Mendocino pygmy cypress woodland</td>
<td>Tree</td>
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<td>G2</td>
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<td>Hesperocyparis sargentii</td>
<td>Sargent cypress woodland</td>
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<td>Heterotheca (oregona, sessiliflora)</td>
<td>Goldenaster patches</td>
<td>Herb</td>
<td>S3</td>
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<td>Holcus lanatus - Anthoxanthum odoratum</td>
<td>Common velvet grass - sweet vernal grass meadows</td>
<td>Herb</td>
<td>None</td>
<td>None</td>
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<td>Holodiscus discolor</td>
<td>Ocean spray brush</td>
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<td>Hordeum brachyantherum</td>
<td>Meadow barley patches</td>
<td>Herb</td>
<td>S3?</td>
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<td>Hydrocotyle (ranunculoides, umbellata)</td>
<td>Mats of floating pennywort</td>
<td>Herb</td>
<td>S3?</td>
<td>G4</td>
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<td>Isoetes (bolanderi, echinospora, howelli, nuttallii, occidentalis)</td>
<td>Quillwort beds</td>
<td>Herb</td>
<td>S3?</td>
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<td>Juglans hindsii and Hybrids</td>
<td>Hinds’s walnut and related stands</td>
<td>Tree</td>
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<td>G1</td>
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<td>Juncus arcticus (var. balticus, mexicanus)</td>
<td>Baltic and Mexican rush marshes</td>
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<td>Juncus effusus</td>
<td>Soft rush marshes</td>
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<td>Juncus lescurii</td>
<td>Salt rush swales</td>
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<td>Juncus (oxymeris, xiphioides)</td>
<td>Iris-leaf rush seeps</td>
<td>Herb</td>
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<td>G2?</td>
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<td>Juncus patens</td>
<td>Western rush marshes</td>
<td>Herb</td>
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<td>Lasthenia californica - Plantago erecta - Vulpia microstachys</td>
<td>California goldfields - dwarf plantain - small fescue flower fields</td>
<td>Herb</td>
<td>S4</td>
<td>G4</td>
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<td>Lemna (minor) and Relatives</td>
<td>Duckweed blooms</td>
<td>Herb</td>
<td>S4?</td>
<td>G5</td>
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<td>Leymus mollis</td>
<td>Sea lyme grass patches</td>
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<td>G4</td>
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<td>Leymus triticoides</td>
<td>Creeping rye grass turfs</td>
<td>Herb</td>
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<td>G5</td>
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<td>Lolium perenne</td>
<td>Perennial rye grass fields</td>
<td>Herb</td>
<td>None</td>
<td>None</td>
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<td>Lotus scoparius</td>
<td>Deer weed scrub</td>
<td>Shrub</td>
<td>S5</td>
<td>G5</td>
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<td>Ludwigia (hexapetala, peploides)</td>
<td>Water primrose wetlands</td>
<td>Herb</td>
<td>None</td>
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<td>Lupinus albifrons</td>
<td>Silver bush lupine scrub</td>
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<td>Lupinus arboreus</td>
<td>Yellow bush lupine scrub</td>
<td>Shrub</td>
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<td>Melica torreyana</td>
<td>Torrey’s melic grass patches</td>
<td>Herb</td>
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<td>Mesembryanthemum spp. - Carpoprotus spp.</td>
<td>Ice plant mats</td>
<td>Herb</td>
<td>SNR</td>
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<td>Morella californica</td>
<td>Wax myrtle scrub</td>
<td>Shrub</td>
<td>S3</td>
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<td>Nassella lepida</td>
<td>Foothill needle grass grassland</td>
<td>Herb</td>
<td>S3?</td>
<td>G3?</td>
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<td>Nassella pulchra</td>
<td>Purple needle grass grassland</td>
<td>Herb</td>
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<td>Notholithocarpus densiflorus</td>
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<td>Tree</td>
<td>S3.2</td>
<td>G4</td>
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<td>Nuphar lutea</td>
<td>Yellow pond-lily mats</td>
<td>Herb</td>
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<tr>
<td>Oenanthe sarmentosa</td>
<td>Water-parsley marsh</td>
<td>Herb</td>
<td>S2?</td>
<td>G4</td>
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<tr>
<td>Phalaris aquatica - Phalaris arundinacea</td>
<td>Harding grass - Reed Canary grass swards</td>
<td>Herb</td>
<td>SNR</td>
<td>GNR</td>
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<td>Phragmites australis</td>
<td>Common reed marshes</td>
<td>Herb</td>
<td>S4?</td>
<td>G5</td>
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<tr>
<td>Picea sitchensis</td>
<td>Sitka spruce forest</td>
<td>Tree</td>
<td>S2</td>
<td>G5</td>
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<td>Pinus attenuata</td>
<td>Knobcone pine forest</td>
<td>Tree</td>
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<td>G4</td>
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<tr>
<td>Pinus contorta ssp. contorta</td>
<td>Beach pine forest</td>
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<td>G5</td>
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<tr>
<td>Pinus jeffreyi</td>
<td>Jeffrey pine forest</td>
<td>Tree</td>
<td>S4</td>
<td>G4</td>
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<td>Pinus muricata</td>
<td>Bishop pine forest</td>
<td>Tree</td>
<td>S3.2</td>
<td>G3</td>
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<tr>
<td>Pinus ponderosa</td>
<td>Ponderosa pine forest</td>
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<td>S4</td>
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<tr>
<td>Pinus ponderosa - Pseudotsuga menziesii</td>
<td>Ponderosa pine - Douglas fir forest</td>
<td>Tree</td>
<td>S4</td>
<td>G4</td>
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<td><em>Polygonum lappathifolium</em> - <em>Xanthium strumarium</em></td>
<td>Smartweed - cocklebur patches</td>
<td>Herb</td>
<td>S5</td>
<td>G5</td>
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<tr>
<td><em>Populus fremontii</em></td>
<td>Fremont cottonwood forest</td>
<td>Tree</td>
<td>S3.2</td>
<td>G4</td>
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<td><em>Populus trichocarpa</em></td>
<td>Black cottonwood forest</td>
<td>Tree</td>
<td>S3</td>
<td>G5</td>
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<tr>
<td><em>Pseudotsuga menziesii</em></td>
<td>Douglas fir forest</td>
<td>Tree</td>
<td>S4</td>
<td>G5</td>
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<td><em>Pseudotsuga menziesii</em></td>
<td>Douglas fir - tanoak forest</td>
<td>Tree</td>
<td>S4</td>
<td>G4</td>
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<td><em>Quercus agrifolia</em></td>
<td>Coast live oak woodland</td>
<td>Tree</td>
<td>S4</td>
<td>G5</td>
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<tr>
<td><em>Quercus (agrifolia, douglasii, garryana, kelloggii, lobata, wislizeni)</em></td>
<td>Mixed oak forest</td>
<td>Tree</td>
<td>S4</td>
<td>G4</td>
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<td><em>Quercus berberidifolia</em></td>
<td>Scrub oak chaparral</td>
<td>Shrub</td>
<td>S4</td>
<td>G4</td>
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<tr>
<td><em>Quercus chrysolepis</em></td>
<td>Canyon live oak forest</td>
<td>Tree</td>
<td>S5</td>
<td>G5</td>
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<tr>
<td><em>Quercus douglasii</em></td>
<td>Blue oak woodland</td>
<td>Tree</td>
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<td><em>Quercus durata</em></td>
<td>Leather oak chaparral</td>
<td>Shrub</td>
<td>S4</td>
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<td><em>Quercus garryana</em></td>
<td>Oregon white oak woodland</td>
<td>Tree</td>
<td>S3</td>
<td>G4</td>
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<tr>
<td><em>Quercus kelloggii</em></td>
<td>California black oak forest</td>
<td>Tree</td>
<td>S4</td>
<td>G4</td>
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<td><em>Quercus lobata</em></td>
<td>Valley oak woodland</td>
<td>Tree</td>
<td>S3</td>
<td>G3</td>
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<td><em>Quercus parvula var.</em></td>
<td>Shreve oak forests</td>
<td>Tree</td>
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<td>G2</td>
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<tr>
<td><em>Quercus wislizeni</em></td>
<td>Interior live oak chaparral</td>
<td>Shrub</td>
<td>S4</td>
<td>G4</td>
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<tr>
<td><em>Quercus wislizeni</em></td>
<td>(shrub)</td>
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<tr>
<td><em>Quercus wislizeni</em></td>
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<tr>
<td><em>Rhododendron columbia</em>um*</td>
<td>Western Labrador-tea thickets</td>
<td>Shrub</td>
<td>S2?</td>
<td>G4</td>
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<td><em>Rhododendron occidentale</em></td>
<td>Western azalea patches</td>
<td>Shrub</td>
<td>S2?</td>
<td>G3</td>
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<td><em>Rubus armeniacus - Sesbania punicea - Ficus carica</em></td>
<td>Himalayan blackberry - rattlebox - edible fig riparian scrub</td>
<td>Shrub</td>
<td>SNR</td>
<td>GNR</td>
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<td><em>Rubus (parviflorus, spectabilis, ursinus)</em></td>
<td>Coastal brambles</td>
<td>Shrub</td>
<td>S3</td>
<td>G4</td>
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<td><em>Ruppi</em>a (cirrhosa, maritima)</td>
<td>Ditch-grass or widgeon-grass mats</td>
<td>Herb</td>
<td>S2</td>
<td>G4?</td>
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<td><em>Salix brewe</em>ri</td>
<td>Brewer willow thickets</td>
<td>Shrub</td>
<td>S2</td>
<td>G2</td>
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<td><em>Salix exigu</em>a</td>
<td>Sandbar willow thickets</td>
<td>Shrub</td>
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<tr>
<td><em>Salix gooddingii</em></td>
<td>Black willow thickets</td>
<td>Tree</td>
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<td>G4</td>
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<td><em>Salix hookeriana</em></td>
<td>Coastal dune willow thickets</td>
<td>Shrub</td>
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<tr>
<td><em>Salix laevigata</em></td>
<td>Red willow thickets</td>
<td>Tree</td>
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<td>G3</td>
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<td><em>Salix lasiolep</em>is</td>
<td>Arroyo willow thickets</td>
<td>Shrub</td>
<td>S4</td>
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<td><em>Salix lucida</em></td>
<td>Shining willow groves</td>
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<tr>
<td><em>Salix sitchensis</em></td>
<td>Sitka willow thickets</td>
<td>Shrub</td>
<td>S3?</td>
<td>G4</td>
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<tr>
<td><em>Sambucus nigra</em></td>
<td>Blue elderberry stands</td>
<td>Shrub</td>
<td>S3</td>
<td>G3</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Sarcocornia pacifica (Salicornia depressa)</em></td>
<td>Pickleweed mats</td>
<td>Herb</td>
<td>S3</td>
<td>G4</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Schoenoplectus acutus</em></td>
<td>Hardstem</td>
<td>Herb</td>
<td>S4</td>
<td>G5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alliance Scientific Name</td>
<td>Common Name</td>
<td>Lifeform</td>
<td>CA Rarity</td>
<td>Global Rarity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------------------------</td>
<td>--------------------------------------</td>
<td>----------</td>
<td>-----------</td>
<td>---------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Schoenoplectus americanus</strong></td>
<td>American bulrush marsh</td>
<td>Herb</td>
<td>S3.2</td>
<td>G5</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Schoenoplectus californicus</strong></td>
<td>California bulrush marsh</td>
<td>Herb</td>
<td>S4?</td>
<td>G5</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Scirpus microcarpus</strong></td>
<td>Small-fruited bulrush marsh</td>
<td>Herb</td>
<td>S2</td>
<td>G4</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Sedum spathulifolium</strong></td>
<td>Coast Range stonewort draperies</td>
<td>Herb</td>
<td>S4?</td>
<td>G4?</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Sequoia sempervirens</strong></td>
<td>Redwood forest</td>
<td>Tree</td>
<td>S3.2</td>
<td>G3</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Sparganium (angustifolium)</strong></td>
<td>Mats of bur-reed leaves</td>
<td>Herb</td>
<td>S3?</td>
<td>G4</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Spartina (alterniflora, densiflora)</strong></td>
<td>Smooth or Chilean cordgrass marshes</td>
<td>Herb</td>
<td>None</td>
<td>None</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Spartina foliosa</strong></td>
<td>California cordgrass marsh</td>
<td>Herb</td>
<td>S3.2</td>
<td>G3</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Stuckenia (pectinata) - Potamogeton spp.</strong></td>
<td>Pondweed mats</td>
<td>Herb</td>
<td>S3?</td>
<td>G3</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Toxicodendron diversilobum</strong></td>
<td>Poison oak scrub</td>
<td>Shrub</td>
<td>S4</td>
<td>G4</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Trifolium variegatum</strong></td>
<td>White-tip clover swales</td>
<td>Herb</td>
<td>S3?</td>
<td>G3?</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Tsuga heterophylla</strong></td>
<td>Western hemlock forest</td>
<td>Tree</td>
<td>S2</td>
<td>G5</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Typha (angustifolia, domingensis, latifolia)</strong></td>
<td>Cattail marshes</td>
<td>Herb</td>
<td>S5</td>
<td>G5</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Umbellularia californica</strong></td>
<td>California bay forest</td>
<td>Tree</td>
<td>S3</td>
<td>G4</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Vaccinium uliginosum</strong></td>
<td>Bog blueberry wet meadows</td>
<td>Shrub</td>
<td>S3</td>
<td>G4</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Vitis arizonica - Vitis girdiana</strong></td>
<td>Wild grape shrubland</td>
<td>Shrub</td>
<td>S3</td>
<td>G3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX A

THP 1-94-337MEN

(Added for reference to pre-existence of roads and skid trails via lawful permitted uses by prior owners)
THP # 1-94- 337 MEN 

Part 1 of 1
This Timber Harvesting Plan (THP) form, when properly completed, is designed to comply with the Forest Practice Act (FPA) and Board of Forestry rules. See separate instructions for information on completing this form. NOTE: The form must be printed legibly in ink or typewritten.

