



MOTHER EARTH ENGINEERING

425 I STREET – ARCATA, CA 95521 – 707.633.8321 – motherearthengineering.com

May 15, 2020

County of Humboldt
Planning and Building Department
Cannabis Services Division
3015 H Street
Eureka, California 95501

RE: Permit Application No. 11608, APN 211-331-027, Case No. SP16-266
Response to Notice of Deficiency dated 06/02/2018
Applicant: Alex Lindsay

Dear Cannabis Planning Staff –

Each numbered deficiency from Isaac Hansen's letter dated 06/02/2019 is listed below in bold with comments on how the item has been addressed. The requested materials are included as a package with this letter.

1. Clarification on the amount and type of cultivation being applied for – inconsistencies in the documents noted below require revision:

- o The county performed a cultivation area verification (CAV) on the parcel to find evidence of historic grow sites in existence prior to January 1, 2016. The CAV found 4,300 square feet of outdoor, and 3,150 square feet of mixed light cultivation (7,450 square feet total). Evidence of prior cultivation has previously been submitted, but is inconclusive as it includes areas of open space (as opposed to canopy area). In order to support the full application, additional evidence must be submitted. Alternatively, the project and associated materials (site plan, ops plan, etc.) may be amended to reflect what the county was able to verify;**
- o The original application describes 2,200 square feet of mixed light and 6,700 square feet of outdoor;**
- o The operations plan describes 9,380 square feet of mixed light;**
- o The site plan describes 1,600 square feet of mixed light and 7,300 square feet of outdoor.**

The correct cultivation square footage totals are: Mixed Light: 2,200 square feet, Outdoor: 5,234 square feet, for a total of 7,434 square feet. These changes are reflected in the updated site plan and the Cultivation and Operations Plan Addendum. Both documents are attached.

2. According to the site plan and operations plan, the irrigation water source for this project is a spring located on the adjacent parcel to the West (APN 211-331-028). Our records indicate that this parcel is owned by Humboldt County. Please provide information on any permissions from the county for access, conveyance, and usage of water from this parcel. If such permissions are not in place, an alternative water source would be required.

The surface water diversion on APN 211-331-028 has been decommissioned and water lines to the point of diversion have been removed. The irrigation sources for the project are a permitted groundwater well and rainwater catchment from the gutters attached to the residence. The Well Completion Report has been included with this submission.

3. An updated operations plan that includes:

- o Projected water usage on a monthly basis; and on an annual basis**
- o If mixed light cultivation is proposed, identify the number of cultivation cycles**
- o Electricity source**

Please see the attached Cultivation and Operations Plans Addendum.

4. A check or money order in the amount of \$30 payable to the Bear River Tribal Historic Preservation Officer (THPO).

A THPO check will be submitted via mail when this response is submitted electronically.

5. A copy of a Water Resources Protection Plan (WRPP) prepared for the project, or a letter from a qualified professional indicating that one is being prepared.

The completed Site Management Plan, equivalent of the WRPP, is submitted with this response.

6. A completed Road Evaluation Report

The subject property is located at 2153 Elk Creek Road in Myers Flat. The property is accessed directly from the County maintained Elk Creek Road, therefore not falling within the criteria of requiring a Road Evaluation Report.

List of Attachments

Attachment A: Cultivation and Operations Plan
Addendum

Attachment B: Updated Plot Plan

Attachment C: Well Completion Report

Attachment D: Site Management Plan

Attachment A



Cultivation & Operations
Plan Addendum



Cultivation and Operations Plan Addendum

Applicant: Alex Lindsay

Permit Application: 11608

APN: 211-331-027

Cultivation Square Footage

The correct cultivation square footage totals are: Mixed Light: 2,200 square feet, Outdoor: 5,234 square feet. These changes are reflected in the updated site plan.

Water Source

The surface water diversion on APN 211-331-028 has been decommissioned and water lines to the point of diversion have been removed. The irrigation sources for the project are a permitted groundwater well and rainwater catchment from the gutters attached to the residence. The Well Completion Report has been included with this submission.

Water Usage

The following is a table of the water use for the cannabis irrigation. These are based on previous monthly usage. The source is groundwater well amended with rainwater catchment.

Table 1: Updated monthly water usage for cannabis irrigation.

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Gallons	1500	1500	4500	4500	6500	16500	18500	23500	24500	24500	1500	1500

This results in an annual use of 129,000 gallons of irrigation water.

Mixed Light Cultivation

The cultivation areas used for mixed light operations run two cycles annually.

Electricity Source

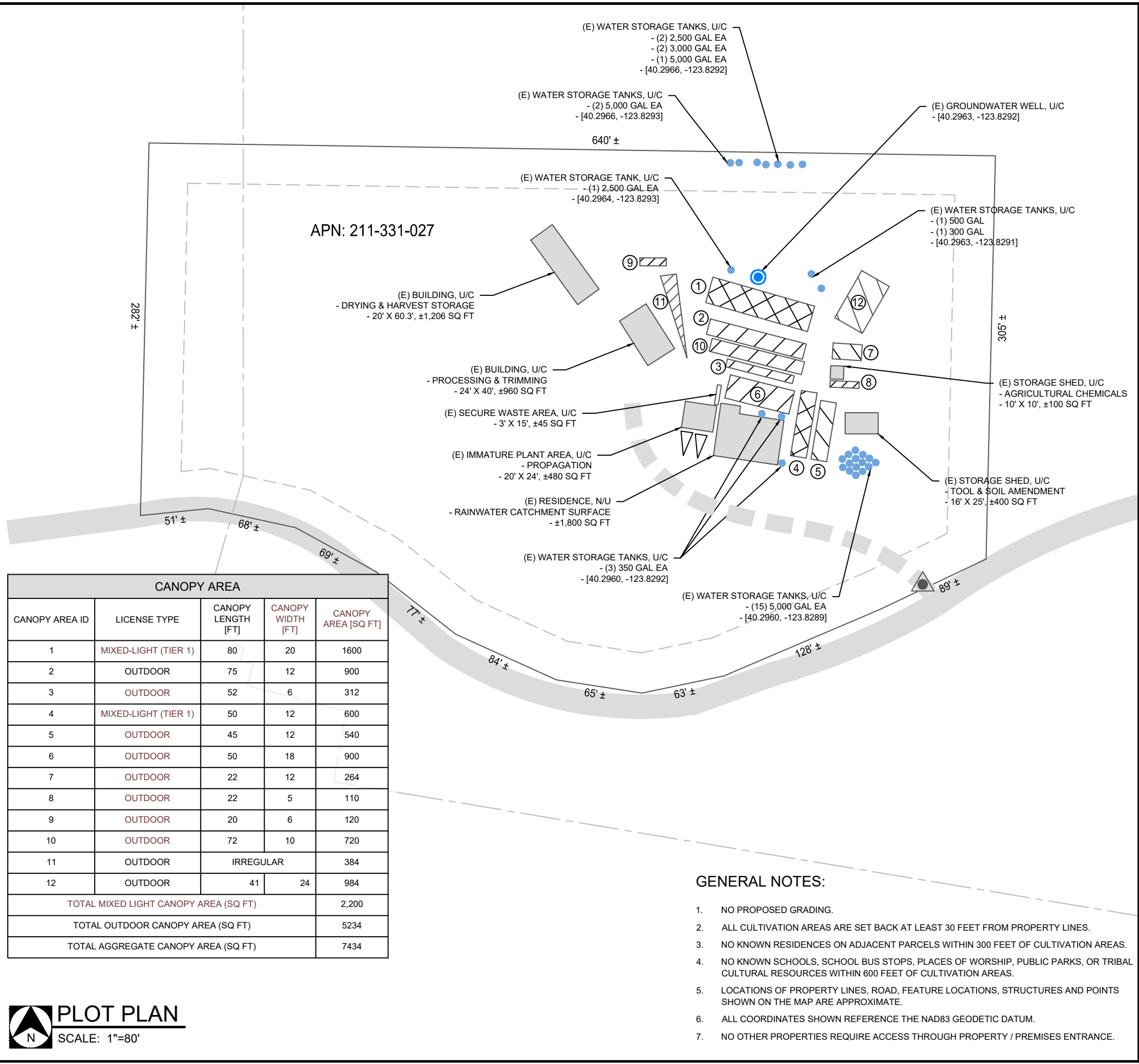
Electricity is provided by a residential PG&E service drop.

