

**SUPPLEMENTAL INFORMATION
No. 1**

For Planning Commission Agenda of:
February 7, 2019

Re:	Applicant	Sky High Humboldt, LLC	Item No.: G-1
	Case Number	CUP16-450	
	Assessor Parcel Number	223-271-006	

The following documents are attached:

- As-Built Grading and Erosion Control Plan Kellar & Maissen dated January 17, 2019.
- Revised Cultivation and Operations Plan dated January 28, 2019.
- APPS #11921 – Supplemental Information – Water Resource Protection APN 223-271-006, dated January 28, 2019.
- Biological Assessment of Development Impacts for 692 Lower Sawmill Road, Garberville, CA, September 17, 2017.
- Email from Kalyn Bocast, California Department of Fish and Wildlife (CDFW), dated February 6, 2019, requesting the applicant adhere to the standard Draft Bullfrog Management Plan.
 - Staff response: Planning staff is recommending restoration of the rainwater catchment pond, which includes the pond outfall. However, if the Planning Commission chooses to approve the relocation and allow the rainwater catchment pond to remain, the Planning Commission shall also consider revising the Recommended Conditions of Approval to include preparation and implementation of a Bullfrog Management Plan as requested by CDFW staff.

AS-BUILT GRADING, DRAINAGE & EROSION CONTROL PLAN

KELLAR & MAISSEN

Garberville, California

CAUTION:

UNAUTHORIZED CHANGES & USES

THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE FOR, OR LIABLE FOR, UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARER OF THESE PLANS.

CONSTRUCTION CONTRACTOR AGREES THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, CONSTRUCTION CONTRACTOR WILL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY, THAT THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND CONSTRUCTION CONTRACTOR FURTHER AGREES TO DEFEND, INDEMNIFY AND HOLD DESIGN PROFESSIONAL HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF DESIGN PROFESSIONALS.

CONSTRUCTION NOTES

GENERAL

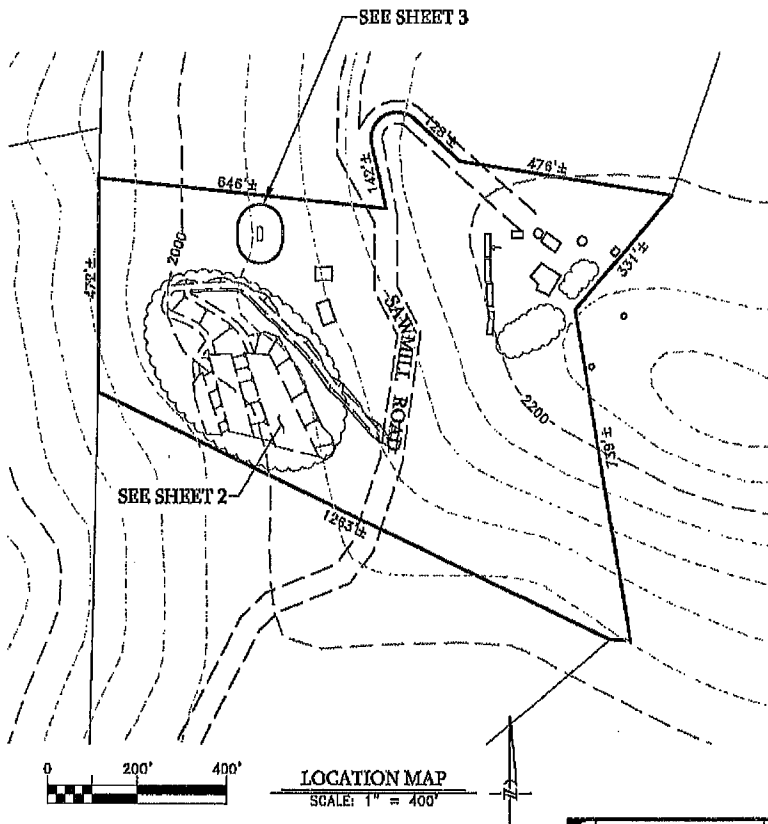
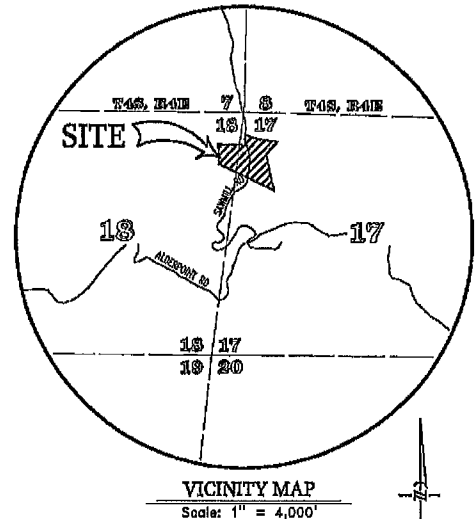
1. THE INFORMATION AND ELEVATIONS PERTAINING TO EXISTING UNDERGROUND FACILITIES, AS SHOWN HEREIN, ARE FROM RECORD INFORMATION AND IS PRESENTED HERE FOR INFORMATION PURPOSES ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ALL AGENCIES INVOLVED AND SHALL LOCATE THE EXISTING UNDERGROUND FACILITIES PRIOR TO EXCAVATION AND CONSTRUCTION IN ANY AREA. THE CONTRACTOR SHALL CONTACT UNDERGROUND SERVICE ALERT (USA) AT 811 AT LEAST TWO (2) WORKING DAYS IN ADVANCE OF ANY EXCAVATION, AND SHALL NOTIFY THE ENGINEER AND DEVELOPER OF ANY APPARENT DISCREPANCIES IN THE RECORD INFORMATION SHOWN HEREIN.
2. ELEVATIONS ON THE TOPOGRAPHIC MAP ARE BASED ON SE 1/4 GARBERVILLE 15 MIN. QUAD, DATED 1970.
3. MATERIALS AND WORK SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS AND STANDARD PLANS OF THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION (CALTRANS), LATEST EDITION, AND THE IMPROVEMENT STANDARDS, LATEST REVISION, OF THE COUNTY OF HUMBOLDT.
4. THE CONTRACTOR SHALL REMOVE FROM THE SITE AND LAWFULLY DISPOSE OF ALL DELETERIOUS MATERIAL (BROKEN CONCRETE, ASPHALT PAVEMENT, BASE MATERIAL, ROCKS, STUMPS, ROOTS, LIMBS, ETC.) TO A COUNTY APPROVED DISPOSAL SITE.
5. THE CONTRACTOR SHALL PROTECT ALL EXISTING IMPROVEMENTS ON OR ADJACENT TO THE PROJECT SITE, INCLUDING BUT NOT LIMITED TO FENCES, CONCRETE CURBS AND GUTTERS, CONCRETE SLABS, UNDERGROUND CONDUITS, STRUCTURES, DECKS, LANDSCAPING, ETC. WHERE DAMAGE TO ADJACENT IMPROVEMENT IS UNAVOIDABLE, THE CONTRACTOR SHALL MAKE ARRANGEMENTS WITH THE PROPERTY OWNER TO REPLACE OR REPAIR THE DAMAGED IMPROVEMENTS.
6. DUST SHALL BE CONTROLLED BY WATERING DURING ALL PHASES OF CONSTRUCTION.
7. SANITARY FACILITIES SHALL BE MAINTAINED ON THE SITE DURING CONSTRUCTION.
8. STORM DRAIN PIPE, SHALL BE HIGH-DENSITY POLYETHYLENE (N-12 AS MANUFACTURED BY ADS, OR APPROVED EQUAL), OR AS SPECIFIED ON THESE PLANS.

PLOT PLAN NOTES

9. THIS PARCEL IS ZONED AGRICULTURAL EXCLUSIVE (AE) AND HAS A GENERAL PLAN DESIGNATION OF AL40 (PER FRAMEWORK PLAN) AND IS IN THE STATE RESPONSIBILITY AREA (SRA).
10. THE SITE, OUTSIDE OF THE SMA, HAS HISTORICALLY NOT BEEN SUBJECT TO FLOODING, PER F.I.R.M. COMMUNITY-PANEL NO. 060080 1075 B.
11. IT IS UNKNOWN AT THIS TIME WHETHER THE SITE IS UNDERLAIN BY SENSITIVE HABITAT AREAS, WETLAND AREAS OR ARCHAEOLOGICAL RESOURCES.

GRADING & EROSION CONTROL NOTES

12. APPROXIMATELY 1,800± CUBIC YARDS OF DIRT WAS RELOCATED TO GRADE THE CULTIVATION AREAS, AND ADDITIONAL 5,100± CUBIC YARDS TO GRADE THE POND, FOR A TOTAL OF 6,900± CUBIC YARDS. A 30 MIL HDPE POND LINER WAS ALSO INSTALLED.
13. ALL GROUND BARED RECEIVED THE EROSION CONTROL TREATMENT. EROSION CONTROL TREATMENT SHALL CONSIST OF THE FOLLOWING:
 - a. BROADCAST NON-INVASIVE, NON-PERSISTANT STATE MIX GRASS SEED AT A RATE OF 100 LBS/ACRE AND 16-20-0 FERTILIZER AT A RATE OF 200LBS/ACRE.
 - b. SPREAD HAY OR STRAW AT THE RATE OF 2 TONS/ACRE.
 - c. HAY OR STRAW SHALL BE STABLE AND NOT SUBJECT TO REMOVAL BY WIND, THE STRAW OR HAY SHALL BE PLACED WITH PARTIAL EMBEDMENT INTO THE SOIL OR TREATED WITH A SUITABLE STABILIZING EMULSION.
14. THE GOAL OF THIS GRADING, DRAINAGE & EROSION CONTROL PLAN IS TO MINIMIZE SEDIMENT LEAVING THE SITE, AND TO ENSURE THAT ANY SEDIMENT THAT DOES LEAVE WILL HAVE AN INSIGNIFICANT IMPACT DOWNSTREAM.
15. SITE MONITORING PRIOR TO AND AFTER SIGNIFICANT STORM EVENTS WILL BE MADE BY THE DEVELOPER, TO VERIFY THAT THE EROSION CONTROL MEASURES ARE SATISFACTORY, AND TO DETERMINE IF ADDITIONAL MEASURES ARE REQUIRED IN ORDER TO ACHIEVE THIS PLAN'S GOAL.
16. ALL EARTHWORK AND GRADING WAS COMPLETED IN ACCORDANCE WITH SECTION 19 OF CALTRANS SPECIFICATIONS, LATEST EDITION, AND SECTION 351-12 OF THE HUMBOLDT COUNTY LAND USE AND DEVELOPMENT ORDINANCE AND THE ENGINEERING-GEOLOGIC SOILS EXPLORATION REPORT OF FINDINGS PREPARED FOR THIS PROJECT BY LINDBERG GEOLOGIC CONSULTING (LGC).
17. ALL NEWLY CONSTRUCTED ROADS TO RECEIVE 6" CLASS II AGG. BASE OR 9" OF LOCAL ROCK SOURCE. ROADS SHALL BE MINIMUM 10' WIDE WITH 2' GRADED SHOULDER EACH SIDE.
18. CUT SLOPES SHALL BE 2:1 MAXIMUM AND FILL SLOPES SHALL BE 2:1 MAXIMUM UNLESS OTHERWISE SHOWN ON THE PLANS.
19. CONTRACTOR TO PROVIDED BMPs AS REQUIRED IN APPENDIX B OF SWRCB ORDER NO. R1-2015-0023, II. STANDARD BMPs FOR CONSTRUCTION.