1. TIMBER OWNER(S): Name Shirley Beltz Zeni

Address Zeni Ranch, 30995 Fish Rock Road

City Yorkville State Calif. Zip 95494 Phone (707) 895-3177

2. TIMBERLAND OWNER(S): Name Same as Item #1.

Address

City State Zip Phone

3. TIMBER OPERATOR(S): Name Harwood Investment Company

Address P.O. Box 224

City Branscomb State Calif. Zip 95417 Phone (707) 984-6181

4. PLAN SUBMITTER(S): Name Harwood Investment Company

If the plan submitter is different from 1,2, or 3 explain authority to submit plan:

________________________________________________________________________

5. Person to contact on-site who is responsible for the conduct of the operation:

Name John Zeni

Address Zeni Ranch, 30995 Fish Rock Road

City Yorkville State Calif. Zip 95494 Phone (707) 895-3177

6. RPP preparing the THP: Name Timothy C. Motl

Address P.O. Box 1393 Registration Number 2047

City Willits State Calif. Zip 95490 Phone (707) 459-2580

Received CDF REGION 1 CDF STOCK NO. 7540-130-0063

JUL 07 1994

PBS Received 9-19-2019

RESOURCE MANAGEMENT APN 029-462-01
7. Expected commencement date of timber operations: Upon Plan Approval

8. Expected completion date of timber operations: Three years following plan approval

9. Forest products to be harvested: Sawlogs, pulpslogs, split products, fuelwood

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

   1. [ ] Coast Forest District
   2. [ ] Northern Forest District
   3. [ ] Southern Forest District
   4. [ ] Southern Subdistrict of the Coast Forest District
   5. [ ] High-Use Subdistrict of the Southern Forest District

11. Location of the timber operations by legal description:

   Base and Meridian: [ ] Mount Diablo [ ] Humboldt [ ] San Bernardino

   Section  
   Township  
   Range  
   Approximate Acreage  
   County  
   Optional, Assessors Parcel No.

   26   12 N   16 W   68   Mendocino

   TOTAL ACREAGE 68

12. [ ] Yes [X] No Is a timberland conversion permit in effect? If yes, list permit number and date of expiration:

13. [ ] Yes [X] 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. [X] Yes [ ] No Is any part of the plan within a special treatment area, Tahoe Regional Planning Agency jurisdiction, or a county which has special rules? If yes, identify the special area: THP is in Coastal Zone, Non-STA.

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[ ] Clearcutting
   2[ ] Shelterwood, preparatory step
   3[ ] Shelterwood, seed step
   4[ ] Shelterwood, removal step
   5[ ] Seed tree, seed tree step
   6[ ] Seed tree, seed tree removal step
   See Addendum #15.

   7[X] Selection - designate basal area stocking standards to be met: See Addendum #15.

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

   9[ ] Sanitation salvage - when will stocking be met:

   10[ ] Special treatment areas
   11[ ] Rehabilitation of understocked areas
   12[ ] Alternative prescription
   13[ ] Transition method

   NOTE: Where the level of stocking is based upon timberland site, timberland sites must be shown on the map.
6a. [X] Yes [ ] No Are any exceptions to the standard silvicultural methods or treatments permitted in the rules proposed for this plan? If yes, explain and justify the exception in an addendum.

See Addendum # 16.

b. [ ] Yes [X] No Will artificial regeneration be required to restock the logged area?

17. [ ] Yes [X] No Are broadleaf or optional species proposed for management? See item 18.

18. [ ] Yes [X] No Are broadleaf or optional species to be used to meet stocking standards?

If the answer to items 17 or 18 is yes, list the species and provide the information required by the rules:

________________________________________________________________________________________

________________________________________________________________________________________

HARVESTING PRACTICES AND EROSION CONTROL

19. Indicate type of yarding systems to be used this plan:

1[X] Tractor, skidder, forwarder 2[ ] Balloon, helicopter 3[ ] Cable, ground lead
4[ ] Cable, high-lead 5[ ] Cable, skyline 6[ ] Animal
7[ ] Other

20. [ ] Yes [X] No Will tractor constructed layouts be used?

21. [X] Yes [ ] No Will tractors be used for directional tree pulling?

Check items 22 through 25 that apply to the use of tractors.

22. [X] Yes [ ] No Operations on unstable soils or slide areas?
23. [X] Yes [ ] No Operations on slopes over 65%?
24. [ ] Yes [X] No Operations on slopes over 50% with high or extreme BHR?
25. [ ] Yes [X] No Operations within cable yarding areas?

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

See Addendum # 22/# 23/# 28

________________________________________________________________________________________

26. Indicate erosion hazard ratings present on this THP:

[ ] Low [X] Moderate [ ] High [ ] Extreme

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

Where grass seeding is required by the Rules or stated in the plan annual rye will be planted at the rate of 25 lbs. per acre. Straw mulch will be applied at the rate of 2 inches thick, dry spread rate 90% coverage.
28. [X] Yes [ ] No Are any alternatives practices or exceptions to the standard harvesting or erosion control practices permitted in the rules proposed for this plan? If yes, explain and justify:

See Addendum # 22/# 23/# 28

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

ROADS AND LANDINGS

30. [X] Yes [ ] No Will any roads or landings be constructed or reconstructed?
   If yes, check items 31 through 37 that apply:

31. [ ] Yes [X] No Will roads be wider than single lane with turnouts?

32. [ ] Yes [X] No Will any landings exceed the maximum size specified in the rules?

33. [X] Yes [ ] No Are logging roads or landings proposed in areas of unstable soils or known slide-prone areas?

34. [ ] Yes [X] No Will new roads exceed a grade of 15% or pitches of 20% for distances greater than 500 feet?

35. [ ] Yes [X] No Are roads to be constructed, other than crossings, within the watercourse and lake protection zone of a class I or class II watercourse?

36. [ ] Yes [X] No Will roads or landings greater than 100 feet in length be located on slopes over 65%, or on slopes over 50% which are within 100 feet of the boundary of a watercourse or lake protection zone?

37. [ ] Yes [X] No Are exceptions proposed for 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, if required by the rules. Provide necessary information in an addendum.

   See Addendum # 33

WATERCOURSES AND LAKES

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

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

   See Addendum #40–#46

Are exceptions proposed for the following watercourse and lake protection zone practices? Check items 41 through 48 that apply.

41. [ ] Yes [X] No Exclusion of the use of watercourses, marshes, wet meadows, and other wet areas, for landings, roads, or tractor roads?

42. [ ] Yes [X] No Retention of non-commercial vegetation bordering and covering meadows and wet areas?
43. [ ] Yes [X] No Directional felling of trees within the zone away from the watercourse or lake?

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

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

46. (X) Yes [ ] No Exclusion of heavy equipment from the zone?

47. [ ] Yes [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. **See Addendum #40-#46**

49. [X] Yes [ ] No Are residual trees or harvest trees going to be marked within the watercourse or lake protection zone?

    **All Class II Watercourse Zones have been flagged and marked by the RPF and his designee.**

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

    **See Addendum # 50**

51. [ ] Yes [X] No Are any known rare or endangered species or species of special concern, including key habitats, associated with the THF area? If yes, in an addendum identify the species and the provisions to be taken for the protection of the species.

52. [ ] Yes [X] No Are there any snags which must be felled for fire protection or other reasons? If yes, describe which snags are going to be felled:

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

**Cultural Resources**

54.a. [X] Yes [ ] No Has an archaeological survey been made of the areas to be harvested?

b. [X] Yes [ ] No Have the California Archaeological Inventory records been checked for any recorded archaeological or historical sites located in the area to be harvested?

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.
HAZARD REDUCTION

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

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
</tr>
</thead>
</table>
| 1[X] Pile and burn, | 2[X] Lopping, | 3[X] Other Removal From Zone |   | 4[ ] Not applicable no fire protection zone present.

57. [ ] Yes [ ] No If the clearcutting method is used, will broadcast burning be used for site preparation? N/A

58. If piling and burning is to be used for hazard reduction, who will be responsible for compliance?

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1[ ] Timber owner,</td>
<td>2[ ] Timber operator,</td>
<td>3[X] Timberland owner</td>
<td></td>
</tr>
</tbody>
</table>

PUBLIC NOTICE

59. [X] Yes [ ] No Are there any ownerships within 300 feet of the plan boundary which are 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 Timber must be included with the plan. See Addendum # 59.

PESTS

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

OTHER INFORMATION

61. Are there any other existing or planned land use activities including but not limited to other THPs in the area of the proposed THP which may combine with 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 an addendum.

ATTACHMENTS

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

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1[ ] Notice of Stream Bed Alteration to Department of Fish and Game (A copy of this notice is attached to the instructions for your use.)</td>
<td>2[X] Estimated Surface Soil Erosion Hazard Calculations</td>
<td>3[X] Notice of Intent to Harvest Timber and a list of names and addresses of adjacent property owners.</td>
<td>4[X] Maps</td>
</tr>
<tr>
<td>5[X] Addendum for silviculture information.</td>
<td>6[ ] Written notice of plan to the timber operator, timberland owner, or timber owner that did not sign the THP.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

REGISTERED PROFESSIONAL FORESTER

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

Preparation and approval of the THP.
64. I have notified the timber owner and the timberland, owner in writing of their responsibilities for:
1. [X] Yes [ ] No The stocking requirements of the rules
2. [X] Yes [ ] No The maintenance of erosion control structures requirements of the rules
3. [X] Yes [ ] No The marking requirements contained in the rules

65. [X] Yes [ ] No I will provide the timber operator with a copy of the approved THP.

66. After considering the rules of the Board of Forestry and the mitigation measures I have proposed I have determined that the timber operation:
[ ] will have a significant adverse effect on the environment.
[X] will not have a significant adverse impact on the environment.
If the operations will have a significant adverse impact on the environment, in an addendum explain why any alternatives or additional measures that would reduce the impact are not feasible.

67. Registered Professional Forester: I certify that I, or my designee, personally inspected the plan area, and the plan complies with the Forest Practice Act and forest practice rules.

Signature: __________________________ Date: 6/17/94

68. CERTIFICATION

The above conforms to my/our plan and, upon filing, I/we agree to conduct harvesting in accordance therewith. Consent is hereby given to the Director of Forestry, his agents and employees, to enter the premises to inspect timber operations for compliance with the Forest Practice Act and forest practice rules.

Timber Owner: Shirley Beltz Zeni

Signature: __________________________ Date: __________________________

Printed Name: Shirley Beltz Zeni

Timberland Owner: Shirley Beltz Zeni

Signature: __________________________ Date: __________________________

Printed Name: Shirley Beltz Zeni

Timber Operator: Harwood Investment Company

Signature: __________________________ Date: 7-1-94

Printed Name: Morris J. Harwood

DIRECTOR OF FORESTRY
This Timber Harvesting Plan conforms to the established regulations of the Board of Forestry and with the Forest Practice Act.

By: __________________________

Leonard F. Thieiss
No. 219

STATE OF CALIFORNIA

RESOURCE MANAGER

PBS Received 9-19-2019

APN 029-462-01
### I. SOIL FACTORS

#### A. SOIL TEXTURE

<table>
<thead>
<tr>
<th>Texture</th>
<th>Fine</th>
<th>Medium</th>
<th>Course</th>
<th>A</th>
<th>B</th>
<th>C</th>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td>2</td>
<td>1</td>
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</table>

#### 1. DETACHABILITY

<table>
<thead>
<tr>
<th>Detachability</th>
<th>Low</th>
<th>Moderate</th>
<th>High</th>
<th>Rating (1-9)</th>
</tr>
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<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10-18 19-30</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1 2 3</td>
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#### 2. PERMEABILITY

<table>
<thead>
<tr>
<th>Permeability</th>
<th>Slow</th>
<th>Moderate</th>
<th>Rapid</th>
<th>Rating (5-4)</th>
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<tbody>
<tr>
<td></td>
<td>5-4</td>
<td></td>
<td>3-2</td>
<td>1 2 3</td>
</tr>
</tbody>
</table>

#### B. DEPTH TO RESTRICTIVE LAYER OR BEDROCK

<table>
<thead>
<tr>
<th>Depth</th>
<th>Shallow</th>
<th>Moderate</th>
<th>Deep (40°-60° (+))</th>
<th>Rating (1-9)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1' - 19&quot;</td>
<td>20° - 39&quot;</td>
<td></td>
<td>15-9</td>
</tr>
<tr>
<td></td>
<td>8-4</td>
<td>3-1</td>
<td>3 3 1</td>
<td></td>
</tr>
</tbody>
</table>

#### C. PERCENT SURFACE COARSE FRAGMENTS GREATER THAN 2 MM IN SIZE INCLUDING ROCKS OR STONES

<table>
<thead>
<tr>
<th>Percent</th>
<th>Low (-10-39%)</th>
<th>Moderate (40-70%)</th>
<th>High (71-100%)</th>
<th>Rating (1-6)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10-6</td>
<td>5-3</td>
<td>2-1</td>
<td>2 2 2</td>
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<table>
<thead>
<tr>
<th>Factor Rating</th>
<th>A</th>
<th>B</th>
<th>C</th>
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<tbody>
<tr>
<td>Subtotal</td>
<td>28</td>
<td>29</td>
<td>23</td>
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#### II. SLOPE FACTOR

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<thead>
<tr>
<th>Slope</th>
<th>5-15%</th>
<th>16-30%</th>
<th>31-40%</th>
<th>41-50%</th>
<th>51-70%</th>
<th>71-80% (+)</th>
<th>Rating (1-3)</th>
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<tbody>
<tr>
<td></td>
<td>1-3</td>
<td>4-6</td>
<td>7-10</td>
<td>11-15</td>
<td>16-25</td>
<td>26-35</td>
<td>10 18 24</td>
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</table>

#### III. PROTECTIVE VEGETATIVE COVER REMAINING AFTER DISTURBANCE

<table>
<thead>
<tr>
<th>Cover</th>
<th>Low (0-40%)</th>
<th>Moderate (41-80%)</th>
<th>High (81-100%)</th>
<th>Rating (1-5)</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>15-8%</td>
<td>7-4</td>
<td>3-1</td>
<td></td>
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</tbody>
</table>

#### IV. TWO-YEAR, ONE-HOUR RAINFALL INTENSITY (Hundredths Inch)

<table>
<thead>
<tr>
<th>Intensity</th>
<th>Low (≤ 30-39)</th>
<th>Moderate (40-59)</th>
<th>High (60-69)</th>
<th>Extreme (70-80 (+))</th>
<th>Rating (1-3)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1-3</td>
<td>4-7</td>
<td>8-11</td>
<td>12-15</td>
<td></td>
</tr>
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</table>

| Total Sum of Factors | 54 | 64 | 63 |

### EROSION HAZARD RATING

<table>
<thead>
<tr>
<th>Erosion Hazard</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;50</td>
</tr>
<tr>
<td>LOW (L)</td>
</tr>
</tbody>
</table>

THE DETERMINATION IS: M M M
NOTICE OF INTENT TO HARVEST TIMBER

A Timber 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 & Fire Protection. The Department will be reviewing the proposed timber operation for compliance with various laws and rules. This review requires the addressing of any concerns you may have with what is being proposed. The following briefly describes the proposed timber operation and where and how to get more information.

The review times given to the Department to review the proposed timber operation are variable in length, but limited. To ensure the Department receives your comments please note the following:

- The earliest date the Department may approve the plan or amendment is: **7/6/94 - 7/22/94**
- This is 15 days from the date of receipt of the plan by the Department.
- The plan or amendment was sent to the department on: ____________________________
- The actual review required by the department will determine the length of the review period beyond the noted minimum, normally it is longer. Please check with the Department to determine the date when public comment closes.

