COUNTY OF HUMBOLDT
PLANNING AND BUILDING DEPARTMENT
CURRENT PLANNING DIVISION

3015 H Street Eureka CA 95501
Phone: (707)445-7541 Fax: (707) 268-3792

Hearing Date: June 20, 2019

To: Humboldt County Planning Commission

From: John H. Ford, Director of Planning and Building Department

Subject: **Joe Royse, Conditional Use Permit and Special Permit**
Application Number 11864
Case Number CUP-16-418 and Special Permit PLN-11864-SP
Assessor's Parcel Number (APN) 208-231-012
1235 Bronco Road, Mad River (Dinsmore), CA

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Please contact Elizabeth Schatz, Senior Planner, at 707-445-7541 or by email at eschatz1@co.humboldt.ca.us if you have any questions about the scheduled public hearing item.

AGENDA ITEM TRANSMITTAL

Hearing Date	Subject	Contact
June 20, 2019	Conditional Use Permit and Special Permit	Elizabeth Schatz

Project Description: Joe Royse is seeking a Conditional Use Permit (CUP) for an existing 17,776 square foot (SF) outdoor cannabis cultivation operation on a 40-acre parcel, and a Special Permit (SP) for a reduction to the setback requirement from federal lands. Cultivation will occur outdoors and in two existing hoop-houses, each 2,688 square feet in area, and full sun outdoor in two areas of 5,700 square feet and 6,700 square feet. No lights or fans are used for the cultivation. Annual estimated water use is 145,520 gallons. Irrigation water is sourced from an onsite well. Three hard sided water tanks on site store 8,450 gallons. Drying of cannabis is proposed to occur on-site in an existing 1,600 square-foot barn. Cultivation will be conducted by the owner, a family member, and up to four seasonal employees, and processing will occur off-site at a licensed third-party facility until a suitable on-site processing building can be permitted and constructed. Electricity is provided by solar panels and generators.

Project Location: The project site is located in the Dinsmore area, on the north side of River Road, approximately 1.38 miles north of the intersection of County Line Road and River Road. From there access is via River Road to Bronco Road, a private drive, and then approximately 1.22 miles north from the intersection of Bronco Road and River Road as property known as 1235 Bronco Road, Mad River (Dinsmore), CA.

Present Plan Land Use Designations Residential Agriculture (RA20-160), Humboldt County General Plan (GP), Density: 20-160 acres per dwelling unit, Slope Stability: High Instability (3)

Present Zoning: Forestry Recreation with a Special Building Site Combining Zone which requires a 40-acre minimum parcel size (FR-B-5(40))

Application Number: 11864 **Case Number:** CUP-16-418

Assessor Parcel Numbers: 208-231-012

Applicant	Owner	Agent
Joe Royse	Joe Royse	Green Road Consulting
PO Box 802	PO Box 802	1650 Central Ave. Suite C
Fortuna, CA 95540	Fortuna, CA 95540	McKinleyville, CA 95519

Environmental Review: An Addendum to a previously adopted Mitigated Negative Declaration has been prepared for consideration per §15164 of the State CEQA Guidelines.

State Appeal Status: Project is NOT appealable to the California Coastal Commission

Major Issues: None.

JOE ROYSE
Case Number CUP-16-418
Assessor's Parcel Number 208-231-012

Recommended Commission Action

1. Describe the application as part of the Consent Agenda.
2. Survey the audience for any person who would like to discuss the application.
3. If no one requests discussion, make the following motion to approve the application as a part of the consent agenda:

   Find that the Commission has considered the Addendum to the adopted Mitigated Negative Declaration for the Commercial Medical Land Use Ordinance (CCMLUO) as described by Section §15164 of the State CEQA Guidelines, make all of the required findings for approval of the Conditional Use Permit and Special based on evidence in the staff report, and adopt the Resolution approving the proposed Joe Royse project subject to the recommended conditions.

Executive Summary: Joe Royse Project (Project) seeks approval of a Conditional Use Permit for existing outdoor commercial cannabis cultivation in compliance with the County Commercial Medical Marijuana Land Use Ordinance (CMMLUO) and the Medical and Adult Use Cannabis Regulation and Safety Act (MAUCRSA). The CUP would allow for the continuation of an existing outdoor cannabis cultivation operation located on parcel 208-231-012 which is approximately 40 acres in size. The Special Permit would authorize a setback reduction to less than 600 feet from public lands. The cultivation area is located approximately 400 feet from the Six Rivers National Forest land to the north of the parcel as indicated on a survey conducted by Kolstad Land Surveyors. The barn where on-site processing is proposed is located approximately 150 feet from the northern property line.

Cannabis cultivation occurs in two natural clearings that appear to have been expanded between 2012 and 2014, according to review of aerial images. The 17,776 square feet of cultivation approved by this CUP will be contained within the same footprints.

The applicant has one solar array and two portable generators to provide electricity for the operations. The generators have secondary containment and have been shown to meet the property line noise requirements. The project proposes to install enough solar panels to become the primary electricity source for the operations. The greenhouses do not use power as they do not include any lights or fans.

The applicant uses drip irrigation with water that is sourced from a permitted well. Water loss will be minimized by mulching the cultivation areas to reduce evaporation and installation of automated timers.

Cannabis plants will start their vegetative growth in up to 1,200 square feet of the 1,600 square foot barn on site. All cultivation will be completed by the owner, a family member, and up to four seasonal employees and all product grown on-site will be dried and prepared for distribution on site in the 1,600 square foot barn, with additional cannabis storage in a shipping container. Processing will occur offsite at a licensed third-party facility until a suitable processing building can be permitted and constructed onsite. The employees will not live on the site. Domestic water is provided by a permitted well, and sewage disposal is provided by an on-site sewage disposal system. The septic system has not been permitted and processing is not approved until a suitably permitted system is in place or documented portable toilets are used.

Six Class III drainages run through the parcel, and the project does not encroach on any of the Streamside Management Areas of these streams. The applicant has enrolled as a Tier 2 discharger with the North Coast Regional Water Quality Control Board and prepared a Water Resource Protection Plan.

The project parcel is located adjacent to potential Northern Spotted Owl (NSO) habitat (Six Rivers National Forest). The nearest NSO activity centers are 1.4, 1.7, and 2.0 miles from the cultivation area. Additionally, individual historic sightings have been observed at 0.7 miles and 0.8, and 1.0 miles of the cultivation area. Standard conditions and CDFW requested conditions have been included for the project as follows: prohibition of use of synthetic netting, refuse contained in wildlife proof storage containers, noise containment structures for the generators, lighting conditions to meet International Dark Sky Association standards, prohibition on anticoagulant rodenticides, and a requirement to leave wildlife unharmed.

The applicant cultivated more than the allowed Interim Permit amount in 2018, then paid a fine and decommissioned the expansion area. During the investigation, a new Cultivation Area Verification was conducted which showed historic cultivation in the amount of 17,776 square feet which is the allowed amount of this Conditional Use Permit.

The site is situated in an area identified by the County as High Geologic Instability. A Professional Engineer conducted a soils investigation and determined that the soils at the site are capable of providing adequate support for the proposed construction as well as for the site's existing structures.

The project parcel access roads were evaluated by a Professional Engineer and determined to be less than equivalent to a Category 4 Standard. The engineer's Road Evaluation Report detailed measures that must be undertaken to ensure safe travel along the road. A condition of approval has been incorporated that requires that the RER measures be completed. The project is accessed from a non-county maintained road that originates in Trinity County. The Road Evaluation Report began at the County line.

A portion of the parcel where the project will occur is in a Federal Aviation Regulation (FAR) Area, but outside of the County's Airport Compatibility Zone and Airport Zone Building Regulation areas. The site plan shows the entire developed area to be outside of all airport restriction areas. If any structures exist or are proposed within the FAR area, the applicant will be required to fill out an Obstruction Evaluation/Airport Airspace Analysis (OE/AAA) form with the Federal Aviation Administration. The site plan shows all proposed and existing structures outside of the FAR Area.

There are no schools, school bus stops, or places of worship within 600 feet of the cultivation or processing areas. A cultural resources investigation for the project site was conducted by Nick Angeloff in October of 2018. The survey, along with historical records searches and correspondence with the Bear River Band Tribal Historic Preservation Officer (TPHO), was documented in a Cultural Resources report that indicated that no historical or archaeological resources were identified on this property. The report recommended inadvertent discovery protocol for any resources discovered during project activities. The TPHO of the Bear River Band of the Rohnerville Rancheria also recommended inadvertent discovery protocol. The project has been conditioned accordingly.

The cultivation area was determined to be 400 feet from public lands in a parcel overview map prepared by Green Road Consulting, dated September 8, 2017. The barn where cannabis is currently dried and stored and that is proposed as a processing site is located approximately 150 feet from public lands. The public land is managed by the Six Rivers National Forest (SRNF) and

does not appear to provide any recreational or other facilities in the vicinity of the property line. A jeep trail passes approximately 2,500 feet away from the property line. The property line monument was identified during plot plan development and the boundaries were surveyed by a licensed professional. A referral was sent to SRNF and no reply was received. A Special Permit is also being requested to authorize the setback reduction to the public lands.

Environmental review for the proposed project was conducted, and based on the results of that analysis, staff believes the existing cultivation activities of the project were previously analyzed in the Final Mitigated Negative Declaration prepared for the Commercial Medical Land Use Ordinance (CMMLUO) adopted by the Humboldt County Board of Supervisors on January 26, 2016. Permitting the existing cultivation areas and bringing them into compliance with County and State regulations would not present substantial changes that would require major revisions to the previous mitigated negative declaration. An addendum to the MND has been prepared for this staff recommendation of permitting the existing cultivation areas. The addendum is included in Attachment 3.

Recommendation: Based on a review of Planning Division reference sources and comments from all involved referral agencies, planning staff believes that the applicant has submitted evidence in support of making all of the required findings for approving the Conditional Use Permit and Special Permit.

ALTERNATIVES: The Planning Commission could elect not to approve the project, or to require the applicant to submit further evidence, or modify the project. If modifications may cause potentially significant impacts, additional CEQA analysis and findings may be required. These alternatives could be implemented if the Commission is unable to make all of the required findings. Planning Division staff has stated that the required findings in support of the proposal have been made. Consequently, Planning staff does not recommend further consideration of either alternative.

The Commission could also decide the project may have environmental impacts that would require further environmental review pursuant to CEQA. Staff did not identify any potential impacts. As Lead Agency, the Department has determined that the project is consistent with an existing Mitigated Negative Declaration, as stated above. However, the Commission may reach a different conclusion. In that case, the Commission should continue the item to a future date at least two months later to give staff the time to complete further environmental review.

RESOLUTION OF THE PLANNING COMMISSION
OF THE COUNTY OF HUMBOLDT
Resolution Number 19-

Case Number CUP-16-418, PLN-11864-SP
Assessor Parcel Number: 208-231-012

Makes the required findings for certifying compliance with the California Environmental Quality Act and conditionally approves the Joe Royse Conditional Use Permit and Special Permit request.

WHEREAS, Joe Royse submitted an application and evidence in support of approving a Conditional Use Permit to cultivate and process 17,776 square feet (SF) of outdoor cannabis located on APN 208-231-012 and a Special Permit for a setback waiver for cultivating and processing within 600 feet of public lands.

WHEREAS, the County Planning Division has reviewed the submitted application and evidence and has referred the application and evidence to involved reviewing agencies for site inspections, comments and recommendations; and

WHEREAS, the County Planning Division, the lead agency, prepared an Addendum to the Final Mitigated Negative Declaration (MND) prepared for the Commercial Medical Land Use Ordinance (CMMLUO) adopted by the Humboldt County Board of Supervisors on January 26, 2016. The proposed project does not present substantial changes that would require major revisions to the previous mitigated negative declaration. No new information of substantial importance that was not known and could not be known at the time was presented as described by §15162(c) of CEQA Guidelines; and

WHEREAS, Attachment 2 in the Planning Division staff report includes evidence in support of making all of the required findings for approving the proposed Conditional Use Permit (Case Number CUP16-418) and a Special Permit (Case Number PLN-11864-SP); and

WHEREAS, a public hearing was held on the matter before the Humboldt County Planning Commission on June 20, 2019.

NOW, THEREFORE, be it resolved, determined, and ordered by the Humboldt County Planning Commission that:

1. The Planning Commission considered the Addendum to the MND adopted for the Commercial Medical Marijuana Land Use Ordinance; and
2. The Planning Commission makes all of the required findings Attachment 2 of the Planning Commission staff report for Case Numbers CUP16-418 and PLN-11864-SP based on the submitted substantial evidence; and
3. Conditional Use Permit CUP-16-418 and Special Permit PLN-11864-SP are approved as recommended and conditioned in Attachment 1 for Case Numbers CUP-16-418 and PLN-11864-SP.

Adopted after review and consideration of all the evidence on June 20, 2019.

The motion was made by Commissioner ____ and seconded by Commissioner ___.

AYES: Commissioners:

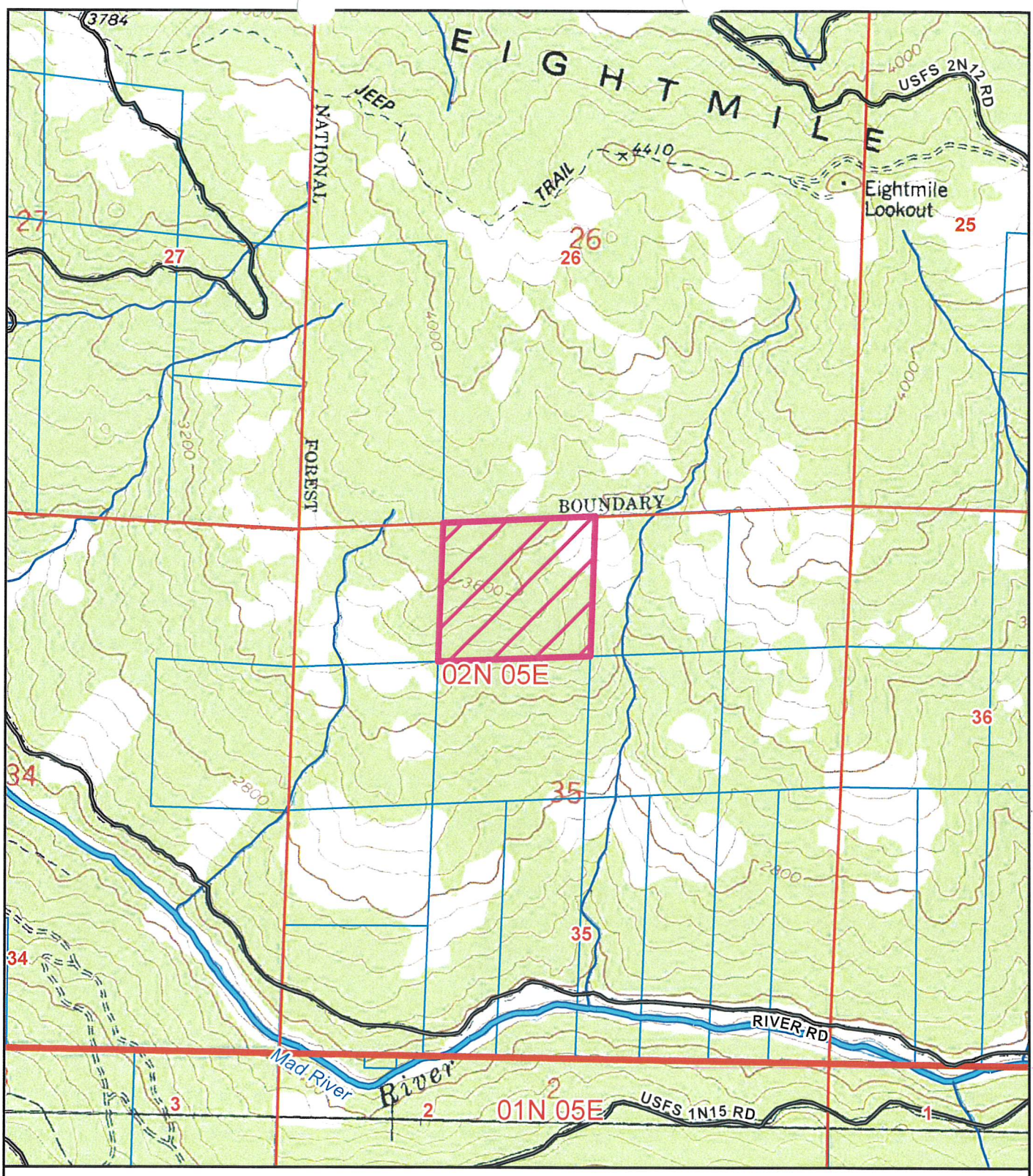
NOES: Commissioners:

ABSTAIN: Commissioners:
ABSENT: Commissioners:
DECISION: Motion carries

I, John H. Ford, Secretary to the Planning Commission of the County of Humboldt, do hereby certify the foregoing to be a true and correct record of the action taken on the above entitled matter by said Commission at a meeting held on the date noted above.

_____

John H. Ford, Director
Planning and Building Department



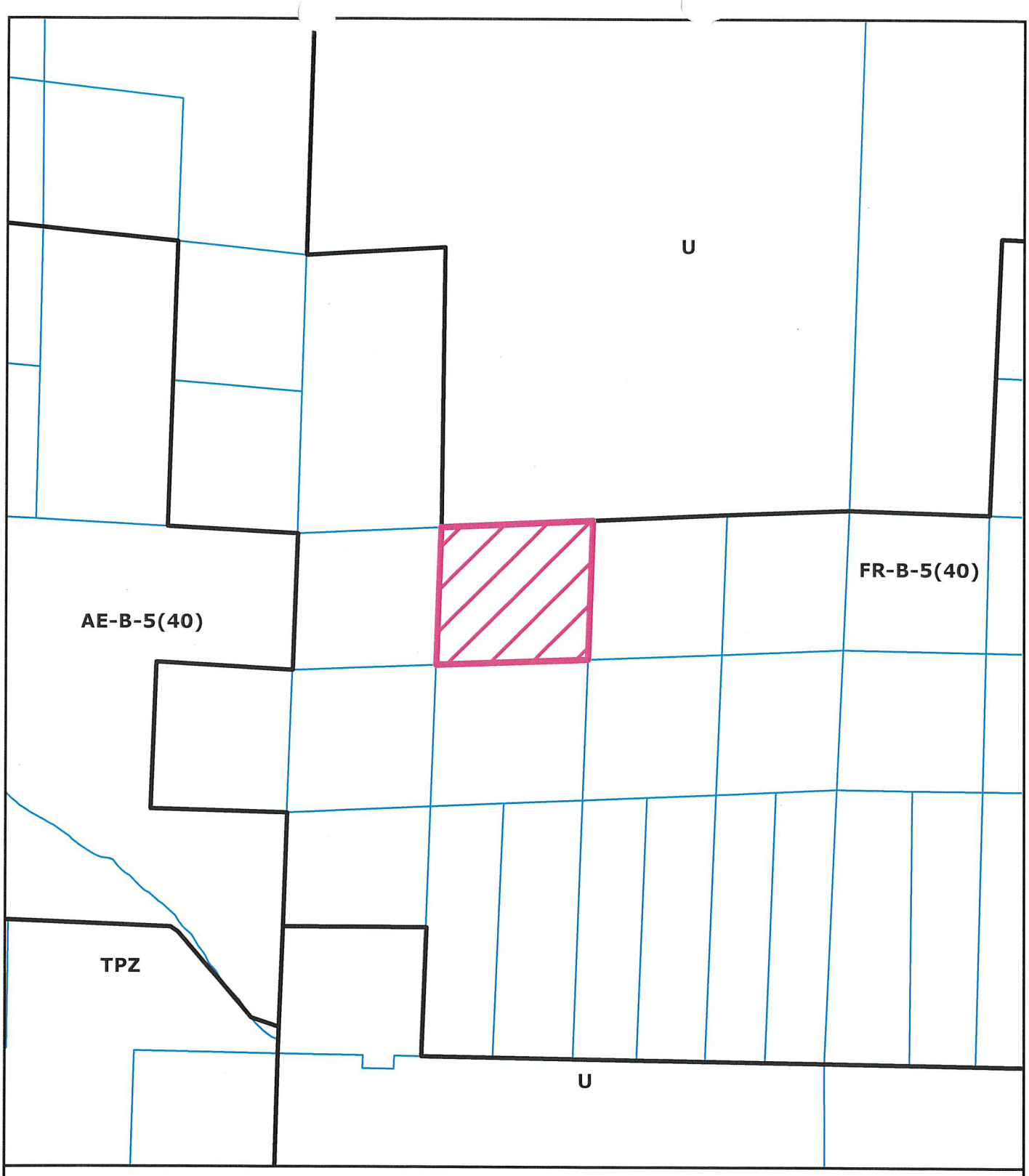
TOPO MAP
PROPOSED JOE ROYSE
DINSMORE AREA
CUP-16-418
APN: 208-231-012
T02N R05E S35 HB&M (BLAKE MOUNTAIN)

Project Area =

N

This map is intended for display purposes and should not be used for precise measurement or navigation. Data has not been completely checked for accuracy.

0 1,000 2,000 Feet



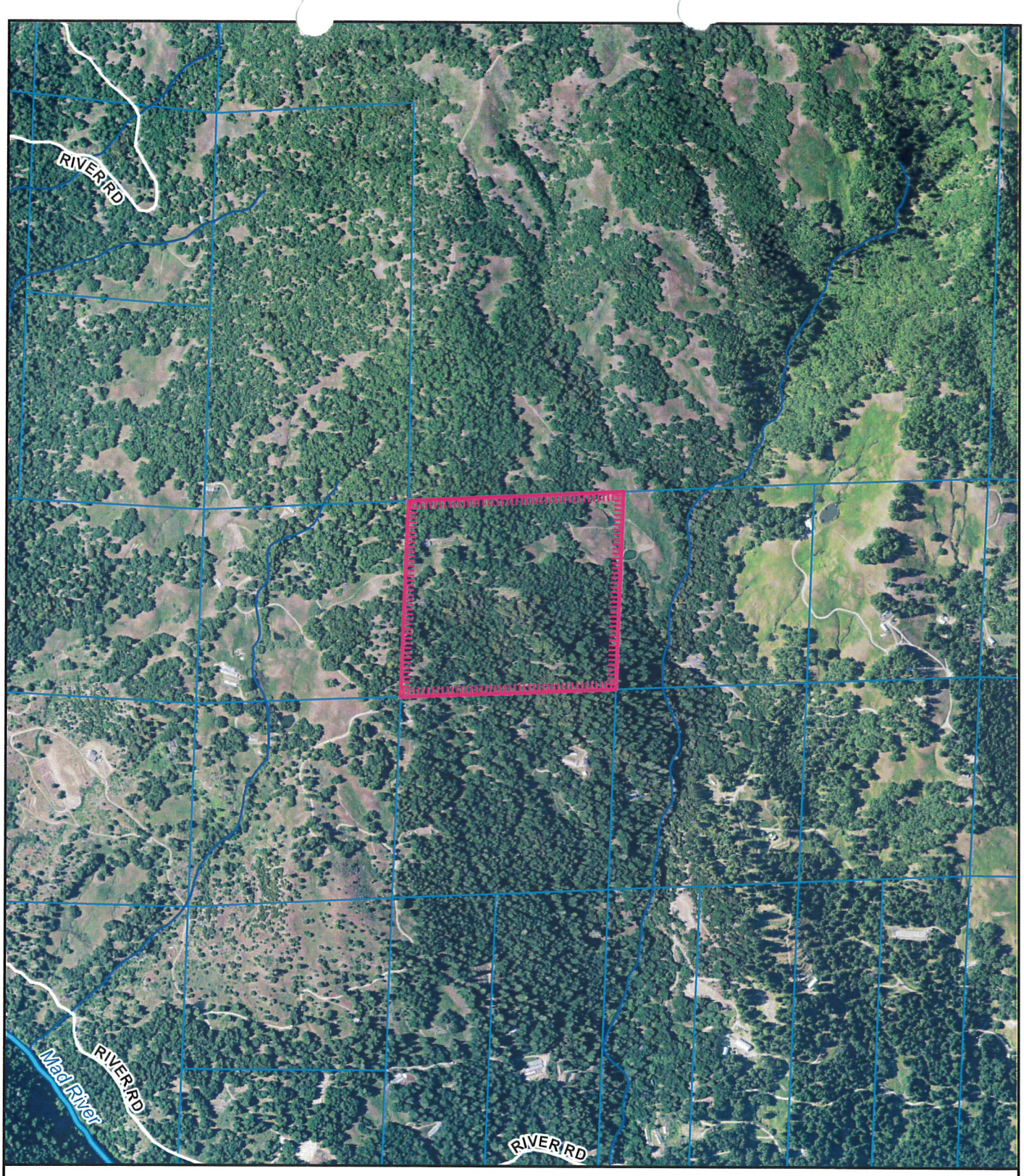
ZONING MAP
PROPOSED JOE ROYSE
DINSMORE AREA
CUP-16-418
APN: 208-231-012
T02N R05E S35 HB&M (BLAKE MOUNTAIN)

Project Area =

N

This map is intended for display purposes and should not be used for precise measurement or navigation. Data has not been completely checked for accuracy.

0 1,000 2,000 Feet



AERIAL MAP
PROPOSED JOE ROYSE
DINSMORE AREA
CUP-16-418
APN: 208-231-012
T02N R05E S35 HB&M (BLAKE MOUNTAIN)

Project Area =

N

This map is intended for display purposes and should not be used for precise measurement or navigation. Data has not been completely checked for accuracy.

0 1,000 2,000 Feet

HUMBOLDT OAKS INC

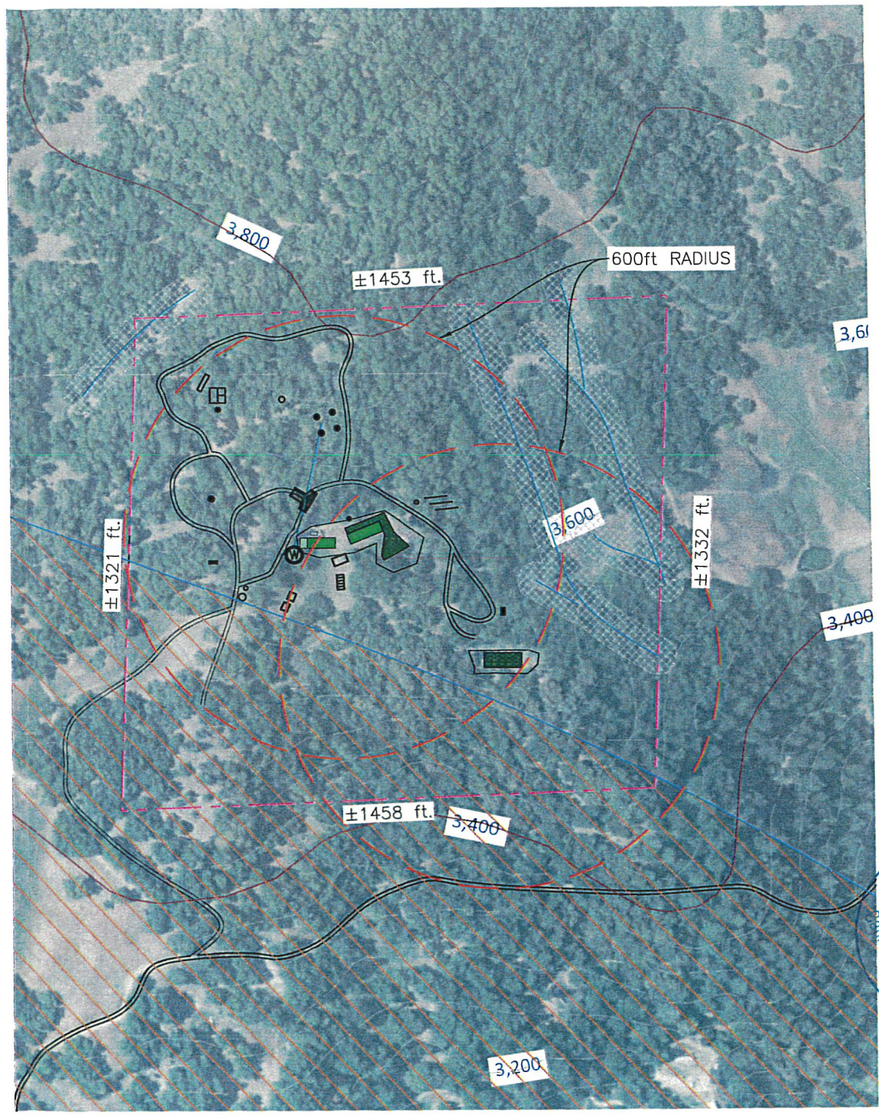
APN: 208-231-012

VICINITY MAP

NOT TO SCALE

AERIAL MAP

*PROPERTY LINES SHOWN ARE FROM A PARCEL BOUNDARY SURVEY BY KOLSTAD LAND SURVEYORS



N

200' 400' 800'

*PROPERTY LINES AND BUILDING LOCATIONS ARE APPROXIMATE AND BASED ON AERIAL MAPS AND GPS DATA TAKEN IN THE FIELD.

PROJECT DIRECTIONS

FROM: EUREKA, CA

- HEAD SOUTH ONTO US-101/BROADWAY STREET (19.9 MI)
- TAKE EXIT 685 FOR CA-36E (0.3 MI)
- TURN LEFT ONTO CA-36E (48.4 MI)
- TURN LEFT ONTO US FOREST SERVICE RD 1 (0.2 MI)
- TURN LEFT ONTO COUNTY LINE CREEK RD (4.2 MI)
- CONTINUE ONTO SALYER MAD RIVER RD (9.7 MI)
- CONTINUE UNTIL YOU HAVE REACHED THE PARCEL

TRAVEL TIME

APPROXIMATELY: 79.4 MI (2 HR 23 MIN)

SHEET INDEX

CP-COVER PAGE
P0-PARCEL OVERVIEW
SP-SPECIFICATIONS

PROJECT INFORMATION

LAT/LONG: 40.5138,-123,5806
APN: 208-231-012
APPLICANT: HUMBOLDT OAKS INC
PARCEL SIZE: ±40 ACRES
ZONING: FR-B-5(40)
APPLICATION TYPE: TYPE 3 OUTDOOR USE

COASTAL ZONE: NO
100 YEAR FLOOD: NO

AGENT:

KAYLIE SAXON
GREEN ROAD CONSULTING INC
1650 CENTRAL AVE. SUITE C
MCKINLEYVILLE, CA 95519
707-630-5041

RECEIVED
FEB 21 2019
Humboldt County Cannabis Svcs.

GREEN ROAD CONSULTING

PROJECT INFORMATION
PROPERTY OWNER . JOESEPH ROYSE
APN 208-231-012
SHEET INFO COVER PAGE

REVISIONS

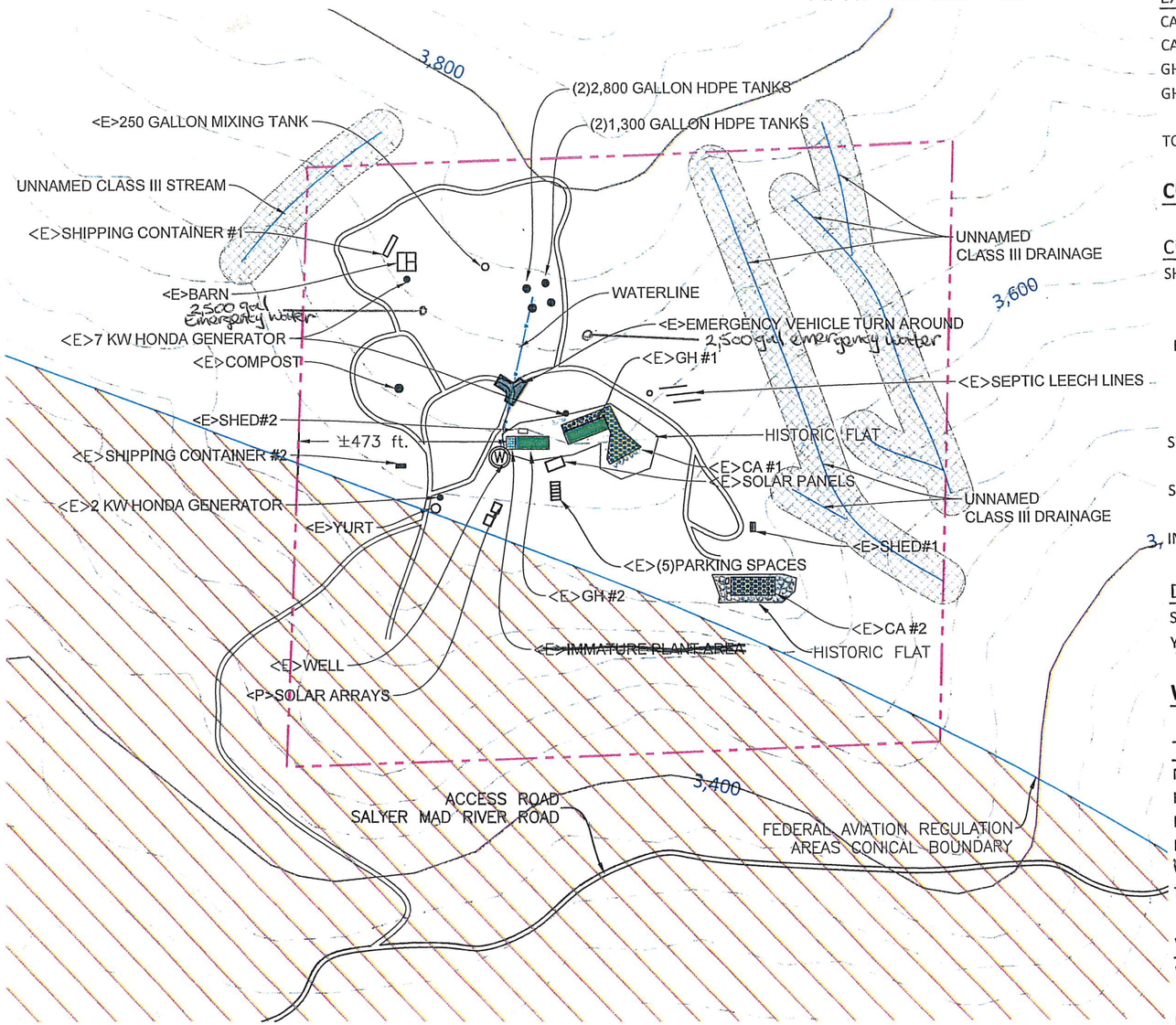
NO.	NOTES	DATE

DATE 2/21/19
DRAFTER X
SCALE AS SHOWN

SHEET
CP

PARCEL OVERVIEW

APN: 208-231-012



SURROUNDING BUILDINGS

THERE ARE NO SCHOOLS, BUS STOPS, PLACES OF WORSHIP, PUBLIC PARKS OR TRIBAL CULTURAL RESOURCES WITH IN 600 FEET OF THE CULTIVATION SITE.

CLASS III STREAMS WITH REQUIRED 50 FT. BUFFER ZONES

THERE ARE NO OFF SITE RESIDENCES WITHIN 600 FEET OF THE CULTIVATION SITE.

N

150' 300' 600'

CULTIVATION INFORMATION

EXISTING OUTDOOR CULTIVATION AREA

CA #1 = ~~5,624 FT²~~ 5,700 ft²

CA #2 = ~~4,000 FT²~~ 6,700 ft²

GH #1 = 2,688 FT² (28'x96')

GH #2 = 2,688 FT² (28'x96')

TOTAL EXISTING OUTDOOR CULTIVATION AREA = ~~15,000 FT²~~ 17,776 ft²

CULTIVATION | DOMESTIC AND USE

CULTIVATION BUILDING	USE	YEAR	SIZE
SHIPPING CONTAINER #1	NUTRIENT/FERTILIZER/ PESTICIDE STORAGE	2015	8'X20' (160FT²)
BARN	PACKAGING&LABELING/ HARVEST STORAGE/ IMMATURE PLANT AREA	2015	40'X40'(1600FT²)
SHIPPING CONTAINER #2	HARVEST STORAGE	2015	8'x20'(160FT²)
SHED#1	HARVEST STORAGE/DRYING	2015	10'X20'(200FT²)
IMMATURE PLANT AREA	PROPAGATION/VEGGING	2015	20'x28'(560FT²)

DOMESTIC BUILDING	USE	YEAR	SIZE
SHED#2	GENERATOR/PERSONAL STORAGE	2010	10'X12'
YURT	SEASONAL LIVING	UNKNOWN	20 Ø

WATER STORAGE

TYPE	NUMBER	SIZE	DATE OF INSTALLATION
MIXING TANK	1	250 GALLONS	2014
HDPE TANKS	2	2,800 GALLONS	2014
HDPE TANKS	1	1,300 GALLONS	2014
HDPE TANKS~~(FIRE SUPPRESSANT)~~	1	1,300 GALLONS	2014
HDPE Tanks (Fire suppression)	2	2,500gallons	2018

TOTAL AMOUNT OF WATER STORAGE = 8,450 GALLONS

WATER SOURCE

WELL — LAT/LONG 40.5094/-123.5896

POWER SOURCE

7 KW HONDA GENERATOR X2

2 KW HONDA GENERATOR

PROPOSED SOLAR ARRAYS

EXISTING SOLAR PANELS

RECEIVED MAY 24 2019 Humboldt County Cannabis Svcs.

~~RECEIVED FEB 21 2019 Humboldt County Cannabis Svcs.~~

Revised 5-24-19 w/owner - ES

COMPOST AREA (CANNABIS WASTE AREA)

144FT² (12'x12')

GREEN ROAD CONSULTING

PROJECT INFORMATION

JOSEPH ROYSE

208-231-012

PARCEL OVERVIEW

PROPERTY OWNER

APN:

SHEET INFO

REVISIONS

NO.	NOTES	DATE

DATE 2/21/19

DRAFTER X

SCALE AS SHOWN

SHEET PO

2/21/2019 - X:_Projects\Roy;Hu.Mo.17.2 Joe\CAD\County Permit\ROYSE-CUL.dwg - 1:02 PM - GRC

#11864

ATTACHMENT 1

RECOMMENDED CONDITIONS OF APPROVAL

APPROVAL OF THE CONDITIONAL USE PERMIT IS CONDITIONED ON THE FOLLOWING TERMS AND REQUIREMENTS WHICH MUST BE SATISFIED BEFORE THE PROVISIONAL CANNABIS CULTIVATION PERMIT CAN BE FINALIZED.

A. General Conditions:

1. Within 60 days of the effective date of project approval, the applicant shall execute a Compliance Agreement with the Humboldt County Planning Department detailing all necessary permits and infrastructure improvements described under Conditions of Approval #5 – 16. The agreement shall provide a timeline for completing all outstanding items. All activities detailed under the agreement must be completed to the satisfaction of the Planning and Building Department before the permit may be finalized and no longer considered provisional.

2. The applicant shall, within 30 days following the execution of the final permit, submit photo evidence to CDFW and the County documenting that all imported soil and operation-associated refuse is fully contained and setback a minimum of 150 feet from watercourses and/or wet areas.

3. Any existing on-site lighting or proposed lighting upgrades in the future, shall be fully shielded and designed and installed to minimize off-site lighting and direct light within the property boundaries. Light shall not escape at a level that is visible from neighboring properties between sunset and sunrise. The light source should comply with the International Dark Sky Association standards for Lighting Zone 0 and Lighting Zone 1, and be designed to regulate light spillage onto neighboring properties resulting from backlight, uplight, or glare (BUG). Should the Humboldt County Planning Division receive complaints that the lighting is out of alignment or not complying with these standards, within ten (10) working days of receiving written notification that a complaint has been filed, the applicant shall submit written verification that the lights' shielding and alignment has been repaired, inspected, and corrected as necessary.

4. The Planning Department reserves the right to require the well to be inspected annually to evaluation drawdown and the potential for the well and to require additional water storage if necessary.

5. The approved building plans shall meet all applicable fire codes, including emergency access, signing and building numbers, emergency water standards, fuel modification standards, a fire hydrant below the water tanks, and fire suppression infrastructure requirements deemed necessary for the project by the Building Inspection Division. Sign off on the Occupancy Permit by the Building Division shall satisfy this requirement.

6. The applicant shall secure permits for all unpermitted grading and structures related to the cannabis cultivation and other commercial cannabis activity. The plans submitted for building permit approval shall be consistent with the project description and approved project site plan. If applicable, prior to issuance of any building or construction permits a grading, erosion and sediment control plan shall be prepared by a qualified professional. The plan shall identify the cubic yards of all grading that has been done and any proposed grading. A letter or similar

communication from the Building Division verifying that all structures related to the cannabis cultivation are permitted will satisfy this condition.

7. Applications for grading and or building permits shall be referred to the North Coast Air Quality Management District (NCAQMD) for review and consultation. Dust control practices during construction and grading shall achieve compliance with NCAQMD fugitive dust emission standards.

8. Review of aerial imagery suggests that tree removal may have occurred between 2012 and 2014. The site shall be evaluated by a Registered Professional Forester, and if timberland conversion occurred, a timber conversion report must be prepared and accepted by the County. The Planning Division shall provide CAL-FIRE written Notice of Availability of the RPF's report. If CAL-FIRE takes no action within ten (10) days of the notice of availability, the report recommendations shall become final and shall be implemented by the applicant. If CAL-FIRE makes additional recommendations, these shall also be completed to the satisfaction of CAL-FIRE. A letter from the RPF, and written confirmation from CAL-FIRE (if additional requirements are imposed), verifying that all their requirements have been met will satisfy this condition.

9. If oak tree removal is determined to have occurred, the applicant shall restock any oak woodlands that were removed to accommodate cannabis cultivation on the subject parcel. The restocking plan shall meet of the objective of oak woodland release from conifer encroachment at a 5:1 rate or 10:1 mitigation in the form of native oak tree planting. Areas selected for replanting and monitoring plan shall be determined by a Registered Professional Forester (RPF) in consultation with CDFW. A report identifying the extent of oak woodlands that have been converted and a plan for restocking is subject to review and approval of the Planning Director, in consultation with CDFW, to satisfy this condition.

10. The applicant shall obtain a Finial Lake or Streambed Alteration Agreement (1600-2018-0717-R1), and comply with the terms of that agreement.

11. The applicant shall secure approval of the County Division of Environmental Health (DEH) for the following:
    a. No processing can be approved until an acceptable site suitability report can establish potential for onsite waste treatment system (OWTS) adequate to support proposed staffing.
    b. The approval of an unpermitted OWTS shown on the provided site plan is dependent upon demonstration of site suitability from a Qualified Professional.
    c. An invoice, or equivalent documentation, is provided to DEH to confirm the continual use of portable toilets to serve the needs of cultivation staff prior to reissuance of annual permit.
    A letter from DEH shall be indicating approval has been issued will satisfy this condition.

12. The applicant shall implement all corrective actions detailed within the Water Resource Protection Plan developed for the parcel, prepared pursuant to Tier 2 enrollment under the North Coast Regional Water Quality Control Board Cannabis Waste Discharge Regulatory Program. A letter or similar communication from the RWQCB verifying that all of their requirements have been met will satisfy this condition.

13. The applicant will complete the access road improvements recommended in the Road Evaluation Report completed by David Nicoletti dated November 29, 2018. Photo documentation of the road improvements shall be submitted to satisfy this condition.