DRAWING INDEX	
SHEET	DRAWING
1	COVER / TITLE SHEET
2	SITE PLAN
3	AS-BUILT POND PLAN & SILT FENCE DETAIL
4	CROSS SECTIONS

OWNER/APPLICANT
RACHEL KELLAR & SEAN MAISSEN
P. O. BOX 213
REDWAY, CA 95560
(415 624-5965)

UTILITIES	
WATER	RAIN CATCHMENT
GAS	PROPANE TANK
ELECTRIC	SOLAR PANELS / PACIFIC GAS & ELECTRIC CO.
SEWER	ON-SITE

ABBREVIATIONS	
(E)	Existing
(P)	Proposed
Agg.	Aggregate
C.Y.	Cubic Yards
R/W	Right of Way
TYP.	Typical

LEGEND	
SYMBOL	INDICATES
	DIRECTION OF SURFACE WATER RUNOFF/FLOW DIRECTION
	PARKING
(P)	PROPOSED
(E)	EXISTING
(TYP.)	TYPICAL
GAL.	GALLON
SRA	STATE RESPONSIBILITY AREA
⊙ RK-2	SEWAGE DISPOSAL TESTHOLE
	SILT FENCE



Stephen G. Nesvold
STEPHEN G. NESVOLD, P.E.
R.C.E. 20681
1-19-19
DATE

APPS # 11921
APN 223-271-006

GRADING, DRAINAGE
& EROSION CONTROL PLAN

KELLAR & MAISSEN

In the unincorporated area of Humboldt County
Portion of NE 1/4 of Section 18 & NW 1/4 of Section 17, T.4S., R.4E., S.B.M.

NO.	REVISION	DATE	BY
1	AS-BUILT	11/17/19	SGN

OMBERG & PRESTON
454 7th Street
Eureka, California
95501
Telephone
(707) 443-4081
SURVEYORS PLANNERS ENGINEERS

DESIGNED BY	SGN	DATE	03/08/17
DRAWN BY	CWB	DATE	03/08/17
CHECKED BY	KOP	DATE	01/17/19

SCALE	AS SHOWN
JOB NO.	17-1949
PAGE	1
SHEET	4

APN 223-271-001
CONTRERAS/JOHNSTON

APN 223-281-002
BUTTERWORTH

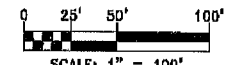
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CUP-16-450 Sky High Humboldt 11921

PC Supplemental #1 2.7.19

APPS # 11921
APN 223-271-006



NO.	REVISION	DATE	BY
1	AS-BUILT	11/17/19	SGN

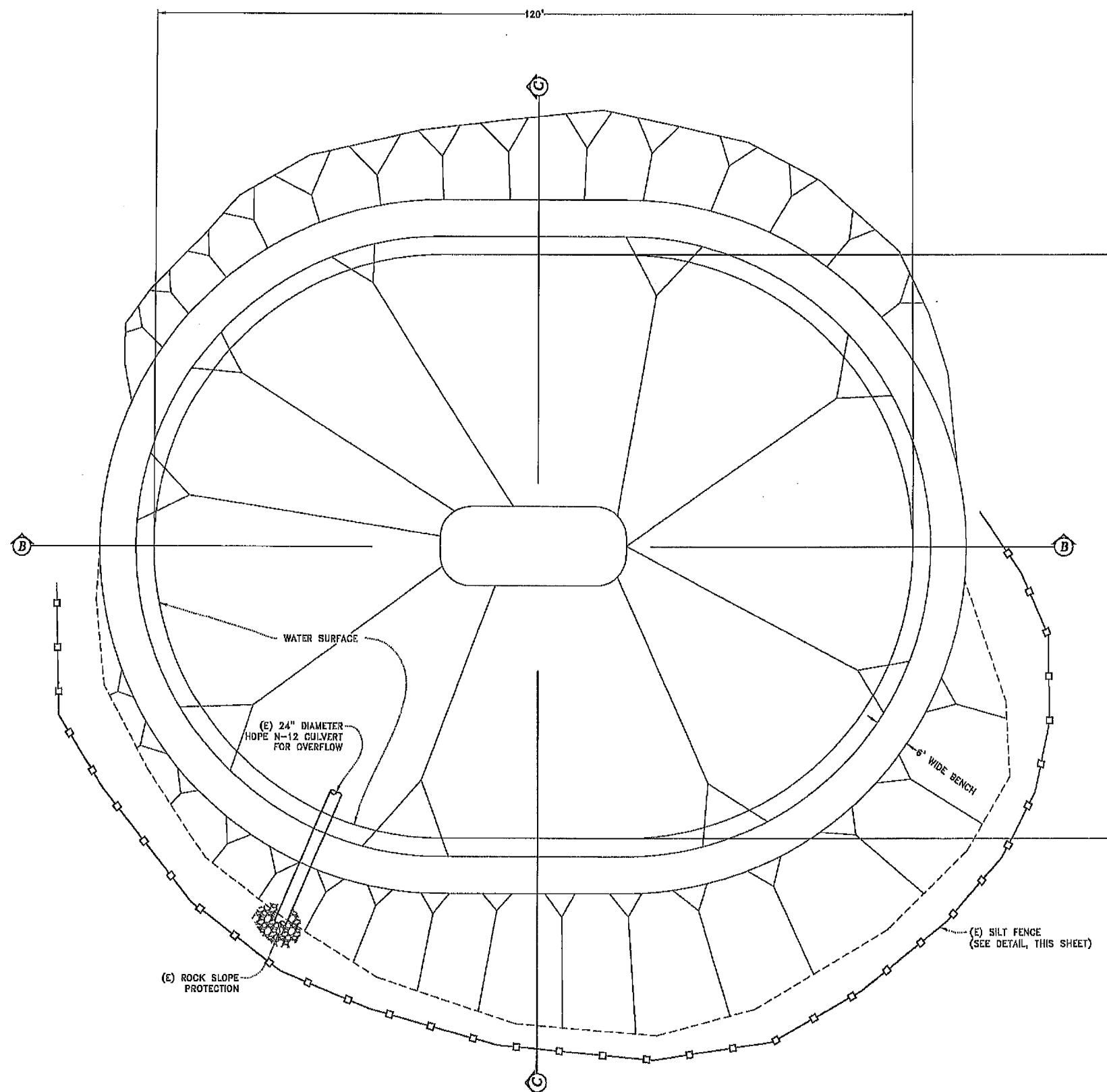
DANBERG & PRESTON
454 7th Street
Eureka, California
95501
Telephone
(707) 443-8881
SURVEYORS PLANNERS ENGINEERS

DESIGNED BY: SGN
DATE: 03/08/17
DRAWN BY: CWD
DATE: 03/08/17
ENGINEER OF WORK: DATE:
STEPHEN G. NESVOLD RCEI 25681

SITE PLAN
for
KELLAR & MAISSEN
In the unincorporated area of Humboldt County
Portion of NE1/4 of Section 18 & NW1/4 of Section 17, T.4S, R.4E, U.S.M.

SCALE AS SHOWN
SHEET NO. 17-1949
SHEET 2
OF 4

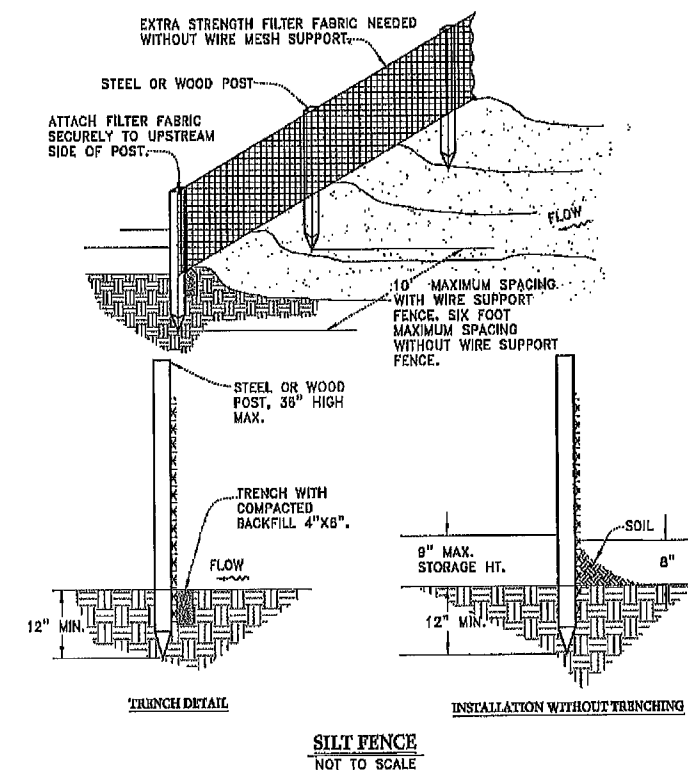
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AS-BUILT POND DETAIL
NOT TO SCALE