Questions about the proposed timber operation or laws and rules governing timber operations should be directed to:

California Department of Forestry & Fire Protection
Forest Practice Program
135 Ridgeway Avenue (P O Box 670)
Santa Rosa, CA 95402
(707) 376-2279

The public may review the plan or amendment at the above Department office or purchase a copy of the plan or amendment. The cost to obtain a copy is $2.50 for the first 20 pages and 12 cents for each additional page. (To be completed by the department upon receipt. The cost to obtain a copy of the plan or amendment is: **$7.15**)

Information about the plan or amendment follows:

1. Timberland Owner where the timber operation is to occur: **Shirley Holtz Zemi**

2. Registered Professional Forester who prepared the plan or amendment: **Timothy C. Motl #2047**

3. Name of individual who submitted the plan or amendment: **Harwood Investment Company**

4. Location of the proposed timber operation (county, legal description, & approximate distance of the timber operation from the nearest community or well-known landmark):

   Sec. 26, T 12N, R 16W, MDOB, Mendocino County. Approximately 3 road miles southeast of the intersection of Ten Mile Cutoff and Eureka Hill County Roads. WTP area lies to the southwest of Ten Mile Cutoff Road.

5. The name of and distance from the nearest perennial stream and major watercourse flowing through or downstream from the timber operation:

   The headwaters of the North Fork of Schooner Gulch bisects the southern and central portions of the plan.

6. Acres proposed to be harvested: **68 acres**

7. The regeneration methods and intermediate treatments to be used:

   Selection, Site IV, Regeneration is Natural; Shelterwood, Removal Step, Site III, Regeneration is Natural

A map is attached to help in locating where the proposed timber operation is to occur.

FOR DEPARTMENT USE ONLY

TIMBER HARVESTING PLAN NO. **1-94-397** MENO
Region 1, September 1, 1992

(Date of Receipt) **JUL 0 7 1994**
Shirley B. Zeni  
Zenii Ranch, 30995 Fish Rock Road  
Yorkville, Calif. 95494

Date: May 27, 1994

Dear Mrs. Zeni:

This letter (as required by law) notifies you as timber and timberland owner of your responsibilities for compliance with stocking requirements, marking requirements, and maintenance of erosion control structures within the Timber Harvest Plan (THP) area on your property (also required by law). Attached is a copy of the applicable rule sections regarding these matters. Should the Plan be operated on, these responsibilities and others which are mentioned in the THP document are ultimately up to you as the timber/timberland owner to fulfill.

Please call if you have any questions regarding this matter.

Sincerely,

Timothy C. Motl, RPF #2047  
P.O. Box 1393  
Willits, Calif. 95490  
(707) 459-2580
Shirley B. Zeni
Zeni Ranch, 30995 Fish Rock Road
Yorkville, Calif. 95494

Dear Mrs. Zeni:

This letter informs you that, as per our prior discussion, I am submitting a Timber Harvest Plan (THP) on your property located in Sections 26, T 12N, R 16W, M.D.M. Your name appears in the THP as the Landowner / Timberland Owner and State law requires that I inform you in writing if I submit the Plan without your signature.

If you have any questions about the THP process as we get along with it, please feel free to call me. Thanks.

Sincerely,

[Signature]

Timothy C. Motl, RPF #2047
P.O. Box 1393
Willits, Calif. 95490
(707) 459-2580
Zeni THP
T 12N, R 16W, M.D.B.&M
General Features / Harvest Method Map

THP Area Boundary: ■

Roads: County Road: ——
Existing, Seasonal: ====
Proposed, Seasonal: ——

Special Road Point: ①
(as per Addendum)

Harvest Systems: Tractor/Skidder: (All)

Watercourses: Class II: ———

Scale: 1"=1320'
Contour Interval=40'

APN 029-462-01
THP Area Boundary: "—"

Watercourses: Class II: ——•—
Class III: ——

Watercourse Break: ——
Class II Watercourse Crossing: P•
(as per Addendum)

Spring/Wet area: —

Scale: 1"=1320'
Contour Interval=40'
THP Area Boundary: 

Silvicultural Systems:
Selection, (Site IV):

Shelterwood, Removal Step: (Site III)

Scale: 1"=1320'
Contour Interval=40'
LEGEND

Zenith THP
T 12N, R 16W, M.D.B.&M
Archaeological Coverage Map

THP Area Boundary:

Areas Surveyed this Report:

Scale: 1"=1320'
Contour Interval=40'

PBS Received 9-19-2019
APN 029-462-01
THP Area Boundary:

Roads: County Road:
Existing, Seasonal:
Proposed, Seasonal:

Special Road Point: ①
as per Addendum

Harvest Systems: Tractor/Skidder (All)

Watercourses: Class II:

Scale: 1" = 1320'
Contour Interval = 40'  APN 029-462-01
LEGEND

Zenith THP
T 12N, R 15W, M.D.B.&M
Watershed Assessment Area Map

Assessment Area Boundary:

Proposed THP Area:

Past THP Project: 1, 2, etc. (as per writeup)

Scale: 1"=3500'
Contour Interval=40'

PBS Received 9-19-2019
ADDENDUM # 15

The project area contains an 80-120 year old second growth coastal redwood / Douglas-fir / Bishop pine / Whitewoods (Grand fir & Hemlock) stand mix in two relatively dispersed stand groups (see Silvicultural Method Map). Past land uses in the project area included homesteading and livestock grazing (limited) with associated land clearing & opening practices (primarily controlled-burns), and timber harvesting. The last harvest in this area occurred approximately a reported 30-40 years ago and generally removed the "Biggest, the Best, & the Easiest to Get".

**Type 1**: Areas lying primarily on the upper terrace portion of the plan were measured Site IV and contain an overall average redwood/Douglas-fir/ Whitewoods/ Bishop pine species mix of an estimated 30% / 25% / < 5% / 40%+ in dominants and codominants. This type makes up an estimated 24 acres of the total 68 timbered areas within the THP. The Silvicultural Treatment deemed appropriate for this stand type is Selection, District Rule Section 14 CCR 913.2 (a). This unit has been marked by the RPF and his designee to ensure that at least a minimum of 50 sq. ft. of basal area will remain following harvest. One small approximate 6 acre area located on the central western portion of the plan area was measured Site III and is included in the Selection stand type. This unit has been marked by the RPF and his designee to ensure that at least a minimum of 75 sq. ft. of basal area will remain following harvest. The long-term objective in these stand types is to produce an un-even aged stand suitable for the Selection system with future periodic entries.

**Type 2**: The area lying in the southern portion of the plan and areas encompassing the bulk of the main Class II Watercourses contain a relatively less-dense, irregular-aged Site III stand with an estimated average species breakdown of 55% redwood, 25% Douglas-fir, 15+% Bishop pine, and less than 5% Whitewoods. This unit is comprised of an estimated 80-110 year old second-growth stand (dominants and codominants) over a relatively thrifty and abundant younger redwood/Douglas-fir/whitewood/bishop pine ingrowth stand, this comprised of sprouts and seedlings to an average estimated 25-40 year old conifer understory stand. The Silvicultural System
Deemed appropriate in this approximate 38 acre unit is Shelterwood Removal Step, District Rule Section 14 CCR 913.1(d)(3). (NOTE: see Addendum #16 regarding acreage explanation in this unit). The current stand contains the following estimated DBH class distribution breakdown (as a percentage of Basal Area): 0-10"=10%; 12-18"=40%; 20"+=50%. The post treatment stand is projected to contain the following estimated DBH class distribution breakdown (as a percentage of conifer Basal Area): 0-10"=15%; 12-18"=80%; 20"+=5%. Pre-harvest conifer Basal Area/acre is estimated at an overall average of 50-70 sq.ft./acre. Post-harvest conifer Basal Area/acre should be at an estimated 25-40 sq.ft./acre. The post harvest stand will contain a minimum of 100 trees per acre over 4 inches in diameter. The long range plan will be to manage this stand type for future even-aged management. The description of the stand treatment to be used in selecting trees to be harvested is as follows:

(1). Overstory conifer dominants/codominants in excess of 20" DBH will be removed where a conifer of equal or greater vigor is present within 25' of the drip line of the removal tree, therefore single, isolated, free growing vigorous conifers will not be harvested. (2). No more than one half of the conifer stems in any redwood clump will be removed. A sample area equal to at least 10% of this proposed type has been sample marked by the RPF and his designee. Harvest trees are easily distinguished from those to be retained as per the above retention standards and therefore the RPF does not feel that the remainder of this type requires marking to meet the intent of 14 CCR 913.1 (a)(5).

Hardwoods are found primarily in the thick understory in both stand types and are comprised mainly of salal, huckleberry, rhododendron, tanoak, manzanita. It is estimated that the overall average hardwood component within the Selection unit is about 30% of the overall basal area and about 40% of the overall basal area in the Shelterwood Removal unit. A portion of the hardwood component will be removed or damaged during operations with a proposed post-harvest ratio of conifer:hardwood approximately the same as existed in the pre-harvest stand.
ADDENDUM # 16

It is proposed to allow for an acreage expansion in an even-aged Silvicultural unit (see Addendum # 15, type 2) from the standard 20 acres to 38 acres. District Rule Section 14 CCR 913.1 (a)(2) disallows this size of a unit unless the RPF, under the same Rule Section, provides substantial evidence that the increased acreage limit meets any one of five separate measures. The inclusion of the added acreage will meet the intent of District Rule Section 913.1 (a)(2)(C). The Landowner's parcel contains about 97 total acres which the owner wishes to manage as a single unit. The upper terrace brush & pygmy areas were not included in the THP which brought the management unit and THP to 68 timbered acres. The area in Type 2 clearly meets the standards of the proposed Silvicultural System and therefore this system was applied to the unit. The management of this relatively small parcel as a whole unit rather than a future "piecemeal approach" creates a more natural logging unit by taking advantage of the road and trail system layout and topography of the area. Reuse of old existing non-waterbared trails (see Addendum #22/#23/#28/#33) will also meet the intent of District Rule Section 14 CCR 913.1(a)(2)(E) since entering the added area will allow for proper placement of functional drainage facilities which will restore and enhance previously impacted resource areas, thus providing for a demonstrable net environmental benefit within the watershed.
ADDENDUM # 22/ #23/ #28

A). Reference to Item #22: (see General Features/Harvest Method Map).

(1). EXPLANATION: (NOTE: Also see Addendum #33 for discussion of this area). It is proposed to reconstruct an old main-line skid trail to be used as a seasonal access road through an old road washed/unstable area "1" (as per map). The description of the area and probable cause of deterioration is discussed in Addendum #33. District Rule Section 14 CCR 914.2(d) disallows the use of tractors in slide areas or past areas of instability unless such areas are unavoidable and the RPF develops specific measures to minimize the effect of operations on slope instability. All measures must be explained and justified in the THP and must meet the requirements of 14 CCR 914.

(2). JUSTIFICATION: Justification for reconstructing the old trail through this area is to take advantage of an existing facility which is otherwise in relatively good condition. The alternative (as also mentioned in Addendum #33) would be to construct an entirely new road system on steeper ground around the area and forego use of the pre-excavated trail, thus displacing much more soil and possibly increasing the overall soil erosion potential in the area. Re-use of the facility will also allow for proper drainage in the area to be enhanced and maintained. Re-use will meet the intent of 14 CCR 914 by negating the need for new roads around the area thus preventing the degradation of the quality and beneficial uses of water through the minimization of soil loss which also maintains the overall site productivity in the area.

(3). MITIGATION: Mitigation for the re-use of the road through this area is mentioned in Addendum #33).

B). Reference to Items #23, & #28: (see Harvest Method Alternative / Exception Map).

(1). EXPLANATION: It is proposed to conduct tractor operations on existing skid trails, portions of which are located on slopes
exceeding 65%. District Rule Section 14 CCR 914.2(f)(1) disallows this practice. District Rule Section 14 CCR 914.2(f)(3) allows for exceptions if said exception will comply with Section 914 of the District Rules and the THP explains and justifies why application with the standard rule is not feasible of would not comply with 14 CCR 914. Portions of the trails are also located on slopes exceeding 50% which lead without flattening to Class II Watercourses. District Rule Section 14 CCR 914.2(f)(2) disallows the use of tractors on slopes over 50% which lead without flattening to a Class I or II Watercourse. Section 14 CCR 914.9 allows for alternatives to this practice if adequately explained, justified, and mitigated and if the practice complies with Section 914 of the District Rules. The trails are located in non-WLPZ areas on slopes above the main Class II Watercourses as shown on the above referenced map. Use of the trails is necessary to gain access to trees above the mentioned Watercourses. All trails proposed for re-use have been flagged by the RPF.

(2): JUSTIFICATION: Use of the above referenced facilities is justified given the fact that the trails are existing and otherwise in fairly good condition. Re-use of the trails for skidding operations will aid in the proper and least damaging harvesting method to the area slopes and residual timber. In addition, the access provided by these trails will allow for better control of tree removal around watercourses, thus providing for increased protection of riparian vegetation and residual timber. Use of these facilities and post-harvest drainage facility installations will enhance the overall beneficial uses of water through the long-term prevention of overall stand soil degradation. The alternative to the use of these facilities would be to build new access trails in the areas thus creating a potential for significant adverse effects to: (a). The Beneficial Uses of Water: any new construction would disrupt more ground, creating more fine particles which would have a higher potential for migration into the watercourse, use of the old trails will allow for the installation of proper waterbars thus decreasing the overall site erosion and provide for future long-
term site enhancement; (b). Soil Productivity: any new construction would disrupt more growing space, thus decreasing overall stand soil productive potential; (c). Protection of Residual Timber: the use of the old trails will allow for better positioning of equipment in harvesting to protect the residual stand, and in addition any new construction would require removal or possibly damage residual stems.

(3): MITIGATION: Mitigation for reuse of the trails is as follows: (a). No new construction of trails on slopes exceeding 50% within these areas will be allowed; (b). Re-opening the trails will be accomplished with minimal bladework, no sidecast placed where it may enter the watercourse. (c). Trails will be properly waterbarred immediately upon completion of final use of the trail. (d). No winter period or wet weather use of the trails will be allowed. (e). Any trail located within 100' of the WLPZ will be grass seeded following seasonal use, prior to the first October 15 following use.
ADDENDUM # 33

EXPLANATION & JUSTIFICATION: A proposed seasonal truck road has been flagged in the field and is necessary within the scope of this THP to provide for harvesting in the southern portion of the plan area. The proposed road system was laid out considering the following factors (as required by District Rule Section 923):
(a): The use of existing roads and trails where feasible.
(b): The use of any existing systematic road system to minimize total mileage.
(c): Planned to fit topography to minimize disturbance to the natural features of the site.
(d): Avoidance of routes, whenever possible considering all other factors, near the bottoms of steep and narrow canyons, through marshes and wet meadows, on unstable areas, and near watercourses or near existing nesting sites of threatened or endangered bird species.
(e): Minimization of the number of watercourse crossings.
(f): Location of roads on natural benches, flatter slopes and areas of stable soils to minimize effects on watercourses.
(g): Use of logging systems which will reduce excavation or placement of fills on unstable areas.