Attachment B



Updated Plot Plan

CalMty Drive\MotherEarth\Engineering\ Project Files\2016016030_Lindsay\CAD\2020_04_13_Base Map_Lindsay_16030.dwg
5-7-2020



PLOT PLAN
SCALE: 1"=80'



MOTHER EARTH ENGINEERING
425 I STREET
ARCATA, CA 95521, 707-633-8321

MEE JOB NO: 16030

REVISION SCHEDULE			
#	DATE	BY	DESCRIPTION
0	04/13/20	JI	DRAFTED
1			
2			
3			
4			
5			

PLOT PLAN
APN: 211-331-027
SITE ADDRESS: 2153 ELK CREEK ROAD, MYERS FLAT CA, 95554

COUNTY CANNABIS APPLICATION
APPLICANT: ALEX LINDSAY
MAILING ADDRESS: 2153 ELK CREEK ROAD, MYERS FLAT CA, 95554

SHEET NO: 1

Attachment C



Well Completion Report

State of California
Well Completion Report
Form DWR 188 Submitted 8/5/2019
WCR2019-010865

Owner's Well Number _____ Date Work Began 08/01/2019 Date Work Ended 08/05/2019
Local Permit Agency Humboldt County Department of Health & Human Services - Land Use Program
Secondary Permit Agency _____ Permit Number 18/19-1100 Permit Date 05/30/2019

Well Owner (must remain confidential pursuant to Water Code 13752)		Planned Use and Activity
Name _____		Activity <u>New Well</u>
Mailing Address _____		Planned Use <u>Water Supply Irrigation - Agriculture</u>
City _____	State _____ Zip _____	

Well Location			
Address _____		APN <u>211-331-027</u>	
City <u>Myers Flat</u>	Zip <u>95554</u> County <u>Humboldt</u>	Township <u>02 S</u>	
Latitude <u>40</u> <u>17</u> <u>47.2379</u> N	Longitude <u>-123</u> <u>49</u> <u>45.4871</u> W	Range <u>03 E</u>	
Deg. Min. Sec.	Deg. Min. Sec.	Section <u>15</u>	
Dec. Lat. <u>40.296455</u>	Dec. Long. <u>-123.829302</u>	Baseline Meridian <u>Humboldt</u>	
Vertical Datum _____	Horizontal Datum <u>WGS84</u>	Ground Surface Elevation _____	
Location Accuracy _____	Location Determination Method _____	Elevation Accuracy _____	
		Elevation Determination Method _____	

Borehole Information	Water Level and Yield of Completed Well
Orientation <u>Vertical</u> Specify _____	Depth to first water <u>61</u> (Feet below surface)
Drilling Method <u>Other - Underream Down Hole Hammer</u> Drilling Fluid <u>Air</u>	Depth to Static _____
	Water Level <u>63</u> (Feet) Date Measured <u>08/05/2019</u>
Total Depth of Boring <u>160</u> Feet	Estimated Yield* <u>40</u> (GPM) Test Type <u>Air Lift</u>
Total Depth of Completed Well <u>160</u> Feet	Test Length <u>4</u> (Hours) Total Drawdown <u>97</u> (feet)
	*May not be representative of a well's long term yield.

Geologic Log - Free Form		
Depth from Surface Feet to Feet		Description
0	2	top soil with road base
2	22	brown silty clay and sandstone
22	26	shale
26	61	brown fractured sandstone
61	106	blue fractured sandstone
106	160	shale melange

ENTERED
8-12-19

RECEIVED

AUG - 6 2019

HUMBOLDT CO. DIVISION
OF ENVIRONMENTAL HEALTH

Attachment D



Site Management Plan

Site Management Plan

Implementation of Best Practical Treatment or Control Measures

In Fulfillment of Water Quality Order 2019-0001-DWQ

State Water Resources Control Board

APN 211-331-027

April 2020

Prepared for:

Alex Lindsay
Finnzland Farms, LLC
WDID: 1_12CC405897
(707) 672-6601

Prepared by:

Phil Zerkel, EIT
Staff Engineer
MEE Project 16030
phil@motherearthengineering.com
(707) 633-8321



425 I Street Arcata, California 95521
707-633-8321 | motherearthengineering.com

As a condition of approval for enrollment into the Water Quality Order 2017-0023-DWQ for the cultivation, processing, manufacture, or distribution of cannabis, the owner or permittee shall indemnify and hold harmless Mother Earth Engineering, Inc. and its agents and employees for any claims, damages, or injuries brought by affected property owners or other third parties due to the commercial cultivation, processing, manufacture, or distribution of cannabis for medicinal and recreational use and for any claims brought by any person for problems, injuries, damages, or liabilities of any kind that may arise out of the commercial cultivation, processing, manufacture, or distribution of cannabis for medicinal and recreational use. As the preparer, Mother Earth Engineering, Inc. is not responsible for any water quality violations.

I/we agree to be responsible to the stated terms and conditions of the Order, and release Mother Earth Engineering, Inc., its employees, contractors, and consultants from any defense costs, including attorneys' fees or other loss connected with any legal challenge which may arise from implementation of said Order.

Landowner Printed Name: Alex Lindsay

Signature: _____ Date: _____

Discharger Printed Name: Alex Lindsay

Signature: _____ Date: _____

Prepared by: Mother Earth Engineering, Inc.
425 I Street
Arcata, CA 95521
(707) 633-8321

Site Management Plan prepared on: April 2020

Signature: _____ Date: _____

GENERAL INFORMATION

Discharger: Alex Lindsay – Finnzland Farms, LLC

P.O. Box 1050

Redway, CA 95560

Site Address: 2153 Elk Creek Road

Myers Flat, CA, 95554

Humboldt County

Parcel: APN: 211-331-027

Zoning: (U) – Unclassified

Parel Size: 5.10 Acres

Cannabis Cultivation Area: 0.17 Acres

Disturbed Area: 0.28 Acres

HUC-12: 180101060407 - Canoe Creek – South Fork Eel River

SWB WDID: 1_12CC405897

Facility Status: Tier 1 – Moderate Risk

TABLE OF CONTENTS

1	Introduction & purpose	3
1.1	Site Location.....	3
1.2	Site Description	3
1.3	Field And Assessment Methods.....	3
2	Sediment discharge bptc measures	4
2.1	Site Characteristics.....	4
2.2	Road Conditions.....	4
2.3	Disturbed Area Table	4
2.4	Watercourses and Stream Crossings	4
2.5	Legacy Waste Discharge Issues.....	5
2.6	Erosion Prevention BPTC Measures.....	5
2.7	Sediment Control BPTC Measures	5
2.8	Maintenance Activities	5
3	Agricultural Chemical BPTC Measures.....	5
3.1	Inventory of Agricultural Chemicals.....	5
3.2	Agricultural Chemical Storage, Application & Disposal	7
3.3	Spill Prevention & Cleanup	7
4	Petroleum Product BPTC MEASURES.....	8
4.1	Inventory of Petroleum Products.....	8
4.2	Petroleum Product Storage, Use & Disposal	8
5	Trash/Refuse and Domestic Wastewater BPTC Measures	8
5.1	Inventory of Refuse Sources On Site.....	8
5.2	Inventory of Wastewater Sources On Site.....	9
6	Winterization BPTC Measures	9
7	Corrective actions table	9

1 INTRODUCTION & PURPOSE

This Site Management Plan (Plan) was developed to report how the discharger is complying with the Best Practicable Treatment or Controls (BPTC's) listed in Attachment A, Section 2 of the State Water Resources Control Board (SWB) Order 2019-0001-DWQ (Order). The purpose of this Order is to provide a regulatory structure to minimize adverse impacts to water quality due to cannabis cultivation. Cannabis cultivators that are enrolled under this Order and compliant with its regulations will receive a conditional waiver for the discharges associated with cannabis cultivation. Using data from on-site assessments and office analysis; this Plan provides an inventory of all cannabis cultivation activities, land and resource management, and land stewardship practices to ensure the discharger is in compliance with the Order.

