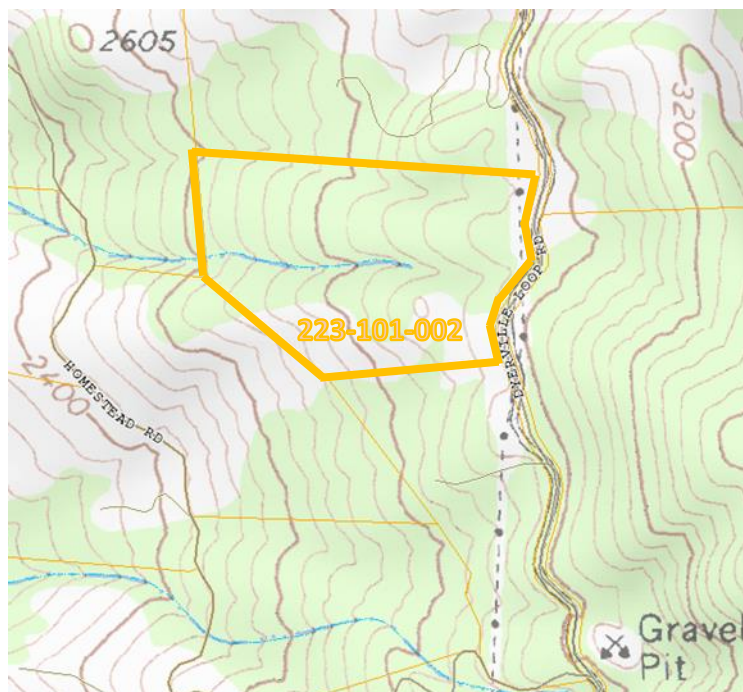




# Site Management Plan

WDID: 1B16182CHUM



*Prepared for:*

*State Water Resources Control Board (SWRCB)*  
North Coast Regional Water Quality Control Board (NCRWQCB)

*Prepared by:*

Green Road Consulting  
1650 Central Ave., Suite C, McKinleyville CA, 95519  
(707) 630-5041

*Date of completion:*

5/29/19

# General Site Information

**Discharger:** Seeking Roots, LLC

**Landowner:** HEPNER TERRENCE & HELEN M

**Site Address:** 26092 Dyersville Loop Rd Garberville, CA 95542

**Mailing Address:** PO Box 162 Garberville, CA 95542

**Parcel Number:** 223-101-002

**General Plan Designation:** RA40

**Zone:** AE-B-6

**Parcel Size:** 33.74-acres

**HUC12 Watershed:** Ohman Creek-South Fork Eel River 180101060403

**Disturbed Area:** 55,757-sq. ft

**Cultivation Area:** 23,725-sq. ft

**Tier Level:** 2

**Risk Level:** Low

## Abbreviations

CA	Cultivation Area
CPP	Corrugated Plastic Pipe
CMP	Corrugated Metal Pipe
CDFW	California Department of Fish and Wildlife
DRC	Ditch Relief Culvert
GRC	Green Road Consulting
IBD	In-board Ditch
NCRWQCB	North Coast Regional Water Quality Control Board
PWA	Pacific Watershed Associates
SWRCB	State Water Resources Control Board
STX	Stream Crossing

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## 1. Introduction

This document was prepared by Green Road Consulting (GRC) for Seeking roots LLC; parcel number 223-101-002, as required by the SWRCB Order WQ 2017-0023-DWQ<sup>1</sup>. The purpose of the order is to provide a regulatory structure for cannabis cultivation that reduces contributions to existing water quality issues and prevents additional adverse impacts to water resources throughout California. The purpose of the Site Management Plan is to identify conditions present on a parcel that may pose a threat to water quality and resources and establish a plan to meet or surpass requirements set forth in the order. Green Road Consulting (GRC) has made an initial assessment of this parcel through field work as well as through a variety of county, state, and private websites (e.g. USDA web soil survey, USGS stream stats program, Google Earth, Humboldt County Web GIS). The parcel boundaries are approximate and obtained from Humboldt County. The site was surveyed with a GPS unit (2 to 4-meter accuracy) to document roads, buildings, cultivation sites, watercourses, and areas requiring remediation. Maps were created using the software ESRI ArcMap.

## 2. Site Characteristics

### 2.1. General

The site is in Southeastern Humboldt County, near Garberville. Travel for 7 miles on Alderpoint Rd and then turn left onto Dyerville Loop Rd. and go for 2.2 miles. The site will be on the left side of the road. The elevation of the site is approximately 2,600 – 3,000 feet above sea level. The parcel is located on a hillslope with Ohman Creek that flows from east to west into Dean Creek and then the Eel River. The Eel River is on the USEPA's Section 303(d) list for impairment or threat of impairment to water quality associated with elevated sediment and temperature levels. The Eel River Watershed is known to have Coho and Chinook Salmon as well as Steelhead trout which are designated as a Federally and State threatened species. Slopes on the site range from 10% to 20%. The hillslopes in the region are known to have high instability. The site geology is part of the Franciscan Complex which is primarily composed of Late Cretaceous to Pliocene sandstone, shale and minor conglomerate. The region was historically logged.

### 2.2. Site Overview

Structures on the approximately 33.74-acre property include a residence, barn with storage rooms, processing rooms, and propagation rooms, two nutrient storage sheds, a generator shed, and two nurseries. Other developments include a permitted well, two points of diversion, an unpermitted septic system, fourteen (14) HDPE water tanks, one (1) metal water tank, one (1) water bladder, one (1) pond on the western boundary of the parcel, and three (3) cultivation areas with sixteen (16) hoop houses. The applicant states that the existing pond to the west is not on their parcel, but a survey might need to be completed to ensure that. The outlet of the pond is in high risk of failing and discharging to waters of the State. The ponds owner needs to be identified and the issues need to be immediately addressed by the responsible party (**MP7**). The client is transitioning away from using the water bladder and has a grading project planned for a water storage pond in the south eastern section of the parcel, and the plan is awaiting approval. The plan has been put together by Trinity Valley Consulting Engineers, INC and includes

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<sup>1</sup> Order entitled "STATE WATER RESOURCES CONTROL BOARD ORDER WQ 2017-0023-DWQ  
GENERAL WASTE DISCHARGE REQUIREMENTS AND WAIVER OF WASTE DISCHARGE REQUIREMENTS FOR  
DISCHARGES OF WASTE ASSOCIATED WITH CANNABIS CULTIVATION ACTIVITIES"



plans for a septic. Registration for diverted irrigation water is under Jeremiah Hepner's name, it is drawn from a point of diversion, **POD1** (application ID: H502193) at lat/long coordinates 40.1318°, -123.7044°. The diversion is on an unnamed class II stream. There is a proposed rain catchment pond under this registration as well at lat/long coordinates 40.131061°, -123.705916°. Water for domestic use (**POD2**) is under Terrence Hepner's name, (application ID: D032576) and is drawn from the same class II stream as **POD1**. See the Water Uses section of this report for more details on these water rights. The parcel is not grid tied and is currently powered by generators and a solar array. There is a storage shed, for a fuel tank and a generator immediately to the westside of **CA1**. The site currently has two locations where cultivation takes place. The west location is comprised of **CA1** and **CA2**. The east location is comprised of **CA3**. The total cultivation area across these sites totals to 23,725-sq. ft. The site had approximately 55,757-sq. ft of disturbed area related to cannabis cultivation activities and because this disturbed area is greater than an acre the site is classified as Tier 2. There was no disturbed area that was located within riparian setbacks and therefore the site is determined to be a low risk.

Table 1. Cultivation area overview.

Cultivation Area (CA)	Disturbed Area (ft <sup>2</sup> )	Natural Slope (%)	Distance to Water Body (ft)	Water Body Classification
(CA1)	~19,159	17%	110	Class II
(CA2)	~3,922	17%	125	Class II
(CA3)	~32,807	17%	140	Class II

### 2.3. Access Roads

The site has 250-ft of permanent road, 1,734-ft of seasonal access road, and 0-ft of skid road. Property contains a small section of permanent road traveled by vehicles to reach the residence; the permanent road is rocked for wet season access, has no outside berm. The positioning of rolling dips and waterbars are demarcated on the Site Map. The segment of permanent road leading to the residence needs to have the rolling dips revamped every 100 feet to prevent the deterioration of the road and provide for year around access (**MP4**) (See Weaver, W.E., Weppner, E.M. and Hagans, D.K., 2015, Handbook for Forest, Ranch and Rural Roads for technical information). The seasonal roads on site will have rolling dips or waterbars every 100 feet, to be inspected and maintained, seasonally, annually and after storm periods. According the Road Handbook, rolling dips shall be installed every 100-feet to prevent erosion based on the slope and erodibility of the road surface. Waterbars will be useful on the seasonal road outside of the riparian buffer because these features are less expensive than rolling dips and they only need to be revamped once before the winter period (**MP5 & MP6**). Rolling dips will be useful on the seasonal road where it temporarily interlays the riparian setbacks on the way to **CA1** and **CA2** and this seasonal road cannot be relocated. A rolling dip is suitable here (**MP8**) because these require less regular maintenance than a waterbar. The applicant is also advised to keep a thick strip of vegetation on the downslope side of the road at **MP8** as a precautionary treatment. The segment of seasonal road which leads to the pond with no determined owner is partially within the riparian setback. This segment of seasonal road is not useful to the cultivation and abandoning the road is proposed. To decommission the road, a condition will exist that provides for long-term, maintenance-free function of drainage and erosion controls. Rolling dips are recommended here. Abandoned roads shall be blocked to prevent unauthorized vehicle traffic and allow for passive revegetation. In general, seasonal roads on the parcel are in good condition. Adding surface gravel preemptively where the existing season access road is steeper than 8 percent is advised to prevent wear on the road during the winter period. The seasonal roads are only used during cultivation season, May through October. The roads are used minimally by workers navigating the site and bringing

in supplies. Workers are on the site daily and most supplies are brought in during the beginning of the season. Vehicles are mainly parked near the processing building at CA2. No hydrologically connected road surfaces were observed on site; all remediation measures listed in this report are purely preventative. The existing road segments in the riparian setbacks are stable.

## 2.4. Stream Crossings

There are no stream crossings on the property that are the responsibility of the property owner.

## 2.5. Legacy Waste Discharges

No historical Legacy issues were observed on site.

# 3. Erosion Prevention and Sediment Capture

The disturbed areas consisted of the cultivation areas, soils/amendment piles, unstable road segments, and a processing area as shown on the Site Map included within this report. The Remediation Summary Table found in section 10 of this report will describe the map points shown on the Site Map. The cultivation area is split up in three separate flats. The fill face of each flat has been successfully stabilized with straw wattles and grasses. The flats do not show signs of erosion or failure. Disused soil for cultivation is kept in piles, which are covered with tarps, but during the site visit there were two uncovered spent soils piles (**MP 1 & 2**) which GRC recommends being kept covered to protect from wind and that straw wattles go around the perimeter of each pile to prevent the soil from transported State waters during rain events. The cultivation beds did not have a cover crop and it is recommended to seed a cover crop of native annuals or nitrogen fixing clover to prevent the transportation of sediment outside of the beds; it is also beneficial to soil health.

# 4. Water Uses

Water for cannabis irrigation is sourced from two diversions on a class II stream. **POD1**, registration ID H502193 states that up to 615,000-gallons may be diverted during the wet season to storage for cannabis irrigation during the forbearance period; the total storage capacity shall not exceed 1,469,115 gallons; and the diversion rate to storage shall not exceed 42,000-gallons per day during the diversion season October 31<sup>st</sup> - April 1<sup>st</sup> as described in the SIUR Certificate (see attached SIUR Certificate). For domestic water and fire protection, registration ID D032576 states that up to 74,945.72-gallons that can be withdrawn throughout the year; water by direct diversion shall not exceed 330-gallons per day November 12<sup>th</sup> - June 15<sup>th</sup>; water to storage shall not exceed 32,585-gallons per year to storage from December 15<sup>th</sup> - March 31<sup>st</sup> (see attached SDUR Certificate). There is a permitted well on the site however the client described the well as unproductive and prefers to divert from the class II. The estimated annual water use is summarized below in **Table 3**. There is currently a total of 123,100-gallons of hard tank storage located on site (See Site Map). A proposed 850,000-gallon pond has been designed by Trinity Valley Consulting Engineers to store rainwater (See Attached Plot Plan overview). The proposed pond would be in the southeastern corner of the parcel between a class II and class III watercourse. The pond will require approval from the California Department of Fish and Wildlife, the State Water Resources Control Board, and the Humboldt County Planning and Building Department.

Table 2. Annual water uses on the parcel.

Source	Use	Start Date	End Date	To Storage (gallons)	To Use (gallons)
<b>POD1</b>	Cannabis	Apr. 1	Oct. 1	NA	123,000
<b>POD1</b>	Cannabis	Nov. 1	Mar. 31	123,000	NA
<b>POD2</b>	Domestic	Jan. 1	Dec. 31	32,585	74,945
<b>Well</b>	Cannabis	Jan. 1	Dec. 31	NA	NA
<b>Well</b>	Domestic	Jan. 1	Dec. 31	NA	NA

The site has a total of 123,100-gallons of water storage available which is summarized in Table 4. The cultivator must install water meters to quantify water use for cannabis irrigation (**MP9**). The cultivator must also maintain written records of water use and keep them on site for a minimum of 5 years. To conserve water, a straw or mulch ground cover should be applied to reduce water evaporation from bare ground. To irrigate at agronomic rates micro-sprinklers and drip irrigation will occur during the early mornings when rate of evapotranspiration is low. All irrigation infrastructure will be regularly inspected for leaks and immediately repaired if any are found.

Table 3. Summary of water storage on the parcel.

Water Storage Type	Size (gallons)	Quantity	Total (gallons)
<b>Bladder</b>	50,000	1	50,000
<b>Pioneer Tank</b>	37,000	1	37,000
<b>HDPE Tank</b>	5,000	4	15,000
<b>HDPE Tank</b>	3,000	1	1,500
<b>HDPE Tank</b>	2,500	1	2,500
<b>HDPE Tank</b>	1,500	1	1,500
<b>HDPE Tank</b>	1,200	3	3,600
<b>HDPE Tank</b>	1,000	1	1,000
<b>Total</b>			123,100

## 5. Fertilizers, Pesticides and Herbicides

### 5.1. Application, Storage and Disposal

All fertilizers, pesticides, herbicides and rodenticides will be mixed or prepared in locations where they cannot enter a waterbody (surface or groundwater). Fertilizers, pesticides, herbicides and rodenticides shall be applied at agronomic rates specified on the product label. The enrollee will keep a log of their fertilizers, pesticides and herbicides use for annual reporting. All labels will be kept, and directions followed when amendments and fertilizers are applied. All liquid chemicals will be stored in separate secondary containment. During the off season all chemicals will be stored in a covered building. Agricultural chemicals will not be applied within 48-hr of a predicted rain event with a 50% or greater chance of 0.25-inches. Disposal of unused products will be consistent with labels on containers. Empty containers will be disposed of at an authorized recycling center. A spill clean-up kit will be stored in the garage/shop. No restricted materials or pesticides will be used or stored on site. No greater than 319 pounds of nitrogen per acre per year shall be applied. A summary of fertilizers, pesticides, and herbicides used annually are listed below in Table 5. The total amount of nitrogen applied to the cultivation acreage

per year is 97 pounds; 99 pounds of phosphorus are applied.

Table 4. Overview of annual chemical use.

Product Name	Chemical Type	N-P-K or Active Ingredient	Annual Use (lbs. or gallons)
Dr. Earth All Purpose	Fertilizer	4-4-4	320
Fox Farm Grow	Fertilizer	6-4-4	600
Fox Farm Tiger Bloom	Fertilizer	2-8-4	200
Fox Farm Big Bloom	Fertilizer	0.01-0.3-0.7	300
Plant Therapy	Insecticide	Peppermint Oil	20 gal

## 5.2. Spill Prevention and Clean Up

A spill cleanup kit will be located near or made available wherever chemicals, fuels, or amendments are stored or used. In case of a major spill of fertilizers, or any petroleum products, the cannabis cultivator shall immediately notify the California Office of Emergency Services at 1-800-852-7550 and initiate cleanup activities for all spills that could enter a waterbody or degrade groundwater.

## 6. Petroleum

### 6.1. Use, Storage, and Disposal

The parcel is not grid tied and is currently powered by small generators and a solar array. There one large fuel storage tank on the site stored in a designated shed designed with appropriate containment. While in use, the generators will need to be stored with drip containment outside of riparian setbacks. Fueling of the generators, as well as any other equipment or vehicles, will also take place outside of the riparian setbacks. All equipment containing petroleum derivatives will be inspected regularly for leaks. When the generators are not in use they will be stored in a covered building. A summary of annual petroleum is listed below in Table 6.

Table 5. Overview annual petroleum usage.

Product	Chemical Type	Annual Use (lbs. or gallons)
Gasoline	Petroleum	150 gallons
Motor Oil	Petroleum	4 gallons

## **7. Cultivation Waste, Trash/Refuse and Domestic Wastewater**

### **7.1. Trash/Refuse Overview**

Cultivation related wastes such as old pots shall be kept in a secure upland location and prevented from entering the riparian setbacks (**MP3**). All trash is locked up in the storage on site and is removed on a regular basis to an authorized waste management facility. No trash or debris will be allowed to enter a watercourse or riparian setback area. Compostable cultivation waste will be stored in a location and manner where it cannot be transported to surface waters. Spent growth medium (e.g. soil) shall either be reused, disposed of at an appropriate waste site, or be spread outside of riparian setbacks and planted with native vegetation.

### **7.2. Domestic Wastewater BPTC Measures**

The residence on the site has a septic system that is in the process of becoming permitted. There are plans for a septic awaiting approval written by Trinity Valley Consulting Engineers, INC. Portable toilets will be brought onto the site for the seasonal workers. Portable toilets will be serviced regularly and located outside of riparian setbacks and away from unstable areas.

## **8. Winterization Measures**

### **8.1. Summary**

It is required that winterization measures be completed annually before the onset of the winter rainy season. The SWRCB has defined the winter season as beginning November 1<sup>st</sup> and concluding April 1<sup>st</sup>. Winterization measures apply to cultivation areas and any additional disturbed areas including roads. These measures aim to prepare the site for an extended period of heavy precipitation during which frequent access, monitoring, and maintenance can be challenging or infeasible. The end goal is to reduce the erosion of unstable areas and prevent the delivery of eroded sediment to sensitive waterways. One of the primary techniques of winterization consists of stabilizing all bare soils with straw and seed. Fiber rolls shall additionally be installed at grade breaks and along slopes of disturbed areas to break up flow paths, thereby reducing the speed and erosive energy of runoff. No heavy machinery shall be used during the winter season to avoid the degradation of saturated roadways and unstable surfaces. Soil stockpiles shall be guarded before the onset of winter with a cover and/or perimeter controls such as fiber rolls. Seasonal access roads shall be locked to ensure that roads are not in use during the wet season by trespassers. Aside from the erosion control components to winterization, a general and thorough site cleanup will be performed to remove all refuse from the site. Additionally, all fertilizers and petroleum products to be left on site will be stored in secondary containment and locked in the shipping container to avoid spillage and discharge to surface or groundwater.

## 9. Monitoring

For Low Risk sites the only monitoring report required is the Facility Status Report. Annual reports for the cultivation site will be submitted to the North Coast Regional Water Quality and Control Board (NCRWQCB) prior to March 1 of the following year. The annual report shall include the following: Facility Status, Site Maintenance, and Storm Water Runoff Monitoring; Name and contact information for the person responsible for operation, maintenance, and monitoring. Reporting documents can be emailed to northcoast@waterboards.ca.gov or mailed to 5550 Skylane Blvd., Ste. A, Santa Rosa, CA 95403.

Table 6. Facility status monitoring requirements.

<b><u>Monitoring Requirement</u></b>	<b><u>Description</u></b>
Winterization Measures Implemented	Report winterization procedures implemented, any outstanding measures, and the schedule for completion.
Tier Status Confirmation	Report any change in tier status. (Stabilization of disturbed areas may change the tier status of a facility. Contact the Regional Water Board if a change in status is appropriate.)
Third Party Identification	Report any change in third party status as appropriate.
Nitrogen Application	Report monthly and annual total nitrogen use for bulk, solid, and liquid forms of nitrogen. Provide the data as lbs./canopy acre/time (month or year) as described in Nitrogen Management Plan.

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

**Legally Responsible Person**\_\_\_\_\_ **Date**\_\_\_\_\_





## Site Map APN 223-101-002

0 125 250 500 Feet

- |                  |                         |              |              |                  |              |        |
|------------------|-------------------------|--------------|--------------|------------------|--------------|--------|
| Parcel Boundary  | Stream Buffer           | <b>Roads</b> | Water Bars   | Water Bladder    | Solar Panel  | Septic |
| Cultivation Area | Proposed Pond           | Permanent    | Rolling Dips | Map Points       | Storage Shed |        |
| Disturbed Area   | Proposed Abandoned Road | Seasonal     | Water Source | Cultivation Soil | Fuel Storage |        |
| Pond             | Trail                   | Skid         | Water Tank   | Residence        | Garbage      |        |

PLN-10871-CUP Seeking Roots LLC  
Attachment 3

May 6, 2020

Contour Interval: 40ft  
imagery: 2016 NAIP





## 10. Remediation Summary Table

Map Point (MP)	Topic	Issue	Remediation Measure	Treatment Priority	Expected Completion Date	Actual Completion Date
MP1	Soil Disposal and Spoils Management	Uncontained spoils pile.	Fully cover spent soils pile along with straw wattles along the bottom. Do not place soil piles within riparian zone setbacks.	Moderate	October 2019	
MP2	Soil Disposal and Spoils Management	Uncontained spoils pile.	Fully cover spent soil pile along with straw wattles along the bottom. Do not place soil piles within riparian zone setbacks.	Moderate	October 2019	
MP3	Cultivation-Related Waste	Uncontained cultivation pots.	Contain cultivation related wastes in a designated area outside of the riparian setbacks. Regularly take disused things to a waste MGMT facility.	Moderate	October 2019	
MP4	Land Development and Maintenance, Erosion Control, and Drainage Features	Potential surface erosion due stormwater runoff.	Rolling dips will be revamped every 100-feet on the permanent road	High	October 2019	
MP5	Land Development and Maintenance, Erosion Control, and Drainage Features	Potential surface erosion due stormwater runoff.	Water-bars will be revamped every 100-feet on the seasonal road.	High	October 2019	
MP6	Land Development and Maintenance, Erosion Control, and Drainage Features	Potential surface erosion due stormwater runoff.	A water-bar will be revamped on the seasonal road by the flat.	High	October 2019	
MP7	Water Storage and Use	The outlet of the pond is in high risk of failing and the owner of the pond has not been determined.	Identify the owner and the responsible party shall work to remediate this issue.	High	October 2019	
MP8	Land Development and Maintenance, Erosion Control, and Drainage Features	There is a well-maintained segment of seasonal road which cannot possibly be relocated out of the riparian setbacks.	The cannabis cultivator shall maintain a vegetated strip along the downslope side of the seasonal road as a precautionary treatment.	High	October 2019	



Map Point (MP)	Topic	Issue	Remediation Measure	Treatment Priority	Expected Completion Date	Actual Completion Date
MP9	Water Storage and Use	There were no water meters installed at the POD.	Install water meters at the POD to quantify water use for cannabis.	High	October 2019	

## **Waterbars**

According to the Pacific Watershed Associates (PWA) Handbook for Forest, Ranch, and Rural Roads, “Waterbars are constructed on unsurfaced forest and ranch roads that will have little or no traffic during the wet season. The waterbar should be extended beyond the shoulder of the road. A berm must block and prevent ditch flow from continuing down the road during flood flows. The excavated waterbar should be constructed to be self-cleaning, typically with a 30° skew to the road alignment with the excavated material bermed on the downhill grade of the road. Water should always be discharged onto the downhill side on a stable slope protected by vegetation. The cross-ditch depth and width must allow vehicle cross-over without destroying the function of the drain.”<sup>1</sup> Rock shall be necessary where water leaves the road because there is not enough space for multiple waterbars spaced close enough to prevent serious erosion.