14. The property owner shall execute and file with the Planning Division the statement titled, "Notice and Acknowledgment regarding Agricultural Activities in Humboldt County," ("Right to Farm" ordinance) as required by the HCC and available at the Planning Division.

15. The applicant shall contact the local fire service provider (Southern Trinity Volunteer Fire Department and USDA Forest Service) and furnish written documentation from that agency of the available emergency response and fire suppression services and any recommended project mitigation measures. Mitigation measures shall be incorporated into the project, if applicable. If emergency response and fire suppression services are not provided, the applicant shall cause to be recorded an "ACKNOWLEDGMENT OF NO AVAILABLE EMERGENCY RESPONSE AND FIRE SUPPRESSION SERVICES" for the parcel(s) on a form provided by the Humboldt County Planning Division. Document review fees as set forth in the schedule of fees and charges as adopted by ordinance of the Humboldt County Board of Supervisors will be required.

16. The applicant shall be compliant with the County of Humboldt's Certified Unified Program Agency (CUPA) requirements regarding any hazardous materials including fuel. A written verification of compliance shall be required before any provisional permits may be finalized. Ongoing proof of compliance with this condition shall be required at each annual inspection in order to keep the permit valid.

17. Oak woodland removal is prohibited within 150 feet of all structures related to cannabis operation.

18. Prohibition on use of synthetic netting. To minimize the risk of wildlife entrapment, Permittee shall not use any erosion control materials that contain synthetic (e.g., plastic or nylon) netting, including photo- or biodegradable plastic netting. Geotextiles, fiber rolls, and other erosion control measures shall be made of loose-weave mesh, such as jute, hemp, coconut (coir) fiber, or other products without welded weaves.

19. The environmental impacts of improper waste disposal are significant and well documented. All refuse be contained in wildlife proof storage containers, at all times, and disposed of at an authorized waste management facility.

20. Human induced noise pollution may adversely affect wildlife species in several ways including abandonment of territory, loss of reproduction, auditory masking, hindrance to navigation, and physiological impacts such as stress and increased blood pressure and respiration. To avoid disturbance, the construction of noise containment structures for all generators on the parcel shall result in noise released being no more than 50 decibels measured from 100 feet.

21. This permit does not authorize the use of Anticoagulant rodenticides on the subject parcel. Anticoagulant rodenticides are prohibited.

22. Notice of Determination (NOD) will be prepared and filed with the County Clerk for this project in accordance with the State CEQA Guidelines. **Within three days of the effective date of permit approval**, it is requested that the applicant submit a check or money order for the required filing fee in the amount of $50 payable to the Humboldt County Clerk/Recorder. If this payment is not received within this time period, the Department will file the NOD and will charge this cost to the project.

23. The applicant is required to pay for permit processing on a time and material basis as set forth in the schedule of fees and charges as adopted by ordinance of the Humboldt County Board of Supervisors. The Department will provide a bill to the applicant after the decision. Any and all outstanding Planning fees to cover the processing of the application to decision by the Hearing Officer shall be paid to the Humboldt County Planning Division, 3015 "H" Street, Eureka.

Ongoing Requirements/Development Restrictions Which Must be Satisfied for the Life of the Project:

1. All components of project shall be developed, operated, and maintained in conformance with the Project Description, the approved Site Plan, the Plan of Operations, and these conditions of approval. Changes shall require modification of this permit except where consistent with Humboldt County Code Section 312-11.1, Minor Deviations to Approved Plot Plan.

2. Cannabis cultivation and other commercial cannabis activity shall be conducted in compliance with all laws and regulations as set forth in the CMMLUO and MAUCRSA, as applicable to the permit type.

3. If operating pursuant to a written approved compliance agreement, permittee shall abate or cure violations at the earliest feasible date, but in no event no more than two (2) years from the date of issuance of a provisional clearance or permit. Permittee shall provide plans for curing such violations to the Planning & Building Department within one (1) year of issuance of the provisional clearance or permit. If good faith effort towards compliance can be shown within the two years following the issuance of the provisional clearance or permit, The Planning Department may, at the discretion of the Director, provide for extensions of the provisional permit to allow for additional time to meet the outstanding requirements.

4. Possession of a current, valid required license, or licenses, issued by any agency of the State of California in accordance with the MAUCRSA, and regulations promulgated thereunder, as soon as such licenses become available.

5. Compliance with all statutes, regulations and requirements of the California State Water Resources Control Board and the Division of Water Rights, at a minimum to include a statement of diversion of surface water from a stream, river, underground stream, or other watercourse required by Water Code Section 5101, or other applicable permit, license, or registration, as applicable.

6. Confinement of the area of cannabis cultivation, processing, manufacture or distribution to the locations depicted on the approved site plan. The commercial cannabis activity shall be set back at least 30 feet from any property line, and 600 feet from any School, School Bus Stop, Church or other Place of Religious Worship, or Tribal Cultural Resources, except where a reduction to this setback has been approved pursuant to Section 55.4.11(d).

7. Maintain enrollment in Tier 1, 2 or 3, certification with the North Coast Regional Water Quality Control Board (NCRWQCB) Order No. R1-2015-0023, if applicable, or any substantially equivalent rule that may be subsequently adopted by the County of Humboldt or other responsible agency.

8. Comply with the terms of any applicable Streambed Alteration (1600) Permit obtained from the Department of Fish & Wildlife.

9. Comply with the terms of a less-than-3-acre conversion exemption or timberland conversion permit, approved by the California Department of Forestry and Fire Protection (CAL-FIRE), if applicable.

10. Consent to an annual on-site compliance inspection, with at least 24 hours prior notice, to be conducted by appropriate County officials during regular business hours (Monday – Friday, 9:00 am – 5:00 pm, excluding holidays).

11. Refrain from the improper storage or use of any fuels, fertilizer, pesticide, fungicide, rodenticide, or herbicide. This permit does not authorize the use of Anticoagulant rodenticides on the subject parcel. Anticoagulant rodenticides are prohibited.

12. Pay all applicable application, review for conformance with conditions and annual inspection fees.

13. Storage of Fuel - Fuel shall be stored and handled in compliance with applicable state and local laws and regulations, including the County of Humboldt's CUPA program, and in such a way that no spillage occurs.

14. The Master Log Books maintained by the applicant to track production and sales shall be maintained for inspection by the County.

15. Pay all applicable taxes as required by the Humboldt County Commercial Marijuana Cultivation Tax Ordinance (Humboldt County Code Section 719-1 et seq.).

16. Participate in and bear costs for permittee's participation in the Medical Cannabis Track and Trace Program administered by the Humboldt County Agricultural Commissioner.

17. The use of monofilament netting for all uses, including but not limited for erosion control, shall be prohibited. Geotextiles, fiber rolls, and other erosion control measure materials shall be made of loose-weave mesh, such as jute, hemp, coconut (coir) fiber, or other products without welded weaves to minimize the risk of ensnaring and strangling wildlife.

18. Should any wildlife be encountered during to work activities, the wildlife shall not be disturbed and be allowed to leave the work site unharmed.

19. All refuse shall be contained in wildlife proof containers, at all times, and relocated to an authorized waste management facility, in compliance with State and local laws, on a regular and on-going basis.

Performance Standards for Cultivation and Processing Operations

20. Pursuant to the MCRSA, Health and Safety Code section 19322(a)(9), an applicant seeking a cultivation license shall "provide a statement declaring the applicant is an 'agricultural employer,' as defined in the Alatorre-Zenovich-Dunlap-Berman Agricultural Labor Relations Act of 1975 (Part 3.5 commencing with Section 1140) of Division 2 of the Labor Code), to the extent not prohibited by law."

21. Cultivators shall comply with all applicable federal, state, and local laws and regulations governing California Agricultural Employers, which may include: federal and state wage and hour laws, CAL/OSHA, OSHA, California Agricultural Labor Relations Act, and the Humboldt County Code (including the Building Code).

22. Cultivators engaged in processing shall comply with the following Processing Practices:
    i. Processing operations must be maintained in a clean and sanitary condition including all work surfaces and equipment.
    ii. Processing operations must implement protocols which prevent processing contamination and mold and mildew growth on cannabis.
    iii. Employees handling cannabis in processing operations must have access to facemasks and gloves in good operable condition as applicable to their job function.
    iv. Employees must wash hands sufficiently when handling cannabis or use gloves.

23. All persons hiring employees to engage in commercial cannabis cultivation and processing shall comply with the following Employee Safety Practices:
    I. Cultivation operations and processing operations must implement safety protocols and provide all employees with adequate safety training relevant to their specific job functions, which may include:
        (a) Emergency action response planning as necessary;
        (b) Employee accident reporting and investigation policies;
        (c) Fire prevention;
        (d) Hazard communication policies, including maintenance of material safety data sheets (MSDS);
        (e) Materials handling policies;
        (f) Job hazard analyses; and
        (g) Personal protective equipment policies, including respiratory protection.

    II. Cultivation operations and processing operations must visibly post and maintain an emergency contact list which includes at a minimum:
        (a) Operation manager contacts;
        (b) Emergency responder contacts;
        (c) Poison control contacts.

    III. At all times, employees shall have access to safe drinking water and toilets and handwashing facilities that comply with applicable federal, state, and local laws and regulations. Plumbing facilities and water source must be capable of handling increased usage without adverse consequences to neighboring properties or the environment.

    IV. On site-housing provided to employees shall comply with all applicable federal, state, and local laws and regulations.

24. All cultivators shall comply with the approved Processing Plan as to the following:
    I. Processing Practices.
    II. Location where processing will occur.
    III. Number of employees, if any.
    IV. Employee Safety Practices.
    V. Toilet and handwashing facilities.
    VI. Plumbing and/or septic system and whether or not the system is capable of handling increased usage.
    VII. Drinking water for employees.
    VIII. Plan to minimize impact from increased road use resulting from processing.
    IX. On-site housing, if any.

25. Term of Commercial Cannabis Activity Conditional Use Permit. Any Commercial Cannabis Cultivation CUP issued pursuant to the CMMLUO shall expire one (1) year after date of issuance, and on the anniversary date of such issuance each year thereafter, unless an annual compliance inspection has been conducted and the permitees and the permitted site have been found to comply with all conditions of approval.

    If the inspector or other County official determines that the permitees or site do not comply with the conditions of approval, the inspector shall serve the CUP or permit holder with a written statement identifying the items not in compliance, and the action that the permit holder may take to cure the non-compliance, or file an appeal within ten (10) days of the date that the written statement is delivered to the permit holder. Personal delivery or mailing the written statement to the mailing address listed on the application by regular mail, plus three (3) days after date of mailing, shall constitute delivery. The permit holder may request a reinspection to determine whether or not the permit holder has cured all issues of non-compliance. Failure to request reinspection or to cure any items of non-compliance shall terminate the Special Permit, immediately upon the expiration of any appeal period, or final determination of the appeal if an appeal has been timely filed pursuant to section 55.4.13.

26. Acknowledgements to Remain in Full Force and Effect. Permittee Acknowledges that the County reserves the right to reduce the size of the area allowed for cultivation under any clearance or permit issued in accordance with this Section in the event that environmental conditions, such as a sustained drought or low flows in the watershed in which the cultivation area is located will not support diversions for irrigation.

    Permittee further acknowledges and declares that:

    (1) All commercial cannabis activity that I, my agents, or employees conduct pursuant to a permit from the County of Humboldt for commercial cultivation, processing, manufacturing, and distribution of cannabis for adult use or medicinal use within the inland area of the County of Humboldt, shall at all times be conducted consistent with the provisions of the approved County permit; and
    (2) All cannabis or cannabis products under my control, or the control of my agents or employees, and cultivated or manufactured pursuant to local Ordinance and the State of California Medicinal and Adult Use Cannabis Regulation and Safety Act ("MAUCRSA") (SB 94), will be distributed within the State of California; and
    (3) All commercial cannabis activity conducted by me, or my agents or employees pursuant to a permit from the County of Humboldt will be conducted in compliance with the State of California MAUCRSA

27. Transfers. Transfer of any leases or permits approved by this project is subject to the review and approval of the Planning Director for conformance with CMMLUO eligibility requirements, and agreement to permit terms and acknowledgments. The fee for required permit transfer review shall accompany the request. The request shall include the following information:

    a. Identifying information for the new Owner(s) and management as required in an initial permit application;
    b. A written acknowledgment by the new Owner in accordance as required for the initial Permit application;
    c. The specific date on which the transfer is to occur; and
    d. Acknowledgement of full responsibility for complying with the existing Permit; and
    e. Execution of an Affidavit of Non-diversion of Medical Cannabis.

28. Inspections. The permit holder and subject property owner are to permit the County or representative(s) or designee(s) to make inspections at any reasonable time deemed necessary to assure that the activities being performed under the authority of this permit are in accordance with the terms and conditions prescribed herein.

Informational Notes:

1. Pursuant to section 314-55.4.11(a) of the CMMLUO, if upon inspection for the initial application, violations of any building or other health, safety, or other state of county statute, ordinance, or regulation are discovered, the Planning and Building Department may issue a provisional clearance or permit with a written approved Compliance Agreement. By signing the agreement, the permittee agrees to abate or cure the violations at the earliest opportunity but in no event more than two (2) years of the date of issuance of the provisional clearance or permit. Plans for curing the violations shall be submitted to the Planning and Building Department by the Permittee within one (1) year of the issuance of the provisional certificate or permit. The terms of the compliance agreement may be appealed pursuant to section 314-55.4.13 of the CMMLUO.
2. This provisional permit approval shall expire and become null and void at the expiration of one (1) year after all appeal periods have lapsed (see "Effective Date"); except where the Compliance Agreement per COA #1 has been executed and the corrective actions pursuant to the agreement are being undertaken. Once building permits have been secured and/or the use initiated pursuant to the terms of the agreement, the use is subject to the Permit Duration and Renewal provisions set forth in Condition of Approval #25 of the On-Going Requirements /Development Restrictions, above.

3. If cultural resources are encountered during construction activities, the contractor on site shall cease all work in the immediate area and within a 50-foot buffer of the discovery location. A qualified archaeologist as well as the appropriate Tribal Historic Preservation Officer(s) are to be contacted to evaluate the discovery and, in consultation with the applicant and lead agency, develop a treatment plan in any instance where significant impacts cannot be avoided.

   Prehistoric materials may include obsidian or chert flakes, tools, locally darkened midden soils, groundstone artifacts, shellfish or faunal remains, and human burials. If human remains are found, California Health and Safety Code 7050.5 requires that the County Coroner be contacted immediately at 707-445-7242. If the Coroner determines the remains to be Native American, the NAHC will then be contacted by the Coroner to determine appropriate treatment of the remains pursuant to PRC 5097.98. Violators shall be prosecuted in accordance with PRC Section 5097.99.

4. The applicant is required to pay for permit processing on a time and material basis as set forth in the schedule of fees and charges as adopted by ordinance of the Humboldt County Board of Supervisors. The Department will provide a bill to the applicant after the decision. Any and all outstanding Planning fees to cover the processing of the application to decision by the Hearing Officer shall be paid to the Humboldt County Planning Division, 3015 "H" Street, Eureka.

5. The Applicant is responsible for costs for post-approval review for determining project conformance with conditions. A deposit is collected to cover this staff review. Permit conformance with conditions must be demonstrated prior to release of building permit or initiation of use and at time of annual inspection. A conformance review deposit as set forth in the schedule of fees and charges as adopted by ordinance of the Humboldt County Board

of Supervisors (currently $750) shall be paid within sixty (60) days of the effective date of the permit or upon filing of the Compliance Agreement (where applicable), whichever occurs first. Payment shall be made to the Humboldt County Planning Division, 3015 "H" Street, Eureka.

6. A Notice of Determination (NOD) will be prepared and filed for this project in accordance with the State CEQA Guidelines. **Within three days of the effective date of permit approval**, it is requested that the applicant submit a check or money order for the required filing fee in the amount of $50 payable to the Humboldt County Clerk/Recorder. If this payment is not received within this time period, the Department will file the NOD and will charge this cost to the project.

ATTACHMENT 2

REQUIRED FINDINGS FOR APPROVAL

The County Zoning Ordinance, Sections 312-1.1.2 and 312-17.1 of the Humboldt County Code (Required Findings for All Discretionary Permits) specify the findings that are required to grant a Conditional Use Permit and a Special Permit:

1. The proposed development is in conformance with the County General Plan;

2. The proposed development is consistent with the purposes of the existing zone in which the site is located;

3. The proposed development conforms with all applicable standards and requirements of these regulations;

4. The proposed development and conditions under which it may be operated or maintained will not be detrimental to the public health, safety, or welfare; or materially injurious to property or improvements in the vicinity;

5. The proposed development does not reduce the residential density for any parcel below that utilized by the Department of Housing and Community Development in determining compliance with housing element law (the midpoint of the density range specified in the plan designation) unless the following written findings are made supported by substantial evidence: 1) the reduction is consistent with the adopted general plan including the housing element; and 2) the remaining sites identified in the housing element are adequate to accommodate the County share of the regional housing need; and 3) the property contains insurmountable physical or environmental limitations and clustering of residential units on the developable portions of the site has been maximized; and

6. In addition, the California Environmental Quality Act (CEQA) states that one of the following findings must be made prior to approval of any development which is subject to the regulations of CEQA. The project either:

    a. Is categorically or statutorily exempt; or

    b. Has no substantial evidence that the project will have a significant effect on the environment and a negative declaration has been prepared; or

    c. Has had an environmental impact report (EIR) prepared and all significant environmental effects have been eliminated or substantially lessened, or the required findings in Section 15091 of the State CEQA Guidelines have been made.

Evidence Supporting the Required Findings: The following tables document the evidence to support the findings for approval.

1. The proposed development must be consistent with the General Plan. The following table identifies the substantial evidence which supports finding that the proposed development is in conformance with all applicable policies and standards of the Humboldt County General Plan.

Plan Section	Summary of Applicable Goal, Policy or Standard	Evidence Which Supports Making the General Plan Conformance Finding
Land Use Chapter 4 Land Use Designations Section 4.8	**Residential Agriculture (RA20-160):** This designation applies to large lot residential uses that typically rely upon on-site water and wastewater systems. Varying densities are reflective of land capabilities and/or compatibility issues. General and Intensive agriculture are allowed uses. Density is 20-160 acres/unit	The Applicant is proposing to continue an existing commercial cannabis cultivation operation consisting of 17,776 square feet of outdoor area on lands designated as Residential Agriculture. Intensive agriculture and agriculture product processing are allowable use types for this designation. The MMRSA, Health and Safety Code section 11362.777(a) provides that medical cannabis is an agricultural product, subject to extensive state and local regulation. The existing cultivation is considered an agricultural use, and the processing facility and supportive infrastructure may be considered accessory to the agricultural use.
Circulation Chapter 7	Goals and policies contained in this Chapter relate to a balanced, safe, efficient, accessible and convenient circulation system that is appropriate for each type of unincorporated community (C-G1,C-G2); coordinated planning design, development, operations, and maintenance between the County and other transportation system service providers (C-G3); and access for all transportation mode types with improved opportunities to move goods within, into and out of Humboldt County (C-G4, C-G5) Related policies: C-P3. Consideration of Transportation Impacts in Land Use Decision Making	Access to the site from a series of non-County maintained roads that originate in Trinity County. The access roads were evaluated by a Professional Engineer and determined to be less than equivalent to a Category 4 Standard. The engineer's Road Evaluation Report detailed measures that must be undertaken to ensure safe travel along the road. Completion of the measures is a Condition of Approval of this permit. The requirements include: constructing turnouts, repairing areas with slides, and unclogging culverts on River Road; and mowing to expose turnouts and unclogging culverts on the private access roads.

Plan Section	Summary of Applicable Goal, Policy or Standard	Evidence Which Supports Making the General Plan Conformance Finding
Housing Chapter 8	Goals and policies contained in this Element seek to identify existing and projected housing needs and establish goals, policies, standards and measures for the preservation, improvement, and development of housing. Related policies: H-P3, Development of Parcels in the Residential Land Inventory	The project does not involve residential development, however, the project will not preclude any future residential development if in conformance with the General Plan and Zoning designations. The project will not reduce the residential density for any parcel below that utilized by the Department of Housing and Community Development in determining compliance with housing element law.
Conservation and Open Space Chapter 10 Public Lands Section 4.7	Goals and policies contained in this chapter present a framework of goals and policies for use and protection of all the natural resources and open space assets of the county, including agricultural production. Public lands policy PL-P6 requires that discretionary review of permit applications adjacent to public lands shall consider impacts to public lands and consistency with applicable management plans.	Cannabis cultivation is an agricultural activity and an allowable use type in this designation, consistent with this policy. The project is adjacent to public lands (Six Rivers National Forest) which is managed by the United States Forest Service. The adjacent lands are subject to the Six Rivers Forest Management Plan adopted in 1995. The project is consistent with the management plan because the cultivation activities will minimize impacts to biological resources and wildlife through measures to reduce potential light and noise impacts. The project will also protect fisheries and aquatic habitat on forest lands by maintaining and enhancing buffers from streams and by placing controls on the storage and use of pesticides, rodenticides and fertilizers. Additionally, the project will minimize risk from wildfire by adhering to the County's Fire Safe Regulations. A Special Permit is sought for a setback reductions to public lands from 600 feet to 400 feet from the outdoor cultivation area and 150 feet from the existing barn which will contain the nursery and on-site processing.

Plan Section	Summary of Applicable Goal, Policy or Standard	Evidence Which Supports Making the General Plan Conformance Finding
Conservation and Open Space Chapter 10 Open Space Section 10.2	Goals and policies contained in this Chapter relate to an Open Space and Conservation Program that is complimentary to other agencies' plans and that preserves the county's unique open spaces (CO-G1,CO-G3) Related policies: CO-P1, Conservation and Open Space Program; CO-P12, Development Review, CO-S1. Identification of Local Open Space Plan, and CO-S2. Identification of the Open Space Action Program	The project can be found consistent with the Open Space Plan Element because the proposed project is consistent with the allowable uses of the RA Land Use Designation. The proposed cannabis cultivation - an agricultural product - is within land planned for agricultural purposes, consistent with the use of Open Space land for management production of resources.
Conservation and Open Space Chapter 10 Biological Resources Section 10.3	Goals and policies contained in this Chapter relate to mapped sensitive habitat areas where policies are applied to protect fish and wildlife and facilitate the recovery of endangered species (BR-G1, Threatened and Endangered Species, BR-G2, Sensitive and Critical Habitat, BR-G3, Benefits of Biological Resources) Related policies: BR-P1. Compatible Land Uses, BR-P5. Streamside Management Areas.	The project site does not contain any observations of sensitive species. There are Northern Spotted Owl Activity Centers located approximately 1.4, 1.7, and 2.0 miles from the cultivation area. Additionally, individual historic NSO sightings have been observed at 0.7 miles and 0.8, and 1.0. The noise produced by the project generators was measured and found to be within the limits imposed by the CMMLUO. Referral comments from CDFW requested the following which have been included in the project conditions: prohibition of use of synthetic netting, refuse contained in wildlife proof storage containers, noise containment structures for the generators, lighting conditions to meet International Dark Sky Association standards, prohibition on anticoagulant rodenticides, requirement to leave wildlife unharmed.
Conservation and Open Space Chapter 10 Cultural Resources Section 10.6	Goals and policies contained in this Chapter relate to the protection and enhancement of significant cultural resources, providing heritage, historic, scientific, educational, social and economic values to benefit present and future generations (CU-G1, Protection and Enhancement of Significant Cultural Resources)	The applicant retained Nick Angeloff, MA for the preparation of a Cultural Resources Investigation for the Project site. A records search was conducted, consultation with the Native American Heritage Commission and local Native American tribal representatives was conducted; and intensive pedestrian field survey of the entire Project area was conducted. The TPHO of the Bear River Band of the Rohnerville Rancheria was contacted during the investigation. The report finds that no

Plan Section	Summary of Applicable Goal, Policy or Standard	Evidence Which Supports Making the General Plan Conformance Finding
	Related policies: CU-P1. Identification and Protection, CU-P2. Native American Tribal Consultation	historical or archaeological resources were identified as a result of the investigation. The project was referred to the TPHO of the Bear River band of the Rohnerville Rancheria. The TPHO requested inadvertent archaeological discovery protocol for the project. The standard inadvertent archaeological discovery language was included as an ongoing Condition of Approval for this permit.
Conservation and Open Space Chapter 10 Scenic Resources Section 10.6	Goals and policies contained in this Chapter relate to the protection of scenic areas that contribute to the enjoyment of Humboldt County's beauty and abundant natural resources (SR-G1); and a system of scenic highways roadways that increase the enjoyment of, and opportunities for, recreational and cultural pursuits and tourism in the County. (SR-G2) Related policies: SR-S4. Light and Glare	The project involves the cultivation of approximately 17,776 sf outdoor cultivation on an approximately 40-acre parcel. The project is located on lands that are only accessible via private roads. The outdoor cultivation does not include the use of artificial light and the project will not create new sources of light and/or glare. However, seeds are started in an existing barn in spring of each growing season. The CMMLUO requires that mixed-light cultivation activities comply with International Dark Sky Association standards for Lighting Zone 0 and Lighting Zone 1, and be designed to regulate light spillage onto neighboring properties resulting from backlight, uplight, or glare (BUG). International Dark Sky Association standards exceed the requirements of Scenic Resources Standard SR-S4, Light and Glare, that lighting be fully shielded, and designed and installed to minimize off-site lighting and direct light within the property boundaries. Compliance with these requirements have been added as conditions of approval to the proposed project.

Plan Section	Summary of Applicable Goal, Policy or Standard	Evidence Which Supports Making the General Plan Conformance Finding
Water Resources Chapter 11 Stormwater Drainage	Goals and policies contained in this Chapter relate to coordinated watershed planning and land use decision making to advance management priorities (WR-G3, WR-G4, WR-G5); watershed conservation and restoration efforts aimed at de-listing water bodies and watersheds which are restored to meet all beneficial uses, including water use, salmon and steelhead recovery plans, recreational activities, and the economy (WR-G1, WR-G, WR-G7, WR-G8, WR-G9); and Related policies: WR-P10. Erosion and Sediment Discharge; WR-P42. Erosion and Sediment Control Measures.	The Project site falls within Tier 2 of the North Coast Regional Water Quality Control Board's (NCRWQCB) Order No. 2015-0023 (Order), which requires preparation of a Water Resources Protection Plan (WRPP) to protect water quality from cannabis cultivation and related activities. The applicant retained Green Road Consulting for the preparation of a WRPP. The WRPP has been prepared to describe and address the required elements and compliance with the 12 Standard Conditions established by the Order. The WRPP identified the operation as meeting all of the elements except for the elements relating to storage of petroleum products and for onsite wastewater systems. Completion of the mitigation measures identified in the WRPP is a Condition of Approval of this permit. Completing these measures will ensure that this project conforms to the requirements of the General Plan.
Water Resources Chapter 11 Onsite Wastewater Systems	Goals and policies contained in this Chapter relate to adequate public water supply as well as onsite wastewater systems and natural and developed storm drainage systems that minimize interference with surface and groundwater flows and storm water pollution (WR-G6, WR-G9, WR G10) Related policies: WR-IM7. Basin Plan Septic Requirements; and IS-P17. On-Site Sewage Disposal Requirements.	The Water Resources Protection Plan (WRPP) states that the site has an existing Onsite Wastewater Treatment System (OWTS) that has not been inspected to determine if it was constructed properly to protect water quality and meet the NCRWQCB's Standard Condition 11 relating to OWTS. A qualified professional shall inspect the OWTS and verify that it is functioning properly and is sized appropriately or an appropriately designed and sized OWTS will need to be sited and installed once pending application is approved by Humboldt County Planning and Building Department. Use of portable toilets shall be required until the OWTS is approved. These requirements have been incorporated as conditions of approval.

Plan Section	Summary of Applicable Goal, Policy or Standard	Evidence Which Supports Making the General Plan Conformance Finding
Noise Chapter 13	Goals and policies contained in this Chapter discourage incompatible uses within communities and reduce excessive noise through the application of standards (N-G1, N-G2) Related policies: N-P1, Minimize Noise from Stationary and Mobile Sources; N-P4, Protection from Excessive Noise	The subject parcel is located in an area that requires special noise attenuation measures due to the presence of special-status, threatened, or endangered wildlife in the surrounding Six Rivers National Forest. The operation relies solar panels and backup generators for electricity. No lights or fans are used in the greenhouses. Generator use for the operation is necessary only for fans to dry cannabis in the barn. Noise created from the generators has been evaluated by Green Road Consulting and was found to comply with the standards set forth in Section 55.4.11(o) of the CMMLUO and Department Policy Statement #DPS-16-005 which limits the combined decibel level for all noise sources to 60 decibels at the property line. The project has been conditioned to restrict the noise released from generators to be no more than 50 decibels measured from 100 feet. The project proposes to install additional solar panels to reduce the reliance on generators.
Safety Element Chapter 14 Geologic & Seismic	Goals and policies contained in this Chapter relate to communities that are designed and built to minimize the potential for loss of life and property resulting from natural and manmade hazards; and to prevent unnecessary exposure to areas of geologic instability, floodplains, tsunami run-up areas, high risk wildland fire areas, and airport areas planned and conditioned to prevent unnecessary exposure of people and property to risks of damage or injury (S-G1, S-G2) Related policies: S-P11. Site Suitability, S-P7. Structural Hazards,	The project site is not located in a mapped Alquist-Priolo fault zone nor is subject to liquefaction. The site is situated in an area identified by the County as High Geologic Instability. A Professional Engineer conducted a soils investigation and determined that the soils at the site are capable of providing adequate support for the proposed construction, as well as the existing structures onsite. The applicant must secure a grading permit and as part of the permit the applicant will, at a minimum, incorporate the standard erosion control measures enumerated in the General Plan. Additional erosion control measures that shall be implemented have been identified in the Water Resource Protection Plan. These measures are a condition of approval of this permit.

Plan Section	Summary of Applicable Goal, Policy or Standard	Evidence Which Supports Making the General Plan Conformance Finding
Safety Element Chapter 14 Flooding	Goals and policies contained in this Chapter relate to the use of natural drainage channels and watersheds that are managed to minimize peak flows in order to reduce the severity and frequency of flooding. (S-G3) Related policies include: S-P12, Federal Flood Insurance Program; S-P13, Flood Plains; S-P15, Construction Within Special Flood Hazard Areas	The subject site is outside any mapped flood hazard areas. The project site is not within a mapped dam or levee inundation area and, at more than 3,600 feet above mean sea level, is outside the areas subject to tsunami run-up.
Safety Element Chapter 14 Fire Hazards	Goals and policies of this Chapter encourage development designed to reduce the risk of structural and wildland fires supported by fire protection services that minimize the potential Related policies: S-P19, Conformance with State Responsibility Areas (SRA) Fire Safe Regulations;	The subject parcel is located within an area with a high fire hazard severity rating. The property is located within the State Fire Responsibility Area where the State of California has the primary financial responsibility for the prevention and suppression of wildland fires. CAL FIRE comments recommended compliance with the requirements of the County's Fire Safe Regulations. The Humboldt County Fire Safe Ordinance (Section 3111-1 *et seq.*) establishes development standards for minimizing wildfire danger in state responsibility designated areas. The applicant shall demonstrate compliance with these standards as part of receiving their building permit. The project has two (2) dedicated 2,500-gallon water storage tanks located on site, as well as an emergency vehicle turnaround.

Plan Section	Summary of Applicable Goal, Policy or Standard	Evidence Which Supports Making the General Plan Conformance Finding
Community Infrastructure and Services Element, Chapter 5 Implementation Action Plan	IS-S5 requires new industrial, commercial and residential development located outside of fire district boundaries to obtain written acknowledgment of available emergency response and fire suppression services from the local fire agency, including any recommended mitigation.	To implement this policy, conditions of approval for the project require the applicant to contact the local fire service provider (Southern Trinity Volunteer Fire Department and USDA Forest Service) and furnish written documentation from that agency of the available emergency response and fire suppression services and any recommended project mitigation measures. If emergency response and fire suppression services are not provided, the applicant shall cause to be recorded an "ACKNOWLEDGMENT OF NO AVAILABLE EMERGENCY RESPONSE AND FIRE SUPPRESSION SERVICES" for the parcel(s) on a form provided by the Humboldt County Planning Division.
Air Quality Chapter 15	Goals and policies contained in this Chapter relate to improved air quality to meet current and future state and federal standards, including attainment of particulate matter requirements (AQ-G1, AQ-G2, AQ-G3) and the successful reduction of greenhouse gas emissions to levels consistent with state and federal requirements (AQ-G4) Related policies: AQ-P4, Construction and Grading Dust Control, AQ-S1, Construction and Grading Dust Control, AQ-P7, Interagency Coordination.	As a condition of project approval, applications for grading and or building permits shall be referred to the North Coast Air Quality Management District (NCAQMD) for review and consultation. Dust control practices during construction and grading shall achieve compliance with NCAQMD fugitive dust emission standards.

2. Zoning Compliance and 3. Conforms with applicable standards and requirements of these regulations: The following table identifies the evidence which supports finding that the proposed development is in conformance with all applicable policies and standards in the Humboldt County Zoning Regulations.

Zoning Section	Summary of Applicable Requirement	Evidence That Supports the Zoning Finding
§312-1.1.2 Legal Lot Requirement	Development permits shall be issued only for a lot that was created in compliance with all applicable state and local subdivision regulations.	The subject parcel is a legal parcel shown as Parcel 123 on Amended Record of Survey showing a portion of the Timberline Ranch Estates, recorded on May 12, 1971. There is no evidence indicating there have been any subsequent acts to merge or divide this parcel. Therefore, the subject parcel was lawfully created in its current configuration and can be developed as proposed.
§314-7.3 Forestry Recreation (FR) §314-17.1 "B" Combining Zone	**Forestry Recreation (FR-B-5(40)):** Intended to be applied to forested areas of the County in which timber production and recreation are the desirable predominant uses and agriculture is the secondary use, and in which protection of the timber and recreational lands is essential to the general welfare. **B - Special Building Site:** Intended to be combined with any principal zone in which lot area and yard requirements should be modified. In B-5 zones, minimum parcel size is determined as specified on zoning maps designating in any such zone.	The applicant is seeking a Conditional Use Permit for an existing 17,776 square foot cannabis cultivation operation on a property zoned FR-B-5(40). The proposed use is specifically allowed with Conditional Use Permit in this zoning district and under Section 314-55.4.8.2.2 of the CMMLUO. The site will be evaluated by a professional forester to determine if any unauthorized timber conversion occurred in the development of the cultivation site. If a conversion did occur without the requisite conversion exemption from CalFire, the RPF will prepare a Timber Conversion Report and make recommendations as to bringing the conversion into compliance with provisions of the Forest Practices Act. The report and RPF's recommendations will be forwarded to CalFire. The approved recommendations, including any requirements of CalFire, will be implemented as a condition of the provisional permit.

Zoning Section	Summary of Applicable Requirement	Evidence That Supports the Zoning Finding
Minimum Lot Size	One acre	The subject parcel is approximately 40 acres.
Maximum Ground Coverage	None specified	Less than 25,000 square feet, ~1.5%
Minimum Lot Width	200 feet	1300 feet
Maximum Lot Depth	None specified	1300 feet
Setbacks Front: 20 feet Rear: 20 feet Side: 10 feet SRA setback from all property lines: 30 feet		Front, east property line: ~200 feet. Rear, west property line: ~300 feet. Side, south property line: ~300 feet. Side, north property line: ~150 feet.
Max. Building Height	35 feet	Less than 35 feet
§314-61.1 Streamside Management Area (SMA)	Purpose: to provide minimum standards pertaining to the use and development of land located within Streamside Management Areas (SMAs) and other wet areas (OWA) to implement the County's Open Space Element of the General Plan.	Streamside management areas have been identified in the project site map and all project operations are outside of the required buffers.

314-55.4 et seq. HCC: Commercial Cultivation, Processing, Manufacturing and Distribution of Cannabis for Medical Use Inland Land Use Regulation (CMMLUO)		
§ 314-55.4.8.2.2 Existing Outdoor and Mixed-Light Cultivation Areas	In...FR zoning districts on parcels one acre or larger, outdoor and mixed-light cultivation may be permitted.	The Cultivation Area verification by the Planning Division confirms evidence of 15,000 sq. ft. of cultivation prior to January 1, 2016. In accordance with the referenced section the applicant has applied for the necessary CUP due to the parcel being greater than one acre in size and the cultivation area being greater than 10,000 square feet outdoor.

§314-55.4.8.2	In all zones where cultivation is allowed consisting of timberland, the commercial cultivation of cannabis for medical use shall only be permitted within a 3-acre conversion exemption area, or non-timberland open area, subject to the conditions and limitations set forth in this Section.	Per CalFire's May 17, 2017 comments, "[c]onversion of timberland takes place when trees are removed and the land use changes even without the sale, barter, exchange, or trade of trees". A review of aerial imagery on the Humboldt County WebGIS shows the parcel has a natural open area where domestic and cultivation activities have occurred. Tree removal that could constitute a timber conversion possibly occurred between 2012 and 2014. Compliance with the Forest Practices Act will be evaluated by a licensed professional forester who will make recommendations for further corrective actions as necessary, subject to review and approval by CalFire. No observed conversion has occurred since the adoption of the CMMLUO. Any oak woodlands that may have been converted shall be restocked at a 5:1 rate as conditioned. No trees are proposed to be removed as part of the project.
§314-55.4.8.10 Permit Limit	No more than four commercial cannabis activity permits may be issued to a single person, as defined in the referenced section.	According to records maintained by the Planning Department, Joe Royse, the applicant, holds no other permits and is entitled to four. This application is for one permit.
§314-55.4.9.1 Accessory Processing	Processing for cultivation requiring a Special Permit or Use Permit will be considered in the Use Permit application.	Until a proper structure can be permitted and constructed, the applicant will not be using employees for processing (trimming). The applicant will use a licensed third-party processor. However, it is the project goal to process onsite. After building permits are secured, all commercial cannabis cultivated will be dried, cured, packaged, labeled, and stored in the barn. No product that was not harvested on-site will be processed on-site.
§314-55.4.9.4 Pre-Application Registration	Existing cultivation sites shall register with the County within 180 days of the effective date of this ordinance.	A Commercial Cannabis Registration Form for the site was filed with the Planning Division on December 14, 2016.
§314-55.4.10 Application Requirements	Identifies the Information Required for All Applications	Attachment 4 identifies the information submitted with the application and shows that all the required information was received.

§314-55.4.11 Performance Standards	Identifies the Performance Standards for Cannabis Cultivation Activities	All the applicable performance standards are included as Conditions of project approval. They are required to be met throughout the timeframe of the permit.
§314-55.4.11.c Performance Standards-Water	Compliance with all statutes, regulations and requirements of the California State Water Resources Control Board, Division of Water Rights, at a minimum to include a statement of diversion of surface water from a stream, river, underground stream, or other watercourse required by Water Code Section 5101, or other applicable permit, license, or registration.	The applicant sources irrigation and domestic water from a permitted well. Based on the submitted evidence, the project complies with the referenced section and is not defined as a surface water diversion. The groundwater well is required to be inspected annually to evaluate drawdown and potential for the well to go dry. The conditions indicate that the Planning Department reserves the right to require additional water storage if necessary.
§314-55.4.11.d Performance Standards-Setbacks	The area of cannabis cultivation and on-site processing shall be setback at least 30 feet from any property line, and 600 feet from any school, school bus stop, church or other place of religious worship, public park, or tribal cultural resources (TCRs).	The applicant's site plan shows that the cultivation area conforms to the 600-foot setback for schools, school bus stops or places of religious worship. The cultivation area and onsite processing is within 600 feet of public lands – Six Rivers National Forest (SRNF) to the north of the subject parcel. A Special Permit is sought to relax the setback from 600 feet to 400 feet from the outdoor cultivation and 150 feet from the on-site processing. The project can be found consistent with the USDA Forest Service's Land and Resource Management Plan - Six Rivers National Forest 1995 (L&RMP) because the cultivation and processing activities will minimize impacts to biological resources and wildlife through measures to reduce potential light and noise impacts by maintaining and enhancing appropriate buffers from sensitive habitat areas such as Streamside Management Areas in addition to prohibiting use of rodenticides. A response from the Tribal Historic Preservation Officer did not identify any nearby Tribal Cultural Resources.

§314-55.4.11.o Performance Standards-Generator Noise	The noise produced by a generator used for cannabis cultivation shall not be audible by humans from neighboring residences. The combined decibel level for all noise sources, including generators, at the property line shall be no more than 60 decibels. Where applicable, sound levels must also show that they will not result in the harassment of Marbled Murrelet or Spotted Owl species, when generator use is to occur in the vicinity of potential habitat. Conformance will be evaluated using current auditory disturbance guidance prepared by the United State Fish and Wildlife Service	As discussed above the primary power source for the project existing solar power, with backup portable generators with proposed additional solar power. The large parcel, and interior location of project activities prevents the generator noise from being heard by neighbors. A sound analysis of the generators was prepared by Green Road Consulting that demonstrates that the generators meet the noise performance standards. There are Northern Spotted Owl Activity Centers located approximately 1.4, 1.7, and 2.0 miles from the cultivation area. Additionally, individual historic NSO sightings have been observed at 0.7 miles and 0.8, and 1.0. Referral comments from CDFW requested the following which has been included in the project conditions: noise containment structures for all generators on the parcel resulting in noise released being no more than 50 decibels measured from 100 feet.
§314-55.4.17 Sunset Date	No application for any Use Permit pursuant to the CMMLUO shall be processed for issuance or approval that is received after December 31, 2016.	The applicant filed the application on December 14, 2016.

4. Public Health, Safety and Welfare: The following table identifies the evidence which supports finding that the proposed development will not be detrimental to the public health, safety and welfare or materially injurious to properties or improvements in the vicinity.

Code Section	Summary of Applicable Requirements	Evidence that Supports the Required Finding
§312-17.1.4	The proposed development will not be detrimental to the public health, safety and welfare, and will not be materially injurious to properties or improvements in the vicinity.	The Department finds that the proposed project will not be detrimental to the public health, safety and welfare since all reviewing referral agencies have approved the proposed project design. The project as proposed and conditioned is consistent with the general plan and zoning ordinances; and the proposed project is not expected to cause significant environmental damage.

5. Residential Density Target: The following table identifies the evidence which supports finding that the proposed project will not reduce the residential density for any parcel below that utilized by the Department of Housing and Community Development in determining compliance with housing element law.

Code Section	Summary of Applicable Requirement	Evidence that Supports the Required Finding
17.1.5 Housing Element Densities	The proposed development shall not reduce the residential density for any parcel below that utilized by the Department of Housing and Community Development in determining compliance with housing element law (the midpoint of the density range specified in the plan designation), except where: 1) the reduction is consistent with the adopted general plan including the housing element; and 2) the remaining sites identified in the housing element are adequate to accommodate the County share of the regional housing need; and 3) the property contains insurmountable physical or environmental limitations and clustering of residential units on the developable portions of the site has been maximized.	The project does not involve housing, but does not limit the ability of the parcel to be developed for residential uses if in conformance with the General Plan and Zoning designations. It is developed with a residence structure which will remain. The project is in conformance with the standards in the Housing Element.

6. Environmental Impact: The following table identifies the evidence which supports finding that the proposed development will not adversely impact the environment.