1.1 SITE LOCATION

The site is located in the Lower South Fork Eel River watershed in southern Humboldt County. The property is located at 2153 Elk Creek Road in Myers Flat area. Heading south from Eureka on US-101 S, take exit 656 for CA-254 S toward Myers Flat. Turn left onto Elk Creek Road for 2.2 miles. Property on the left at 2153 Elk Creek Road, Myers Flat, CA, 95554. The site is located in Section 15, Township 2 South, Range 3 East. The property is located on the Myers Flat USGS 7.5-minute quadrangle map. The parcel centroid is located at latitude 40.2961 and longitude -123.8298.

1.2 SITE DESCRIPTION

The property is located on a south-facing land and ranges from 910 to 1,030 ft above mean sea level, surrounded by mixed montane hardwood conifer forest and other species. The land is characterized as having medium sloped grades up to 30% slopes that generally drains south towards of the property into Elk Creek, a tributary to the South Fork Eel River. The climate can be generalized by a pattern of high-intensity rainfall in the late fall until the early spring and hot, dry summers. Mean annual precipitation is 68.27 inches (Caltrans). Soils within the property are primarily composed of the Sproulish-Canoe Creek-Redwohly complex, 30 to 50 percent slopes. These soils very deep, well-drained soils formed in colluvium, and residuum derived from sandstone, mudstone and metasedimentary rocks. They are typically found on mountain backslopes and are not considered hydric.

The South Fork Eel River is approximately 1.7 miles southwest from the property. The site is located in the South Fork Eel River watershed and the Canoe Creek subwatershed. The subwatershed is the habitat of California coast fall chinook salmon (*Oncorhynchus tshawtscha*), coastal rainbow trout (*Oncorhynchus mykiss irideus*), Northern California coast summer and winter steelhead (*Oncorhynchus mykiss*), which are all special-status fish species.

According to CDFW's California Natural Diversity Database (CNDDB), the following special-status species have been historically observed within one (1) mile of the property: white-flowered orchid (*Piperia candida*), seacoast ragwort (*Packera bolanderi* var. *bolanderi*), western pond turtle (*Emys marmorata*) and the Northern spotted owl (*Strix occidentalis caurina*).

1.3 FIELD AND ASSESSMENT METHODS

Office analysis and field inventory were used to determine the status of the property for enrollment in the Order. Pre-field inspection using aerial footage of the property was used to identify existing infrastructure, cultivation areas, watercourses, and the general layout of the property. The field inventory was conducted by Mother Earth Engineering staff on 10/10/2019. The inventory included GPS mapping of structures, water tanks, ponds, roads, cultivation sites, and other infrastructure.

2 SEDIMENT DISCHARGE BPTC MEASURES

2.1 SITE CHARACTERISTICS

Included with this report is an up to date map showing access roads, vehicle parking areas, streams, stream crossings, cultivation site(s), disturbed areas, buildings, and other relevant site features. See Attachment A.

2.2 ROAD CONDITIONS

The private access road is a private driveway approximately 320 feet long and is accessed from Elk Creek Road. An inventory of the private access road and the public roads to the property are given below in Table 1.

Table 1: Inventory of access roads on site.

Roadway	Distance (mi.)	Type / Description	Condition
Driveway	0.06	Paved private driveway used year round	Good

↑ Reference photos are located in Attachment B.

The main access road is used by residents and employees. On average, the main access road is used 10 times a week during the growing season and 7 times a week during the winter season. There is a residence located on-site so the property has active traffic year-round. Stormwater that runs off the driveway is collected by an inboard ditch on Elk Creek Road. No stream crossings exist on site.

2.3 DISTURBED AREA TABLE

There are 9 distinct cultivation areas located on site. The cultivation areas are inventoried in Table 2.

Table 2: Inventory of cultivation areas and associated characteristics.

Map ID	Cultivation Area (ft ²)	Area Description	Cultivation Area Slope (%)	Distance to Water Body (ft)	Water Body Classification
CA-1 through CA-9	12,196	Outdoor and Mixed-light and area immediately surrounding cultivation area.	5-45%	>150'	Class II

2.4 WATERCOURSES AND STREAM CROSSINGS

There are no watercourses or stream crossings through the site.

2.5 LEGACY WASTE DISCHARGE ISSUES

Due to in the site's location within Regional Water Quality Control Board Region 1, legacy waste discharge issues must be identified and discussed in the Site Management Plan. There no known legacy waste discharge issues on site. Site visits carried out by Mother Earth Engineering have investigated the access, residence, cannabis cultivation, and surrounding support facilities. The rest of the parcel has not been thoroughly investigated but observation appear undeveloped.

2.6 EROSION PREVENTION BPTC MEASURES

Areas of exposed earth within hoop houses have been mulched, though some areas remain barren. The discharger shall complete erosion prevention measures by broadcasting native grass seed mix and straw mulch on all areas of exposed earth.

2.7 SEDIMENT CONTROL BPTC MEASURES

There are no sediment control measures in place on the parcel. Discharger shall install straw waddles at the downslope portion of the cultivation area perimeter.

2.8 MAINTENANCE ACTIVITIES

The discharger will maintain a Road and Drainage Feature Maintenance Log and Sediment and Erosion Controls. Storms that produce 0.5 inches of precipitation within 24 hours or over 1 inch over the course of 7 days shall trigger an inspection of all roads, ditches, culverts and their outfalls, and any other drainage features. This same inspection shall occur prior to the onset of the wet season (e.g. September before regular rain events begin). Dischargers shall inspect the condition of the roads and drainage features. Any woody debris that is found at drainage inlets should be removed to prevent any blockages. Any sediment buildup that impacts access road or drainage feature performance shall be removed and stabilized outside of the riparian setbacks. Stabilization of sediment will be achieved by one of the following methods:

- Reused in contained vegetable or ornamental gardening beds that are located outside of the riparian setbacks.
- In contained stockpiles that are covered when not in use. These stockpiles can then be used when amending/reusing cultivation medium.
- Transported contained and covered to the closest transfer station to be green wasted.

3 AGRICULTURAL CHEMICAL BPTC MEASURES

3.1 INVENTORY OF AGRICULTURAL CHEMICALS

Table 3 lists all off the agricultural chemicals in use on site. All agricultural chemicals are used and stored in a manner that prevents those chemicals from entering the riparian setbacks or waters of the State. All chemical usage is in accordance with the label instructions. Agricultural chemicals are applied at agronomic rates. No restricted pesticides are allowed on the site.

Table 3: Inventory of all agricultural chemicals in use on site.