Waterbars can also be used to drain a road surface. These are shallow, abrupt, excavated dips or troughs with an adjacent, downslope hump or mounded berm that are built at an oblique angle across the road. To maintain the greatest effectiveness, the axis of the waterbar (including where it drains onto the adjacent hillslope) should be constructed at a gradient slightly steeper than the road gradient it is intended to drain. This prevents deposition within or at the outlet of the structure and maintains flow and sediment transport along its length. Waterbars are useful only on low standard seasonal or temporary, unsurfaced roads where winter or wet season use will not occur, because traffic easily cuts through the soft berm and fills the adjacent dip. On seasonal rocky roads and roads where waterbars cannot be built and maintained each year, thick rubber flaps or “rubber waterbars” are occasionally constructed into the roadbed. The rubber waterbar is most useful where frequent road grading is not necessary but the road surface needs better drainage. These drainage diversion devices are sometimes made of thick rubber strips or salvaged conveyor belt fabrics, and are dug at least 12 inches into, and anchored in, the roadbed at an angle oblique to the road alignment, much like a waterbar. They stick up about 4 inches above the running surface and divert surface runoff to the side of the road. The flap bends down as vehicles pass over the waterbar and then immediately springs back to deflect runoff. Unlike waterbars, vehicles can drive over the flap without having to slow down; it folds over and pops back up when the vehicle passes. The main shortcomings include the labor-intensive installation required to build each diversion device, and the difficulty of grading the road surface that contains frequent rubber waterbars. Open top box culverts (usually made of wood or metal) can also be used to drain the road surface, but they often fill with soil and rock, are difficult to grade over, and usually require higher levels of maintenance to keep open and functional. They should have a relatively steep grade so they self-clean during runoff events and are often fitted with a surface grate on top to prevent large rocks from entering the top of the culvert and obstructing flow. Like waterbars, and for maximum effectiveness and minimal maintenance, these less common road drainage structures should be constructed obliquely across the road such that their slope is slightly greater than the grade of the road they are draining. The alternative may be a ditch relief culvert here which is for roads used regularly during the wet season.<sup>1</sup> (see attached diagram in appendices).

**TABLE 19.** Recommended maximum rolling dip and ditch relief culvert spacing, in feet, based on road gradient and soil erodibility <sup>1,2</sup>

Soil erodibility	Road gradient (%) and drainage structure spacing (feet)				
	0–3	4–6	7–9	10–12	>12
High to moderate	250	160	130	115	100
Low	400	300	250	200	160

<sup>1</sup>Based on Keller and Sherar, 2003. Also suggested by California Board of Forestry and Fire Protection in Technical Rule Addendum No. 5 (see Appendix C).

<sup>2</sup>Table distances are designed to prevent ditch erosion, not to eliminate hydrologic connectivity. If road surface drainage is hydrologically connected to a stream crossing, install first a rolling dip and/or ditch relief culvert close to the crossing, but such that it drains onto the fill slope or hillslope and will not deliver runoff to the watercourse. The next (second) drainage structure should be placed so that it too will not discharge to the stream. Add additional drainage relief treatments along the road according to the approximate spacing recommended in this table.

**FIGURE 40.** Waterbars are constructed on unsurfaced forest and ranch roads that will have little or no traffic during the wet season. The waterbar should be extended to the cutbank to intercept all ditch flow (1) and extend beyond the shoulder of the road. A berm (2) must block and prevent ditch flow from continuing down the road during flood flows. The excavated waterbar (3) should be constructed to be self-cleaning, typically with a 30° skew to the road alignment with the excavated material bermed on the downhill grade of the road (4). Water should always be discharged onto the downhill side on a stable slope protected by vegetation. Rock (shown in the figure) should not be necessary if waterbars are spaced close enough to prevent serious erosion. (5) The cross ditch depth (6) and width (7) must allow vehicle cross-over without destroying the function of the drain. Several alternate types of waterbars are possible, including one that drains only the road surface (not the ditch), and one that drains the road surface into the inside ditch (BCMF, 1991).



#### Work Cited

- <sup>1</sup>Weaver, William, PHD, Eileen Weppner, P.G., and Danny Hagans, CPESC. "Handbook for Forest, Ranch, & Rural Roads: A Guide for Planning, Designing, Constructing, Reconstructing, Upgrading, Maintaining, and Closing Wildland Roads." Pacific Watershed Associates. 2014. Accessed 2019. [http://www.pacificwatershed.com/sites/default/files/5\\_-\\_chapter\\_4\\_-\\_road\\_and\\_stream\\_crossing\\_design.pdf](http://www.pacificwatershed.com/sites/default/files/5_-_chapter_4_-_road_and_stream_crossing_design.pdf)



SEEKING ROOTS, LLC  
APN: 223-101-002

VICINITY MAP  
NOT TO SCALE



IMAGE SOURCE: ESRI 2018

PROJECT DIRECTIONS  
FROM: EUREKA, CA

1. HEAD SOUTH ON US-101 S
2. TAKE EXIT 639B TOWARD REDWAY
3. TURN RIGHT ONTO REDWOOD DR
4. TURN RIGHT ONTO ALDERPOINT RD
5. TURN LEFT ONTO DYERVILLE LOOP RD
6. SLIGHT LEFT  
26092 DYERVILLE LOOP RD  
GARBERVILLE, CA 95542

TRAVEL TIME  
APPROXIMATELY: 72.5 MI (1 H 21 MIN)

SHEET INDEX  
CP-COVER PAGE  
PO-PARCEL OVERVIEW  
SB-SHARED BUILDINGS

PROJECT INFORMATION  
LAT/LONG: 40.1317,+123.7071  
APN: 233-101-002  
APPLICANT: SEEKING ROOTS, LLC  
PARCEL SIZE: ± 33.74 ACRES  
ZONING: AE-B-6  
APPLICATION TYPE:

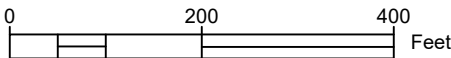
COASTAL ZONE: N  
100 YEAR FLOOD: N

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

AERIAL MAP



IMAGE SOURCE: BING 2018



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



PROJECT INFORMATION			
PROPERTY OWNER	TERRENCE HEPNER		
ADDRESS	26092 DYERVILLE LOOP RD, GARBERVILLE, CA 95542		
SHEET INFO	COVER PAGE		

REVISIONS		
NO.	NOTES	DATE

DATE 12/19/18  
DRAFTER DDV  
SCALE AS SHOWN

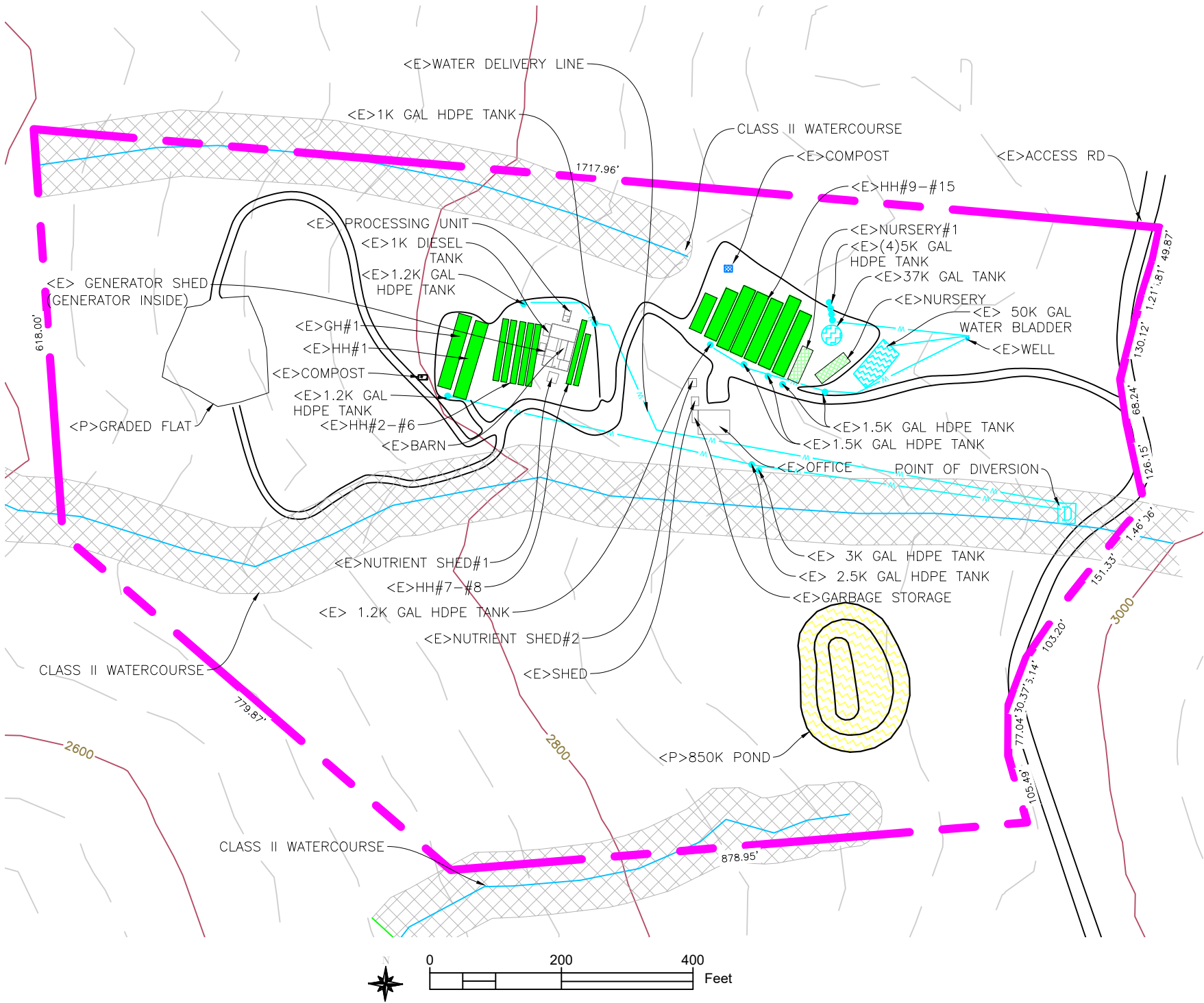
SHEET  
CP



12/19/2018 - X:\Projects\Hep-Hu-Ga-18.3\CAD\CULTIVATION-MAP\HEP-CUL.dwg - 11:15 AM - GRC

# PARCEL OVERVIEW

APN: 223-101-002



## CULTIVATION INFORMATION

### SPECIALTY COTTAGE MIXED LIGHT TIER 1 - TCA18-0007783

GH	LENGTH	WIDTH	SQ FT
1	115	X	2,300
TOTAL MIXED LIGHT CULTIVATION AREA =			2,300 SQ FT

### MEDIUM MIXED LIGHT TIER 1 - TCA18-0007782

HOOP HOUSE	LENGTH	WIDTH	SQ FT
1	115	X	2,300
2	120	X	2,400
3	95	X	855
4	95	X	855
5	95	X	855
6	95	X	855
7	95	X	855
8	100	X	750
9	80	X	600
10	60	X	1,200
11	80	X	1,600
12	100	X	2,000
13	100	X	2,000
14	100	X	2,000
15	115	X	2,300
TOTAL MIXED LIGHT CULTIVATION AREA =			21,425

### CULTIVATION BUILDINGS AND USE

BUILDINGS	USE	SIZE	YEAR
NUTRIENT SHED1	NUTRIENT/PESTICIDE STORAGE	10'x12'	2013
NUTRIENT SHED 2	NUTRIENT/PESTICIDE STORAGE	10'x12'	2012
BARN	PROPAGATION/DRYING/PROCESSING/PRO DUCT STORAGE/PACKAGE & LABELING	40'x65'	2012
GENERATOR SHED (TCA18-0007782)	GENERATOR STORAGE	10'x18'	2014
SHED (TCA18-0007782)	STORAGE	10'x12'	2011
OFFICE (TCA18-0007782)	PACKAGE&LABELING	40'x37'	2012
NURSERY#1 (TCA18-0007782)	PROPAGATION	50'x17.5'	2012
NURSERY#2 (TCA18-0007783)	PROPAGATION	60'x17.5'	2012
PROCESSING UNIT	PROCESSING	10'x18'	2012

### BARN ROOM USE (TCA18-0007782)

BUILDINGS	USE	SIZE	YEAR
PROPAGATION ROOM	PROPAGATION OF CANNABIS	10'x30'	2012
PROCESSING ROOM	PROCESSING/ PACKAGING AND LABELING OF CANNABIS	40'x20'	2012
STORAGE ROOM	STORING HARVESTED CANNABIS	15'x15'	2012

### BARN ROOM USE (TCA18-0007783)

BUILDINGS	USE	SIZE	YEAR
PROPAGATION ROOM	PROPAGATION OF CANNABIS	10'x30'	2012
PROCESSING ROOM	PROCESSING/ PACKAGING AND LABELING OF CANNABIS	15'x20'	2012
STORAGE ROOM	STORING HARVESTED CANNABIS	15'x15'	2012

### PROCESSING UNIT USE

LICENSE	USE	SIZE	YEAR
(TCA18-0007783)	PROCESSING	10'x9'	2012
(TCA18-00077832)	PROCESSING	10'x9'	2012

### WATER STORAGE AND USE

TYPE	LAT/LONG	QUANTITY	GALLONS	TOTAL GALLONS
HDPE TANK	40.1323, -123.7075	1	1,200	1,200
HDPE TANK	40.1319, -123.7078	1	1,200	1,200
HDPE TANK	40.1322, -123.7071	1	1,000	1,000
HDPE TANK	40.1321, -123.7064	1	1,200	1,200
HDPE TANK	40.1316, -123.7062	1	3,000	3,000
HDPE TANK	40.1316, -123.7062	1	2,500	2,500
HDPE TANK	40.1320, -123.7061	4	1,500	6,000
BLADDER	40.1321, -123.7057	1	50,000	50,000
HDPE TANK	40.1321, -123.7057	4	5,000	20,000
TANK	40.1322, -123.7053	1	37,000	37,000
				123,100 GALLONS

### WATER SOURCE

TYPE	LAT/LONG
WELL	40.1322, -123.7050
POINT OF DIVERSION	40.1314, -123.7045
(P) POND 850,000 GALLONS	40.2232, -123.5584

### POWER SOURCE

36 KW GENERATOR

### COMPOST AREA

120FT<sup>2</sup> (12'x10')

UNNAMED CLASS II STREAM WITH REQUIRED 100 FT BUFFER

### SURROUNDING BUILDINGS

THERE ARE NO SCHOOLS, BUS STOPS, PLACES OF WORSHIP, PUBLIC PARKS OR TRIBAL CULTURAL RESOURCES WITHIN 600 FEET OF THE CULTIVATION SITE.  
THERE ARE NO OFF SITE RESIDENCES WITHIN 300 FEET OF THE CULTIVATION SITE.



## PROJECT INFORMATION

TERRENCE HEPNER

PROPERTY OWNER

26092 DYERVILLE LOOP RD, GARBERVILLE, CA 95542

PARCEL OVERVIEW

SHEET INFO

## REVISIONS

NO.	NOTES	DATE

DATE	12/19/18
DRAFTER	DDV
SCALE	AS SHOWN

SHEET  
PO

APN: 223-101-002



TERRENCE HEPNER

ADDRESS 26092 DYERVILLE LOOP RD, GARBERVILLE, CA 95542

SHEET INFO

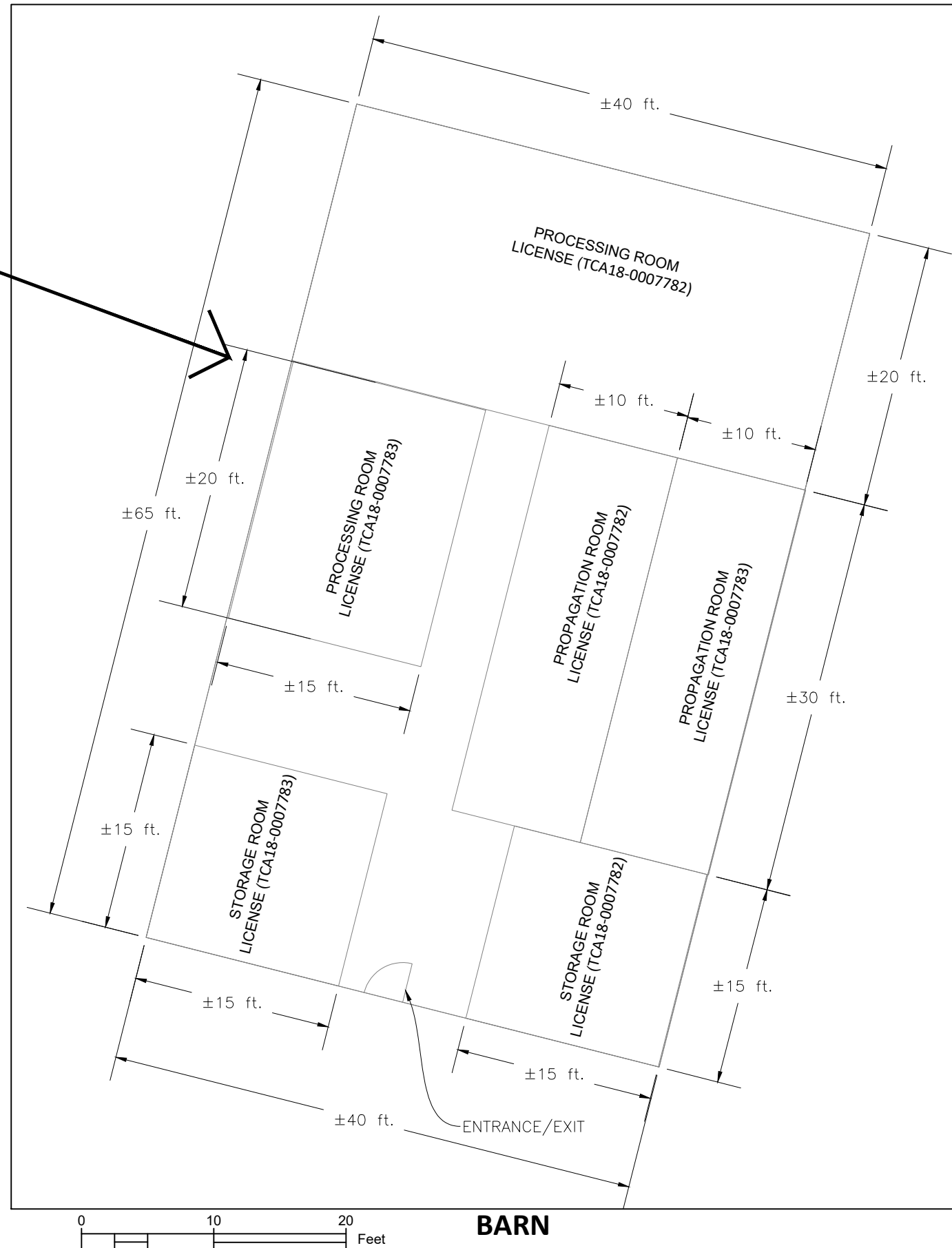
SHARED BUILDINGS

## REVISIONS

[illegible]

DATE	12/19/18
DRAFTER	DDV
SCALE	AS SHOWN

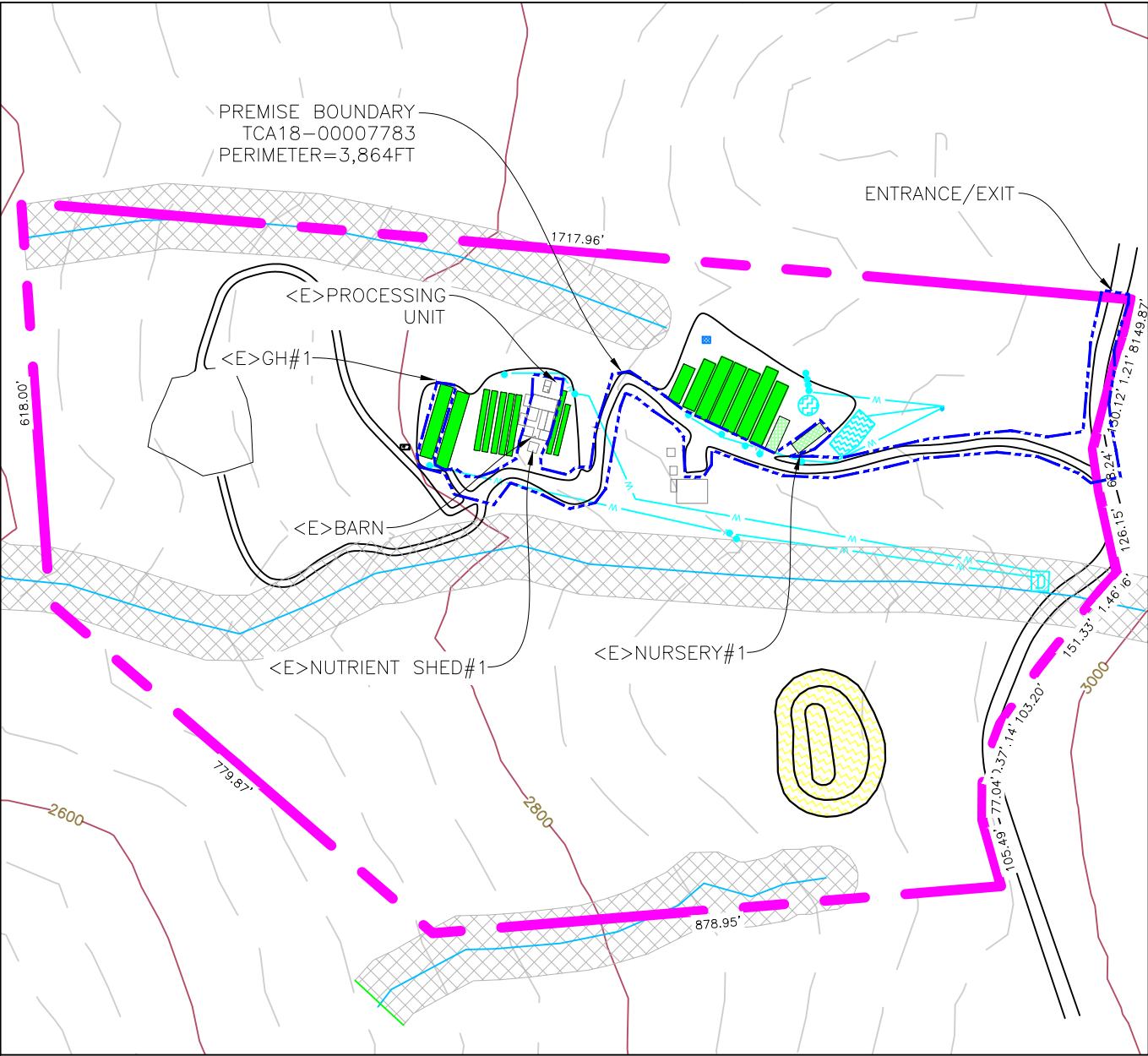
SHEET  
SB



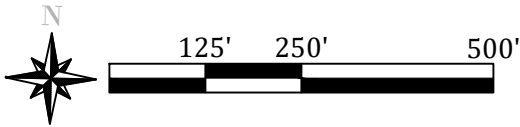
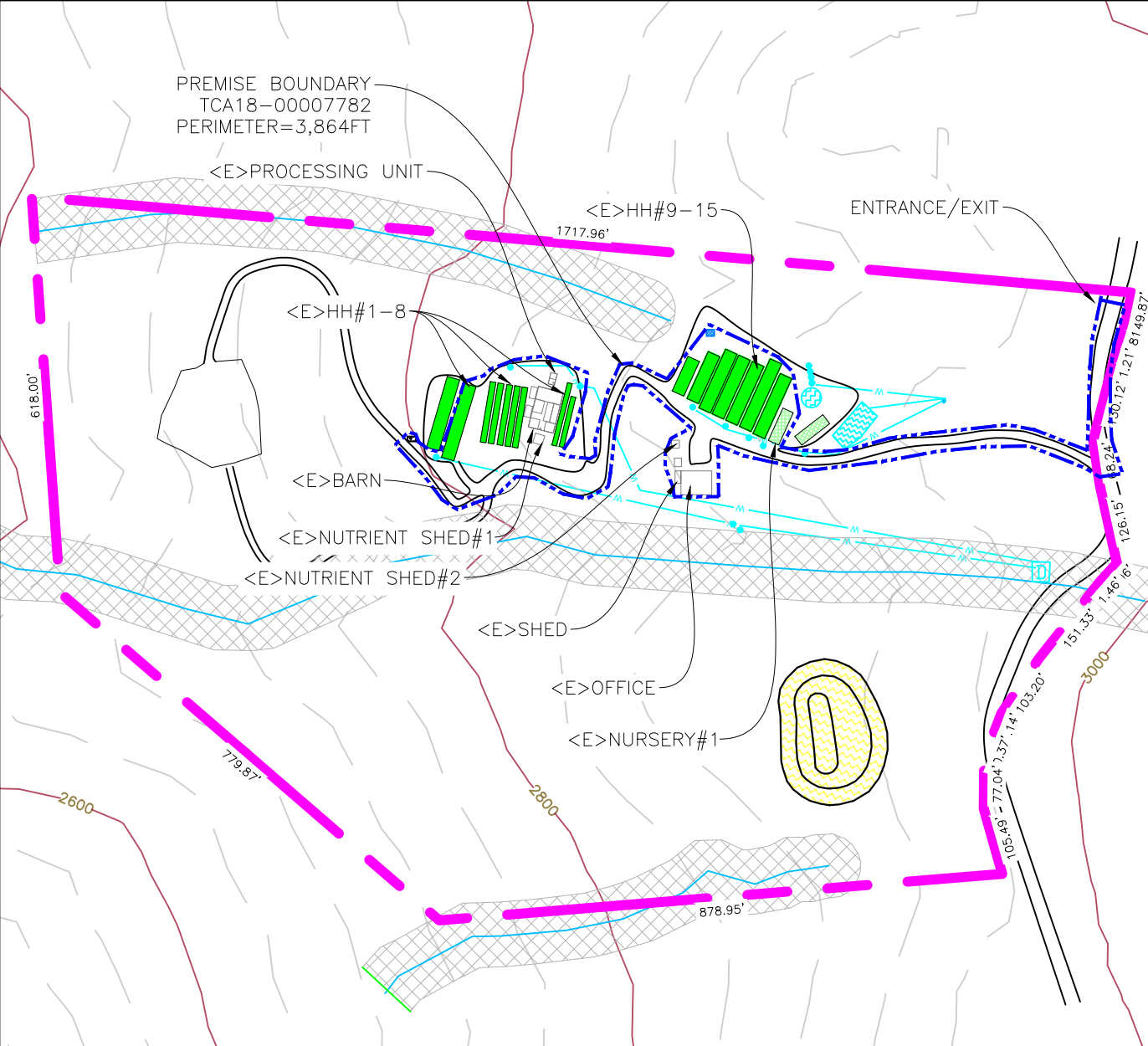
PREMISE DIAGRAMS