Following an extensive route-location field layout process, it was determined that the best locale for the road, while considering all the above listed factors, utilized the bulk of a main-line skid trail (about 75% of the proposed road off the terrace flat utilizes the trail). It is proposed that this trail be re-constructed, moderately widened to accommodate safe log truck traffic. In order to comply with the above mentioned factors, portions of the proposed road system are located on slopes exceeding 65%. A portion of the approach to the Class II Watercourse crossing is located on slopes over 50% which lead without flattening and are within the WLPZ of the Class II Watercourse. District Rule Sections 14 CCR 914.2 (f)(1)&(2) disallow tractors on the above mentioned areas. This same section allows for exceptions if explained and justified.
in the THP. Section 14 CCR 914.2(f)(2) outlines an alternative which must also comply with Section 914.9(a). This proposed road will allow for long-term forestry management of the entire parcel. (This trail is one referred-to in Addendum #22/ #23/ #28, please see this Addendum regarding justification to meet the intent of District Rule Section 914). The existing trail will require reconstruction through an old outer edge fill-failure / bank-sluff area (see General Features/ Harvest Method Map point "1"). This area involves about 60' of trail of which 1/4-1/2 of the outer edge is slumped and washed. The proposal will be to take the road into the cutbank with no sidecast through the area.

MITIGATIONS: The proposed road location was selected only after careful consideration of the factors mentioned in "a" through "g" above, and only after the ground was extensively field surveyed by the RPF. The planned, field flagged system is deemed the best road location alternative giving consideration to all applicable factors. Any road segment which is located on slopes exceeding 65% or on slopes over 50% which lead without flattening to a Class I or II Watercourse, on slopes exceeding 50% which are within the Class II WLPZ, and the portion through Area "1" will be re-constructed with an excavator or similar piece of bucket-loading equipment to control sidecast in the area. End hauling will be used, whenever necessary to remove excessive fill in these areas. All endhauled spoils will be placed on suitable ridgetop benches, used as fill for the permanent culvert installation on the road, or spread onto the existing road surface. No fill will be placed where it may be in a position to enter any watercourse except at the road crossing site. Please note that any deposit site for any material associated with this road system will be located in various locations on the owner's parcel. Any exposed fill slopes exceeding 20' in length as measured from the edge of the road surface along the surface of the ground to the toe of the fill will be grass seeded prior to the first Oct. 15th following road construction. The permanent culvert fill will be grass seeded and straw mulched prior to the same date mentioned above.
EXPLANATION: It is proposed to re-construct an old skid trail to be used as a truck road under the scope of this THP (Also please see Addendum #33). During the construction of this road, equipment will be operating within the WLPZ at the permanent crossing site "P" (see Watercourse Facility Map). The Standard District Rule that prohibits the use of heavy equipment within the WLPZ is 14 CCR 916.3(c). Section 14 CCR 916.4(d) also restricts equipment usage in the Zone. District Rule Section 916.4(d) also allows for such practices if explained and justified in the THP. Section 14 CCR 916.6 outlines the prescription under which such practices must comply.

JUSTIFICATION: Justification for entering the WLPZ in the above mentioned area is to allow for road construction and minor right-of-way skidding on the truck road during the course of re-constructing the trail to road status. There is no feasible alternative to entering the WLPZ at the described location above. Further justification is outlined under Addendum #23/ #23/ #28 and Addendum #33.

MITIGATION: As previously mentioned in Addendum #23/ #23/ #28 and Addendum #33 road fill material will be controlled by the use of an excavator or similar piece of bucket-loading equipment, and endhauling (where necessary) to ensure that sidecast/fill is not placed in a position where it may enter the watercourse (except at the planned permanent culvert installation). Also, all exposed fill material within the Class II WLPZ at the crossing site will be grass seeded and straw mulched prior to the first Oct. 15th following construction. No WLPZ tractor construction or skidding will take place within the WLPZ during wet weather or wet ground conditions.
ADDENDUM # 50

Class I Watercourse: There are no Class I Watercourses associated with the THP area.

Class II Watercourses: Class II Watercourses have a WLPZ flagged as a function of slope with variable widths of 50' (slopes less than 30%), 75' (slopes 30% to 50%), 100' (slopes greater than 50%) in compliance with Table 1, 14 CCR 916.5. Harvest trees have been marked below the cutline to ensure 50% retention of shade canopy filter strip properties within the WLPZ. There will be a minimum of 75% surface cover retained within the WLPZ as a filter strip for raindrop energy dissipation. To protect water temperature, filter strip properties, upslope stability, and fish and wildlife values at least 50% of the total canopy covering the ground shall be left in a well-distributed multi-storied stand configuration composed of a diversity of species similar to that found before the start of operations. The residual overstory canopy shall be comprised of at least 25% of the existing overstory conifers. Recruitment of large woody debris for instream habitat shall be provided by retaining at least two living conifers per acre at least 16 inches diameter breast high and 50 feet tall within 50 feet of all Class II Watercourses.

Class III Watercourses: The Class III Watercourses have no zone. Skid trail crossings are temporary and the watercourse will be re-channeled upon completion of operations with the approaches sloped back to prevent backcutting of the stream bank. Soil deposited during timber operations in any Class III watercourse other than at a temporary crossing shall be removed and debris deposited during timber operations shall be removed or stabilized before the conclusion of timber operations, or before October 15. Temporary crossings shall be removed before the winter period.
Springs: Several active springs within the THP harvest area were discovered during field layout. A 15' EEZ will be imposed on all discovered spring areas. Any newly-discovered springs with surface water present at the time of operations will have a 15' EEZ except at crossings along truck roads and at skid crossings. At these locations any water present will be properly contained and drained across the road/trail with minimal disturbance. All temporary crossings will be properly pulled upon completion with the approaches sloped back to prevent backcutting of the streambank. Should any additional springs be discovered during operations the same above protection will apply unless such springs contain aquatic life, in which case a Departmental Representative will inspect the area and institute site-specific protection measures, if necessary.

Proposed Crossing: A permanent truck road crossing is proposed under the scope of the THP (see Watercourse Facility Map point "P"). The crossing site has been sized to facilitate 36" diameter culvert, necessary to carry peak flow. Erosion will be controlled at the crossing site as mentioned in Addendum # 40-# 46.
ADDENDUM # 59

Jorgensen, Paul S. et.al.; PO Box 645, Point Arena, Ca. 95468
Hammond, Lorelei J. et.al.; PO Box 83, Point Arena, Ca. 95468
Cook, Virginia, B.; PO Box 845, Gualala, Ca. 95445
Jacobs, Howard & Marva; PO Box 33, Point Arena, Ca. 95468
Stornetta, Henry & Gloria; 21601 S. Hwy. 1, Point Arena, Ca. 95468
Louisiana Pacific Corp.; PO Box 158, Samoa, Ca. 95564
Dept. of Veteren Affairs, State of Calif.; PO Box 311, Point Arena, Ca. 95468
Brodjeski, Grace & Edward; PO Box 73, Point Arena, Ca. 95468
Fairbrother, Edward & Kathleen; PO Box 472, Gualala, Ca. 95445
Terlouw, Frank & Irene; PO Box 372, Point Arena, Ca. 95468
Kopfer, Kurt & Kathleen; PO Box 782, Gualala, Ca. 95445
Dorn, Robert & Marilyn; PO Box 233, Point Arena, Ca. 95468
Timberland Productivity
Sustained Forestry Planning Addendum

This harvest entry and the Silvicultural treatments proposed within meet the goal of District Rule Section 14 CCR 913.10 to restore, enhance, and maintain the productivity of these private landowner's timberland. This goal will be met by the following:

(a) Where feasible, the productivity of the stand will be maintained on a site-specific basis and will:

(1). meet the stocking standards of the selected silvicultural or regeneration method, or that level of stocking above the minimum that will achieve long term sustained yield (LTSY) that is proposed in District Rule Section 913.11(c) through: 913.11(c)(2): for uneven aged management, complying with the seed tree retention standards pursuant to Section 913.1 (c)(1)(A), meeting the minimum stocking and basal area standards for the Selection Silvicultural method in Type 1 of the THP with Group A species while protecting the soil, air, fish, and wildlife, water resources and other public trust resources through the application of these rules. 913.11(c)(3): for evenaged management the Shelterwood Removal Step in Type 2 of the THP by complying with the stocking/restocking requirements of this method as outlined in District Rule Section 913.3(a)(1)(B). 913.11(c)(4): The total California State Timberland Ownership of the individual landowners currently totals less than 2500 acres in size.

(2). propose and implement the appropriate silvicultural system(s) and regeneration methods for the site(s) through: the use of the Selection Silvicultural system with natural regeneration where appropriate stand and site conditions are present, and the use of the Shelterwood Removal Step Silvicultural system to enhance overall stand health and vigor.

(3). protect the soil resource and its ability to grow commercial tree species and provide sustainable associated forest values through: the use of the least disruptive harvest methods including
limiting tractors to existing trails in good condition on the steeper slopes.

**(b).** Timberland productivity is mitigated in the THP through: mitigating the adverse low stand vigor in both the Shelterwood Removal Step unit and in the Selection unit, trees to remain have been selected based on general overall vigor and health in order to improve the site capacity to grow for commercial tree species and provide for other forest values.

**(c).** Timberland productivity is enhanced by: removal of lower vigor trees which will improve overall future stand productivity and associated forest values.

**(d).** Measures implemented to mitigate or avoid adverse environmental impacts of timber harvesting included in this THP are: The trail system has been inspected and pre-flagged prior to plan submittal. Additional erosion control measures were implemented in the THP to control short-term and long-term particle displacement. Timberland productivity will be enhanced through the establishment of a younger, more disease free, and more vigorous post-treatment stand throughout the THP area.
ZENI THP
CUMULATIVE IMPACT ASSESSMENT SITE DESCRIPTION

1). **TOPOGRAPHY AND SOILS**: The project area is located on a relatively small private parcel along the upper ridgetop and upper drainage areas of the north fork of Schooner Gulch adjacent to and just south and west of the Ten Mile Cutoff County Road about 2.3 air miles east of State Highway 1. Project area slopes in this upper drainage area are generally west to north/south-facing or located directly on top, or just off of, the main ridge. Topography is moderately gentle (10-40%) over the bulk of the project, graduates to moderately steep (40-55%) off the main ridge on midslope areas, with steeper slopes (55-65%+) located along the lower portions of the project's main Watercourse areas. Coastal coniferous timber types (primarily redwood/Douglas-fir/Bishop pine/minor amounts of Whitewoods) are supported by the following timber-based soils: Irmulco-Tramway complex, Iversen sandy loam, and Havensneck sandy loam. Project area elevations range from about 1080' on the ridgetop to about 750' at the lower areas of the project area. Average elevation in the majority of the project area is about 950'.

2). **VEGETATION AND STAND CONDITIONS**: The stand contains a coastal timber type mix of 80-120 year old conifers in two fairly distinct stand groups. The upper ridgetop terrace area of the project contains a Site IV mix of redwood, Douglas-fir, Bishop pine, and Whitewoods in an approximate 30%:25%:40%:5% ratio. The southern end and lower slope Watercourse areas of the project was measured Site III and contains a redwood, Douglas-fir, Bishop Pine, Whitewood mix in about a 55%:25%:15%:5% ratio over a relatively thrifty conifer understory in varying densities. Hardwood species including madrone, tanoak, and various understory species (primarily huckleberry, rhododendron, salal, manzanita and waxmyrtle) are typically dense and pervasive throughout the project area. A pygmy forest type is located adjacent to upper portions of the project.
Evidence of past fire(s) is present at the base of many of the redwoods with scars frequently present throughout the stand. Past logging has occurred at the turn of the century and most recently prior to the Forest Practice act, an estimated 30-40 years ago.

3). **Watershed and Stream Conditions**: The THP area is located along the upper watershed area of the North fork of Schooner Gulch approximately 2 channel miles east of the intersection of this fork with the main Schooner Gulch, which lies just east of the Pacific Ocean. The unit contains the headwater areas of three Class II Watercourse upper extremities of this Gulch with several Class III Watercourses bisecting and draining the project into the headwaters of the Gulch. Riparian vegetation within the Class II Watercourses in the project area consists primarily of adjacent conifers (redwood, Douglas-fir, Grand fir, and hemlock), berries, ferns, alder, and rhododendron. Stream channels appear fairly stable, the streamside vegetation fairly densely intermingled with naturally-fallen and old logging slash over almost the entire length(s) of all Class II channels. Old slash buildup has caused creek flow to migrate below streambed in some locations. Surface water, where present appears slightly murky due probably to the marine soil composition of the headwater terraces and the abundant organic matter present in watercourse channels. No fish were observed within the watercourse channels associated with the project.
ZENI THP
CUMULATIVE IMPACT ASSESSMENT
STATE OF CALIFORNIA
BOARD OF FORESTRY
CUMULATIVE IMPACTS ASSESSMENT

(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?

**YES _X_**

**NO ____**

The records search indicated that all or portions of several THP's within the last ten year period were located within the Watershed Assessment Area. Specifics regarding these THP's are as follows (also see Watershed Assessment Area Map):

<table>
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<tr>
<th>THP</th>
<th>Map #</th>
<th>Completion Date</th>
<th>Stocking Date</th>
<th>Silvic. Logging Method</th>
<th>Acres</th>
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<td>1-88-743 M</td>
<td>1</td>
<td>1/23/90</td>
<td>1/23/90</td>
<td>Shel.Rem. tractor</td>
<td>390</td>
</tr>
<tr>
<td>1-90-01 M</td>
<td>2</td>
<td>10/17/90</td>
<td>10/17/90</td>
<td>Shel.Rem. tractor</td>
<td>320</td>
</tr>
<tr>
<td>1-91-216 M</td>
<td>3</td>
<td>10/4/93</td>
<td>10/4/93</td>
<td>Selection tractor</td>
<td>16</td>
</tr>
<tr>
<td>1-93-149 M</td>
<td>4</td>
<td>open</td>
<td>open</td>
<td>Selection tractor</td>
<td>24</td>
</tr>
</tbody>
</table>

The records search also indicated the presence of several additional THP's (the four above are contained within this Assessment Area) within the last ten years located within the Biological Assessment Area. These past projects are as follows: THP's: 1-84-326 M; 1-85-285 M; 1-82-457 M; 1-88-32 M; 1-87-585 M; 1-87-633 M; 1-85-551 M; 1-83-249 M; 1-84-336 M; 1-85-154 M; 1-92-138 M; 1-84-580 M; 1-85-177 M; 1-80-194 M; 1-83-249 M; 1-86-433M; 1-83-690 M.