Agricultural Chemical Name	Agricultural Chemical Type	Method of Storage	Storage Location	Description of Use
All Purpose Fertilizer	Fertilizer	Purchased and used at start of season, not stored during the cultivation season	N/A	Mixed in soil at start of season
Earth Worm Castings	Amendmet	Purchased and used at start of season, not stored during the cultivation season	N/A	Mixed in soil at start of season
nitro bat guano	Fertilizer	Purchased and used at start of season, not stored during the cultivation season	N/A	Mixed in soil at start of season
mocha bat guano	Fertilizer	Purchased and used at start of season, not stored during the cultivation season	N/A	Mixed in soil at start of season
oyster shell	Amendment	Purchased and used at start of season, not stored during the cultivation season	N/A	Mixed in soil at start of season
azomite	Pesticide	Manufactures packaging within secured storage	Agricultural Chemical Storage Shed	Natural pesticide, used as needed
diatomaceous earth	Pesticide	Manufactures packaging within secured storage	Agricultural Chemical Storage Shed	Natural pesticide, used as needed
high phos bat guano	Fertilizer	Manufactures packaging within secured storage	Agricultural Chemical Storage Shed	Mixed in soil at start of season
max sea	Fertilizer	Manufactures packaging within secured storage	Agricultural Chemical Storage Shed	Fertilizer added during vegetation
silica	Amendment	Manufactures packaging within secured storage	Agricultural Chemical Storage Shed	Mixed in soil at start of season

cal-mag	Amendment	Manufactures packaging within secured storage	Agricultural Chemical Storage Shed	Amendment added during vegetation
liquid fertilizer	Fertilizer	Manufactures packaging within secured storage	Agricultural Chemical Storage Shed	Fertilizer added during vegetation
age old grow	Fertilizer	Manufactures packaging within secured storage	Agricultural Chemical Storage Shed	Fertilizer added during vegetation
age old bloom	Fertilizer	Manufactures packaging within secured storage	Agricultural Chemical Storage Shed	Fertilizer added during flowering
liquid bone meal	Amendment	Manufactures packaging within secured storage	Agricultural Chemical Storage Shed	Amendment added during vegetation
molasses	Amendment	Manufactures packaging within secured storage	Agricultural Chemical Storage Shed	Amendment added during vegetation
sea pal fish emulsion	Fertilizer	Manufactures packaging within secured storage	Agricultural Chemical Storage Shed	Fertilizer added during vegetation

3.2 AGRICULTURAL CHEMICAL STORAGE, APPLICATION & DISPOSAL

Empty agricultural chemical containers are disposed of per their label instruction. If the discharger is unsure of proper disposal method, they will contact their local Waste Management or Transfer Center Facility for instruction. Until proper disposal, empty containers will be kept in heavy-duty plastic totes or heavy-duty contractor bags stored in weatherproof shelter.

3.3 SPILL PREVENTION & CLEANUP

Spill kit is kept on site in the Agricultural Chemical Storage Shed.

4 PETROLEUM PRODUCT BPTC MEASURES

4.1 INVENTORY OF PETROLEUM PRODUCTS

Table 4 lists all off the petroleum products in use on site. All petroleum products are used and stored in a manner that prevents those chemicals from entering the riparian setbacks or waters of the State. All petroleum product usage is in accordance with the label instructions.

Table 4: Inventory of all petroleum products used on site.

Petroleum Product	Associated Equipment	Method of Storage	Storage Location	Description of Use
Gasoline	Pump	In manufacturers container with secondary containment	Tool Shed	Used to pump water from storage to staging tanks

4.2 PETROLEUM PRODUCT STORAGE, USE & DISPOSAL

Empty petroleum product containers are stored, used and disposed of per label instruction. If the discharger is unsure of proper disposal method, they will contact their local Waste Management or Transfer Center Facility for instruction. Until proper disposal, empty containers will be kept in heavy duty plastic totes or contractor bags stored in weatherproof shelter.

5 TRASH/REFUSE AND DOMESTIC WASTEWATER BPTC MEASURES

Trash and refuse is generated from cannabis cultivation and domestic-related activities. There is one residence located on site.

5.1 INVENTORY OF REFUSE SOURCES ON SITE

Table 5 Inventory of Refuse Sources on site.

Refuse Source	Type	Storage Location	Disposal Process
Residential	Domestic Waste	Residential pickup cart	Weekly residential pickup
Agricultural	Packaging, miscellaneous	In secured containers,	Disposed of at transfer station as needed

		bagged and covered	
--	--	--------------------	--

5.2 INVENTORY OF WASTEWATER SOURCES ON SITE

Table 6 Inventory of Wastewater Sources on site

Wastewater Source	Treatment Type	Treatment System Location	Additional Notes
Residential	Septic	Adjacent to residence	

6 WINTERIZATION BPTC MEASURES

All applicable erosion control and sediment prevention measures shall be implemented prior to the beginning of the winter period, November 15. The winter period lasts from November 15 to April 1. All soil stockpiles and spoils must either be properly disposed of or fully contained and weatherproofed during this period. Any seasonal roads shall be blocked off during this period. No heavy equipment will be used during the winter period. Hydroseed any exposed earth areas with native plant seed to revegetate and stabilize those areas.

7 CORRECTIVE ACTIONS TABLE

Table 7 summarizes Corrective Actions and BPTC measures that are either underway or yet to be implemented. These measures must be completed prior to the start of the winter period, November 15.

Table 7 Summarized site-specific BPTC measures

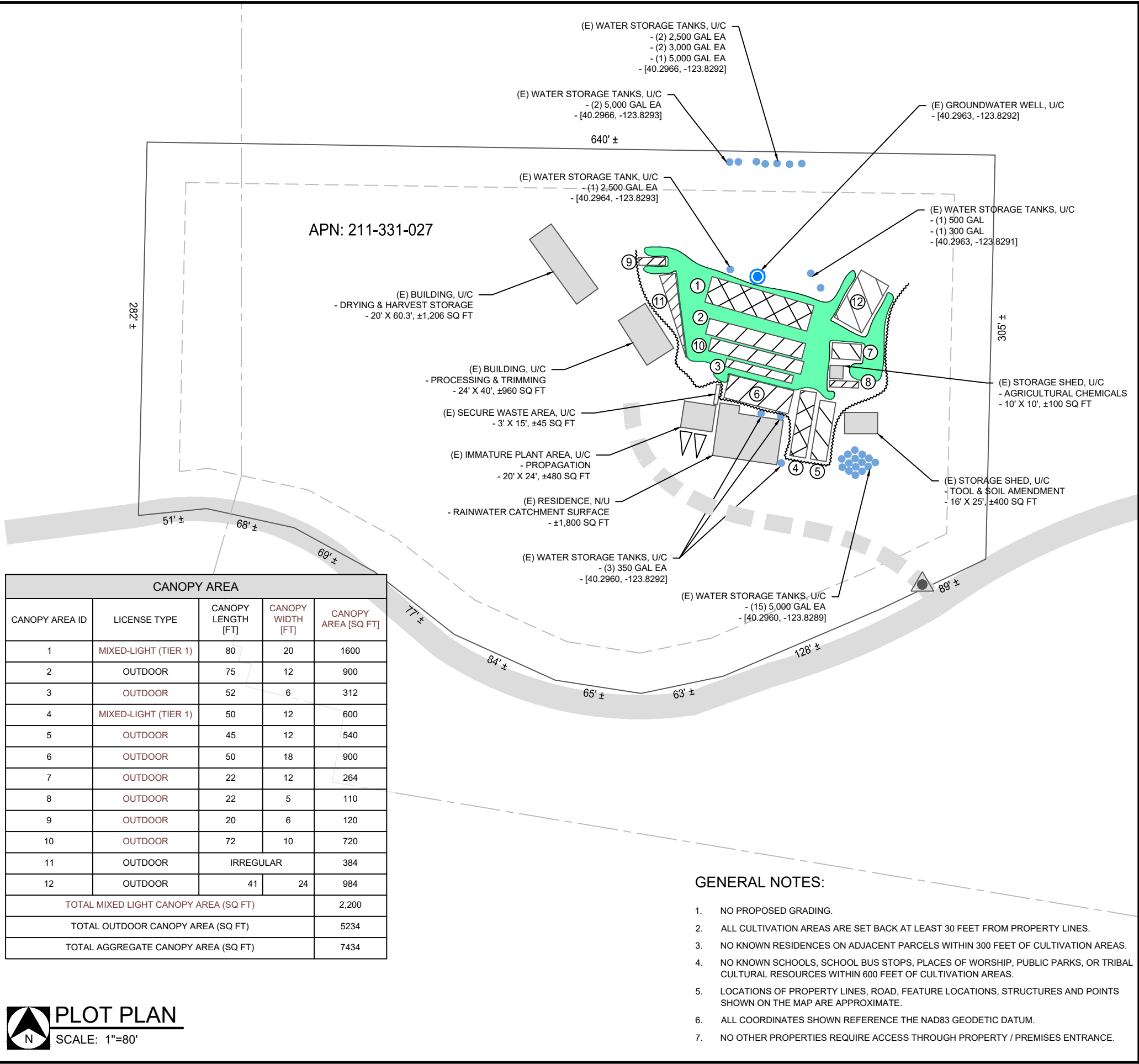
BPTC Measure	Location	Requirements to Meet Measure
10	Throughout the property	Downslope perimeter of exposed earth areas shall be lined with straw wattles for sediment control.
132	Throughout the property	All exposed ground shall have erosion control measures installed. Discharger shall broadcast native seed on all exposed earth areas and cover with straw mulch.