CUP-16-450 Sky High Humboldt 11921

PC Supplemental #1 2.7.19



APPS # 11921
APN 223-271-006

AS-BUILT POND PLAN
& SILT FENCE DETAIL

KELLAR & MAISSEN

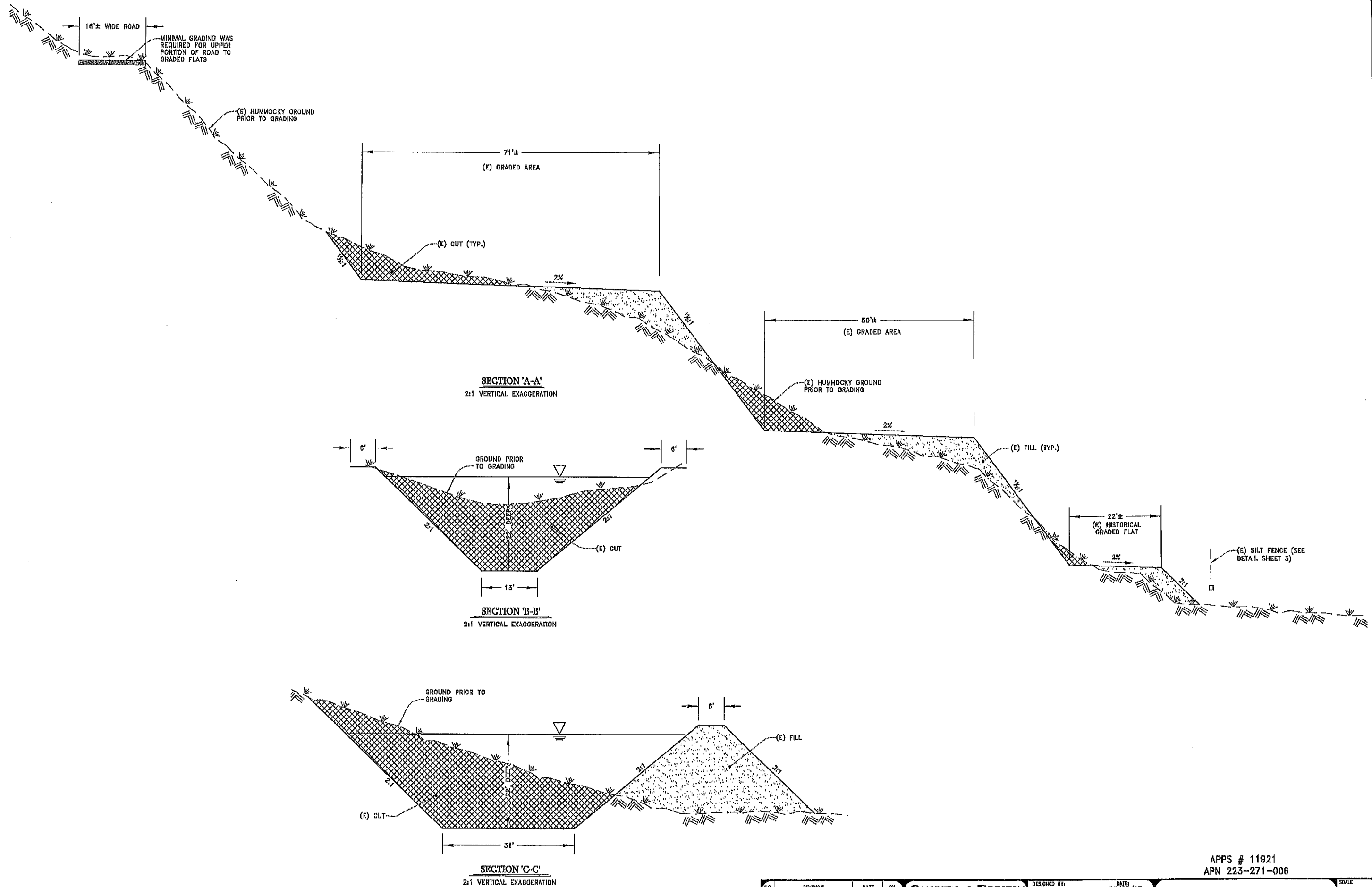
In the unincorporated area of Humboldt County
Portion of NE1/4 of Section 16 & NW1/4 of Section 17, T.4S, R.4E, N.M.S.

NO.	REVISION	DATE	BY
1	AS-BUILT	11/17/19	SGN

OMBERG & PRESTON
494 7th Street
Humboldt, California
95501
Telephone
(707) 443-8881
SURVEYORS PLANNERS ENGINEERS

DESIGNED BY SGN	DATE 03/08/17
DRAWN BY CWB	DATE 03/08/17
ENGINEER OF WORK STEPHEN G. NESVOLD	DATE RCE: 25881

SCALE AS SHOWN
JOB NO. 17-1949
SHEET 4 OF 4 3 4



APPS: 11921
Revised Cultivation/Operations Plan
Rachel Kellar, The Kind Connection
APN: 223-271-006
January 28, 2019

The applicant is seeking approval under Humboldt County CMMLUO to allow continued Mixed Light and Outdoor cultivation.

Proposed Mixed Light Cultivation – 1,730 ft²

Proposed Outdoor Cultivation – 10,260 ft²

The most recent CAV completed by the County found **8,260 ft²** of existing outdoor cultivation and **1,640 ft²** of mixed light cultivation (see letter dated October 12, 2018). The Google Earth image (5/28/2014) provided by the County labeling cultivation areas A through D, is not accurate in showing cultivated square footage. Aerial imagery from TerraServer (07-31-2014) is included with this submission showing that areas **C** and **D** (County Google Earth image) is a **single** area approaching **9,000 ft²**; not two distinct areas totaling **6,050 ft²** as shown on the 5/28/2014 Google Earth Image.

Also, a mixed light structure (located just north of the pool) measuring 20' x 25' should be credited towards the total mixed light square footage.

The most recent County CAV increased:

Mixed Light from 1,230 ft² to 1,640 ft² - additional 410 ft² allotted.

The 20' x 25' ML structure equates to 500 ft² (instead of 410 ft²) which adds an additional 90 ft² to ML bringing the **total mixed light square footage to 1,730 ft²**.

Outdoor Cultivation from 8,050 ft² to 8,260 ft² - additional 210 ft² allotted.

The 6,050 ft² previously calculated (Google Earth image areas C and D) - should be increased based on the 2014 TerraServer image. An additional 2,000 ft² of pre-2016 cultivation area should be credited to the area labeled C and D (Google Earth image) bringing the **total outdoor cultivation square footage to 10,260 ft²**.

Appurtenant development proposed in association with the aforementioned cultivation includes, but is not limited to, relocation of current cultivation areas to a consolidated, environmentally superior location approximately 600 feet west of the current site, placement of additional water storage tanks, future Ag-processing facility construction and pond development. Engineered plans for graded areas and pond development have been provided to the County.

The applicant acknowledges that the commercial cannabis activity approval being sought pursuant to CMMLUO, is subject to compliance with all other applicable Humboldt County zoning and land use regulations, as well as other applicable provisions of the Humboldt County Code and applicable state laws. Determination of compliance will require multi-agency review of proposed activity/development described in the aforementioned conditional use permit and may also require site inspections by personnel from various governmental agencies.

If development and/or activities on the subject parcel are determined, for some reason, to be out of compliance with any applicable State or County code, regulation or policy, a compliance agreement can be formulated between the applicant and relevant agency or agencies, which includes a compliance timeline whereby operations may continue under a *"Provisional Clearance or Permit"* and corrective action is initiated to achieve compliance under agreed upon terms.

The subject parcel, 223-271-006, is 20.06 acres and zoned AE, Agriculture Exclusive Zone. The parcel is located inland of the Coastal zone, off Saw Mill Road, Garberville. The parcel is developed with a residence, garage and swimming pool completed under permit. Electricity is supplied by PG&E and propane is supplied by Amerigas. The residence is served by a permitted onsite sewage disposal system.

Cultivation Practices

Cultivation on the subject parcel occurs from March to October in both an outdoor and mixed light setting.

In early spring, cuttings/clones from mother plants located onsite are propagated and seedlings are started. Applicant rears them in outdoor and mixed light greenhouses. Plants are grown in raised beds, smart pots and roll down bags. Cover crops are planted.

A green, biodegradable netting is used to trellis plants while plants are young along with metal cages as plants grow heavier and risk breakage. Light weight hoop structures are used throughout the outdoor cultivation area to enable support, wind protection and light deprivation. The metal cages are stored in garage shown on plot plan to be reused every year and netting is reused indefinitely unless damage occurs at which time it is disposed of properly and replaced.

Supplemental lighting is used from March to April to maintain plants in the vegetative stage. Following this lighting is discontinued and light deprivation initiated shortly thereafter.

Power poles and a power distribution line run through the property providing PG&E on-grid power. Equipment used include Sixteen (16) t-5 florescent lights (8 per 5,000 sq. ft. areas), pumps for irrigation, fans in hoop houses, dehumidifiers for drying purposes and t-5 florescent lights in processing space.

Mixed Light Cultivation Cycles – Greenhouses

The Applicant proposes multiple mixed light cultivation cycles through use of light deprivation. The cycles will occur from March to October. The Applicant uses supplemental light to maintain vegetating from March to May with light deprivation practices starting from June to October. Plants are harvested in August and October

Outdoor

There are two (2) outdoor cultivation cycles completed from March to October. The outdoor cultivation area will be equipped with light weight hoops to facilitate plant support, wind protection and light deprivation. Outdoor plants are set in May and July with final harvest occurring in October.

Electrical power is supplied from Pacific Gas and Electric and is used to run irrigation pumps, fans and lights. Dehumidifiers are used during the harvest portion of the cultivation cycle. T-5 lights are used during the processing portion of the cultivation cycle.

The Applicant has a large amount of solar panels that feed back into the Pacific Gas and Electric grid. No generators are used.

Cultivation Areas

Cultivation on the subject parcel occurs at various locations within close proximity to the residential setting as viewed from air imagery. Proposed cultivation aims to relocate current cultivation areas away from the residential setting to an environmentally superior location west of the current areas.

Documentation supporting the proposed cultivation relocation provided with this submission includes the following:

Biological Assessment (September 30, 2017) explaining environmental superior siting.

Engineering Geologic R-2 Soils Report – addressing grading/pond development

As-Built Grading, Drainage & Erosion Control Plan – providing pond and grading specifications

Proposed cultivation areas (greenhouses) are located on engineered “flats” as specified in the aforementioned ***Grading, Drainage & Erosion Control Plan***. The engineered “flats” along with the placement of five (5) greenhouses are shown on the site plan; four measuring 20’ x 120’ and one measuring 30’ x 80’.

Water Source

Rainwater is collected and stored for agricultural use and domestic water is supplied by a deeded spring.

Water Storage

By permission/easement the Applicant uses two **(2) - 25,000 gallon** metal rainwater collection/storage tanks located on a neighboring parcel.