It is possible, yet cannot be stated with certainty, that other THP projects will be proposed in the near future within the Watershed and Biological Assessment Areas. The surrounding areas are located within the first conifer belt east of the Pacific Ocean and it is reasonable to assume that probable future projects will include THP's as well as permanent residential intrusion, primarily along the County Road in the area. The RPF does not currently know of any specific reasonably foreseeable probable future projects which would significantly affect the Assessment Area(s).
(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 ______

The project area is located along the upper watershed areas of the North Fork of Schooner Gulch. Historic land uses including past ridgetop grazing, logging, and periodic fires have impacted this upper drainage area to an unascertained degree. Due primarily to the upper-headwater watershed location of the project area the impact of the past on-site land practices is not considered significant when the overall Watershed Assessment Area is considered. The location of past projects within the Biological Assessment Area is not considered relevant or significant in the discussion of possible additive impacts to this Resource Base. The RPF is not aware of any continuing, significant adverse impact which may add to the any potential short-term impacts of the proposed project causing an additive (cumulative) adverse effect to any of the resource subjects covered here.

(3). Will the proposed project, as presented, in combination with past, present, or reasonably foreseeable future projects identified in (1) or (2) above, have a reasonable potential to cause or add to significant cumulative impacts in any of the following resource subjects?

<table>
<thead>
<tr>
<th>Yes After Mitigation</th>
<th>No After Mitigation</th>
<th>No Reasonable Potential Significant Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1). Watershed</td>
<td>_______</td>
<td>X</td>
</tr>
<tr>
<td>(2). Soil Productivity</td>
<td>_______</td>
<td>X</td>
</tr>
<tr>
<td>(3). Biological</td>
<td>_______</td>
<td>X</td>
</tr>
<tr>
<td>(4). Recreation</td>
<td>_______</td>
<td>_______</td>
</tr>
<tr>
<td>(5). Visual</td>
<td>_______</td>
<td>_______</td>
</tr>
<tr>
<td>(6). Traffic</td>
<td>_______</td>
<td>_______</td>
</tr>
</tbody>
</table>
(4). Describe what mitigation measures have been selected which will substantially reduce or avoid reasonably potential significant cumulative impacts except for those mitigation measures or alternatives mandated by application of the Rules of the Board of Forestry.

The proposed project is located on a relatively small private parcel currently owned and maintained as recreational-forestland by the present landowner. Small forestland ownership is the buttress of conscientious forest management in California. With the above in mind, the following was considered in the evaluation process dealing with possible cumulative effects which may arise as a result of operations associated with the proposed project.

(4.1) WATERSHED RESOURCES: As previously discussed, the project area is contained within the northeastern-most and upper watershed area of the North Fork of Schooner Gulch. The lower end (western edge) of the project lies approximately 2 channel miles from the confluence of the North Fork with the main Schooner Gulch. The project Area contains the drainages (or portions thereof) of the last three Class II Watercourse forks prior to the watershed's limits which lie about 2000' from the unit's western edge at Ten Mile Cutoff County Road. Elevational differences within the project area average about 300' from ridge to watercourse lower limits within an average of about 1200' (channel length). This relatively shallow drainage length (break in slope to channel bottom) coupled with the extreme upper drainage position and small drainage area means the associated volume of water draining offsite is relatively low. Together, the above-mentioned factors provide for an expected temporary and slight transport of suspended soil particles. Relatively dense understory vegetation, duff, and abundant watercourse channel vegetation, streambank rooting, and residual channel woody material provide for an effective sediment filter and streambank stabilizing agent during peak flows throughout the project area. No advanced channel aggredation or degradation was noted during field inspection of the project's watercourses. Watercourse temperatures varied from 55 and 57 degrees (F) during
field layout in early spring. Proposed use of only existing, non-WLPZ pre-flagged trails in good condition and long-lining of the Class II areas will provide for minimal impact of the lower steeper slopes above the Class II Watercourses within the area. Proposed WLPZ operations were kept to an absolute minimum with long-term access laid out to provide for future long term management within the area. To mitigate any possible off-site migration of suspended materials, the following additional restrictions and measures will be adhered to under the scope of this project:

(a). All equipment operations will be confined to dry, rainless periods when the ground is not saturated. No winter period operations are proposed.

(b). All erosion control facilities will be installed concurrent with operations, immediately upon completion of seasonal use.

(c). Unauthorized access which may damage drainage facilities, will be restricted by the installation of a gate or physical block at County Road access points.

(d). New roads on steeper slopes will be constructed with an excavator or similar bucket-type equipment to control unnecessary sidecast.

(e). Any trail located within 100' of the WLPZ will be grass seeded following seasonal use, prior to the first October 15 following use.

(4.2) SOIL PRODUCTIVITY: The proposed silvicultural methods intend to remove the less vigorous stems and only a portion of the conifer stem basal area from the operating area. Minor hardwood removal/damage will occur within the plan area to maintain approximately the same proportion of conifer:hardwood basal area as existed prior to harvest. The removal of only a portion of the existing canopy cover will allow for a substantial raindrop interception barrier in place immediately upon completion of operations. The removal of the slower-growing and less vigorous stems should encourage a growth response in the residual trees within a few short seasons following operations. This relatively rapid canopy recovery will ensure the enhancement of the overall
stand and soil productivity. The relatively dense understory and thick organic duff layer will be moderately disrupted but should recover rapidly to provide for additional raindrop interception. Heavy equipment skidding is confined to the relatively gentle slopes with operations on the steeper ground confined to existing pre-flagged trails in good condition. These trails will be properly drained upon completion, correcting the no-drainage practices of the older past harvest(s). This will minimize future, long-term overall site and soil disruption within the project area. To further mitigate possible disruption to this base, the following additional measures will be undertaken:
(a). Large unmerchantable woody debris, slash, and non-merchantable tops and limbs will remain on site (with the exception of slash control areas adjacent to the County Road) to provide for future organic matter replacement.
(b). Tractor and other heavy equipment will be confined to periods of dry weather when the ground is not saturated, thus minimizing soil compaction in the area and overall degradation of the soil productive potential.
(c). The project operation's trails and roads will be drained properly in a timely fashion and concurrent with the end of use to mitigate possible soil disruption in the area due to unseasonable weather.
(d). The landowner will restrict public access to the area through road blocks and/or gates to minimize drainage facility damage and overall site disruption.

(4.3) BIOLOGICAL RESOURCES: The Natural Diversity Database and Mendocino County Biodiversity Database were contacted to explore the possibility of any protected species which may be impacted as a result of the proposed project. The Database indicated that a nearby, non-project-area, Coast Lily patch lies northwest of the area about .6 miles. A further records search indicated that the project area was located within the Pt. Arena Mountain Beaver habitat area.

A field survey of the area by the RPF and personal knowledge of
the area by Ted Wooster, Dept. of Fish and Game representative indicated the presence of no Northern Spotted Owls. In addition, the area was not considered proper habitat for the Marbled Murrelet. A field survey of the area by the RPF and knowledge of the area by T. Wooster (D. F&G) indicated that the project area did contain proper habitat deemed necessary to support the Pt. Arena Mountain Beaver. The project area does not contain the elements (large, downed logs, large decadent trees) necessary in defining late seral (mature) forest characteristics and will therefore have no impact on late seral habitat continuity. Field inspection(s) of the area and research of documented databases and other sources indicated that no plant or animal species or associated community or habitat is likely to be impacted by the proposed project.

To further enhance Biological Resources in the area the following will be undertaken under the scope of this project:
(a). Hardwood tree retention will be approximately the same percentage (basal area) as existed in the preharvest stand, thus providing for a continuance of wildlife forage and habitat.
(b). Soft and hard snags will be retained (when safe) to provide for bird, insect, and small mammal cavity habitat.
(c). Large scale intensive harvest activity will be minimized by employing a small-scale LTO to maintain activity levels as low as possible thus avoiding high-density activities which might substantially disrupt wildlife patterns in the area.
(d). Large, downed non-merchantable woody material and slash will remain on site (with the exception of the Fire Protection Zone) to provide for animal cavity habitat.

4.4 RECREATIONAL RESOURCES: The proposed activity is adjacent to Ten Mile Cutoff County Road. This paved public road is frequently used by residents for general residential access yet infrequently used by the general recreating public. This county road doesn't lure many of the recreating public off State Hwy.1 since it provides no access to any generally desirable recreating sites. Areas adjacent to the project area are private woodland/residential and the project will not impose into these areas. Any recreational
pursuits within the THP area will conform with the wishes of the current landowner(s). No expected impact to this resource base is likely to occur as a result of the proposed project.

(4.5) **VISUAL RESOURCES:** A small portion of the project area is visible to the general public in significant numbers from Ten Mile Cutoff County Road. This portion involves an approximate 600' stretch of the northeastern portion of the plan which lies southwest of the County Road. During the course of field layout, the RPF noted traffic on this road during several separate periods. Traffic is generally moderately heavy during most of the daylight hours. The project area adjacent to this road is located on an upper terrace which slopes gently parallel to the road at 0-5%. This provides for very gentle tractor ground and the paved flat county road, reasonably straight and narrow, provides for a rapid public traffic corridor. In short, most folks are moving right along through this area. Only one small approximate 2 acre area is located within 100' of this road. The remainder of the project in this area has an approximate 100' + no-cut buffer area which helps shield this small portion of the project from any viewers along the County Road. Due to the Selective nature of the proposed harvest in this area and the fact that the locals travelling on this road seem more interested in getting to their respective destinations, the visual impact of the proposed harvest is considered insignificant. To further mitigate any possible impact, slash created during the project will be lopped, removed, or piled & burned within 100' of the road. A small number of nearby residents will be able to view the area but due to the relatively light harvest and slash treatment, the viewshed will be only slightly modified. Therefore no expected significant impact to this resource base is likely to occur.

(4.6) **TRAFFIC RESOURCES:** The project will generate temporary log truck traffic for only a relatively short period of time and is not a permanent intrusion into the area's road system. The use of a small-scale operator will generate an estimated 6-12 truck loads
per day. All log trucks will strictly adhere to state and federal statutes and restrictions regarding the use of this public road. "Truck-Entering-Roadway" signs will be placed on the county road alerting the General Public of truck egress onto the County Road. Due to the short-lived and small scale use of this road which has historically been used to access nearby rural parcels and transport woodland material, the impact to this base by this project is expected to be insignificant.

(5) Provide a brief description of the assessment area used for each resource base and the reason this base was chosen:

(5.1) **Watershed Assessment Area**: This 810 acre assessment area includes all drainage areas and watercourses affected by waters initiated within the project area and all drainage areas to the first main watershed ridge located in any direction from the project area inclusive of drainage off the County Road and includes the entire North Fork of Schooner Gulch Watershed. This was chosen to measure any areas within the project's Watershed area which could provide an additive impact to this resource base and yet provide for a base which would remain manageable in size. This is consistent with Technical Rule Addendum #2.

(5.2) **Soil Productivity Assessment Area**: This included the project area, chosen to measure any possible disruptive impact to this base which is most likely to occur within the confines of the project area. This is consistent with Technical Rule Addendum #2.

(5.3) **Biological Assessment Area**: This included the project area and an area within 1.3 miles from the project area's central point. This was chosen to measure any impact to the Northern Spotted Owl. This is consistent with Technical Rule Addendum #2.

(5.4) **Recreational Assessment Area**: This included the project area and any area within 300' from the boundary of the project, chosen to measure any nearby recreational pursuit which may be affected by
the proposed project and consistent with Technical Rule Addendum #2.

(5.5) **VISUAL RESOURCES:** This included any vantage point outside the project area which could be a view station by the general public in significant numbers who are no further than three miles from the project, chosen to measure the impact to the perceptual viewshed in the area and consistent with Technical Rule Addendum #2.

(5.6) **VEHICULAR RESOURCES:** This included the Ten Mile Cutoff County Road from the project then west along Eureka Hill/Riverside Drive approximately 2.5 miles to the County Road corridors intersection with State Highway 1. This was chosen to reflect any possible impact in traffic from the first arterial road to it's intersection with the first main public well-used thoroughfare. This is consistent with Technical Rule Addendum #2.

(6). List and briefly describe the individuals, organizations, and records consulted in the assessment of cumulative impacts for each resource subject. Records of the information used in the assessment shall be provided to the director upon his written request.

(6.1) **WATERSHED RESOURCES:**
(a). Field inspection by the RPF.
(c). Communication with landowner and locals.
(d). THP layout maps, prepared by CDF, accessed at the CDF Resources office in Ukiah.

(6.2) **SOIL PRODUCTIVITY:**
(c). Field inspection of project area by the RPF.
(d). Pt. Arena, Eureka Hill, Saunier's Reef, Gualala 7.5 min.
USGS Quads. & Pt. Arena 15 min. USGS Quad.

(e). Aerial Photo Interpretation.

(6.3) BIOLOGICAL RESOURCES:


(b). Consultation, correspondence, knowledge of field review by T. Wooster, Calif. Dept. of Fish and Game, Region 3.; 6645 Yount St., Yountville, Ca. 94599;(707)944-8451.


(d). Mendocino County Biodiversity Database and Natural Diversity Database.

(e). Pt. Arena, Eureka Hill, Saunders Reef, Gualala 7.5 min. USGS Quads. & Pt. Arena 15 min. USGS Quad.

(6.4, 6.5, 6.6) RECREATIONAL, VISUAL, TRAFFIC:

(a). Personal knowledge, observations, travels by the RPF.

(b). Communication with Landowner and locals.

(c). Pt. Arena, Eureka Hill, Saunders Reef, Gualala 7.5 min. USGS Quads. & Pt. Arena 15 min. USGS Quad.
POPE ENGINEERING
CIVIL ENGINEERING ~ LAND SURVEYING
SAMUEL G. POPE  P.E. 65228, P.L.S. 8903
1540 Harrah Drive, Willits, CA 95490
Tel 707-459-3893  Fax 707-459-3875
Cell 707-321-7458

SITE EVALUATION REPORT
FOR
ON-SITE WASTE WATER DISPOSAL SYSTEM

March 21, 2020

Jim Lewis
574 May Street
Arroyo Grande, CA 93420

Site Address:
27201 10 Mile Road, Point Arena
APN 027-462-01

RECEIVED
APR 27 2020
PLANNING & BUILDING SERV
FORT BRAGG CA
Project Description

In May of this year two soil profiles were excavated at 27201 10 Mile Rd, Point Arena, CA.
There is a proposed 4-bedroom house to be built at this site. The purpose of this site review was to establish a leaching area and septic design for the proposed residence.