APN: 223-101-002

TCA18-00007783



TCA18-00007782



PROJECT INFORMATION

PROPERTY OWNER  
TERRENCE HEPNER

ADDRESS  
26092 DYERVILLE LOOP RD, GARBERVILLE, CA 95542

SHEET INFO  
PARCEL OVERVIEW

REVISIONS		
NO.	NOTES	DATE

DATE  
12/19/18


DRAFTER  
DDV


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AS SHOWN


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PO





PROPOSED


CABLE TV OVERHEAD


POWER OVERHEAD


TELEPHONE OVERHEAD


TELEPHONE UG


POWER (UNDERGROUND) UG


GAS LINE


ANCHOR/GUY WIRE


SEWER MANHOLE


SEWER LINE


FLUSHING BRANCH/CLEANOUT


SEWER SERVICE


STORM DRAIN MANHOLE


STORM DRAIN PIPE


STORM DRAIN INLET


WATER LINE


WATER VALVE


REDUCER


BLOW OFF ASSEMBLY


AIR RELIEF VALVE


FIRE HYDRANT ASSEMBLY


R.P. BACKFLOW PREVENTER


DRIVE WAY


SIDEWALK RAMP


BARRICADE


SURVEY MONUMENT


CENTERLINE


RIGHT OF WAY LINE


PROPERTY LINE


EASEMENT LINE


EDGE OF PAVEMENT


RIDGE LINE


FENCE LINE

CONTOUR LINE

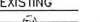
SIDEWALK

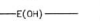
STREET LIGHT

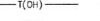
STREET NAME SIGN

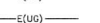
SIGN


EXISTING


CABLE TV OVERHEAD


POWER OVERHEAD


TELEPHONE OVERHEAD


TELEPHONE UG


POWER (UNDERGROUND) UG


GAS LINE


ANCHOR/GUY WIRE


SEWER MANHOLE


SEWER LINE

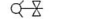
FLUSHING BRANCH/CLEANOUT


SEWER SERVICE

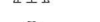
STORM DRAIN MANHOLE


STORM DRAIN PIPE


STORM DRAIN INLET


WATER LINE


WATER VALVE


REDUCER


BLOW OFF ASSEMBLY


AIR RELIEF VALVE


FIRE HYDRANT ASSEMBLY


R.P. BACKFLOW PREVENTER


DRIVE WAY


SIDEWALK RAMP


BARRICADE

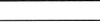
SURVEY MONUMENT


CENTERLINE


RIGHT OF WAY LINE


PROPERTY LINE


EASEMENT LINE


EDGE OF PAVEMENT


RIDGE LINE


FENCE LINE

CONTOUR LINE

SIDEWALK

STREET LIGHT

STREET NAME SIGN

SIGN

LEGEND

AC = ASPHALTIC CONCRETE

AB = AGGREGATE BASE

A.D. = ALGEBRAIC DIFFERENCE

BC, PC = BEGIN CURVE

CO = CLEAN OUT

CL = CENTER LINE

CMP = CORRUGATED METAL PIPE

CPCT. = COMPACT

D = DELTA

DET = DETAIL

DRN = DRAIN

<AS> = EXISTING

EC = END CURVE

EG = EXISTING GROUND

EP = EDGE OF PAVEMENT

FF = FINISH FLOOR

FG = FINISH GRADE

FH = FIRE HYDRENT

FL = FLOW LINE

GA = GUY ANCHOR

GV = GATE VALVE

HC = HANDICAPPED

HDPE = HIGH DENSITY POLYETHYLENE PIPE

INV = INVERT

(INT-X) = INTERSECTION

K = SIGHT DISTANCE

LAT = LATERAL

LD. = LOCAL DEPRESSION

LF. = LINEAR FEET

LF. = SEWER LEACH FIELD

LT. = LEFT

MAS. = MASONRY

MI = MILES

MSE = MECHANICALLY STABILIZED EARTH

(N) = NEW

NTS = NOT TO SCALE

O.C. = ON CENTER

PG&E = PACIFIC GAS & ELECTRIC

(P) = PROPOSED

PP = POWER POLE

PRC = POINT OF REVERSE CURVE

PT = POINT

PVI = POINT OF VERTICAL INTERSECTION

PVT = PRIVATE

RT = RIGHT

RTN = RETURN

SB = SET BACK

SDMH = STORM DRAIN MAN HOLE

SHT = SHEET

SD = STORM DRAIN

STA = STATION

STD. = STANDARD

TC = TOP OF CURB

TBC = TOP BACK OF CURB

TFC = TOP FACE OF CURB

TOB = TOP OF BANK

TEL = TELEPHONE

TP = TOP OF PAVEMENT

TVCE = TRINITY VALLEY CONSULTING ENGINEERS

TW = TOP OF WALL

(TYP) = TYPICAL

UG = UNDERGROUND

W = WATER

WV = WATER VALVE

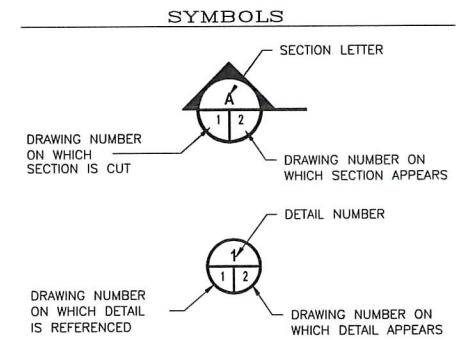
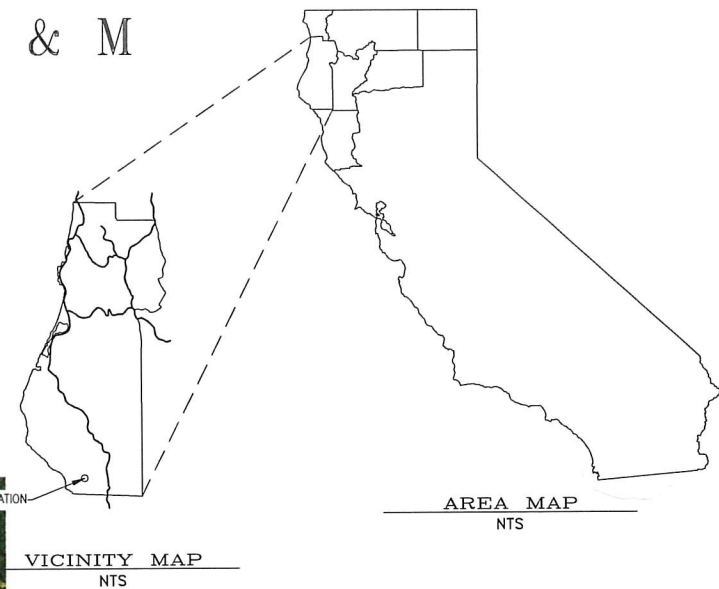
ABBREVIATIONS

SECTION 2, TOWNSHIP 4 SOUTH, RANGE 4 EAST HB & M

APN: 223-101-002-000

FOR:  
SEEKING ROOTS, LLC  
P.O. BOX 162  
GARBERVILLE, CA 95542

PROJECT LOCATION:  
26092 DYERVILLE LOOP ROAD  
GARBERVILLE, CA 95542



SHEET INDEX			
DRAWING #	TITLE	REVISION	DATE
T01	TITLE SHEET	0	03/15/17
C01	PLOT PLAN	0	03/15/17
C02	OVERALL GRADING & DRAINAGE PLAN	0	03/15/17
C02.1	GRADING & DRAINAGE PLAN SITE 1	0	03/15/17
C02.2	GRADING & DRAINAGE PLAN SITE 2	0	03/15/17
C02.3	GRADING & DRAINAGE PLAN SITE 3	0	03/15/17
C02.4	GRADING & DRAINAGE PLAN SITE 4	0	03/15/17
C02.5	ROAD GRADING & DRAINAGE PLAN	0	03/15/17
C03.1	SITE 5 SECTIONS AND DETAILS	0	03/15/17
C03.2	GRADING & DRAINAGE PLAN DETAILS	0	03/15/17
C04.1	EROSION CONTROL PLAN & DETAILS SITE-1	0	03/15/17
C04.2	EROSION CONTROL PLAN & DETAILS SITE-2	0	03/15/17
C04.3	EROSION CONTROL PLAN & DETAILS SITE-3	0	03/15/17
C04.4	EROSION CONTROL PLAN & DETAILS SITE-4	0	03/15/17
C04.5	ROAD EROSION CONTROL PLAN & DETAILS	0	03/15/17

ENGINEERING NOTES

ALL REQUIREMENTS FROM THE SOILS REPORT HAVE BEEN INCORPORATED INTO THESE PLANS.

THE ENGINEER OF RECORD SHALL INSPECT ALL SITE GRADING.

SURVEY NOTES


FIELD SURVEY FOR TOPOGRAPHIC PURPOSES WAS PERFORMED BY TVCE ON JANUARY 23, 2017

A BOUNDARY SURVEY WAS NOT CONDUCTED BY TVCE.

CONTRACTOR ALERT!

CONTRACTOR MUST CONTACT USA DIG AT 800-227-2600 AT LEAST 72 HOURS BEFORE ANY EARTHWORK OR ACTIVITIES THAT MAY IMPACT EXISTING UNDERGROUND UTILITIES.

EXISTING UTILITY ALIGNMENTS BOTH HORIZONTALLY AND VERTICALLY MUST BE VERIFIED BY THE CONTRACTOR PRIOR TO ANY CONSTRUCTION ACTIVITIES.



TVCE  
87 WILSON WAY  
P.O. BOX 162  
WILLOW CREEK, CA 95573  
PHONE (530) 629-3000  
FAX (530) 629-3011

DESIGNED BY	DESIGNED BY	DESIGNED BY	DESIGNED BY	DESIGNED BY
H. NAVARRO	JTM	JTM	JTM	JTM
CHECKED BY	CHECKED BY	CHECKED BY	CHECKED BY	CHECKED BY
J. MCKNIGHT	J. MCKNIGHT	J. MCKNIGHT	J. MCKNIGHT	J. MCKNIGHT
APPROVED BY	APPROVED BY	APPROVED BY	APPROVED BY	APPROVED BY
TVCE	TVCE	TVCE	TVCE	TVCE

SCALE: AS SHOWN

PROJECT NO: 1067

DRAWING NO: T01

SEEKING ROOTS, LLC  
26092 DYERVILLE LOOP ROAD, GARBERVILLE, CA 95542

TITLE SHEET

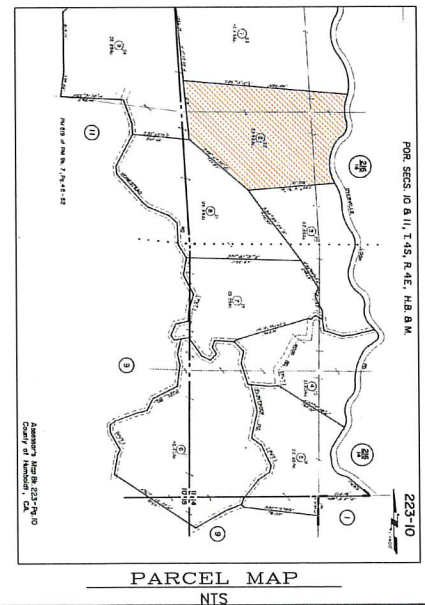
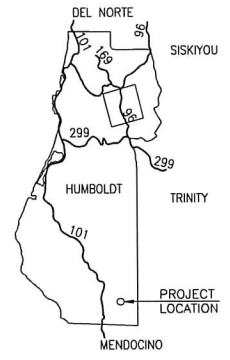
SECTION 11, TOWNSHIP 4 SOUTH, RANGE 4 EAST HB & M  
APN: 223-101-002-000



PLOT PLAN  
APN: 223-101-002

FOR:  
SEEKING ROOTS, LLC.  
P.O. BOX 162  
GARBERVILLE, CA 95542

PROJECT LOCATION:  
26092 DYERVILLE LOOP ROAD  
GARBERVILLE, CA 95542



LEGEND

[Green Box]	PROPOSED GREENHOUSE
[Light Green Box]	EXISTING GREENHOUSE
[White Box]	EXISTING 50' SMA
[Red Box]	PROPOSED BUILDING
[Light Red Box]	EXISTING BUILDING

CULTIVATION		
CULTIVATION TYPE	(AMOUNT) SIZE	SQUARE FOOTAGE
(E) GREENHOUSE	(1) 20x60	1,200
	(1) 20x80	1,600
	(5) 20x100	10,000
	(2) 20x115	4,600
	(1) 20x120	2,400
(P) GREENHOUSE	(7) 20x100	14,000
TOTAL CULTIVATION:		±33,800SF

WATER STORAGE		
WATER STORAGE TYPE	AMOUNT (GAL.)	
WATER STORAGE TANKS	(3)	1,500
	(2)	2,500
	(2)	500
	(1)	3,000
	(1)	37,000
RAINWATER IMPOUNDMENT STRUCTURE	(1)	850,000
TOTAL:		917,000 GALLONS

**SRA REQUIREMENTS**

PROVIDE ADEQUATE WATER STORAGE AND DELIVERY AS OUTLINED BY SRA ORDINANCE AND CALFIRE REQUIREMENTS

PROVIDE ADEQUATE TURN AROUND AND PULLOUTS AS OUTLINED BY SRA ORDINANCE REQUIREMENTS AND CALFIRE REQUIREMENTS

TOTAL GRADING ACTIVITY			
NUMBER	PROPOSED		DISTURBANCE (ACRES)
	CUT (CY)	FILL (CY)	
SITE 1	202.89	202.89	0.30
SITE 2	377.16	377.16	0.24
SITE 3	1,213.17	1,213.17	0.54
SITE 4	7,398.48	7,398.48	0.16
(P)ROAD	1,270.17	1,270.17	0.43
TOTAL	10,461.77	10,461.77	1.67

**GENERAL NOTES**

WATER: WELL/ STREAM  
WASTEWATER: ONSITE SEPTIC  
POWER: PG&E  
PHONE: FRONTIER  
CREEKS/STREAMS: UNNAMED CLASS III WATERCOURSE TO DEAN CREEK  
TREES TO BE REMOVED: NONE  
GRADING: AS SHOWN - SEE GRADING PLAN

EXISTING STRUCTURE NOTES		
HOME	BUILT 2006-2009	
37,000 GAL WATER TANK	BUILT 2006-2009	
BARN	BUILT 2013	

**CULTIVATION NOTES**

1. THERE ARE NO SCHOOLS, SCHOOL BUS STOPS, PLACES OF WORSHIP, PUBLIC PARKS, OR TRIBAL CULTURAL RESOURCES WITHIN 600' OF CULTIVATION AREAS.

2. THERE ARE NO OFFSITE RESIDENCES WITHIN 300' OF CULTIVATION AREAS.

**SURVEY NOTES**

A FIELD SURVEY FOR TOPOGRAPHIC PURPOSES WAS CONDUCTED BY TRINITY VALLEY CONSULTING ENGINEERS (TVCE) ON MARCH 2016. A BOUNDARY SURVEY WAS NOT CONDUCTED. ALL PROPERTY LINES DEPICTED ON THESE PLANS REFLECT APPROXIMATE LOCATIONS BASED ON COUNTY RECORDS.

1" = 1/2" 0"

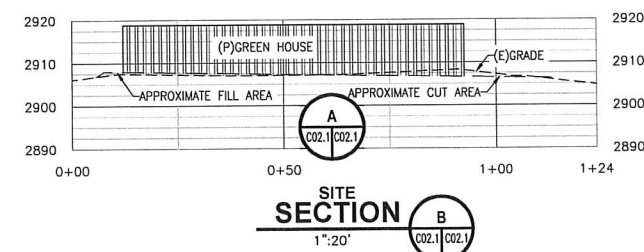
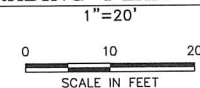






1. ALL EARTHWORK, INCLUDING BUT NOT LIMITED TO, SITE CLEARING, GRUBBING, STRIPPING, AND GRADING WILL BE CONDUCTED DURING DRY WEATHER CONDITIONS. (TYPICALLY APRIL 15 TO OCTOBER 15)
2. STRIP AND REMOVE ALL TOPSOIL AND VEGETATION FROM THE PROJECT AREA, AND FOR A MINIMUM OF THREE FEET TO THE OUTSIDE OF THE WORKING AREA.
3. ALL UNDOCUMENTED FILL SOILS, FINE-GRAINED RESIDUAL SOILS, AND ANY OTHER DEBRIS ENCOUNTERED AT OR BELOW THE EXISTING GROUND SURFACE SHALL BE REMOVED AT THE LOCATIONS RECEIVING ANY POTENTIAL FILLS.
4. THE SITE SHOULD BE GRADED TO PROVIDE ADEQUATE DRAINAGE SUCH THAT NO WATER IS ALLOWED TO POND ANYWHERE ON THE SITE OR MIGRATE BENEATH PROPOSED DEVELOPMENTS.
5. ALL FILL MATERIAL SHALL BE PLACED IN HORIZONTAL LIFTS NOT TO EXCEED EIGHT INCHES (8") IN DEPTH AND SHALL BE COMPACTED MECHANICALLY.
6. ALL FILL MATERIAL SHALL BE FREE OF ORGANICS, ROCKS LARGER THAN 3"Ø, WOODY DEBRIS, ROOTS, AND INORGANIC MATERIAL.
7. ALL FILL MATERIAL SHALL HAVE A UNIFORM MOISTURE CONTENT AT OR NEAR OPTIMUM MOISTURE CONTENT AS DETERMINED BY TESTING AND APPROVED BY THE ENGINEER.
8. NON-STRUCTURAL FILL SHALL BE COMPACTED TO A FIRM UNYIELDING SURFACE AS APPROVED BY THE ENGINEER.
9. IT IS RECOMMENDED THAT ANY MATERIAL PROPOSED FOR STRUCTURAL FILL MATERIAL TO SUPPORT ANY FOUNDATIONS OR STRUCTURAL BUILDING ELEMENT AND ASSOCIATED UTILITIES BE COMPACTED AS OUTLINED IN THE SOILS REPORT.
10. ALL FINAL SLOPES SHALL BE TO A SMOOTH AND EVEN GRADE, SHALL BE SURFACE TRACKWALKED, AND FINAL GRADED NOT TO EXCEED 1.5:1 (h:v).
11. SUFFICIENT TESTING AND INSPECTION SHOULD BE PERFORMED TO MONITOR THE SUITABILITY OF FILL MATERIALS AND ASSURE COMPLIANCE WITH THE RECOMMENDED COMPACTION STANDARDS.
12. AGGREGATE BASE MATERIAL MAY BE USED FOR PAVEMENT SUBGRADE, PLACED BENEATH FOOTINGS OR FLOOR SLABS, OR USED AS TRENCH BACKFILL. THIS MATERIAL SHOULD MEET THE REQUIREMENTS IN THE CALTRANS STANDARD SPECIFICATIONS FOR 3/4"- CLASS 2 AGGREGATE BASE.

1. TREES SCHEDULED TO BE REMOVED SHALL BE REMOVED COMPLETELY INCLUDING STUMPS, ROOTS, BRANCHES, WOODY DEBRIS, BARK, AND FLESH. TREES SHALL BE REMOVED FROM THE SITE AND DEPOSITED IN LOCATIONS DESIGNATED BY THE OWNER.
2. VEGETATION AND WOODY DEBRIS SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN A MANNER CONSISTENT WITH APPLICABLE LAWS AND REGULATIONS.
3. ALL GENERATED AND ACCUMULATED CONSTRUCTION DEBRIS SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN A MANNER CONSISTENT WITH APPLICABLE LAWS AND REGULATIONS.
4. FOUNDATION CONCRETE SCHEDULED FOR REMOVAL SHALL BE COMPLETELY REMOVED INCLUDING STEM WALL AND FOOTING.
5. ALL AREAS WITH GENERATED VOIDS FROM DEMOLITION ACTIVITIES SHALL BE BACKFILLED WITH NATIVE SOIL TO FINISH GRADE IN 1' MAXIMUM VERTICAL LIFTS SUFFICIENTLY COMPACTED TO ELIMINATE SUBSIDENCE.
6. DUST CONTROL SHALL BE MAINTAINED DURING DEMOLITION PRACTICES.
7. TRACKING OF MATERIAL FROM THE SITE ONTO EXISTING ROADWAYS WILL NOT BE TOLERATED. TEMPORARY CONSTRUCTION SITE ENTRANCES SHOULD BE BUILT AT POINTS OF INTERSECTION TO EXISTING ROADWAYS AND PRACTICES SHOULD BE IMPLEMENTED TO REMOVE CONSTRUCTION MATTER FROM VEHICLES AND EQUIPMENT PRIOR TO LEAVING THE CONSTRUCTION SITE.
8. EROSION CONTROL MEASURES SHALL BE IMPLEMENTED FOR THE SITE AS SOON AS PRACTICAL AND SHALL BE IN PLACE PRIOR TO EXECUTION OF MAJOR DEMOLITION OPERATIONS.



(P)GRADING ACTIVITY:

TOTAL ACREAGE:	4.50± Ac
ACRES DISTURBED:	0.16± Ac
ACRES UNDISTURBED:	4.34± Ac
PERCENTAGE OF UNDISTURBED AREA:	96.44%

[illegible]

SEEKING ROOTS, LLC  
26092 DYERVILLE LOOP ROAD, GARBERVILLE, CA 95542  
**GRADING & DRAINAGE PLAN SITE 1**  
SECTION II, TOWNSHIP 4 SOUTH, RANGE 4 EAST HB & M  
APN: 223-101-003-000

DRAWN BY: H. NAVARRO	DESIGNED BY: JTM	CHECKED BY: J. MCKNIGHT	APPROVED BY: TWICE
DATE OF ISSUE: FEBRUARY 2017			
SCALE: AS SHOWN			
PROJECT NO: 1067			
DRAWING NO: C02.1			

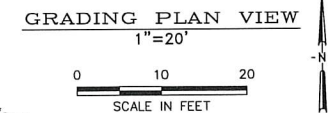
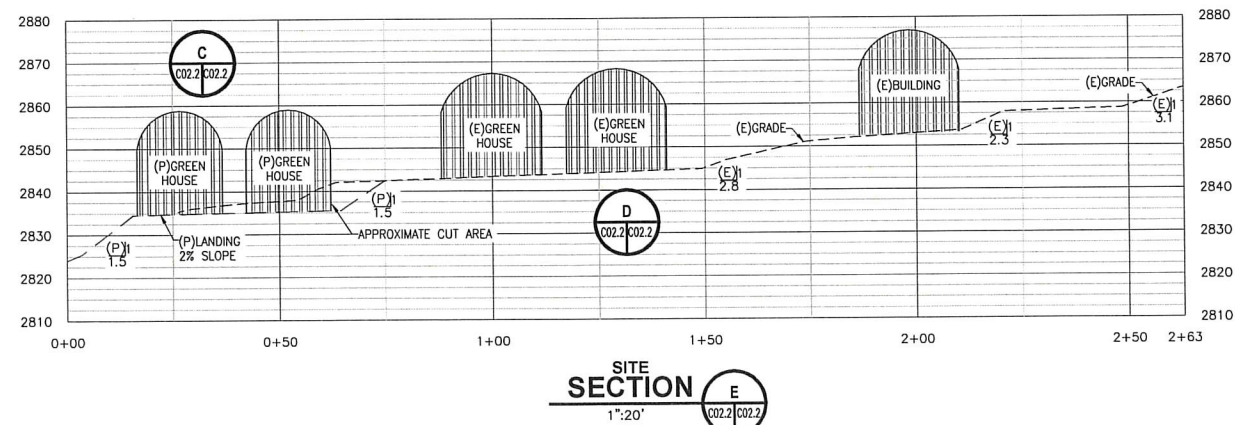


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2. STRIP AND REMOVE ALL TOPSOIL AND VEGETATION FROM THE PROJECT AREA, AND FOR A MINIMUM OF THREE FEET TO THE OUTSIDE OF THE WORKING AREA.
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8. EROSION CONTROL MEASURES SHALL BE IMPLEMENTED FOR THE SITE AS SOON AS PRACTICAL AND SHALL BE IN PLACE PRIOR TO EXECUTION OF MAJOR DEMOLITION OPERATIONS.