Three (3) – 2,500 gallon rain tanks for residential use

Three (3) – 5,000 gallon tanks for agricultural use

Four (4) – 2,500 gallon rain tanks for agricultural use

Four (4) – 500 gallon nutrient mixing tanks proposed at relocation site

Water Usage

The Applicant strives to conserve water through efficient irrigation methods and close monitoring of usage. Based on past water usage shown in table 1 below, the projected monthly water demand for cultivation proposed is expected to be the similar as the quantities shown in table 1- as there is no increase in the square footage under cultivation the only difference being the distribution will be adjusted to match aforementioned cultivation area adjustments.

Month	Stage of Cultivation				Cultivation Area Approx. (12,000 ft ²)	Water Usage
	Flowering	Cloning	Vegging	Harvesting		
January						
February						
March		X				6000 gallons/month
April		X	X			6000 gallons/month
May			X			6000 gallons/month
June	X					6000 gallons/month
July	X					12,000 gallons/month
August	X			X[*ML]		12,000 gallons/month
September	X					6,000 gallons/month
October				X		6,000 gallons/month
November						
December						

Table 1 – Historic Cultivation and Water Usage

*ML=Mixed Light

Irrigation Plan

Cultivation Areas are irrigated with ½ inch DripWorks brand drip lines with emitters that are rated at .5 gals/hr. Drip lines are spaced 1.25 feet apart. Emitters are installed along driplines every 9 inches. Rainwater collection tanks are hard plumbed into spigots in Cultivation Areas with backflow and check valves installed on tanks. Nutrient mixing tank ARE integrated into the irrigation system. Water delivery throughout the system is carefully monitored on a regular basis to ensure proper function and responsible water use. Mulch is carefully placed as a top dressing to optimize soil water retention. Occasional hand watering may be employed if needed.

Soil Management

The Applicant maintains soil in garden beds year round. During the off season cover crops are used including a variety of legumes which are later cut down and turned into the soil to decompose.

Runoff and Erosion Control Measures

The use of carefully regulated drip irrigation minimizes the chance of overwatering or residual discharge of irrigation solutions outside of the “targeted” root zone. In the unlikely event that residual discharge did occur it would contact permeable soil on nearly level ground in and around cultivation areas and be rapidly absorbed. **Lateral movement/irrigation runoff** of any irrigation solutions away from the point of ground contact is very unlikely. The ground surface in and around proposed cultivation areas shall be prepared and proactively managed year-round as prescribed in the ***As-Built Grading, Drainage & Erosion Control Plan*** (Omsberg & Preston) and a *Site Management Plan* to be developed under SWRCB Order WQ 2017-0023-DWQ. Following measures prescribed will prevent unwanted migration of entrained constituents, sediment, fertilizer or other organic particles occurs.

Measures Taken to Ensure Protection of Watershed and Nearby Habitat

A Water Resources Protection Plan Site Map included in the APPS: 11921 supplement shows the proposed cultivation area on the subject parcel meeting applicable setback requirements to watercourses, riparian zones or wetlands. The applicant shall ensure BMP's related to storage, use and disposal of cultivation related materials/products in and around cultivation areas are in use at all times. This includes limiting cultivation activities to the immediate area where cultivation occurs and keeping products/materials securely confined preventing unwanted spreading due to weather or pests. **Watershed protection** will be ensured by implementation of all measures prescribed in a site-specific:

Water Resources Protection Plan (Timberland Resource Consultants, 10/26/2016)

As-Built Grading, Drainage & Erosion Control Plan (Omsberg & Preston, 01/17/19)

Site Management Plan under SWRCB Order WQ 2017-0023-DWQ

Once enrolled under R1-2015-0023, participants are required to engage in ongoing monitoring, reporting and maintenance including periodic site inspections and reviews of operational practices to ensure regulatory requirements related to the following listed items are being met:

<i>Site maintenance, erosion control, and drainage features</i>	<i>Stream crossing maintenance</i>
<i>Riparian and wetland protection and management</i>	<i>Spoils management</i>
<i>Water storage and use</i>	<i>Irrigation runoff</i>
<i>Fertilizers and soil amendments</i>	<i>Pesticides and herbicides</i>
<i>Petroleum products and other chemicals</i>	<i>Cultivation-related wastes</i>
<i>Refuse and human waste</i>	

Additionally, participants ensure that management measures and controls are effectively protecting water resources, and that any newly developing problems representing a water quality concern are identified and corrected quickly.

Mixed Light greenhouses shall be securely shielded to prevent light escape at a level that is visible from neighboring properties between sunset and sunrise. A black out tarp and/or other measures will be used to regulate light spillage onto neighboring properties and reduce light pollution to comply with the International Dark Sky Association standards for Lighting Zone 0 and Lighting Zone 1.

Protocols for Proper Storage and Use of Fertilizers, Pesticides, and Regulated Products

Storage

No chemical pesticides are used. Agriculture products and materials are stored in a locked storage shed which has a concrete slab foundation.

Usage and Regulated Products

The Applicant uses neem oil, and beneficial insects regularly to prevent pest and mold outbreaks. Neem oil is applied using a atomizer apparatus during early evening hours and no wind is present. Native plants are planted at cultivation area borders to promote natural insect habitat. The Applicant also employs manual removal of pests, water rinse for powder mold removal and early intervention for bud rot to prevent spreading.

The Applicant amends soil once a year with organic soil builder and chicken manure. All product brought to the site is used on cultivation, fruit trees and ornamental shrubbery which precludes the need to store fertilizers/amendments. An organic compost tea blend is used as needed.

The applicant acknowledges that the storage and/or use of certain materials in specified volumes and/or weights will be subject to regulation through Humboldt County Division of Environmental Health CUPA and may require: submittal of inventories for those materials, documentation of emergency and training procedures, maintenance of hazardous waste disposal records, obtaining an EPA generator ID number and be subject to site inspections.

Schedule of Activities During Each Month

January: Tend cover crops, add mulch, clean processing facilities, research new medical strains, research cultivation accordingly. Minimal power needs.

February: Tend cover crops, add mulch, clean processing facilities, research new medical strains, research cultivation accordingly. Minimal power needs.

March: Sprout seeds, transplant and tend vegetative growth stage of seeds, cultivate clones, transplant and tend accordingly.

April: Continue tending seedlings and clones. Turn in cover crops, add mulch, check irrigation systems for leaks, efficiency, replace faulty equipment.

May: Amend soil and transplant outdoor plants into beds/pots. Continue tending mixed light seedlings/clones.

June: Amend soil and transplant mixed light and begin light deprivation. Net/stake/cage all Cultivation Areas. Water, de-leaf, pest management, water conservation.

July: Continue tending all Cultivation Areas. Water, de-leaf, pest management, water conservation.

August: Harvest light deprivation, process harvest. Continue tending Cultivation Area 1. Minimal power needs.

September: Continue tending Cultivation Area 1. Minimal power needs.

October: Harvest Cultivation Area 1. Process harvest. Begin winterizing all cultivation areas – clean-up, storage, etc. Cover crops planted, turn sold. Check landscape for new challenges in run off/drainage/storage. Minimal power needs

November: Processing and winterizing continues. Minimal Power needs

December: Tend cover crops, add mulch, clean processing facilities, research new medical strains, research cultivation accordingly. Minimal power needs.

Processing Plan & Employee Safety Protocols

All processing/trimming is completed by the individuals residing on the subject parcel. Currently cannabis drying and trimming is done onsite by hand, within the Garage. This occurs in August for the first mixed light cycle and then again at the end of October. The applicant is pursuing development of an Ag Barn/Building designed to accommodate drying/processing. Once the Ag Barn/Building is approved and developed the Garage will no longer be used for any cannabis related activity.

Plants are periodically inspected to ensure that any indication of pests, molds, mildews or disease are immediately addressed and crop quality is maintained. When ready, individual plants are hand harvested, placed inside clean transport containers and immediately transferred to the Garage where they are hung to dry and undergo processing/trimming. The drying area is cleaned thoroughly prior to placement of any harvested plants therein to minimize potential contaminant contact. Natural air flow may be supplemented with careful use of household fans and dehumidifiers to facilitate drying and maintain product quality control.

When plants have achieved optimal dryness, they will be removed from the drying section and set out for flower removal. The removed flowers will be placed into clean bags and/or containers where they will await final manicuring. As flowers are manicured, they will be weighed into one-pound bags and again checked for moisture content. Upon determination that optimum moisture content is attained, flowers will be placed into sterile bags, sealed and labeled. Individual sealed bags will be stored in plastic storage totes kept in an environmentally friendly, secure location while awaiting marketing/sales through licensed facilities.

All equipment, surfaces and tools used in the harvesting/drying/trimming of cultivated product are used exclusively for that purpose. Equipment, surfaces and tools are visually inspected, washed and sanitized throughout the day. A Gentle detergent (such as *Simple Green or equivalent*) is used for cleaning followed by rinsing with potable water. Isopropyl Alcohol is applied as a sanitizer.

Individuals engaged in processing/trimming are cognizant of potential mold and mildew problems associated with cultivation/processing. Handwashing with potable water and soap occurs upon entrance into the Garage as well as use of new latex gloves, face masks and hair nets. Any suspect plant matter which appears compromised for any reason is carefully removed and disposed of avoiding cross contaminant contact with other product, equipment or utensils. A separately designated green-waste stream is implemented to recycle plant waste.

Individuals involved with processing/trimming are well versed in the use/cleaning of equipment utilized throughout the operation. Cleaning materials are stored on shelves away from working surfaces. A fire extinguisher is readily available. The working space is kept clean and orderly and used exclusively for processing/trimming; this optimizes safety and functionality.

Ample potable water for handwashing and restroom facilities adjoin the Garage where processing/trimming takes place. The restroom is equipped with first aid kits and eye-wash kits for emergency use. Wastewater from the restroom is plumbed to a permitted septic system. Although there is a *Commercial* connotation associated with this permit application, operations are carried out by individuals residing on the property, not transient/temporary employees. Therefore, the daily **wastewater flow** resulting from processing/trimming will not increase above normal domestic usage and can be accommodated by the septic system described.

This particular operation would not add any any extra **vehicle trips/road use** beyond that which would normally occur for a typical rural residence in the area. Only resident occupants conduct cannabis activities on the parcel.

Safety Protocols

Fire extinguishers, and emergency plans are in place. No chemical is used in the workplace.