Attachment A

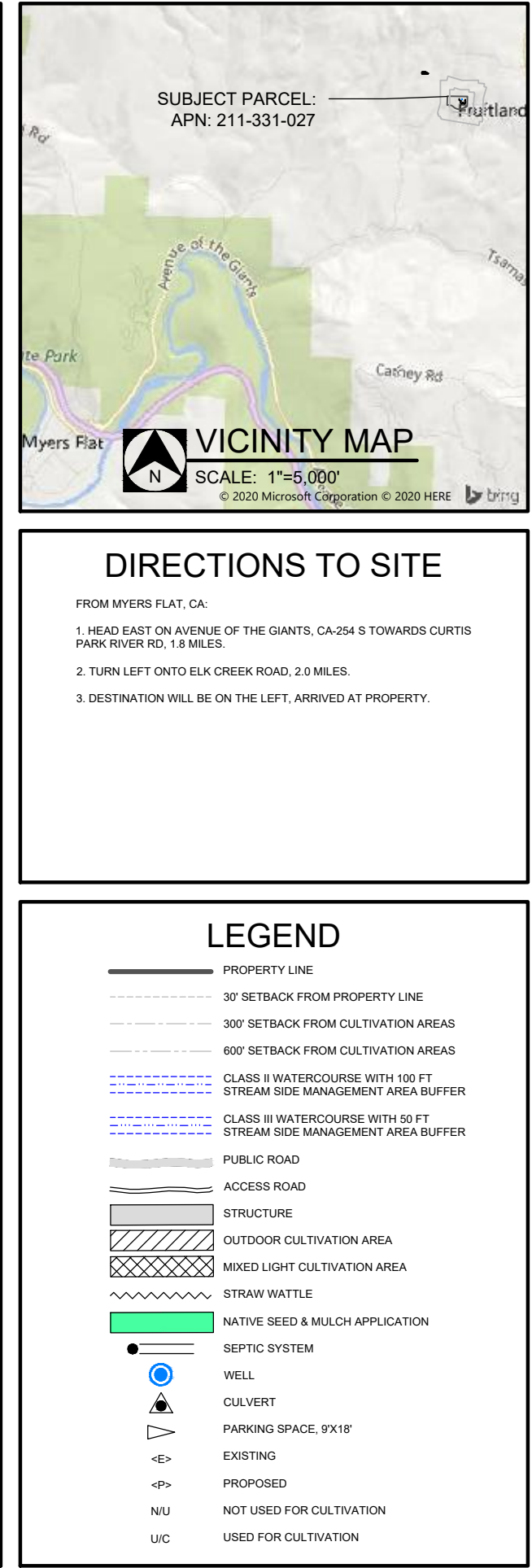


Site Map

CalMty Drive\MotherEarth\Engineering\ Project Files\2016016030-Lindsay\CAD\2020_04_13-Base Map-Lindsay-46030.dwg
5-7-2020



PLOT PLAN
SCALE: 1"=80'



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MEE JOB NO: 16030

REVISION SCHEDULE			
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PLOT PLAN
APN: 211-331-027
SITE ADDRESS: 2153 ELK CREEK ROAD, MYERS FLAT CA, 95554

SITE MANAGEMENT PLAN
APPLICANT: ALEX LINDSAY
MAILING ADDRESS: 2153 ELK CREEK ROAD, MYERS FLAT CA, 95554

SHEET NO:
1

Mother Earth Engineering Inc. 2020

Attachment B



Photos

Picture No. 1			
October 10, 2019			
Description: Water tank array			

Picture No. 2			
October 10, 2019			
Description: Water tank array			



Picture No. 3		
October 10, 2019		
Description: Water tank array		

Picture No. 4		
October 10, 2019		
Description: Catch tank for rainwater catchment system		



Picture No. 5		
October 10, 2019		
Description: Groundwater well		

Picture No. 6		
October 10, 2019		
Description: Paved entrance to property		



Attachment C



Selected BPTC Measures
Data Logs & Measure
Checklists

Selected Best Practicable Treatments & Control (BPTC) Measures, Data Logs and Measure Checklists

- A) Year Round BPTCs
- B) Conditional BPTCs
- C) BPTC Schedule & Conditional BPTCs
- D) Daily Water Usage Log
- C) Land Disturbance Weather Log
- D) Road and Drainage Feature Maintenance
Log
- E) Winterization Checklist
- F) Erosion Control Checklist
- G) Soil Disposal and Management Checklist
- H) Erosion and Sediment Control BMPs

Year-Round BPTCs

In order to maintain compliance with the State Water Board General Order the following conditions shall be met all throughout the year.

Cannabis cultivators shall comply with the minimum riparian setback below for all land disturbance, cannabis cultivation, facilities (material/vehicle/equipment storage, pump locations, portable toilet, water storage), and equipment maintenance/usage:

Class I watercourses - Stream that flows 9 months or more of the year, fish present or includes a habitat to sustain fish migration and spawning, lakes, ponds and springs. **Maintain a 150 feet setback.**

Class II watercourses - Intermittent watercourse that runs 3 to 9 months a year, provides habitat to non-fish aquatic species. **Maintain a 100-foot setback.**

Class III watercourses - Ephemeral watercourse that runs 3 months or less a year, does not provide habitat for riparian vegetation or aquatic species. **Maintain a 50-foot setback.**

Maintain a complete spill kit on site. Use spill kit and properly dispose of any spilled agricultural chemicals, petroleum products, or any other hazardous chemicals. Properly dispose all wastes off-site. **All Agricultural products and fuel products require separate storage areas with secondary containment.** Hazardous materials shall only be used by their label usage. No unpermitted pesticides or chemicals are allowed on site. No agricultural products shall be used in the 48 hours before a forecast of 0.25 inches or more with a 50% or greater chance.

Temporary sediment controls (seeding and strawing, straw wattles, hay bales, silt fences, etc.) shall be **installed within 7 days of any land disturbance activities.** Only native seed and plants shall be used for revegetating disturbed areas.

Road approaches to water crossings should be rocked if not paved. The steeper the road the higher quality of surfacing. Winter roads shall be surfaced. Asphalt grindings not allowed for surfacing.

All applicable permits shall be obtained before working around surface water or wetlands. Habitat in and immediately around streams cannot be disturbed without the correct permits. These may include CWA 401/404 permits, Regional Water Board WDRs, and CDFW 1600.

Soil, construction, and waste materials should be stored in an area that is stable, contained, and outside of the riparian setbacks.

Cultivator shall inspect their water distribution system regularly and immediately repair any leaks.

No domestic wastewater shall be disposed without meeting applicable local and regional regulations. Septic systems must be permitted. Porta-Potties should be sited on stable flat ground and maintained regularly.