A standard pressure dosed trench system is recommended at 30 inches deep with 24-inch-wide trenches. For a 4-bedroom system with an application rate of 0.2 Gal/Sf/Day, 750 lineal feet of pressurized trench is recommended.

To whom it may concern:

1. This site evaluation report does not constitute a permit for installation from the Mendocino County Health Department.
2. The Proposed septic system was designed according to Mendocino County required limits and is based on information and lot access available to the designer at the time the system was proposed. Changes in parcel utilization or topography may require re-evaluation of the design.
3. If the septic system installer does not understand or agree with the system proposal, contact the designer or the Mendocino County Health Department before construction begins. Systems installed incorrectly may require reconstruction.
4. Be aware of property line, well, and watercourse setback requirements before system construction takes place.
MENDOCINO COUNTY ENVIRONMENTAL HEALTH
SITE EVALUATION REPORT SUMMARY

Site Address: 27201 10 Mile Rd, Point Arena, CA 95468
City: Point Arena
Owner Name: Jim Lewis
Mailing Address: 574 May Street
City: Arroyo Grande
State, Zip: CA 93420

Location Description: 6.2 miles southeast of the town of Point Arena, Ca.
Project Description (# of bedrooms): New 4-bedroom house
Water Source: Well

<table>
<thead>
<tr>
<th>Initial Area</th>
<th>Expansion Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Profile #</td>
<td></td>
</tr>
<tr>
<td>Slope (%)</td>
<td></td>
</tr>
<tr>
<td>Effective Soil Depth (IN)</td>
<td>1</td>
</tr>
<tr>
<td>Absorption System Type</td>
<td>5</td>
</tr>
<tr>
<td>Distribution Method</td>
<td>96</td>
</tr>
<tr>
<td>Soil Suitability Class</td>
<td>1</td>
</tr>
<tr>
<td>Soil Perk Rate (MPI)</td>
<td>Trench</td>
</tr>
<tr>
<td>Design App. Rate (G/SF/D)</td>
<td>Pumped</td>
</tr>
<tr>
<td>Design Flow (G/D)</td>
<td>3</td>
</tr>
<tr>
<td>Absorption Area (SF)</td>
<td>Trench</td>
</tr>
<tr>
<td>Linear Area (SF/LF)</td>
<td>Pumped</td>
</tr>
<tr>
<td>Total Trench (LF)</td>
<td>3</td>
</tr>
<tr>
<td>Trench Depth (IN)</td>
<td>89.5</td>
</tr>
<tr>
<td>Trench Width (IN)</td>
<td>3</td>
</tr>
<tr>
<td>Effective Trench Depth (IN)</td>
<td>0.2</td>
</tr>
<tr>
<td>Volume (Gal)</td>
<td>600</td>
</tr>
<tr>
<td>Const. Material</td>
<td>3000.00</td>
</tr>
<tr>
<td>Concrete</td>
<td>4</td>
</tr>
<tr>
<td>Trench Calculation: Design Flow * Design App. Rate * Linear Area = Total Trench (LF)</td>
<td></td>
</tr>
<tr>
<td>600/0.2/4 = 750</td>
<td></td>
</tr>
<tr>
<td>Requested Waiver: (attach justification)</td>
<td>None</td>
</tr>
<tr>
<td>Special Design Features:</td>
<td>None</td>
</tr>
</tbody>
</table>

Site Evaluator's Statement: I hereby certify that I have examined the above designated site using approved procedures, and that to the best of my information, knowledge and belief it complies with all state and county requirements for an on-site Sewage System at the time of this evaluation.

Signed: [Signature]
Date: [Date]
Septic System Sizing Calculations

Residence: LEWIS

<table>
<thead>
<tr>
<th>Proposed Bedrooms</th>
<th>4</th>
<th>Bedrooms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water use</td>
<td>150 Gal/Day/Bedroom</td>
<td></td>
</tr>
<tr>
<td>Total water use</td>
<td>600 Gal/Day</td>
<td></td>
</tr>
<tr>
<td>Trench width</td>
<td>2</td>
<td>Feet</td>
</tr>
<tr>
<td>Effective Sidewall</td>
<td>1</td>
<td>Foot</td>
</tr>
<tr>
<td>Application rate</td>
<td>0.2 Gal/SF/Day</td>
<td></td>
</tr>
<tr>
<td>Total trench</td>
<td>750 LF (Absorption area / Linear area)</td>
<td></td>
</tr>
<tr>
<td>Linear area</td>
<td>4  SF/LF (Trench width + 2 x Trench sidewall depth)</td>
<td></td>
</tr>
<tr>
<td>Absorption area</td>
<td>3000.00 SF (Water use / Application rate)</td>
<td></td>
</tr>
</tbody>
</table>
## Hydrometer Test Worksheet

### Site Address:
27201 10 Mile Road, Point Arena

### APN
027-462-01

### Owner Name:
LEWIS

### Site Evaluator:
Pope

### Lab Test Date:
10/5/2019

### Project #
0

### Environmental Health

<table>
<thead>
<tr>
<th>HYDROMETER TEST</th>
<th>PASS</th>
<th>PASS</th>
<th>PASS</th>
<th>PASS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample ID Number:</td>
<td>P1A</td>
<td>P1B</td>
<td>P2A</td>
<td>P2B</td>
</tr>
<tr>
<td>Sample Depth:</td>
<td>0-40&quot;</td>
<td>40-96&quot;</td>
<td>0-40&quot;</td>
<td>40-96&quot;</td>
</tr>
<tr>
<td>Slake Test: (pass or fail)</td>
<td>PASS</td>
<td>PASS</td>
<td>PASS</td>
<td>PASS</td>
</tr>
<tr>
<td>A. Oven dry wt. (gm) (Fine)</td>
<td>50.0</td>
<td>50.0</td>
<td>50.0</td>
<td>50.0</td>
</tr>
<tr>
<td>B. Start Time</td>
<td>10:53 AM</td>
<td>10:54 AM</td>
<td>10:56 AM</td>
<td>10:57 AM</td>
</tr>
<tr>
<td>C. Temp @ 40 sec (°F)</td>
<td>65</td>
<td>65</td>
<td>65</td>
<td>65</td>
</tr>
<tr>
<td>D. Hydrometer reading @ 40 sec. (gm/l)</td>
<td>39.0</td>
<td>38.0</td>
<td>31.0</td>
<td>38.0</td>
</tr>
<tr>
<td>E. Composite correction (gm/l)</td>
<td>7.1</td>
<td>7.1</td>
<td>7.1</td>
<td>7.1</td>
</tr>
<tr>
<td>F. True Density @ 40 sec (gm/l)</td>
<td>31.9</td>
<td>30.9</td>
<td>23.9</td>
<td>30.9</td>
</tr>
<tr>
<td>G. Temp @ 2 hrs. (°F)</td>
<td>63</td>
<td>63</td>
<td>63</td>
<td>63</td>
</tr>
<tr>
<td>H. Hydrometer reading @ 2 hrs. (gm/l)</td>
<td>28.0</td>
<td>26.0</td>
<td>21.0</td>
<td>25.0</td>
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<tr>
<td>I. Composite correction (gm/l)</td>
<td>7.5</td>
<td>7.5</td>
<td>7.5</td>
<td>7.5</td>
</tr>
<tr>
<td>J. True Density @ 2 hrs. (gm/l)</td>
<td>20.5</td>
<td>18.5</td>
<td>13.5</td>
<td>17.5</td>
</tr>
<tr>
<td>K. % Sand = 100-[(F/A)x100]</td>
<td>36.2</td>
<td>38.2</td>
<td>52.2</td>
<td>38.2</td>
</tr>
<tr>
<td>L. % Clay = (J/A)x100</td>
<td>41.0</td>
<td>37.0</td>
<td>27.0</td>
<td>35.0</td>
</tr>
<tr>
<td>M. % Silt = 100-(K+L)</td>
<td>22.8</td>
<td>24.8</td>
<td>20.8</td>
<td>26.8</td>
</tr>
</tbody>
</table>

### COARSE PARTICLES

| N. Wt. Coarse particles retained (gm) | 131.1 | 137.5 | 122.7 | 109.9 |
| O. Wt of total sample (gm) | 275.5 | 277.5 | 276.3 | 239.7 |
| P1. % Coarse Particles by Wt. = (N/O)x100 | 47.6% | 49.5% | 44.4% | 45.8% |
| P2. % Coarse Particles by Vol. | 33.5 | 35.3 | 30.7 | 32.0 |
| P3. % Sand Adjustment | 6.7 | 7.1 | 6.1 | 6.4 |

### BULK DENSITY

| S1. Vol second Clod (cc) | 35.0 | 40.0 | 25.0 |
| S2. Wt Second Clod | 28.8 | 33.2 | 23.7 |
| Q. Wt first clod (gm) | 46.5 | 38.1 | 62.4 |
| R. Coarse particles wt. (gm) | 22.4 | 22.9 | 22.1 |
| S. Vol. First clod = [(S1*Q/S2)] (cc) | 56.5 | 45.9 | #DIV/0! | 65.8 |
| T. Coarse particles vol. (cc) | 10.0 | 8.0 | 13.0 |
| U. Bulk Density = [(Q-R)/(S-T)] (gm/cc) | 0.5 | 0.4 | #DIV/0! | 0.8 |
| W. Adjusted Sand (%) | 42.9 | 45.3 | 58.3 | 44.6 |
| X. Adjusted Clay (%) | 41.0 | 37.0 | 27.0 | 35.0 |
| Y. Adjusted Silt (%) | 16.1 | 17.7 | 14.7 | 20.4 |

### Z. Soil Suitability Zone

| 3 | 3 | 2C | 3 |

I hereby certify that I have used the procedures specified by the North Coast Region Water Quality Control Board contained in the "Soil Eval Site Sewage Disposal", May 1979.

Date (seal) Signed:

---

PBS Received 4-27-2020

APN 029-462-01
Soil Texture Suitability Chart

INSTRUCTIONS:

1. Plot texture on triangle based on percent sand, silt, and clay as determined by hydrometer analysis.
2. Adjust for coarse particles (gravel not fractured rock) by moving the plotted point in the sand direction an additional 2% for each 10% by volume of gravels greater than 2 mm in diameter.
3. Adjust for compactness of the soil by moving the plotted point in the clay direction an additional 15% for soils having a bulk-density greater than 1.7 gm/cc.

NOTE: For soils falling in sand, loamy sand or sandy loam texture classification, the bulk density analysis will generally not affect suitability and analysis not be necessary.
On-site Waste Water Disposal System, Revised

CROSS SECTION

NOTE: SPRAY TEST OF 5 FT.

ELEVATION

TRENCH DETAIL
N.T.S.

PRESSURIZED DISTRIBUTION BOX DETAIL
N.T.S.

PBS Received 4-27-2020

APN 029-462-01
On-site Waste Water Disposal System, Revised

NOTES:
1. FLOAT ALARMS TO FLOAT FREE OF OBSTRUCTIONS.
2. IF THE SUMP TANK HAS AN INTERIOR BAFFLE, A 6" MIN. OPENING MUST BE MADE AT THE BOTTOM OF BAFFLE TO ALLOW EQUAL PUMPING OF BOTH CHAMBERS.
3. ALL FITTINGS SAME SIZE AS PIPE, SCH. 40 P.V.C.
4. FITTINGS INSIDE RISER TO BE GLUED.

EXTERIOR CONTROL BOXES TO BE NEMA TYPE 4 OR BETTER WITH HAND-OFF-AUTO SWITCH, FUSED DISCONNECT (OR CIRCUIT BREAKER) & MOTOR PROTECTION SWITCH. EMERGENCY DISCONNECT MUST BE WITHIN 25' OF THE SUMP. PROVIDE SEPARATE ELECTRICAL CIRCUITS FOR PUMP AND ALARM. NO ELECTRICAL JUNCTIONS ARE TO BE MADE BELOW GROUND LEVEL. INSTALL NON-RESETTABLE DOSE COUNTER ON CONTROL PANEL.

INSTALL CONTROL BOX WITH ON/OFF AND TEST SWITCH WITHIN 25' OF HOUSE.

PBS Received 4-27-2020

APN 029-462-01
CONTROL/ALARM BOX ELECTRICAL FEATURES

1. ALL ELECTRICAL, MECHANICAL, AND PLUMBING WORK AND THE METHOD OF CONSTRUCTION AND INSTALLATION THEREOF SHALL CONFORM TO MENDOCINO COUNTY STANDARDS AND/OR UNIFORM PLUMBING CODE AND NATIONAL ELECTRICAL CODE; AND TO ALL LOCAL, STATE, FEDERAL, AND OTHER LAWS PERTAINING TO THIS WORK.

2. SECURE AN ELECTRICAL PERMIT FROM THE MENDOCINO COUNTY BUILDING DEPARTMENT FOR SUMP PUMP INSTALLATION.

3. THE CONCRETE SUMP SHALL BE I.A.P.M.O. APPROVED O.A.E.. THE SUMP SHALL BE SEALED WITH THOROSEAL OR EQUIVALENT. ALL JOINTS TO BE WATER TIGHT AND SEALED WITH NON-SHRINK GROUT INSIDE AND OUT. THOROSEAL GROUT INSIDE ALL JOINTS.

4. PIPES THROUGH HOLES IN THE SUMP OR RISER MUST BE SEALED WITH GAS-TIGHT COMPRESSION CONNECTORS OR WATERPROOF SEALANT OR PRECAST INTO SUMP.

5. A WATER TIGHTNESS TEST MAY BE REQUIRED BY THE MENDOCINO COUNTY PLANNING AND BUILDING DEPARTMENT, WELL AND SEPTIC DIVISION. THE WATER TIGHTNESS TEST CONSISTS OF FILLING THE TANK(S) INTO THE RISER (OR TO THE EXTERIOR OF THE TOP) WITH CLEAR WATER. THE TANK SHALL BE CONSIDERED ADEQUATELY WATER TIGHT IF THE FALL OF WATER IN THE TANK IS LESS THAN 1/8 INCH IN 1/2 HOUR. BACK FILL AROUND TANK(S) PRIOR TO FILLING WITH WATER. ENGINEER TO OBSERVE THE TEST.

6. SUMP TO BE APPROXIMATELY 1200 GALLON CAPACITY WITH A 360 GALLON RESERVE CAPACITY ABOVE THE HIGH WATER ALARM.

7. PUMP SHALL BE OSI PF5005 OR EQUIVALENT AND PROVIDE A MINIMUM OF 62.3 GALLONS PER MINUTE AT 20 TOTAL HEAD, DELIVERED TO THE TOP LINE. THE PUMP SHALL BE INSTALLED AS SHOWN ON THESE PLANS. ANY OTHER PUMP SHALL BE AS APPROVED BY THE ENGINEER.