California Environmental Quality Act §15164	Addendum to an EIR or Negative Declaration.	As lead agency, the Department prepared an Addendum to the previously adopted Mitigated Negative Declaration (MND) (State Clearinghouse # 2015102005) prepared for the Commercial Medical Marijuana Land Use Ordinance (CMMLUO) and adopted by the County Board of Supervisors January 26, 2016. The MND prepared for the CMMLUO established that the environmental effects of existing cultivation operations would be reduced from the baseline impacts through the regulations applied by the CMMLUO. The proposed project is consistent with all regulations within the CMMLUO and all mitigation measures of the MND. The project is a Conditional Use Permit for the approval of existing outdoor cultivation, and a Special Permit for a setback reduction from public lands, eventual on-site processing, and appurtenant propagation facilities. The environmental document on file includes detailed discussions of all the relevant environmental issues.

ATTACHMENT 3

CEQA ADDENDUM TO THE MITIGATED NEGATIVE DECLARATION FOR THE COMMERCIAL MEDICIAL MARIJUANA LAND USE ORDINANCE

Commercial Medical Marijuana Land Use Ordinance Mitigated Negative Declaration (MND) (State Clearinghouse # 2015102005), January 2016

APN 208-231-012, 1235 Bronco Road, Dinsmore, *County of Humboldt*

Prepared By
Humboldt County Planning and Building Department
3015 H Street, Eureka, CA 95501

June 2019

Background

Modified Project Description and Project History - The original project reviewed under the Mitigated Negative Declaration (MND) for the Commercial Medical Marijuana Land Use Ordinance (CMMLUO) addressed the broad environmental impacts that could be expected to occur from the adoption and implementation of the ordinance. The MND specified that the regulations established in the CMMLUO would mitigate the impacts of existing cannabis operations by establishing regulations for an existing unregulated land use to help prevent and reduce environmental impacts that are known to result from unpermitted baseline cultivation operations. The MND states that "Bringing existing operations into compliance will help to attenuate potential environmental effects from existing cultivation activities, including aesthetic impacts resulting from improper operation or poor siting."

This Conditional Use Permit is for an existing 17,776 square foot (SF) outdoor cannabis cultivation. The water source is from an on-site well that is not hydrologically connected as it is located more than 700 feet from the nearest mapped stream, and more than 500 feet from the nearest Class III drainage that is located at about the same elevation. Water storage for irrigation is sourced from several water tanks on-site with a total capacity of 8,450 gallons. Additionally, two (2) 2,500-gallon water storage tanks are located on project parcel for fire suppression. Cultivation irrigation requires approximately 145,500 gallons (8.2 gallons per square foot) of water annually. Existing water storage complies with the California Department of Forestry and Fire Protection (CAL FIRE) State Responsibility Area (SRA) water storage requirement of 2,500 gallons. Peak monthly water demand is approximately 25,000 gallons for the months of July and August. Water is applied using a timed, metered drip irrigation system with supplemental hand water.

Plants are harvested and dried onsite in the existing 1,600 SF structure. According to the operations plan, processing will occur off-site by a licensed third-party processor until such time as a processing facility is permitted. Depending on demand and availability of workers, there will be up to four seasonal employees in addition to the owner and a family member for processing on-site. Power to the site is provided by one solar array and two portable generators.

The project site contains six Class III drainages; however, all related project elements do not encroach on the Streamside Management Area setbacks for those streams. There are Northern Spotted Owl Activity Centers located approximately 1.4, 1.7, and 2.0 miles from the cultivation area. Additionally, individual historic NSO sightings have been observed at 0.7 miles and 0.8, and 1.0. Referral comments from CDFW requested the following which have been included in the project conditions: prohibition of use of synthetic netting, refuse contained in wildlife proof storage containers, noise containment structures for the generators, lighting conditions to meet International Dark Sky Association standards, prohibition on anticoagulant rodenticides, requirement to leave wildlife unharmed. The site has been analyzed for cultural resources and determined to not have sensitive cultural or archaeological resources that could be impacted from on-going cultivation.

The modified project is consistent with the adopted MND for the CMMLUO because it complies with all standards of the CMMLUO which were intended to mitigate for impacts of existing cultivation. These include compliance with noise, light, and other standards to limit disturbance to wildlife, compliance with all state agency requirements, and compliance with setback requirements.

Purpose - Section 15164 of the California Environmental Quality Act (CEQA) provides that the lead agency shall prepare an addendum to a previously certified Mitigated Negative Declaration (MND) if some changes or additions are necessary but none of the conditions described in Section 15162 calling for a subsequent EIR or Negative Declaration have occurred. Section 15162 states that when an EIR has been certified for a project, no subsequent EIR shall be prepared for that project unless the lead agency determines, on the basis of substantial evidence in the light of the whole record, one or more of the following:

1. Substantial changes are proposed in the project which require major revisions of the previous MND due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;
   or

2. Substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions of the previous MND due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or

3. New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous MND was certified as complete, shows any of the following: A) the project will have one or more significant effects not discussed in the previous MND; B) significant effect previously examined will be substantially more severe than shown in the previous MND; C) mitigation measures or alternatives previously found not to be feasible would in fact be feasible and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative; or D) mitigation measures or alternatives which are considerably different from those analyzed in the previous MND would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.

Summary of Significant Project Effects and Mitigation Recommended

No changes are proposed for the original MND recommended mitigations. The proposal to authorize an existing 17,776 square feet outdoor cannabis cultivation and minor improvements necessary to bring the operation into compliance with the CMMLUO, as well as the special permit for a reduction to the required setback to public lands, is fully consistent with the impacts identified and adequately mitigated in the original MND. The project as conditioned to implement responsible agency recommendations, results in no significantly adverse environmental effects beyond those identified in the MND. Compliance with the CMMLUO ensures consistency with the adopted MND and provides for mitigation of all project related impacts to a less than significant level.

In reviewing the application for consistency with the adopted MND, the County considered the following information and studies, among other documents:

- A Cultural Resources Investigation Report including APN 208-231-012.
- Notification of Streambed Alteration Agreement (1600-2018-0717-R1) by the California Department of Fish and Wildlife.
- Water Resources Protection Plan for APN 208-231-012, March 1, 2018.

- Soils report prepared by Whitchurch Engineering, May 2, 2016.
- Road Evaluation Report prepared by David Nicoletti, November 29, 2108.
- Boundary Exhibit prepared by Kolstad Land Surveyors dated received February 25, 2019.
- Operations Plan and Site Plan for Joe Royse, updated May 24, 2019.

Other CEQA Considerations

Staff suggests no changes for the revised project.

EXPLANATION OF DECISION NOT TO PREPARE A SUPPLEMENTAL MITIGATED NEGATIVE DECLARATION OR ENVIRONMENTAL IMPACT REPORT

See **Purpose** statement above.

In every impact category analyzed in this review, the projected consequences of the current project proposal are either the same or less than significantly increased than the initial project for which the MND was adopted. Based upon this review, the following findings are supported:

FINDINGS

1. The proposed project will permit an existing cannabis operation and bring the operation into compliance with county and state requirements intended to adequately mitigate environmental impacts.

2. The circumstances under which the project was approved have not changed substantially. There are no new significant environmental effects and no substantial increases in the severity of previously identified effects.

3. For the current proposed project, there has been no new information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous MND was adopted as complete.

CONCLUSION

Based on these findings it is concluded that an Addendum to the certified MND is appropriate to address the requirements under CEQA for the current project proposal. All of the findings, mitigation requirements, and mitigation and monitoring program of the MND, remain in full force and effect on the original project.

ATTACHMENT 4

Applicant's Evidence In Support of the Required Findings

Attachment 4 includes a listing of all written evidence which has been submitted by the applicant in support of making the required findings. The following materials are on file with the Planning Division:

1. The name, contact address, and phone number(s) of the applicant. (Application form on file)

2. If the applicant is not the record title owner of parcel, written consent of the owner for the application with original signature and notary acknowledgement. (On file)

3. Site plan showing the entire parcel, including easements, streams, springs, ponds and other surface water features, and the location and area for cultivation on the parcel with dimensions of the area for cultivation and setbacks from property lines. The site plan shall also include all areas of ground disturbance or surface water disturbance associated with cultivation activities, including: access roads, water diversions, culverts, ponds, dams, graded flats, and other related features. If the area for cultivation is within ¼ mile (1,320 ft.) of a school, school bus stop, church or other place of religious worship, public park, or Tribal Cultural Resource, the site plan shall include dimensions showing that the distance from the location of such features to the nearest point of the cultivation area is at least 600 feet. (Revised May 24, 2019, Attached)

4. A cultivation and operations plan that meets or exceeds minimum legal standards for water storage, conservation and use; drainage, runoff and erosion control; watershed and habitat protection; and proper storage of fertilizers, pesticides, and other regulated products to be used on the parcel, and a description of cultivation activities (outdoor, indoor, mixed light), the approximate date(s) cannabis cultivation activities have been conducted on the parcel prior to the effective date of this ordinance, if applicable, and schedule of activities during each month of the growing and harvesting season. (Revised May 24, 2019, Attached)

5. Copy of the statement of water diversion, or other permit, license or registration filed with the State Water Resources Control Board, Division of Water Rights, if applicable. (N/A)

6. Description of water source, storage, irrigation plan, and projected water usage. (On file)

7. Copy of Notice of Intent and Monitoring Self-Certification and other documents filed with the North Coast Regional Water Quality Control Board demonstrating enrollment in Tier 1, 2 or 3, North Coast Regional Water Quality Control Board Order No. 2015-0023, or any substantially equivalent rule that may be subsequently adopted by the County of Humboldt or other responsible agency. (On file)

8. If any on-site or off-site component of the cultivation facility, including access roads, water supply, grading or terracing impacts the bed or bank of any stream or other watercourse, a copy of the Streambed Alteration Permit obtained from the Department of Fish & Wildlife. (N/A)

9. If the source of water is a well, a copy of the County well permit, if available. (On file)

10. If the parcel is zoned FR, U or TPZ, or involves the conversion of timberland as defined under section 4526 of the Public Resources Code, a copy of a less-than-3-acre conversion exemption or timberland conversion permit, approved by the California Department of Forestry and Fire Protection (CAL-FIRE). Alternately, for existing operations occupying sites created through prior unauthorized conversion of timberland, evidence may be provided showing that the landowner has completed a civil or criminal process and/or entered into a negotiated settlement with CAL-FIRE. (Required as a Condition of Approval)

11. Consent for onsite inspection of the parcel by County officials at prearranged date and time in consultation with the applicant prior to issuance of any clearance or permit, and once annually thereafter. (On file)

12. For indoor cultivation facilities, identify the source of electrical power and how it will meet with the energy requirements in section 55.4.8.2.3, and plan for compliance with applicable Building Codes. (Not applicable)

13. Acknowledge that the County reserves the right to reduce the size of the area allowed for cultivation under any clearance or permit issued in accordance with this Section in the event that environmental conditions, such as a sustained drought or low flows in the watershed will not support diversions for irrigation. (On file)

14. Acknowledge that the county reserves the right to engage with local Tribes before consenting to the issuance of any clearance or permit, if cultivation operations occur within an Area of Traditional Tribal Cultural Affiliation, as defined herein. This process will follow current departmental referral protocol, including engagement with the Tribe(s) through coordination with their Tribal Historic Preservation Officer (THPO) or other tribal representatives. This procedure shall be conducted similar to the protocols outlined under SB 18 (Burton) and AB 52 (Gatto), which describe "government to government" consultation, through tribal and local government officials and their designees. During this process, the tribe may request that operations associated with the clearance or permit be designed to avoid, minimize or mitigate impacts to Tribal Cultural Resources, as defined herein. Examples include, but are not limited to: conducting a site visit with the THPO or their designee to the existing or proposed cultivation site, requiring that a professional cultural resources survey be performed, or requiring that a tribal cultural monitor be retained during project-related ground disturbance within areas of sensitivity or concern. The county shall request that a records search be performed through the California Historical Resources Information System (CHRIS). (On-file)

15. Water Resource Protection Plan, prepared by Green Road Consulting dated March 1, 2018. (Attached)

16. DEH Worksheet. (on file)

17. Road Evaluation Report prepared by David Nicoletti, dated November 29, 2018. (Attached)

18. Boundary Exhibit, prepared by Kolstand Land Surveyors, December 14, 2018. (Attached)

GREEN ROAD CONSULTING

RECEIVED
MAY 24 2019
Humboldt County
Cannabis Svcs.

5/24/19
Revised
w/appl.
-ES

RECEIVED
JAN 15 2019
Humboldt County
Cannabis Svcs.

Humboldt County Planning Department
3015 H Street
Eureka, CA 95501

RE: Joe Royse – Humboldt County APPS 11864

October 8th, 2018

To Whom It May Concern:

The following information should be added to the Cultivation and Operations Plan for Joe Royse, APPS #11864, APN: 208-231-012.

Water Storage
The Applicant has five (5) water tanks that total to 8,450 gallons of hard tank water storage on the parcel. The size and number are outlined below:

- One (1) 250-gallon HDPE tank
- Two (2) 2,800-gallon HDPE tanks
- Two (2) 1,300-gallon HDPE tanks

Processing Plan
Until a proper structure can be permitted and constructed the Applicant will not be using employees for processing. The Applicant will seek out a licensed third-party processor.

Soils Management Plan
The use of Native Soil versus Imported soil for a cannabis farm is a decision based on a variety of factors, from soil type, location, cultivation style and climate. The Applicant will import soil (potting soil) for use in their cultivation practices. The Applicant intends to reamend their soil after every season for reuse. Once the soil is deemed no longer usable for cultivation, the Applicant will take the soil to Wes Green in Arcata for disposal.

Pesticides/Fertilizer/ Regulated Product Storage
Pesticides, herbicides, or fungicides will be stored in plastic storage totes in a covered building. The Registrant will keep a log of their pesticides, herbicides, or fungicides use for annual reporting.

Irrigation Runoff/Drainage
There were no signs of irrigation runoff during Greenroad Consulting's site investigation. The Registrant uses a drip irrigation water system to limit water use and significantly minimize irrigation runoff.

Schedule of Cultivation Activities

The Applicant anticipates two (2) annual harvest for their light depravation cultivation and one annual harvest for their outdoor cultivation. The Cultivation schedule is as follows

Light Depravation 1st Run

March- April (veg)
April-July (flower)
July (harvest)

Light Depravation 2nd Run

July-August (veg)
August- November (flower)
November (harvest)

Full-Term Cultivation

June-July (veg)
July-November (flower)
November (harvest)

Generator Decibel Readings

7KW Honda Generator decibel reading=58d(B)
When measured at 100 feet=34.4d(B)

Estimating Sound Levels With the Inverse Square Law

In the real world, the inverse square law is always an idealization because it assumes exactly equal sound propagation in all directions. If there are reflective surfaces in the sound field, then reflected sounds will add to the directed sound and you will get more sound at a field location than the inverse square law predicts. If there are barriers between the source and the point of measurement, you may get less than the inverse square law predicts. Nevertheless, the inverse square law is the logical first estimate of the sound you would get at a distant point in a reasonably open area.

If you measure a sound level I_1 = 58 dB
at distance
d_1 = 2 m = 6.56167979 ft

$$\frac{I_2}{I_1} = \left[\frac{d_1}{d_2}\right]^2$$

then at distance
d_2 = 30.48 m = 100 ft

the inverse square law predicts a sound level
I_2 = 34.3403006 dB

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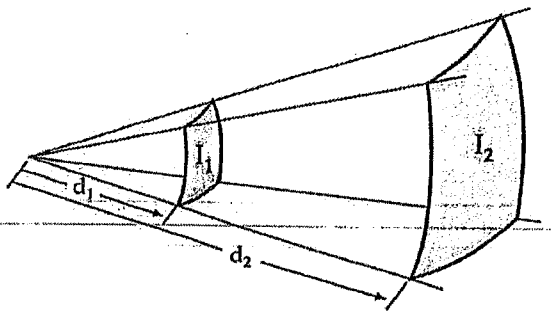
Auditorium acoustics



You can explore numerically to confirm that doubling the distance drops the intensity by about 6 dB and that 10 times the distance drops the intensity by 20 dB.

Decibel definition | Decibel calculation

2KW Honda Generator decibel reading=50 d(B)
When measured at 100 feet=17 d(B)

Estimating Sound Levels With the Inverse Square Law

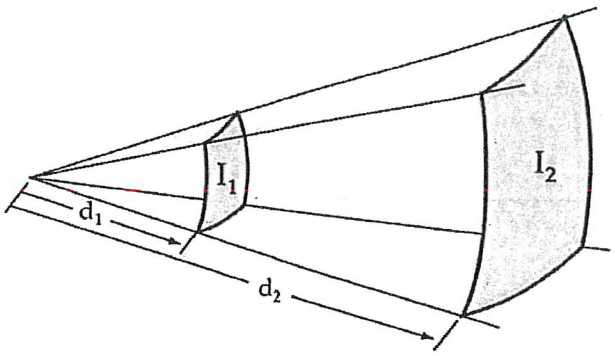
In the real world, the inverse square law is always an idealization because it assumes exactly equal sound propagation in all directions. If there are reflective surfaces in the sound field, then reflected sounds will add to the directed sound and you will get more sound at a field location than the inverse square law predicts. If there are barriers between the source and the point of measurement, you may get less than the inverse square law predicts. Nevertheless, the inverse square law is the logical first estimate of the sound you would get at a distant point in a reasonably open area.

If you measure a sound level I_1 = 57 dB
at distance
d_1 = 0.3048 m = 1 ft

$$\frac{I_2}{I_1} = \left[\frac{d_1}{d_2}\right]^2$$

then at distance
d_2 = 30.48 m = 100 ft

the inverse square law predicts a sound level
I_2 = 17.0000000 dB



You can explore numerically to confirm that doubling the distance drops the intensity by about 6 dB and that 10 times the distance drops the intensity by 20 dB.

Decibel definition | Decibel calculation | Calculating dB for distance ratios

Index
Auditorium acoustics

http://hyperphysics.phy-astr.gsu.edu/hbase/Acoustic/isprob2.html

*please note, all generators on property are kept at a distance greater than 100ft from property boundary.

Outdoor Cultivation Area

The Existing outdoor cultivation occurs in two (2) general areas on the map.

Cultivation Area #1 ~~5,700~~ - ES w/appl. 5/24/19

Cultivation Area #1 consists of ~~5,959~~ ft2of full-term, outdoor cannabis cultivation.

Cultivation Area #2 6,700 - ES w/appl. 5/24/19

Cultivation Area #2 consists of ~~4,000~~ ft2of full-term, outdoor cannabis cultivation.

Greenhouse #1 and #2

Greenhouse #1 and #2 are 28'x96' greenhouse structures (2,688 ft^2) each, totaling 5,376 ft^2 of outdoor cultivation area.

Number of Employees up to four(4) -ES w/appl. 5/24/19

The Applicant expects using ~~two (2)~~ seasonal employees.

Employees Safety Practices

All those working on the property will be instructed in safe and proper techniques for performing any duties pretraining to cultivation. This includes the utilization of personal protective equipment and proper use of tools and necessary instruments required for the performance of one's duties. Personal protective equipment shall be provided for all employees and/or independent contractors via the proponent as well as having ample personal protective equipment in stock and onsite. Clean and safe drinking water will be in the form of filtered spring water. For the safety of the public and employees working while intoxicated will not be tolerated. All Employee and/or independent contractors shall be made aware of the following.

I. Location of fire extinguishers and the "P.A.S.S" technique.
II. List of operations manager contacts;
III. List of emergency control contacts;
IV. List of poison control contacts;
V. Location of first aid kit;
VI. Location of Restroom and hand washing stations;
VII. Location of clean drinking water and;
VIII. Location of Personal protective equipment.

All work surfaces and equipment are maintained in a clean, sanitary condition. Protocols to prevent the spread of mold are strictly followed.

Employee Onsite Housing

There will be no employee onsite housing.

Processing

Until an appropriate structure can be permitted and constructed, no employees will be involved in the processing stage, the Applicant may seek out a licensed third-party processor.

FAR 77 Federal Aviation Regulation Area

While a portion of the Applicant's parcel is within FAR 77 Federal Aviation Regulation Area, none of the Applicants buildings lie with said area. Therefore, no certification on the matter is required. The Applicant will ensure that any new development (if any) will occur outside said zone. (see Site map for zone location)

GREEN ROAD CONSULTING

Site Plan Overview and Cultivation and Operations Plan

Applicant

Joseph Royse

PO Box 802

Fortuna, CA 95540

Parcel: 208-231-012

Agent

Georgia Yarborough

Green Road Consulting, Inc.

1650 Central Avenue, Suite C

McKinleyville, CA 95519

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I. Site Plan Overview

1.0 Project Information

Joseph Royse ("Applicant") is submitting this application for a Type 3 Use Permit for 15,000 square feet of existing outdoor commercial cannabis cultivation on a 40-acre parcel, located near Dinsmore, CA ("Parcel"), Assessor's Parcel Number 208-231-012.

The Applicant is sourcing water from the permitted, confined aquafer well. There are two (2) HDPE water tanks and one (1) mix tank located on the parcel giving the Applicant a total of 8,450-gallons of water storage. The Applicant is estimating to use 105,990-gallons of water annually.

There are eight (8) existing structures located on the parcel. The 10'X12' Shed was constructed in 2010 and is used for personal storage. The 16'X24' Cabin was also constructed in 2010 and is used for temporary living. The Yurt is 20' in diameter and has been on the parcel since the Applicant bought the property in 2015. It is used for seasonal living. There is a second 8'X20' Shipping Container and has been on the parcel since 2016. It is used for personal storage. There is a 8'X20' Shipping Container that has been on the parcel since 2015. It is used to store nutrients and fertilizers. The 40'X40' is in the process of being built and once completed will be 40'X40'. The lower half of the Barn is completed and is used to dry and cure harvested cannabis. ~~The Vegging Greenhouse is 30'X50' and was constructed in 2014.~~ It is used for the vegetative cycle of the cannabis. There are two (2) 10'X20' Carports which the Applicant uses to machine process under and has been on the parcel since 2015. The 40'x40' Barn will house 1,200 square feet of ancillary nursery space. 5/24/19 -ES w/appl.
The Applicant is anticipating one (1) harvest, once in October and November. The Applicant and family members are machine trimming under the Carports.

This application is submitted through their agent, Georgia Yarborough of Green Road Consulting, Inc., and has been prepared in accordance with Humboldt County's ("County") Commercial Medical Marijuana Land Use Ordinance ("CMMLUO").

The Type 3 Use Permit would achieve the following results for the Applicant:

a. Permit ~~15,000~~ 17,776 square feet of Outdoor commercial cannabis cultivation activities that were in existence prior to January 1, 2016, in compliance with the County CMMLUO; and
b. Comply with applicable standards for water quality maintenance and watershed protection through the Waiver of Waste Discharge requirements of the North Coast Regional Water Quality Control Board ("Water Board") and California Department of Fish and Wildlife ("Fish and Wildlife").

2.0 Project Location

The Applicant's Parcel is located in the inland zone of Humboldt County near Dinsmore, CA. The Parcel is comprised of 40-acres and is identified by Assessor's Parcel Number ("APN") 208-231-012. The is no street address for this Parcel.

2.1 Zoning Classification

The County's Zoning Classification of the Parcel is FR-B-5(40) with a Current General Plan of AL20 (FRWK). The CMMLUO permits existing Outdoor commercial cannabis cultivation on land zoned as FR with cultivation sites between 10,001 square feet and 43,560 square feet with a Type 3 Use Permit.

2.2 Site Topography

A map of the Parcel's topography is included as Attachment "A."

3.0 Easements

The following information is taken from Exhibit "A" of the recorded Grant Deed, a copy of which is included in the Evidence of Ownership and Authorization section of this Application.

"That real property situate in the County of Humboldt, State of California, described as follows:

PARCEL ONE:

Parcel 123 of Timberline Ranch Estates as shown on the Amended Record of Survey Map thereof, filed in the Office of the County Recorder of Humboldt County, California, May 19, 1971, in Book 26 of Surveys at Pages 135 to 142, inclusive.

PARCEL TWO:

Non-exclusive easement for ingress, egress and public utility purposes, within those portions of the follow described roads:

A.) Bronco Court (60 feet in width) that lies within Parcel 122 as shown on the Amended Record of Survey Map referred to in Parcel One above.

B.) Bronco Road (60 feet in width) that lies within Parcels 122, 139, 141 and 142 as shown on said Amended Record of Survey Map.

C.) River Road (50 feet in width) that lies within Parcels 141 as shown on said amended record of Survey Map.

D.) A strip of land 60 feet in width, the center line of which being the center line of the existing toad, extending from the center line of River Road above referred to, Southerly across said Parcel 141 and across the Southwest Quarter of the Southwest Quarter of Section 35, Township 2 North, Range 5 East, Humboldt Meridian, to the center line of Parcel Three hereinafter described.

Being a portion of the easement reserved by Jed Land Company in Deed recorded October 19, 1979 in Book 1593, Page 423, Humboldt County Official Records.

PARCEL FOUR:

A non-exclusive easement for ingress, egress and public utility and purposes within those portions of the following described roads:

A.) River Court 60 feet in width, that lies-within Parcels 142, 143, 144, 145 and 146 as shown on the Amended Record of Survey Map showing a portion of Timberline Ranch Estates on file in the Office of the County Recorder of said County in Book 26 of Surveys, Pages 141 and 142.

B.) River Road 60 feet in width, that lies within Parcels 146, 147, 148, 149, 150, 151, 151, 153 and 154 as shown on said Amended Record of Survey Map.

PARCEL FIVE:

A non-exclusive easement for ingress, egress and public utility purposes, within a strip of land 60 feet in width, the center line of which is the center line of the existing toad extending from that portion of River Road that lies within the exterior boundaries of Parcel 154, as shown on said Amended Record of Survey Map in a Southerly direction to the Forrest Service Road.

PARCEL SIX:

A non-exclusive right of way for ingress and egress over a strip of land 60 feet in width, the center line of which is the center line of the existing road over the North Half of the North Half of Lot 2 and that portion of Lot 3 lying North of Mad River of Section 6, Township 1 North, Range 6 East, Humboldt Meridian.

PARCEL SEVEN:

The right to use that certain non-exclusive right of way, 60 feet in width, as the same is reserved in the Deed from Marion P. Scianna and Norma Jean Scianna, husband and wife, et al, to Salvatore Marion and Barba Marion, husband and wife, as joint tenants, et al, dated July 15, 1971 and recorded November 3, 1971, in Book 151 of Official Records, Page 266, Trinity County Records.

Being the same right of way as conveyed by Deed from Marion P. Scianna and Norma Jean Scianna, his wife, to Jed Land Company, a limited partnership and John E. Donahue and Janet L. Donahue, husband and wife, as joint tenants, dated October 27, 178, recorded October 30, 1978, Book 1978, Book 195 of Official Records, Page 648, Trinity County Records and recorded November 10, 1978, Book 1528 of Official Records, Page 288, Humboldt County Records. "

4.0 Natural Waterways

There are six (6) Unnamed Class III drainages that run through the parcel.

The Applicant will have a Water Resource Protection Plan ("WRPP") for the Parcel and is enrolled in the Water Board's Waiver of Waste Discharge program as a Tier II discharger.

5.0 Location and Area of Existing Cultivation

-ES 5/24/19 w/appl.

The ~~15,000~~ 17,776 square feet of Outdoor cannabis cultivation occurs in four (4) locations on the parcel.

Cultivation Area #1

Cultivation Area #1 is located near the center of the parcel and consists of approximately 5,060 square feet of cultivation.

Cultivation Area #2

Cultivation Area #2 is located in the southeastern section of the parcel and consists of approximately 5,440 square feet of cultivation.

Greenhouse #1

Greenhouse #1 is located in the center of the parcel to the west of Cultivation Area #1 and consists of 3,000 square feet of cultivation.

Greenhouse #2

Greenhouse #2 is also located in the center of the parcel to the west of Cultivation Area #1 and consists of 1,500 square feet of cultivation.

6.0 Setbacks of Cultivation Area

Outdoor Cultivation

Cultivation Area #1

Cultivation Area #1 It is setback from the eastern parcel line by approximately 311 feet and the southern parcel line by approximately 320 feet.

Cultivation Area #2

Cultivation Area #2is setback from the eastern parcel line by approximately 638 feet, the southern parcel line by more than 854 feet and the western line by approximately 765 feet.

Greenhouses #1 & #2

Greenhouses #1 & #2 are setback from the northern parcel line by approximately 518 feet and the western parcel line by approximately 518 feet.

7.0 Access Roads

The Parcel is located off Salyer Mad River Road. All Roads on the site area season and subject to intense precipitation in the winter months. While generally in fair shape, they would benefit from surface rocking. The Installation of regular rolling dips and/or water bars combined with rock armoring is also required to prevent any erosion, fully formation and sediment transport. Suggested locations for rolling dips are included on the Erosion Control & Sediment Delivery Map.

8.0 Graded Flats

There are no graded flats identified on the Parcel.

9.0 Existing Structures

Cultivation Related Structures

Shipping Container #1

The 8'X20' Shipping Container has been on the parcel since 2015 and is used to store nutrients and fertilizers.

Barn

The Barn is in the process of being constructed and will be 40'X40'. The lower half of the Barn is currently completed and is used for drying and curing harvested cannabis. The Applicant will be getting the Barn permitted through Humboldt County Planning and Building Department. 1,200 square feet of the barn will be used as an ancillary nursery.

~~Vegging Greenhouse~~

~~The Vegging Greenhouse is a 30'X50' structure and was constructed in 2014. It is used for the vegetative cycle of the plants.~~

5/24/19 -ES w/appl.

Carports (X2)

The Carports are 10'X20' and will be used for the Applicant and family members to machine process under.

Domestic Related Structures

Shed

The existing 10'X12' Shed was constructed in 2010 and houses the 7KW and 2KW Honda generators. The Shed is raised and us where the Applicant stores their ten (10) 5-gallon gasoline cans with drip pans underneath. The Applicant also uses the Shed for personal storage.

Cabin

The existing 16'X24' Cabin was constructed in 2010 and is used as temporary living.

Shipping Container #2

The 8'X20' Shipping Container has been on the parcel since 2015 and is used for personal storage.

Yurt

The Yurt is 20' in diameter and has been on the parcel since the Applicant purchased the property in 2015 and is used as seasonal living.

10.0 Water Source, Storage, Irrigation Plan and Projected Water Usage

10.1 Water Source

All water used for cultivation is sourced from the permitted, confined aquafer well.

10.2 Water Storage

There are two (2) 2,800-gallon HDPE water tanks, two (2) 1,300-gallon HDPE water tanks and one (1) 250 gallon mixing tank giving the Applicant a total of 8,450 gallons of water storage.

10.3 Irrigation Plan

All irrigation of cannabis will be completed with a timed, metered, drip irrigation system preventing any over watering or runoff. The Applicant may need to use supplemental hand watering.

10.4 Projected Water Use

The amount of water used for the cultivation of cannabis will vary throughout the year, with peak periods of water use occurring during the summer months. The Applicant's cultivation and water use is outlined in the Cultivation and Water Usage Chart, attached as Attachment "B."

The Applicant estimates their annual water use to be 105,990-gallons.

11.0 Site Drainage, Runoff, Erosion Control Measures and Watershed Protection

Site Maintenance, Erosion Control and Drainage Features

All Roads on the site area season and subject to intense precipitation in the winter months. While generally in fair shape, they would benefit from surface rocking. The Installation of regular rolling dips and/or water bars combined with rock armoring is also required to prevent any erosion, fully formation and sediment transport. Suggested locations for rolling dips are included on the Erosion Control & Sediment Delivery Map. The Applicant meets the standard conditions for stream crossing maintenance.

Riparian and Wetland Protection and Management

The Applicant meets the standard conditions for riparian and wetland protection and management.

12.0 Distances from Significant Landmarks

There are no schools, school bus stops, state parks, places of worship or Tribal Cultural Resources within 600 feet of the cultivation site.

II. Cultivation and Operations Plan

1.0 Materials Storage

Currently, there are no pesticides or herbicides registered specifically for use directly on cannabis. The Applicant will be using items that were accepted under Legal Pest Management Practices for Marijuana Growers in California.

All fertilizers and amendments are located in the Shipping Container on the Parcel. Fertilizers and amendments are placed on the shelves and floor where any spill will be contained. All labels are kept and directions are followed when nutrients are applied. The storage area is in need of posted instructions for storing fertilizers and amendments, instructions for cleaning up spills and a spill kit that contains a container, gloves, towels, absorbent socks and an absorbent material (kitty litter).

The Applicant has a 7KW and 2KW Honda generator located on the parcel with proper secondary containment underneath and are stored in the Shed when they are not in use. The ten (10) 5-gallon gasoline cans are stored under the Shed with drip pans underneath. Currently the Applicant has three (3) solar panels hooked up near the Cabin and has proposed additional panels throughout the parcel to use as the Applicant's primary power source.

There is no soil pile on-site. The Applicant brings in soil to fill the beds and pots. The soil is reamended for each cultivation cycle. Once the dirt is no longer viable for cultivation, it is removed and disposed of at Wes Green in Arcata. The Applicant does have a mushroom compost bin and a separate composite pile at the Cabin that the Applicant uses to amend their soil.

The Applicant has two (2) 40-gallon water tight trashcans, one outside the Cabin and one outside of the Barn. The Applicant will haul trash every four (4) days to Eel River Resource Recovery in Fortuna, CA.

2.0 Cultivation Activities

Cultivation activities typically begin sometime during April when cannabis plants are brought to the Parcel for planting.

The applicant will be pulling tarps over the greenhouses in order to have one (1) harvest of in October and November. Tarps will be pulled by hand and will not have any negative effects to the surrounding area or the cannabis. The full-term outdoor cultivation will also be harvested in October.

3.0 Processing Practices

Plants will be harvested one at a time using hand shears and taken into the lower half of the Barn where it will be dried and cured. The Applicant and family members will machine process under the two (2) carports.

All work surfaces and equipment are maintained in a clean, sanitary condition. Protocols to prevent the spread of mold are strictly followed. The final cannabis product is stored in a secure location.

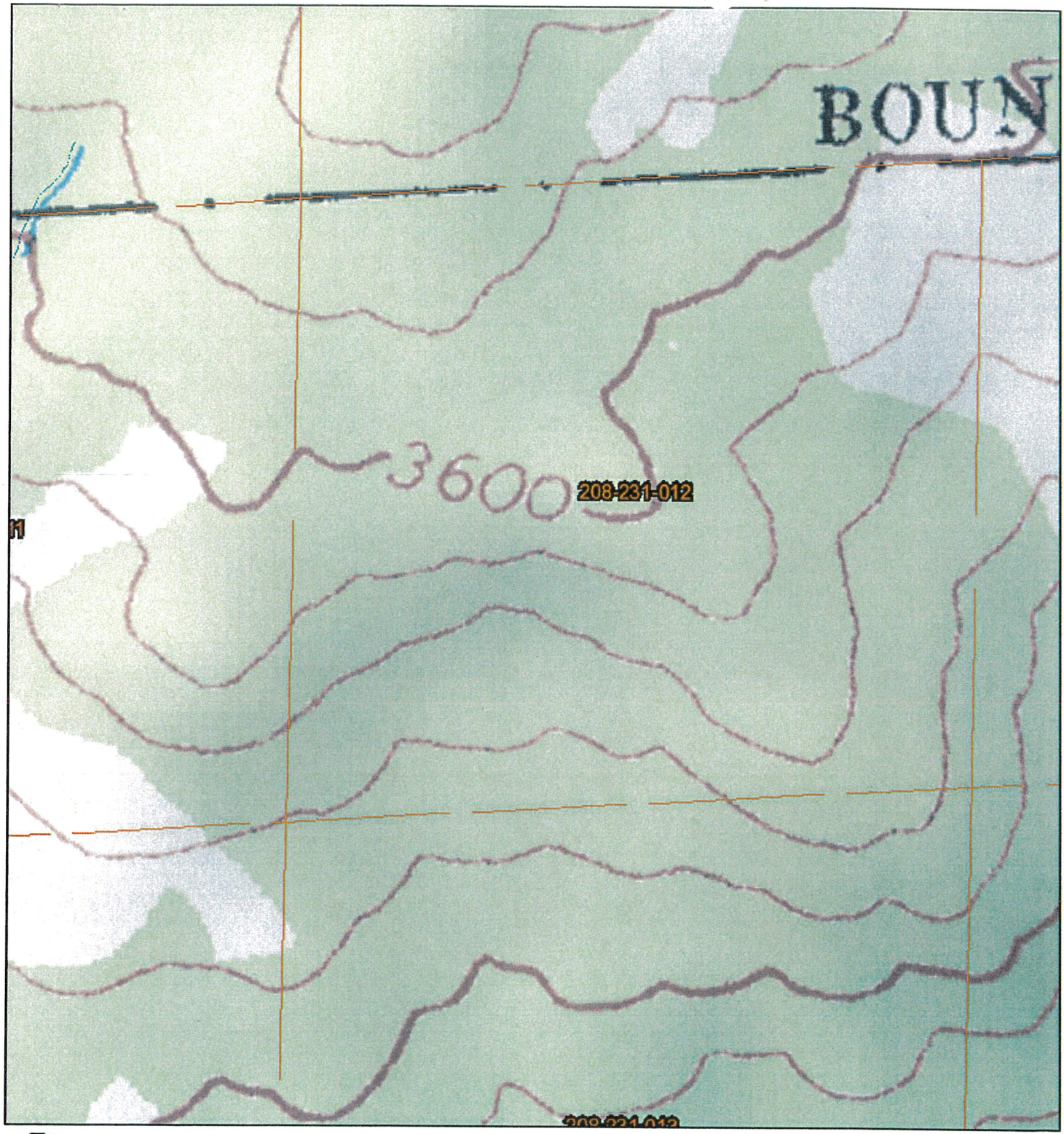
The Applicant will be utilizing any Track and Trace program the County seeks to implement, abiding by all appropriate record keeping practices.

4.0 Security Measures

There are two (2) locked gates at the bottom, top and middle of the parcel. The Applicant has game cameras at each gate and cultivation areas.

GREEN ROAD CONSULTING

Attachment "A"



ArcGIS Web Map

Humboldt County Planning and Building Department

0 180 360 720 Feet

0 0.0325 0.065 0.13 Miles

RF= 1:4,514 1 in = 376 ft

N W E S

Highways and Roads
- Principal Arterials
- Minor Arterials
- Major Collectors
- Minor Collectors
- Local Roads

- Private or Unclassified
- Major River or Stream

Blue Line Streams
- Perennial 1-3
- Perennial >4

- Intermittent
- Subsurface

- City Boundary
- Counties
- Parcels (Owners)
- Red: Band_1
- Green: Band_2
- Blue: Band_3

Printed: July 31, 2017 Web AppBuilder 2.0 for ArcGIS

Map Disclaimer:
While every effort has been made to assure the accuracy of this information, it should be understood that it does not have the force & effect of law, rule, or regulation. Should any difference or error occur, the law will take precedence.

Source: NRCS, Humboldt County GIS, Healthy Rural Roads, Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, and the GIS user community, Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, FRAP, FEMA, USGS

GREEN ROAD CONSULTING

Attachment "B"

Water Use and Cultivation Form

Name:	Joseph Royse
APN:	**208-231-012**
WDID:	1B16112CHUM
Reporting Year	
Storage (Gallons):	8,050
Total Cultivation (ft^2):	15,000

Cultivation Information				
Cultivation Area	**Distance to watercourse (ft)**	**Watercourse Classification**	**Average Slope**	**Area (ft^2)**
CA-1	158.80 ft	Class III	16%	5,440
CA-2	383.09 ft	Class III	27%	4,500
CA-3	349.47 ft	Class III	27%	5,060

Water Use by Source (Gallons)													
Use from Source	January	February	March	April	May	June	July	August	September	October	November	December	**Total**
Cultivation from well	-	-	-	250	750	1,800	22,300	26,050	28,800	26,040	-	-	105,990
Domestic from well	-	-	-	1,200	2,500	2,500	2,500	2,500	2,500	2,500	-	-	16,200
Sum	-	-	-	1,450	3,250	4,300	24,800	28,550	31,300	28,540	-	-	122,190

* Water use is estimated from the best information available, if water meters are not installed.

Standard Conditions to Address	Brief Description
Site maintenance, erosion control, and drainage features	All roads on the site are seasonal and subject to intense precipitation in the winter months. While generally in fair shape, they would benefit from surface rocking. The installation of regular rolling dips and/or water bars combined with rock armoring is also required to prevent erosion, gully formation, and sediment transport. Suggested locations for rolling dips are included on the map.
Water Storage and Use	All water use on the site comes from permitted well.
Fertilizers and Soil Amendments	Fertilizers and Soil amendments were mostly in powdered form. They will require watertight lids.
Pesticides / Herbicides	Pesticides and Herbicides were stored on open ground. They will require secondary containment with a watertight lid.
Petroleum Products and Other Chemicals	Fuel is currently stored in small plastic containers that require secondary containment with a watertight lid.
Refuse and Human Wastes	A seasonal residence on the property has a septic system with no signs of failure but it is unknown if proper permitting was acquired. If it is found to be unpermitted, then the system will need to be back-permitted.

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HUMBOLDT COUNTY DEPARTMENT OF PUBLIC WORKS
ROAD EVALUATION REPORT

PART A: *Part A may be completed by the applicant*

Applicant Name: Joe Royse APN: 208-231-012

Planning & Building Department Case/File No.: 11864

Road Name: River Rd *(complete a separate form for each road)*

From Road (Cross street): Humboldt / Trinity County Line

To Road (Cross street): Private Access Rd

Length of road segment: 2.50 miles Date Inspected: 10/8/2018

Road is maintained by: ☐ County ☒ Other Road Association
(State, Forest Service, National Park, State Park, BLM, Private, Tribal, etc)

Check one of the following:

Box 1 ☐ The entire road segment is developed to Category 4 road standards (20 feet wide) or better. If checked, then the road is adequate for the proposed use without further review by the applicant.

Box 2 ☐ The entire road segment is developed to the equivalent of a road category 4 standard. If checked, then the road is adequate for the proposed use without further review by the applicant.

An equivalent road category 4 standard is defined as a roadway that is generally 20 feet in width, but has pinch points which narrow the road. Pinch points include, but are not limited to, one-lane bridges, trees, large rock outcroppings, culverts, etc. Pinch points must provide visibility where a driver can see oncoming vehicles through the pinch point which allows the oncoming vehicle to stop and wait in a 20 foot wide section of the road for the other vehicle to pass.

Box 3 ☒ The entire road segment is not developed to the equivalent of road category 4 or better. The road may or may not be able to accommodate the proposed use and further evaluation is necessary. Part B is to be completed by a Civil Engineer licensed by the State of California.

The statements in PART A are true and correct and have been made by me after personally inspecting and measuring the road.

David Nicoletti
Signature

11/29/2018
Date

David Nicoletti PE #76814
Name Printed

Important: Read the instructions before using this form. If you have questions, please call the Dept. of Public Works Land Use Division at 707.445.7205.