Safety rules include:

1. Horseplay, scuffling, fighting and other acts which tend to have an adverse influence on the safety is prohibited.
2. Work shall be well planned and executed to prevent injuries in the handling of materials and in working together with equipment.
3. During trimming, keep hands out of the line of the trimming scissors.
4. Keep your work area clean, free of debris, electrical cords and other hazards.
5. Immediately clean up spilled liquids.
6. Always notify all other individuals in your area who might be endangered by the work you are doing.
7. Do not operate equipment that you are not familiar with. Do not attempt to use such equipment until you are fully trained and authorized.
8. Do not block exits, fire doors, aisles, fire extinguishers, first aid kits, emergency equipment, electrical panels, or traffic lanes.
9. Do not leave tools, materials, or other objects on the floor that might cause others to trip and fall.
10. Do not stretch any cords across aisles that may present a tripping hazard.
11. Always follow safe lifting procedures when lifting any object and get help for heavy loads.
 - Bend your knees, not your back.
 - Keep the load close to body.
 - Keep your back straight.
 - Lift with your legs. Do not lift and twist.

EMERGENCY PROCEDURES

In Case of a Fire

- Call 911 or nearest fire district. The responsibility for fighting fires is with professional fire fighters.
- Confine the fire by closing doors
- Do not break windows.
- Alert anyone in danger. Check all work areas to ensure that everyone has been alerted.
- Activate alarm, if there is one.
- Evacuate the building via the nearest safe exit.
- Meet at the pre-designated location after evacuating the building.
- Account for all coworkers.
- Be alert for approaching emergency vehicles. If you think they may not be able to find the farm, post someone on the road.
- Use a fire extinguisher only if you have been trained in safe use.
- Fire extinguishers are properly located for easy access in all greenhouses, the main house and storage sheds.

In Case of Earthquake

- DUCK & COVER – under a heavy table, desk or in a doorway, away from glass.
- Crouch and protect your head.
- Stay away from windows and doors.
- Stay outdoors if you are outdoors.
- *After an earthquake:*
- Weigh the risks before you do anything.
- Be prepared for aftershocks.
- Minor quakes - Stay where you are.
- Major quakes. – Exit calmly. Meet at the designated location. If evacuation if not possible, stay where you are until help arrives.
- Do not use telephone, except in an emergency.

Security Plan

Security

Currently all sheds and structures are pad lockable. Entrance to the property is through a locked gate and the property is fenced and there are multiple people on site at any given time.

APPS: 11921

Supplemental Information

Water Resource Protection

APN: 223-271-006

January 28, 2019

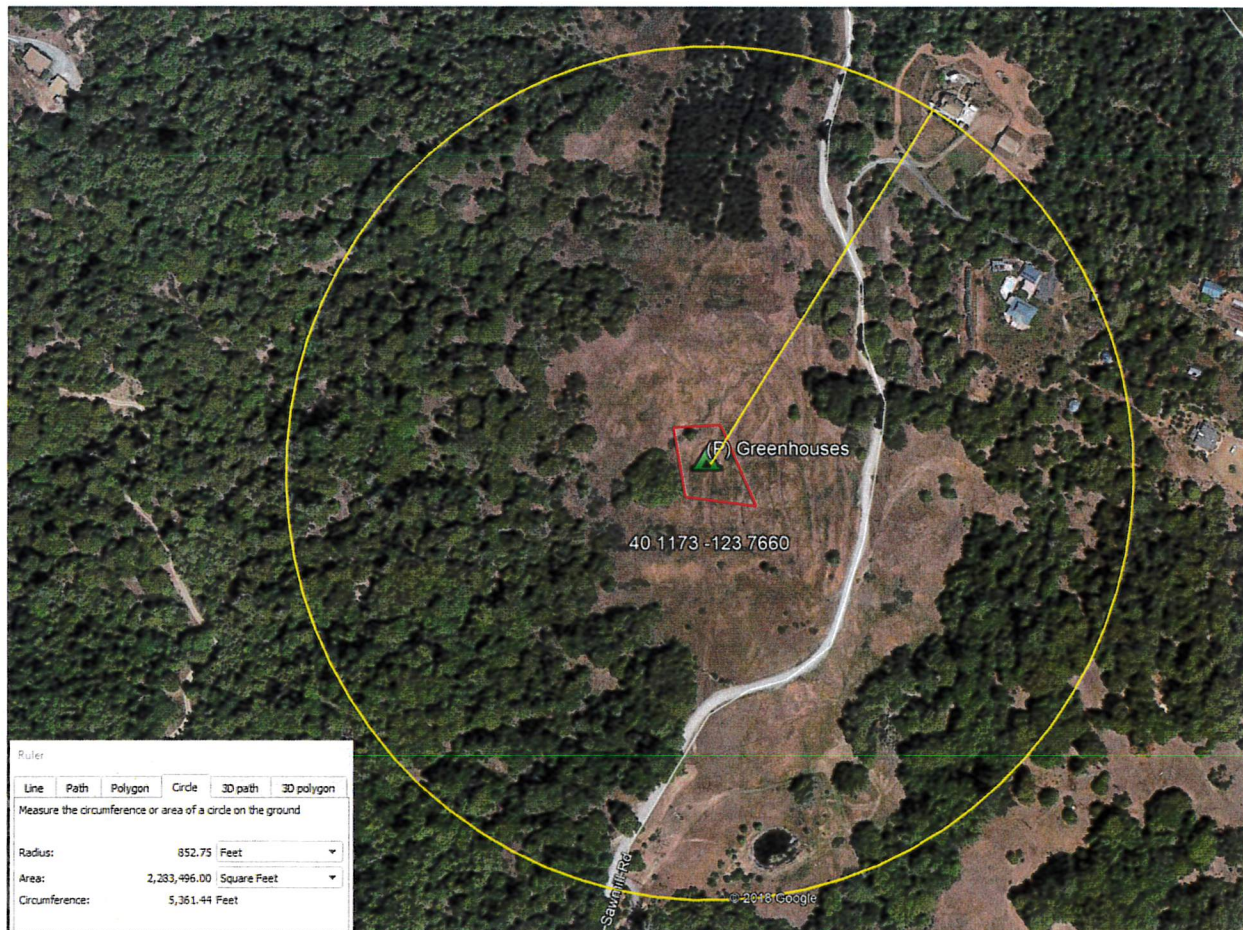
The following materials and information are provided to address development occurring on the subject parcel after preparation of the original Water Resources Protection Plan (WRPP) dated 10/26/16. The development consists of grading to create flats, pond construction and road installation.

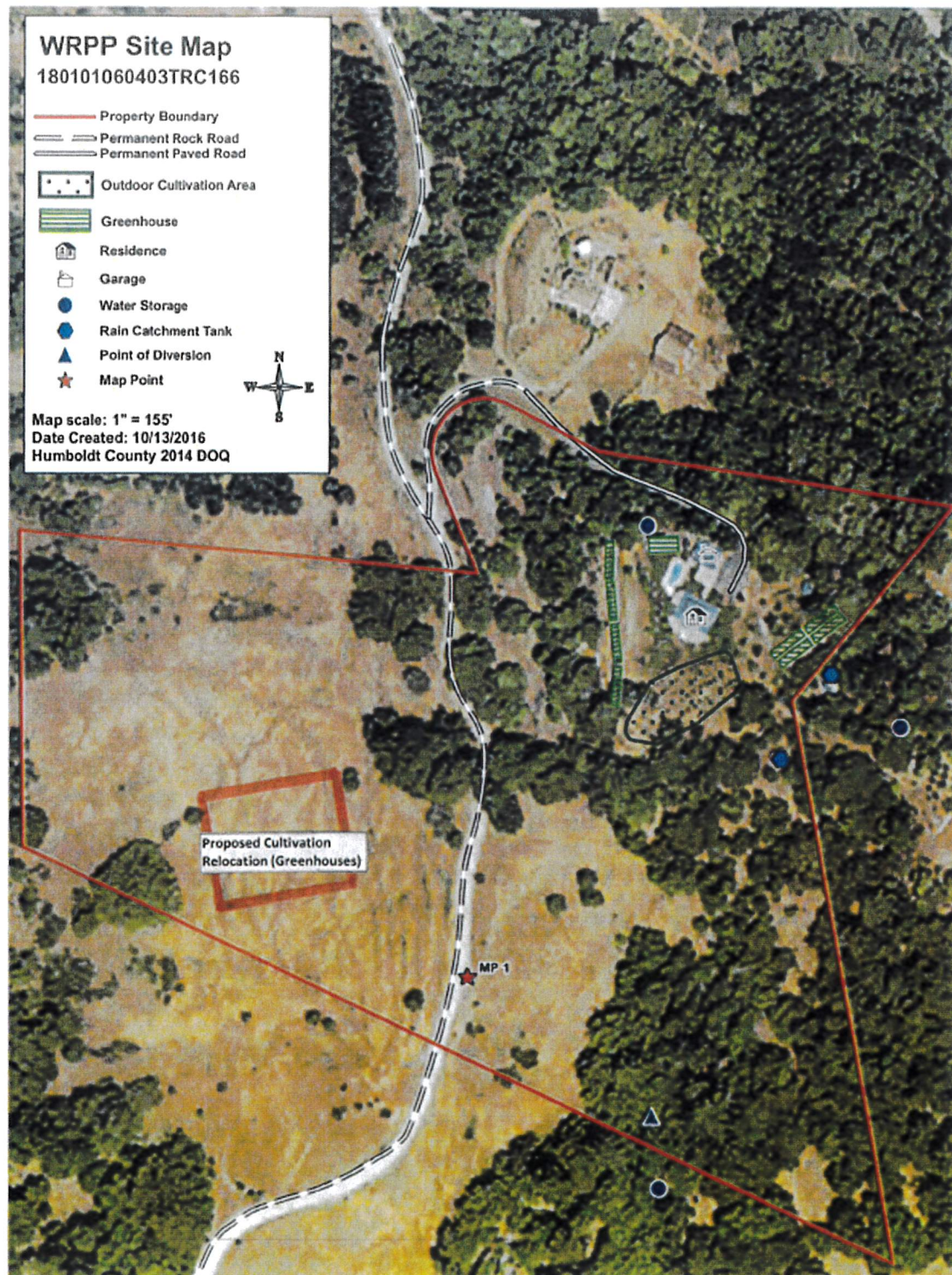
This work was initiated to facilitate relocation of legacy cultivation areas within a wildlife corridor to an *environmentally superior* location. The relocation area is situated west of Sawmill Road on the western portion of the parcel which was undeveloped at the time of the initial WRPP site assessment. An assessment of standard conditions under Order R1-2015-0023 for this particular area in its current configuration has not been completed.