Surface water diversions for cannabis cultivation shall be recorded daily. Additionally, the water usage for cannabis cultivation shall be recorded daily. Surface water shall not be diverted from April 1st to October 31st. Surface water diversions must allow 50% of the streamflow to bypass the point of diversion. Surface water diversions are not permitted unless the flow of the watercourse diverted from meets the designated Numeric Flow Requirement. Groundwater may be subject to forbearance, if State Water Board decides so.

For each water delivery make sure to obtain a receipt and information needed to fill out the Water Delivery Log.

Before any land disturbance activity is initiated the conditions on the Land Disturbance Weather Log must be met and it must be filled out through the duration of activities.

Prior to the rainy season and whenever there are large storm events the Road and Drainage Maintenance log shall be filled in. Prior to November 15th the Winterization Checklist shall be completed.

BPTCs Schedule												
Monitoring Element	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Water Usage Log	X	X	X	X	X	X	X	X	X	X	X	X
Road and Drainage Maintenance Log	X	X	X	X					X	X	X	X
Winterization Checklist										X	X	
Surface Water Diversion Forbearance				X	X	X	X	X	X	X		

Conditional BPTCs	
If	Then
You plan to do any land disturbance work (grading, clearing, terracing, roadbuilding, culvert installation, etc.)	Make sure you are in possession of all necessary permits (CDFW LSAA, County Grading Permit, etc.). Maintain the Land Disturbance Weather Log, Erosion Control Checklist, and Soil Disposal and Management Checklist. Install erosion and sediment controls within 7 days of the completion of the project. If the project is an emergency project in the winter period (Nov 15 th to April 1 st) the Regional Water Board and CDFW must be notified .
A storm produces 0.5 inches of rain within 24 hours or a storm produces 1 inch of rain over 7 days	Fill out the Road Drainage Feature Maintenance Log.
A 48 hours prior rainfall forecast predicts 0.25 inches of rain with 50% chance or greater	No agricultural chemicals/products can be applied.
Your diversion is a surface water diversion	Maintain Water Diversion Log as well as Water Usage Log.
There is exposed ground on your property	Erosion controls must be applied under the guidance of the Erosion Control Checklist .

- Fill out daily, write down the date and the metered amount
- Only record diversion for cannabis irrigation - not domestic or other irrigation usage
- Install meter as close to diversion source as reasonable
- Measuring device must have 15% accuracy
- Records must be kept on site, available for up to 5 years

[illegible]

- Fill out daily, write down the date and the metered amount
- Only record usage for cannabis irrigation - not domestic or other irrigation usage
- Use a meter as installed as close to point of irrigation or use estimate based on amount of time watering and known irrigation rate
- Records must be kept on site, available for up to 5 years

[illegible]

- For each water delivery make sure to obtain a receipt with the following
 - Name
 - Address
 - License Plate Number, State Issuing
 - A copy of the Water Haulers License
 - A copy of Haulers Water Right or other authorization to take water
 - Quantity and source of water

[illegible]

A land disturbance is any activity that increases the amount of soil that will runoff the property when it rains. Examples of this are construction/maintenance of roads, building construction, grading, and site clearing. Please acknowledge the following requirements when engaging in land disturbance activities:

- Fill out this log when you are doing permitted to do land disturbance work with the above condition met. For each day of land disturbance activity, the 24-hour forecast must be checked and recorded. If the 24-hour forecast reports a chance of precipitation at 50 percent or greater of 0.5 inches or more within that period than all land disturbance work was stop and erosion controls put into place.

[illegible]

Land Disturbance Weather Log

[illegible]

Road and Drainage Feature Maintenance Log

Road surfaces and drainage features (culverts, drop inlets, trash racks) shall be closely inspected before the rainy season and after large storm events. Record the dates of inspection and mark down any maintenance work that was completed. Perform inspection and maintenance when any of the following occur:

- Prior to the start of the rainy season
- A storm produces 0.5 inches of rain within 24 hours
- A storm produces 1 inch of rain over 7 days

Examples of road and drainage feature maintenance:

- Wood or debris blocking entrance of ditch relief culvert or stream crossing culvert
- Sediment blocking rolling dip outlet removed and disposed of
- Rocking road where it is necessary

Any sediment or debris removed should be stabilized on a flat area away from surface water or stormwater flow.

Date	Pre-rainy season check or storm event	Maintenance Notes

Road and Drainage Feature Maintenance Log

[illegible]

Winterization Checklist

The winter season as defined by the State Water Board begins November 15th and ends April 1. Before the winter season begins the cultivator must go through this and the associated checklist and make sure the property that enrolled is winterized. The two associated checklists are the Erosion Control Checklist and the Soil Disposal and Management Checklist. Each time the winterization is completed sign and date below.

By November 15th complete the following:

- Complete the Erosion Control Checklist
- Complete the Soil Disposal and Management Checklist
- Block off seasonal roadways
- Refrain from using any heavy equipment during the winter season unless authorized
- Install linear sediment controls (silt fences, wattles) on the face of exposed slopes at the following spacing:
 - Slopes 0%-25% at 20 feet maximum apart
 - Slopes 25%-50% at 15 feet maximum apart
 - Slopes 50% and greater at 10 feet maximum apart
- Install linear sediment controls at the toe and break of any exposed slopes
- Complete the Drainage Feature Maintenance Log prior to the start of the rainy season
- Stabilize all disturbed areas and construction entrances and exits
- Stabilize all stockpiles using Stockpile Management BMPs (included with this document)
- All exposed or bare ground (cultivation area, access pathways) shall have erosion repair and control measures in place
- Any applicable checklist items that were not completed by November 15th should be reported on this form as well as a schedule for completion.

<i>Date</i>	<i>Notes</i>	<i>Signature</i>
<i>Ex. 11/05/18</i>	<i>ex: Wattles installed a upper cultivation area, perimeter of cultivation area seeded and mulched, all other checklists complete</i>	<i>DB</i>

[illegible]

Erosion Control Checklist

The Erosion Control Checklist should be completed when any of the following occur:

- Within seven days of completing any land disturbance activities (grading, terracing, etc)
- When any earthwork using heavy equipment occurs
- Prior to the start of the winter period (Nov 15th)

Each time the Erosion Control Checklist is completed sign and date this checklist.

Complete the following measures if applicable:

- Disturbed areas and/or stockpiles should be controlled by one or a combination of the following methods
 - Seeded and mulched
 - Hydroseed
 - Replanted
 - Stockpile Management BMPs
 - Rock slope protection
- The lower gradient perimeter of disturbed areas should be controlled by one or a combination of the following methods
 - Gravel bag berms
 - Fiber rolls
 - Straw bale barriers
 - Silt fences
 - Sediment settling basins
- Complete the Soil Disposal and Management Checklist
- Block off seasonal roadway
- Refrain from using any heavy equipment during the winter season unless authorized
- Install linear sediment controls (silt fences, wattles) on the face of exposed slopes at the following spacing:
 - Slopes 0%-25% at 20 feet maximum apart
 - Slopes 25%-50% at 15 feet maximum apart
 - Slopes 50% and greater at 10 feet maximum apart
- Install linear sediment controls at the toe and break of any exposed slopes
- Complete the Drainage Feature Maintenance Log prior to the start of the rainy season
- Stabilize all disturbed areas and construction entrances and exits
- Stabilize all stockpiles using Stockpile Management BMPs (included with this document)
- All exposed or bare ground (cultivation area, access pathways) shall have erosion repair and control measures in place

<i>Date</i>	<i>Notes</i>	<i>Signature</i>
<i>Ex.</i> 11/05/18	<i>ex: Wattles installed a upper cultivation area, perimeter of cultivation area seeded and mulched, all other checklists complete</i>	<i>DB</i>

Erosion Control Checklist

[illegible]

Soil Disposal and Management Checklist

The Soil Disposal and Management Checklist should be completed when any of the following occur:

- Whenever soil, growth medium, or construction materials are to be stored on site.
- Prior to the start of the winter period (Nov 15th)

Each time the Soil Disposal and Management Checklist is completed sign and date this checklist.