PART B: Only complete Part B if Box 3 is checked in Part A. *Part B is to be completed by a Civil Engineer licensed by the State of California. Complete a separate form for each road.*

Road Name: River Rd Date Inspected: 10/8/2018 APN: 208-231-012

From Road: Humboldt / Trinity County Line (Post Mile _____) Planning & Building Department Case/File No.:

To Road: Private Access Rd (Post Mile 2.50) 11864

1. What is the Average Daily Traffic (ADT) of the road (including other known cannabis projects)?

   Number of other known cannabis projects included in ADT calculations:
   (Contact the Planning & Building Department for information on other nearby projects.) _____

   ADT: <400 Date(s) measured: 10/8/2018

   Method used to measure ADT: [X] Counters [ ] Estimated using ITE *Trip Generation* Book

   Is the ADT of the road less than 400? [X] Yes [ ] No

   If **YES**, then the road is considered very low volume and shall comply with the design standards outlined in the American Association of State Highway and Transportation Officials (AASHTO) *Guidelines for Geometric Design of Very Low-Volume Local Roads (ADT ≤400). Complete sections 2 and 3 below.*

   If **NO**, then the road shall be reviewed per the applicable policies for the design of local roads and streets presented in AASHTO *A Policy on Geometric Design of Highways and Streets*, commonly known as the "Green Book". Complete section 3 below.

2. Identify site specific safety problems with the road that include, but are not limited to: (Refer to Chapter 3 in AASHTO *Guidelines for Geometric Design of Very Low-Volume Local Roads (ADT ≤400)* for guidance.)

   A. Pattern of curve related crashes.
   Check one: [X] No. [ ] Yes, see attached sheet for Post Mile (PM) locations.

   B. Physical evidence of curve problems such as skid marks, scarred trees, or scarred utility poles
   Check one: [X] No. [ ] Yes, see attached sheet for PM locations.

   C. Substantial edge rutting or encroachment.
   Check one: [ ] No. [X] Yes, see attached sheet for PM locations.

   D. History of complaints from residents or law enforcement.
   Check one: [X] No. [ ] Yes ([ ] check if written documentation is attached)

   E. Measured or known speed substantially higher than the design speed of the road (20+ MPH higher)
   Check one: [X] No. [ ] Yes.

   F. Need for turn-outs.
   Check one: [ ] No. [X] Yes, see attached sheet for PM locations.

3. Conclusions/Recommendations per AASHTO. Check one:

   [ ] The roadway can accommodate the cumulative increased traffic from this project and all known cannabis projects identified above.

   [X] The roadway can accommodate the cumulative increased traffic from this project and all known cannabis projects identified above, if the recommendations on the attached report are done. ([ ] check if a *Neighborhood Traffic Management Plan* is also required and is attached.)

   [ ] The roadway cannot accommodate increased traffic from the proposed u address increased traffic.

A map showing the location and limits of the road being evaluated in PART B is attached. The statements in PART B are true and correct and have been made by me after personally evaluating the road.

David Nicoletti
Signature of Civil Engineer

11/29/2018
Date

REGISTERED PROFESSIONAL ENGINEER * DAVID T. NICOLETTI * No. 76814 * 12/31/18 * CIVIL * STATE OF CALIFORNIA *

Important: Read the instructions before using this form. If you have questions, please call the Dept. of Public Works Land Use Division at 707.445.7205.

HUMBOLDT COUNTY DEPARTMENT OF PUBLIC WORKS
ROAD EVALUATION REPORT

PART A: *Part A may be completed by the applicant*

Applicant Name: Joe Royse APN: 208-231-012

Planning & Building Department Case/File No.: 11864

Road Name: Private Access Rd *(complete a separate form for each road)*

From Road (Cross street): River Rd

To Road (Cross street): Cultivation Area APN 208-211-012

Length of road segment: 1.50 miles Date Inspected: 10/8/18

Road is maintained by: ☐ County ☒ Other Residents
(State, Forest Service, National Park, State Park, BLM, Private, Tribal, etc)

Check one of the following:

Box 1 ☐ The entire road segment is developed to Category 4 road standards (20 feet wide) or better. If checked, then the road is adequate for the proposed use without further review by the applicant.

Box 2 ☐ The entire road segment is developed to the equivalent of a road category 4 standard. If checked, then the road is adequate for the proposed use without further review by the applicant.

An equivalent road category 4 standard is defined as a roadway that is generally 20 feet in width, but has pinch points which narrow the road. Pinch points include, but are not limited to, one-lane bridges, trees, large rock outcroppings, culverts, etc. Pinch points must provide visibility where a driver can see oncoming vehicles through the pinch point which allows the oncoming vehicle to stop and wait in a 20 foot wide section of the road for the other vehicle to pass.

Box 3 ☒ The entire road segment is not developed to the equivalent of road category 4 or better. The road may or may not be able to accommodate the proposed use and further evaluation is necessary. Part B is to be completed by a Civil Engineer licensed by the State of California.

The statements in PART A are true and correct and have been made by me after personally inspecting and measuring the road.

David Nicoletti
Signature

11/29/2018
Date

David Nicoletti PE #76814
Name Printed

Important: Read the instructions before using this form. If you have questions, please call the Dept. of Public Works Land Use Division at 707.445.7205.

PART B: Only complete Part B if Box 3 is checked in Part A. *Part B is to be completed by a Civil Engineer licensed by the State of California. Complete a separate form for each road.*

Road Name: Private Access Rd Date Inspected: 10/8/2018 APN: 208-231-012

From Road: River Rd (Post Mile _____) Planning & Building Department Case/File No.:

To Road: Residence 208-231-0012 (Post Mile 1.50) 11864

1. What is the Average Daily Traffic (ADT) of the road (including other known cannabis projects)?

   Number of other known cannabis projects included in ADT calculations:
   (Contact the Planning & Building Department for information on other nearby projects.) _____

   ADT: <400 Date(s) measured: _____

   Method used to measure ADT: [X] Counters [ ] Estimated using ITE *Trip Generation* Book

   Is the ADT of the road less than 400? [ ] Yes [ ] No

   If **YES**, then the road is considered very low volume and shall comply with the design standards outlined in the American Association of State Highway and Transportation Officials (AASHTO) *Guidelines for Geometric Design of Very Low-Volume Local Roads (ADT ≤400). Complete sections 2 and 3 below.*

   If **NO**, then the road shall be reviewed per the applicable policies for the design of local roads and streets presented in AASHTO *A Policy on Geometric Design of Highways and Streets*, commonly known as the "Green Book". Complete section 3 below.

2. Identify site specific safety problems with the road that include, but are not limited to: (Refer to Chapter 3 in AASHTO *Guidelines for Geometric Design of Very Low-Volume Local Roads (ADT ≤400)* for guidance.)

   A. Pattern of curve related crashes.
   Check one: [X] No. [ ] Yes, see attached sheet for Post Mile (PM) locations.

   B. Physical evidence of curve problems such as skid marks, scarred trees, or scarred utility poles
   Check one: [X] No. [ ] Yes, see attached sheet for PM locations.

   C. Substantial edge rutting or encroachment.
   Check one: [X] No. [ ] Yes, see attached sheet for PM locations.

   D. History of complaints from residents or law enforcement.
   Check one: [X] No. [ ] Yes ([ ] check if written documentation is attached)

   E. Measured or known speed substantially higher than the design speed of the road (20+ MPH higher)
   Check one: [X] No. [ ] Yes.

   F. Need for turn-outs.
   Check one: [X] No. [ ] Yes, see attached sheet for PM locations.

3. Conclusions/Recommendations per AASHTO. Check one:

   [ ] The roadway can accommodate the cumulative increased traffic from this project and all known cannabis projects identified above.

   [X] The roadway can accommodate the cumulative increased traffic from this project and all known cannabis projects identified above, if the recommendations on the attached report are done. ([ ] check if a *Neighborhood Traffic Management Plan* is also required and is attached.)

   [ ] The roadway cannot accommodate increased traffic from the proposed use. It is address increased traffic.

A map showing the location and limits of the road being evaluated in PART B is attached. The statements in PART B are true and correct and have been made by me after personally evaluating the road.

David Nicoletti 11/29/2018

Signature of Civil Engineer Date

REGISTERED PROFESSIONAL ENGINEER * DAVID T. NICOLETTI * No. 76814 * 12/31/18 * CIVIL * STATE OF CALIFORNIA *

Important: Read the instructions before using this form. If you have questions, please call the Dept. of Public Works Land Use Division at 707.445.7205.

From: David Nicoletti PE QSD\QSP
DTN Engineering & Consulting
2731 K Street Unit A
Eureka, CA 95501
Email: dnicoletti@dtnengineering.com

Subject: Roadway Evaluation for APN 208-231-012, APPS 11864

Introduction

On October 8th, 2018, DTN Engineering & Consulting (Engineer) performed a roadway evaluation for Joe Royse, upon request from Humboldt County Public Works. Humboldt County Public Works has provided direction for the roads to be evaluated by the Engineer. The roads to be evaluated are as follows (see Exhibit A):

- River Road from the Humboldt / Trinity County Line to Unnamed Road
- Unnamed Road From River Rd to APN 208-231-012

River Rd is being evaluated as part of the Applicant's Cannabis permit referral process. The roadways were evaluated for Category 4 compliance as described in Title III – Land Use and Development, Division II, Fire Safe Regulations (Ordinance) (Exhibit D). The driveway was evaluated for Driveways in accordance with the Ordinance. This analysis performed was in accordance with the Roadway Evaluation Report Instructions provided by Humboldt County Public Works Department.

The existing site conditions for the evaluated roadways in this Technical Memorandum consists of hilly terrain (Exhibit C), crosses four Streamside Management Areas (SMA) (Exhibit C) three are Class I and one is Class II streams that are tributary to the Mad River, and high seismic instability, gradual to steep grades, and there are no mapped historic landslides. The Applicant will have four employees onsite and deliveries of supplies to the Applicants facilities will occur once every year.

Evaluation

River Rd Photos 1-201 (Exhibit B)

The evaluation begins just east of the at the Railroad Car Bridge that is at or near the Humboldt County / Trinity County line. The criteria for evaluating River is a Category 4 in accordance with Humboldt County Title III - Land Use And Development Division 11 Fire Safe Regulations.

As shown in Photo 1 the measurements of River Rd have a width of approximately 14 feet and a slope of 9.6%. Photos 3 & 4 depict the rail road car bridge that is at or near the County line. River Rd generally has a width that varies from 12 feet to 14 feet wide with 1-2 foot shoulders. In some areas the roadway width is less than 12 feet and at turnouts the roadway width extends up to 20 feet. The terrain is moderately hilly, and most grades are below 16%. Most of the roadway curves generally have turnouts at curves and pullouts at strategically placed locations along with turnaround areas.

The issues found on River Rd are primarily due to drainage including partially clogged culverts, lack of waterbars and rolling dips, areas of roadway width reduced due to erosion, driveway approaches at angles less than 75%, hillside slips, and at limited locations the roadway falls under 12 feet in width and over 16% grade. The criteria listed above is from the Humboldt County SRA Road Ordinance and AASHTO Guidelines for Geometric Design of Low Volume Roads.

The following are photo locations that are not in accordance with Humboldt County SRA Ordinance, AASHTO Guidelines for Geometric Design of Low Volume Roads, or industry standard practices for gravel roadway maintenance, and drainage.

Curve Locations Requiring Turnouts: Photo #18, 184, 195
Slope Over 16%: Photos 52 148, 158, 186
Width Under 12 Feet: Photos 19, 43, 94, & 95
Slide Locations: Photos 51,56, & 116/118
Clogged / Partially Culverts: Photos 25/26, 28/29, 33, 50/51, 61, 68/69 (sizing), 111, 125/126, 144, 152/154, 164,169 (approach culvert), 176, & 179.
Erosion / Drainage Issues: Photos 8, 9, 14, 25, 27, 30/31/32, 41, 60, 80/90, 99, 114/115, 117, 119, 127, 129, 140, 145, 174, 187, 192

This roadway does not meet a Category 4 or Equivalent Category 4 Roadway. The Engineer recommends the following improvements for safe travel on River Rd for the amount of Average Daily Traffic (ADT) calculated.

Curve Locations Requiring Turnouts: *Construct Turnouts at the following photo locations18, 184, & 195.*

Slopes Over 16%: *The Engineer recommends no improvements for photo locations 52,148, 158, & 186 where slopes are over 16%. The traffic benefits to*

environmental impacts doesn't justify paving or lowering grades. Typically, the steep grades shown at these locations are for short segments of roadway.

Width Under 12 Feet: *The Engineer recommends no improvements for Photo locations 19, 43, 94 & 95. The traffic benefits to environmental impacts doesn't justify cutting into hillsides or expanding travel width on hillsides with fill.*

Slide Locations: *The Engineer recommends repairs to areas that slides have occurred. Slides have occurred in Photos 51, 56, 116,117, & 118 and repairs such as re-establishing a stable slope with grading and placing Rock Slope Protection (RSP) on the slope to stabilize with weight. At some locations, slides have occurred due to clogged culverts and poor drainage.*

Clogged / Partially Culverts: *Almost all culverts locations have clogged inlets or are completely clogged. This has resulted in erosion and drainage issues as shown in Photos 25/26, 28/29, 33, 61, 68/69 (sizing), 111, 125/126, 144, 152/154, 164,169 (approach culvert), 176, & 179. The Engineer recommends unclogging all culverts that have been shown to be partially clogged or fully clogged.*

Erosion / Drainage Issues*: Erosion Issues are related to a lack of waterbars or rolling dips, impacted by nearby slide, or clogged culverts. The Engineer recommends the following:*

- *Photo 8/9 Construct rolling dip or waterbar.*
- *Photo 14 Unclogging nearby culvert will alleviate erosion.*
- *Photos 25/27, & 30/31/32 Unclogging nearby culvert will alleviate erosion.*
- *Photo 41 Construct rolling dip or waterbar.*
- *Photo 60 Re-establish embankment and construct roadside ditches to daylight water from.*
- *Photo 89 Re-establish embankment and construct roadside ditches to daylight water from.*
- *Photo 99 Construct rolling dip or waterbar.*
- *114/115/116 & 117/118/119 This erosion issue is tied to the nearby slide and lack of culvert. Repair of the slide and installation of a culvert at each location.*
- *125/126/127 Re-establish embankment and construct roadside ditches to daylight water from.*
- *Photo 129 Construct rolling dip or waterbar.*
- *Photo 140 Unclogging nearby culvert will alleviate erosion.*
- *Photo 174 Construct rolling dip or waterbar.*

- *Photo 192 Construct rolling dip or waterbar.*

Miscellaneous: *The Engineer recommends that grass be mowed along the roadside, which will expose the turnouts. Then Engineer also recommends that the roadside ditches be cleaned and re-established.*

Evaluation

Unnamed Main Rd Photos 731-864A (Exhibit B)

The of Unnamed Main Rd was evaluated for Category 4 compliance as described in Title III – Land Use and Development, Division II, Fire Safe Regulations.

The evaluation begins just at the River Rd Intersection (Photo 731). As shown in Photo 731A the measurements of the Gate at the intersection of Unnamed Main Rd and River Rd has a width of approximately 12 feet. Unnamed Main Rd generally has a width that varies from 10 feet to 12 feet wide with 1-2 foot shoulders. The terrain is moderately hilly, and many grades are above 16%. The majority of the roadway curves generally have turnouts at curves and pullouts at strategically placed locations.

The following are photo locations that are not in accordance with Humboldt County SRA Ordinance, AASHTO Guidelines for Geometric Design of Low Volume Roads, or industry standard practices for gravel roadway maintenance, and drainage.

Gate Widths Under 14 Feet: Photo 731A, 783, & 864
Curve Locations Requiring Turnouts: None
Slope Over 16%: Photos 732, 744, 763, 779, 787, 789, 793, 801, 805, 812, 814, 818, 819, 824, 830, 835, 857
Width Under 12 Feet: Photos 732, 763, 779, 781, 787, 789, 793, 797, 812, 822. 857, 861
Slide Locations: None
Clogged / Partially Culverts: Photos 754, 781 (sizing), 848
Erosion / Drainage Issues: None

This roadway does not meet a Category 4 or Equivalent Category 4 Roadway. The Engineer recommends the following improvements for safe travel on River Rd for the amount of Average Daily Traffic (ADT) calculated.

Slopes Over 16%: *The Engineer recommends no improvements for photo locations where slopes are over 16%. The traffic benefits to environmental impacts doesn't justify paving or lowering grades. Typically, the steep grades shown at these locations are for short segments of roadway.*

Width Under 12 Feet: *The Engineer recommends no improvements. The traffic benefits to environmental impacts doesn't justify cutting into hillsides or expanding travel width on hillsides with fill.*

Clogged / Partially Culverts: *The Engineer recommends unclogging all culverts that have been shown to be partially clogged or fully clogged.*

Miscellaneous: *The Engineer recommends that grass be mowed along the roadside, which will expose the turnouts. Then Engineer also recommends that the roadside ditches be cleaned and re-established.*

Private Access Rd Photos 500-529 (Exhibit B)

The of Private Access Rd was evaluated for Category 2 compliance as described in Title III – Land Use and Development, Division II, Fire Safe Regulations. The evaluation begins approximately at the southwest corner of APN 208-231-012.

The Private Access Rd for APN 208-231-012 generally has a width that varies from 10 feet to 12 feet wide with 1-2 foot shoulders. The terrain is moderately hilly, and most grades are below 16%, but many are above 16%. The Private Access Rd for APN 208-231-012 generally have turnouts at curves and pullouts at strategically placed locations along with turnaround areas.

The following are photo locations that are not in accordance with Humboldt County SRA Ordinance, AASHTO Guidelines for Geometric Design of Low Volume Roads, or industry standard practices for gravel roadway maintenance, and drainage.

Curve Locations Requiring Turnouts: None
Slope Over 16%: Photos 502, 508, 509, 513, 518, & 519
Width Under 12 Feet: Photos 502, 509, 518, 519, & 525
Slide Locations: None
Clogged / Partially Culverts: Photos 524/526.
Erosion / Drainage Issues: 527

This roadway does not meet a Category 2 Roadway. The Engineer recommends the following improvements for safe travel on Private Access Rd for APN 208-231-012 for the amount of Average Daily Traffic (ADT) calculated.

Slopes Over 16%: *The Engineer recommends no improvements for over 16%. The traffic benefits to environmental impacts doesn't justify paving or lowering grades. Typically, the steep grades shown at these locations are for short segments of roadway.*

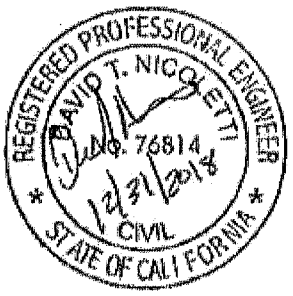
Width Under 12 Feet: *The Engineer recommends no improvements width. The traffic benefits to environmental impacts doesn't justify cutting into hillsides or expanding travel width on hillsides with fill.*

Clogged / Partially Culverts: *The Engineer recommends unclogging all culverts that have been shown to be partially clogged or fully clogged.*

Erosion / Drainage Issues*: Erosion Issues are related to a lack of waterbars or rolling dips, impacted by nearby slide, or clogged culverts. The Engineer recommends applying a cross slope or rolling dip to the Private Access Rd for APN 208-231-012 at Photo 527.*

Miscellaneous: *The Engineer recommends that grass be mowed along the roadside, which will expose the turnouts. Then Engineer also recommends that the roadside ditches be cleaned and re-established.*

Report Completed By:



David Nicoletti PE

Exhibit A

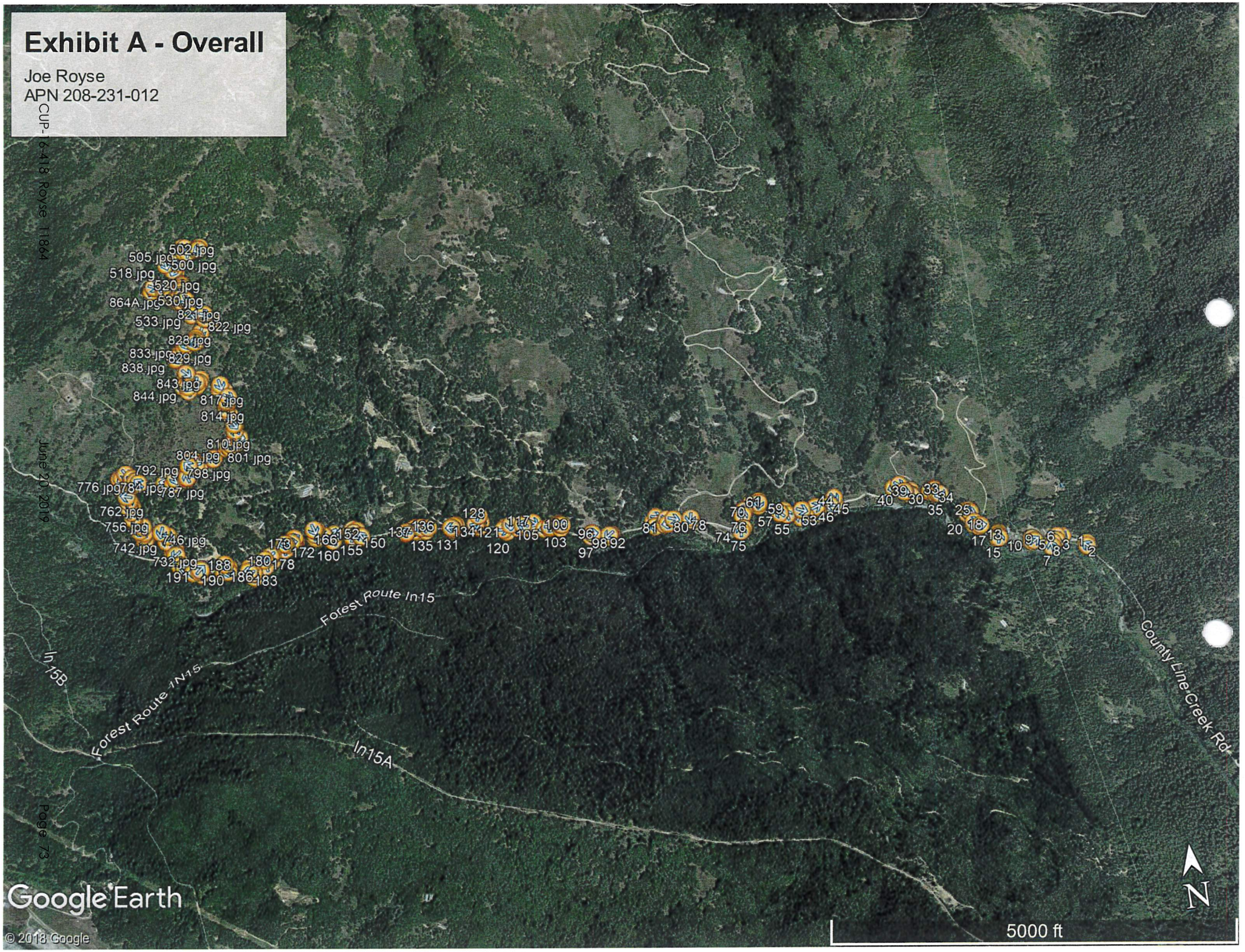


Exhibit A - Overall
Joe Royse
APN 208-231-012
CUP-16-418 Royse 11864
June 20, 2019
Page 73
Forest Route In15
In15B
Forest Route 1N15
In15A
County Line Creek Rd
Google Earth
© 2018 Google
5000 ft
N


Exhibit A
River Rd Photos 1-42
CUP 16-418 Royse 11864
June 20, 2019
Page 74
Google Earth
© 2018 Google
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Exhibit A
River Rd Photos 43-76
CUP-16-418 Royse 11864
June 20, 2019
Page 75
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© 2018 Google
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Exhibit A
River Rd Photos 77-99
CUP-16-418 Royse 11864
June 20, 2019
Page 76
Ridge Rd
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Exhibit A
River Rd Photos 100-134
CUP 16-418 Rowe 11864
June 20, 2019
Page 77
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Google Earth
© 2018 Google
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400 ft


Exhibit A
River Rd Photos 135-166
Cur 14418 Royse 11864
June 20, 2019
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Google Earth
© 2018 Google
400 ft
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Exhibit A
River Rd Photos 167-198
CUP16-418 Royse 11864
June 20, 2019
Page 79
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Google Earth
© 2018 Google
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400 ft

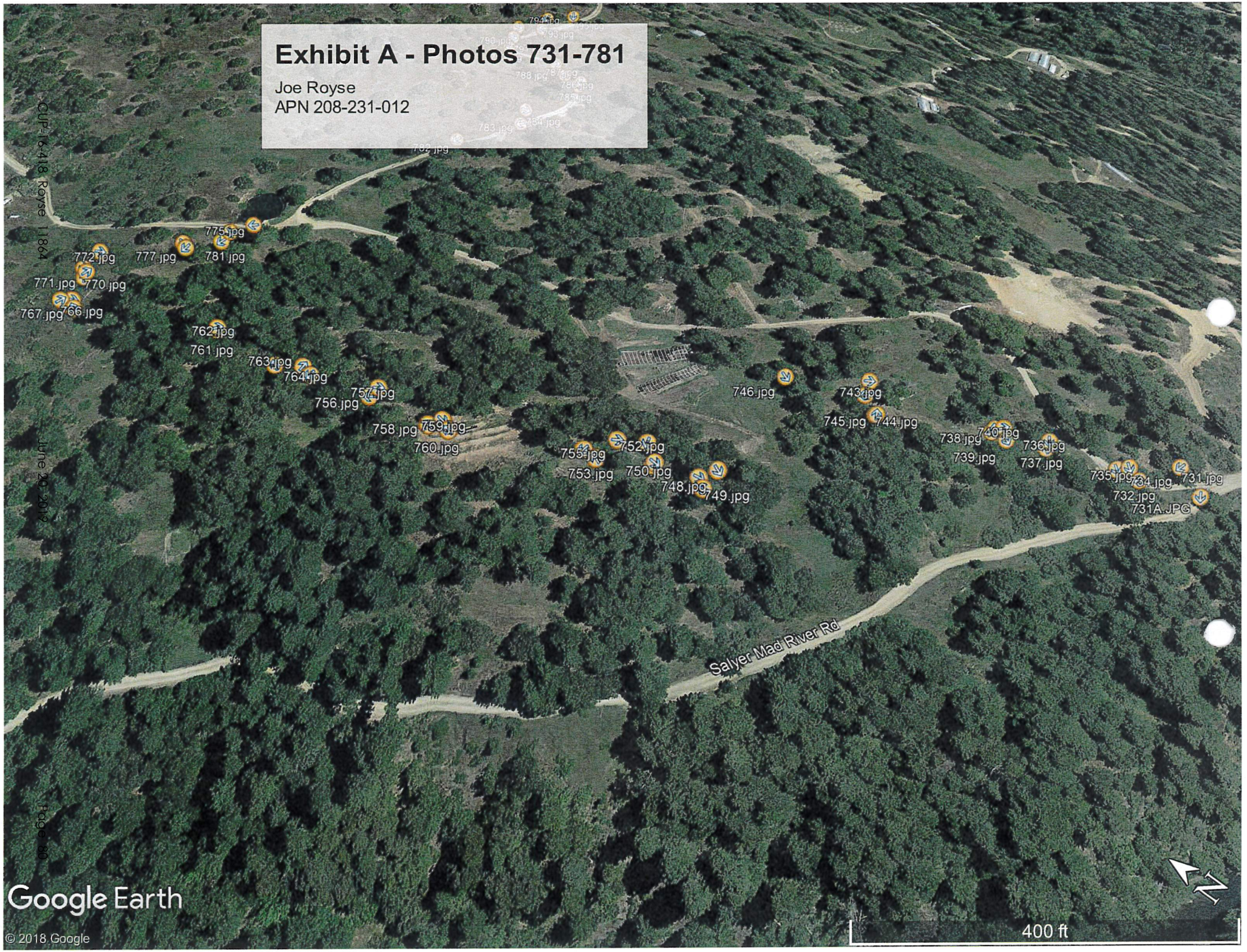
Exhibit A - Photos 731-781
Joe Royse
APN 208-231-012
CUP-16-418 Royse 11864
June 20, 2019
Page 80
775.jpg
772.jpg
777.jpg
781.jpg
771.jpg
770.jpg
767.jpg
766.jpg
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763.jpg
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737.jpg
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748.jpg
749.jpg
735.jpg
734.jpg
731.jpg
732.jpg
731A.JPG
Salyer Mad River Rd
Google Earth
© 2018 Google
400 ft
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Exhibit A - Photos 782-795
Joe Royse
APN 208-231-012
CUP-16418 Royse 11864
June 20, 2019
Page 81
782.jpg
783.jpg
784.jpg
786.jpg
787.jpg
788.jpg
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792.jpg
793.jpg
794.jpg
795.jpg
Google Earth
© 2018 Google
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100 ft


Exhibit A - Photos 796-807
Joe Royse
APN 208-231-012
CUP-16-418 Royse 11864
June 20, 2019
Page 82
796.jpg
797.jpg
798.jpg
799.jpg
801.jpg
802.jpg
803.jpg
804.jpg
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Google Earth
© 2018 Google
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100 ft


Exhibit A - Photos 808-819
Joe Royse
APN 208-231-012
CUP-16-418 Royse 11864
June 20, 2019
Page 83
818.jpg
819.jpg
818A.jpg
819A.jpg
814.jpg
815.jpg
816.jpg
817.jpg
813.jpg
812.jpg
810.jpg
809.jpg
808.jpg
Google Earth
200 ft
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Exhibit A - Photos 827-849
Joe Royse
APN 208-231-012
CUP-16-418 Royse 11864
June 20, 2019
Page 84
827.jpg
828.jpg
829.jpg
830.jpg
833.jpg
834.jpg
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Google Earth

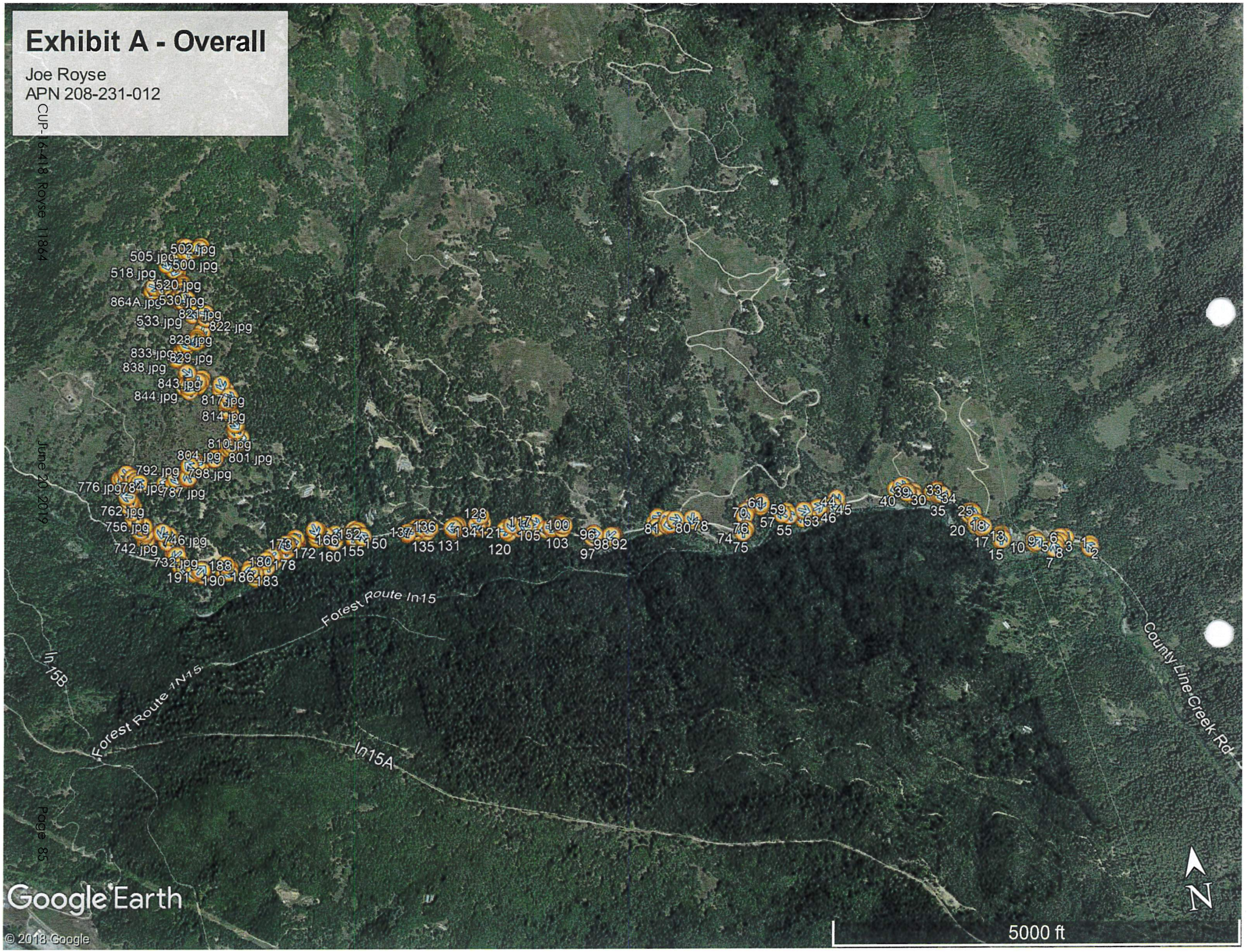
Exhibit A - Overall
Joe Royse
APN 208-231-012
CUP-16-418 Royse 11864
June 20, 2019
Page 85
Forest Route In15
Forest Route 1N15
In15B
In15A
County Line Creek Rd
Google Earth
© 2018 Google
5000 ft
N

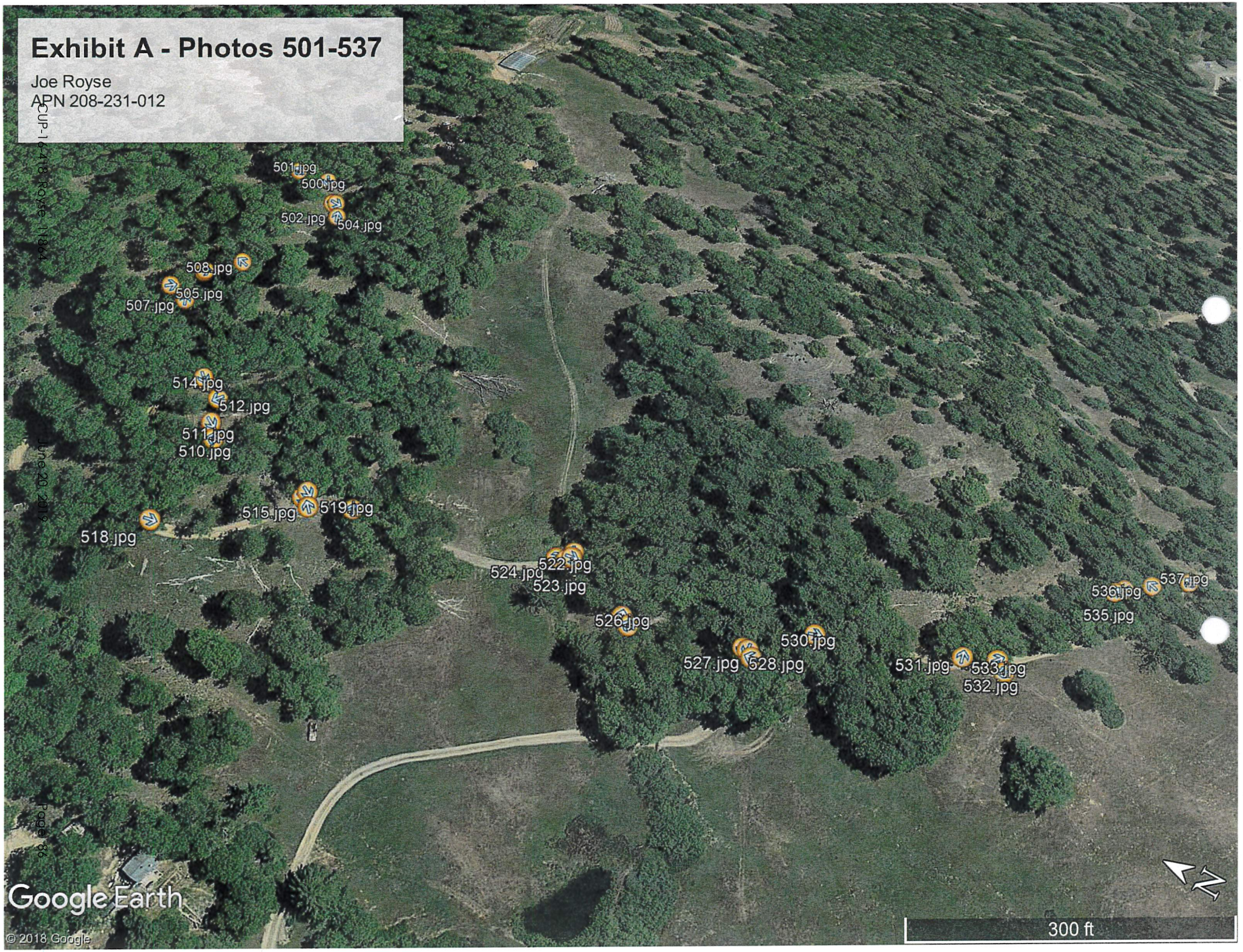
Exhibit A - Photos 501-537
Joe Royse
APN 208-231-012
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300 ft
Google Earth
© 2018 Google

Exhibit B

Photo #1 River Rd Width 13.9'

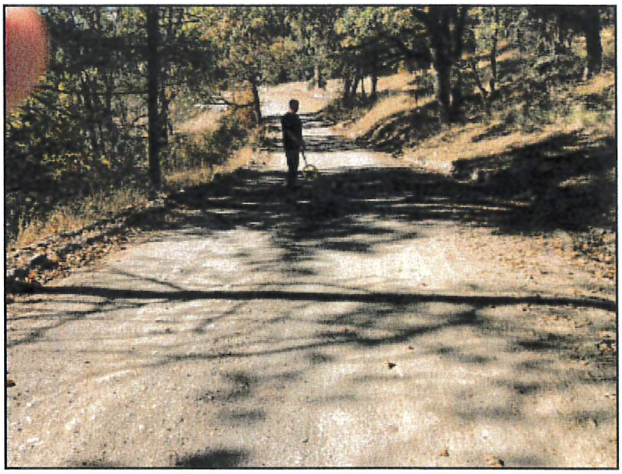


Photo #2 River Rd Looking NW

Photo #3 River Rd Looking East @ RR Car Bridge

Photo #4 River Rd Warning sign @ RR Car Bridge

Photo #5 River Rd Looking SW @ Curve w/ Turn-out

Photo #6 River Rd Looking NE @ Curve w/ Turn-out

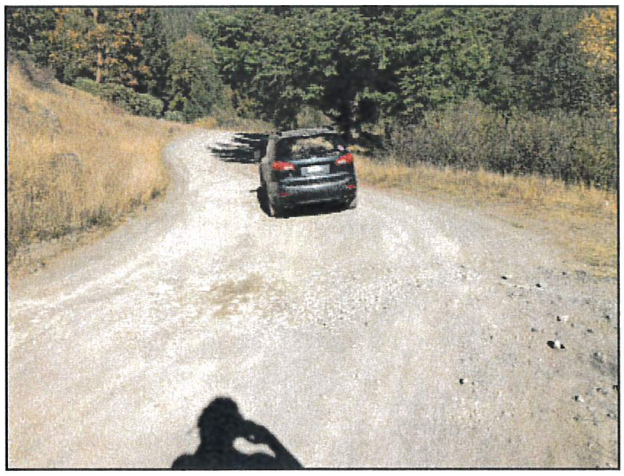


Photo #7 River Rd Looking NE @ Curve w/ Turn-out

Photo #8 River Rd Looking SW @ Curve w/ Turn-out

Photo #9 River Rd Looking SE @ Curve w/ Turn-out

Photo #10 River Rd Width 14.3'

Photo #11 River Rd Looking East @ Curve w/ Turnout

Photo #12 River Rd Looking West

Photo #13 River Rd Looking NW

Photo #14 River Rd Looking SE @ Potholing Caused by Poor Drainage

Photo #15 River Rd Looking @ 36" Culvert In

Photo #16 River Rd Looking @ Dual 36" Culverts Out

Photo #17 River Rd Looking NW @ Curve w/ Turnout

Photo #18 River Rd Looking SE @ Curve w/o Turnout

Photo #19 River Rd 14.8% Slope & 11.5' Width

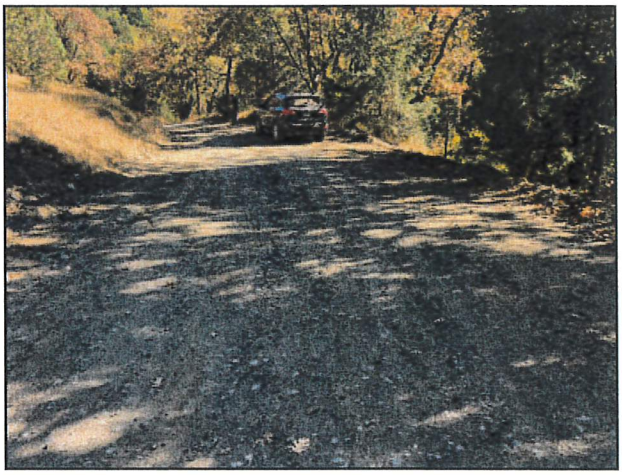


Photo #20 River Rd Looking SE @ Curve w/ Turnout

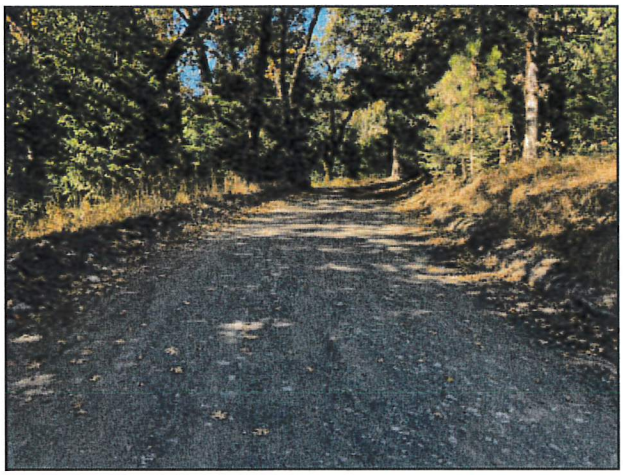


Photo #21 River Rd Looking NW

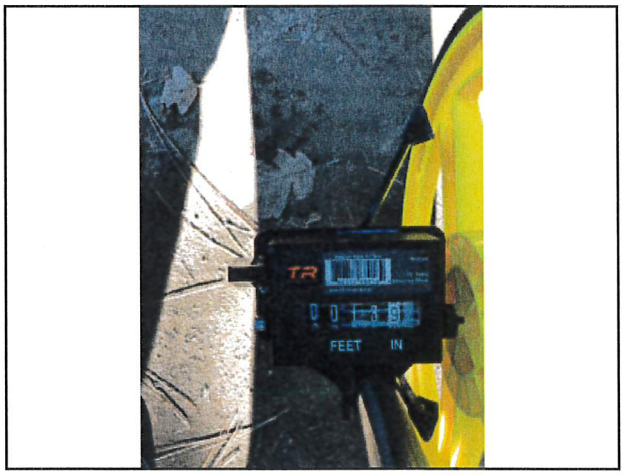


Photo #22 River Rd 13.9' Width

Photo #23 River Rd Looking @ Curve w/ Turnout

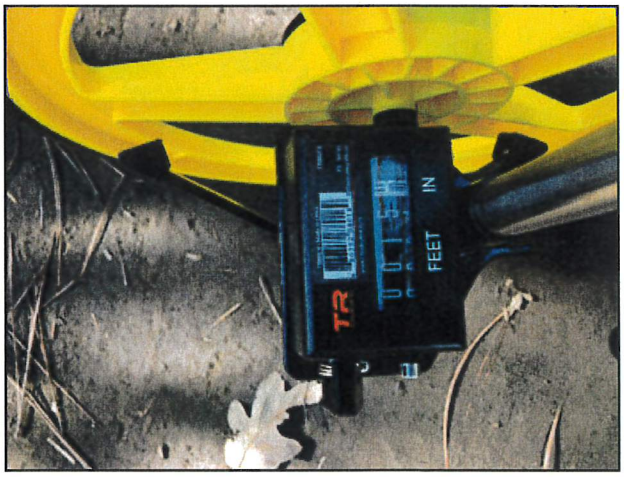


Photo #24 River Rd 15.10' Width Including Turn-out Width

Photo #25 River Rd Looking @ Clogged 12" Culvert In

Photo #26 River Rd Looking @ Clogged 12" Culvert Out

Photo #27 River Rd Looking NW @ Erosion & Tire Tracks Over Eroded Area

Photo #28 River Rd 12" Clogged 12" Culvert Out

Photo #29 River Rd Looking @ Clogged 12" Culvert In

Photo #30 River Rd Looking SE @ Erosion

Photo #31 River Rd Looking SE Closeup @ Erosion

Photo #32 River Rd Looking SE @ Tire Tracks @ Erosion Area

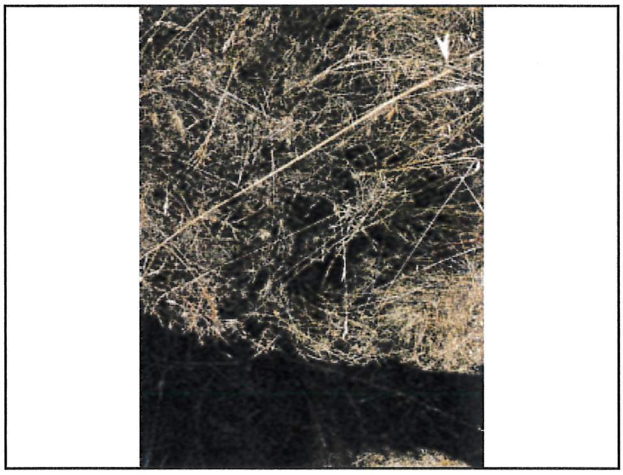


Photo #33 River Rd Possible Culvert In. No Culvert Out Was Identified.