Attached herein is a copy of the *As-Built Grading, Drainage & Erosion Control Plan* prepared by Omsberg & Preston (01/19/2019) providing specifications of the development intended to accommodate new (relocation) cultivation sites. The plan prescribes protective measures to minimize sediment transport.

There has been no cultivation or related activities occurring on the recently developed area. Post construction observations of the landscape modifications by Omsberg & Preston personnel revealed no present threat to water quality.

Below: Google Earth image (05/28/2014) showing proposed greenhouse location relative to surrounding features.





Above: The proposed cultivation relocation area outlined starts approximately 240 feet east of the western property line. It is apparent that there are no watercourses or wetlands within 200 feet of the cultivation relocation area.

It is anticipated (based on engineered design parameters and recent observations) that the forthcoming planned use of the recently developed cultivation area, appurtenant road and pond will **comply with standard conditions** as described under Order R1-2015-0023. An assessment of the newly created cultivation area and appurtenant features under **actual operative conditions is necessary** in order to identify conditions which may require corrective measures. This assessment shall occur as the subject parcel must **enroll under SWRCB Order WQ 2017-0023-DWQ (Site Management Plan)** this year **(2019)**. An assessment of the recently developed cultivation area and related features (as well as legacy cultivation areas) will be completed. If found, deficiencies will be described in the Site Management Plan along with corrective measures. Required site monitoring/reporting (including the recently developed cultivation area) will continue in accordance with current applicable State mandates to ensure the ongoing protection of water resources.

Biological Assessment of Development Impacts for 692 Lower Sawmill Road
Garberville, CA

September 30, 2017

Prepared by: Adam N. Canter
Consulting Biologist/Botanist
1463 Anderson Ave. McKinleyville, CA 95519
707-972-0065, adamcanter707@gmail.com

Abstract and Summary of Findings

The proposed relocation of a CA occurs within a degraded, non-native grassland, with limited benefits to wildlife. Conversely, the present CA is located on a ridge-top corridor of vegetation linking the drainage systems of Dean Creek and Bear Canyon, important cool weather micro-sites for wildlife. High quality examples of a remnant madrone stand and bay laurel/canyon live oak forest will be opened up to the ridge top corridor for Dean Creek and Bear Canyon if the current CA is retired, benefiting wildlife and allowing for the opportunity to restore these sensitive natural communities. It is of the biologist's opinion that the ecological benefits to both wildlife and vegetation gained from retiring the current CA warrant the relocation of the CA to the proposed site. The closer proximity of the proposed CA to an established Humboldt County road system (Lower Sawmill Rd. and Alderpoint Rd.) also contributes to the environmental superiority of the proposed relocated CA site.

Introduction, Project Background and Need

I was contacted by Rachel Kellar to perform a biological assessment (BA) regarding a cultivation application for the property at 692 Lower Sawmill Road, in the greater community of Garberville, Humboldt County, Calif., approx. 2 miles up Alder Point Road. As part of the application, the original cultivation area (CA) (i.e. circa 2014 or before) was proposed for relocation to an alternate area, which is within closer proximity to the main road (Alder Pt.) and away from the private residence associated with the property.

The historic and present CA site could be characterized as a wooded ridge top, which forms the crest between the Dean Creek watershed and the cool micro-climate refugium of Bear Canyon, both tributaries to the South Fork of the Eel River. The proposed CA occurs on an open west-facing side slope, which borders Lower Sawmill Road, and could be characterized as a degraded, non-native grassland, which has signs of prior decking, an old road grade and switchbacks, clearly present in past aerial imagery (see 2009 imagery). These historic switchbacks are within close proximity to one another, thereby exacerbating their impact of modifying the original terrain, soils, and likely native vegetation which would have occurred prior to the historic grading.

Need for Biological Assessment

The biologist was contacted for the present assessment due to comments from Humboldt County regarding the re-location of the CA from the present historic area to the proposed area noted above, in the non-native grassland (see attached map). Comments from the County note that upon "review of the initial application that while it's a good first step it is not adequate. The submitted justification evidences economies and efficiencies that will be realized by the operator but doesn't say much about how relocation is in fact environmentally superior."

This BA was conducted to evaluate whether or not the new CA is environmentally superior to the present CA. Upon objective assessment of the property, it was concluded that the historic CA, is environmentally superior habitat to the new CA site, and that cessation of cultivation in the historic area will provide substantial environmental benefits to wildlife, native vegetation, and the associated watersheds.

Methods:

Research of relevant Geodatabases

The California Natural Diversity Database (CNDDB) was reviewed to assess the known presence of special status plants and wildlife on the property. No occurrences were noted. The California Consortium of Herbaria was also reviewed for rare plant collections from the property vicinity, with no occurrences noted.

Field Observations

The property was visited on September 21, 2017, and upon meeting the applicants, a tour was given of the property, where the present CA was viewed, followed by the proposed CA, which is a graded slope, comprised of a non-native grassland. The biologist took an intuitive meander, assessing all vegetation types, habitats, and species that were present in and around the CAs. After viewing the proposed CA, the biologist was taken to a section of the property below the present CA, where a high quality stand of mature Douglas fir (*Pseudotsuga menziesii*) forest occurs, with California bay laurel (*Umbellularia californica*) and canyon live-oak (*Quercus chrysolepis*) as co-dominant mid-story and understory species (see photos below). This stand is contiguous with closed canopy forest and woodland that spans the ridge top connecting the Dean Creek and Bear Canyon drainages (see map macro-view). In addition to obtaining the landowner's personal accounts regarding wildlife usage of the property, remote trail cameras were deployed by the landowner within the proposed CA to assess wildlife activity.

Results:

Wildlife Observations and Benefits

Upon arriving at the current CA, the most apparent characterization of the site is its position on the apex of a ridge system, which functions as the divide between the Dean Creek and Bear Canyon drainage systems. Ridges are important wildlife corridors and routes between cool-weather resting sites and water resources. The proposed CA occurs in a degraded non-native grassland immediately adjacent to Lower Sawmill Road.

Before cultivation was initiated on the present site, owners and operators noted frequent use of wildlife using the ridge top parcel as a thoroughfare. Species frequently observed included mule deer (*Odocoileus hemionus ssp. columbianus*), black bear (*Ursus americanus altifrontalis*), wild turkey (*Meleagris gallopavo*), California quail (*Callipepla californica*), western gray squirrel (*Sciurus griseus*), red-tailed hawks (*Buteo jamaicensis*), and mountain lion (*Puma concolor*). Once the CA was established, wildlife sightings notably decreased. It was apparent to the applicants that the CA development of the ridge-top space, combined with an increase in human activities, including sound from fans and equipment, as well as artificial light impacts, contributed to a decrease in wildlife usage of the corridor area. At the same time, remote cameras used for wildlife monitoring in the proposed CA did not document any increased use by wildlife. Most likely this is due to the open, hot, patchy, and exposed habitat in and below the proposed CA, which provides little cover for wildlife, and illustrates the environmental superiority of moving the CA.

A secondary issue in the present CA is due to the Medicinal and Adult-Use Cannabis and Safety Act's Protection of Minors Chapter 14 code 26140, which would require additional fencing to be installed within the ridge-top corridor due to the proximity of operations within the homestead area. This would further impact wildlife in the corridor. If the CA is permitted to be moved to the proposed site, no fencing would need to be installed within the wildlife corridor, illustrating the environmental superiority of the new CA.

Madrone (*Arbutus menziesii*) forest remnant

The most noteworthy component of the vegetation at the site is several large (3 ft diameter at breast height) madrone (*Arbutus menziesii*) trees that highlight this ridge-top environment with its open woodland/forest mosaic. Some trees have open cavities which provide habitat for wildlife. Madrone fruit also serve as an important food source for birds and other wildlife, especially during mast years. While madrone is normally characterized as a co-dominant mid-story or understory tree in mixed evergreen forest, it can form distinct stands at high cover worthy of recognition (Sawyer et al. 2008). The current rank designated by the California Department of Fish and Wildlife (CDFW) and the California Native Plant Society (CNPS) is G4S3.2 (Manual of California Vegetation 2nd Ed.-MCV). This rank can be interpreted by the NatureServe rank system as having a global rank of G4, being apparently secure but uncommon, with some cause for long-term concern due to declines or other factors. The state ranking of S3.2 indicates that this is indeed a sensitive and vulnerable natural community at moderate risk of elimination due to a restricted range, relatively few populations, recent and widespread declines, or other factors, and moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat). Natural Communities with rankings of S3 or lower are considered special status and must be consulted following California Environmental Quality Act (CEQA) guidelines (List IVb). By retiring the present CA, which occurs in this madrone stand, the applicant would be helping to restore this special status natural community, which has a greater ecological value than the non-native grassland site at the location of the proposed CA.

***Umbellularia californica-Quercus chrysolepis* forest**

Patches of the Douglas fir stand noted above also contain areas of bay laurel (*U. californica*) dominance, with canyon live oak as a co-dominant (*Q. chrysolepis*). Many trees are large and mature and this could be noted as an exemplary stand of this vegetation association. This association is ranked G4S3, also giving it special status under CEQA (MCV). This rank is explained in the above madrone section. Bay laurel nuts and live oak acorns provide substantial forage to wildlife.

***Pseudotsuga menziesii-Umbellularia californica* forest**

Immediately south of the present CA and remnant madrone stand is a mature Douglas fir (*Pseudotsuga menziesii*)-bay laurel (*Umbellularia californica*) forest stand, which is high quality wildlife habitat and is a component of a vegetated corridor that spans the ridge (and property). Retiring the current CA would provide more unhampered access for wildlife from both the ridge top and the Dean Creek drainage to this habitat patch and corridor to Bear Canyon. This is a multi-tiered forest and suitable habitat for avifauna.

Conclusions:

Due to the unique madrone stand present in the current CA and the sites position along an important wildlife corridor between two drainage systems and other ridge networks, retirement of the site would provide many benefits to wildlife and sensitive natural communities (Lindenmayer & Nix 1993). The importance of cool-weather resting sights is only becoming more significant under climate change and with the increase in California's wildfire season. The majority of the present CA lies on the cooler, east facing aspect, which most likely accounts for the mesic vegetation within this portion of the property, and illustrates why retirement of operations on the east side of Lower Sawmill Road is environmentally superior to the dryer west side, which receives much more solar radiation and higher average daily temperatures. Adjacent property development and accessible freshwater springs near the ridge top confluence also highlights the weighted significance of restoring the corridor on the east side of the Kellar parcel.