Complete the following measures if applicable:

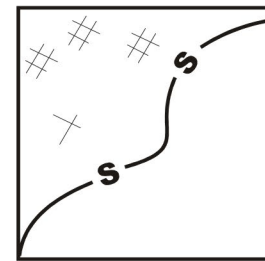
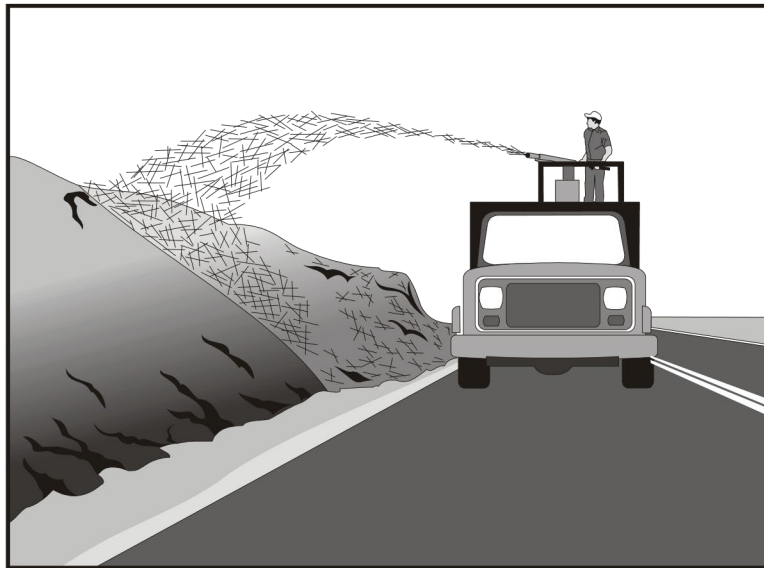
- Ensure that all soil, growth medium, and construction materials are stored in a stable, contained manner outside of the riparian setbacks.
- Large organic materials (woody debris, root balls) should be stored separate from soil stockpiles. These materials should be properly disposed of (landfill, burning, composted).
- Sediment control devices (silt fences, straw waddles, strawbales) and tarps should be used to protect soil stockpiles from erosion.
- Alternatively, the stockpiles can be vegetated to prevent erosion
 - Revegetate using a mix of native plant species and seed.
 - Cover with straw at a rate of two tons per acre
 - Apply non-synthetic netting or similar erosion control fabric (jute) on slopes greater than 2:1
- Any soil that is not stored for reuse or vegetated shall be disposed of at an appropriate green waste facility.

<i>Date</i>	<i>Notes</i>	<i>Signature</i>
<i>Ex.</i> 11/05/18	<i>ex: Leftover growth medium has been tarped and surrounded by straw bales on the flat by the cultivation area.</i>	<i>DB</i>

Soil Disposal and Management Checklist

[illegible]

Erosion and Sediment Control BMPs



Standard Symbol

BMP Objectives

- Soil Stabilization
- Sediment Control
- Tracking Control
- Wind Erosion Control
- Non-Storm Water Management
- Materials and Waste Management

Definition and Purpose Straw mulch consists of placing a uniform layer of straw and incorporating it into the soil with a studded roller or anchoring it with a stabilizing emulsion. This is one of five temporary soil stabilization alternatives to consider.

Appropriate Applications

- Straw mulch is typically used for soil stabilization as a temporary surface cover on disturbed areas until soils can be prepared for revegetation and permanent vegetation is established.
- Also typically used in combination with temporary and/or permanent seeding strategies to enhance plant establishment.

Limitations

- Availability of erosion control contractors and straw may be limited prior to the rainy season due to high demand.
- There is a potential for introduction of weed-seed and unwanted plant material.
- When straw blowers are used to apply straw mulch, the treatment areas must be within 45 m (150 ft) of a road or surface capable of supporting trucks.
- Straw mulch applied by hand is more time intensive and potentially costly.
- May have to be removed prior to permanent seeding or soil stabilization.
- "Punching" of straw does not work in sandy soils.

Standards and Specifications

- Straw shall be derived from wheat, rice, or barley.
- All materials shall conform to Standard Specifications Sections 20-2.06, 20-2.07 and 20-2.11.
- 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 the traveled way, sidewalks, lined drainage channels, sound walls, and existing vegetation.
- Straw mulch with tackifier shall not be applied during or immediately before rainfall.

Application Procedures

- Apply loose straw at a minimum rate of 3,570 kg/ha (4,000 lb/ac), or as indicated in the project's special provisions, either by machine or by hand distribution.
- If stabilizing emulsion will be used to anchor the straw mulch in lieu of incorporation, roughen embankment or fill areas by rolling with a crimping or punching-type roller or by track walking before placing the straw mulch. Track walking should only be used where rolling is impractical.
- The straw mulch must be evenly distributed on the soil surface.
- Anchor the mulch in place by using a tackifier or by "punching" it into the soil mechanically (incorporating).
- A 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 140 kg/ha (125 lb/ac). In windy conditions, the rates are typically 200 kg/ha (178 lb/ac).
- Methods for holding the straw mulch in place depend upon the slope steepness, accessibility, soil conditions and longevity. If the selected method is incorporation of straw mulch into the soil, then do as follows:
 - Applying and incorporating straw shall follow the requirements in Standard Specifications Section 20-3.03.
 - On small areas, a spade or shovel can be used.

- On slopes with soils, which 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 coultter, known commercially as a “crimper.”
- 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. Refer to BMP SS-7, “Geotextiles, Plastic Covers and Erosion Control Blankets/Mats.”

Maintenance and Inspections

- The key consideration in Maintenance and Inspection is that the straw needs to last long enough to achieve erosion control objectives.
- Maintain an unbroken, temporary mulched ground cover while DSAs are non-active. Repair any damaged ground cover and re-mulch exposed areas.
- Reapplication of straw mulch and tackifier may be required by the Resident Engineer (RE) to maintain effective soil stabilization over disturbed areas and slopes.
- After any rainfall event, the Contractor is responsible for maintaining all slopes to prevent erosion.



Standard Symbol

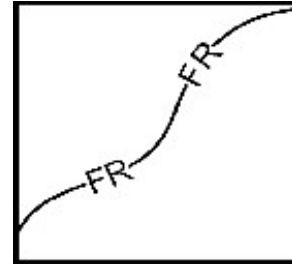
BMP Objectives

- Soil Stabilization
- Sediment Control
- Tracking Control
- Wind Erosion Control
- Non-Storm Water Management
- Materials and Waste Management

Definition and Purpose A fiber roll consists of wood excelsior, rice or wheat straw, or coconut fibers that is rolled or bound into a tight tubular roll and placed on the toe and face of slopes to intercept runoff, reduce its flow velocity, release the runoff as sheet flow and provide removal of sediment from the runoff. Fiber rolls may also be used for inlet protection and as check dams under certain situations.

■ Appropriate Applications

This BMP may be implemented on a project-by-project basis with other



BMPs

when determined necessary and feasible by the RE.

■ slopes

Along the toe, top, face, and at grade breaks of exposed and erodible to shorten slope length and spread runoff as sheet flow.

- Below the toe of exposed and erodible slopes.

■ the (refer to

Fiber rolls may be used as check dams in unlined ditches if approved by Resident Engineer (RE) or the District Construction Storm Water Coordinator (refer to SC-4 "Check Dams").

■ or the Inlet

Fiber rolls may be used for drain inlet protection if approved by the RE District Construction Storm Water Coordinator (refer to SC-10 "Storm Drain Protection").

- Down-slope of exposed soil areas.
- Around temporary stockpiles.
- Along the perimeter of a project.