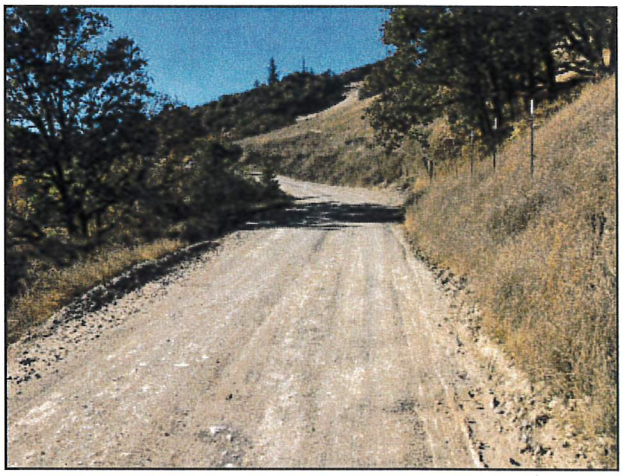


Photo #34 River Rd Looking NW @ Curve w/ Pullout

Photo #35 River Rd 10.3% Slope & 12.2' Width

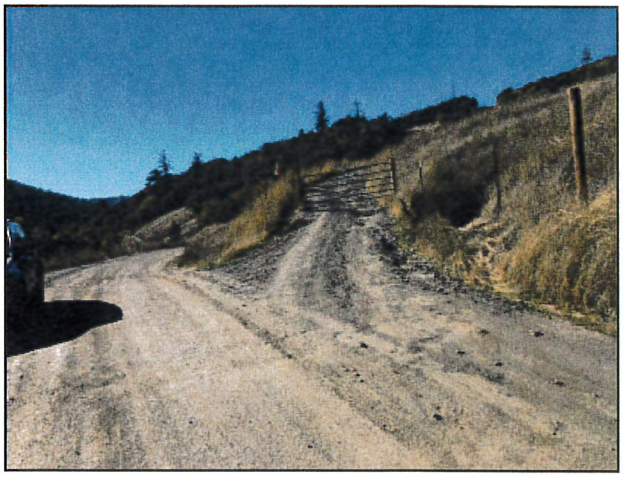


Photo #36 River Rd Looking NW @ Curve w/ Pullout & Approach

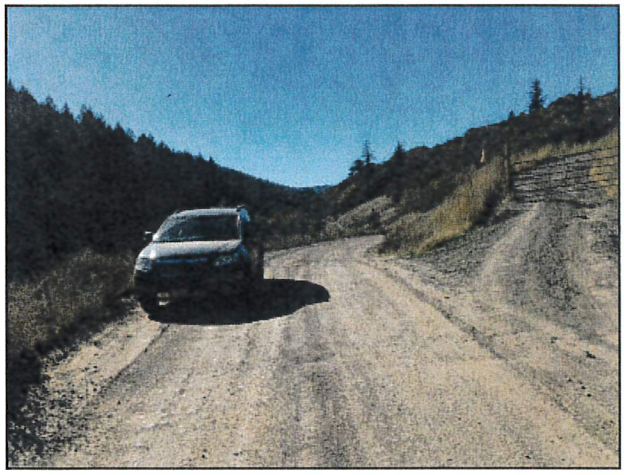


Photo #37 River Rd Looking West @ Curve w/ Pullout

Photo #38 River Rd Looking East

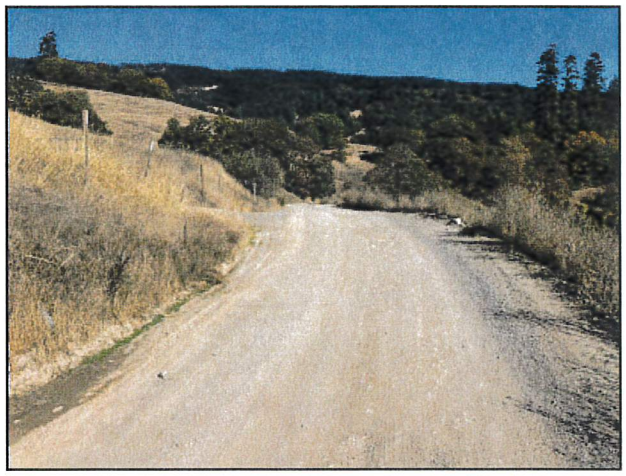


Photo #39 River Rd Looking Eas t @ Curve w/ Pullout

Photo #40 River Rd Width 16.1'

Photo #41 River Rd Looking East @ Curve w/ Pullout & Approach w/ Erosion from Drainage

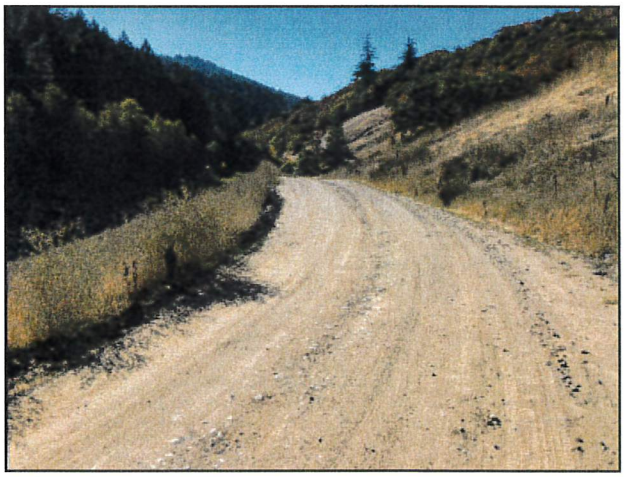


Photo #42 River Rd Looking West @ Curve w/ Pullout

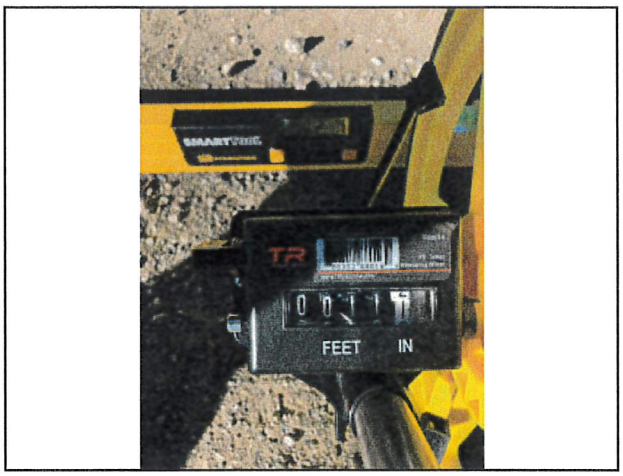


Photo #43 River Rd Slope 10.2% Width 11.1'

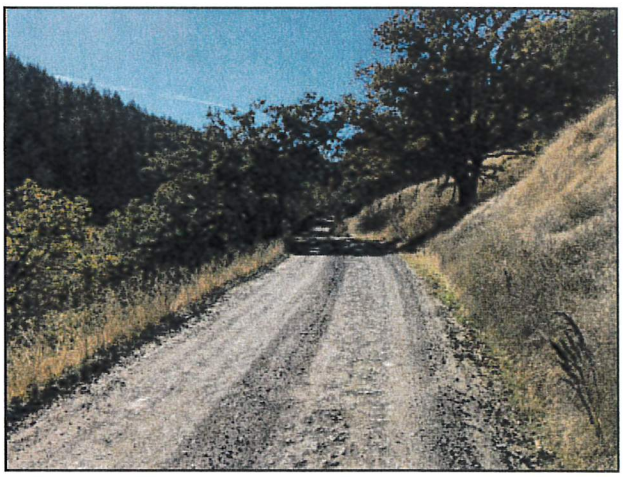


Photo #44 River Rd Looking West @ Curve w/o Turnout

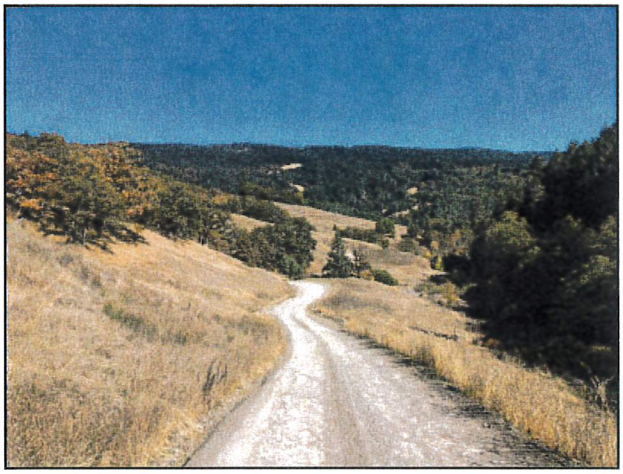


Photo #45 River Rd Looking East @ Curve w/ Pullout

Photo #46 River Rd Looking West @ Turnout

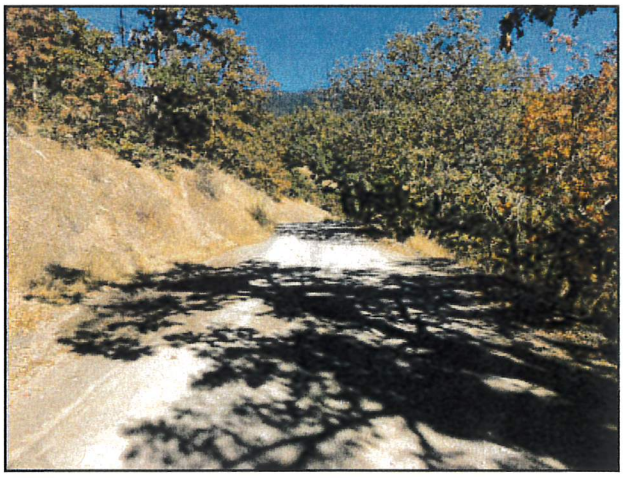


Photo #47 River Rd Looking East @ Turnout

Photo #48 River Rd Looking West @ Turnout

Photo #49 River Rd 12" Culvert Out

Photo #50 River Rd Partially Clogged 12" Culvert In

Photo #51 River Rd Looking North @ Slide Area Feeding Culvert In Photo #50

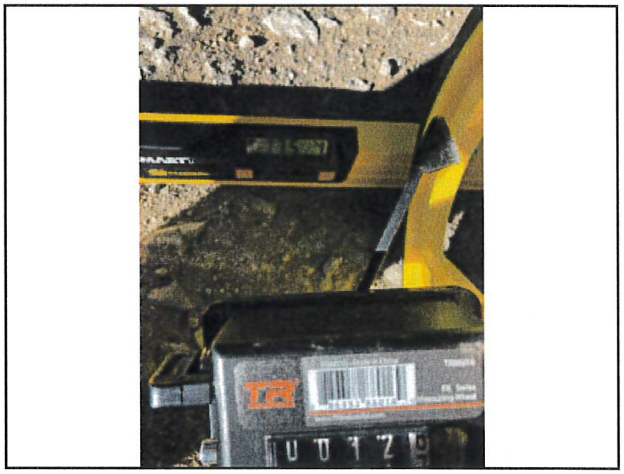


Photo #52 River Rd Slope 17.5% Width 12.8'

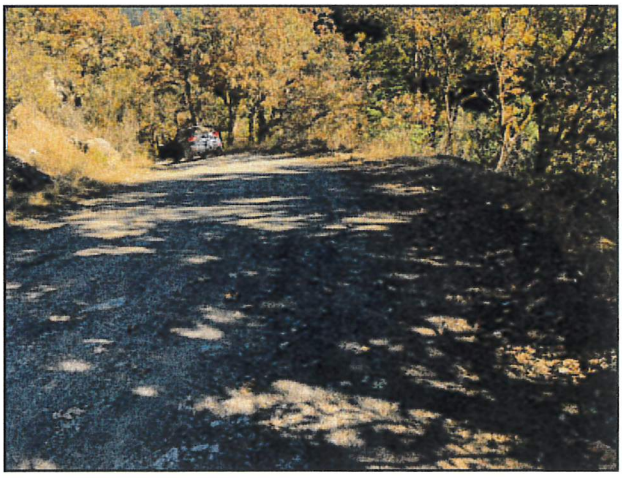


Photo #53 River Rd Looking SE @ Curve w/ Turnout

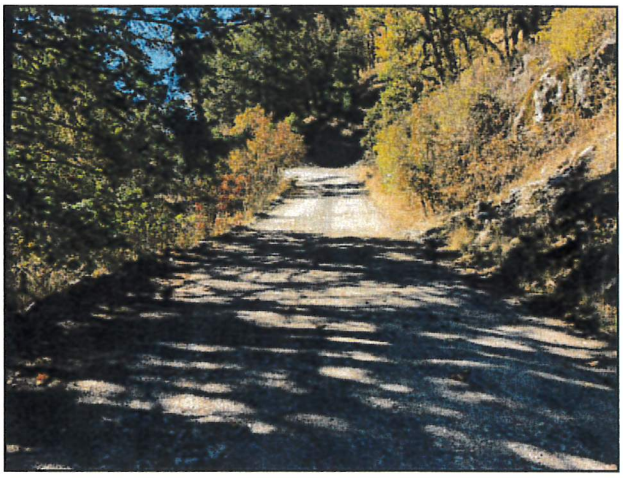


Photo #54 River Rd Looking NW @ Curve w/ Turnout

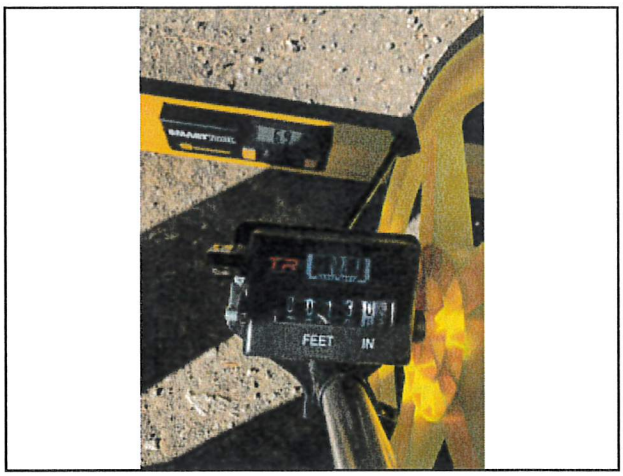


Photo #55 River Rd Slope 6.9% Width 13.0'

Photo #56 River Rd Looking @ Slide

Photo #57 River Rd Looking East @ Curve w/ Turnout

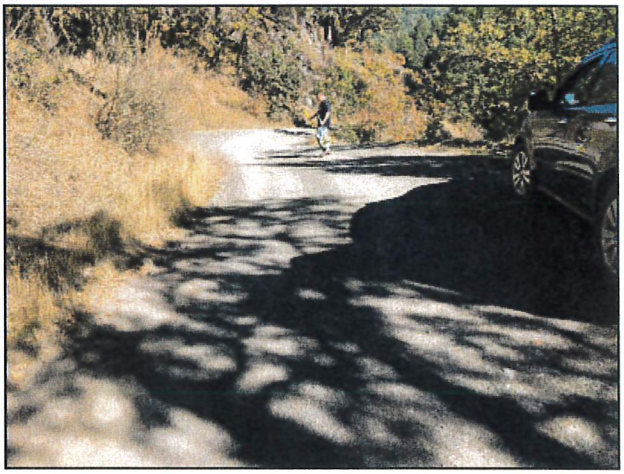


Photo #58 River Rd Looking East @ Curve w/ Turnout

Photo #59 River Rd Looking NW @ Curve w/ Turnout

Photo #60 River Rd Looking @ Erosion and Tire Tracks through Erosion Area

Photo #61 River Rd Looking @ Clogged Culvert In

Photo #62 River Rd Looking @ 36" Culvert Out (Dual?)

Photo #63 River Rd Looking @ 36" Culvert Out (Dual?)

Photo #64 River Rd Looking SW @ Turnout Prior to Curve

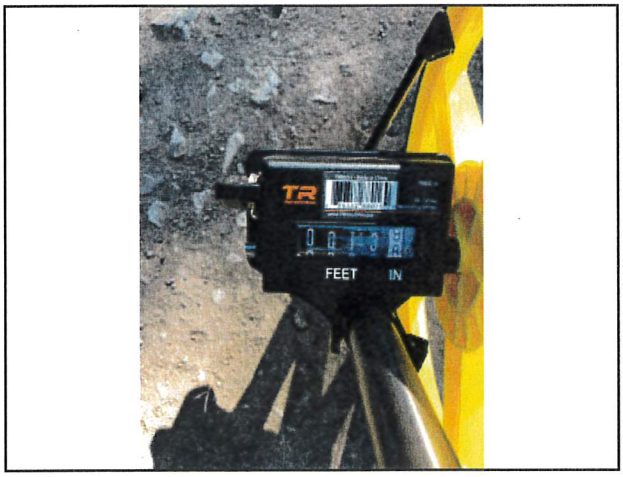


Photo #65 River Rd Width 13.9'

Photo #66 River Rd Looking SE @ Curve w/ Turnout

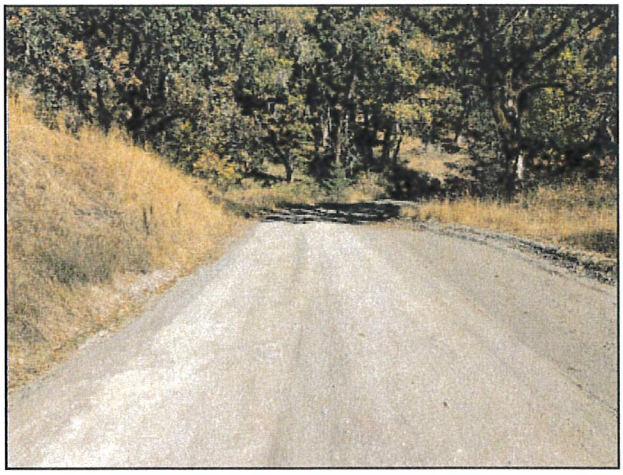


Photo #67 River Rd @ Turnout Looking @ Curve

Photo #68 River Rd Looking @ 6" Culvert In

Photo #69 River Rd Looking @ 6" Culvert Out

Photo #70 River Rd @ Turnout Looking @ Curve

Photo #71 River Rd Looking North @ Curve w/ Pullout

Photo #72 River Rd Width 16.2' @ Turnout

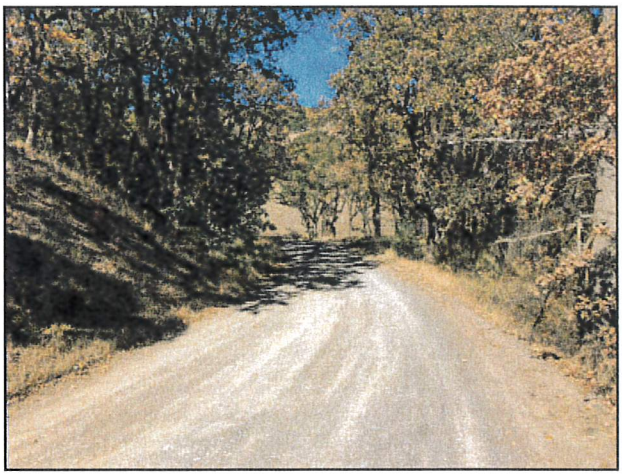


Photo #73 River Rd @ Turnbout Looking North @ Curve

Photo #74 River Rd Looking @ Curve w/ Turnout

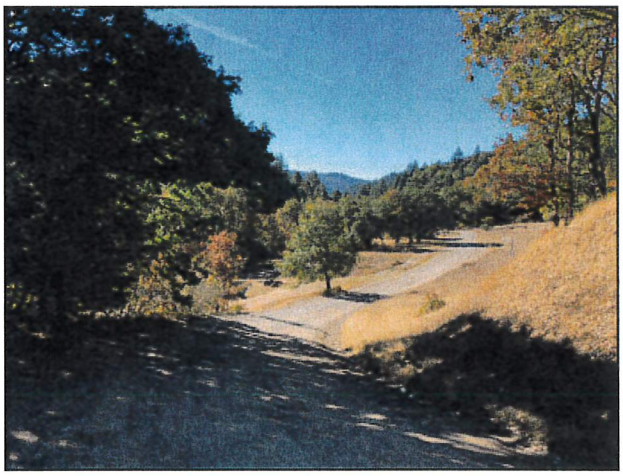


Photo #75 River Rd Looking SW @ Curve w/ Turnout

Photo #76 River Rd Looking SW @ Curve w/ Turnout

Photo #77 River Rd Width 18.1' @ Turnout

Photo #78 River Rd Looking West @ Turnaround Area

Photo #79 River Rd Looking West@ Curve w/ Turnout

Photo #80 River Rd Looking East @! Curve w/ Turnout

Photo #81 River Rd Slope 9.0% Width 10.7'

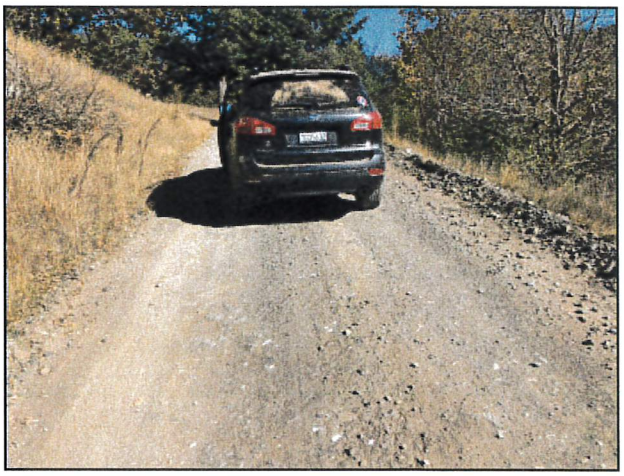


Photo #82 River Rd Looking East

Photo #83 River Rd Looking West @ gate

Photo #84 River Rd 15Ft Wide Gate

Photo #85 River Rd Looking West @ Turnout @ Curve

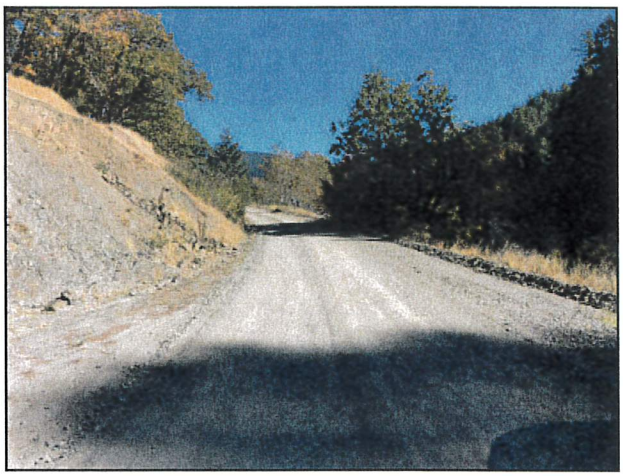


Photo #86 River Rd Looking East @ Turnout @ Curve

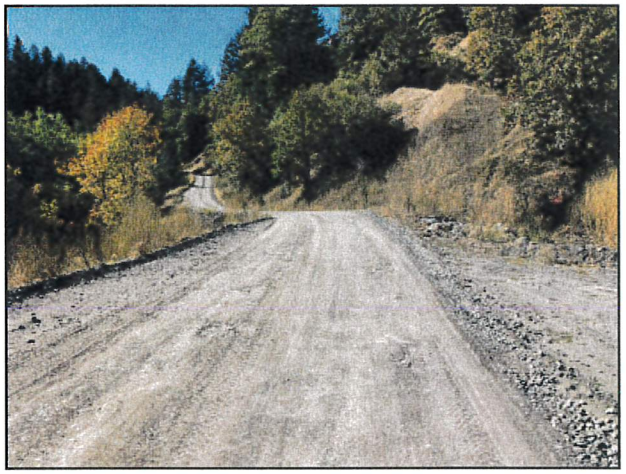


Photo #87 River Rd @ Turnout Looking West Towards Curve

Photo #88 River Rd Looking East @ Curve w/ Turnout

Photo #89 River Rd Looking @ 24" Culvert Out

Photo #90 River Rd Looking @ Clogged 24" Culvert In

Photo #91 River Rd Looking North @ Approach

Photo #92 River Rd Looking SW @ Turnout, Approach, & Curve

Photo #93 River Rd Width 12.4'

Photo #94 River Rd Width 11.10'

Photo #95 River Rd Width 11.9'

Photo #96 River Rd Looking SE @ curve w/ Turnout

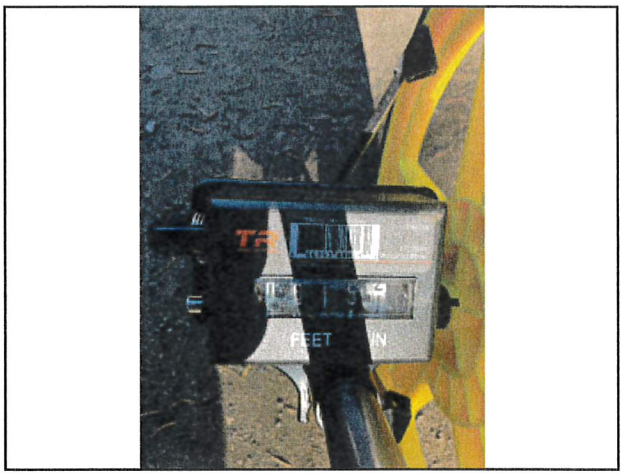


Photo #97 River Rd Width 15.1'

Photo #98 Ri ver Rd Looking SE @ Curve w/ Turnout

Photo #99 River Rd Looking NW @ Drainage Problem

Photo #100 River Rd @ Curve w/ Turnout Looking SE

Photo #101 River Rd Width 12.6'

Photo #102 River Rd Looking SE @ Curve w/ Turnout

Photo #103 River Rd Looking @ 36" Culvert Out

Photo #104 River Rd Looking @ Partially Clogged 36" Culvert In

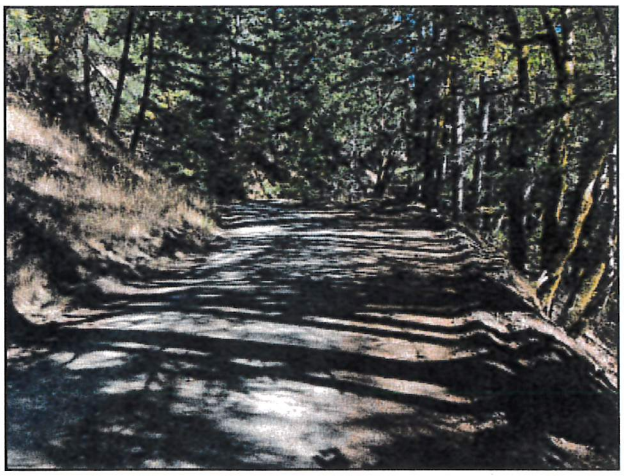


Photo #105 River Rd Looking East @ Curve w/ Turnout

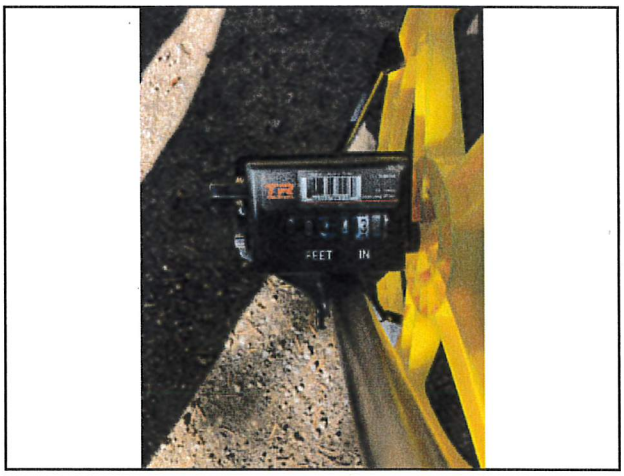


Photo #106 River Rd Width 14.3'

Photo #107 River Rd Looking West @ Curve w/ Turnout

Photo #108 River Rd Looking West @ Curve w/ Turnout

Photo #109 River Rd Looking East @ Curve w/ Turnout

Photo #110 River Rd Looking @ 36" Culvert Out

Photo #111 River Rd Looking @ Partially Clogged 36" Culvert In

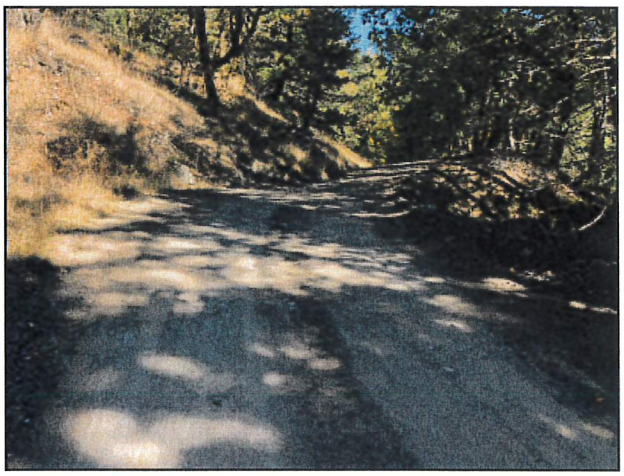


Photo #112 River Rd Looking East @ Curve w/ Turnout

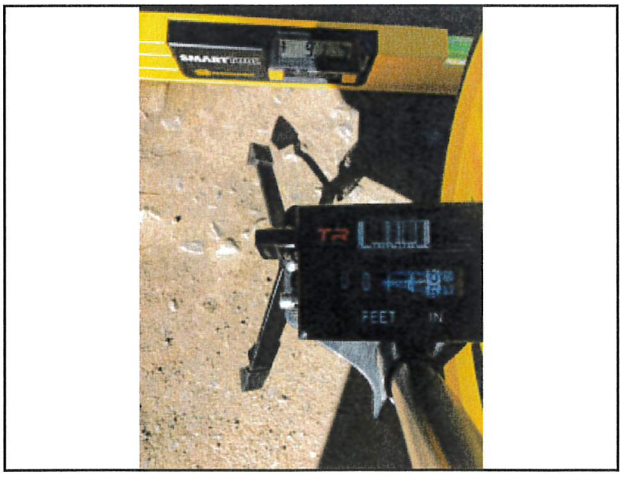


Photo #113 River Rd Slope 9.1% Width 14.6'

Photo #114 River Rd Looking @ Erosion Issue

Photo #115 River Rd Looking East @ Narrowed Curve Area w/ Tire Tracks Over Eroded Area

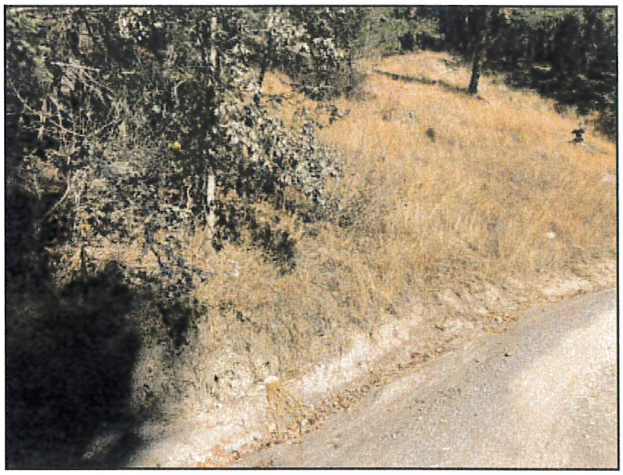


Photo #116 River Rd Looking North @ Hilside Slip

Photo #117 River Rd Looking West @ Narrowed Curve Area w/ Tire Tracks Over Curve Area

Photo #118 River Rd Looking North @ Hilside Slip

Photo #119 River Rd Looking West

Photo #120 River Rd Looking East @ Curve w/ Turnout

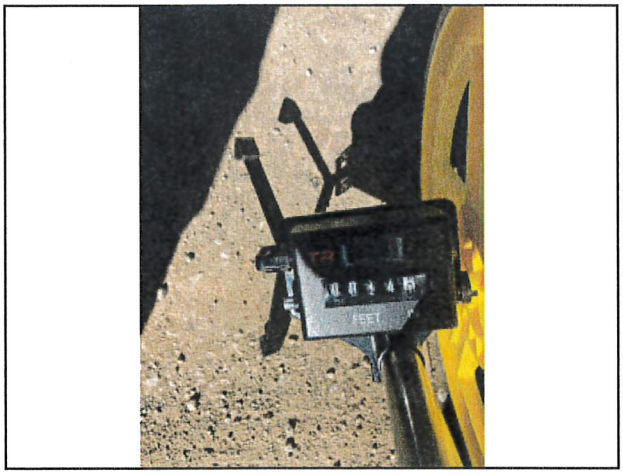


Photo #121River Rd Width 14.0'

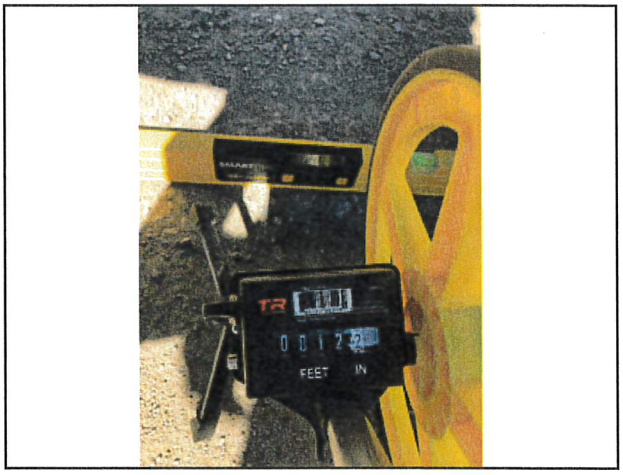


Photo #122 River Rd Width 12.2'

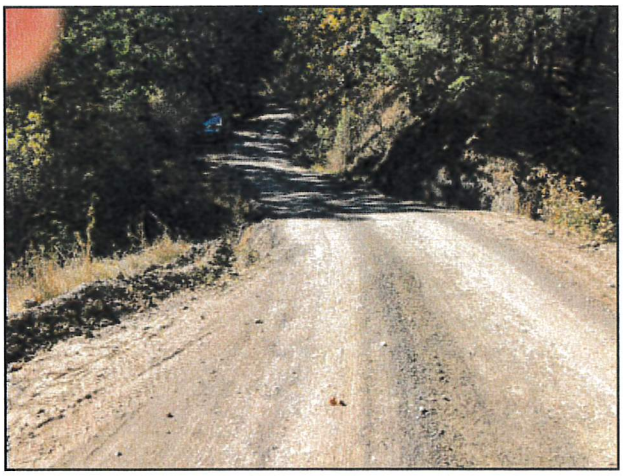


Photo #123 River Rd Looking West@ Curve w/ Turnout

Photo #124 River Rd Looking East @ Curve w/ Turnout

Photo #125 River Rd Looking @ 36" Culvert Out

Photo #126 River Rd Looking @ 36" Culvert In

Photo #127 River Rd Looking @ Culvert Location In Photos 126 & 125 Erosion Area

Photo #128 River Rd Slope 14.2% Width 12.0'

Photo #129 River Rd @ Curve w/ Turnout Looking NW

Photo #130 River Rd Looking East @ Approach Looking @ Curve w/ Turnout

Photo #131 River Rd Slope 3.6% Width 14.1'

Photo #132 River Rd Looking West

Photo #133 River Rd Looking East @ Curve w/ Turnout

Photo #134 River Rd Looking West @ Curve w/ Turnout

Photo #135 River Rd @ Curve w/ Turnout LookingWest

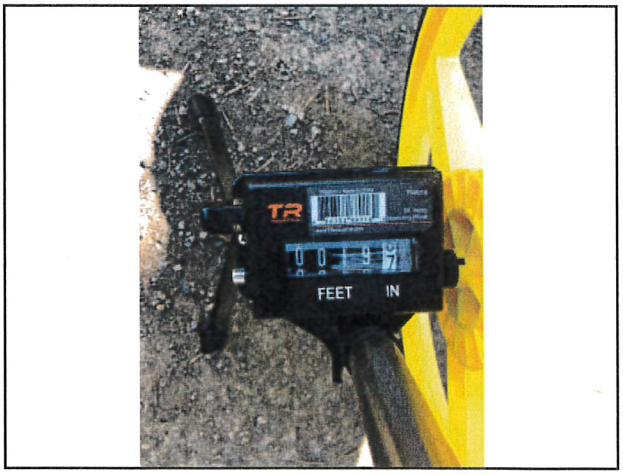


Photo #136 River Rd Turnbout Widt 19.7' Including Turnout

Photo #137 River Rd @ Curve w/ Turnout Looking West

Photo #138 River Rd Looking @ 36" Culvert Out

Photo #139 River Rd Looking @ Partially Clogged 36" Culvert In

Photo #140 River Rd Looking West @ Drainage Issue

Photo #141River Rd Looking East @ Curve w/ Turnout

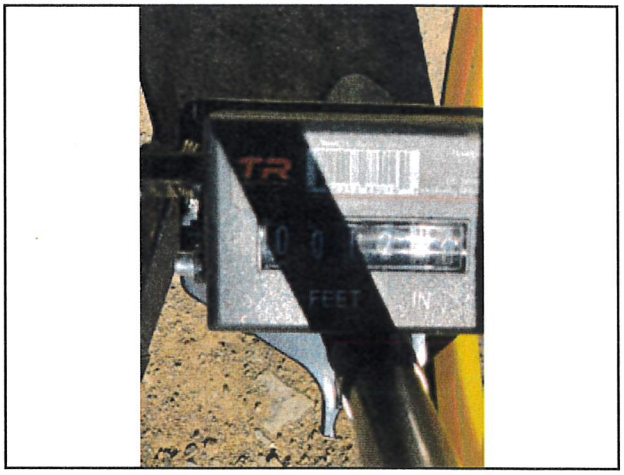


Photo #142 River Rd Width 21.10' Including Turnout

Photo #143 River Rd Looking @ Drainage Path Over Road

Photo #144 River Rd Looking @ Clogged Culvert Inlet. Outlet Was't Found

Photo #145 River Rd Looking @ Erosion Issue From Lack of Functioning Culvert

Photo #146 River Rd Width 14.5'

Photo #147 River Rd Looking West from Turnout Area

Photo #148 River Rd Slope 16.3'

Photo #149 River Rd Looking NW @ Curve w/ Turnout

Photo #150 River Rd Looking NW @ Curve w/ Turnout

Photo #151River Rd Looking @ 24" Culvert Out

Photo #152 River Rd Looking @ Partially C;logged 24" Culvert In

Photo #153 River Rd Looking @ 36" Culvert Out

Photo #154 River Rd Looking @ Partially Clogged 36" Culvert In

Photo #155 River Rd Looking SE @ Curve w/ Turnout & Old Culvert

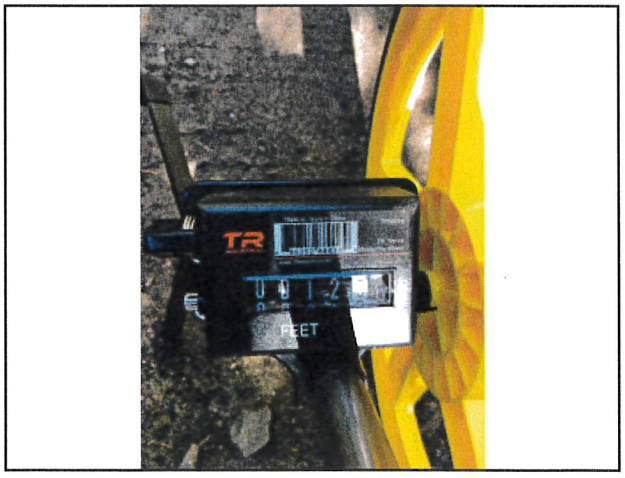


Photo #156 River Rd Width 12.8'

Photo #157 River Rd Looking West @ Curve w/ Turnout & Old Culvert Seen In Photo 155

Photo #158 River Rd Slope 23.7% Width 11.8'

Photo #159 River Rd Looking East @ Approach

Photo #160 River Rd Looking West

Photo #161River Rd Looking West @ Curve w/ Turnout

Photo #162 River Rd Looking West

Photo #163 River Rd Width 17.0' @ Turnout

Photo #164 River Rd Looking @ Partially Clogged 24" Culvert Out

Photo #165 River Rd Looking @ 24" Culvert Out

Photo #166 River Rd Looking SE @ Curve w/ Turnout

Photo #167 River Rd @ Turnout Looking SW

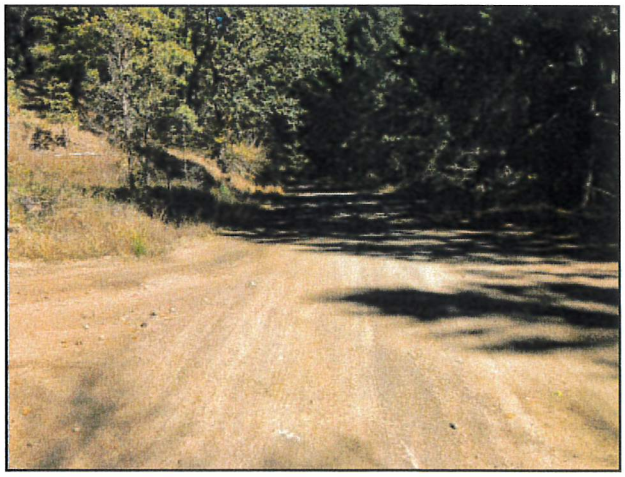


Photo #168 River Rd Looking NE @ Approach & Turnout Area

Photo #169 River Rd Looking @ Partially Clogged 24" Culvert Under Approach Running E to W