(E) CUT (CY): 313.56  
(E) FILL (CY): 313.56  
NOTE:  
CUT AND FILL QUANTITIES ONSITE TO BE  
PERMANENT

TOTAL ACREAGE: 4.50± Ac  
ACRES DISTURBED: 0.22± Ac  
ACRES UNDISTURBED: 4.28± Ac  
PERCENTAGE OF UNDISTURBED AREA: 95.1%

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SEEKING ROOTS, LLC  
26092 DYERVILLE LOOP ROAD, GARBERVILLE, CA 95542

**GRADING & DRAINAGE PLAN SITE 2**

SECTION II, TOWNSHIP 4 SOUTH, RANGE 4 EAST HB & M  
APN: 223-101-002-000

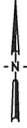
DRAWN BY: H. NAVARRO	DESIGNED BY: JTM	CHECKED BY: J. MCKNIGHT	APPROVED BY: TWCE
DATE OF ISSUE: FEBRUARY 2017			
SCALE: AS SHOWN			
PROJECT NO: 1067			
DRAWING NO: C02.2			











(E) CUT (CY): 1,270.17  
(E) FILL (CY): 1,272.17  
NOTE:  
CUT AND FILL QUANTITIES ONSITE TO BE  
PERMANENT

TOTAL ACREAGE: 4.50± Ac  
ACRES DISTURBED: 0.43± Ac  
ACRES UNDISTURBED: 4.07± Ac  
PERCENTAGE OF UNDISTURBED AREA: 90.44%

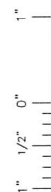
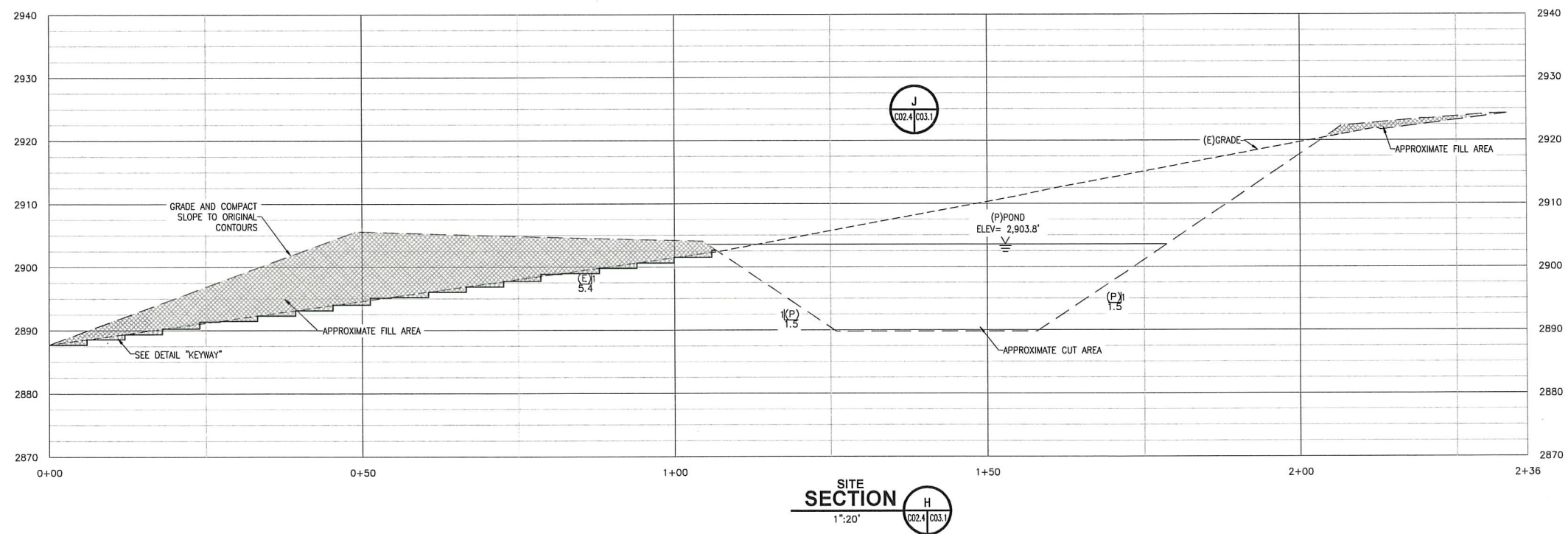
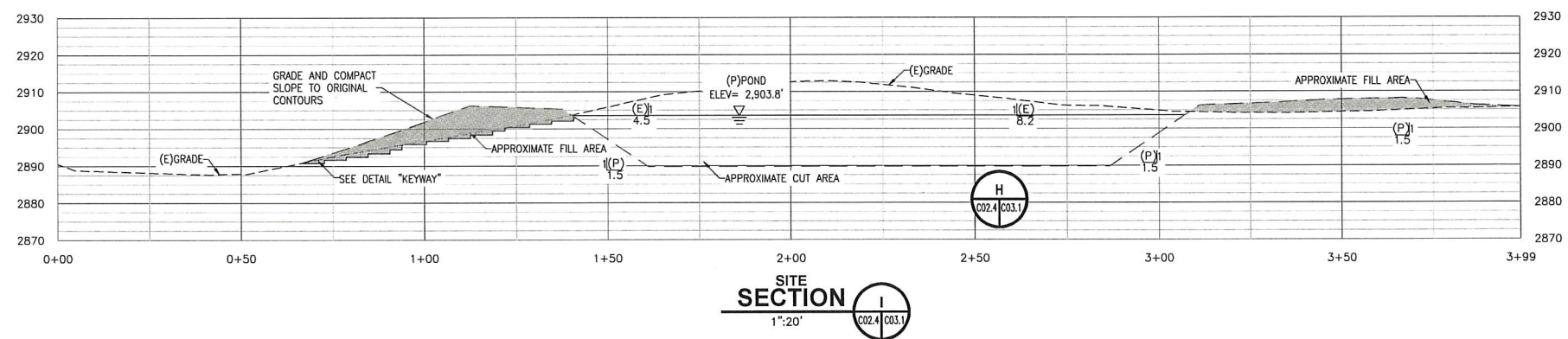


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[illegible]





Professional Engineer Seal for Joshua T. McKnight, State of California, License No. C80687, Civil Engineering, expires 12/31/18.

[illegible]

SEEKING ROOTS, LLC  
26092 DYERVILLE LOOP ROAD, GARBERVILLE, CA 95542

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**GRADING & DRAINAGE PLAN DETAILS**

SECTION II, TOWNSHIP 4 SOUTH, RANGE 4 EAST HB & M  
APN: 223-101-002-000

DRAWN BY:  
H. NAVARRO  
DESIGNED BY:  
JTM  
CHECKED BY:  
J. MCKNIGHT  
APPROVED BY:  
TVCE

DATE OF ISSUE:  
FEBRUARY 2017

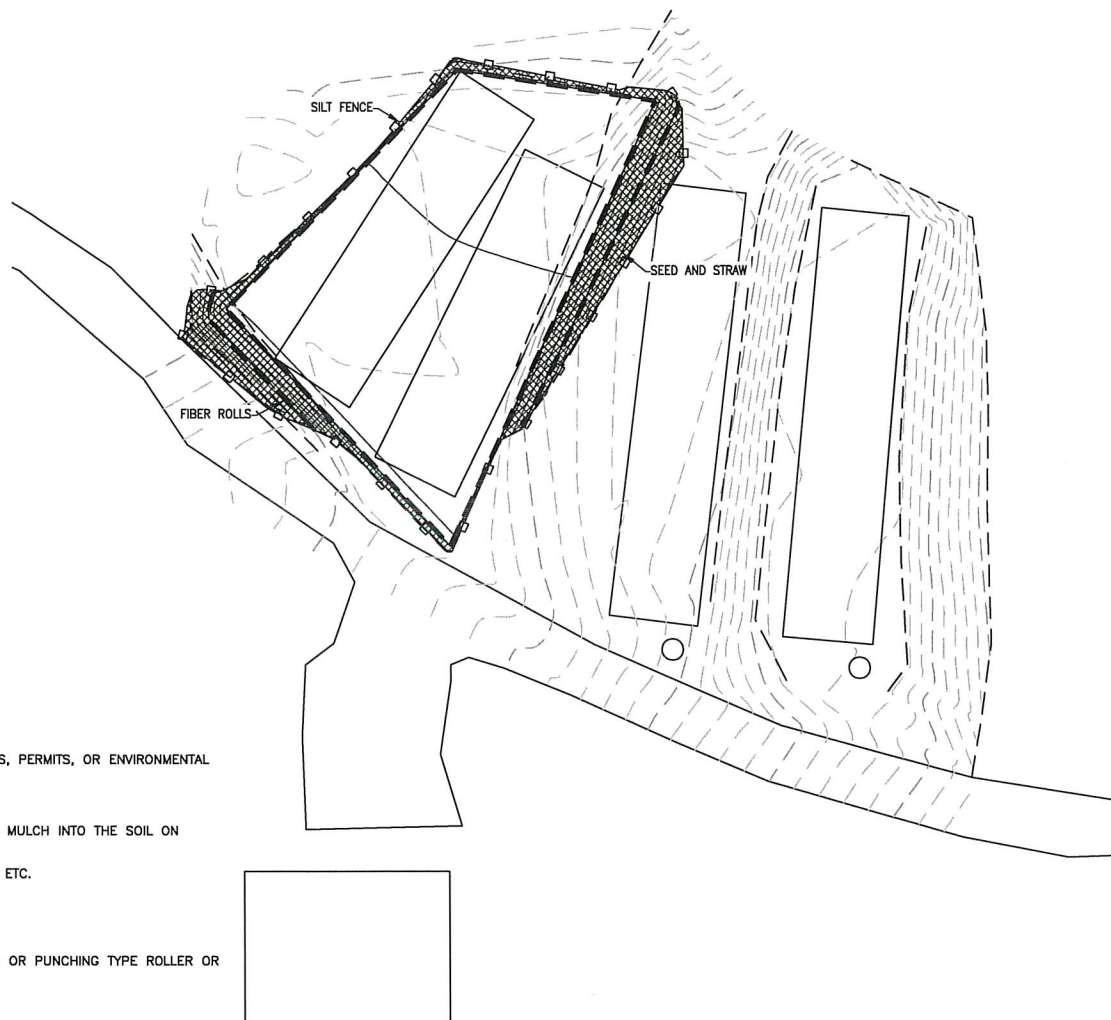
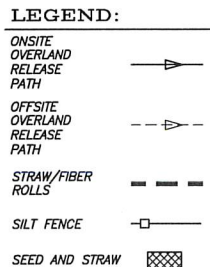
SCALE:  
AS SHOWN

PROJECT NO:  
1067

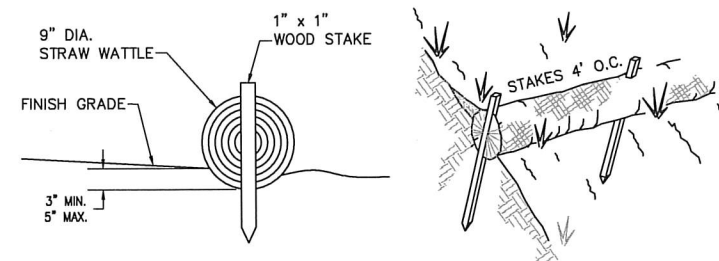
DRAWING NO:

C03.2





1. STRAW SHALL BE DERIVED FROM WHEAT, RICE, OR BARLEY. WHERE REQUIRED BY THE PLANS, SPECIFICATIONS, PERMITS, OR ENVIRONMENTAL DOCUMENTS, NATIVE GRASS STRAW SHALL BE USED.
2. A TACKIFIER IS THE PREFERRED METHOD FOR ANCHORING STRAW MULCH TO THE SOIL ON SLOPES.
3. CRIMPING, PUNCH ROLLER-TYPE ROLLERS, OR TRACK WALKING MAY ALSO BE USED TO INCORPORATE STRAW MULCH INTO THE SOIL ON SLOPES. TRACK WALKING SHALL ONLY BE USED WHERE OTHER METHODS ARE IMPRACTICAL.
4. AVOID PLACING STRAW ONTO ROADS, SIDEWALKS, DRAINAGE CHANNELS, SOUND WALLS, EXISTING VEGETATION, ETC.
5. STRAW MULCH WITH TACKIFIER SHALL NOT BE APPLIED DURING OR IMMEDIATELY BEFORE RAINFALL.
6. APPLY STRAW AT A MINIMUM RATE OF 4,000 LB/ACRE, EITHER BY MACHINE OR BY HAND DISTRIBUTION.
7. ROUGHEN EMBANKMENTS AND FILL RILLS BEFORE PLACING THE STRAW MULCH BY ROLLING WITH A CRIMPING OR PUNCHING TYPE ROLLER OR BY TRACK WALKING.
8. EVENLY DISTRIBUTE STRAW MULCH ON THE SOIL SURFACE.
9. ON SMALL AREAS, A SPADE OR SHOVEL CAN BE USED TO PUNCH IN STRAW MULCH.
10. ON SLOPES WITH SOILS THAT ARE STABLE ENOUGH AND OF SUFFICIENT GRADIENT TO SAFELY SUPPORT CONSTRUCTION EQUIPMENT WITHOUT CONTRIBUTING TO COMPACTION AND INSTABILITY PROBLEMS, STRAW CAN BE "PUNCHED" INTO THE GROUND USING A KNIFE BLADE ROLLER OR A STRAIGHT BLADED COULTER, KNOWN COMMERCIALY AS A "CRIMPER".
11. ON SMALL AREAS AND/OR STEEP SLOPES, STRAW CAN ALSO BE HELD IN PLACE USING PLASTIC NETTING OR JUTE. THE NETTING SHALL BE HELD IN PLACE USING 11 GAUGE WIRE STAPLES, GEOTEXTILE PINS OR WOODEN STAKES AS DESCRIBED IN EC-7, GEOTEXTILES AND MATS.
12. TACKIFIER ACTS TO GLUE THE STRAW FIBERS TOGETHER AND TO THE SOIL SURFACE. THE TACKIFIER SHALL BE SELECTED BASED ON LONGEVITY AND ABILITY TO HOLD THE FIBERS IN PLACE. A TACKIFIER IS TYPICALLY APPLIED AT A RATE OF 125 LB/ACRE. IN WINDY CONDITIONS, THE RATES ARE TYPICALLY 180LB/ACRE.



1. STRAW WATTLES SHALL BE INSTALLED WITH 18 OR 24 INCH WOOD STAKES AT FOUR FEET ON CENTER. THE ENDS OF ADJACENT STRAW WATTLES SHALL BE ABUTTED TO EACH OTHER SNUGLY OR OVERLAPPED BY SIX INCHES.
2. STRAW ROLL INSTALLATION REQUIRES THE PLACEMENT AND SECURE STAKING OF THE ROLL IN A TRENCH, 3"-5" DEEP. RUNOFF MUST NOT BE ALLOWED TO RUN UNDER OR AROUND THE ROLL.

STEEL OR WOOD POST  
36" HIGH MAX

9" MAX STORAGE HT.

24" MIN.

POUNDING HT.

8"

12"

8"x12" TRENCH WITH COMPACTED BACKFILL

ATTACH FILTER FABRIC SECURELY TO UPSTREAM SIDE OF POST

RUNOFF

EXTRA STRENGTH FILTER FABRIC WITHOUT WIRE MESH

STEEL OR WOOD POSTS

10 FT MAX SPACING WITH WIRE SUPPORT FENCE  
6 FT MAX SPACING WITHOUT WIRE SUPPORT FENCE

FLOW

1. THE CONTRACTOR SHALL INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT.
2. CONTRACTOR SHALL REMOVE SEDIMENT AS NECESSARY. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND IN AN AREA THAT CAN BE PERMANENTLY STABILIZED.
3. SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE POUNDING EFFICIENCY.

LS

REGISTERED PROFESSIONAL ENGINEER  
JOSHUA T. MCKNIGHT  
C60687  
EXP. 12/31/18  
CIVIL  
STATE OF CALIFORNIA

1. EROSION CONTROL BEST MANAGEMENT PRACTICES (BMP'S) SHALL BE INSTALLED AND MAINTAINED DURING THE WET SEASON (OCTOBER 1 THROUGH APRIL 30). SEDIMENT CONTROL BMP'S SHALL BE INSTALLED AND MAINTAINED ALL YEAR.
2. ALL DRAINAGE INLETS IMMEDIATELY DOWNSTREAM OF THE WORK AREA AND WITHIN THE WORK AREA SHALL BE PROTECTED WITH SEDIMENT CONTROL AND INLET FILTER BAGS, YEAR ROUND.
3. ALL STABILIZED CONSTRUCTION ACCESS LOCATIONS SHALL BE CONSTRUCTED PER STANDARD DRAWING TC-1 WHERE CONSTRUCTION TRAFFIC ENTERS OR LEAVES PAVED AREAS. THE STABILIZED ACCESS SHALL BE MAINTAINED ON A YEAR-ROUND BASIS UNTIL THE COMPLETION OF CONSTRUCTION.
4. ALL AREAS DISTURBED DURING CONSTRUCTION, BY GRADING, TRENCHING, OR OTHER ACTIVITIES, SHALL BE PROTECTED FROM EROSION DURING THE WET SEASON (OCTOBER 1 THROUGH APRIL 30). HYDROSEED, IF UTILIZED, MUST BE PLACED BY SEPTEMBER 15. HYDROSEED PLACED DURING THE WET SEASON SHALL USE A SECONDARY EROSION PROTECTION METHOD.
5. SENSITIVE AREAS AND AREAS WHERE EXISTING VEGETATION IS BEING PRESERVED SHALL BE PROTECTED WITH CONSTRUCTION FENCING. SEDIMENT CONTROL BMP'S SHALL BE INSTALLED WHERE ACTIVE CONSTRUCTION AREAS DRAIN INTO SENSITIVE OR PRESERVED VEGETATION AREAS.
6. SEDIMENT CONTROL BMP'S SHALL BE PLACED ALONG THE PROJECT PERIMETER WHERE DRAINAGE LEAVES THE PROJECT. SEDIMENT CONTROL BMP'S SHALL BE MAINTAINED YEAR-ROUND UNTIL THE CONSTRUCTION IS COMPLETE OR THE DRAINAGE PATTERN HAS BEEN CHANGED AND NO LONGER LEAVES THE SITE.
7. ALL SLOPES GREATER THAN 1:1 SHALL RECEIVE SEED AND STRAW OR OTHER EROSION CONTROL.
8. ALL FENCING AND EROSION CONTROL METHODS SHALL BE MAINTAINED THROUGHOUT ALL ON-SITE CONSTRUCTION ACTIVITIES.
9. ALL BMP'S SHALL BE INSTALLED AND FUNCTIONING PRIOR TO ANY ANTICIPATED STORM EVENT.

1. CONTRACTOR MAY SUBSTITUTE TEMPORARY SILT FENCES FOR STRAW AND FIBER ROLLS AND VICE VERSA

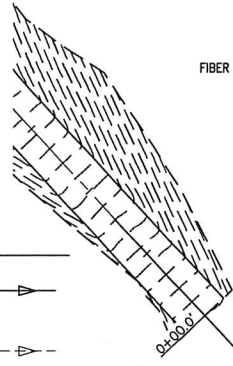
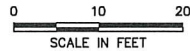
1. ALL OF THE IMPLEMENTED BMPS SHALL BE INSPECTED AND CORRECTED AS NEEDED PRIOR TO, DURING, AND DIRECTLY FOLLOWING ANY STORM EVENT, OR WHENEVER PRACTICAL.

BMP INSTALLATION SCHEDULE											
PHASE OF CONSTRUCTION	EROSION AND SEDIMENT CONTROL MEASURES										
	(WET SEASON)			(WET AND DRY SEASON)							
	HYDROSEEDING/ MULCHING	PRESERVATION OF EXISTING VEGETATION	STRAW/ FIBER ROLLS	SILT FENCE	CHECK DAM	STABILIZED CONSTRUCTION ENTRANCE	CONTRACTOR EQUIPMENT CONTROLS	MATERIAL & WASTE DISPOSAL LOCATION	DUST CONTROL	DEWATERING OPERATIONS	CONCRETE WASHOUT
PRE-GRADING		●	●		●	●	●	●	●		
CUT AND FILL ACTIVITIES											
UNDERGROUND WORK											
STORM DRAIN IMPROVEMENTS											
OFFSITE IMPROVEMENTS											
COMPLETION OF PAVING											
POST-GRADING	●	●			●						



EROSION CONTROL PLAN

1"=20'



LEGEND:

- ONSITE OVERLAND RELEASE PATH
- OFFSITE OVERLAND RELEASE PATH
- STRAW/FIBER ROLLS
- SILT FENCE
- SEED AND STRAW

STRAW MULCH NOTES:

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- STRAW MULCH WITH TACKIFIER SHALL NOT BE APPLIED DURING OR IMMEDIATELY BEFORE RAINFALL.
- APPLY STRAW AT A MINIMUM RATE OF 4,000 LB/ACRE, EITHER BY MACHINE OR BY HAND DISTRIBUTION.
- ROUGHEN EMBANKMENTS AND FILL RILLS BEFORE PLACING THE STRAW MULCH BY ROLLING WITH A CRIMPING OR PUNCHING TYPE ROLLER OR BY TRACK WALKING.
- EVENLY DISTRIBUTE STRAW MULCH ON THE SOIL SURFACE.
- ON SMALL AREAS, A SPADE OR SHOVEL CAN BE USED TO PUNCH IN STRAW MULCH.
- ON SLOPES WITH SOILS THAT ARE STABLE ENOUGH AND OF SUFFICIENT GRADIENT TO SAFELY SUPPORT CONSTRUCTION EQUIPMENT WITHOUT CONTRIBUTING TO COMPACTION AND INSTABILITY PROBLEMS, STRAW CAN BE "PUNCHED" INTO THE GROUND USING A KNIFE BLADE ROLLER OR A STRAIGHT BLADED COULTER, KNOWN COMMERCIALY AS A "CRIMPER".
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BMP INSTALLATION SCHEDULE

PHASE OF CONSTRUCTION	EROSION AND SEDIMENT CONTROL MEASURES									
	(WET SEASON)					(WET AND DRY SEASON)				
	HYDROSEEDING/MULCHING	PRESERVATION OF EXISTING VEGETATION	STRAW/FIBER ROLLS	SILT FENCE	CHECK DAM	STABILIZED CONSTRUCTION ENTRANCE	CONTRACTOR EQUIPMENT CONTROLS	MATERIAL & WASTE DISPOSAL LOCATION	DUST CONTROL	DEWATERING OPERATIONS
PRE-GRADING										
CUT AND FILL ACTIVITIES										
UNDERGROUND WORK										
STORM DRAIN IMPROVEMENTS										
OFFSITE IMPROVEMENTS										
COMPLETION OF PAVING										
POST-GRADING										

EROSION AND SEDIMENT CONTROL NOTES:

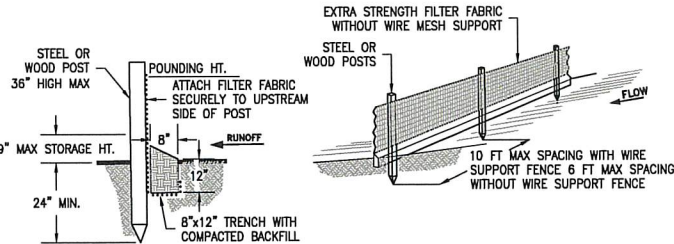
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- ALL STABILIZED CONSTRUCTION ACCESS LOCATIONS SHALL BE CONSTRUCTED PER STANDARD DRAWING TC-1 WHERE CONSTRUCTION TRAFFIC ENTERS OR LEAVES PAVED AREAS. THE STABILIZED ACCESS SHALL BE MAINTAINED ON A YEAR-ROUND BASIS UNTIL THE COMPLETION OF CONSTRUCTION.
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- ALL FENCING AND EROSION CONTROL METHODS SHALL BE MAINTAINED THROUGHOUT ALL ON-SITE CONSTRUCTION ACTIVITIES.
- ALL BMP'S SHALL BE INSTALLED AND FUNCTIONING PRIOR TO ANY ANTICIPATED STORM EVENT.