Development of the proposed CA is more environmentally superior because it occurs in a non-native grassland, which already has experienced degradation from historic grading (see map zoom and 2009 aerial imagery). This area provides little cover or forage for wildlife, occurs on a hot and exposed western slope, and was not shown to host wildlife through assessment of remote trail-camera footage and personal observations.

Another primary benefit of the proposed CA is that it is within immediate and closer proximity to a more established Humboldt County road (Lower Sawmill Rd.). The road and private

residence driveway to the current CA is much steeper and further from the primary road system. Negative impacts from this road will be reduced by moving the CA within closer proximity to Lower Sawmill Road. Additionally, the proposed CA will not require the extent of safety fencing as would the present CA, thereby benefiting opportunities for wildlife movement between Dean Creek and Bear Canyon. Impacts from noise and lighting would also be immensely reduced within the ridge top corridor if the CA is relocated.

The restoration of the current CA and relocation to the proposed site in the degraded habitat will provide several environmental benefits including; allowing for expansion of the mixed madrone, bay laurel, and live oak woodlands; opening up a key space within a wildlife corridor between the drainages of Dean Creek and Bear Canyon, which are important cool-weather refugia and water resources for wildlife, particularly in the dry summer season; reduce sedimentation and run-off from cultivation related activities on the older and steeper road section; and provide more open unhampered access for wildlife to the food sources of madrone berries, bay laurel nuts, and acorns present to the south of the current CA.

Development of the proposed CA could also provide opportunities for native plant and grassland restoration around the historically degraded site, as well as the present CA. Restoration of the current CA should focus on preserving the broadleaf woodland components, while managing for Douglas fir encroachment and providing vegetation cover for wildlife using this ridge-top corridor. A remediation plan for retirement of the current CA should focus on connecting any gaps within the wildlife corridor through native plantings of madrone, shrubs such as evergreen huckleberry (*Vaccinium ovatum*) and hazelnut (*Corylus cornuta* ssp. *californica*), and native grasses like *Festuca rubra* and *Festuca idahoensis*.

Works Cited

California Environmental Quality Act. 2016. California Natural Resources Agency. Sacramento, CA.

Data provided by the participants of the Consortium of California Herbaria (ucjeps.berkeley.edu/consortium/). Accessed September 19, 2017.

Lindenmayer D.B. and H.A. Nix. 1993. *Conservation Biology*. Ecological Principles for the Design of Wildlife Corridors. Vol. 7 No. 3. Pages 627-630.

Sawyer, J.O., T. Keeler-Wolf, and J.M. Evens. 2009. A manual of California vegetation, 2nd edition. California Native Plant Society, Sacramento, CA.

692 Lower Sawmill Road, Garberville, CA

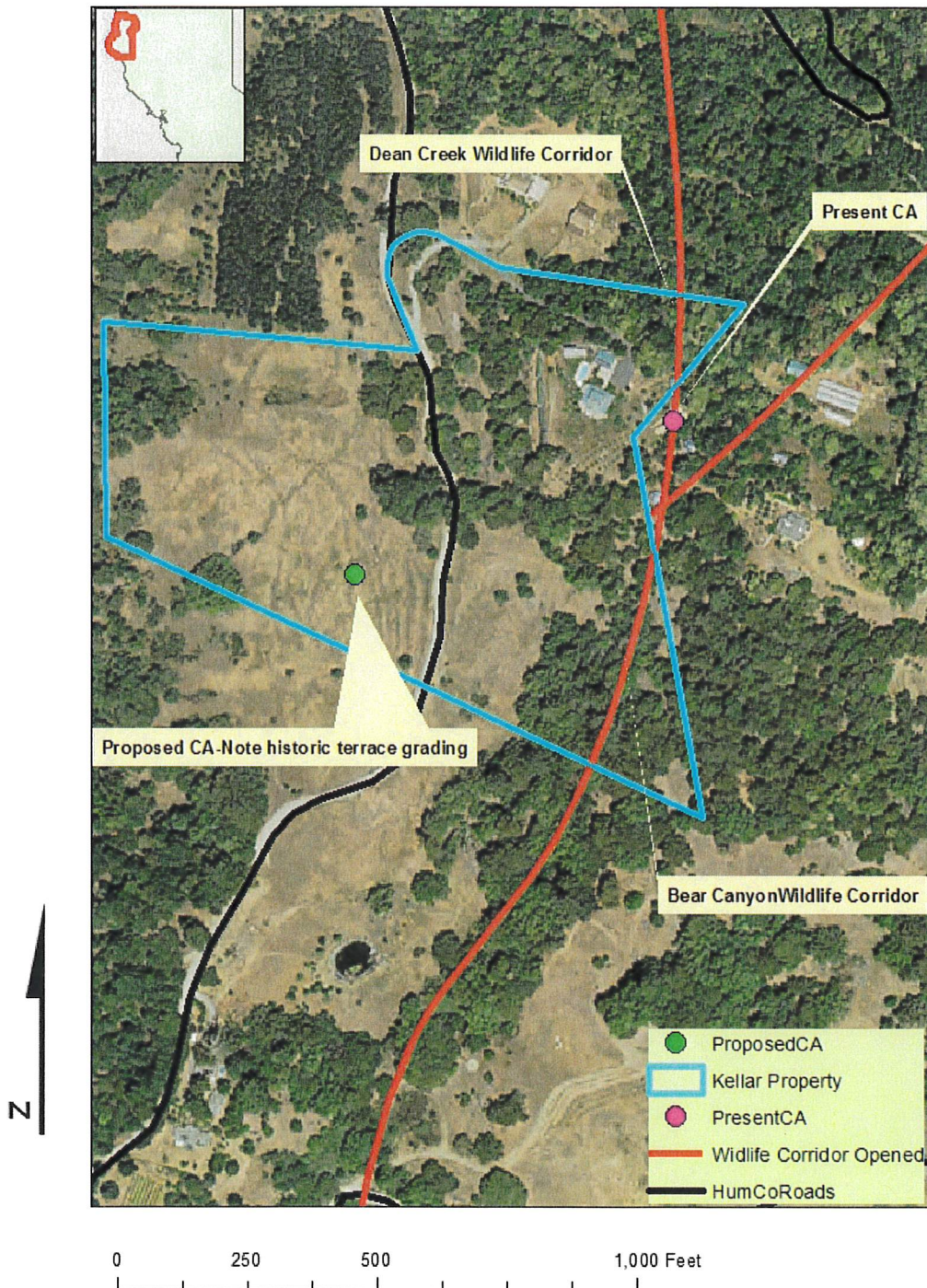


Figure. Note historic terracing in proposed CA. Property parcel lines are approximate from Humboldt County geoportal. NAIP imagery 2014.

692 Lower Sawmill Road, Garberville, CA

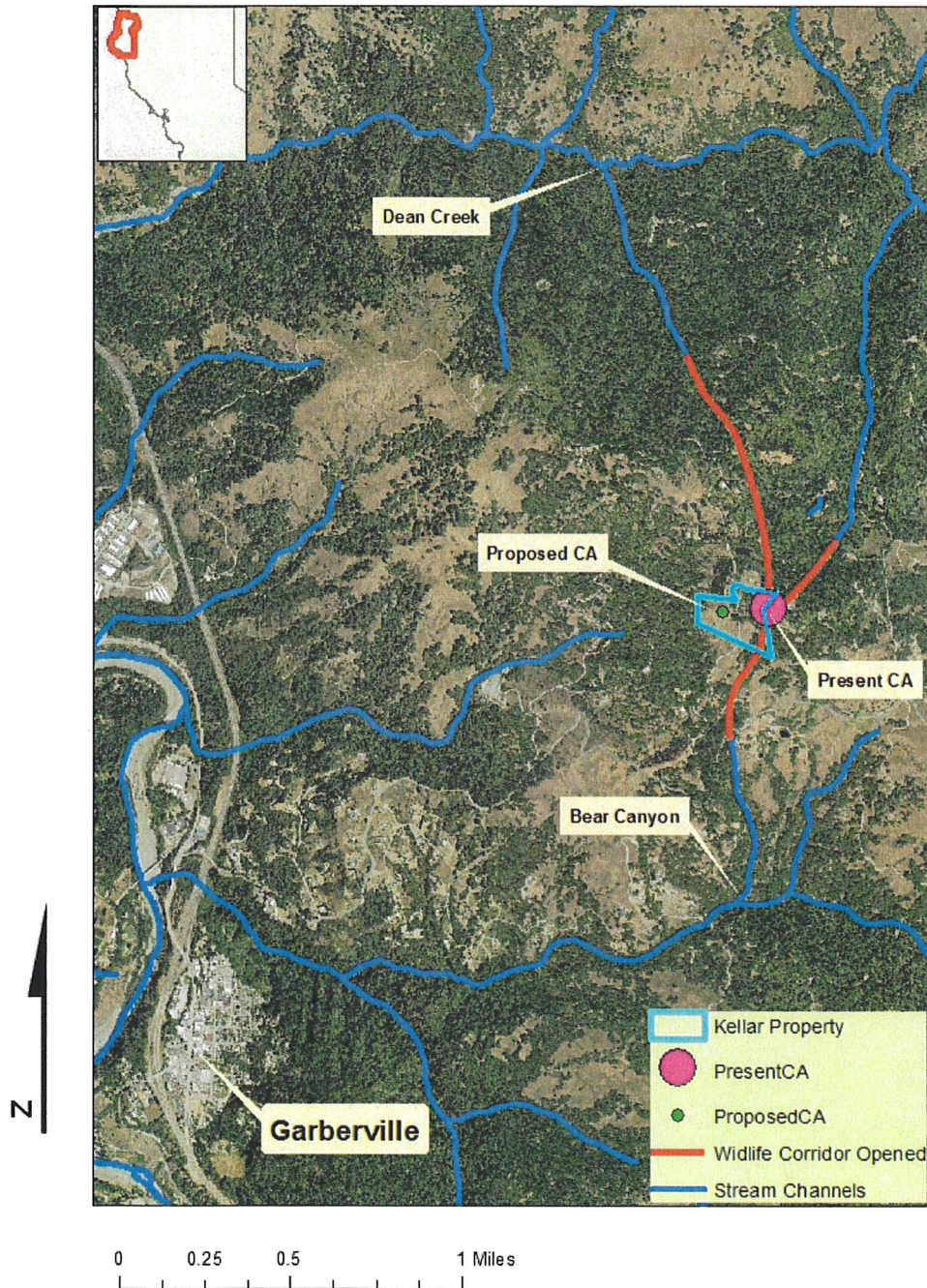


Figure. Macro-view of wildlife corridors opened up to Dean Creek and Bear Canyon if present CA retired.