8. HIGH WATER AUDIO AND VISUAL ALARMS TO BE INSTALLED INSIDE THE HOUSE IN LAUNDRY ROOM, OR SIMILAR INTERIOR ROOM.

9. PROVIDE AN ELECTRONIC NON-RESETTABLE DOSE COUNTER ON SUMP CONTROL PANEL.

10. PRESSURE PIPE DOWNSTREAM FROM THE SUMP SHALL BE SCHEDULE 40 PVC PIPE, TWO INCHES (2") IN DIAMETER. IF THE PRESSURE PIPE IS PLACED UNDER TRAVELED AREAS, THE PIPE SHALL BE ENCASED IN CAST IRON PIPE OR SCH 40 ABS, EXTENDING A MINIMUM OF FIVE FEET (5') FROM THE DRIVEWAY EDGES.

11. THE TWO INCH (2") PVC PRESSURE PIPE SHALL BE INSTALLED ON A CONTINUOUS GRADE WITH NO HIGH SPOTS.

12. THE SUMP, PUMP, AND CONTROL SYSTEMS SHALL BE INSPECTED BY THE ENGINEER, AND THE PUMP SYSTEM SHALL HAVE A HYDRAULIC TEST FOR PROPER OPERATION IN THE ENGINEER'S PRESENCE.


14. PUMP LEVEL TO BE ADJUSTED TO PROVIDE AT LEAST 120 GALLON DOSAGE. FLOW TO BE ADJUSTED SO THAT PUMP RUNS FOR 2 MINUTES MINIMUM.

15. ALL VALVES TO BE SCHEDULE 80 PVC. BRASS VALVES AND PIPE ARE NOT TO BE USED. CHECK VALVE TO BE SCH 80 PVC. FLOAT TIES TO BE PLASTIC.
DEPTH (FT) | TYPICAL LEACHFIELD X-SECTION | GRAPHIC LOG
---|---|---
1 | | |
2 | | 0" TO 40"
3 | | 10YR 5/6 SANDY CLAY LOAM
4 | | MODERATE, GRANULAR, FRIABLE
5 | | FEW FINE ROOTS, MANY FINE PORES
6 | | GRADUAL BOUNDARY, NO MOTTLING
7 | | |
8 | | 40" TO 96"
9 | | 10YR 8/6 SANDY LOAM
10 | | MODERATE, GRANULAR, FRIABLE
 | | FEW FINE ROOTS, FEW FINE PORES
 | | NO MOTTLING
0" TO 40"
7.5YR 5/8 CLAY LOAM
MODERATE, GRANULAR, FRIABLE
FEW FINE ROOTS, MANY FINE PORES
GRADUAL BOUNDARY, NO MOTTLING

40" TO 96"
7.5YR 5/8 SANDY LOAM
MODERATE, GRANULAR, FRIABLE
FEW FINE ROOTS, FEW FINE PORES
NO MOTTLING
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I certify the was carried out by the procedures specified by the Mendocino County Division of Environmental Health.
I declare under penalty of perjury that the foregoing is true and correct.

Signed: [Signature]

PBS Received 4-27-2020
APN 029-462-01
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I certify the was carried out by the procedures specified by the Mendocino County Division of Environmental Health.
I declare under penalty of perjury that the foregoing is true and correct.

Signed

PBS Received 4-27-2020

APN 029-462-01
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I certify the work was carried out by the procedures specified by the Mendocino County Division of Environmental Health.

I declare under penalty of perjury that the foregoing is true and correct.

Signed

PBS Received 4-27-2020

APN 029-462-01
# MENDOCINO COUNTY Environmental Health

## Percolation Test Data

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I certify the test was carried out by the procedures specified by the Mendocino County Division of Environmental Health.

I declare under penalty of perjury that the foregoing is true and correct.

PBS Received 4-27-2020

Signed: APN-029-462-01
# MENDOCINO COUNTY

## Percolation Test Data

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**Site Address:**

**APN:**

**Subdivision #**

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<td>2</td>
<td>30</td>
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</table>

I certify the test was carried out by the procedures specified by the Mendocino County Division of Environmental Health. I declare under penalty of perjury that the foregoing is true and correct.

**PBS Received:** 4-27-2020

**Signed:**

**APN 029-462-01**
MENDOCINO COUNTY
Environmental Health

Percolation Test Data

Owner Name
Site Address
APN
Subdivision #

Depth = 70"  Dia (d_h) = 6"  Pipe (d_p) = 3"  Adj. = 1.95

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<th>Read Time (T_r)</th>
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<th>delta Level (W_r-W_s)</th>
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Depth = 60"  Dia (d_h) = 6"  Pipe (d_p) = 3"  Adj. = 1.95

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I declare under penalty of perjury that the foregoing is true and correct.

Signed: ___________________  APN: 029-462-01
Mendocino County Construction Notes

SEPTIC TANK INSTALLATION

1. The tank shall be set level and as shallow as possible on the undisturbed earth or compacted aggregate.

2. The house is connected to the large chamber (2/3 of the tank). This is called the inlet or solids side of the tank. The tank should be setback between 5 and 10 feet from the house or as shown on the plan with at least one cleanout between the house and tank.

3. The center baffle should be properly installed with an approved vent connecting the large chamber to the small chamber.

4. The tank shall be watertight. All tanks must be engineered and meet adopted Uniform Plumbing Code requirements. All plastic or fiberglass tanks are to be IAPMO approved.

5. The inlet sanitary tee (also called the inlet baffle) should be installed and grouted in place. The grout should be free of cracks and adequate to support the pipes and not allow rotation or movement. Application of waterproofing materials over grout joints is recommended. Non-shrink grout or mortar should always be used.

6. The outlet of the septic tank shall be fitted with an approved outlet filter. See attached septic tank detail this plan set.

7. The excavation for the septic tank shall be clean, free of large rock, and level before placement of tank.

8. The size of the tank shall be verified by manufacturer’s stamp on the tank. The tank must be one which meets the Uniform Plumbing Code.

9. Fiberglass and polyethylene tanks should be installed per the manufacturer’s specifications. This usually requires bedding the tank in sand or small aggregate. Check with the Environmental Health Division for approval of the tank manufacturer prior to installation.

10. It is required that the risers be installed over the septic tank access hatches before it is buried. In this way the tank can be easily located in an emergency and for regular pumping maintenance at about a 5-year interval depending on family size and use. Such risers must be watertight, bonded to the septic tank, and not allow surface or groundwater to run into the septic tank.
SEWAGE TRANSMISSION LINE FROM STRUCTURE TO SEPTIC TANK

1. Must be three (3) or four (4) inches in diameter, ABS Schedule 40.

2. The sewage line should be installed with a slope (fall) of no less than \( \frac{1}{4} \) inches per one (1) foot of line or 2%. Lines with too little or too much slope may plug with waste materials.

3. The sewage line should not be longer than 50 feet. And it is best to avoid bends in the pipe if possible. Any bends in excess of 30 degrees should have a cleanout installed.

EFFLUENT TRANSMISSION LINE FROM SEPTIC TANK TO D-BOX

1. Must be (2), three (3), or four (4) inches in diameter, Schedule 40 ABS, Schedule 40 PVC or SDR 35 PVC (refer to plan for pipe size and type). Drain pipe (or similar belled pipe with no-glued or rubber ring-tight joints) may not be used from the tank to the first distribution box.

2. The effluent transmission line might use the hole which is slightly higher in the box than the outlet hole piping going to the absorption field (approximately two (2) inches).

DISTRIBUTION BOX INSTALLATION

1. Distribution boxes should be placed level on undisturbed native soil or embedded in the aggregate of the soil absorption trench.

2. Concrete or plastic distribution boxes may be used. Plastic boxes MUST be installed according to the manufactures recommendations.

3. All the pipes must be grouted securely in the precast holes of the box with non-shrink grout. Extra holes may not be punched out to accommodate more pipes. Use or waterproofing materials on the outside of the grout is recommended. Plastic boxes may have other sealing methods.

4. Water should be present at the site during time of inspection, so that the distribution of flow can be tested. If there are any questions about distribution, call the Environmental Health Division or design Engineer prior to construction.

LEACH LINES AND PIPING (when not using Infiltrator trenches)

1. Approved pipe materials for use in the sewage system are listed in the current version of the Uniform Plumbing Code.
2. Gravel is to be installed under the pipe in the amount specified on the permit. Gravel depth of up to two (2) feet can be verified with a gravel rod. For gravel depths greater than two (2) feet, one of the following verifications can be used:

   (1) Purchase receipts.
   (2) Amount of rock below the pipe should be exposed at the ends of the lines at a 45-degree slope, so the amount of rock can be visibly determined.
   (3) Stakes may be embedded in the gravel at 40 foot intervals, so that they may be vertically pulled out to verify the amount of rock under the pipe.

3. The bottom of the leach trench should be level and approximately uniform in depth. Leach lines must follow land surface contours. The leach pipe should be placed with holes 135° from the crown, and with a fall of no more than one (1) inch per 30 feet. Smear or compacted material must be removed from the side wall below the invert elevation by hand raking to the trench sides to a depth of one (1) inch.

4. Leach lines should be no longer than 100 feet and equal in length. Distribution can be from the end of the mid-point of the trench. The total length of the leach lines and the amount of gravel required is determined by the number of bedrooms in the home and the results of the soil evaluation.

5. The minimum lateral separation of undisturbed earth between leach trenches is four (4) feet when using 12 inches of gravel under the pipe. This increases to six (6) feet for 24 inches of gravel, and eight (8) for 36 inches of gravel. On slopes greater than 20% the leach lines must be installed with a minimum separation of eight (8) of undisturbed earth between trenches. (note see approved plan for trench spacing)

6. A transit, builders or laser level should be used to lay out and install the septic system. A level of appropriate type should be available at the site during the final inspection to check fall on the drain pipe.

7. The trenches are normally 24 inch wide, but no wider than 36 inches. Anything wider than 36 inches is considered a seepage bed, and is subject to different siting requirements than trenches.

8. Drain rock used in the lines should be clean (washed), 1 ½ inch nominal size (3/4 inches 2 ½ inches), river gravel or approved crushed rock. Smaller sized material, if appropriate, may be specified by the site evaluator. At least 12 inches of drain rock is required under the
leach line and two (2) inches over the pipe. Greater depths may be specified by the site evaluator if soil conditions are suitable. No more than 36 inches of rock may be used under the pipe.

9. Heavy, brown (Kraft) paper, straw, filter fabric or other approved material must be placed over the drain rock prior to soil backfill to prevent infiltration of soil into the washed gravel of the trench. Do not use roofing felt, tar paper, plastic or other non-breathable materials.

INSPECTION RISERS IN ABSORPTION TRENCHES

1. Inspection risers, constructed of ABS plastic, are required to extend to the bottom of the trench at the end of each leach line and connect to the drain pipe with a Tee fitting. Such wells are necessary to monitor the water level in the trenches. See the attached typical trench drawing.

JOB SITE PLANS AND SPECIFICATIONS

1. A copy of the site evaluation report must be on the job site for the installer of the sewage system. The design and plans shall be followed. If there are any problems or if you have a question, you should contact the design Engineer, and the Environmental Health Division before construction begins.
SEPTIC TANK ACCESS RISER DETAIL

N.T.S.
On-site Waste Water Disposal System, Revised

PLASTIC CHAMBER - IN-GROUND TRENCH

Screws
Back-plate secured to plastic
Back-plate with self-locking screws

SIDE ELEVATION

Not to scale
See manufacturer's instructions

4'-0" wide x 12'-0"
Plastic Chamber

FILL CLEAR CAVITY
To top of chamber

Chad compacted to seepage trench

Native Depth Bead 12" min

2 or 3" ABS Inspection Ring

Lower edge

FABRIC

10' N Filter

WASTE
Septic System
Installation Instructions

Equalizer® 36 Chambers
PBS Received 4-27-2020
Before You Begin

Equalizer 36 chambers may only be installed according to state and/or local regulations. If unsure of the installation requirements for a particular site, contact the local health department.

Like conventional systems, the soil and site conditions must be approved prior to installation. Conduct a thorough site evaluation to determine the proper sizing and siting of the system before installation.

Materials and Equipment Needed

- Equalizer 36 Chambers
- PosiLock End Plates
- PVC Pipe and Couplings
  - (4-inch in diameter for header and inlet pipes, and inspection port)
- 4-inch Cap for Inspection Port
- Backhoe
- Laser, Transit, or Level
- Shovel and Rake

These guidelines for construction machinery must be followed during installation:

- Avoid direct contact with chambers when using construction equipment. Chambers require a 12-inch minimum of compacted cover to support a wheel load rating of 16,000 lbs/axle or equivalent to an H-10 AASHTO load rating.
- Only drive across the trenches when necessary. Never drive down the length of them.
- To avoid additional soil compaction, never drive heavy vehicles over the completed system.

Excavating and Preparing the Site

Note: As is the case with conventional systems, do not install the systems in wet conditions or in overly moist soils, as this causes machinery to smear the soil.

1. Stake out the location of all trenches and lines. Set the elevations of the tank, pipe, and trench bottom.

2. Install sedimentation and erosion control measures. Temporary drainage swales/berms may be installed to protect the site during rainfall events.

3. Excavate and level 2-foot wide trenches with proper center-to-center separation. Verify that the trenches are level or have the prescribed slope.

4. Rake the bottom and sides if smearing has occurred while excavating. Remove any large stones and other debris. Do not use the bucket teeth to rake the trench bottom.

   Note: Raking to eliminate smearing is not necessary in sandy soils. In fine textured soils (silts and clays), avoid walking in the trench to prevent compaction and loss of soil structure.

5. Verify that each trench is level using a level, transit, or laser.

Attaching the PosiLock™ End Plates

1. With a hole-saw, cut an opening for the inlet pipe using one of the pre-marked circles on the end plate as a guide. Pre-marked circles allow for 4-inch SDR35, 4-inch SCH40 and 2-inch pressure dosing pipe.

2. Attach the end plate to the inlet end of the chamber by lining up the locking hubs with the corresponding chamber end. Applying firm pressure, lock the hubs in place on one side of the chamber and then the other.

   Note: The end plate is clearly marked "INLET SIDE TOWARD CHAMBER".

3. In the inlet end of the end plate, insert the appropriate-diameter inlet pipe into the previously drilled hole. Fasten the pipe in place with a screw to secure it to the end plate.