STRAW WATTLE NOTES:

- STRAW WATTLES SHALL BE INSTALLED WITH 18 OR 24 INCH WOOD STAKES AT FOUR FEET ON CENTER. THE ENDS OF ADJACENT STRAW WATTLES SHALL BE BUTTED TO EACH OTHER SNUGLY OR OVERLAPPED BY SIX INCHES.
- STRAW ROLL INSTALLATION REQUIRES THE PLACEMENT AND SECURE STAKING OF THE ROLL IN A TRENCH, 3"-5" DEEP. RUNOFF MUST NOT BE ALLOWED TO RUN UNDER OR AROUND THE ROLL.

STRAW WATTLE INSTALLATION DETAIL

NTS



SILT FENCE NOTES:

- THE CONTRACTOR SHALL INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT.
- CONTRACTOR SHALL REMOVE SEDIMENT AS NECESSARY. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND IN AN AREA THAT CAN BE PERMANENTLY STABILIZED.
- SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE POUNDING EFFICIENCY.

SILT FENCE DETAILS

NTS

NOTE:

- CONTRACTOR MAY SUBSTITUTE TEMPORARY SILT FENCES FOR STRAW AND FIBER ROLLS AND VICE VERSA

BMP MAINTENANCE NOTES:

- ALL OF THE IMPLEMENTED BMP'S SHALL BE INSPECTED AND CORRECTED AS NEEDED PRIOR TO, DURING, AND DIRECTLY FOLLOWING ANY STORM EVENT, OR WHENEVER PRACTICAL.

TVCE  
67 WALNUT WAY  
DUBLIN, CA 94568  
PHONE (925) 829-3000  
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TYPE	JUN	JUN	EX	DWN BY	DES BY	CHK BY	APP BY

DESCRIPTION	REV	DATE

EROSION CONTROL PLAN & DETAILS SITE-2

26092 DYERVILLE LOOP ROAD, CARBERRYVILLE, CA 95542

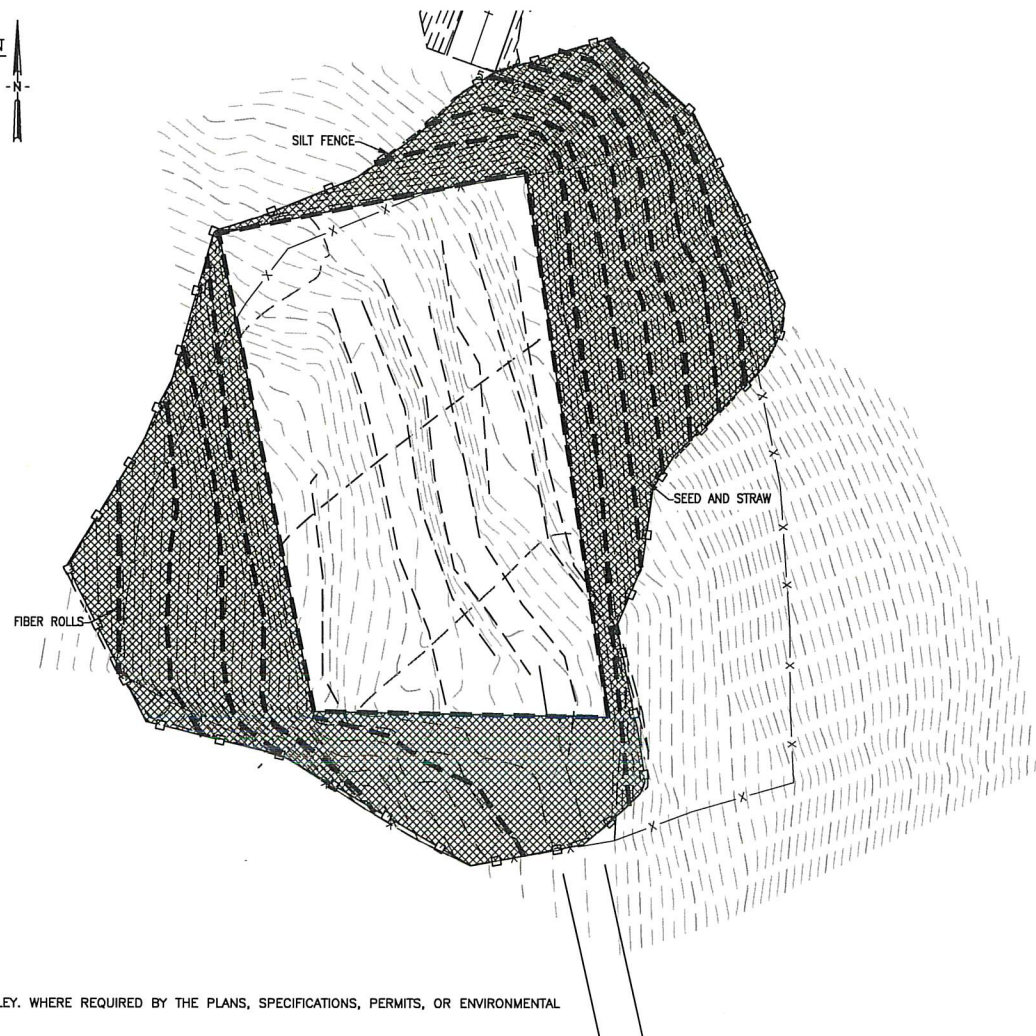
DRAWN BY: H. NAVARRO	DESIGNED BY: JTM	CHECKED BY: J. MCKNIGHT	APPROVED BY: TVCE
DATE OF ISSUE: FEBRUARY 2017			
SCALE: AS SHOWN			
PROJECT NO: 1067			
DRAWING NO: C04.2			



EROSION CONTROL PLAN

1"=20'

0 10 20  
SCALE IN FEET



LEGEND:

- ONSITE OVERLAND RELEASE PATH  
OFFSITE OVERLAND RELEASE PATH  
STRAW/FIBER ROLLS  
SILT FENCE  
SEED AND STRAW

STRAW MULCH NOTES:

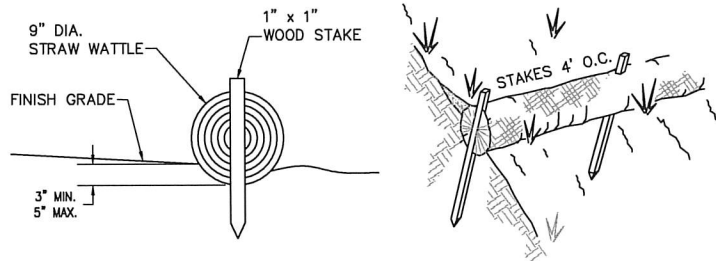
- STRAW SHALL BE DERIVED FROM WHEAT, RICE, OR BARLEY. WHERE REQUIRED BY THE PLANS, SPECIFICATIONS, PERMITS, OR ENVIRONMENTAL DOCUMENTS, NATIVE GRASS STRAW SHALL BE USED.
- A TACKIFIER IS THE PREFERRED METHOD FOR ANCHORING STRAW MULCH TO THE SOIL ON SLOPES.
- CRIMPING, PUNCH ROLLER-TYPE ROLLERS, OR TRACK WALKING MAY ALSO BE USED TO INCORPORATE STRAW MULCH INTO THE SOIL ON SLOPES. TRACK WALKING SHALL ONLY BE USED WHERE OTHER METHODS ARE IMPRACTICAL.
- AVOID PLACING STRAW ONTO ROADS, SIDEWALKS, DRAINAGE CHANNELS, SOUND WALLS, EXISTING VEGETATION, ETC.
- STRAW MULCH WITH TACKIFIER SHALL NOT BE APPLIED DURING OR IMMEDIATELY BEFORE RAINFALL.
- APPLY STRAW AT A MINIMUM RATE OF 4,000 LB/ACRE, EITHER BY MACHINE OR BY HAND DISTRIBUTION.
- ROUGHEN EMBANKMENTS AND FILL RILLS BEFORE PLACING THE STRAW MULCH BY ROLLING WITH A CRIMPING OR PUNCHING TYPE ROLLER OR BY TRACK WALKING.
- EVENLY DISTRIBUTE STRAW MULCH ON THE SOIL SURFACE.
- ON SMALL AREAS, A SPADE OR SHOVEL CAN BE USED TO PUNCH IN STRAW MULCH.
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- ON SMALL AREAS AND/OR STEEP SLOPES, STRAW CAN ALSO BE HELD IN PLACE USING PLASTIC NETTING OR JUTE. THE NETTING SHALL BE HELD IN PLACE USING 11 GAUGE WIRE STAPLES, GEOTEXTILE PINS OR WOODEN STAKES AS DESCRIBED IN EC-7, GEOTEXTILES AND MATS.
- TACKIFIER ACTS TO GLUE THE STRAW FIBERS TOGETHER AND TO THE SOIL SURFACE. THE TACKIFIER SHALL BE SELECTED BASED ON LONGEVITY AND ABILITY TO HOLD THE FIBERS IN PLACE. A TACKIFIER IS TYPICALLY APPLIED AT A RATE OF 125 LB/ACRE. IN WINDY CONDITIONS, THE RATES ARE TYPICALLY 180LB/ACRE.

BMP INSTALLATION SCHEDULE

PHASE OF CONSTRUCTION	EROSION AND SEDIMENT CONTROL MEASURES									
	(WET SEASON)					(WET AND DRY SEASON)				
	HYDROSEEDING/MULCHING	PRESERVATION OF EXISTING VEGETATION	STRAW/FIBER ROLLS	SILT FENCE	CHECK DAM	STABILIZED CONSTRUCTION ENTRANCE	CONTRACTOR EQUIPMENT CONTROLS	MATERIAL & WASTE DISPOSAL LOCATION	DUST CONTROL	DEWATERING OPERATIONS
PRE-GRADING		●	●		●	●	●	●	●	
CUT AND FILL ACTIVITIES										
UNDERGROUND WORK										
STORM DRAIN IMPROVEMENTS										
OFFSITE IMPROVEMENTS										
COMPLETION OF PAVING										
POST-GRADING	●	●			●					

EROSION AND SEDIMENT CONTROL NOTES:

- EROSION CONTROL BEST MANAGEMENT PRACTICES (BMP'S) SHALL BE INSTALLED AND MAINTAINED DURING THE WET SEASON (OCTOBER 1 THROUGH APRIL 30). SEDIMENT CONTROL BMP'S SHALL BE INSTALLED AND MAINTAINED ALL YEAR.
- ALL DRAINAGE INLETS IMMEDIATELY DOWNSTREAM OF THE WORK AREA AND WITHIN THE WORK AREA SHALL BE PROTECTED WITH SEDIMENT CONTROL AND INLET FILTER BAGS, YEAR ROUND.
- ALL STABILIZED CONSTRUCTION ACCESS LOCATIONS SHALL BE CONSTRUCTED PER STANDARD DRAWING TC-1 WHERE CONSTRUCTION TRAFFIC ENTERS OR LEAVES PAVED AREAS. THE STABILIZED ACCESS SHALL BE MAINTAINED ON A YEAR-ROUND BASIS UNTIL THE COMPLETION OF CONSTRUCTION.
- ALL AREAS DISTURBED DURING CONSTRUCTION, BY GRADING, TRENCHING, OR OTHER ACTIVITIES, SHALL BE PROTECTED FROM EROSION DURING THE WET SEASON (OCTOBER 1 THROUGH APRIL 30). HYDROSEED, IF UTILIZED, MUST BE PLACED BY SEPTEMBER 15. HYDROSEED PLACED DURING THE WET SEASON SHALL USE A SECONDARY EROSION PROTECTION METHOD.
- SENSITIVE AREAS AND AREAS WHERE EXISTING VEGETATION IS BEING PRESERVED SHALL BE PROTECTED WITH CONSTRUCTION FENCING. SEDIMENT CONTROL BMP'S SHALL BE INSTALLED WHERE ACTIVE CONSTRUCTION AREAS DRAIN INTO SENSITIVE OR PRESERVED VEGETATION AREAS.
- SEDIMENT CONTROL BMP'S SHALL BE PLACED ALONG THE PROJECT PERIMETER WHERE DRAINAGE LEAVES THE PROJECT. SEDIMENT CONTROL BMP'S SHALL BE MAINTAINED YEAR-ROUND UNTIL THE CONSTRUCTION IS COMPLETE OR THE DRAINAGE PATTERN HAS BEEN CHANGED AND NO LONGER LEAVES THE SITE.
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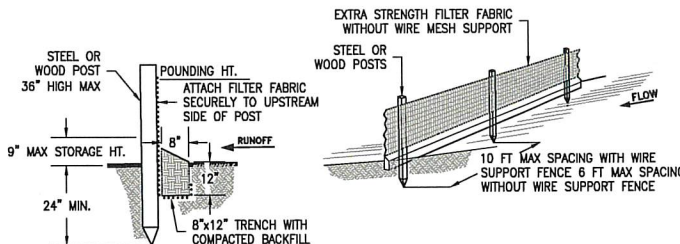


STRAW WATTLE NOTES:

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STRAW WATTLE INSTALLATION DETAIL

NTS



SILT FENCE NOTES:

- THE CONTRACTOR SHALL INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT.
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SILT FENCE DETAILS

NTS

NOTE:

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TVCE  
67 WALNUT WAY  
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TYPE	JTM	JTM	EX	DWN BY	DES BY	CHK BY	APP BY

DESCRIPTION	REV	DATE

26092 DYERVILLE LOOP ROAD, GARBERVILLE, CA 95542

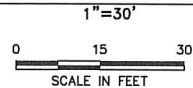
EROSION CONTROL PLAN & DETAILS SITE-3

SECTION II, TOWNSHIP 4 SOUTH, RANGE 4 EAST HB & M  
APN: 223-101-002-000

DRAWN BY: H. NAVARRO	DESIGNED BY: JTM	CHECKED BY: J. MCKNIGHT	APPROVED BY: TVCE
DATE OF ISSUE: FEBRUARY 2017			
SCALE: AS SHOWN			
PROJECT NO: 1067			
DRAWING NO: C04.3			



EROSION CONTROL PLAN



LEGEND:

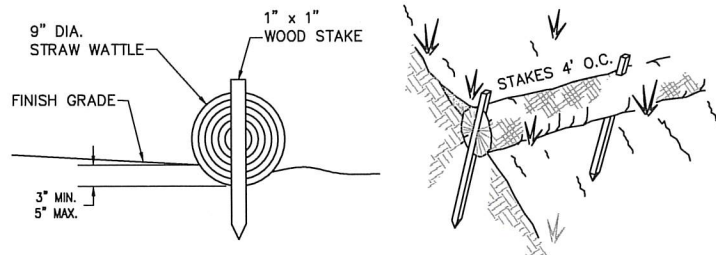
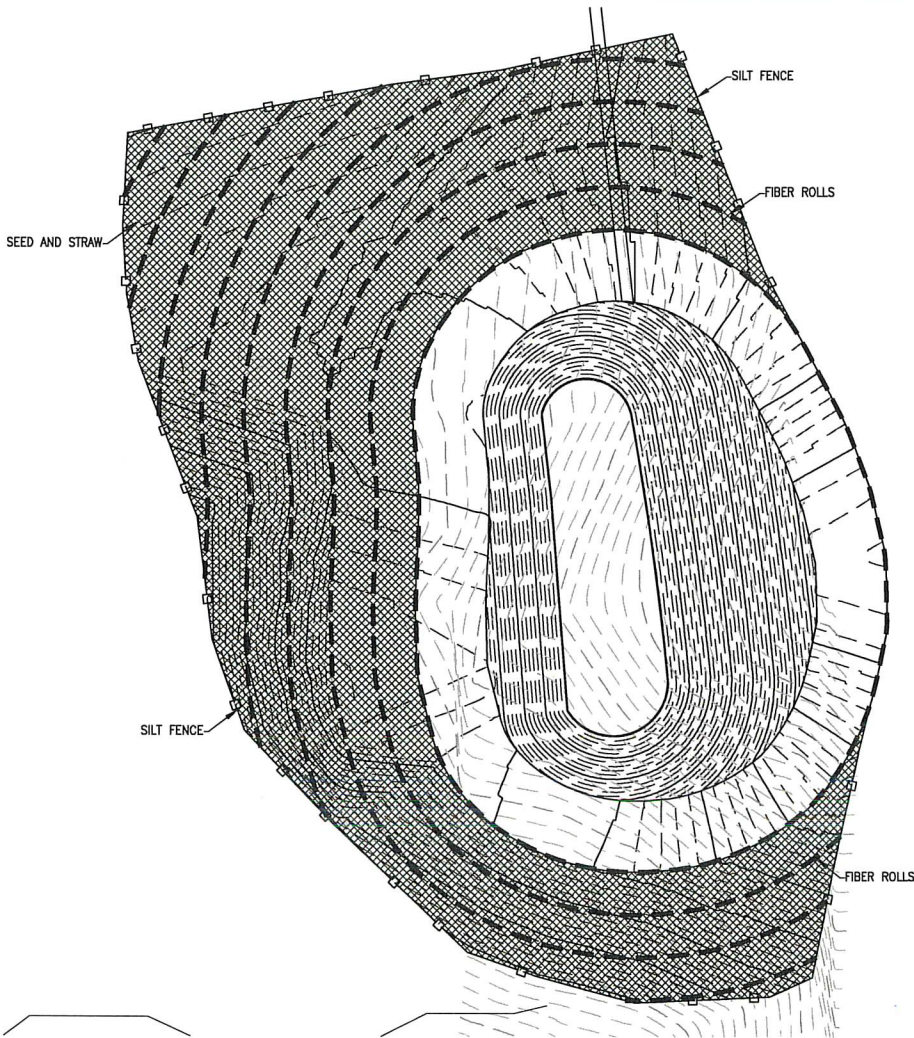
ONSITE OVERLAND RELEASE PATH	—▶—
OFFSITE OVERLAND RELEASE PATH	- - -▶-
STRAW/FIBER ROLLS	- - - -
SILT FENCE	—□—
SEED AND STRAW	▨

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PHASE OF CONSTRUCTION	EROSION AND SEDIMENT CONTROL MEASURES								
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PRE-GRADING		●	●		●	●	●	●	●
CUT AND FILL ACTIVITIES									
UNDERGROUND WORK									
STORM DRAIN IMPROVEMENTS									
OFFSITE IMPROVEMENTS									
COMPLETION OF PAVING									
POST-GRADING	●	●			●				

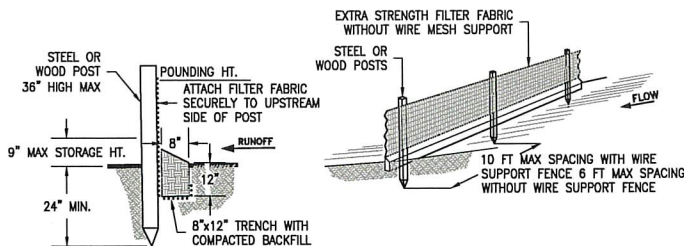


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STRAW WATTLE INSTALLATION DETAIL

NTS



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SILT FENCE DETAILS

NTS

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NOTE:

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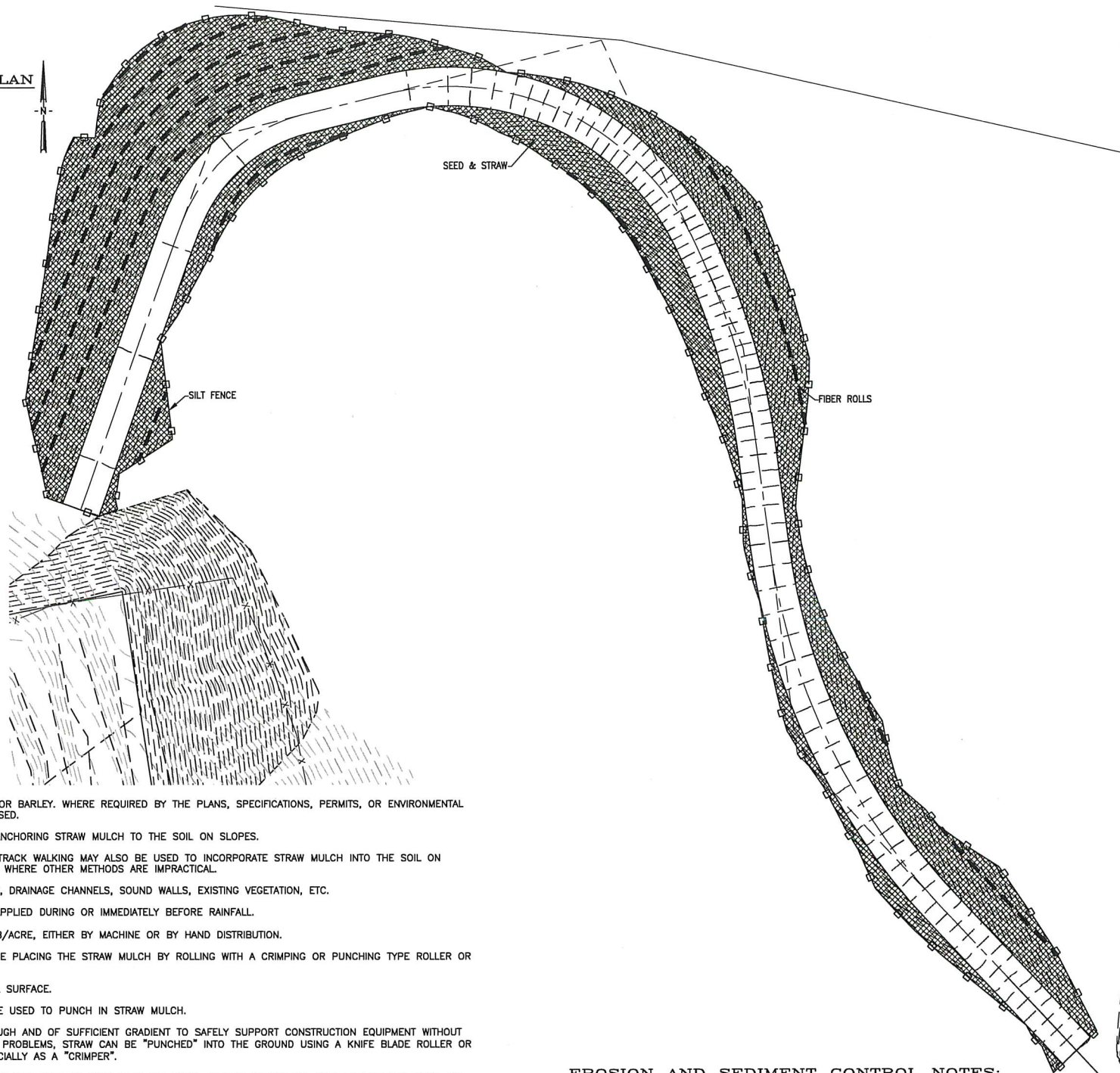
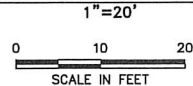


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EROSION CONTROL PLAN & DETAILS SITE-4

DRAWN BY	DESIGNED BY	CHECKED BY	APPROVED BY
H. NAVARRO	JTM	J. MCKNIGHT	TVCE
DATE OF ISSUE	DATE OF ISSUE	DATE OF ISSUE	DATE OF ISSUE
FEBRUARY 2017	FEBRUARY 2017	FEBRUARY 2017	FEBRUARY 2017
SCALE	SCALE	SCALE	SCALE
AS SHOWN	AS SHOWN	AS SHOWN	AS SHOWN
PROJECT NO.	PROJECT NO.	PROJECT NO.	PROJECT NO.
1067	1067	1067	1067
DRAWING NO.	DRAWING NO.	DRAWING NO.	DRAWING NO.
C04.4	C04.4	C04.4	C04.4





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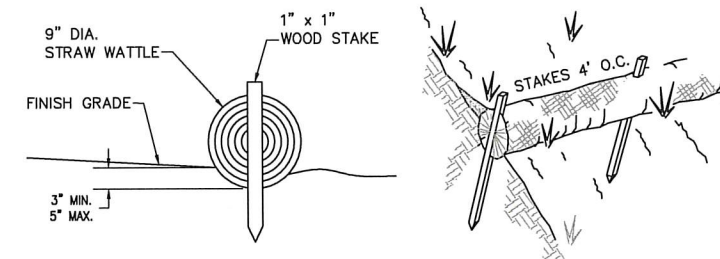
- ONSITE  
OVERLAND  
RELEASE  
PATH
- OFFSITE  
OVERLAND  
RELEASE  
PATH
- STRAW/FIBER  
ROLLS
- SILT FENCE
- SEED AND STRAW

## STRAW MULCH NOTES:

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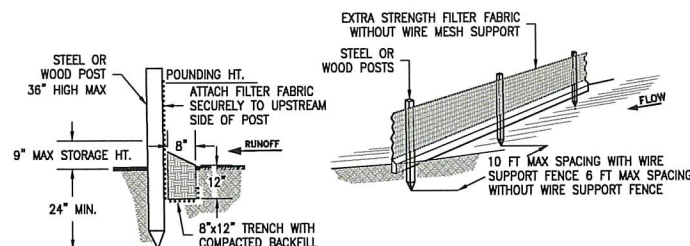


STRAW WATTLE NOTES:

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### STRAW WATTLE INSTALLATION DETAIL

NTS



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## BMP MAINTENANCE NOTES:

1. ALL OF THE IMPLEMENTED BMPS SHALL BE INSPECTED AND CORRECTED AS NEEDED PRIOR TO, DURING, AND DIRECTLY FOLLOWING ANY STORM EVENT, OR WHENEVER PRACTICAL.