Photo. Habitat below present CA. Douglas fir-bay laurel forest.



Photo. Bay laurel (*Umbellularia californica*)-canyon live oak (*Quercus chrysolepis*) forest, Rank G4S3. Below present CA. Retiring the present CA will open up ridge top access and wildlife corridors for wildlife.



Photo. 2009 Aerial photo of proposed CA with extensive grading. GoogleEarth®

Ryan, Meghan

From: Ryan, Meghan
Sent: Thursday, February 07, 2019 8:32 AM
To: Johnson, Cliff; Hilton, Keenan
Cc: Bocast, Kalyn@Wildlife
Subject: RE: Friday Meeting

Hi Kalyn – I am preparing supplemental for APPS #11921 for tonight's hearing that includes the following:

- Email from Kalyn Bocast, California Department of Fish and Wildlife (CDFW), dated February 6, 2019, requesting the applicant adhere to the standard Draft Bullfrog Management Plan.
 - Staff response: Planning staff is recommending restoration of the rainwater catchment pond, which includes the pond outfall. However, if the Planning Commission chooses to approve the relocation and allow the rainwater catchment pond to remain, the Planning Commission shall also consider revising the Recommended Conditions of Approval to include preparation and implementation of a Bullfrog Management Plan as requested by CDFW staff.

Thank you for comments. I appreciate it!

Best,
Meghan

From: Johnson, Cliff
Sent: Wednesday, February 06, 2019 3:49 PM
To: Hilton, Keenan <KHilton@co.humboldt.ca.us>; Ryan, Meghan <mryan2@co.humboldt.ca.us>
Cc: Bocast, Kalyn@Wildlife <Kalyn.Bocast@Wildlife.ca.gov>
Subject: FW: Friday Meeting

Keenan and Meghan, Can you please prepare a supplemental for your projects to add the condition for bullfrog management? Thanks!

Cliff

From: Bocast, Kalyn@Wildlife <Kalyn.Bocast@Wildlife.ca.gov>
Sent: Wednesday, February 6, 2019 3:40 PM
To: Johnson, Cliff <CJohnson@co.humboldt.ca.us>; Manthorne, David@Wildlife <David.Manthorne@wildlife.ca.gov>
Cc: Bauer, Scott@Wildlife <Scott.Bauer@wildlife.ca.gov>
Subject: RE: Friday Meeting

Hello Cliff,

Thank you for checking in with us regarding the projects up for approval tomorrow. It may be too late in the game to add the following requests, but if possible, we would appreciate it. On two separate projects, APPS 11092 and APPS 11921, we had requested, as a condition of Project approval, that the Applicant/Permittee adhere to the standard Draft Bullfrog Management Plan. Would it be possible at this point to incorporate this request? Meghan incorporated a version of our request in the Staff Report of APPS 12966, which works fine. In the case that you still can incorporate this on the APPS mentioned above, I have included a Draft BMP for both projects.

Regarding meeting on Friday, I am going to have to refer to Dave. He is currently out of the office but will likely be able to get back to you tomorrow.

Thank you,

Kalyn Bocast
Environmental Scientist
Watershed Enforcement Team
California Department of Fish and Wildlife
619 2nd Street
Eureka, CA 95501
(707) 441-2077

From: Johnson, Cliff <CJohnson@co.humboldt.ca.us>
Sent: Wednesday, February 6, 2019 9:15 AM
To: Manthorne, David@Wildlife <David.Manthorne@wildlife.ca.gov>
Cc: Bocast, Kalyn@Wildlife <Kalyn.Bocast@Wildlife.ca.gov>; Bauer, Scott@Wildlife <Scott.Bauer@wildlife.ca.gov>
Subject: Friday Meeting

Hi Dave, We have a meetings scheduled for this Friday. Perhaps we can discuss the approach to comments and conditions of approval at this meeting? In particular, if you have some examples of where you feel we have not been responsive that will help us to target where to make changes.

Please let us know if you have any concerns about any of the projects for tomorrow. Three of the ZA projects are being continued (the King Range Botanicals and Canyon farms 10898).

Cliff Johnson, Supervising Planner
County of Humboldt Planning and Building Department
3015 H Street
Eureka, CA 95501
(707) 268-3721

EXHIBIT A.

BULLFROG MONITORING AND MANAGEMENT PLAN FOR CEQA-2017-0565-R1

GENERAL BULLFROG INFORMATION

The American bullfrog (*Lithobates catesbeianus* = *Rana catesbeiana*); hereafter bullfrog, is an invasive non-native species in California that poses a significant threat to California's native fish and wildlife resources. Bullfrogs were introduced in California over 100 years ago from eastern parts of the United States as a food supply, but have since caused substantial ecological consequences. Bullfrogs are considered highly invasive and are well documented to prey upon a variety of fish and wildlife species, including some that are rare, threatened, and endangered. Human modifications to the environment provide favorable condition to bullfrogs such as artificially created agricultural ponds, canals and ditches where warm still water occurs. As a result, bullfrogs have spread throughout California.

Efforts to control bullfrogs have been met with varying degrees of success because: 1) bullfrogs can be difficult to detect and go dormant from fall through winter, 2) bullfrogs often take cover in difficult areas to manage (e.g. dense vegetation), 3) they can travel long distances to colonize and re-colonize areas, 4) they have high reproductive output, 5) they are wary and readily flee perceived threats, and 6) they can survive physical trauma remarkably well. CDFW scientific staff recognizes there is an urgent and immediate need to develop improved bullfrog management strategies to protect California's diverse fish, wildlife, and plant resources, and the habitats upon which they depend, for their ecological values and for their use and enjoyment by the public. Public support and implementation of bullfrog control in California is an important conservation strategy that will help protect natural resources for future generations.

MONITORING

The Project reservoir(s) shall be monitored for bullfrog presence on an annual basis with a minimum of two total surveys, no less than two weeks apart, throughout the months of May-July

- All pond survey efforts must be made by a person knowledgeable in bullfrog identification (see Appendix A for reference photos);
- Survey efforts shall include listening for bullfrog calls and slowly walking the complete perimeter of the pond at night* (dusk or later) while shining a flashlight to detect movement and eye-shine

If bullfrogs are not detected upon completion of two total surveys, or at any other time of the year incidentally, removal efforts are not required that year.

*Day time monitoring can also be conducted to aid detection but is not required under this plan.

SUCCESS CRITERIA

The level of effort needed to successfully manage bullfrog populations varies with infestation levels. This plan shall be considered successful if sufficient effort is provided to prevent adult bullfrogs from reproducing in the reservoir(s) each year, and no bullfrog life-stages can be detected. Bullfrogs are capable of traveling long distances over-land, and on-going efforts will be required to ensure dispersing bullfrogs do not colonize the reservoir(s) at a future time.

OPTIONS FOR MANAGEMENT

Two removal methods may be employed for controlling bullfrogs under this plan and include:

- Manual direct removal
- Reservoir de-watering (Hydro-modification)

Implementing both reservoir de-watering and manual direct removal is currently believed to be the most effective method of managing bullfrog infestations. For reservoirs that are heavily infested with juvenile bullfrogs and/or tadpoles, reservoir dewatering may be necessary to break the bullfrog's life cycle and prevent on-going reproduction. Prior to conducting reservoir dewatering activities, please coordinate with CDFW Environmental Scientist Kalyn Bocast by phone at (707) 441-2077 or via email at kalyn.bocast@wildlife.ca.gov.

Direct Removal

All direct removal efforts must be made by a person knowledgeable in bullfrog identification.

- Removal efforts must occur during, but are not be limited to the active/breeding season, occurring May – July;
- A minimum of **two** efforts throughout the season are considered necessary;
- Direct removal efforts are typically most effective when conducted at night with use of lights but can also be conducted during the day;
- Direct removal must include working the entire perimeter of the reservoir;
- A rubber raft or small boat may be necessary to successfully remove some individuals;
- A team of two individuals or more is often helpful, one person for shining lights and/or operating a boat and the other person to perform removal efforts;
- Bullfrog tadpoles must be removed and dispatched and must not be relocated or kept as pets.

Management Authorization

Take of bullfrogs is specifically allowed in the California Code of Regulations (CCR), Title 14 (T-14) section 5.05(a)(28), under the authority of a sport fishing license. There is no daily bag limit, possession limit or hour restriction, but bullfrogs can only be taken by hand, hand-held dip net, hook and line, lights, spears, gigs, grabs, paddles, bow and arrow or fish tackle.

Alternatively, FGC Section 5501 allows CDFW, as limited by the commission, to issue a permit to destroy fish that are harmful to other wildlife. The regulations have addressed this under Section CCR T-14 226.5 Issuance of Permits to Destroy Harmful Species of Fish in Private Waters for Management Purposes. This allows the CDFW to issue free permits to destroy harmful aquatic species by seining and draining.

Pond Dewatering

Pond dewatering may be appropriate if the reservoir can be successfully dewatered without adversely affecting stream resources. Careful planning and coordination with CDFW, is necessary to ensure potential impacts to stream resources can be addressed, prior to commencing with pond draining. Discharge of polluted water to waters of the state may require permitting from other agencies with permitting authority, such as the Regional Water Quality Control Board.

In general, bullfrog tadpoles require two years to develop into frogs, whereas native amphibians only require one year. Therefore, draining a reservoir every year is intended to interrupt bullfrog tadpole development, dramatically decrease bullfrog populations and allow for reduced efforts as a measure of adaptive management. Typically in Northern California, reservoir draining should occur in September through October to avoid impacts to sensitive native amphibian and fishery resources. While draining occurs, direct removal efforts should be employed as described above if possible.

REPORTING

A written log shall be kept of monitoring and management efforts and shall be provided to CDFW **each year** by December 31. The written log shall include: 1) date and time of each monitoring and management effort, 2) approximate number of each bullfrog life stage detected and/or removed per effort, and 3) amount of time spent for each monitoring and management effort.

APPENDIX A. BULLFROG REFERENCE PHOTOS



This is a photo of a Bullfrog tadpole. (Photo taken by Mike van Hattem).



The photos shown in this Appendix demonstrate a medium sized adult bullfrog that was removed from Ten Mile Creek, Mendocino County. Note the bullfrog has a large tympanum, (circular ear drum shown with an arrow) and **does not** have distinct ridges along its back (dorsolateral folds). Photo taken by Wes Stokes.



The bullfrog has somewhat distinct mottling and the underside of the bullfrogs hind legs are not shaded pink or red.