Photo #170 River Rd Looking SW @ Curve w/ Turnout

Photo #171River Rd Looking @ 24" Culvert Out Under Approach Running East to West

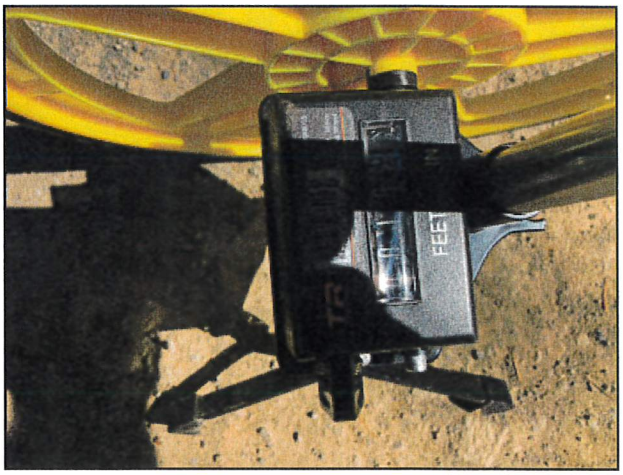


Photo #172 River Rd Turnout Width 16.5'

Photo #173 River Rd Looking @ 36" Culvert Out, Inlet Not Found

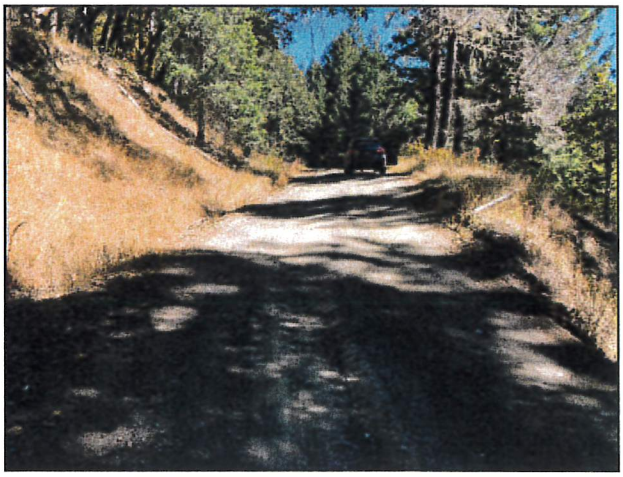


Photo #174 River Rd Looking NE @ Curve w/ Pullout

Photo #175 River Rd Looking SW @ Turnout Area

Photo #176 River Rd Looking @ Partially Clogged 36" Culvert In

Photo #177 River Rd Looking NE @ Curve w/ Turnout

Photo #178 River Rd Looking @ 36" Culvert Out

Photo #179River Rd Looking @ Partially Clogged 36" Culvert In

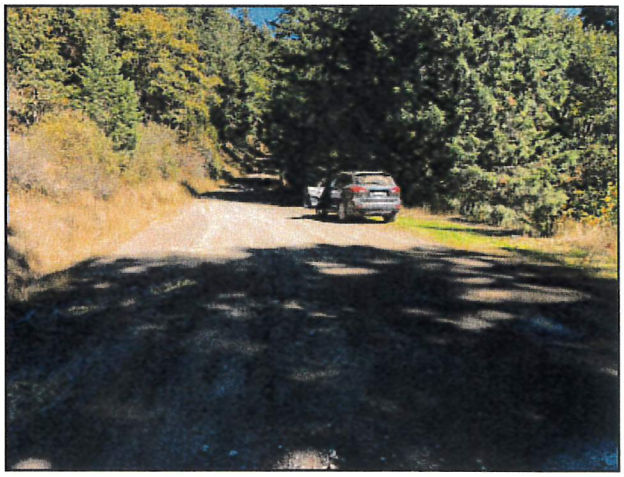


Photo #180 River Rd Looking East @ Turnbout Area

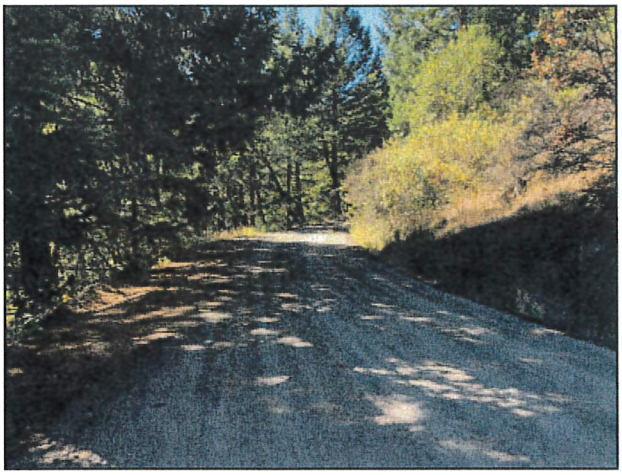


Photo #181River Rd Looking SW @ Curve w/ Turnout

Photo #182 River Rd Looking West

Photo #183 River Rd Slope 11.0% Width 12.7'

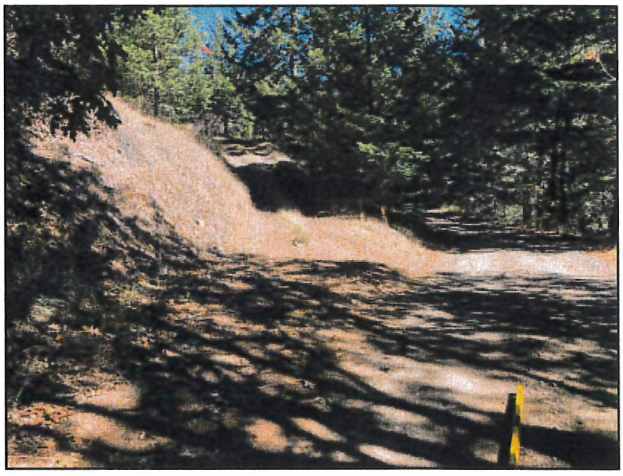


Photo #184 River Rd Looking SE @ Approach

Photo #185 River Rd @ Turnout Looking NW @ Approach

Photo #186 River Rd Width 12.5'

Photo #187 River Rd Looking SE @ Turnout Area

Photo #188 River Rd Looking NW @ Approach

Photo #189 River Rd @ Turnout Loking @ Curve w/ Turnout

Photo #190 River Rd Looking SW @ Turnout Area On Curve

Photo #191 River Rd Looking North @ Gate on Approach

Photo #192 River Rd Looking East

Photo #193 Slope 14.5% Width 12.0'ver Rd

Photo #194 River Rd Looking SE @ Curve w/ Turnout

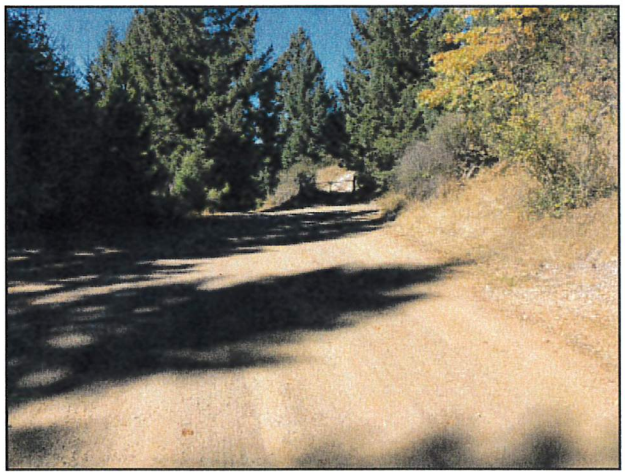


Photo #195 River Rd Looking NW @ Curve w/ Turnout

Photo #196 River Rd Looking NW @ Gated Aproach

Photo #197 River Rd Looking East @ Curve w/ Turnout

Photo #198 12' Gate @ Approach on River Rd Seen in Photo 196

Photo #199 River Rd Slope 8.9$ Width 11.7'

Photo #200 River Rd Looking NW

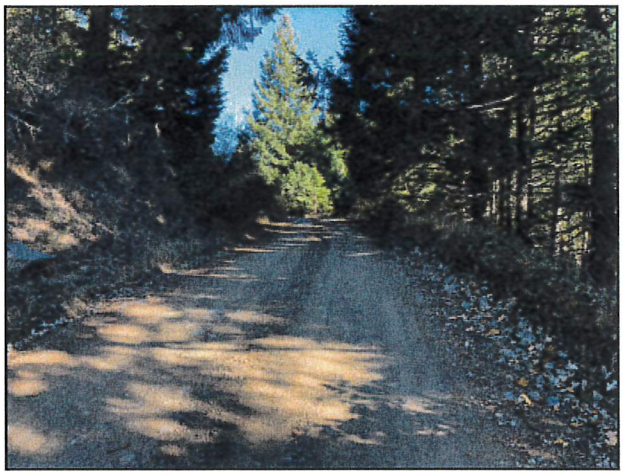


Photo #201 River Rd Looking SE @ Curve w/ Turnout

Photo #202 River Rd Looking NW @ Curve w/ Turnout

Photo #203 River Rd Looking @ 12" Culvert In

Photo #204 River Rd Looking @ 12" Culvert Out

Photo #500 Private Access Rd APN 208-231-012
Looking SW

Photo #501 Private Access Rd APN 208-231-012
Looking NE

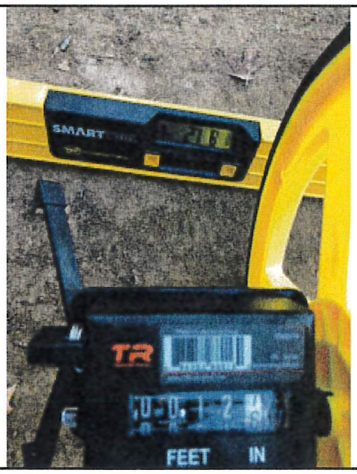


Photo #502 Private Access Rd APN 208-231-012
Slope 21.8% Width 12'6"

Not Used

Photo # 503 Not Used

Photo #504 Private Access Rd APN 208-231-012
@ Curve w/ Turnout Looking NE

Photo #505 Private Access Rd APN 208-231-012
@ Curve w/ Turnout Looking SW

Photo #506 Private Access Rd APN 208-231-012
@ Curve w/ Turnout Looking SW

Photo #507 Private Access Rd APN 208-231-012
@ Curve w/ Turnout Looking NE

Photo #508 Private Access Rd APN 208-231-012
Slope 21.8% Width 12'9"

Photo #509 Private Access Rd APN 208-231-012
Slope 22.0% Width 11'3"

Photo #510 Private Access Rd APN 208-231-012
@ Curve w/ Turnout Looking SW

Photo #511 Private Access Rd APN 208-231-012
@ Curve w/ Turnout Looking NE

Photo #512 Private Access Rd APN 208-231-012
@ Curve w/ Turnout Looking NW

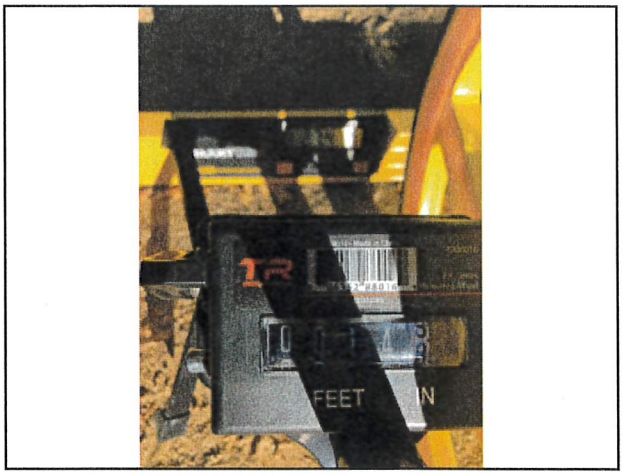


Photo #513 Private Access Rd APN 208-231-012
Slope 21.4% Width 14'9"

Not Used

Photo #514 Not Used

Photo #515 Private Access Rd APN 208-231-012
@ Curve w/ Turnout Looking NE

Photo #516 Private Access Rd APN 208-231-012
@ Curve w/ Turnout Looking SW

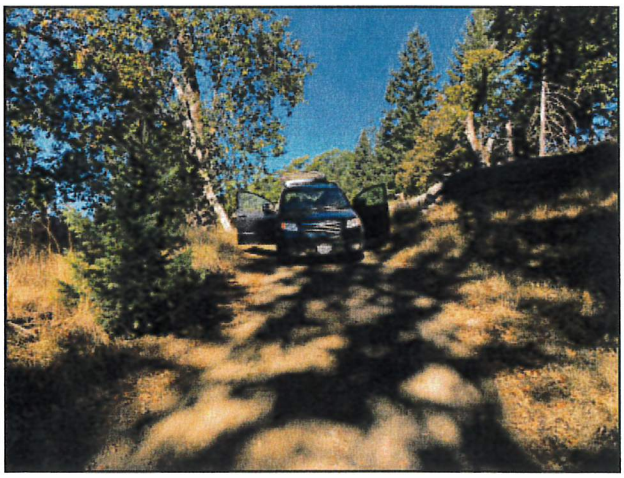


Photo #517 Private Access Rd APN 208-231-012
@ Curve w/ Turnout Looking SW

Photo #518 Private Access Rd APN 208-231-012
Slope 18.8% Width 10'2"

Photo #519 Private Access Rd APN 208-231-012
Slope 28.8% Width 11'7""

Photo #520 Private Access Rd APN 208-231-012
@ Curve w/ Turnout Looking SW

Photo #521 Private Access Rd APN 208-231-012
@ Curve w/ Turnout Looking @ Quad Trail

Photo #522 Private Access Rd APN 208-231-012
@ Curve w/ Turnout Looking South

Photo #523 Private Access Rd APN 208-231-012
@ Curve w/ Turnout Looking SE

Photo #524 Private Access Rd APN 208-231-012
Looking @ Partially Clogged 12" Culvert In

Photo # 525 Private Access Rd APN 208-231-012
Width 10'9"

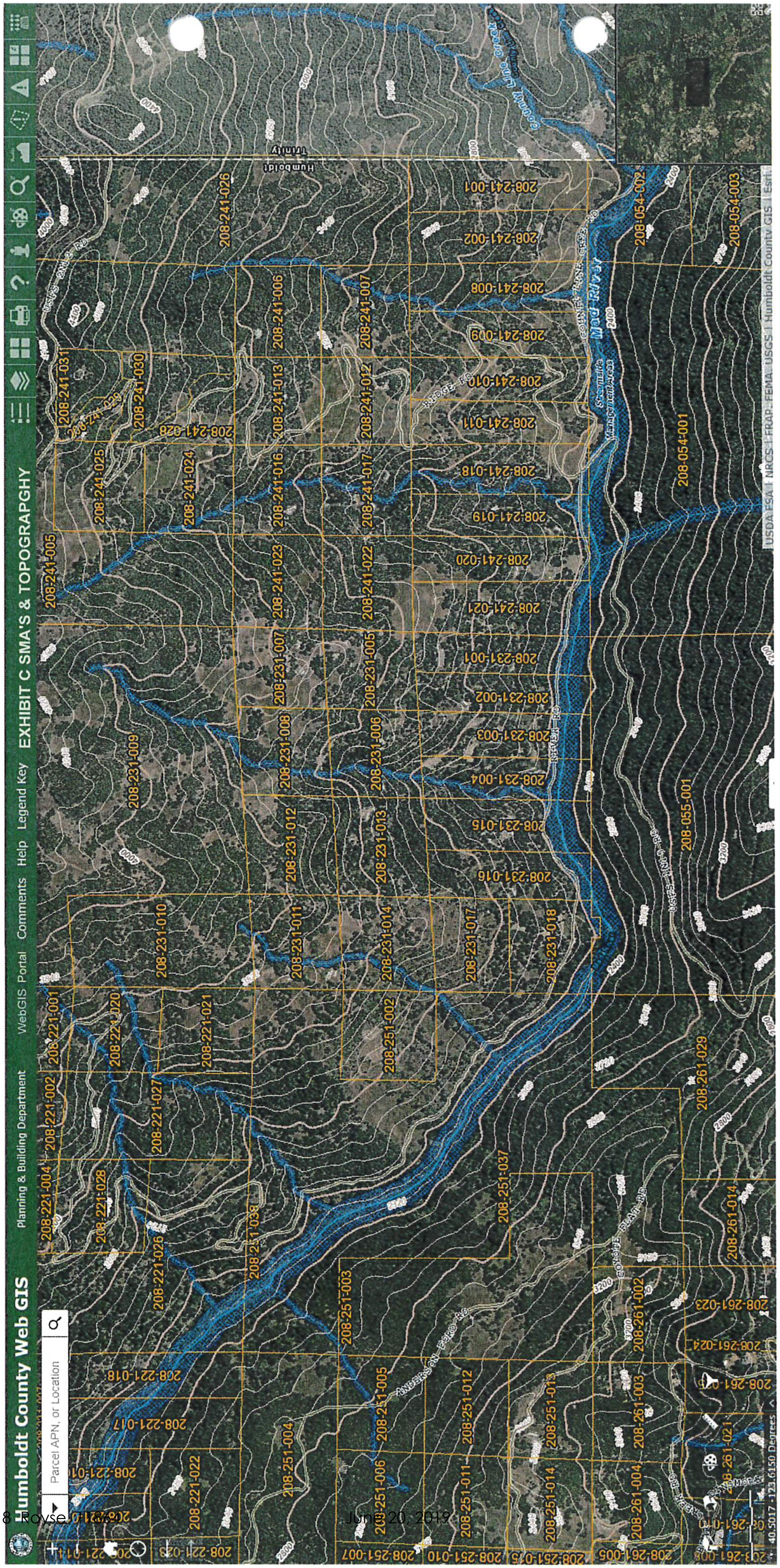
Photo #526 Private Access Rd APN 208-231-012
Looking @ Partially Clogged Culvert Out

Photo #527 Private Access Rd APN 208-231-012
@ Curve w/ Turnout Looking SE

Photo #528 Private Access Rd APN 208-231-012
@ Curve w/ Turnout Looking NW

Photo #529 Private Access Rd APN 208-231-012
@ Curve w/ Turnout Looking SE

Exhibit C


Humboldt County Web GIS
Planning & Building Department
WebGIS Portal
Comments
Help
Legend Key
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Parcel APN, or Location
Humboldt
Trinity
Mad River
USDA FSA | NRCS | FRAP, FEMA, USGS | Humboldt County GIS | Esri

Exhibit D

Exhibit E

PUBLICATION 8262

Rural Roads: A Construction and Maintenance Guide for California Landowners

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Many thousands of miles of privately maintained rural roads extend throughout California, and they are used for resource management as well as residential and recreational access by over 500,000 landowners (fig. 1). The California Department of Forestry and Fire Protection (CAL FIRE) estimates that another 2.7 million acres of forest and rangeland will be developed over the next 40 years, requiring the construction of thousands of miles of new roads (CAL FIRE 2003). Poorly located, designed, or maintained roads are the primary cause of water quality degradation in rural watersheds.

This publication is designed to help rural landowners understand how to improve and maintain existing roads. It also provides guidance on planning new roads. It is written for people who have little to no previous experience in managing a road. If you have recently purchased a rural parcel or have become responsible for road maintenance on an existing parcel—or otherwise feel unprepared for maintaining roads—this publication should help you. It mainly addresses single-lane dirt or rock-surfaced rural roads, also known as "low-volume" roads because they are not expected to carry high traffic levels.

This publication should enable you to

- understand the basic principles of good road design and maintenance
- recognize current and potential road erosion and drainage problems
- consider remedial treatments that may be needed
- develop rough estimates for the costs of road improvements and maintenance
- communicate clearly with contractors who may perform work on your roads

Figure 1. Low-volume road that has been newly graveled and out-sloped, San Bernardino County. *Photo:* Richard Harris.

UC PEER REVIEWED

Figure 2. This cross drain delivers sediment from the roadside ditch under the road surface to a nearby stream. The road fill is also eroding. *Photo:* Jared Gerstein.

WHY WORRY ABOUT ROAD DESIGN AND MAINTENANCE?

Road maintenance should be considered an unavoidable necessity of living in a rural area. Landowners should take the time to learn about roads because when they are well designed and maintained they have fewer impacts on the environment, are more reliable, and cost less to maintain than problem roads.

Environmental impacts

Rural roads are a major source of sediment that ends up in stream channels (fig. 2). This is especially true for unpaved roads located near streams that are used year-round. Sediment delivered to streams from roads causes streams to run muddy and take a long time to clear after storms. Sediment can end up depositing in pools and adversely affect habitat for fish and other aquatic organisms.

Reliability

Poorly designed, located, or maintained roads have a higher risk of failing during storms than roads that are well constructed and maintained. Adequately sized culverts, free-flowing ditches, and properly drained road surfaces are essential elements of a reliable road network. Without these elements in place, even a moderate winter storm can render a road impassable.

Cost of repetitive maintenance

The bottom line is that it can be extremely expensive to maintain roads that are designed, located, or constructed poorly. It is usually more cost effective to identify and remedy chronic road problems than to treat only the symptoms of the problem year after year. For example, it will cost less in the long run to install proper drainage structures and rock surfacing on a road that gets muddy and rutted every winter than to regrade the road surface every spring.

UNDERSTANDING ROAD COMPONENTS

Although roads vary in their configuration and design, they have common elements that affect their functionality and durability. Roads must create a flat surface for vehicle travel on sloped land. To do this, part of the hillslope is cut away (the *cut slope*) and the removed soils are placed below (the *fill slope*) and compacted to create a flat bench or *traveled way*. This is called *cut-and-fill* construction (fig. 3). A *balanced cut-and-fill* project uses all the cut material to generate the fill. In *full-bench* construction, the cut is made wide enough to accommodate the entire traveled way (fig. 4). The cut mate-

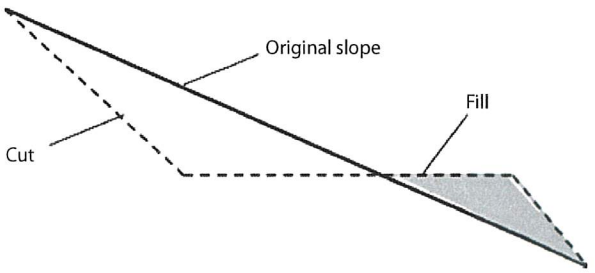

Figure 3. Cut-and-fill road construction design. *Source:* Kramer 2001.

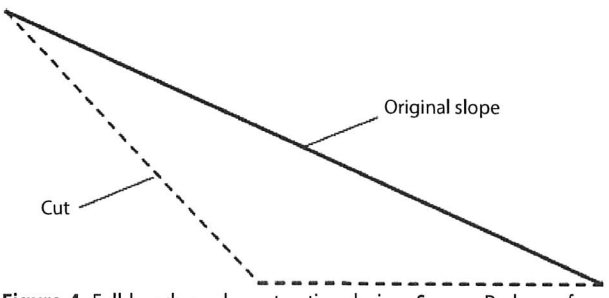

Figure 4. Full-bench road construction design. *Source:* Redrawn from Kramer 2001.

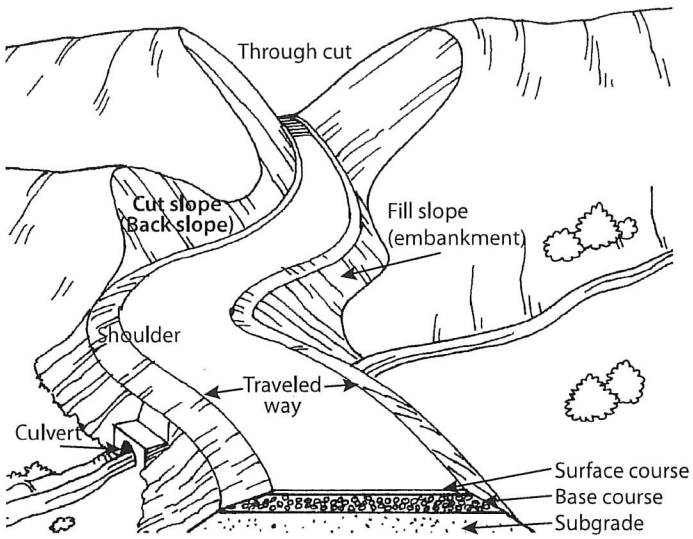

Figure 5. Components of a road. *Source:* Keller and Sherar 2003.

rial is not used in the road construction and must be hauled (*end-hauled*) to an off-site disposal area. Full-bench construction reduces the risk of fill slope failure but is usually more expensive due to hauling costs.

Ideally, a road should consist of three layers (fig. 5). The *subgrade* is the bottommost layer at the level of the in-place material. The *base course* is the main load-spreading layer and typically consists of gravels or gravelly soils, with sand and/or clay intermixed. The *surface course* or *surfacing* may consist of native materials, imported rock, or asphalt. It is placed on top of the base course to improve rider comfort, provide structural support, and weatherproof the road for wet season use. As a practical matter, many rural roads are not constructed in this way but consist entirely of native materials encountered during grading. This can be a factor contributing to poor performance.

All roads must incorporate features to drain water off the road surface and allow it to cross from one side to the other. Road drainage is the key to a road's integrity. *Culverts* are metal, concrete, or plastic pipes set beneath the road surface to drain ditches, springs, or streams crossed by the road. Culverts move water from the inside of the road (next to the cut slope) through a pipe to the outside of the road (to the fill slope or edge of bench). *Ditches* are used to collect water that accumulates from the road surface or hillslope on the inside or cut-slope side of an in-sloped road. *Ditch relief culverts* drain the accumulated water from the inside ditch to the outside of the road.

Besides culverts, common stream-crossing structures include bridges and low-water crossings or fords. *Bridges* usually cause fewer environmental impacts than culverts because they may not alter the natural channel form or require placement of fill in the channel. However, they are often more expensive to install than culverts. *Low-water fords* involve modifying and sometimes hardening a swale or stream channel to allow vehicles to drive through during low-flow periods (figs. 6 and 7). Less fill is introduced to the stream channel; however, vehicles driving through may input sediment to the stream continuously. Fords are typically impassable during high flows and so are rarely suitable for permanent roads.

Figure 6. Low-water crossing on a perennial stream, San Bernardino County. *Photo:* Richard Harris.

Figure 7. Concreted low-water crossing placed on bedrock outcrop in intermittent stream. *Photo:* Angela Wilson, Central Valley Regional Water Quality Control Board.

Figure 8. Rolling dips installed to drain an out-sloped road. *Source:* Bill Weaver, Pacific Watershed Associates.

Figure 9. Water bars installed on a road after timber harvesting. *Source:* Angela Wilson, Central Valley Regional Water Quality Control Board.

Rolling dips are constructed breaks in the road grade designed to drain water directly from the road surface to the outside of a road without using an inside ditch or ditch relief culvert (fig. 8). They require vehicles to slow their speed of travel.

A *water bar* is a mound of soil and an accompanying ditch on the road surface that interrupts water flow and diverts it off the road surface (fig. 9). It is typically not passable by vehicles and so is not used on permanent roads. A *berm* is a ridge of rock, soil, or asphalt usually found on the outside of a road shoulder to control surface water. It directs runoff to specific locations where water can be discharged without causing erosion. *Armoring* is the placement of a layer of rock on cut or fill slopes or ditches to prevent water from eroding the soil.

UNDERSTANDING ROAD DESIGN AND DRAINAGE

Draining water from the road surface quickly, without letting it concentrate, is key to preventing erosion and thus to maintaining a stable driving surface. Two characteristics influence how well water drains from the road surface: the steepness of the road (i.e. its *grade* or *gradient*), and the shape and cross slope of the traveled way. The gradient of the road is determined by its location and routing; thus, it cannot be changed without moving the road. The cross-sectional shape and slope of a road are the primary design features that may be manipulated to improve drainage.

Figure 10. These ruts were created by wet-weather use of an unsurfaced, poorly drained road. *Photo:* Angela Wilson, Central Valley Regional Water Quality Control Board.

Gradient

Roads with a gentle gradient are easiest to maintain as long as the slope is adequate to drain the water off the road surface. In general, road grades need to be a minimum of two percent to facilitate drainage, so that water will not accumulate on the surface and saturate the subgrade. Saturated subgrades in combination with repetitive splash erosion due to vehicle traffic are responsible for potholes and ruts (fig. 10). Steeper roads drain water more quickly, but this allows the water to develop more erosive power, necessitating measures to prevent erosion and destabilization.

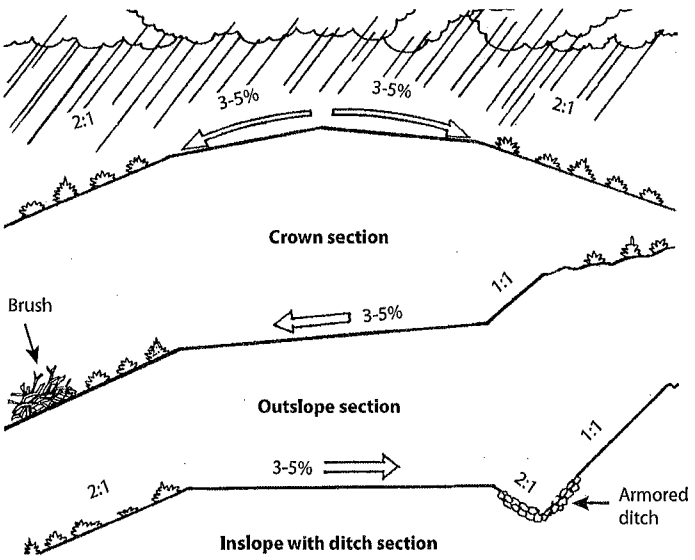

Figure 11. Typical road drainage options. *Source:* Keller and Sherar 2003.

Shape and slope of the surface

The shape and slope of the road surface determines how water will drain from it (fig. 11). In-sloped, out-sloped, and crowned roads drain water differently. The surface of an *in-sloped* road has a gentle tilt towards the cut slope of the hillside. Water collecting on the surface is drained into a ditch constructed between the road surface and the cut slope. Until recently, most roads in California were designed and constructed as in-sloped roads. When constructed in native materials, in-sloped roads are prone to erosion. Erosion can occur in the ditch, due to concentrated flow; on the road surface when ditch capacity is exceeded; or at the outfalls of culverts and cross drains receiving ditch flow. Ditch relief culverts must be installed frequently to accept ditch flow and dispose of it in a nonerosive manner.

Out-sloped roads are built with a slight angle of the road surface towards the fill slope. This allows the road surface runoff to sheet flow in a dispersed manner over the fill slope onto the adjacent hillside. Continuously concentrated runoff is avoided. Assuming that the fill slope and hillside are adequately vegetated or otherwise protected, no erosion occurs. Without a ditch, no ditch relief culverts are needed. This minimizes costs, reduces the chance of road failure due to culvert plugging, and may require less road width. Fill slopes may be armored to avoid erosion. Out-sloped roads may be difficult to drain on steep hillslopes and on road grades over 10 to 12 percent. They may be unsafe in areas with slippery soils or snow cover or in places where roads become icy, especially on curves where momentum would carry vehicles to the edge.

Crowned roads disperse water to each side of the road. They often require a system of ditches and cross drains which can be difficult to create and maintain. Therefore, they work best on two-lane roads with gentle grades or on the crest of hills.

UNDERSTANDING THE TYPE OF ROAD NEEDED

Deciding what kinds of roads you need for access to and on your property is an important step towards good stewardship. This includes considering whether or not existing roads are adequately designed for the intended uses. In some cases, existing roads may need to be upgraded to accommodate your uses or entirely new roads may be required.

The appropriate road design depends on the intended use. Roads with relatively high traffic levels, heavy truck use, or all-season use require a higher design standard and possibly a higher level of maintenance. In any case, the guiding principles should be to minimize erosion and ensure that the road is designed and maintained according to its use.

All-season roads

These are used year-round and are intended to be in continuous service for the foreseeable future. In rural subdivisions, these tend to be the "community roads" that run across multiple parcels and collect traffic from individual driveways. On timberlands or ranches, these permanent roads are the "haul roads" that can be used year-round, but receive most traffic during the dry season. Typically, all-season roads have rock

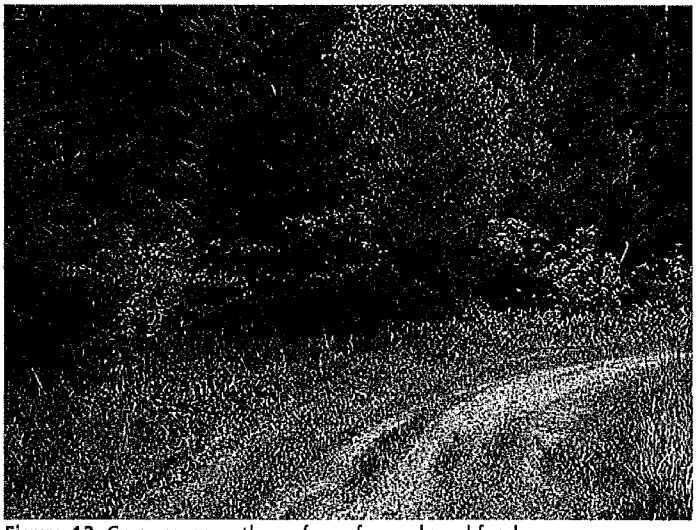

Figure 12. Grass cover on the surface of a road used for dry-season access. *Source:* Julie Bawcom, California Geological Survey.

or other surfacing (at least on steep hills and near stream channels) and bridges or culverts at stream crossings. They may be in-sloped, out-sloped, or crowned alone or in combination. They may be graded and resurfaced regularly to maintain a smooth running surface.

Seasonal roads

These may be constructed to a lower standard because they are used only during the dry season (fig. 12). They are often permanent roads so they require provisions for drainage even if they are not used in the winter. Rock surfacing may not be required. Fords, rather than culverts or bridges, may be used at stream crossings, particularly if the streams do not flow in the summer. Seasonal roads may have a steeper gradient than all-season roads and utilize an out-sloping drainage design. They may be closed after seasonal use and winterized by installation of water bars and revegetation of the road surface.

Temporary roads

These are used for only a short time and for a dedicated purpose, such as a timber harvest. Use is generally confined to the dry season and design standards may be minimal. Construction should minimize the volume of material excavated by following existing contours and cutting as little as possible. The road is closed after use, although the road bed may be retained for future use. Adequate closure should include removal of stream-crossing structures and associated fills along with installation of water bars to prevent any accumulation of water on the road surface. If vegetation cannot grow back on the road surface, it may be necessary to break up compaction and loosen the soil by 'ripping' it with a bulldozer. When closed, the entrance to the road should be blocked off to prevent all vehicle access.

ROAD DESIGN PRINCIPLES

Construction

- Minimize the number and length of roads in the watershed.
- Minimize the width of the road and the area disturbed during construction.
- Minimize road gradient. Gradient should be 12 percent or less.
- Use balanced cut-and-fill construction in gentle terrain.
- Avoid construction on steep slopes over 60 percent. Use full-bench construction where slopes over 60 percent cannot be avoided.
- Minimize cuts, fills, and vegetation clearing. Construct cut slopes on a ¾:1 or flatter slope.
- Build fill slopes on a 1½:1 or flatter slope.

Streams

- Stay as far away from streams as possible and minimize the number of crossings.
- Design crossings with adequate capacity to pass the 100-year storm flow plus the debris and sediment carried through the culvert during the storm.

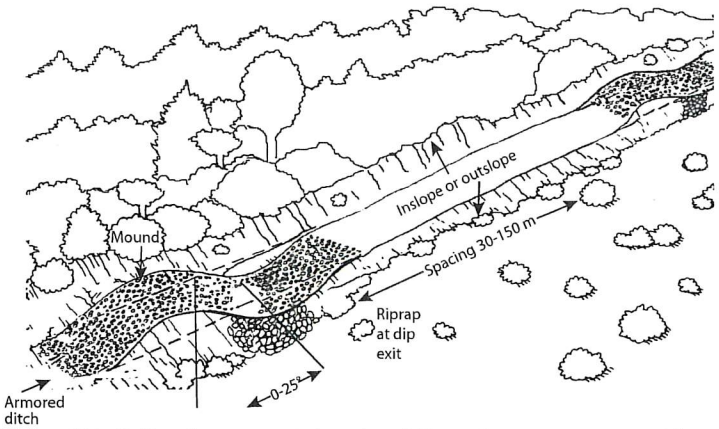

Figure 13A. Rolling dip on an out-sloped road. Proportions are exaggerated for clarity. (In practice, rolling dips can be subtle and still be effective.) *Source:* Keller and Sherar 2003.

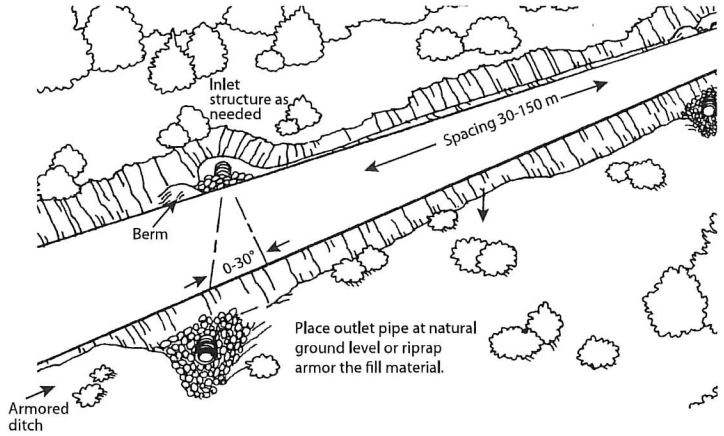

Figure 13B. Installation of ditch relief culverts on an in-sloped road section. *Source:* Keller and Sherar 2003.

- Reduce the potential for streams to be diverted onto the road surface by installing dips and trash barriers on streams that are not fish bearing.
- Protect crossing outlets with erosion control measures or downspouts.
- Facilitate fish passage, preferably by installing bridges, on fish-bearing streams.
- Use special techniques to cross meadows and other wet areas.

Drainage

- Provide adequate road surface drainage and minimize the concentration of runoff.
- Out-slope roads whenever practical. Road surfaces should slope 3 to 5 percent for road grades less than 10 percent. Install rolling dips for drainage (fig. 13A).
- In-slope road surfaces at an angle of 3 to 5 percent. Install ditch relief culverts (fig. 13B).
- Crown road sections with gentle slopes to prevent standing water on the road.
- Avoid wet and unstable areas.

Table 1. Rolling dip and ditch relief culvert recommendations

Road grade (%)	Soil erodibility	
	Low to non-erosive soils (ft)	Erosive soils (ft)
0–3	400	250
4–6	300	160
7–9	250	130
10–12	200	115
12+	160	100

Source: Adapted from Keller and Sherar 2003.

Table 2. Water bar spacing recommendations

Road or trail grade (%)	Soil erodibility	
	Low to non-erosive soils (ft)	Erosive soils (ft)
0–5	250	130
6–10	200	100
11–15	150	65
16–20	115	50
21–30	100	40
30+	50	30

Source: Adapted from Keller and Sherar 2003.

LOW-VOLUME ROAD DRAINAGE PRINCIPLES

Situating and designing roads correctly from the outset will save a landowner years of worry and maintenance costs caused by avoidable road problems. The key to proper road design is to abide by established guidelines and hire good help. These guidelines can also be used to address maintenance problems on existing roads.

It is often said that the three most important considerations for road design are drainage, drainage, drainage! Drainage features should include ditch relief culverts for in-sloped roads and rolling dips for out-sloped roads. Rolling dips or ditch relief culverts of at least 12 inches in diameter should be spaced as necessary to effectively drain the road, and no further apart than every 400 feet (table 1). Adequate drainage control during the winter is also critical for seasonal and temporary roads. Water bars should be installed every 250 feet or closer when the road is closed (table 2). Drainage features should be spaced more closely on roads with steep grades or erodible soils composed of silt or fine sands. (A conversion table is provided at the end of this publication for calculating equivalents between English and metric systems of measurement.)

Figure 14. This fill slope erosion was caused by a plugged cross-drain inlet that diverted ditch flow over the road surface. *Photo:* Angela Wilson, Central Valley Regional Water Quality Control Board.

RECOMMENDED ROAD MAINTENANCE PRACTICES

Even properly designed and constructed roads need inspection and maintenance to function well and avoid road and environmental damage. Maintenance should be performed when needed. The longer the delay in needed maintenance, the more damage will occur and the more costly the repairs will be (fig. 14).

Maintenance should focus on correcting problems that may lead to road failure. This involves ensuring that the established drainage system is not compromised. Culverts plugged with debris often lead to ditch or stream water flowing on to the road surface, which can cause surface erosion or even wash away the entire road prism. Preventing such occurrences should be a top priority. Closing a road during the rainy season can reduce damage caused by vehicles and avoid substantial maintenance costs.

KEY MAINTENANCE PRACTICES

- Inspect roads regularly, especially before the winter season and following heavy rains.
- Keep ditches and culverts free from debris.
- Remove slide material from the road or ditches where it blocks normal drainage.
- Regrade and shape the road surface periodically to maintain proper surface drainage.
  - o Keep rolling dips shaped and graded.
  - o Keep the downhill side of the road free of berms unless they are intentionally placed to control water or traffic.
  - o As necessary, apply surfacing such as aggregate or pavement to protect the roadbed.
- Avoid disturbing soil and vegetation in ditches, shoulders, and on cut-and-fill slopes.
- Maintain an erosion-resistant surfacing such as grass or rock in ditches.
- Close the road during very wet conditions.
- Carry a shovel in your vehicle during the rainy season to clean out ditches, redirect water off the road surface, etc.

The key to good maintenance is identification of maintenance needs through frequent inspections. Road inspections should focus on identifying areas where problems may occur in future storms (fig. 15). All parts of the road including the road surface and cut-and-fill slopes should be inspected, as well as drainage structures such as culverts, bridges, and water bars. Ideally, inspections should be done in time to allow for repairs before the rainy season.

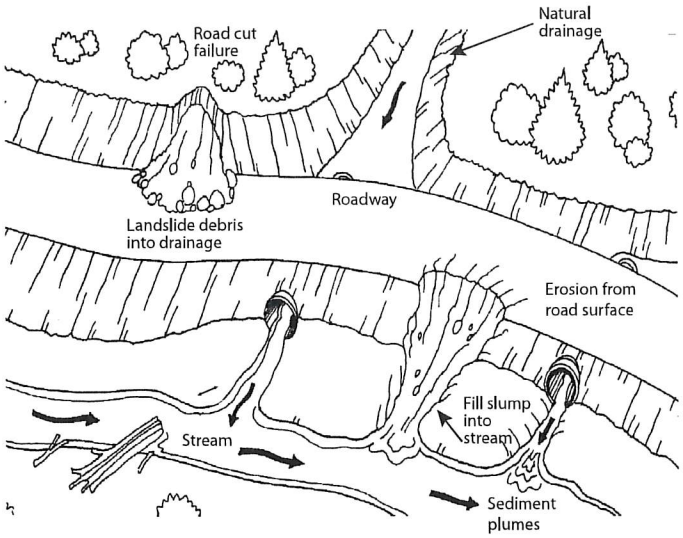

Figure 15. Road system problems to look for during a road inspection. *Source:* Keller and Sherar 2003.