BMP INSTALLATION SCHEDULE											
PHASE OF CONSTRUCTION	EROSION AND SEDIMENT CONTROL MEASURES										
	(WET SEASON)		(WET AND DRY SEASON)								
	HYDROSEEDING/ MULCHING	PRESERVATION OF EXISTING VEGETATION	STRAW/ FIBER ROLLS	SILT FENCE	CHECK DAM	STABILIZED CONSTRUCTION ENTRANCE	CONTRACTOR EQUIPMENT CONTROLS	MATERIAL & WASTE DISPOSAL LOCATION	DUST CONTROL	DEWATERING OPERATIONS	CONCRETE WASHOUT
PRE-GRADING		●	●		●	●	●	●	●		
CUT AND FILL ACTIVITIES											
UNDERGROUND WORK											
STORM DRAIN IMPROVEMENTS											
OFFSITE IMPROVEMENTS											
COMPLETION OF PAVING											
POST-GRADING	●	●			●						



STATE OF CALIFORNIA  
CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY  
STATE WATER RESOURCES CONTROL BOARD

DIVISION OF WATER RIGHTS

RIGHT TO DIVERT AND USE WATER

REGISTRATION *H502193*

CERTIFICATE *H100333*

Right Holder: *Jeremiah Hepner*  
*PO Box 162*  
*Garberville, CA 95542*

The State Water Resources Control Board (State Water Board) authorizes the diversion and use of water by the right holder in accordance with the limitations and conditions herein SUBJECT TO PRIOR RIGHTS. The priority of this right dates from *10/16/2018*. This right is issued in accordance with the State Water Board delegation of authority to the Deputy Director for Water Rights (Resolution 2012-0029) and the Deputy Director for Water Rights redelegation of authority dated October 19, 2017.

The Deputy Director for Water Rights finds that this registration meets the requirements for registration of small irrigation use appropriation. (Wat. Code, § 1228 et seq.)

Right holder is hereby granted a right to divert and use water as follows:

1. Location of point(s) of diversion (**Coordinates in WGS 84**)

Name of Diversion	Source	Tributary To:	Thence	Latitude	Longitude	County	Assessor's Parcel Numbers (APN)
POD	Unnamed Stream	Dean Creek	South Fork Eel River	40.131797	-123.704385	Humboldt	223-101-002

2. Purpose of Use and 3. Place of Use

2. Purpose of Use	3. Place of Use		
	County	Assessor's Parcel Numbers (APN)	Acres
Irrigation	Humboldt	223-101-002	0.7

Note: Assessor's Parcel Numbers provided are based on the user's entries in this portal on *11/19/2018*.

The place of use is shown on the map filed on *11/19/2018* with the State Water Board.

4. Quantity and Season:

The water appropriated shall be limited to the quantity which can be beneficially used and shall not exceed 1.88736603 **acre-feet per year** to be collected from 01/01 to 12/31 and as permitted in the diversion season specified in the current version of the State Water Board's Cannabis Policy, whichever is more restrictive. The total storage capacity shall not exceed 4.50855 acre-feet. The rate of diversion to storage shall not exceed **42,000 gallons per day (gpd) or the diversion rate specified in the current version of the State Water Board's Cannabis Policy, whichever is more restrictive.**

5. No water shall be diverted or used under this right unless the water right holder is in compliance with all applicable conditions, including the numeric and narrative instream flow requirements, of the current version of the State Water Board's Cannabis Policy, except as follows:



Right holders enrolled under Regional Water Quality Control Board Order R1-2015-0023 or Order R5-2015-0113 shall comply at all times with requirements related to flow, diversion, storage, and similar requirements of Attachment A of the Cannabis Policy identified by the Division of Water Rights below in this condition. This condition remains in effect until July 1, 2019, or when the right holder enrolls under the statewide Cannabis General Order, whichever comes first, at which time right holders shall comply with all applicable conditions and requirements of Attachment A of the Cannabis Policy.

- Section 1 – Term Numbers 4, 15, 17, 24, 26, and 36.
- Section 2 – Term Numbers 23, 63, 64, 66, 69 – 78, 82 – 94, 96, and 98 – 103.
- Section 3 – All Instream Flow Requirements for Surface Water Diversions (Requirements 1 – 7) and the Gage Installation, Maintenance, and Operation Requirements.
- Section 4 – All requirements and conditions.

The current version of the State Water Board's *Cannabis Policy* is available online at:  
[https://www.waterboards.ca.gov/water\\_issues/programs/cannabis/docs/policy.pdf](https://www.waterboards.ca.gov/water_issues/programs/cannabis/docs/policy.pdf).

6. No water shall be diverted or used under this right, and no construction related to such diversion shall commence, unless right holder has obtained and is in compliance with all necessary permits or other approvals required by other agencies.
7. Diversion works shall be constructed and water applied to beneficial use with due diligence.
8. No water shall be diverted under this right unless right holder complies with all lawful conditions required by the California Department of Fish and Wildlife. (Wat. Code, § 1228.6, subd. (a)(2).)
9. No water shall be diverted under this right unless it is diverted in accordance with the information set forth in the completed registration form as to source, location of point of diversion, purpose of use, place of use, quantity, and season of diversion. This information is reproduced as conditions 1 through 4 of this certificate.
10. No water shall be diverted under this right unless right holder complies with all applicable state, city, county, and local laws, regulations, ordinances, permits, and license requirements including, but not limited to those for cannabis cultivation, grading, construction, and building.
11. Pursuant to Water Code sections 100 and 275 and the common law public trust doctrine, all rights and privileges under this right, including method of diversion, method of use, and quantity of water diverted, are subject to the continuing authority of the State Water Board in accordance with law and in the interest of the public welfare to protect public trust uses and to prevent waste, unreasonable use, unreasonable method of use, or unreasonable method of diversion of said water.
12. The State Water Board reserves jurisdiction over this registration to change the season of diversion and rate of diversion based on later findings of the State Water Board concerning availability of water and the protection of beneficial uses. Any action to change the authorized season of diversion and rate of diversion will be taken only after notice to interested parties and opportunity for hearing.
13. Right holder shall grant, or secure authorization through right holder's right of access to property owned by another party, the staff of the State Water Board, and any other authorized representatives of the State Water Board the following:
  - a. Entry upon property where water is being diverted, stored, or used under a right issued by the State Water Board or where monitoring, samples and/or records must be collected under the conditions of this right;
  - b. Access to copy any records at reasonable times that are kept under the terms and conditions of a right or other order issued by the State Water Board;
  - c. Access to inspect at reasonable times any project covered by a right issued by the State Water Board, equipment (including monitoring and control equipment), practices, or operations regulated by or required under this right; and,
  - d. Access to photograph, sample, measure, and monitor at reasonable times for the purpose of ensuring compliance with a right or other order issued by the State Water Board, or as otherwise authorized by the Water Code.
14. Diversion of water under this right is subject to prior rights. Right holder may be required to curtail diversion or release water stored during the most recent collection season should diversion under this right result in injury to holders of legal downstream senior rights. If a reservoir is involved, right holder may be required to bypass or release water through, over, or around the dam. If release of stored water would not effectively satisfy downstream prior storage rights, right holder may be required to otherwise compensate the holders of such rights for injury caused.
15. This right shall not be construed as conferring right of access to any lands or facilities not owned by right holder.



16. All rights are issued subject to available flows. Inasmuch as the source contains treated wastewater, imported water from another stream system, or return flow from other projects, there is no guarantee that such supply will continue.
17. If storage or diversion of water under this right is by means of a dam, right holder shall allow sufficient water at all times to pass through a fishway or, in the absence of a fishway, allow sufficient water to pass over, around, or through the dam to keep in good condition any fish that may be planted or exist below the dam; provided that, during a period of low flow in the stream, upon approval of the California Department of Fish and Wildlife, this requirement will be satisfied if sufficient water is passed through a culvert, waste gate, or over or around the dam to keep in good condition any fish that may be planted or exist below the dam if it is impracticable or detrimental to pass the water through a fishway. In the case of a reservoir, this provision shall not require the passage or release of water at a greater rate than the unimpaired natural inflow into the reservoir. (Fish & G. Code, § 5937.)
18. The facilities for diversion under this right shall include satisfactory means of measuring and bypassing sufficient water to satisfy downstream prior rights and any requirements of the California Department of Fish and Wildlife and the State Water Board's Cannabis Policy.
19. This right does not authorize any act which results in the taking of a threatened, endangered, or candidate species or any act which is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code section 2050 et seq.) or the federal Endangered Species Act (16 U.S.C.A. section 1531 et seq.). If a "take" will result from any act authorized under this water right, the right holder shall obtain authorization for an incidental take prior to construction or operation of the project. Right holder shall be responsible for meeting all requirements of the state and Federal Endangered Species Acts for the project authorized under this right.
20. This right is subject to the submittal of an annual report of water use and satisfactory renewal, on forms to be furnished by the State Water Board, including payment of the then-current annual renewal fees. (Wat. Code, § 1228.5.)
21. This right shall be totally or partially forfeited for nonuse if the diversion is abandoned or if all or any part of the diversion is not beneficially used for a continuous period of five years.
22. This right is subject to enforcement, including but not limited to revocation, by the State Water Board if 1) the State Water Board finds that the right holder knowingly made any false statement, or knowingly concealed any material fact, in the right; 2) the right is not renewed as required by the conditions of this certificate; or 3) the State Water Board finds that the right holder is in violation of the conditions of this right. (Wat. Code, § 1228.4 et seq.)
23. The State Water Board intends to develop and implement a basin-wide program for real-time electronic monitoring and reporting of diversions, withdrawals, releases, and streamflow in a standardized format if and when resources become available. Such real-time reporting will be required upon a showing by the State Water Board that the program and the infrastructure are in place to accept real-time electronic reports. Implementation of the reporting requirements shall not necessitate amendment to this right.

STATE WATER RESOURCES CONTROL BOARD  
DIVISION OF WATER RIGHTS

This certificate was issued automatically as a result of the registrant self-certifying submittal of a water right registration filing in substantial compliance with Water Code §1228.3.

Dated: 11/19/2018 07:39:18

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STATE OF CALIFORNIA  
CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY  
STATE WATER RESOURCES CONTROL BOARD

DIVISION OF WATER RIGHTS

**RIGHT TO DIVERT AND USE WATER**

REGISTRATION D032576

CERTIFICATE D1003

Right Holder: Terrence Hepner  
13525 Cronese Road  
Apple Valley, CA 92308

The State Water Resources Control Board (State Water Board) authorizes the diversion and use of water by the right holder in accordance with the limitations and conditions herein SUBJECT TO PRIOR RIGHTS. The priority of this right dates from **January 25, 2016**. This right is issued in accordance with the State Water Board delegation of authority to the Deputy Director for Water Rights (Resolution 2012-0029) and the Deputy Director for Water Rights redelegation of authority dated July 6, 2012. The Deputy Director for Water Rights finds that this registration meets the requirements for registration of small domestic use appropriation. (Wat. Code, § 1228 et seq.)

**Right holder is hereby granted a right to divert and use water as follows:**

1. Source of water: **Unnamed Stream**

tributary to: **Dean Creek thence Eel River**

within the County of **Humboldt**.

2. Location of point of diversion

By California Coordinate System of 1983 in Zone 1	County	Assessor's Parcel Number
<b>North 1,935,933 feet and East 6,085,121 feet</b>	<b>Humboldt</b>	<b>223-101-002</b>

Location of place of storage

By California Coordinate System of 1983 in Zone 1	County	Assessor's Parcel Number
<b>N/A</b>	<b>Humboldt</b>	<b>223-101-002</b>

3. Purpose of use	4. Place of use	
	County	Assessor's Parcel Number
<b>Domestic and Fire Protection</b>	<b>Humboldt</b>	<b>223-101-002</b>

The place of use is shown on map on file with the State Water Board.

5. The water appropriated shall be limited to the quantity which can be beneficially used and shall not exceed **330 gallons per day** by direct diversion from November 12 of each year to June 15 of the succeeding year and **0.1 acre-foot per year** by storage from December 15 of each year to March 31 of the succeeding year. The total amount of water taken from the source (direct diversion plus collection to storage) under this right shall not exceed **0.23 acre-foot per year**.
6. No water shall be diverted or used under this right, and no construction related to such diversion shall commence, unless the right holder has obtained and is in compliance with all necessary permits or other approvals required by other agencies.
7. Diversion works shall be constructed and water applied to beneficial use with due diligence.
8. No water shall be diverted under this right unless the right holder complies with all lawful conditions required by the California Department of Fish and Wildlife. (Wat. Code, § 1228.6, subd. (a)(2).)
9. No water shall be diverted under this right unless it is diverted in accordance with the information set forth in the completed registration form as to source, location of point of diversion, purpose of use, place of use, and quantity and season of diversion. This information is reproduced as conditions 1 through 5 of this certificate.
10. No water shall be diverted under this right for irrigating any commercial crop (e.g. crop grown for sale or trade), or for irrigating more than one-half acre of lawn, ornamental shrubbery, or gardens not associated with an establishment within the place of use.
11. Pursuant to Water Code sections 100 and 275 and the common law public trust doctrine, all rights and privileges under this right, including method of diversion, method of use, and quantity of water diverted, are subject to the continuing authority of the State Water Board in accordance with law and in the interest of the public welfare to protect public trust uses and to prevent waste, unreasonable use, unreasonable method of use, or unreasonable method of diversion of said water.
12. Right holder shall grant, or secure authorization through the right holder's right of access to property owned by another party, the staff of the State Water Board, and any other authorized representatives of the State Water Board the following:
  - a. Entry upon property where water is being diverted, stored or used under a right issued by the State Water Board or where monitoring, samples and/or records must be collected under the conditions of this right;
  - b. Access to copy any records at reasonable times that are kept under the terms and conditions of a right or other order issued by State Water Board;
  - c. Access to inspect at reasonable times any project covered by a right issued by the State Water Board, equipment (including monitoring and control equipment), practices, or operations regulated by or required under this right; and,
  - d. Access to photograph, sample, measure, and monitor at reasonable times for the purpose of ensuring compliance with a right or other order issued by State Water Board, or as otherwise authorized by the Water Code.

13. Diversion of water under this right is subject to prior rights. Right holder may be required to curtail diversion or release water stored during the most recent collection season should diversion under this right result in injury to holders of legal downstream senior rights. If a reservoir is involved, the right holder may be required to bypass or release water through, over, or around the dam. If release of stored water would not effectively satisfy downstream prior storage rights, the right holder may be required to otherwise compensate the holders of such rights for injury caused.
14. This right shall not be construed as conferring right of access to any lands or facilities not owned by the right holder.
15. All rights are issued subject to available flows. Inasmuch as the source contains treated wastewater, imported water from another stream system, or return flow from other projects, there is no guarantee that such supply will continue.
16. If storage or diversion of water under this right is by means of a dam, the right holder shall allow sufficient water at all times to pass through a fishway or, in the absence of a fishway, allow sufficient water to pass over, around, or through the dam to keep in good condition any fish that may be planted or exist below the dam; provided that, during a period of low flow in the stream, upon approval of the California Department of Fish and Wildlife, this requirement will be satisfied if sufficient water is passed through a culvert, waste gate, or over or around the dam to keep in good condition any fish that may be planted or exist below the dam if it is impracticable or detrimental to pass the water through a fishway. In the case of a reservoir, this provision shall not require the passage or release of water at a greater rate than the unimpaired natural inflow into the reservoir. (Fish & G. Code, § 5937.)
17. The facilities for diversion under this right shall include satisfactory means of measuring and bypassing sufficient water to satisfy downstream prior rights and any requirements of the California Department of Fish and Wildlife.
18. This right does not authorize any act which results in the taking of a threatened, endangered or candidate species or any act which is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code section 2050 et seq.) or the federal Endangered Species Act (16 U.S.C.A. section 1531 et seq.). If a "take" will result from any act authorized under this water right, the right holder shall obtain authorization for an incidental take prior to construction or operation of the project. Right holder shall be responsible for meeting all requirements of the state and Federal Endangered Species Acts for the project authorized under this right.
19. No water shall be diverted under this right unless the right holder complies with the reporting, measuring, and monitoring requirements of Chapters 2.7 and 2.8 of Division 3 of Title 23 of the California Code of Regulations. If there is any conflict or inconsistency between these regulations and the conditions in this right for reporting, measuring, and monitoring the diversion and use of water, the more stringent requirement or requirements shall control in each instance.
20. This right is subject to renewal prior to the expiration of each five-year period following the priority date of this right. This right shall be renewed only if the right holder has paid the renewal fee and properly reported the diversion and use of water under this right in accordance with the requirements of the State Water Board. This right shall be revoked upon failure of the right holder to renew the right as required by the conditions of this certificate. (Wat. Code, § 1228.5.)

21. Right holder is on notice that any of the following may be cause for the State Water Board to consider revocation (including partial revocation) of this right: (1) failure to timely commence or complete construction work or beneficial use of water with due diligence; (2) cessation or partial cessation of beneficial use of water; (3) failure to observe any of the terms or conditions of this right; or (4) a finding by the State Water Board that the right holder knowingly made a false statement or knowingly concealed any material fact in the registration. (Wat. Code, § 1228.4.)

STATE WATER RESOURCES CONTROL BOARD

ORIGINAL SIGNED BY  
ROBERT CERVANTES FOR:

*Erik Ekdahl, Deputy Director  
Division of Water Rights*

Dated: APR 02 2018

## SECTION 2 – REQUIREMENTS RELATED TO WATER DIVERSIONS AND WASTE DISCHARGE FOR CANNABIS CULTIVATION

The following Requirements apply to any water diversion or waste discharge related to cannabis cultivation.

No.	TERM
<b>Land Development and Maintenance, Erosion Control, and Drainage Features</b>	
<b>Limitations on Earthmoving</b>	
1.	<p>Cannabis cultivators shall not conduct grading activities for cannabis cultivation land development or alteration on slopes exceeding 50 percent grade, or as restricted by local county or city permits, ordinances, or regulations for grading, agriculture, or cannabis cultivation; whichever is more stringent shall apply.</p> <p>The grading prohibition on slopes exceeding 50 percent does not apply to site mitigation or remediation if the cannabis cultivator is issued separate WDRs or an enforcement order for the activity by the Regional Water Board Executive Officer.</p>
2.	<p>Finished cut and fill slopes, including side slopes between terraces, shall not exceed slopes of 50 percent and should conform to the natural pre-grade slope whenever possible.</p>
3.	<p>Cannabis cultivators shall not drive or operate vehicles or equipment within the riparian setbacks or within waters of the state unless authorized under 404/401 CWA permits, a CDFW LSA Agreement, coverage under the Cannabis General Order water quality certification, or site-specific WDRs issued by the Regional Water Board. This requirement does not prohibit driving on established, maintained access roads that are in compliance with this Policy.</p>
4.	<p>Cannabis cultivation land development and access road construction shall be designed by qualified professionals. Cannabis cultivators shall conduct all construction or land development activities to minimize grading, soil disturbance, and disturbance to aquatic and terrestrial habitat.</p>
5.	<p>The cannabis cultivator shall control all dust related to cannabis cultivation activities to ensure dust does not produce sediment-laden runoff. The cannabis cultivator shall implement dust control measures, including, but not limited to, pre-watering of excavation or grading sites, use of water trucks, track-out prevention, washing down vehicles or equipment before leaving a site, and prohibiting land disturbance activities when instantaneous wind speeds (gusts) exceed 25 miles per hour. Cannabis cultivators shall grade access roads in dry weather while moisture is still present in soil to minimize dust and to achieve design soil compaction, or when needed use a water truck to control dust and soil moisture.</p>
<b>Construction Equipment Use and Limitations</b>	



6.	Cannabis cultivators shall employ spill control and containment practices to prevent the discharge of fuels, oils, solvents and other chemicals to soils and waters of the state.
7.	<p>Cannabis cultivators shall stage and store equipment, materials, fuels, lubricants, solvents, or hazardous or toxic materials in locations that minimize the potential for discharge to waters of the state. At a minimum, the following measures shall be implemented:</p> <ol style="list-style-type: none"> <li>1. Designate an area outside the riparian setback for equipment storage, short-term maintenance, and refueling. Cannabis cultivator shall not conduct any maintenance activity or refuel equipment in any location where the petroleum products or other pollutants may enter waters of the state as per Fish and Game Code section 5650 (a)(1).</li> <li>2. Frequently inspect equipment and vehicles for leaks.</li> <li>3. Immediately clean up leaks, drips, and spills. Except for emergency repairs that are necessary for safe transport of equipment or vehicles to an appropriate repair facility, equipment or vehicle repairs, maintenance, and washing onsite is prohibited.</li> <li>4. If emergency repairs generate waste fluids, ensure they are contained and properly disposed or recycled off-site.</li> <li>5. Properly dispose of all construction debris off-site.</li> <li>6. Use dry cleanup methods (e.g., absorbent materials, cat litter, and/or rags) whenever possible. Sweep up, contain, and properly dispose of spilled dry materials.</li> </ol>
<b>Erosion Control</b>	
8.	The cannabis cultivator shall use appropriate erosion control measures to minimize erosion of disturbed areas, potting soil, or bulk soil amendments to prevent discharges of waste. Fill soil shall not be placed where it may discharge into surface water. If used, weed-free straw mulch shall be applied at a rate of two tons per acre of exposed soils and, if warranted by site conditions, shall be secured to the ground.
9.	The cannabis cultivator shall not plant or seed noxious weeds. Prohibited plant species include those identified in the California Invasive Pest Plant Council's database, available at: <a href="http://www.cal-ipc.org/paf/">www.cal-ipc.org/paf/</a> . Locally native, non-invasive, and non-persistent grass species may be used for temporary erosion control benefits to stabilize disturbed land and prevent exposure of disturbed land to rainfall. Nothing in this term may be construed as a ban on cannabis cultivation that complies with the terms of this Policy.
10.	<p>Cannabis cultivators shall incorporate erosion control and sediment detention devices and materials into the design, work schedule, and implementation of the cannabis cultivation activities. The erosion prevention and sediment capture measures shall be effective in protecting water quality.</p> <ul style="list-style-type: none"> <li>• Interim erosion prevention and sediment capture measures shall be implemented within seven days of completion of grading and land disturbance activities, and</li> </ul>

	<p>shall consist of erosion prevention measures and sediment capture measures including:</p> <ul style="list-style-type: none"> <li>○ Erosion prevention measures are required for any earthwork that uses heavy equipment (e.g., bulldozer, compactor, excavator, etc.). Erosion prevention measures may include surface contouring, slope roughening, and upslope storm water diversion. Other types of erosion prevention measures may include mulching, hydroseeding, tarp placement, revegetation, and rock slope protection.</li> <li>○ Sediment capture measures include the implementation of measures such as gravel bag berms, fiber rolls, straw bale barriers, properly installed silt fences, and sediment settling basins.</li> <li>● Long-term erosion prevention and sediment capture measures shall be implemented as soon as possible and prior to the onset of fall and winter precipitation. Long-term measures may include the use of heavy equipment to reconfigure access roads or improve access road drainage, installation of properly-sized culverts, gravel placement on steeper grades, and stabilization of previously disturbed land.</li> <li>● Maintenance of all erosion protection and sediment capture measures is required year round. Early monitoring allows for identification of problem areas or underperforming erosion or sediment control measures. Verification of the effectiveness of all erosion prevention and sediment capture measures is required as part of winterization activities.</li> </ul>
<b>11.</b>	Cannabis cultivators shall only use geotextiles, fiber rolls, and other erosion control measures made of loose-weave mesh (e.g., jute, coconut (coir) fiber, or from other products without welded weaves). To minimize the risk of ensnaring and strangling wildlife, cannabis cultivators shall not use synthetic (e.g., plastic or nylon) monofilament netting materials for erosion control for any cannabis cultivation activities. This prohibition includes photo- or bio-degradable plastic netting.
<b>12.</b>	Cultivation sites constructed on or near slopes with a slope greater than or equal to 30 percent shall be inspected for indications of instability. Indications of instability include the occurrence of slope failures at nearby similar sites, weak soil layers, geologic bedding parallel to slope surface, hillside creep (trees, fence posts, etc. leaning downslope), tension cracks in the slope surface, bulging soil at the base of the slope, and groundwater discharge from the slope. If indicators of instability are present, the cannabis cultivator shall consult with a qualified professional to design measures to stabilize the slope to prevent sediment discharge to surface waters.
<b>13.</b>	For areas outside of riparian setbacks or for upland areas, cannabis cultivators shall ensure that rock placed for slope protection is the minimum amount necessary and is part of a design that provides for native plant revegetation. If retaining walls or other structures are required to provide slope stability, they shall be designed by a qualified professional.
<b>14.</b>	Cannabis cultivators shall monitor erosion control measures during and after each storm event that produces at least 0.5 in/day or 1.0 inch/7 days of precipitation, and repair or replace, as needed, ineffective erosion control measures immediately.