   Note: The end plate is designed so that effluent will flow in through the pipe and corresponding inlet hole and spill out the opening on the other side. When inserting the inlet pipe, the pipe will only extend into the plate 1 inch before it reaches a stop.

4. Attach a closed end plate onto the outlet end of the chamber by snapping the end plate’s locking hubs onto the chamber end. Do not cut an opening on the closed or outlet end plate.

   Note: The existing opening on the end plate must face outward when installed on the closed/outlet end of the chamber. The opening is designed to fill with soil during system installation.
Installing the Chambers

1. Level the header pipe.
2. Set the invert at the appropriate height from the bottom of the trench to the bottom of the inlet. Invert height will vary depending on which end plate is used. Precisely measure the invert on the end plate prior to setting the invert height.
3. Place the first chamber with the open end plate at the beginning of the trench.
4. Insert the inlet pipe into the end of the chamber. The pipe will only go into the unit one inch before it reaches a stop.
5. Check the first-installed chamber to be sure it is level or has the prescribed slope.
6. Secure the inlet pipe to the end plate with a screw at the 12 o'clock position.
7. Lift and place the end of the next chamber onto the previous one at a 45° angle. Line up the notches on the center end of the chamber and lower it to the ground to engage the interlocks.
8. Continue interlocking the chambers until the trench is completed. The last chamber in the trench should have a closed end plate. As the chambers are installed, verify that they are level or have the prescribed slope.
9. To fill the sidewall area, start at the joints where one chamber interlocks with another, and pull soil from the sides of the trench with a shovel. Continue backfilling the area making sure the fill covers the louvers.
10. Pack down the fill by walking along the edges of the trench and chambers. This step is important for assuring structural support. In wet conditions, silty or clay soil, do not walk in the sidewalls.
11. Proceed to the next trench and begin with step one.

Installing Optional Inspection Ports

1. Using a hole saw or router, cut an opening in the pre-marked area located in the center of the chamber. The hole saw should match the size and type of pipe that is being installed.
2. Glue a 6-inch long piece of PVC pipe into a 2-inch pipe coupling.
3. Insert the 6-inch piece of pipe into the opening at the top of the chamber so the coupling sits on top of the chamber.
4. Insert another piece of pipe into the coupling and cut it at or above grade.
5. Attach a cap or threaded cleanout assembly onto the protruding pipe.
6. A small valve-cover box may be used if the inspection port is below the desired grade.

Note: Inspection ports may also be used for venting.

Covering the System

Before backfilling, the system must be inspected by a health officer or other official as required by state and local codes. Create an as-built drawing at this time for future records.

1. Backfill the trench by pushing fill material over the units. Keep a minimum of 12 inches of compacted cover over the chambers before driving over the system.

Note: Do not drive over the system while backfilling in sand, since sand does not give adequate support.

2. It is best to mound several extra inches of soil over the finish grade to allow for settling. This also ensures that runoff water is diverted away from the system. After the system is covered, the site should be seeded or sodded to prevent erosion.

Note: A minimum cover of 12 inches is required to attain H-10-equivalent loading. If allowed by code, chambers can be installed with a minimum of 6 inches of cover.

Note: If the system is for new home construction, it is important to leave marking stakes along the boundary of the system. This will notify contractors of the site location so they will not cross it with equipment of vehicles.
Infiltrator Systems, Inc. Limited Warranty

(a) The structural integrity of each chamber and end plate manufactured by Infiltrator (collectively referred to as "Units"), when installed and operated in a new, residential leachfield of an onsite septic system in accordance with Infiltrator's installation instructions, is warranted to the original purchaser ("Holder") against defective materials and workmanship for one year from the date upon which a septic permit is issued for the septic system containing the Units; provided, however, that if a septic permit is not required for the septic system by applicable law, the one (1) year warranty period will begin upon the date that installation of the septic system commences. In order to exercise its warranty rights, Holder must notify Infiltrator in writing at its corporate headquarters in Old Saybrook, Connecticut within fifteen (15) days of the alleged defect. Infiltrator will supply replacement Units for those Units determined by Infiltrator to be defective and covered by this Limited Warranty. Infiltrator's liability specifically excludes the cost of removal and/or installation of the Units.

(b) THE LIMITED WARRANTY AND REMEDIES IN SUBPARAGRAPH (a) ARE EXCLUSIVE. THERE ARE NO OTHER WARRANTIES WITH RESPECT TO THE UNITS, INCLUDING NO IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

(c) The Limited Warranty does not extend to incidental, consequential, special or indirect damages. Infiltrator shall not be liable for penalties or liquidated damages, including loss of production and profits, labor and materials, overhead costs, or other losses or expenses incurred by the Holder or any third party. Specifically excluded from Limited Warranty coverage are damage to the Units due to ordinary wear and tear, alteration, accident, misuse, abuse or neglect of the Units; the Units being subjected to vehicle traffic or other conditions which are not permitted by the installation instructions; failure to maintain the minimum ground covers set forth in the installation instructions; the placement of improper materials into the system containing the Units; failure of the Units or the septic system due to improper siting, improper sizing, excessive water usage, improper grease disposal, or improper operation; or any other event not caused by Infiltrator. This Limited Warranty shall be void if the Holder fails to comply with all of the terms set forth in this Limited Warranty. Further, in no event shall Infiltrator be responsible for any loss or damage to the Holder, the Units, or any third party resulting from installation or shipment, or from any product liability claims of Holder or any third party. For this Limited Warranty to apply, the Units must be installed in accordance with all site conditions required by state and local codes, all other applicable laws, and Infiltrator's installation instructions.

(d) No representative of Infiltrator has the authority to change this Limited Warranty in any manner whatsoever, or to extend this Limited Warranty. No warranty applies to any party other than the original Holder.

The above represents the standard Limited Warranty offered by Infiltrator. A limited number of states and counties have different warranty requirements. Any purchaser of Units should contact Infiltrator's corporate headquarters in Old Saybrook, Connecticut, prior to such purchase, to obtain a copy of the applicable warranty, and should carefully read that warranty prior to the purchase of Units.
There Is No Faster, Easier, Better, Or More Economical Way To Equalize Distribution Box Flow

There's no need to dig up and re-level tilted distribution boxes. Or to struggle with makeshift pipe dams. Now, with Tuf-Tite Speed Levelers, you can do the job in a fraction of the time, for a fraction of the cost.

For 3" or 4" PVC pipes
Speed Levelers are precision engineered to fit commonly used Schedule 40 Thick-Wall, SDR 35 (3034), and 2729 Thin-Wall PVC pipes. Simply press the Levelers into the pipe ends. They fit water-tight. No tools are necessary.

Non-corrosive Polyethylene
Tuf-Tite Speed Levelers are molded of specially formulated polyethylene that is highly chemical resistant. They are actually more corrosion resistant than the PVC pipe in which they're used.

They're hand-adjustable
Easily rotate Speed Levelers by hand. The Flo-Hole can be positioned to admit effluent at the precise level you desire. The range of settings is infinitely variable. And Levelers can be reset easily, anytime.

Tested. Proved. Preferred
Test after test show that Tuf-Tite Speed Levelers signify significantly improve distribution in gravity-flow septic systems. There simply is no other way this can be accomplished as effectively, quickly, easily, or economically.
HOW TO SET SPEED LEVELERS

1. Insert a Speed Leveler into each outlet pipe inside the Distribution Box. Rotate each Leveler until the Flo-Hole is at the 12 o’clock position.

2. Start filling the Distribution Box with water. Stop when the water level touches the "Inner Guide Ring" of the highest Speed Leveler.

3. Rotate all the Speed Levelers until each of the Flo-Holes is aligned just above the water level. Slowly add more water to see if it enters all the Flo-Holes simultaneously. Make fine-tune adjustments if necessary.

4. You can alternate fields, or rest failed lines anytime. Simply rotate the Leveler on the appropriate pipe until the Flo-Hole is at the 12 o’clock position to stop the flow.
Tuf-Tite® Distribution Box. THE TOUGH ONE!

- Injection molded HDPE
- Non-corrosive
- Simple to install
- Easy to level

In a septic environment, no other material can match High Density Polyethylene in delivering a lifetime of trouble-free service. Tuf-Tite Distribution Boxes are injection molded, using only premium HDPE which contains no fillers or foam.

Snap-in pipe seals
They're patented. Simply insert your PVC pipe and push it through the flexible, polyethylene Tuf-Tite seal. Pipes fit watertight. Installation couldn't be easier.

They're permanent
Unlike cement-based pipe grout, Tuf-Tite seals will not crack or corrode in septic conditions. They stay pliable and watertight permanently.
INSTALLATION IS JUST THIS SIMPLE

1. Position the Distribution Box on level virgin soil. **Do not place box on a concrete slab.**
2. Install the inlet pipe and outlet pipes. Be sure the bottoms of all pipes rest on virgin soil.
3. Level the Distribution Box and all pipes as needed.
4. Backfill the pipes to within two feet of the Distribution Box. Recheck the level of the box, then backfill up to the top lid ridge.
5. Install and adjust Tuf-Tite Speed Levelers.
6. Place lid on the Distribution Box and finish backfilling.

**Choice of Fittings**
- S-35 Pipe Seal, for:
  - Sewer and Drain
  - SDR 35
  - ASTM 3034
  - Thin Wall
  - 1500 Lb. Crush
- S-40 Pipe Seal, for:
  - Schedule 40
  - 4" Corrugated
  - P-10 Plug, for unused holes

**Choice of Lids**
- Regular Lid. Molded of rugged HDPE.
- Inspection Port Lid. For easy access and inspection. Models available to accept either 4" or 6" extension pipes.

**Tuf-Tite Speed Levelers™**
Control the flow of effluent from the Distribution Box. Simply insert a Speed Leveler into each outlet pipe. Rotate each Speed Leveler so the flow is distributed as desired. Available for 3" or 4" PVC pipe.

A full line of innovations for better septic systems

Tuf-Tite® Corporation
1200 Flex Court
Lake Zurich, Illinois 60047

©1999 Tuf-Tite® Corporation
Form 4H0D2K - Produced in USA

PBS Received 4-27-2020

APN 029-462-01
GENERAL NOTES

1. ALL MATERIALS AND WORKMANSHIP SHALL CONFORM WITH HEALTH SERVICES STANDARDS AND REQUIREMENTS, INCLUDING BUILDING, PLUMBING AND ELECTRICAL CODES.

2. THE APPROVED CONCRETE SEPTIC TANK SHALL BE SET LEVEL IN THE EXCAVATION WITH A RECOMMENDED EARTH COVER OF 12 INCHES.

3. CONTRACTOR SHALL GIVE THE ENGINEER PRIOR NOTICE OF AT LEAST 48 HOURS FOR INSPECTION OF THE SEPTIC TANK SYSTEM.

4. ENDS OF LEACH LINES SHALL REMAIN EXPOSED FOR INSPECTION PURPOSES.

5. SMEARED OR COMPACTED TRENCH SIDES SHALL BE SCARIFIED TO A DEPTH OF ONE INCH AND THE LOOSE MATERIAL REMOVED BEFORE PLACING THE INFILTRATOR IN THE TRENCH.

6. WATERTIGHT CAP OR SEAL TO BE PLACED AT THE END OF EACH LEACH LINE.

7. THE TRENCH BOTTOM AND TOTAL LENGTH OF LINE SHALL BE LEVEL AND PLACED WITH THE AID OF A TRANSIT OR LEVEL.

8. THE CONNECTION BETWEEN THE SEPTIC TANK AND THE DISTRIBUTION BOXES SHALL BE OF SCH 40 ABS.

9. ENGINEER IS TO BE NOTIFIED IMMEDIATELY OF ANY ADVERSE CONDITIONS DISCOVERED DURING CONSTRUCTION SUCH AS IMPERMEABLE SOIL LAYER, SPRINGS, GROUNDWATER, ETC.

10. CONTRACTOR SHALL BE RESPONSIBLE FOR DISCOVERY AND AVOIDANCE OF ALL UNDERGROUND UTILITIES.

11. ANY CHANGES TO THIS PROPOSED SEPTIC PLAN AS A RESULT OF ( BUT NOT LIMITED TO) COUNTY DEPARTMENT OF ENVIRONMENTAL HEALTH (DEH) REVIEW PROCESS UNFORSEEN FIELD CONSTRAINTS, OR PROJECT DEVELOPMENT CHANGES, MUST FIRST BE CLEARED WITH THE DESIGN ENGINEER AND COUNTY DEH PRIOR TO CONSTRUCTION.

NOTES

A. NO FOUNDATION AND/OR DRIVeway CUTS AND NO SURFACE OR SUB–SURFACE DRAINS ARE TO BE LOCATED WITHIN 50 FEET DOWNSLOPE OR LATERALLY OF THE PRIMARY OR SECONDARY SYSTEM.

B. ALL DRAINAGE FROM HOUSE (DOWNSPOUTS), DRIVEWAY OR OTHER GRADING AROUND THE HOUSE SHALL BE DIRECTED AWAY FROM THE LEACH FIELDS.

C. PROPOSED SYSTEM AREA TO REMAIN UNDISTURBED DURING SITE GRADING AND HOUSE CONSTRUCTION.

D. LOW FLOW TOILETS (1.6 GALLONS MAX,) ARE REQUIRED IN ALL BATHROOMS.
CASE: CDP 2018-0032
OWNER: LEWIS, James & Susan
APN: 027-462-01
APLCT:
AGENT:
ADDRESS: 27201 Ten Mile Road, Point Arena

THIS MAP AND DATA ARE PROVIDED WITHOUT WARRANTY OF ANY KIND.
DO NOT USE THIS MAP TO DETERMINE LEGAL PROPERTY BOUNDARIES.
CASE: CDP 2018-0032
OWNER: LEWIS, James & Susan
APN: 027-462-01
AGENT:
ADDRESS: 27201 Ten Mile Road, Point Arena

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CASE: CDP 2018-0032
OWNER: LEWIS, James & Susan
APN: 027-462-01
AGENT: 
ADDRESS: 27201 Ten Mile Road, Point Arena

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Coastal Zone Boundary

CASE: CDP 2018-0032
OWNER: LEWIS, James & Susan
APN: 027-462-01
APLCT:
AGENT:
ADDRESS: 27201 Ten Mile Road, Point Arena

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<td>LEWIS, James &amp; Susan</td>
<td>027-462-01</td>
<td>27201 Ten Mile Road, Point Arena</td>
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**ADJACENT PARCELS**

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Highly Scenic Area (Conditional)

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HIGHLY SCENIC & TREE REMOVAL AREAS

MENDOCINO COUNTY PLANNING DEPARTMENT- 12/17/2018
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Grazing Land (G)
Rural Residential & Rural Commercial (R)

FARMLAND CLASSIFICATIONS

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Coastal Zone Boundary
Supervisory Districts 2010
Gualala MAC

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