Figure 16. Culvert plugged with sediment at inlet. *Photo:* Angela Wilson, Central Valley Regional Water Quality Control Board.

Figure 17. Culvert with rusted bottom and breakage caused by sediment. *Photo:* Angela Wilson, Central Valley Regional Water Quality Control Board.

WHAT TO LOOK FOR DURING A ROAD INSPECTION

- Culverts: Clear debris and sediment from culvert inlets (see figs. 16 and 17). Straighten bent culvert ends. If erosion has occurred at outlets, install energy dissipaters or armoring.
- Bridges: Inspect bridge abutments. Remove logs or branches lodged in the bridge structure.
- Water bars: Confirm that the water bars are working properly and directing drainage off the side of the road. Inspect the area downslope of the water bars for evidence of rills or gullies indicating that the slope requires additional protection from concentrated roadside drainage.
- Rolling dips: If erosion has occurred at the outside edge of the dip, install energy dissipaters or armoring.
- Inside ditches: Use a shovel to clear debris from the ditch. Avoid grading in ditches.
- Cut-and-fill slopes: Inspect for rilling, slumping, or cracks. Install more drainage structures if problems are found. Remove unstable material with an excavator.

RECOGNIZING AND FIXING COMMON ROAD PROBLEMS

Many road problems are quite easy to detect because they result in reduced driving comfort (e.g., rutting, potholes or wash boarding, erosion of portions of the roadbed, and deposition of soil on the road surface). Obvious problems such as these may cause impacts to streams and aquatic organisms by, for example, depositing sediment or creating barriers to fish passage. Road treatments can be designed to alleviate problems for traffic as well as aquatic habitat without much additional cost. Appropriate treatments for specific kinds of problems are identified here. Before initiating a treatment on your property, it is advisable to consult a professional erosion control or geotechnical specialist.

Figure 18. Water collecting on a forest road because of poor drainage. *Photo:* Jared Gerstein.

Potholes, Gullies, Extensive Rilling, Mud, and Other Road Surface Problems

Symptom

Potholes, ruts, and mud on the surface of the road are symptoms of drainage problems (fig. 18). A properly designed and maintained road will have very little standing or running water on the road surface, even during rain storms.

Finding the underlying problem

In order to locate the source of the problem, follow the water. Water may be originating from springs in the cut bank or under the road, from small creeks diverted onto the road surface, or from retained rain water due to improper drainage. The problem may also be caused by a combination of these.

First, look for springs on the cutbank or under the road. Water-loving vegetation, such as ferns or rushes, is a good indicator of the existence of springs. After a storm ends, puddles will dry out elsewhere on the road but remain much longer where you have springs. If no springs are found, look for streams diverting water onto the road surface. Small swales that are dry most of the year may flow during rain storms; go look for them while it is raining. Look for the original stream on the downhill side of the road.

If the road is retaining rain water on the surface during and shortly after rains, the road may need to be reshaped in order to drain water more efficiently. It is common for roads that have been poorly maintained for years to develop berms on one or both sides of the road, preventing water from draining from the road surface.

Solutions

Possible treatments for spring seepage onto roads are installing deeper inboard ditches and culverts to drain the water under the road, building up the road surface with base rock, or others as appropriate. Stream diversions onto the road surface may be treated by installing a culvert or rocked dip to place the stream back in its natural channel. Standing water due to poor drainage should be treated by changing the shape of the road to out-sloped, in-sloped, or crowned. Breach berms at strategic nonerosive locations to allow drainage and prevent their re-creation during grading. Out-sloping roads and installing rolling dips should be done whenever possible. Rock surfacing may also need to be added.

Dysfunctional Ditches

Symptom

One of the liabilities of a ditch system is the possibility of ditches plugging with debris, causing water to flow onto the road surface. Ditch water "captured" by the road surface can cause severe erosion (fig. 19) and even wash out the road completely.

Finding the underlying problem

Water may flow out of a ditch onto a road when the capacity of the ditch is exceeded. This occurs when the volume of runoff exceeds the ditch capacity or, more commonly, when a ditch relief culvert is plugged with debris. In the latter instance, the plugged cul-

Figure 19. Erosion caused by ditch water leaving the ditch and traveling across the road. *Photo:* Susan Kocher.

vert may be located at the point where water flows onto the road or it may be uphill from there. Once the plugged culvert is located, examine its size and alignment. If a culvert plugs regularly, especially with sediment, there may be a design problem. If the culvert is less than 18 inches in diameter, it may be too small. If the culvert is installed at too sharp of an angle at the inlet, ditch water may not be directed into the culvert at high flow. If the cross-drain grade is too flat, sediment may settle out in the culvert rather than passing through it, causing blockage.

Solution

Once the plugged culvert is located, material blocking the culvert inlet should be removed. If this is the first time the culvert has plugged and the blockage was caused by a recently fallen tree or branch, simply removing the blockage may be sufficient. If the culvert repeatedly plugs, it may be undersized or misaligned and need to be replaced or realigned. In some cases, excess sediment may be evidence of upslope instabilities that need to be addressed.

Symptom

Another liability of ditch systems can be inadequate cross drains. Without a sufficient number of cross drains or ditch relief culverts, ditch water may become increasingly concentrated, gain erosive power, and cause ditch erosion in larger storms. Deeply incised ditches can be a hazard to driving, especially when they become large enough to accommodate a car tire (fig. 20).

Finding the underlying problem

Ditches incise when they carry too much flow for their design capacity and they erode rather than spill water out onto the road. Too much flow in the ditch occurs because there are not enough ditch relief structures and/or because there are sources of water other than road runoff contributing to ditch flow. Examine the ditch system to see if the ditch has captured the flow from a stream channel or spring and diverted it down the ditch. If not, the most likely problem is too few ditch relief culverts or cross drains.

Figure 20. Eroding inboard ditch on an in-sloped road. This is a symptom of inadequate cross drains for conveying ditch flow across the road. *Photo:* Richard Harris.

Solution

Ditch-captured stream channels should be treated by installing a culvert under the road and reconnecting the stream channel to its original course below the road. Problems arising from inadequate drainage should be treated by adding more ditch relief culverts. A more effective long-term solution may be to out-slope the road, if feasible, and remove the ditch altogether. Armoring ditches without treating the underlying drainage problem may reduce erosion in the short term but is not considered a permanent solution.

Symptom

Ditches may become filled in with sediment, rock, or woody debris (fig. 21). This reduces their

Figure 21. Cut bank failure blocking inboard ditch. Cut bank failures cause operational and maintenance problems, especially when chronic. *Source:* Keller and Sherar 2003.

capacity to convey ditch flow. The inlets to ditch relief culverts can become filled with sediment, causing ditch water to flow over and erode the road surface.

Finding the underlying problem

Examine the cut slope along the road to identify the source of the sediment. A slump or failure in the cut slope may have delivered dirt and rocks to the ditch. Or, a tree or branch may have fallen into the ditch, causing sediment to accumulate. Sediment may have accumulated in sections of ditch that have a flat gradient.

Solution

Filled-in ditches should be cleaned out with hand tools or heavy equipment, depending on the scale of the problem. If this is a recurring problem, the cut slope may need treatment to reduce its chances of slumping. A number of slope stabilization techniques are available and can be developed with the help of a professional erosion control or geotechnical specialist. Road surface sediment can be reduced by rocking the road. A ditch relief culvert may need to be installed before the grade flattens out, to carry water through the culvert before the sediment settles out in the ditch.

Gullies Caused by Roads

Symptom

Gullies are caused when increased or concentrated flow from the road system flows onto erosive soil. Most often, gullies originate from a road system's drainage features. They can be identified by their bare dirt banks and occurrence in places where natural streams do not occur, such as smooth hillslopes or ridges (fig. 22). Gullies may or may not threaten the roadbed itself, but they are always a significant source of sediment and thus a detriment to streams.

Figure 22. Gully caused by through-cut on road at base of steep road section. *Photo:* Jared Gerstein.

Finding the underlying problem

Inspect for gullies at the outlets of ditch relief culverts and rolling dips or where inboard ditches leave the road at a corner. Most gullies are caused by a concentration of water from the road and ditch system. Walk the road system to identify the drainage structures releasing flow that leads to gullies. Gullies can also occur when a stream has been diverted out of its natural channel. If this is the case, it is important to locate the original stream channel by walking up the gully to find where it starts.

Another cause of gullies can be culverts that have been installed improperly, with outlets set on the hillside rather than back in the natural channel. Examine culverts located at the origin of the gully flow to see if misalignment is causing the erosion.

Solution

The solution to gullies is to remove the concentrated flow from the soil it is eroding. Gullies should be dewatered by returning the flow to a controlled conveyance, either back into the ditch or stream system from which the flow escaped, or by realigning the culvert that allowed its escape. Alternatively, flow can be rerouted around the most erosive soils by installing downspouts. The goal of the treatment is typically to stabilize the gully and halt further erosion since it usually is not feasible or cost effective to fill in and restore a gully's original slope.

Stream Crossings

Stream crossings on roads can be the most significant source of sediment to streams. They are also the most likely locations to become impassable during a storm. Because of their importance to both stream health and accessibility, these sites should be carefully watched and maintained. Typical problems include culvert plugging, fill eroding, outlet scouring, and blocking of the migration of fish and other aquatic life such as amphibians.

Symptom

Culverts that convey streams under roads must be large enough to transport the flow plus the tree branches, sediment, and rocks that often accompany the flow during large rain storms (fig. 23). Stream culverts may plug when debris blocks the inlet, allowing water to overtop the crossing and possibly wash out the crossing and road altogether.

Finding the underlying problem

Culverts that plug frequently with debris may be undersized for the flow of the stream and the debris it carries, or they may be misaligned, blocking the flow of water and debris through the culvert. When material collects behind a culvert, it is likely that the culvert is too small.

Figure 23. This culvert is nearly plugged by woody debris, endangering the road. *Photo:* Angela Wilson, Central Valley Regional Water Quality Control Board.

Solution

The ideal treatment for an undersized culvert is replacement with a larger one, capable of carrying flow and debris. Appropriately sizing a culvert for the stream and watershed it drains is a fairly technical task and should be done by a knowledgeable professional (Cafferata et al. 2004). In some relatively simple cases, it may be feasible to install trash and debris racks upstream from the culvert to capture and retain the debris so that it does not flow into the culvert (fig. 24). This, however, should be discouraged on fish-bearing watercourses because debris accumulations may become a barrier to migrating fish. Remember that debris racks need to be cleaned regularly to continue to function.

Symptom

Installing a culvert to convey a stream under a road involves placing a significant amount

Figure 24. A trash rack installed upstream to protect a culvert from plugging. *Source:* Keller and Sherar 2003.

Figure 25. Eroding fill slope and culvert failure due to plugging at inlet and diversion of flow across the road. *Photo:* Bill Weaver, Pacific Watershed Associates.

of fill in the channel above and below the culvert, and then building the road base on that fill. The fill over the culvert may erode, narrowing the traveled way (fig. 25).

Finding the underlying problem

Road fill is most often eroded by water plunging from the outlet of a culvert that is too short. "Shotgun" culverts shoot the water down to the streambed while eroding the fill under the culvert. Inspect road culverts at the downslope ends, looking for any that stick out into the air rather than carry their flow to the base of the fill slope.

Solution

The most thorough solution to shotgun culverts is to replace them with longer pipes that are placed at the grade of the natural stream channel rather than high in the fill above the stream. Alternatively, a downspout or rock armor can be added below the outlet if erosion has not been too severe (fig. 26).

Symptom

Culverts may create barriers to fish migration (fig. 27). Problems include excessive water velocity, insufficient water depth, lack of a downstream jump pool, and excessive jump height. Culverts that are relatively

Figure 26. Rock armoring at ditch relief culvert outfall to reduce potential for downstream erosion. Note also the berm around the fill slope to prevent road runoff from eroding it. Also, straw mulch has been placed on the fill slope to reduce erosion. *Photo:* Jared Gerstein.

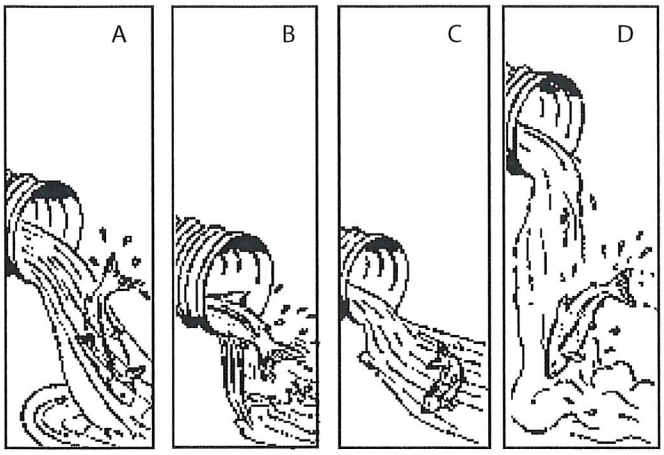

Figure 27. Barriers to fish migration caused by culverts. *Source:* Keller and Sherar 2003.

small for the size of the stream accelerate the speed of the flow, sometimes rendering it too fast for an adult or juvenile fish to swim against when heading upstream (fig. 27A). Culverts too large for the stream they carry may dissipate the flow to the point where it is too shallow for the fish to navigate (fig. 27B). Culverts with no natural resting place downstream may not allow fish to find a spot from which to make their jump (fig. 27C). Some culverts may be positioned too high above the stream and so require a jump that is too high for an adult or juvenile fish to make (fig. 27D).

Finding the underlying problem

All culverts and bridges over fish-bearing streams should be inspected for the existence of problems such as those shown in figure 27. Some barrier problems will be quite obvious. Unfortunately, many are not. Therefore, the best way to identify whether your crossings are blocking fish is to consult a fisheries biologist from a state, federal, or local agency.

Solution

Replacement of problem culverts with bridges and arched culverts of adequate size is preferred because they modify the channel less and so avoid many problems that can block migration (fig. 28). Appropriate assistance should be sought in designing and constructing crossings where migrating fish must be accommodated. Contact your local Department of Fish and Game office. In some cases, passage through existing culverts may be improved by installing baffles or weirs to slow and funnel stream water. In other cases, the upstream and/or downstream channels may be modified to create resting pools and reduce the jump height.

GETTING ROAD WORK DONE

There are some things that a landowner can do to maintain his or her roads and there are other actions that are best left to professionals. If you are contemplating new road construction or major road upgrading and you are not experienced with this work, you need to get help. County public works and planning departments, your local California Department of Forestry and Fire Protection or Resource Conservation District office, UC Cooperative Extension Office, and your neighbors may be able to recommend someone who can help you plan and implement a road construction or improvement project. Depending on your location and the type of work, you may even qualify for grants and cost sharing programs (see "Sources").

Figure 28. An arched pipe installed on a fish-bearing stream to minimize impacts on fish habitat and migration. *Source:* Keller and Sherar 2003.

Before undertaking extensive road work, it is important to have a good plan. You may retain professionals trained in road assessment to evaluate your roads in relation to your land management and use objectives. The objectives might be to reduce maintenance costs, to reduce sediment production, to protect natural resources, or to

Figure 29. Bulldozer clearing out a road ditch. *Photo:* Jared Gerstein.

Figure 30. Installation of a new culvert after the old one was excavated. *Photo:* Jared Gerstein.

assure accessibility in all conditions. A road assessment may be used to help decide whether a road is worth maintaining in its current condition and location. Many roads were built in locations because of property boundaries, with little regard for geologic, geomorphic, biologic, or hydrologic conditions. If the road is tied to an easement and there are multiple landowners, relocation may not be an option. If a road is a chronic problem, however, relocation should be considered because it may be the cheapest and most effective remedy. A thorough road assessment will help you decide the best course of action and develop a plan for implementing road work.

Constructing or upgrading a road may require the services of a licensed civil engineer. Especially difficult projects may require other professionals including a licensed geologist or structural engineer. Simpler projects may only require a qualified equipment operator or grading contractor. When choosing an engineer or a contractor, it is important to carefully review their qualifications to do the work, their experience, and their ability to perform on time and on budget. Always ask for references and always follow up by checking them. Never hire someone who is not adequately insured against liabilities resulting from the work. You also want to make sure your contractor is licensed. Get the contractor's license number, and check with the State Contractors Licensing Board to see if there are any complaints or violations for the operator you intend to hire.

Routine road maintenance is another matter and there are many things you can do to ensure that your roads function well under all weather conditions. In some instances when a road is shared by several landowners, there may already be a road association or homeowners' association that is responsible for road maintenance. Generally, if you do not know if you are part of a road association, you probably are not. Road and homeowners' associations assess landowners a fee used to offset costs for road maintenance. The fee is either paid on a yearly basis or as the need for maintenance arises. If you have a neglected road that serves several properties and there is no road maintenance agreement between them, you might consider initiating one. One of the major problems in rural areas is "orphan roads" that no one takes responsibility for maintaining.

For the roads on your property that are your sole responsibility, the key to good maintenance is a system of inspection and record-keeping. Inspections should be performed on all your roads and stream crossings before the winter, during storm events, and after the winter. Use the diagnostic tips previously described to identify

maintenance needs. Simple tasks such as culvert and ditch clearing can be performed by most landowners (fig. 29). More complex tasks, such as roadside brushing, remedial grading repair, or installation of culverts (fig. 30), will probably require outside assistance. Keeping good maintenance records can help landowners evaluate the cost of correcting on-going problems and judge whether road upgrading projects would be cost effective. It is also essential for tax purposes.

ELEMENTS OF GOOD ROAD MAINTENANCE RECORD KEEPING

- Identify and prepare sketch maps of problem areas and treatments applied.
- For each site, describe the problem, when it started, and what caused it.
- Document the things done to fix the problem.
- List the equipment and labor hours needed to fix the problem.
- Quantify the amount of armor or rock imported to fix the problem (cubic yards).
- Quantify the amount of sediment or spoils removed (cubic yards).
- Measure the length, width, and depth of any erosion features.
- Take photos before and after the maintenance activities.

PERMITS FOR ROAD WORK

Depending on where you live, extensive road work may require a grading permit from the county public works or planning department, particularly if the project involves new road construction. Not all counties have grading ordinances but all have stipulations in their building codes that apply to grading for home sites and driveways. These are typically triggered by the extent of planned disturbance. Before undertaking any grading on your property, check with your county planning staff.

If you are planning on crossing or otherwise altering a stream or creek, you may be required to obtain a Streambed Alteration Agreement from the California Department of Fish and Game. Activities requiring these agreements include installing culverts, bridges, or fords; rip-rapping the banks of stream channels; or skidding logs across temporary crossings. Many projects that require a Streambed Alteration Agreement will also require a permit from the U.S. Army Corps of Engineers. If the project involves a stream that has anadromous fish (i.e., salmon, cutthroat trout, or steelhead), additional consultation or permits may be required from the National Marine Fisheries Service or from the U.S. Fish and Wildlife Service. Your local Department of Fish and Game staff should be aware of the permit requirements of these agencies.

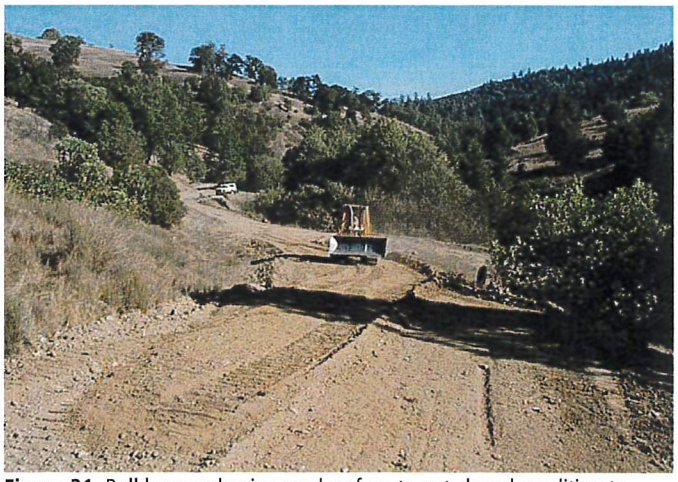

Figure 31. Bulldozer reshaping road surface to out-sloped condition to improve drainage. *Photo:* Jared Gerstein.

ESTABLISHING A WRITTEN CONTRACT FOR ROAD WORK

Landowners should establish a clear written contract for contractors providing road services. Contracts should include the necessary road specifications and standards to be constructed or maintained. The various parts of a new road to be constructed should be listed, including the subgrade and surface and the cut-and-fill slope. The standards to which these should be built, including the width of the subgrade and surface, slope of cut and fill, and depth and size of the base and surface rock, should be specified.

TYPES OF EQUIPMENT USED IN ROAD MAINTENANCE

A variety of heavy equipment may be used when constructing or maintaining a road. *Bulldozers* are often used to make road cuts, shape the road, and develop the subgrade (fig. 31). *Excavators* can be used to replace crossings and develop new road alignments (fig. 32). *Backhoes* have many uses, including replacing small crossings, loading rock, and road shaping. *Graders* are used for final road shaping, spreading surface rock, and smoothing the surface (fig. 33). *Dump trucks* are used to transport rock to the construction site and to haul away any excess cut materials (fig. 33). *Rollers* are specialized to roll over the road surface and compact rock and road materials.

ROAD WORK COSTS

Upgrading an existing road is less expensive than constructing a new one, but may still involve substantial costs. Cost depends on the heavy equipment used, hourly equipment rental or contract rates, the skill and experience of the operator, design standards of the road, and the choice of the specific drainage structures and features to be installed. Examples of costs for road improvements are listed in table 3. When

Table 3. Costs to modify and improve existing roads

Activity	Ideal equipment	Cost rate*	Production rates†	Costs
out-sloping road and filling ditch	motor grader with rippers	$140/hr	500 ft/hr for a 20 ft wide road	$280/1,000 ft
installing rolling dip	small dozer with rippers (John Deere 450)	$130/hr	1 hr each (30 to 40 ft long on flat roads) 2 hr each (50 to 100 ft long on steep roads)	$130 to $260 each
removing berm or cleaning ditch	motor grader	$140/hr	1,000 ft/hr	$140/1,000 ft
rock-surfacing road (1.5 in. minus crushed)	dump truck spread	$25 to $50/ yd^3 delivered‡	4 in. deep × 20 ft wide = 250 yd^3/1,000 ft road	$6,250 to $12,500/1,000 ft
installing ditch relief culvert (40 ft of 18 in. culvert)	backhoe or tractor, laborer	$120/hr or $95/hr $55/hr	3 hr each + culvert ($35/ft + $25 coupler + $165 labor)	$1,950 each
installing stream crossing (36 in. × 40 ft culvert with 200 yd^3 fill)	excavator, small dozer, water truck, laborer	$175/hr $130/hr $95/hr $55/hr	$2,350 culvert (w/coupler) + $1,225 excavator +$910 dozer + $190 water truck + $165 labor + $125 tamper	$4,965 each
installing culvert downspout	hand labor, equipment (>24 in. culvert)	$55/hr $125/hr	2 hr labor for 20 ft × 24 in. 3 hr labor for 40ft × 36 in.	$110 + materials $375 + materials
straw mulching of bare soils areas	labor	$55/hr $7.50/straw bale incl. tax/delivery	1 bale/600 ft^2 to 700 ft^2 + spreading at 4 bales/hr	$36 to $40/1,000 ft^2
upgrading road completely	motor grader, skip loader, dump truck water truck riding compactor	$140/hr $110/hr $85/hr $95/hr $95/hr	Average mid-slope road requiring stream crossing upgrades	$45,000 to $77,000 per mi

Source: Adapted from CDFG 2004 by Joe Carri Jr.
Notes: *Additional equipment mobilization costs apply (4-hour minimum for small equipment and an 8-hour minimum for large equipment).
†Production rates do not account for rocky soil or soft soil conditions.
‡Trucking and material costs for bulk rock or sand assume a round trip time from 1 to 2½ hours. Longer hauls require additional trucking costs.

Figure 32. Excavator removing a crossing, including culvert and fill. *Photo:* Jared Gerstein.

Figure 33. A grader spreading the gravel on the road surface placed by a dump truck. *Source:* Joe Hoffman, Plumas National Forest.

Figure 34. Outlet of a concrete culvert (30 inches in diameter) before the project. The culvert was placed too high in the fill, resulting in a 10-foot drop to the channel at the outlet. This caused erosion of the road fill and stream banks, eventually undermining the outer section of the culvert. *Photo:* Jared Gerstein.

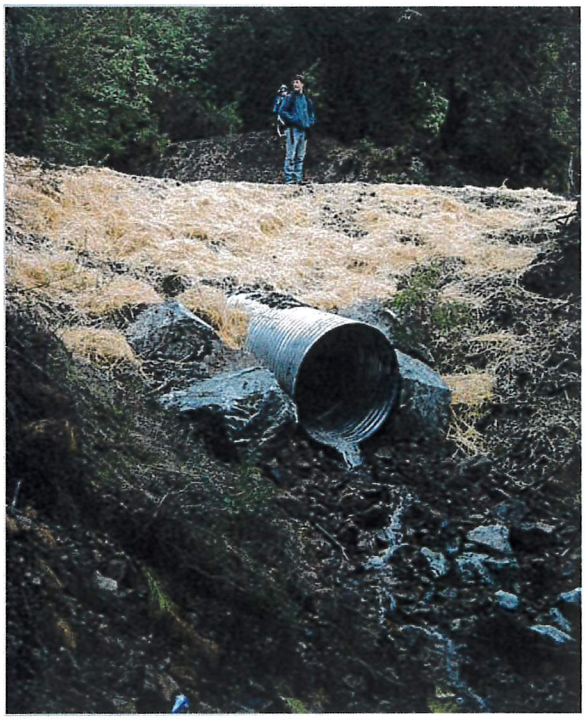

Figure 35. The culvert was replaced with a metal pipe (48 inches in diameter) at the correct slope. The road surface was lowered, reducing the fill volume by 100 cubic yards. The outlet and fill were armored to prevent future diversion. *Photo:* Jared Gerstein.

using different equipment, the rates for some treatments may differ from those listed here. Tasks accomplished by manual labor, such as culvert downspout installation and straw mulching for erosion control, are much less expensive than tasks requiring heavy equipment. Installing rolling dips is substantially less expensive than installing ditch relief culverts because only one type of equipment and one worker is needed, and there is no culvert to purchase. The most expensive aspect of building or upgrading a permanent rural road is placing rock on the roadbed and road surface. The drainage structures and road shaping need to be done first, but rock surfacing is the final ingredient necessary to make the road durable for year-round travel.

ROAD WORK CASE STUDIES

Some examples of road upgrading projects are described below. These projects were undertaken by private landowners, the U.S. Forest Service, and the University of California.

Tom Long Watershed

The Tom Long Watershed in Humboldt County is like many other rural areas that have been subdivided for residential use. The road system was put in for harvesting timber during the 1950s and '60s. Harvesting was only done during the dry season and roads were only intended to handle seasonal access. In the 1970s the watershed was subdivided into 40-acre parcels with the layout based largely on the location of the original logging roads. No formal road association or methods for funding road betterment or maintenance were established in the subdivision process. After the subdivision, roads were maintained on an emergency basis, meaning that bridges and culverts were only replaced if the road was no longer passable. Roads were rarely graded and rock surfacing was seldom if ever applied. The watershed became notorious for some of the worst roads in the region.

In the late 1990s residents organized in response to the threat of increased water quality regulation and out of exasperation with degraded road conditions. Following an evaluation of the road system, a number of sites were identified for remedial treatment. The highest priority sites were problem roads and crossings nearest the fish-bearing reaches of Tom Long Creek (figs. 34 and 35). Eventually, remedial work included replacing and upgrading 17 culverts and fixing two active creek diversions at a cost of approximately $120,000. The majority of the work was funded with a combination of local, state, and federal grant dollars intended to improve fisheries and water quality conditions.

These efforts addressed major issues, but road surfacing, drainage, and other needed improvements have not been completed. All this work requires funding, especially for equipment operators, and funds available from grant programs are limited. Gradually, the work will get accom-

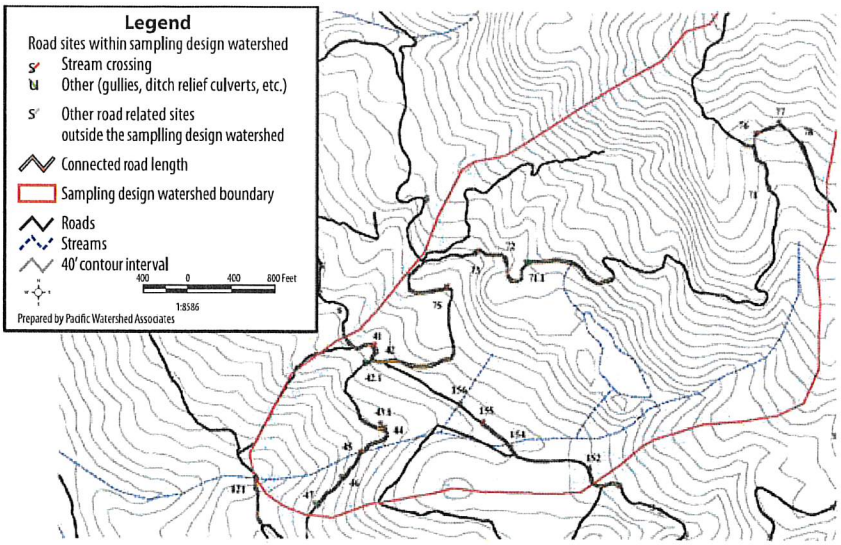

Figure 36. Road upgrading sites at the experimental watershed, Hopland Field Research and Extension Station. *Source:* Bill Weaver, Pacific Watershed Associates.

plished. As one resident said, "The grant resources enabled us to complete the root canals in the watershed and now we have to find the money to pay for the routine cleanings."

University of California Hopland Field Station Research and Extension Center

Over a period of about five years, beginning in the late 1990s, the University of California implemented a program to upgrade the road system at Hopland Field Station Research and Extension Center, located in Mendocino County. The work was largely funded by grants from the Department of Fish and Game (1999 SB 271 funds), Fisheries Restoration Grant Program. After an inventory and assessment of roads throughout the property, over 200 stream crossings and sections of road were prioritized for remedial treatment (fig. 36). Proposed treatments included replacement of culverts, installation of rolling dips and ditch relief culverts, and other measures intended to improve drainage, reduce sediment production, and generally reduce maintenance problems.

The entire program was implemented successfully by 2004. Although some newly installed culverts and fills experienced significant erosion during the first winter after construction, most post-project adjustments have diminished over time. Nearly all treatments have performed well, with a few fill failures at the outlets of rolling dips during spring 2006 (with very high precipitation). Maintenance needs and costs have declined dramatically. Personnel at the Field Station Center are especially satisfied with the superior performance of rolling dips as an alternative to cross drains for both reducing maintenance requirements and adequately draining road surfaces.

Pinchard Creek Project

The U.S. Forest Service partnered with Sierra Pacific Industries and Plumas County to upgrade a section of national forest road with serious erosion problems. The road's native surface was very erosive and lacked drainage structures. The surface was heavily rutted with rills over 2 inches deep and over 20 feet long (fig. 37). Road cut banks were unstable and eroding with more than 5 cubic yards of material moved, 40 percent of which was delivered to the stream channel. Roadside ditches were overloaded and degrading. One stream-crossing culvert entrance was more than 30 percent blocked with sediment and debris.

The project involved out-sloping the road surface, covering it with crushed rock, and installing drainage dips (fig. 38). Two years after the completion of the project, no surface ruts or road bank erosion has occurred, roadside drainage ditches are stable with little or no sediment delivery to the stream, and culvert entrances remain clear (fig. 39). The cost of the project was $221,603, with 35 percent from National Forest road maintenance funds, 9 percent from Sierra Pacific Industries, and 56 percent from the Plumas County Resource Advisory Committee.

Figure 37. Pinchard Creek road with rilling along the road surface before the project, 2002. *Photo:* Joe Hoffman, Plumas National Forest.

Figure 38. Pinchard Creek road immediately after project construction, 2002. *Photo:* Joe Hoffman, Plumas National Forest.

Figure 39. Pinchard Creek road two years after project construction, 2004. Note that the road surface remains in good shape without additional maintenance. *Photo:* Joe Hoffman, Plumas National Forest.

BEST MANAGEMENT PRACTICES DURING CONSTRUCTION

Construction of a new road necessarily involves a great deal of earth moving and soil disturbance. It is important that construction be managed wisely to avoid environmental impacts and damage to your property. One important thing a landowner can do is visit the site regularly during construction to ensure that the job is being done correctly. Sometimes plans made before construction are no longer feasible due to site constraints, and new decisions must be made. You need to be accessible to your contractor to help make these decisions when the situation arises.

Some general principles for best practices during construction are listed below:

- Minimize grading and soil disturbance.
- Develop an erosion control plan that includes measures on cut-and-fill slopes, drainage outlets, and disturbed areas (fig. 40).
- Avoid construction and soil disturbance in the winter.
- If construction does occur in the rainy season, ensure that the site has been storm proofed with erosion control measures when rains are forecast.
- Avoid incorporating logs or brush in the fill slope.
- Haul away excess sediment generated rather than side cast it onto the slope.
- Locate any stockpiled sediment in areas where it can be protected from erosion and will not deliver sediment to streams.
- Do not service or fuel heavy equipment where spills could enter a watercourse.

POST-PROJECT ADJUSTMENT

No matter how well planned and executed a road project has been, winter rains and traffic will lead to some adjustment of the final as-built condition during the first winter after improvements are made. Assuming that the road is in otherwise stable terrain, the adjustments will usually be minor and easily corrected. Adjustments may include some erosion of cut-and-fill slopes or culvert inlets and outlets (fig. 41). Road inspections should be done frequently during the new road's first winter season to identify any emerging problems for remediation. Developing problems may be averted with timely action. Plan for follow-up maintenance and put aside funds to perform the maintenance.

Figure 40. Using a portable blower to spread straw mulch on a disturbed road site. *Photo:* Julie Bawcom, California Geological Survey.

Figure 41. Fill surface erosion occurring after a road upgrading project. *Photo:* Bill Weaver, Pacific Watershed Associates.

SOURCES

For information on grants and cost sharing programs, check the online guides at

http://ceres.ca.gov/foreststeward/html/financial.html
http://www.calwatershedfunds.org/
http://cwp.resources.ca.gov/grant_programs.html

For more information on road design and maintenance, consult the following resources:

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Metric Equivalents

English unit	Metric equivalent
1 inch (in)	2.54 centimeters cm)
1 foot (ft)	0.3048 meters (m)
1 mile (mi)	1.609 kilometers (km)
1 acre	0.4047 hectares (ha)

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SCALE: 1" = 300'

LEGEND

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———	ADJACENT BOUNDARY LINES
◉	FOUND SURVEY MONUMENT FROM BOOK 24 OF SURVEYS, PAGES 24 HUMBOLDT COUNTRY RECORDS
(N 01°16'08" W 1330.06')	RECORD DATA PER BOOK 24 OF SURVEYS, PAGES 24–32 HUMBOLDT COUNTY RECORDS
APN	ASSESSOR'S PARCEL NUMBER

NOTE

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LS 8152
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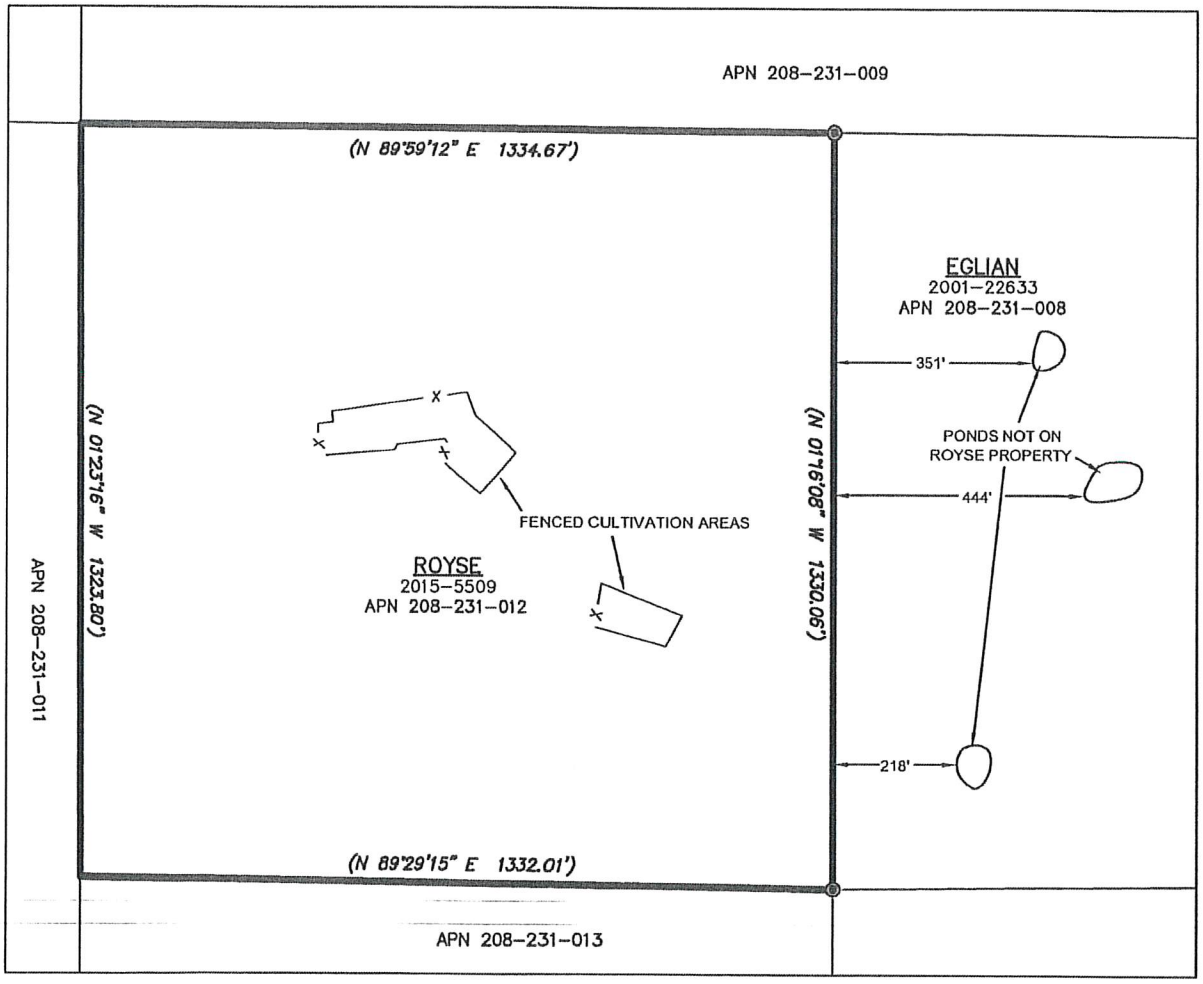

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FAX (707) 822–5636

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APN	ASSESSOR'S PARCEL NUMBER

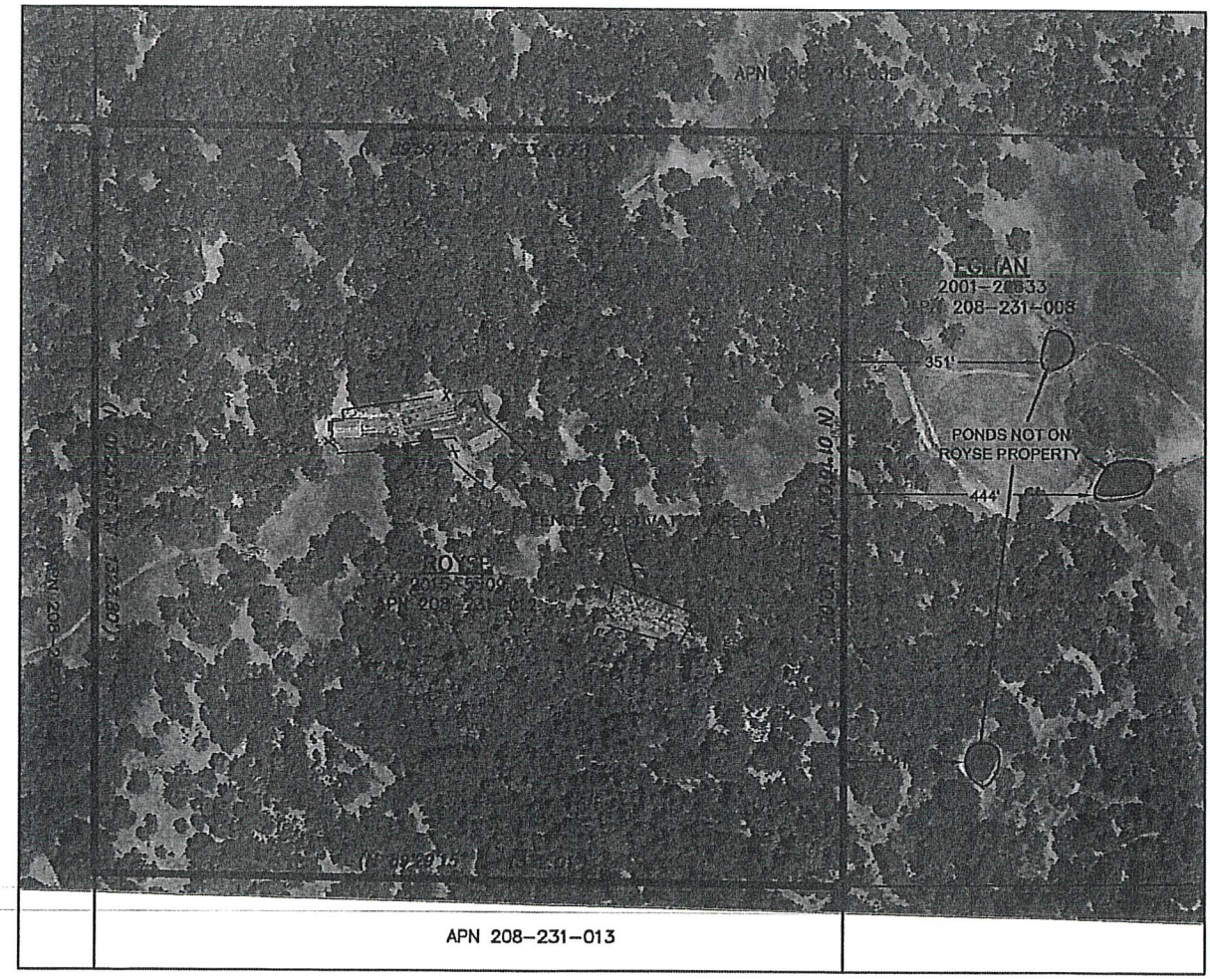
NOTE

THIS EXHIBIT PREPARED BY DYLAN KOLSTAD, PLS 8152, DECEMBER 14, 2018 BASED ON FIELD SURVEY ON DECEMBER 13, 2018. BOUNDARY LINES SHOWN ARE BASED ON FOUND SURVEY MONUMENTS SET BY BOOK 24 OF SURVEYS, PAGES 24, HUMBOLDT COUNTY RECORDS. BACKGROUND IMAGERY, IF APPLICABLE, IS FROM GOOGLE EARTH, DATED MAY 26, 2016, ALIGNED TO FIELD SURVEY.