Access Road/Land Development and Drainage	
15.	Access roads shall be constructed consistent with the requirements of California Code of Regulations Title 14, Chapter 4. The Road Handbook describes how to implement the regulations and is available at < <a href="http://www.pacificwatershed.com/PWA-publications-library">http://www.pacificwatershed.com/PWA-publications-library</a> >. Existing access roads shall be upgraded to comply with the Road Handbook.
16.	Cannabis cultivators shall obtain all required permits and approvals prior to the construction of any access road constructed for cannabis cultivation activities. Permits may include section 404/401 CWA permits, Regional Water Board WDRs (when applicable), CDFW LSA Agreement, and county or local agency permits.
17.	Cannabis cultivators shall ensure that all access roads are hydrologically disconnected to receiving waters to the extent possible by installing disconnecting drainage features, increasing the frequency of (inside) ditch drain relief as needed, constructing out-sloped roads, constructing energy dissipating structures, avoiding concentrating flows in unstable areas, and performing inspection and maintenance as needed to optimize the access road performance.
18.	New access road alignments should be constructed with grades (slopes) of 3- to 8-percent, or less, wherever possible. Forest access roads should generally be kept below 12-percent except for short pitches of 500 feet or less where road slopes may go up to 20-percent. These steeper access road slopes should be paved or rock surfaced and equipped with adequate drainage. Existing access roads that do not comply with these limits shall be inspected by a qualified professional to determine if improvements are needed.
19.	Cannabis cultivators shall decommission or relocate existing roads away from riparian setbacks whenever possible. Roads that are proposed for decommissioning shall be abandoned and left in a condition that provides for long-term, maintenance-free function of drainage and erosion controls. Abandoned roads shall be blocked to prevent unauthorized vehicle traffic.
20.	If site conditions prohibit drainage structures (including rolling dips and ditch-relief culverts) at adequate intervals to avoid erosion, the cannabis cultivator shall use bioengineering techniques <sup>12</sup> as the preferred measure to minimize erosion (e.g., live fascines). If bioengineering cannot be used, then engineering fixes such as armoring (e.g., rock of adequate size and depth to remain in place under traffic and flow conditions) and velocity dissipaters (e.g., gravel-filled “pillows” in an inside ditch to trap sediment) may be used for problem sites. The maximum distance between water breaks shall not exceed those defined in the Road Handbook.
21.	Cannabis cultivators shall have a qualified professional design the optimal access road alignment, surfacing, drainage, maintenance requirements, and spoils handling

<sup>12</sup> A Primer on Stream and River Protection for the Regulator and Program Manager: Technical Reference Circular W.D. 02-#1, San Francisco Bay Region, California Regional Water Board (April 2003) [http://www.waterboards.ca.gov/sanfranciscobay/water\\_issues/programs/stream\\_wetland/streamprotectioncircular.pdf](http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/stream_wetland/streamprotectioncircular.pdf).

	procedures.
<b>22.</b>	Cannabis cultivators shall ensure that access road surfacing, especially within a segment leading to a waterbody, is sufficient to minimize sediment delivery to the wetland or waterbody and maximize access road integrity. Road surfacing may include pavement, chip-seal, lignin, rock, or other material appropriate for timing and nature of use. All access roads that will be used for winter or wet weather hauling/traffic shall be surfaced. Steeper access road grades require higher quality rock (e.g., crushed angular versus river-run) to remain in place. The use of asphalt grindings is prohibited.
<b>23.</b>	Cannabis cultivators shall install erosion control measures on all access road approaches to surface water diversion sites to reduce the generation and transport of sediment to streams.
<b>24.</b>	Cannabis cultivators shall ensure that access roads are out-sloped whenever possible to promote even drainage of the access road surface, prevent the concentration of storm water flow within an inboard or inside ditch, and to minimize disruption of the natural sheet flow pattern off a hill slope to a stream.
<b>25.</b>	If unable to eliminate inboard or inside ditches, the cannabis cultivator shall ensure adequate ditch relief culverts to prevent down-cutting of the ditch and to reduce water runoff concentration, velocity, and erosion. Ditches shall be designed and maintained as recommended by a qualified professional. To avoid point-source discharges, inboard ditches and ditch relief culverts shall be discharged onto vegetated or armored slopes that are designed to dissipate and prevent runoff channelization. Inboard ditches and ditch relief culverts shall be designed to ensure discharges into natural stream channels or watercourses are prevented.
<b>26.</b>	Cannabis cultivators shall ensure that access roads are not allowed to develop or show evidence of significant surface rutting or gulying. Cannabis cultivators shall use water bars and rolling dips as designed by a qualified professional to minimize access road surface erosion and dissipate runoff.
<b>27.</b>	Cannabis cultivators shall only grade ditches when necessary to prevent erosion of the ditch, undermining of the banks, or exposure of the toe of the cut slope to erosion. Cannabis cultivators shall not remove more vegetation than necessary to keep water moving, as vegetation prevents scour and filters out sediment.
<b>28.</b>	Access road storm water drainage structures shall not discharge onto unstable slopes, earthen fills, or directly to a waterbody. Drainage structures shall discharge onto stable areas with straw bales, slash, vegetation, and/or rock riprap.
<b>29.</b>	Sediment control devices (e.g., check dams, sand/gravel bag barriers, etc.) shall be used when it is not practical to disperse storm water before discharge to a waterbody. Where potential discharge to a wetland or waterbody exists (e.g., within 200 feet of a waterbody) access road surface drainage shall be filtered through vegetation, slash, other appropriate material, or settled into a depression with an outlet with adequate drainage. Sediment basins shall be engineered and properly sized to allow sediment settling, spillway stability, and maintenance activities.

<b>Drainage Culverts (See also Watercourse Crossings)</b>	
<b>30.</b>	Cannabis cultivators shall regularly inspect ditch-relief culverts and clear them of any debris or sediment. To reduce ditch-relief culvert plugging by debris, cannabis cultivators shall use 15- to 24-inch diameter pipes, at minimum. In forested areas with a potential for woody debris, a minimum 18-inch diameter pipe shall be used to reduce clogging. Ditch relief culverts shall be designed by a qualified professional based on site-specific conditions.
<b>31.</b>	Cannabis cultivators shall ensure that all permanent watercourse crossings that are constructed or reconstructed are capable of accommodating the estimated 100-year flood flow, including debris and sediment loads. Watercourse crossings shall be designed and sized by a qualified professional.
<b>Cleanup, Restoration, and Mitigation</b>	
<b>32.</b>	Cannabis cultivators shall limit disturbance to existing grades and vegetation to the actual site of the cleanup or remediation and any necessary access routes.
<b>33.</b>	<p>Cannabis cultivators shall avoid damage to native riparian vegetation. All exposed or disturbed land and access points within the stream and riparian setback with damaged vegetation shall be restored with regional native vegetation of similar native species. Riparian trees over four inches diameter at breast height shall be replaced by similar native species at a ratio of three to one (3:1). Restored areas must be mulched, using at least 2 to 4 inches of weed-free, clean straw or similar biodegradable mulch over the seeded area. Mulching shall be completed within 30 days after land disturbance activities in the areas cease. Revegetation planting shall occur at a seasonally appropriate time until vegetation is restored to pre-cannabis or pre-Legacy condition or better.</p> <p>Cannabis cultivators shall stabilize and restore any temporary work areas with native vegetation to pre-cannabis cultivation or pre-Legacy conditions or better. Vegetation shall be planted at an adequate density and variety to control surface erosion and re-generate a diverse composition of regional native vegetation of similar native species.</p>
<b>34.</b>	Cannabis cultivators shall avoid damage to oak woodlands. Cannabis cultivator shall plant three oak trees for every one oak tree damaged or removed. Trees may be planted in groves in order to maximize wildlife benefits and shall be native to the local county.
<b>35.</b>	<p>Cannabis cultivators shall develop a revegetation plan for:</p> <ul style="list-style-type: none"> <li>• All exposed or disturbed riparian vegetation areas,</li> <li>• any oak trees that are damaged or removed, and</li> <li>• temporary work areas.</li> </ul> <p>Cannabis cultivators shall develop a monitoring plan that evaluates the revegetation plan for five years. Cannabis cultivators shall maintain annual inspections for the purpose of assessing an 85 percent survival and growth of revegetated areas within a five-year period. The presence of exposed soil shall be documented for three years following revegetation work. If the revegetation results in less than an 85 percent success rate, the unsuccessful vegetation areas shall be replanted. Cannabis cultivators shall identify the location and extent of exposed soil associated with the site; pre- and post-revegetation</p>

	work photos; diagram of all areas revegetated, the planting methods, and plants used; and an assessment of the success of the revegetation program. Cannabis cultivators shall maintain a copy of the revegetation plan and monitoring results onsite and make them available, upon request, to Water Boards staff or authorized representatives. An electronic copy of monitoring results is acceptable in Portable Document Format (PDF).
<b>36.</b>	Cannabis cultivators shall revegetate soil exposed as a result of cannabis cultivation activities with native vegetation by live planting, seed casting, or hydroseeding within seven days of exposure.
<b>37.</b>	Cannabis cultivators shall prevent the spread or introduction of exotic plant species to the maximum extent possible by cleaning equipment before delivery to the cannabis cultivation Site and before removal, restoring land disturbance with appropriate native species, and post-cannabis cultivation activities monitoring and control of exotic species. Nothing in this term may be construed as a ban on cannabis cultivation that complies with the terms of this Policy.
<b>Stream Crossing Installation and Maintenance</b>	
<b>Limitations on Work in Watercourses and Permanently Ponded Areas</b>	
<b>38.</b>	Cannabis cultivators shall obtain all applicable permits and approvals prior to doing any work in or around waterbodies or within the riparian setbacks. Permits may include section 404/401 CWA permits, Regional Water Board WDRs (when applicable), and a CDFW LSA Agreement.
<b>39.</b>	Cannabis cultivators shall avoid or minimize temporary stream crossings. When necessary, temporary stream crossings shall be located in areas where erosion potential and damage to the existing habitat is low. Cannabis cultivators shall avoid areas where runoff from access roadway side slopes and natural hillsides will drain and flow into the temporary crossing. Temporary stream crossings that impede fish passage are strictly prohibited on permanent or seasonal fish-bearing streams.
<b>40.</b>	Cannabis cultivators shall avoid or minimize use of heavy equipment <sup>13</sup> in a watercourse. If use is unavoidable, heavy equipment may only travel or work in a waterbody with a rocky or cobbled channel. Wood, rubber, or clean native rock temporary work pads shall be used on the channel bottom prior to use of heavy equipment to protect channel bed and preserve channel morphology. Temporary work pads and other channel protection shall be removed as soon as possible once the use of heavy equipment is complete.
<b>41.</b>	Cannabis cultivators shall avoid or minimize work in or near a stream, creek, river, lake, pond, or other waterbody. If work in a waterbody cannot be avoided, activities and associated workspace shall be isolated from flowing water by directing the water around the work site. If water is present, then the cannabis cultivator shall develop a site-specific plan prepared by a qualified professional. The plan shall consider partial or full stream diversion and dewatering. The plan shall consider the use of coffer dams upstream and downstream of the work site and the diversion of all flow from upstream of the upstream

<sup>13</sup> Heavy equipment is defined as large pieces of machinery or vehicles, especially those used in the building and construction industry (e.g., bulldozers, excavators, backhoes, bobcats, tractors, etc.).



	dam to downstream of the downstream dam, through a suitably sized pipe with intake screens that protect and prevent impacts to fish and wildlife. Cannabis cultivation activities and associated work shall be performed outside the waterbody from the top of the bank to the maximum extent possible.
<b>Temporary Watercourse Diversion and Dewatering: All Live Watercourses</b>	
<b>42.</b>	Cannabis cultivators shall ensure that coffer dams are constructed prior to commencing work and as close as practicable upstream and downstream of the work area. Cofferdam construction using offsite materials, such as clean gravel bags or inflatable dams, is preferred. Thick plastic may be used to minimize leakage, but shall be completely removed and properly disposed of upon work completion. If the coffer dams or stream diversion fail, the cannabis cultivator shall repair them immediately.
<b>43.</b>	When any dam or other artificial obstruction is being constructed, maintained, or placed in operation, the cannabis cultivator shall allow sufficient water at all times to pass downstream to maintain aquatic life below the dam pursuant to Fish and Game Code section 5937.
<b>44.</b>	If possible, gravity flow is the preferred method of water diversion. If a pump is used, the cannabis cultivator shall ensure that the pump is operated at the rate of flow that passes through the cannabis cultivation site. Pumping rates shall not dewater or impound water on the upstream side of the coffer dam. When diversion pipe is used it shall be protected from cannabis cultivation activities and maintained to prevent debris blockage.
<b>45.</b>	Cannabis cultivators shall only divert water such that water does not scour the channel bed or banks at the downstream end. Cannabis cultivator shall divert flow in a manner that prevents turbidity, siltation, and pollution and provides flows to downstream reaches. Cannabis cultivators shall provide flows to downstream reaches during all times that the natural flow would have supported aquatic life. Flows shall be of sufficient quality and quantity, and of appropriate temperature to support fish and other aquatic life both above and below the diversion. Block netting and intake screens shall be sized to protect and prevent impacts to fish and wildlife.
<b>46.</b>	Once water has been diverted around the work area, cannabis cultivators may dewater the site to provide an adequately dry work area. Any muddy or otherwise contaminated water shall be pumped to a settling tank, dewatering filter bag, or upland area, or to another location approved by CDFW or the appropriate Regional Water Board Executive Officer prior to re-entering the watercourse.
<b>47.</b>	Upon completion of work, cannabis cultivators shall immediately remove the flow diversion structure in a manner that allows flow to resume with a minimum of disturbance to the channel substrate and that minimizes the generation of turbidity.
<b>Watercourse Crossings</b>	
<b>48.</b>	Cannabis cultivators shall ensure that watercourse crossings are designed by a qualified professional.
<b>49.</b>	Cannabis cultivators shall ensure that all access road watercourse crossing structures allow for the unrestricted passage of water and shall be designed to accommodate the



	estimated 100-year flood flow and associated debris (based upon an assessment of the streams potential to generate debris during high flow events). Consult CAL FIRE 100 year Watercourse Crossings document for examples and design calculations, available at: <a href="http://calfire.ca.gov/resource_mgt/downloads/100%20yr%20revised%208-08-17%20(final-a).pdf">http://calfire.ca.gov/resource_mgt/downloads/100%20yr%20revised%208-08-17%20(final-a).pdf</a> .
<b>50.</b>	<p>Cannabis cultivators shall ensure that watercourse crossings allow migration of aquatic life during all life stages supported or potentially supported by that stream reach. Design measures shall be incorporated to ensure water depth and velocity does not inhibit migration of aquatic life. Any access road crossing structure on watercourses that supports fish shall be constructed for the unrestricted passage of fish at all life stages, and should use the following design guidelines:</p> <ul style="list-style-type: none"> <li>• CDFW's <i>Culvert Criteria for Fish Passage</i>;</li> <li>• CDFW's <i>Salmonid Stream Habitat Restoration Manual, Volume 2, Part IX: Fish Passage Evaluation at Stream Crossings</i>; and</li> <li>• National Marine Fisheries Service, Southwest Region <i>Guidelines for Salmonid Passage at Stream Crossings</i>.</li> </ul>
<b>51.</b>	<p>Cannabis cultivators shall conduct regular inspection and maintenance of stream crossings to ensure crossings are not blocked by debris. Refer to California Board of Forestry Technical Rule No. 5 available at: <a href="http://www.calforests.org/wp-content/uploads/2013/10/Adopted-TRA5.pdf">http://www.calforests.org/wp-content/uploads/2013/10/Adopted-TRA5.pdf</a>.</p>
<b>52.</b>	<p>Cannabis cultivators shall only use rock fords for temporary seasonal crossings on small watercourses where aquatic life passage is not required during the time period of use. Rock fords shall be oriented perpendicular to the flow of the watercourse and designed to maintain the range of surface flows that occur in the watercourse. When constructed, rock shall be sized to withstand the range of flow events that occur at the crossing and rock shall be maintained at the rock ford to completely cover the channel bed and bank surfaces to minimize soil compaction, rutting, and erosion. Rock must extend on either side of the ford up to the break in slope. The use of rock fords as watercourse crossings for all-weather access road use is prohibited.</p>
<b>53.</b>	<p>Cannabis cultivators shall ensure that culverts used at watercourse crossings are designed to direct flow and debris toward the inlet (e.g., use of wing-walls, pipe beveling, rock armoring, etc.) to prevent erosion of road fill, debris blocking the culvert, and watercourses from eroding a new channel.</p>
<b>54.</b>	<p>Cannabis cultivators shall regularly inspect and maintain the condition of access roads, access road drainage features, and watercourse crossings. At a minimum, cannabis cultivators shall perform inspections prior to the onset of fall and winter precipitation and following storm events that produce at least 0.5 in/day or 1.0 inch/7 days of precipitation. Cannabis cultivators are required to perform all of the following maintenance:</p> <ul style="list-style-type: none"> <li>• Remove any wood debris that may restrict flow in a culvert.</li> <li>• Remove sediment that impacts access road or drainage feature performance. Place any removed sediment in a location outside the riparian setbacks and stabilize the sediment.</li> <li>• Maintain records of access road and drainage feature maintenance and consider</li> </ul>

	redesigning the access road to improve performance and reduce maintenance needs.
<b>55.</b>	Cannabis cultivators shall compact access road crossing approaches and fill slopes during installation and shall stabilize them with rock or other appropriate surface protection to minimize surface erosion. When possible, cannabis cultivators shall ensure that access roads over culverts are equipped with a critical dip to ensure that, if the culvert becomes blocked or plugged, water can flow over the access road surface without washing away the fill prism. Access road crossings where specific conditions do not allow for a critical dip or in areas with potential for significant debris accumulation, shall include additional measures such as emergency overflow culverts or oversized culverts that are designed by a qualified professional.
<b>56.</b>	Cannabis cultivators shall ensure that culverts used at watercourse crossings are: 1) installed parallel to the watercourse alignment to the extent possible, 2) of sufficient length to extend beyond stabilized fill/sidecast material, and 3) embedded or installed at the same level and gradient of the streambed in which they are being placed to prevent erosion.
<b>Soil Disposal and Spoils Management</b>	
<b>57.</b>	Cannabis cultivators shall store soil, construction, and waste materials outside the riparian setback except as needed for immediate construction needs. Such materials shall not be stored in locations of known slope instability or where the storage of construction or waste material could reduce slope stability.
<b>58.</b>	Cannabis cultivators shall separate large organic material (e.g., roots, woody debris, etc.) from soil materials. Cannabis cultivators shall either place the large organic material in long-term, upland storage sites, or properly dispose of these materials offsite.
<b>59.</b>	Cannabis cultivators shall store erodible soil, soil amendments, and spoil piles to prevent sediment discharges in storm water. Storage practices may include use of tarps, upslope land contouring to divert surface flow around the material, or use of sediment control devices (e.g., silt fences, straw wattles, etc.).
<b>60.</b>	Cannabis cultivators shall contour and stabilize stored spoils to mimic natural slope contours and drainage patterns (as appropriate) to reduce the potential for fill saturation and slope failure.
<b>61.</b>	For soil disposal sites cannabis cultivators shall: <ul style="list-style-type: none"> <li>• revegetate soil disposal sites with a mix of native plant species,</li> <li>• cover the seeded and planted areas with mulched straw at a rate of two tons per acre, and</li> <li>• apply non-synthetic netting or similar erosion control fabric (e.g., jute) on slopes greater than 2:1 if the site is erodible.</li> </ul>
<b>62.</b>	Cannabis cultivators shall haul away and properly dispose of excess soil and other debris as needed to prevent discharge to waters of the state.

## Riparian and Wetland Protection and Management

63.	Cannabis cultivators shall not disturb aquatic or riparian habitat, such as pools, spawning sites, large wood, or shading vegetation unless authorized under a CWA section 404 permit, CWA section 401 certification, Regional Water Board WDRs (when applicable), or a CDFW LSA Agreement.
64.	Cannabis cultivators shall maintain existing, naturally occurring, riparian vegetative cover (e.g., trees, shrubs, and grasses) in aquatic habitat areas to the maximum extent possible to maintain riparian areas for streambank stabilization, erosion control, stream shading and temperature control, sediment and chemical filtration, aquatic life support, wildlife support, and to minimize waste discharge.

## Water Storage and Use

### Water Supply, Diversion, and Storage

65.	Cannabis cultivators shall only install, maintain, and destroy wells in compliance with county, city, and local ordinances and with California Well Standards as stipulated in California Department of Water Resources Bulletins 74-90 and 74-81. <sup>14</sup>
66.	All water diversions for cannabis cultivation from a surface stream, subterranean stream flowing through a known and definite channel (e.g., groundwater well diversions from subsurface stream flows), or other surface waterbody are subject to the surface water Numeric and Narrative Instream Flow Requirements. This includes lakes, ponds, and springs (unless the spring is deemed exempt by the Deputy Director). See Section 3. Numeric and Narrative Instream Flow Requirements of this Attachment A for more information.
67.	Groundwater diversions may be subject to additional requirements, such as a forbearance period, if the State Water Board determines those requirements are reasonably necessary to implement the purposes of this Policy.
68.	Cannabis cultivators are encouraged to use appropriate rainwater catchment systems to collect from impermeable surfaces (e.g., roof tops, etc.) during the wet season and store storm water in tanks, bladders, or off-stream engineered reservoirs to reduce the need for surface water or groundwater diversions.
69.	Cannabis cultivators shall not divert surface water unless it is diverted in accordance with an existing water right that specifies, as appropriate, the source, location of the point of diversion, purpose of use, place of use, and quantity and season of diversion. Cannabis cultivators shall maintain documentation of the water right at the cannabis cultivation site. Documentation of the water right shall be available for review and inspection by the Water Boards, CDFW, and any other authorized representatives of the Water Boards or CDFW.

<sup>14</sup> California Well Standards are available at:

[http://www.water.ca.gov/groundwater/well\\_info\\_and\\_other/california\\_well\\_standards/well\\_standards\\_content.html](http://www.water.ca.gov/groundwater/well_info_and_other/california_well_standards/well_standards_content.html).

<b>70.</b>	Cannabis cultivators shall ensure that all water diversion facilities are designed, constructed, and maintained so they do not prevent, impede, or tend to prevent the passing of fish, as defined by Fish and Game Code section 45, upstream or downstream, as required by Fish and Game Code section 5901. This includes but is not limited to the supply of water at an appropriate depth, temperature, and velocity to facilitate upstream and downstream aquatic life movement and migration. Cannabis cultivators shall allow sufficient water at all times to pass past the point of diversion to keep in good condition any fish that may be planted or exist below the point of diversion as defined by Fish and Game Code section 5937. Cannabis cultivators shall not divert water in a manner contrary to or inconsistent with these Requirements.
<b>71.</b>	Cannabis cultivators issued a Cannabis SIUR by the State Water Board shall not divert surface water unless in compliance with all additional Cannabis SIUR conditions required by CDFW.
<b>72.</b>	Water diversion facilities shall include satisfactory means for bypassing water to satisfy downstream prior rights and any requirements of policies for water quality control, water quality control plans, water quality certifications, waste discharge requirements, or other local, state or federal instream flow requirements. Cannabis cultivators shall not divert in a manner that results in injury to holders of legal downstream senior rights. Cannabis cultivators may be required to curtail diversions should diversion result in injury to holders of legal downstream senior water rights or interfere with maintenance of downstream instream flow requirements.
<b>73.</b>	<p>Fuel powered (e.g., gas, diesel, etc.) diversion pumps shall be located in a stable and secure location outside of the riparian setbacks unless authorized under a 404/401 CWA permits, a CDFW LSA Agreement, coverage under the Cannabis General Order water quality certification, or site-specific WDRs issued by the Regional Water Board. Use of non-fuel powered diversion pumps (solar, electric, gravity, etc.) is encouraged.</p> <p>In all cases, all pumps shall:</p> <ol style="list-style-type: none"> <li>1. be properly maintained,</li> <li>2. have suitable containment to ensure any spills or leaks do not enter surface waterbodies or groundwater, and</li> <li>3. have sufficient overhead cover to prevent exposure of equipment to precipitation.</li> </ol>
<b>74.</b>	No water shall be diverted unless the cannabis cultivator is operating the water diversion facility with a CDFW-approved water-intake screen (e.g. fish screen). The water intake screen shall be designed and maintained in accordance with screening criteria approved by CDFW. The screen shall prevent wildlife from entering the diversion intake and becoming entrapped. The cannabis cultivator shall contact the regional CDFW Office, LSA Program for information on screening criteria for diversion(s). <sup>15</sup> The cannabis cultivator shall provide evidence that demonstrates that the water intake screen is in good condition whenever requested by the Water Boards or CDFW. Points of re-diversion from off-stream storage facilities that are open to the environment shall have a water intake screen, as required by CDFW.

<sup>15</sup> CDFW's Lake and Streambed program information is available at:  
<https://www.wildlife.ca.gov/Conservation/LSA> .



<b>75.</b>	Cannabis cultivators shall inspect, maintain, and clean water intake screens and bypass appurtenances as directed by CDFW to ensure proper operation for the protection of fish and wildlife.
<b>76.</b>	Cannabis cultivators shall not obstruct, alter, dam, or divert all or any portion of a natural watercourse prior to obtaining all applicable permits and approvals. Permits may include a valid water right, 404/401 CWA permits, a CDFW LSA Agreement, coverage under the Cannabis General Order water quality certification, or site-specific WDRs issued by the Regional Water Board.
<b>77.</b>	Cannabis cultivators shall plug, block, cap, disconnect, or remove the diversion intake associated with cannabis cultivation activities during the surface water forbearance period, unless the diversion intake is used for other beneficial uses, to ensure no water is diverted during that time.
<b>78.</b>	Cannabis cultivators shall not divert from a surface water or from a subterranean stream for cannabis cultivation at a rate more than a maximum instantaneous diversion rate of 10 gallons per minute, unless authorized under an existing appropriative water right.
<b>82.</b>	<p>Onstream storage reservoirs are prohibited unless either:</p> <ul style="list-style-type: none"> <li>• The cannabis cultivator has an existing water right with irrigation as a designated use, issued prior to October 31, 2017, that authorizes the onstream storage reservoir, or</li> <li>• The cannabis cultivator obtains an appropriative water right permit with irrigation as a designated use prior to diverting water from an onstream storage reservoir for cannabis cultivation. Cannabis cultivators with a pending application or an unpermitted onstream storage reservoir shall not divert for cannabis cultivation until the cannabis cultivator has obtain a valid water right.</li> </ul>
<b>83.</b>	Cannabis cultivators are encouraged to install separate storage systems for water diverted for cannabis irrigation and water diverted for any other beneficial uses, <sup>16</sup> or otherwise shall install separate measuring devices to quantify diversion to and from each storage facility, including the quantity of water diverted and the quantity, place, and purpose of use (e.g., cannabis irrigation, other crop irrigation, domestic, etc.) for the stored water.
<b>84.</b>	The cannabis cultivator shall install and maintain a measuring device(s) for surface water or subterranean stream diversions. The measuring device shall be, at a minimum equivalent to the requirements for direct diversions greater than 10 acre-feet per year in California Code of Regulations, Title 23, Division 3, Chapter 2.7 <sup>17</sup> . The measuring device(s) shall be located as close to the point of diversion as reasonable. Cannabis cultivators shall maintain daily diversion records for water diverted for cannabis cultivation.

<sup>16</sup> Other beneficial uses of water include: domestic, irrigation, power, municipal, mining, industrial, fish and wildlife preservation and enhancement, aquaculture, recreational, stockwatering, water quality, frost protection, and heat control. (California Code of Regulations, Title 23 sections 659-672).

<sup>17</sup> Additional information on measuring devices may be found at:  
[https://www.waterboards.ca.gov/waterrights/water\\_issues/programs/diversion\\_use/water\\_use.shtml#measurement](https://www.waterboards.ca.gov/waterrights/water_issues/programs/diversion_use/water_use.shtml#measurement)

	<p>Cannabis cultivators shall maintain separate records that document the amount of water used for cannabis cultivation separated out from the amount of water used for other irrigation purposes and other beneficial uses of water (e.g., domestic, fire protection, etc.). Cannabis cultivators shall maintain daily diversion records at the cultivation site and shall make the records available for review or by request by the Water Boards CDFW, or any other authorized representatives of the Water Boards or CDFW. Daily diversion records shall be retained for a minimum of five years. Compliance with this term is required for any surface water diversion for cannabis cultivation, even those under 10 acre-feet per year.</p>
85.	<p>The State Water Board intends to develop and implement a basin-wide program for real-time electronic monitoring and reporting of diversions, withdrawals, releases and streamflow in a standardized format if and when resources become available. Such real-time reporting will be required upon a showing by the State Water Board that the program and the infrastructure are in place to accept real-time electronic reports. Implementation of the reporting requirements shall not necessitate amendment to this Requirement.</p>
86.	<p>Cannabis cultivators shall not use off-stream storage reservoirs and ponds to store water for cannabis cultivation unless they are sited and designed or approved by a qualified professional in compliance with Division of Safety of Dams (DSOD), county, and/or city requirements, as applicable. If the DSOD, county, and/or city do not have established requirements they shall be designed consistent with the Natural Resource Conservation Service National Engineering Manual. Reservoirs shall be designed with an adequate overflow outlet that is protected and promotes the dispersal and infiltration of flow and prevents channelization.</p> <p>All off-stream storage reservoirs and ponds shall be designed, managed, and maintained to accommodate average annual winter period precipitation and storm water inputs to reduce the potential for overflow.</p> <p>Cannabis cultivators shall plant native vegetation along the perimeter of the reservoir in locations where it does not impact the structural integrity of the reservoir berm or spillway. The cannabis cultivator shall control vegetation around the reservoir berm and spillway to allow for visual inspection of berm and spillway condition and control burrowing animals as necessary.</p>
87.	<p>Cannabis cultivators shall implement an invasive species management plan prepared by a Qualified Biologist for any existing or proposed water storage facilities that are open to the environment. The plan shall include, at a minimum, an annual survey for bullfrogs and other invasive aquatic species. If bullfrogs or other invasive aquatic species are identified, eradication measures shall be implemented under the direction of a qualified biologist, if appropriate after consultation with CDFW (pursuant to Fish and Game Code section 6400). Eradication methods can be direct or indirect. Direct methods may include hand-held dip net, hook and line, lights, spears, gigs, or fish tackle under a fishing license (pursuant to Fish and Game Code section 6855). An indirect method may involve seasonally timed complete dewatering and a drying period of the off-stream storage facility under a Permit to Destroy Harmful Species (pursuant to Fish and Game Code section 5501) issued by CDFW.</p>
88.	<p>Water storage bladders are not encouraged for long-term use. If bladders are used, the cannabis cultivator shall ensure that the bladder is designed and properly installed to store water and that the bladder is sited to minimize the potential for water to flow into a</p>

	watercourse in the event of a catastrophic failure. If a storage bladder has been previously used, the cannabis cultivator shall carefully inspect the bladder to confirm its integrity and confirm the absence of any interior residual chemicals prior to resuming use. Cannabis cultivators shall periodically inspect water storage bladders and containment features to ensure integrity. Water storage bladders shall be properly disposed of or recycled and not resold when assurance of structural integrity is no longer guaranteed.
<b>89.</b>	Cannabis cultivators shall not use water storage bladders unless the bladder is safely contained within a secondary containment system with sufficient capacity to capture 110 percent of a bladder's maximum possible contents in the event of bladder failure (i.e., 110 percent of bladder's capacity). Secondary containment systems shall be of sufficient strength and stability to withstand the forces of released contents in the event of catastrophic bladder failure. In addition, secondary containment systems that are open to the environment shall be designed and maintained with sufficient capacity to accommodate precipitation and storm water inputs from a 25-year, 24-hour storm event.
<b>90.</b>	Cannabis cultivators shall not cause or allow any overflow from off-stream water storage facilities that are closed to the environment (e.g., tanks and bladders) if the off-stream facilities are served by a diversion from surface water or groundwater. Cannabis cultivators shall regularly inspect for and repair all leaks of the diversion and storage system.
<b>91.</b>	Water storage tanks, bladders, and other off-stream water storage facilities that are closed to the environment shall not be located in a riparian setback or next to equipment that generates heat. Cannabis cultivators shall place water storage tanks, bladders, and other off-stream water storage facilities that are closed to the environment in areas that allow for ease of installation, access, maintenance, and minimize road development.
<b>92.</b>	Cannabis cultivators shall install vertical and horizontal tanks according to manufacturer's specifications and shall place tanks on properly compacted soil that is free of rocks and sharp objects and capable of bearing the weight of the tank and its maximum contents with minimal settlement. Tanks shall not be located in areas of slope instability. Cannabis cultivators shall install water storage tanks capable of containing more than 8,000 gallons only on a reinforced concrete pad providing adequate support and enough space to attach a tank restraint system (anchor using the molded-in tie down lugs with moderate tension, being careful not to over-tighten) per the recommendations of a qualified professional.
<b>93.</b>	To prevent rupture or overflow and runoff, cannabis cultivators shall only use water storage tanks and bladders equipped with a float valve, or equivalent device, to shut off diversion when storage systems are full. Cannabis cultivators shall install any other measures necessary to prevent overflow of storage systems to prevent runoff and the diversion of more water than can be used and/or stored.
<b>94.</b>	Cannabis cultivators shall ensure that all vents and other openings on water storage tanks are designed to prevent the entry and/or entrapment of wildlife.



95.	<p>Cannabis cultivators shall retain, for a minimum of five years, appropriate documentation for any hauled water<sup>18</sup> used for cannabis cultivation. Documentation for hauled water shall include, for each delivery, all of the following:</p> <ol style="list-style-type: none"> <li>1. A receipt that shows the date of delivery and the name, address, license plate number, and license plate issuing state for the water hauler,</li> <li>2. A copy of the Water Hauler's License (California Health and Safety Code section 111120),</li> <li>3. A copy of proof of the Water Hauler's water right, groundwater well, or other authorization to take water, and the location of the water source, and</li> <li>4. The quantity of water delivered or picked up from a water source, in gallons.</li> </ol> <p>Documentation shall be made available, upon request, to Water Boards or CDFW staff and any other authorized representatives of the Water Boards or CDFW.</p>
<b>Water Conservation and Use</b>	
96.	Cannabis cultivators shall regularly inspect their entire water delivery system for leaks and immediately repair any leaky faucets, pipes, connectors, or other leaks.
97.	Cannabis cultivators shall use weed-free mulch in cultivation areas that do not have ground cover to conserve soil moisture and minimize evaporative loss.
98.	Cannabis cultivators shall implement water conserving irrigation methods (e.g., drip or trickle irrigation, micro-spray, or hydroponics).
99.	<p>Cannabis cultivators shall maintain daily records of all water used for irrigation of cannabis. Daily records may be calculated by the use of a measuring device or, if known, by calculating the irrigation system rates and duration of time watered (e.g., irrigating for one hour twice per day using 50 half-gallon drips equates to 50 gallons per day (1*2*50*0.5) of water used for irrigation). Cannabis cultivators shall retain, for a minimum of 5 years, irrigation records at the cannabis cultivation site and shall make all irrigation records available for review by the Water Boards, CDFW and any other authorized representatives of the Water Boards or CDFW.</p>
<b>Irrigation Runoff</b>	
100.	Cannabis cultivators shall regularly inspect for leaks in mainlines <sup>19</sup> , laterals <sup>20</sup> , in irrigation connections, sprinkler heads, or at the ends of drip tape and feeder lines and immediately repair any leaks found upon detection.
101.	The irrigation system shall be designed to include redundancy (e.g., safety valves) in the event that leaks occur, so that waste of water and runoff is prevented and minimized.
102.	Cannabis cultivators shall regularly replace worn, outdated, or inefficient irrigation system components and equipment to ensure a properly functioning, leak-free irrigation system at

<sup>18</sup> Water hauler means any person who hauls water in bulk by any means of transportation.

<sup>19</sup> Mainlines are pipes that go from the water source to the control valves.

<sup>20</sup> Laterals are the pipes between the control valve and the sprinkler heads.

	all times.
103.	Cannabis cultivators shall minimize irrigation deep percolation <sup>21</sup> by applying irrigation water at agronomic rates.
<b>Fertilizers, Pesticides, and Petroleum Products</b>	
104.	Cannabis cultivators shall not mix, prepare, over apply, or dispose of agricultural chemicals/products (e.g., fertilizers, pesticides <sup>22</sup> , and other chemicals as defined in the applicable water quality control plan) in any location where they could enter the riparian setback or waters of the state. The use of agricultural chemicals inconsistently with product labeling, storage instructions, or DPR requirements for pesticide applications <sup>23</sup> is prohibited. Disposal of unused product and containers shall be consistent with labels.
105.	Cannabis cultivators shall keep and use absorbent materials designated for spill containment and spill cleanup equipment on-site for use in an accidental spill of fertilizers, petroleum products, hazardous materials, and other substances which may degrade waters of the state. The cannabis cultivator shall immediately notify the California Office of Emergency Services at 1-800-852-7550 and immediately initiate cleanup activities for all spills that could enter a waterbody or degrade groundwater.
106.	Cannabis cultivators shall establish and use a separate storage area for pesticides, and fertilizers, and another storage area for petroleum or other liquid chemicals (including diesel, gasoline, oils, etc.). All such storage areas shall comply with the riparian setback Requirements, be in a secured location in compliance with label instructions, outside of areas of known slope instability, and be protected from accidental ignition, weather, and wildlife. All storage areas shall have appropriate secondary containment structures, as necessary, to protect water quality and prevent spillage, mixing, discharge, or seepage.

<sup>21</sup> Deep percolation occurs when excess irrigation water is applied and percolates below the plant root zone.

<sup>22</sup> Pesticide is defined as follows:

- Per California Code of Regulations Title 3. Division 6. Section 6000:

(a) Any substance or mixture of substances that is a pesticide as defined in the Food and Agricultural Code and includes mixtures and dilutions of pesticides;

(b) As the term is used in Section 12995 of the California Food and Agricultural Code, includes any substance or product that the user intends to be used for the pesticidal poison purposes specified in Sections 12753 and 12758 of the Food and Agricultural Code.

- Per California Food and Agricultural Code section 12753(b), the term "Pesticide" includes any of the following: Any substance, or mixture of substances which is intended to be used for defoliating plants, regulating plant growth, or for preventing, destroying, repelling, or mitigating any pest, as defined in Section 12754.5, which may infest or be detrimental to vegetation, man, animals, or households, or be present in any agricultural or nonagricultural environment whatsoever.

- In laymen's terms: "pesticide" includes: rodenticides, herbicides, insecticides, fungicides, and disinfectants.

<sup>23</sup> More information on DPR requirements is available at:

[http://www.cdpr.ca.gov/docs/legbills/laws\\_regulations.htm](http://www.cdpr.ca.gov/docs/legbills/laws_regulations.htm),

<http://www.cdpr.ca.gov/docs/county/cacitrs/penfltrs/penf2017/2017atch/attach0301.pdf>, and

<http://www.cdpr.ca.gov/docs/cannabis/index.htm>

	Storage tanks and containers must be of suitable material and construction to be compatible with the substances stored and conditions of storage, such as pressure and temperature.
107.	Throughout the wet season, Cannabis Cultivators shall ensure that any temporary storage areas have a permanent cover and side-wind protection or be covered during non-working days and prior to and during rain events.
108.	Cannabis cultivators shall only use hazardous materials <sup>24</sup> in a manner consistent with the product's label.
109.	Cannabis cultivators shall only keep hazardous materials in their original containers with labels intact, and shall store hazardous materials to prevent exposure to sunlight, excessive heat, and precipitation. Cannabis cultivators shall provide secondary containment for hazardous materials to prevent possible exposure to the environment. Disposal of unused hazardous materials and containers shall be consistent with the label.
110.	Cannabis cultivators shall only mix, prepare, apply, or load hazardous materials outside of the riparian setbacks.
111.	Cannabis cultivators shall not apply agricultural chemicals within 48 hours of a predicted rainfall event of 0.25 inches or greater with a probability greater than 50-percent. In the Lake Tahoe Hydrologic Unit, cannabis cultivators shall not apply agricultural chemicals within 48 hours of any weather pattern that is forecast to have a 30 percent or greater chance of precipitation greater than 0.1 inch per 24 hours. This requirement may be updated based on amendments to the Lahontan Regional Water Board construction storm water general order.
<b>Fertilizers and Soils</b>	
112.	To minimize infiltration and water quality degradation, Cannabis cultivators shall irrigate and apply fertilizer to consistent with the crop need (i.e., agronomic rate).
113.	When used, cannabis cultivators shall apply nitrogen to cannabis cultivation areas consistent with crop need (i.e., agronomic rate). Cannabis cultivators shall not apply nitrogen at a rate that may result in a discharge to surface water or groundwater that causes or contributes to exceedance of water quality objectives, and no greater than 319 pounds/acre/year unless plant tissue analysis performed by a qualified individual demonstrates the need for additional nitrogen application. The analysis shall be performed by an agricultural laboratory certified by the State Water Board's Environmental Laboratory Accreditation Program.
114.	Cannabis cultivators shall ensure that potting soil or soil amendments, when not in use, are placed and stored with covers, when needed, to protect from rainfall and erosion, to prevent discharge to waters of the state, and to minimize leaching of waste constituents into

<sup>24</sup> A hazardous material is any item or agent (biological, chemical, radiological, and/or physical), which has the potential to cause harm to humans, animals, or the environment, either by itself or through interaction with other factors.



	groundwater.
<b>Pesticides and Herbicides</b>	
<b>115.</b>	Cannabis cultivators shall not apply restricted materials, including restricted pesticides, or allow restricted materials to be stored at the cannabis cultivation site.
<b>116.</b>	Cannabis cultivators shall implement integrated pest management strategies where possible to reduce the need and use of pesticides and the potential for discharges to waters of the state. <sup>25</sup>
<b>Petroleum Products and Other Chemicals</b>	
<b>117.</b>	Cannabis cultivators shall only refuel vehicles or equipment outside of riparian setbacks. Cannabis cultivators shall inspect all equipment using oil, hydraulic fluid, or petroleum products for leaks prior to use and shall monitor equipment for leakage. Stationary equipment (e.g., motors, pumps, generators, etc.) and vehicles not in use shall be located outside of riparian setbacks. Spill and containment equipment (e.g., oil spill booms, sorbent pads, etc.) shall be stored onsite at all locations where equipment is used or staged.
<b>118.</b>	Cannabis cultivators shall store petroleum, petroleum products, and similar fluids in a manner that provides chemical compatibility, provides secondary containment, and protection from accidental ignition, the sun, wind, and rain.
<b>119.</b>	Use of an underground storage tank(s) for the storage of petroleum products is allowed if compliant with all applicable federal, state, and local laws; regulations; and permitting requirements.
<b>Cultivation-Related Waste</b>	
<b>120.</b>	Cannabis cultivators shall contain and regularly remove all debris and trash associated with cannabis cultivation activities from the cannabis cultivation site. Cannabis cultivators shall only dispose of debris and trash at an authorized landfill or other disposal site in compliance with state and local laws, ordinances, and regulations. Cannabis cultivators shall not allow litter, plastic, or similar debris to enter the riparian setback or waters of the state. Cannabis plant material may be disposed of onsite in compliance with any applicable CDFA license conditions.
<b>121.</b>	Cannabis cultivators shall only dispose or reuse spent growth medium (e.g., soil and other organic media) in a manner that prevents discharge of soil and residual nutrients and chemicals to the riparian setback or waters of the state. Spent growth medium shall be covered with plastic sheeting or stored in water tight dumpsters prior to proper disposal or reuse. Spent growth medium should be disposed of at an authorized landfill or other disposal site in compliance with state and local laws, ordinances, and regulations. Proper reuse of spent growth medium may include incorporation into garden beds or spreading on a stable surface and revegetating the surface with native plants. Cannabis cultivators shall use erosion control techniques, as needed, for any reused or stored spent growth medium

<sup>25</sup> <https://www.epa.gov/safepestcontrol/integrated-pest-management-ipm-principles>

	to prevent polluted runoff.								
<b>Refuse and Domestic Waste</b>									
<b>122.</b>	Cannabis cultivators shall ensure that debris, soil, silt, bark, slash, sawdust, rubbish, creosote-treated wood, raw cement and concrete or washings thereof, asphalt, paint or other coating material, oil or other petroleum products, or any other substances which could be hazardous to any life stage of fish and wildlife or their habitat (includes food sources) does not contaminate soil or enter the riparian setback or waters of the state.								
<b>123.</b>	Cannabis cultivators shall not dispose of domestic wastewater unless it meets applicable local agency and/or Regional Water Board requirements. Cannabis cultivators shall ensure that human or animal waste is disposed of properly. Cannabis cultivators shall ensure onsite wastewater treatment systems (e.g., septic system) are permitted by the local agency or applicable Regional Water Board.								
<b>124.</b>	If used, chemical toilets or holding tanks shall be maintained in a manner appropriate for the frequency and conditions of usage, sited in stable locations, and comply with the riparian setback Requirements.								
<b>Winterization</b>									
<b>125.</b>	Cannabis cultivators shall implement all applicable Erosion Control and Soil Disposal and Spoils Management Requirements in addition to the Winterization Requirements below by the onset of the winter period.								
<b>126.</b>	Cannabis cultivators shall block or otherwise close any temporary access roads to all motorized vehicles no later than the onset of the winter period each year.								
<b>127.</b>	Cannabis cultivators shall not operate heavy equipment of any kind at the cannabis cultivation site during the winter period, unless authorized for emergency repairs contained in an enforcement order issued by the State Water Board, Regional Water Board, or other agency having jurisdiction.								
<b>128.</b>	<p>Cannabis cultivators shall apply linear sediment controls (e.g., silt fences, wattles, etc.) along the toe of the slope, face of the slope, and at the grade breaks of exposed slopes to comply with sheet flow length<sup>26</sup> at the frequency specified below.</p> <table border="1"> <thead> <tr> <th>Slope (percent)</th><th>Sheet Flow Length Not to Exceed (feet)</th></tr> </thead> <tbody> <tr> <td>0 – 25</td><td>20</td></tr> <tr> <td>25 – 50</td><td>15</td></tr> <tr> <td>&gt;50</td><td>10</td></tr> </tbody> </table>	Slope (percent)	Sheet Flow Length Not to Exceed (feet)	0 – 25	20	25 – 50	15	>50	10
Slope (percent)	Sheet Flow Length Not to Exceed (feet)								
0 – 25	20								
25 – 50	15								
>50	10								

<sup>26</sup> Sheet flow length is the length that shallow, low velocity flow travels across a site.

<b>129.</b>	Cannabis cultivators shall maintain all culverts, drop inlets, trash racks and similar devices to ensure they are not blocked by debris or sediment. The outflow of culverts shall be inspected to ensure erosion is not undermining the culvert. Culverts shall be inspected prior to the onset of fall and winter precipitation and following precipitation events that produce at least 0.5 in/day or 1.0 inch/7 days of precipitation to determine if maintenance or cleaning is required.
<b>130.</b>	Cannabis cultivators shall stabilize all disturbed areas and construction entrances and exits to control erosion and sediment discharges from land disturbance.
<b>131.</b>	Cannabis cultivators shall cover and berm all loose stockpiled construction materials (e.g., soil, spoils, aggregate, etc.) that are not actively (scheduled for use within 48 hours) being used as needed to prevent erosion by storm water. The cannabis cultivator shall have adequate cover and berm materials available onsite if the weather forecast indicates a probability of precipitation.
<b>132.</b>	Cannabis cultivators shall apply erosion repair and control measures to the bare ground (e.g., cultivation area, access paths, etc.) to prevent discharge of sediment to waters of the state.
<b>133.</b>	As part of the winterization plan approval process, the Regional Water Board may require cannabis cultivators to implement additional site-specific erosion and sediment control requirements if the implementation of the Requirements in this section do not adequately protect water quality.