N

SCALE: 1" = 300'

LICENSED LAND SURVEYOR
DYLAN L. KOLSTAD
LS 8152
STATE OF CALIFORNIA



BOUNDARY EXHIBIT

SHEET 1 OF 1

KOLSTAD LAND SURVEYORS
PO BOX 594
BAYSIDE, CA 95524
VOICE (707) 822-2718
FAX (707) 822-5636

N

SCALE: 1" = 300'

LEGEND

———	BOUNDARY LINES OF ROYSE PROPERTY
———	ADJACENT BOUNDARY LINES
◉	FOUND SURVEY MONUMENT FROM BOOK 24 OF SURVEYS, PAGES 24 HUMBOLDT COUNTRY RECORDS
(N 01°16'08" W 1330.06')	RECORD DATA PER BOOK 24 OF SURVEYS, PAGES 24–32 HUMBOLDT COUNTY RECORDS
APN	ASSESSOR'S PARCEL NUMBER

NOTE

THIS EXHIBIT PREPARED BY DYLAN KOLSTAD, PLS 8152, DECEMBER 14, 2018 BASED ON FIELD SURVEY ON DECEMBER 13, 2018. BOUNDARY LINES SHOWN ARE BASED ON FOUND SURVEY MONUMENTS SET BY BOOK 24 OF SURVEYS, PAGES 24, HUMBOLDT COUNTY RECORDS. BACKGROUND IMAGERY (IF APPLICABLE) IS FROM GOOGLE EARTH, DATED MAY 26, 2016, ALIGNED TO FIELD SURVEY.

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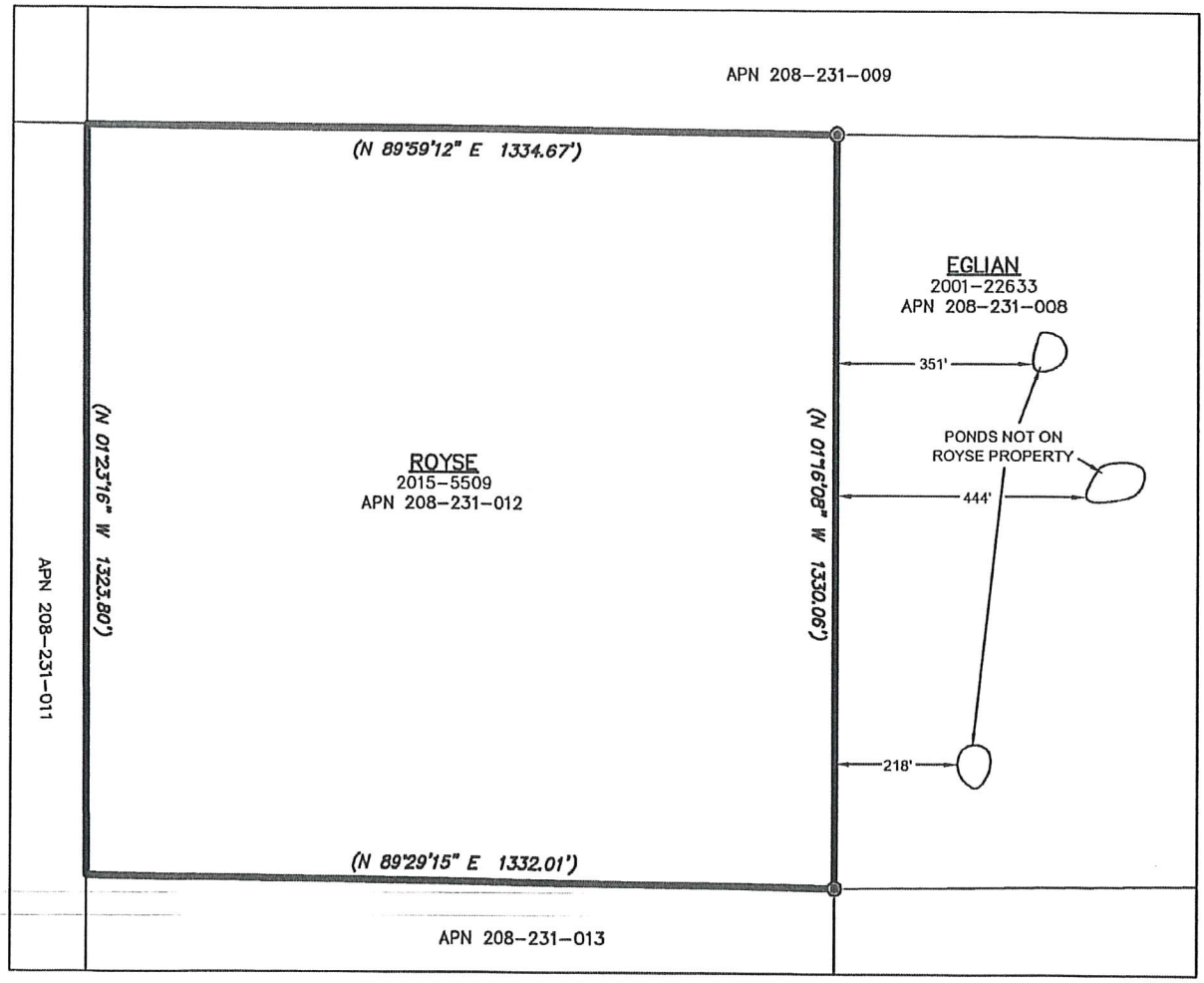
STATE OF CALIFORNIA



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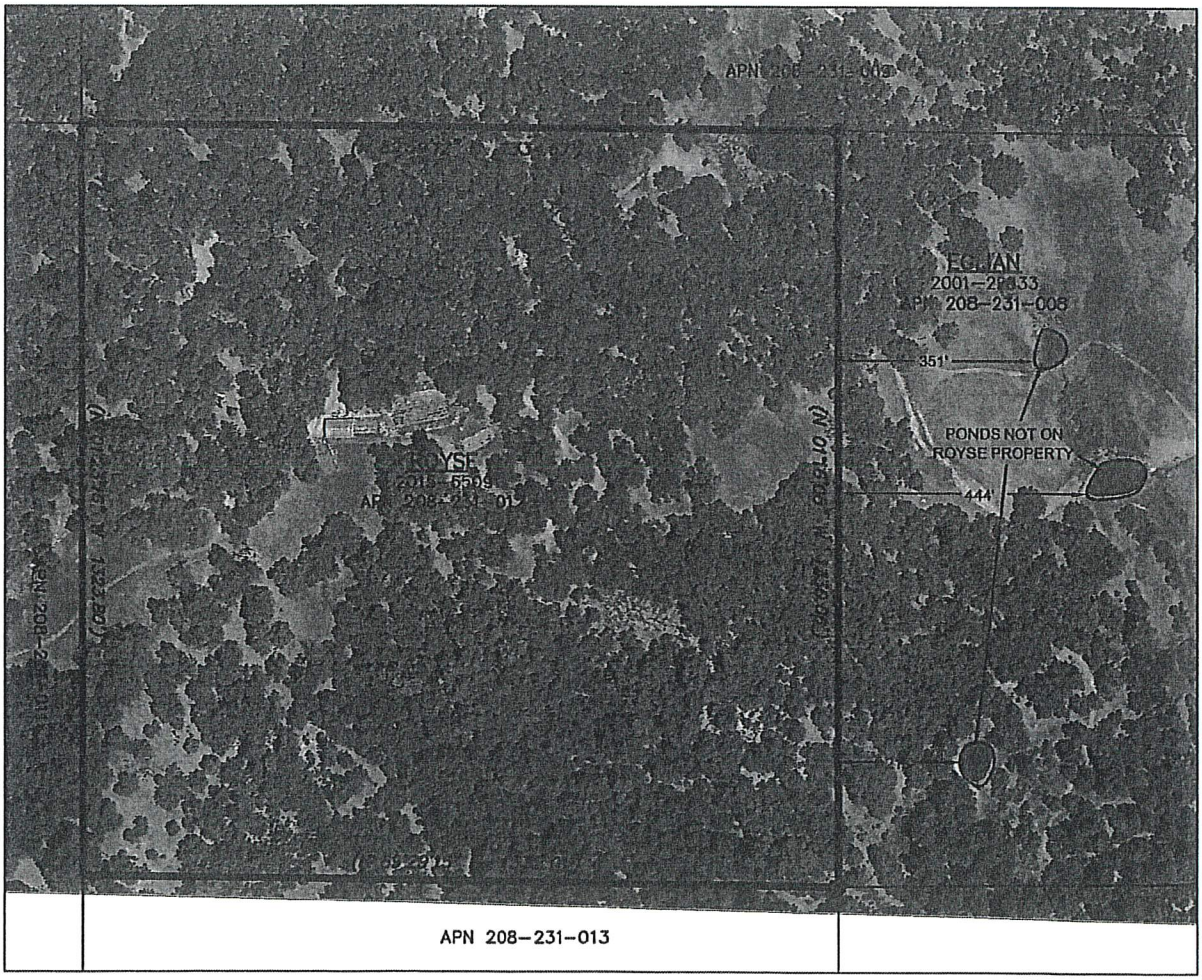
LICENSED LAND SURVEYOR
DYLAN L. KOLSTAD
LS 8152
STATE OF CALIFORNIA



BOUNDARY EXHIBIT

SHEET 1 OF 1

KOLSTAD LAND SURVEYORS
PO BOX 594
BAYSIDE, CA 95524
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ATTACHMENT 5

REFERRAL AGENCY COMMENTS AND RECOMMENDATIONS

The project was referred to the following referral agencies for review and comment. Those agencies that provided written comments are checked off.

Referral Agency	Response	Recommendation	Location
Building Inspection Division	✓	Conditional Approval	Attached
Land Use Division	✓	Conditional Approval	Attached
Division Environmental Health	✓	Conditional Approval	Attached
Calfire	✓	Other comments	Attached
Department of Fish & Wildlife	✓	Conditional Approval	Attached
NWIC	✓	Further Study	On file with Planning
Bear River Band of the Rohnerville Rancheria	✓	Inadvertent Discovery Protocol	On file with Planning
RWQCB		No Response	
CA Division of Water Rights		No Response	
Humboldt County Sheriff		No response	
Humboldt County District Attorney		No response	
Humboldt County Agricultural Commissioner		No response	
Southern Trinity Joint Unified School District		No response	
Southern Trinity Volunteer Fire Protection District	✓	Conditional Approval	Attached

HUMBOLDT COUNTY
PLANNING AND BUILDING DEPARTMENT
CURRENT PLANNING DIVISION
3015 H STREET, EUREKA, CA 95501 ~ PHONE (707) 445-7541

RECEIVED
FEB 05 2018
Humboldt County
Planning Division

11/6/2017

PROJECT REFERRAL TO: Building Inspection Division

Project Referred To The Following Agencies:
Building Inspection Division, Public Works Land Use Division, Health and Human Services Environmental Health Division, County Counsel, CalFire, California Department of Fish And Wildlife, Northwest Information Center, Bear River Band Rohnerville Rancheria, Regional Water Quality Control Board, North Coast Unified Air Quality Management District, Humboldt County District Attorney, Humboldt County Agriculture Commissioner, Humboldt County Sheriff, SWRCB- Division of Water Rights, Southern Trinity Joint Unified School District, Southern Trinity Volunteer Fire Department

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Applicant Name Joe Royse **Key Parcel Number** 208-231-012-000

Application (APPS#) 11864 **Assigned Planner** Cannabis Planner (CPOD) (707) 445-7541 **Case Number(s)** CUP16-418

Please review the above project and provide comments with any recommended conditions of approval. To help us log your response accurately, please include a copy of this form with your correspondence.

Questions concerning this project may be directed to the assigned planner for this project between 8:30am and 5:30pm Monday through Friday.

County Zoning Ordinance allows up to 15 calendar days for a response. If no response or extension request is received by the response date, processing will proceed as proposed.

☐ If this box is checked, please return large format maps with your response.

Return Response No Later Than 11/21/2017

Planning Commission Clerk
County of Humboldt Planning and Building Department
3015 H Street
Eureka, CA 95501
E-mail: PlanningClerk@co.humboldt.ca.us **Fax:** (707) 268-3792

208-231-12

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

☐ Recommend Approval. The Department has no comment at this time.

☒ Recommend Conditional Approval. Suggested Conditions Attached.

☐ Applicant needs to submit additional information. List of items attached.

☐ Recommend Denial. Attach reasons for recommended denial.

☐ Other Comments: _____

DATE: 2/1/18 PRINT NAME: Ian Mion

14

COUNTY OF HUMBOLDT
PLANNING AND BUILDING DEPARTMENT
BUILDING DIVISION

3015 H STREET EUREKA CA 95501
PHONE: (707) 445-7245 FAX: (707) 445-7446

Building Division's Referral Comments for Cannabis Operations:

Application No.: 46355 apps #11864
Parcel No.: 208-231-012
Case No.: CUP16-418

The following comments apply to the proposed project, (check all that apply).

☒ Site/plot plan appears to be accurate.

☐ Submit revised site/plot plan showing all of the following items: all grading including ponds and roads, location of any water course including springs, all structure including size and use and all setbacks from the above stated to each other and property lines.

☐ Existing operation appears to have expanded, see comments:_____

☐ Existing structures used in the cannabis operation shall not to be used/occupied until all required permits have been obtained.

☐ Proposed new operation has already started.

☒ Recommend approval based on the condition that all required grading, building, plumbing electrical and mechanical permits and or Agricultural Exemption are obtained.

☐ Other Comments:_____

Name: Ian Mion Date: 2/1/18

Note: Remember to take photographs and then save them to the Planning's case number. File location J, Current Planning, Projects,(CUP, SP, ZCC) Case number.

DEPARTMENT OF PUBLIC WORKS
COUNTY OF HUMBOLDT
MAILING ADDRESS: 1106 SECOND STREET, EUREKA, CA 95501-0579
AREA CODE 707

ARCATA-EUREKA AIRPORT TERMINAL
McKINLEYVILLE
FAX 839-3596
AVIATION 839-5401

PUBLIC WORKS BUILDING
SECOND & L ST., EUREKA
FAX 445-7409

ADMINISTRATION	445-7491	NATURAL RESOURCES	445-7741
BUSINESS	445-7652	NATURAL RESOURCES PLANNING	267-9540
ENGINEERING	445-7377	PARKS	445-7651
FACILITY MAINTENANCE	445-7493	ROADS & EQUIPMENT MAINTENANCE	445-7421

CLARK COMPLEX
HARRIS & H ST., EUREKA
FAX 445-7388
LAND USE 445-7205

LAND USE DIVISION INTEROFFICE MEMORANDUM

TO: Michelle Nielsen, Senior Planner, Planning & Building Department

FROM: Kenneth M. Freed, Assistant Engineer

DATE: 06-06-2018

RE:

Applicant Name	Joe Royse
APN	208-231-012
APPS#	11864
CASE#	CUP16-418

The Department has reviewed the above project and has the following comments:

☐ The Department's recommended conditions of approval are attached as **Exhibit "A"**.

☐ Additional information identified on **Exhibit "B"** is required before the Department can review the project. **Please re-refer the project to the Department when all of the requested information has been provided.**

☒ Additional review is required by Planning & Building staff for the items on **Exhibit "C"**. **No re-refer is required.**

☒ *Road Evaluation Reports(s)* are required; See **Exhibit "D"**. **No re-refer is required.**

*Note: Exhibits are attached as necessary.

Additional comments/notes:

Review Items 2 & 7 on Exhibit "C".
If project proposing to construct (or permit) a fence, building, or othe structure then an Airspace Certification form is required. Also will require request of a variance.

// END //

Exhibit "C"

Additional Review is Required by Planning & Building Staff

APPS # 11864

All of the following questions are to be answered by Planning and Building Department staff. No further involvement with the Department of Public Works is required for these items; however Public Works staff is available to answer any questions that may arise.

1. **ROADS – PART 1.** Does the project takes access from a series of non-county maintained roads that connect directly to a State Highway (36, 96, 101, 255, 299, etc…)?

   ☐ YES ☐ NO (E) PAVED INTERSECTION

   If **YES**, the project does not need to be referred to the Department. Include the following requirement:

   All recommendations in the *Road Evaluation Report(s)* for non-county maintained road(s) shall be constructed/implemented to the satisfaction of the Planning & Building Department prior to commencing operations, final sign-off for a building permit, or approval for a business license. A grading permit may be required; check with the Building Division of the Planning and Building Department for any permit requirements.

2. **ROADS – PART 2.** Does the project takes access from a series of non-county maintained roads that connect directly to a Caltrans State Highway, US Forest Service Road, BLM Road, or a City road?

   ☒ YES ☐ NO

   If **YES**, the Department recommends that prior to the project presented to the Planning Commission or Zoning Administrator, that the project should be referred to the affected road agency(ies).

3. **ROADS – PART 3.** Does the project take access or use a county maintained road that does not have a centerline stripe or is not on the "approved list" of known category 4 roads? ☐ YES ☐ NO

   If **YES**, a *Road Evaluation Report* must be done for the County road(s) that do not have a centerline stripe or are not on the "approved" list. The project along with the road evaluation report(s) for the County maintained road(s) must be referred to Public Works for review to ensure that the Department supports the findings in the report. If the road is on the "not approved" list, then Part B of the *Road Evaluation Report* form must be completed.

4. **Deferred Subdivision Improvements.** Does the project have deferred subdivision improvements? ☐ YES ☐ NO

   How to check: Method 1: Planning and Building Department staff review the legal description for the subject property in the deed. If the deed reads similar to "Parcel __ of Parcel Map No. ___" then there may be deferred subdivision improvements; further research will be needed. Method 2: Planning and Building Department staff need to review the title report(s) for the subject property(ies) to see if a "Notice of Construction Requirements" document is listed. If the document is listed, then there are deferred subdivision improvements.

   If **YES** then the subject property has deferred subdivision improvements. The project cannot be presented to the Zoning Administrator or the Planning Commission until the deferred subdivision improvements are completed. The applicant should be directed to the Department of Public Works regarding the deferred subdivision improvements.

5. **AIRPORT- PART 1 (ALUCP).** Is the project located within Airport Land Use Compatibility Plan (ALUCP) Zone A, B, B1, B2, or B3 as shown on the ALUCP GIS layer? ☐ YES ☐ NO

   If **YES**, include the following requirement:

   The applicant shall cause to be dedicated to the County of Humboldt an Avigation Easement. The avigation easement shall be on the form prescribed by the Department of Public Works. This condition shall be completed to the satisfaction of the Department of Public Works prior to commencing operations, final sign-off for a building permit, or Public Works approval for a business license.

Exhibit "C"

Additional Review is Required by Planning & Building Staff

The applicant shall conduct all operations consistent with the ALUCP and in a manner that does not attract flocks of birds. Open ponds shall not be permitted.

6. **AIRPORT – PART 2 (County Code Section 333).** Is the project is located within the County Code Section 333 GIS layer **AND** is the project proposing to construct (or permit) a fence, building or other structure? ☐ YES ☐ NO

   If **YES**, the applicant shall submit a completed *Airspace Certification Form* prior to the project being presented to the Zoning Administrator or the Planning Commission for approval.

7. **AIRPORT – PART 3 (Height Restrictions).** Planning & Building Staff shall review the completed *Airspace Certification Form* as follows:

   - If Box 1 is checked **NO**, the applicant shall either modify the project to comply with County Code Section 333-4 or the applicant shall request a variance pursuant to County Code Section 333-8. The project shall not be presented to the Zoning Administrator or the Planning Commission for approval until the variance is approved by the Board of Supervisors, or the project was modified to comply with County Code Section 333-4.
   - If Box 2 is checked **YES**, the applicant shall submit form FAA 7460-1 to the FAA for review and comment. The project shall not be presented to the Zoning Administrator or the Planning Commission for approval until the FAA supports the project.
   - If Box 3 is checked **YES**, then the project cannot be permitted and must be modified to conform to the easement. As an alternative, the applicant may wish to seek approval from both the County and the FAA to quitclaim a portion of the easement to allow the project to be permitted.
   - If Box 1 is checked **YES** and Box 2 is checked **NO** and Box 3 checked **NO or NA**, then Planning & Building staff shall signoff on the project in the "county use only" section of the form. In the "pre-construction" right of way (or "post construction" right of way if the building exists), check the approval box; date and initial your work.

     Note that if the proposed structure is close to the imaginary surface (within 5 feet), then require a post construction certificate to be filed. By including the following requirement:

     Applicant shall file a post construction *Airspace Certification Form* to ensure that the proposed structures are in compliance with County Code 333-3. This shall be completed within 90 days of completion of construction or prior to building final, whichever occurs first.

     Submit a copy of all processed *Airspace Certification Forms* to the Land Use Division.

8. **MS4/ASBS Areas.** Is the project located within MS4 Permit Area as shown on the GIS layer? ☐ YES ☐ NO

   If **YES**, include the following requirement:

   The applicant shall demonstrate to the satisfaction of the Planning & Building Department that the project is in compliance with MS4/ASBS requirements.

// END //

HUMBOLDT COUNTY
PLANNING AND BUILDING DEPARTMENT
CURRENT PLANNING DIVISION
3015 H STREET, EUREKA, CA 95501 ~ PHONE (707) 445-7541

PROJECT REFERRAL TO: Health and Human Services Environmental Health Division

Project Referred To The Following Agencies:
Building Inspection Division, Public Works Land Use Division, Health and Human Services Environmental Health Division, County Counsel, CalFire, California Department of Fish And Wildlife, Northwest Information Center, Bear River Band Rohnerville Rancheria, Regional Water Quality Control Board, North Coast Unified Air Quality Management District, Humboldt County District Attorney, Humboldt County Agriculture Commissioner, Humboldt County Sheriff, SWRCB- Division of Water Rights, Southern Trinity Joint Unified School District, Southern Trinity Volunteer Fire Department

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Applicant Name Joe Royse **Key Parcel Number** 208-231-012-000

Application (APPS#) 11864 **Assigned Planner** Elizabeth Schatz (707) 268-3759 **Case Number(s)** CUP16-418

Please review the above project and provide comments with any recommended conditions of approval. To help us log your response accurately, please include a copy of this form with your correspondence.

Questions concerning this project may be directed to the assigned planner for this project between 8:30am and 5:30pm Monday through Friday.

County Zoning Ordinance allows up to 15 calendar days for a response. If no response or extension request is received by the response date, processing will proceed as proposed.

☐ If this box is checked, please return large format maps with your response.

Return Response No Later Than

Planning Commission Clerk
County of Humboldt Planning and Building Department
3015 H Street
Eureka, CA 95501
E-mail: PlanningClerk@co.humboldt.ca.us **Fax:** (707) 268-3792

We have reviewed the above application and recommend the following:

Conditional Approval

Comments:

DEH recommends approval with the following conditions:

1. **No processing can be approved** until an acceptable site suitability report can establish potential for onsite waste treatment system (OWTS) adequate to support proposed staffing.
2. The approval of an unpermitted OWTS shown on the provided site plan is **dependent upon demonstration of site suitability** from a Qualified Professional.
3. **An invoice, or equivalent documentation, is provided to DEH** to confirm the continual use of portable toilets to serve the needs of cultivation staff prior to reissuance of annual permit.

*Please provide a copy of the written Approved Compliance Agreement to DEH per HCC §313-55.4.11

*This review and recommendation is for the Land Use aspects of the planning project and does not include or imply compliance with all DEH programs. Although DEH recommends the approval of the Planning project, Solid Waste and HazMat Program requirements need to be addressed directly with staff from those programs.

Response Date: 7/17/2018 **Recommendation By:** Joey Whittlesey

From: Lee, Bo@CALFIRE
To: Planning Clerk; HUU CEQA@CALFIRE
Subject: 208-231-012-000. Joe Royse, application # 11864
Date: Tuesday, November 14, 2017 10:30:04 PM

Reviewed by B1213.

Recommend:

- Emergency Access
  - Turnarounds
- Signing and building numbers
- Emergency water standards
  - Designated water storage for fire
- Fuel modification standards

Bo Lee
Battalion Chief
CAL FIRE
Humboldt-Del Norte Unit
707-499-2244

DEPARTMENT OF FORESTRY AND FIRE PROTECTION

Humboldt – Del Norte Unit
118 Fortuna Blvd.
Fortuna, CA 95540
Website: www.fire.ca.gov
(707) 726-1272

Ref: 7100 Planning
Date: November 14, 2017

John Ford, Director
Humboldt County Planning and Building Department – Planning Division
3015 H Street
Eureka, CA 95501

Attention: Cannabis Planner (CPOD)
Applicant: Royse, Joe
APN: 208-231-012-000
Area: Dinsmore
Case Numbers: CUP16-418

Humboldt County Application #: 11864
Type of Application: Conditional Use Permit
Date Received: 11/7/2017
Due Date: 11/21/2017

Project Description: An application for a Conditional Use Permit for 15,000 square foot (SF) existing outdoor medical cannabis cultivation. Irrigation water source is an onsite well. Water storage capacity onsite is 8,450 gallons amongst 3 storage tanks. Processing will be performed onsite. Power source is unknown.

Mr. Ford,

The California Department of Forestry and Fire Protection (CALFIRE) provides these standard project review comments on the above noted project for the following subject matter:

-Fire Safe
-Resource Management
-Cannabis

The following pages address these concerns directly.

If CALFIRE staff develops additional comment on this project, it will be forwarded in an additional response letter.

By: Planning Battalion
CALFIRE Humboldt – Del Norte Unit

For ***Hugh Scanlon***, Unit Chief

FIRE SAFE

General:
CALFIRE has responsibility for enforcement of Fire Safe Standards as required by Public Resources Code (PRC) 4290 and 4291. However CALFIRE is not the lead agency in planning development and project permitting. CALFIRE provides input as a contributing agency, generally limited to plan review, and is not the approving agency for these projects.

Local Responsibility Areas:
Should this project include Local Responsibility Area (LRA) lands, CALFIRE has no direct fire safe input on those parcels. However, in those areas with LRA parcels adjacent to State Responsibility Area (SRA) land, CALFIRE recommends that local standards be applied that are consistent with those CALFIRE makes for SRA lands.

State Responsibility Areas:
Should this project include State Responsibility Area (SRA) lands, the following are CALFIRE's Fire Safe minimum input and recommendation for any and all development.

1. In Humboldt County, developments must meet minimum fire safe standards by constructing the project in conformance with County Fire Safe Ordinance 1952, which the California Board of Forestry and Fire Protection has accepted as functionally equivalent to PRC 4290. The County Fire Safe Ordinance provides specific standards for roads providing ingress and egress, signing of streets and buildings, minimum water supply requirements, and setback distances for maintaining defensible space.

2. New buildings located in any Fire Hazard Severity Zone within State Responsibility Areas shall comply with the 2007 California Building Code (CBC) Section 701A.3.2. This requires roofing assemblies, attic and eve ventilation, exterior siding, decking and deck enclosure, windows and exterior doors, and exposed under floor areas that are approved "ignition resistive" in design.

3. All development, especially commercial or industrial development, should be designed to comply with the most current versions of the following standards:
   a) California Fire Code (CFC) — for overall design standards
   b) Public Utilities Commission (PUC) General Order 103 — for design of water systems
   c) National Fire Protection Association Standards (NFPA) for fire flow minimums and other design questions not specifically covered by CFC and PUC
   d) Housing and Community Development Codes and Standards —for mobile home parks and recreational camps

4. For Department of Real Estate reporting purposes, fire protection coverage in SRA is generally described as follows:
   During the declared fire season (usually June through October) CALFIRE responds to all types of fires and emergencies in SRA.
   During the remainder of the year (winter period), CALFIRE responds to emergency requests with the closest available fire engine, if a response can reasonably be expected to arrive in time to be effective. A fire engine is usually available somewhere in the Unit, but may have an extended response time.
   There are many hazards confronting fire protection agencies in most subdivisions on SRA lands. Steep terrain and heavy wildland fuels contribute to fire intensity and spread. The distances from fire stations and road grades encountered usually create an excessive response time for effective structure fire suppression purposes.
   Subdivisions increase fire risks from additional people and increase probable dollar losses in the event of fire due to added structures and improvements.

5. If the project expects to produce densities consistent with a major subdivision, the impacts on all infrastructures should be mitigated. Local government more appropriately provides the responsibility for high-density area protection and services. Annexation or inclusion into Local Responsibility Area should be studied as well.

6. CALFIRE does not support development in areas where there is no local agency fire service for structure fires and emergency medical response. Fire services should be extended into service gap areas as a condition of development. New development can adversely impact existing fire services. Careful consideration must be given where development may overload the local fire service's ability to respond.

RESOURCE MANAGEMENT

CALFIRE has enforcement responsibility for requirements of the Z'berg—Nejedly Forest Practice Act of 1973. CALFIRE is also the lead agency for those parts of projects involving the scope of the Forest Practice Act. The following basic input will cover the majority of projects. Each project will be reviewed with additional input sent at a later date, if needed.

The following comments reflect the basic Resource Management policies of the Board of Forestry and Fire Protection and CALFIRE on CEQA review requests. These policies apply to both Local and State Responsibility Areas.

1. If this project reduces the amount of timberland, by policy, the Board of Forestry and CALFIRE cannot support any project that will reduce the timberland base of California. "Timberland" means land which is available for, and capable of, growing a crop of trees of any commercial species used to produce lumber and other forest products, including Christmas trees regardless of current zoning (PRC 4526). However, if the zoning and intended use are consistent with the county's general plan; and if no land other than timberland can be identified to site the project; then CALFIRE may choose not to oppose the project.

2. If **any** commercial timber operations are involved with a project, the timber operations cannot be conducted without a CAL FIRE permit. Commercial timber operations include the cutting or removal of trees offered for sale, barter, exchange, or trade or the conversion of timberlands to land uses other than the growing of timber (PRC 4527). Contact your nearest CAL FIRE Resource Management office for guidance on obtaining the necessary permits.

3. If **any** timberlands are being converted to a non-timber growing use by this project, the conversion operations cannot be conducted without a CAL FIRE permit (PRC 4621). Conversion of timberland takes place when trees are removed and the land use changes, even without the sale, barter, exchange, or trade of the trees. Contact your nearest CAL FIRE Resource Management office for guidance on obtaining the necessary permits.

4. If timberland is in the viewshed of a project, the current and future owners should be overtly notified that changes will occur to their views due to timber management activities. Further, no project should be allowed to negatively affect access to timberland for timber management purposes; neither on the project parcel(s) nor any other timberland parcels.

5. If timber harvesting has occurred and post-harvest restocking and prescribed erosion control maintenance obligations have not been met on a parcel, future owners should be overtly notified (14 CCR 1042). The current owner of a parcel is responsible for restocking requirements and maintenance of roads whether or not they were involved in the actual harvest plan.

6. If the project involves the development of parcels zoned as Timber Production Zone (TPZ), CALFIRE cannot support the project. Dividing TPZ land into parcels of less than 160 acres requires a Joint Timber Management plan prepared by a Registered Professional Forester (RPF), recorded as a deed restriction for a minimum of 10-years on all affected parcels, and approved by a four – fifths vote of the full board (Govt. Code 51119.5). TPZ may be rezoned using a "Ten Year Phase Out," which precludes the need for a Timberland Conversion Permit. CALFIRE opposes immediate rezoning of TPZ land.

CANNABIS PROJECTS

Local Responsibility Areas:
CAL FIRE is the primary command and control dispatch center for many local agency fire districts and departments. Potential life hazard threats associated with a project must be identified and documented for the protection of the public and first responders. Projects which include timber harvesting or conversion of timberland are subject to the Forest Practices Act and Rules, regardless of wildland fire responsibility area.

State Responsibility Areas:
Should this project include State Responsibility Area (SRA) lands, the following are CAL FIRE's minimum input.

Conversion of timberland to a non-timber producing use is subject to permit from CAL FIRE. Commercial timber harvesting operations to facilitate cannabis cultivation and processing are subject to permitting and regulation under the Forest Practice Act and Rules. Please refer to the RESOURCE MANAGEMENT comments.

General Recommendations:
The following recommendations are made by CAL FIRE with the understanding that most areas of Humboldt County do not have a paid fire department providing fire prevention services.

1. Cannabis growing operations shall have easily accessible safety data sheets (SDS) for all chemicals and hazardous materials on site. Commercial operations must have a current Hazardous Materials Business Plan on file with Humboldt County Environmental Health, where applicable.

2. California Health and Safety Code (HSC 11362.769.) Requires that indoor and outdoor medical marijuana cultivation shall be conducted in accordance with state and local laws related to land conversion, grading, electricity usage, water usage, water quality, woodland and riparian habitat protection, agricultural discharges, and similar matters.

3. Cannabis growing and extraction shall be in accordance with Chapter N101.1 of the International Fire Code, the International Building Code, and the International Mechanical Code. Hazardous materials shall comply with Chapter 50. Compressed gases shall comply with Chapter 53. Cryogenic fluids shall comply with Chapter 55. Flammable and combustible liquids shall comply with Chapter 57. LP-gas shall comply with Chapter 61 and the International Fuel Gas Code. All applicable California State Fire Marshal standards and regulations for the designated occupancy must be met.

4. Growing and processing of cannabis is generally an agricultural operation. However, manufacture of marijuana extracts and concentrates are commercial or industrial activities, and may be subject to the county's SRA Fire Safe Ordinance. Any new residential units associated with cannabis cultivation and processing may also be subject to the SRA Fire Safe Ordinance. All materials hazardous and non-hazardous associated with the extraction process shall be utilized in conformance of the law and fire safe codes.

From: Titus, Lucas@CALFIRE
To: Planning Clerk; HUU CEQA@CALFIRE
Subject: APN# 208-231-012 Joe Royse APPS# 11864
Date: Monday, November 13, 2017 11:13:14 AM

Resource Management has no comments regarding this project at this time

Lucas Titus
Forester I, Bridgeville Resource Management
Department of Forestry and Fire Protection
CAL FIRE
Humboldt-Del Norte Unit
Office (707)777-1720
Cellular (707)599-6893

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California Department of Fish and Wildlife
CEQA: Project Referral Comments

Applicant: Joe Royse		Date: 4/23/19	
APPS No.: 11864	APN: 208-231-012	DFW CEQA No.: 2017-0982	Case No.: CUP16-418
☐ New ☒Existing	Proposed: ☐ Mixed-light (SF):	☒ Outdoor (SF): 15,000 ☐ Indoor	☐ RRR

Thank you for referring this application to the California Department of Fish and Wildlife (CDFW) for review and comment.

CDFW offers the following comments on the Project in our role as a Trustee and Responsible Agency pursuant to the California Environmental Quality Act (CEQA; California Public Resource Code Section 21000 *et seq.*). These comments are intended to assist the Lead Agency in making informed decisions early in the planning process.

☒ Applicant needs to submit additional information. Please see the list of items below.

Please note the following project specific information:

☒ The applicant submitted a Notification of Lake or Streambed Alteration (LSA#: 1600-2018-0717-R1).

Please provide the following information <u>prior to Project Approval</u>: *(All supplemental information requested shall be provided to the Department concurrently)*

☒ Aerial Imagery analysis suggests cultivation areas has been expanded post January 1, 2016. CDFW requests, prior to Project approval, a copy of the County Cannabis Area Assessment (CAV). CDFW requests, information regarding actions taken by the County to identify and/or resolve unpermitted expansion.

If the County elects to move this Project forward to hearing, CDFW requests the following items be incorporated as conditions of Project approval:

☒ If following review of the County Cannabis Area Assessment (CAV) expansion of cultivation operations post January 1, 2016, is identified. CDFW requests remediation of the impacted area and mitigation as outlined in the comments below.

☒ That within thirty-days, following execution of the final permit, photo evidence is provided to CDFW and the County documenting that all imported soil and operation associated refuse is fully contained and setback a minimum of 150ft from watercourses and/or wet areas.

☒ CDFW requests that the groundwater well be inspected annually to evaluate drawdown, and the potential for the well to go dry. This evaluation should include a standard pump test to be conducted during the dry season. Evaluation of the pump test results should be conducted by a licensed professional with expertise. Since the County is the lead agency on land use and associated groundwater well use and management, planning staff should evaluate the location and water use of other proximal wells to this Project and require storage as necessary to avoid excessive aquifer drawdown. CDFW recommends additional water storage at this site in the event that the well does not produce in perpetuity.

☒ Referral materials suggest that the Project has or has the potential to damage or remove oak woodlands. California deciduous oak woodlands provide many ecological, cultural, and economic benefits, and often represent unique plant communities that harbor native rare and declining

species (Cocking et al. 2015). Oak woodlands have suffered substantial losses in area and ecological integrity in the post-settlement era due to land conversion and widespread fire exclusion (Cocking et al. 2015). Oaks are important ecologically at individual tree and woodland scales (Vesely et al. 2004). Diversity of bird species is often higher in oak forests than in adjacent conifer forests (Cole 1977). Additional contributions to biological richness include, increased diversity of native insect populations, provides nest and den sites for wildlife, provides unique microhabitats for mosses and lichens, are an important food source for many species of wildlife, and they maintain ecological processes (Vesely and Tucker 2004). Land conversion and encroachment by development, including cannabis operations, may have potentially significant adverse effects on biological resources. The Department requests mitigation for expansion/relocation in the form of oak woodland enhancement. Remnant oak woodlands in many areas are undergoing further conversion to conifer forest as shade tolerant, and often less fire-tolerant species invade and increase in abundance (Cocking et al. 2015). CDFW requests as a condition of Project approval, 5:1 mitigation (i.e. one acre illegally converted, five acres restored) in the form of oak woodland release from conifer encroachment (oak woodland health improvement) or10:1 mitigation in the form of native oak tree (genus *Quercus*) planting (i.e. 10 oak trees planted for every one oak tree removed) with a five-year monitoring plan and minimum 80% survival rate, for the total area of expansion; areas selected for mitigation shall be determined by a Registered Professional Forester (RPF), in consultation with CDFW and CAL FIRE. CDFW further requests, as a condition of Project approval, that additional oak woodland removal be prohibited within 150ft of all operation related structures.

☒ Prohibition on use of synthetic netting. To minimize the risk of wildlife entrapment, Permittee shall not use any erosion control and/or cultivation materials that contain synthetic (e.g., plastic or nylon) netting, including photo- or biodegradable plastic netting. Geotextiles, fiber rolls, and other erosion control measures shall be made of loose-weave mesh, such as jute, hemp, coconut (coir) fiber, or other products without welded weaves.

☒ The environmental impacts of improper waste disposal are significant and well documented. CDFW requests, as a condition of Project approval, that all refuse be contained in wildlife proof storage containers, at all times, and disposed of at an authorized waste management facility.

☒ Human induced noise pollution may adversely affect wildlife species in several ways including abandonment of territory, loss of reproduction, auditory masking (inability to hear important cues and signals in the environment), hindrance to navigation, and physiological impacts such as stress, increased blood pressure, and respiration. To avoid disturbance, CDFW requests, as a condition of project approval, the construction of noise containment structures for all generators parcel; noise released shall be no more than 50 decibels measured from 100ft.

☒ This project has the potential to affect sensitive fish and wildlife resources such as Oregon Goldthread (*Coptis laciniate*), Tracy's Sanicle (*Sanicula tracyi*) Steelhead Trout (*O. mykiss*), Coastal Rainbow Trout (*O. mykiss irideus*), Foothill Yellow-legged Frog (*Rana boylii*), Pacific Giant Salamander (*Dicamptodon tenebrosus*), Rough-skinned Newt (*Taricha granulosa*), Boreal Toad (*Anaxyrus boreas boreas*), Western Pond Turtle (*Actinemys marmorata marmorata),* and amphibians, reptiles, aquatic invertebrates, mammals, birds, and other aquatic and riparian species.

Thank you for the opportunity to comment on this Project. Please send all inquiries regarding these comments to kalyn.bocast@wildlife.ca.gov .

Sincerely,

California Department of Fish and Wildlife
619 2nd Street
Eureka, CA 95501

References

Cocking, M.I., J.M. Varner, and E.A. Engber. 2015. Conifer encroachment in California oak woodlands. Pages 505–514 in: R.B. Standiford and K.L. Purcell, editors. Proceedings of the seventh California oak symposium: managing oak woodlands in a dynamic world. USDA Forest Service General Technical Report PSW-GTR-251, Pacific Southwest Research Station, Berkeley, California, USA.

Cole, D. 1977. Ecosystem dynamics in the coniferous forest of the Willamette Valley, Oregon, U.S.A. Journal of Biogeography 4(2): 181-192.

DeMars, C.A., D.K. Rosenberg and J.B. Fontaine. 2010. Multi-scale factors affecting bird use of isolated remnant oak trees in agro-ecosystems. Biological Conservation 143: 1485-1492.

International Dark-Sky Association (IDA) 2018.

Vesely, D.G. and G. Tucker. 2004. A landowner's guide to restoring and managing Oregon white oak habitats. Pacific Wildlife Research. Corvallis, Oregon.

HUMBOLDT COUNTY
PLANNING AND BUILDING DEPARTMENT
CURRENT PLANNING DIVISION
3015 H STREET, EUREKA, CA 95501 ~ PHONE (707) 445-7541

RECEIVED
NOV 09 2017
Humboldt County
Planning Dept.

11/6/2017

PROJECT REFERRAL TO: Southern Trinity Volunteer Fire Department

Project Referred To The Following Agencies:
Building Inspection Division, Public Works Land Use Division, Health and Human Services Environmental Health Division, County Counsel, CalFire, California Department of Fish And Wildlife, Northwest Information Center, Bear River Band Rohnerville Rancheria, Regional Water Quality Control Board, North Coast Unified Air Quality Management District, Humboldt County District Attorney, Humboldt County Agriculture Commissioner, Humboldt County Sheriff, SWRCB- Division of Water Rights, Southern Trinity Joint Unified School District, Southern Trinity Volunteer Fire Department

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Applicant Name Joe Royse **Key Parcel Number** 208-231-012-000

Application (APPS#) 11864 **Assigned Planner** Cannabis Planner (CPOD) (707) 445-7541 **Case Number(s)** CUP16-418

Please review the above project and provide comments with any recommended conditions of approval. To help us log your response accurately, please include a copy of this form with your correspondence.

Questions concerning this project may be directed to the assigned planner for this project between 8:30am and 5:30pm Monday through Friday.

County Zoning Ordinance allows up to 15 calendar days for a response. If no response or extension request is received by the response date, processing will proceed as proposed.

☐ If this box is checked, please return large format maps with your response.

Return Response No Later Than 11/21/2017

Planning Commission Clerk
County of Humboldt Planning and Building Department
3015 H Street
Eureka, CA 95501
E-mail: PlanningClerk@co.humboldt.ca.us **Fax:** (707) 268-3792

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

☐ Recommend Approval. The Department has no comment at this time.

☒ Recommend Conditional Approval. Suggested Conditions Attached. Recommend inclusion of a fire hydrant in NW qtr of parcel below water tanks

☐ Applicant needs to submit additional information. List of items attached.

☐ Recommend Denial. Attach reasons for recommended denial.

☒ Other Comments: recommend addition of USDA, Forest Service, 741 Highway 36 Bridgeville 95526 as this agency provides wildland fire protection to Bunker Ridge

DATE: 11/8/17 PRINT NAME: Wm German, chief STVFD

Typical - Rural Residential Fire Hydrant

2"-4" galv metal supply line
shutoff valve in ground in box near standpipe
2"-4" galv metal standpipe rising 2'-3' above ground
Gate valve with 90° discharge at top of standpipe
Gate valve discharge thru threaded 2½" male fire hose thread with cap
Garden hose drain spigget at bottom of standpipe at ground level
Standpipe located 2'-4' from access road
Standpipe protected by 2 or more substantial posts in ground