- Limitations
- Runoff and erosion may occur if fiber roll is not adequately trenched in.
 - Fiber rolls at the toe of slopes greater than 1:5 may require the use of 500 mm (20" diameter) or installations achieving the same protection (i.e., stacked smaller diameter fiber rolls, etc.).
 - Fiber rolls may be used for drainage inlet protection if they can be properly anchored.
 - Difficult to move once saturated.
 - Fiber rolls could be transported by high flows if not properly staked and trenched in.
 - Fiber rolls have limited sediment capture zone.
 - Do not use fiber rolls on slopes subject to creep, slumping, or landslide.

Standards and Specifications

Fiber Roll Materials ■

Fiber rolls shall be either:

- (1) Prefabricated rolls.
- (2) Rolled tubes of erosion control blanket.

Assembly of Field Rolled Fiber Roll

- Roll length of erosion control blanket into a tube of minimum 200 mm (8 in) diameter.
- Bind roll at each end and every 1.2 m (4 ft) along length of roll with jute-type twine.

Installation

- Slope inclination of 1:4 or flatter: fiber rolls shall be placed on slopes 6.0 m apart.
- Slope inclination of 1:4 to 1:2: fiber rolls shall be placed on slopes 4.5 m apart.
- Slope inclination 1:2 or greater: fiber rolls shall be placed on slopes 3.0 m apart.
- Stake fiber rolls into a 50 to 100 mm (2 to 4 in) trench.

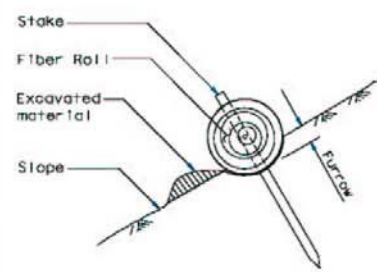
- Drive stakes at the end of each fiber roll and spaced 600 mm (2 ft) apart if Type 2 installation is used (refer to Page 4). Otherwise, space stakes 1.2 m (4 ft) maximum on center if installed as shown on Pages 5 and 6.
- Use wood stakes with a nominal classification of 19 by 19 mm (3/4 by 3/4 in), and minimum length of 600 mm (24 in).
- If more than one fiber roll is placed in a row, the rolls shall be overlapped; not abutted.

Removal

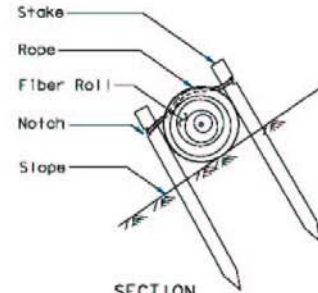
- Fiber rolls are typically left in place.
- If fiber rolls are removed, collect and dispose of sediment accumulation, and fill and compact holes, trenches, depressions or any other ground disturbance to blend with adjacent ground.
- Repair or replace split, torn, unraveling, or slumping fiber rolls.
- Inspect fiber rolls when rain is forecast. Perform maintenance as needed or as required by the RE.
- Inspect fiber rolls following rainfall events and at least daily during prolonged rainfall. Perform maintenance as needed or as required by the RE.
- Maintain fiber rolls to provide an adequate sediment holding capacity. Sediment shall be removed when the sediment accumulation reaches three quarters (3/4) of the barrier height. Removed sediment shall be incorporated in the project at locations designated by the RE or disposed of outside the highway right-of-way in conformance with the Standard Specifications.

Maintenance and Inspection

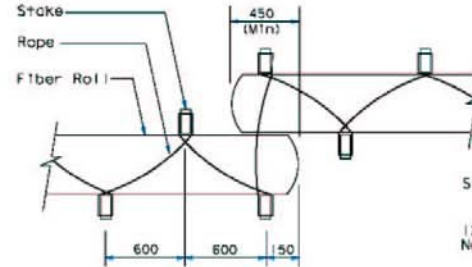
Fiber Rolls



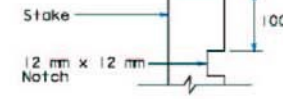
SECTION
TEMPORARY FIBER ROLL
(TYPE 1)



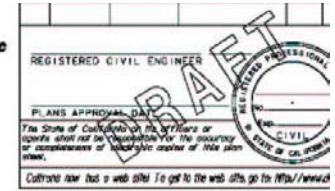
SECTION
TEMPORARY FIBER ROLL
(TYPE 2)



PLAN

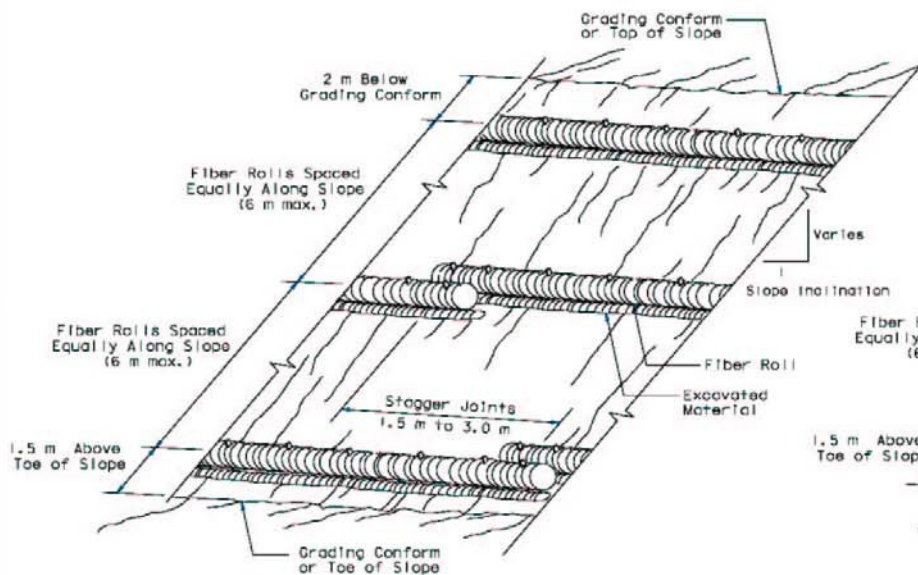


ELEVATION
NOTCH DETAIL

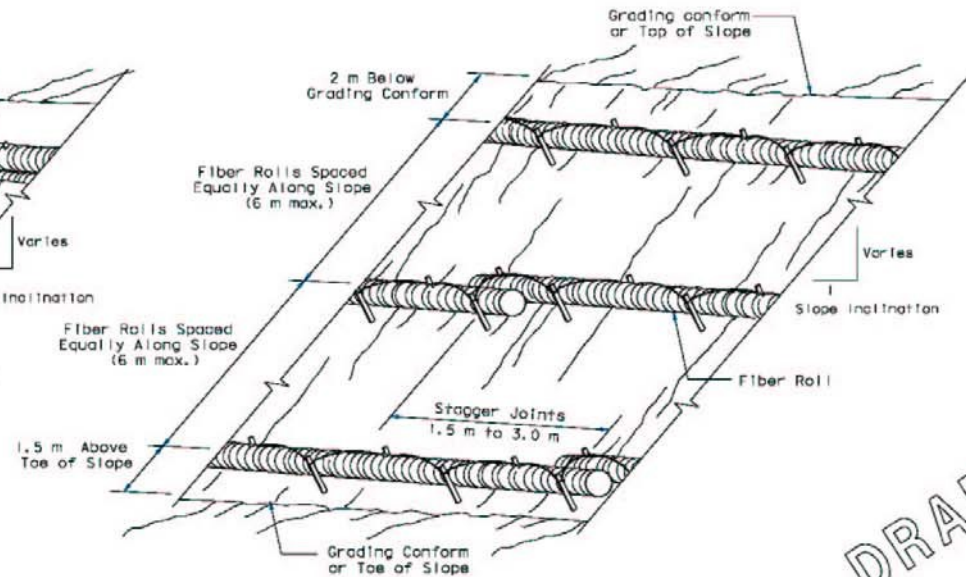


NOTE

1. Temporary fiber roll spacing varies depending upon slope inclination.



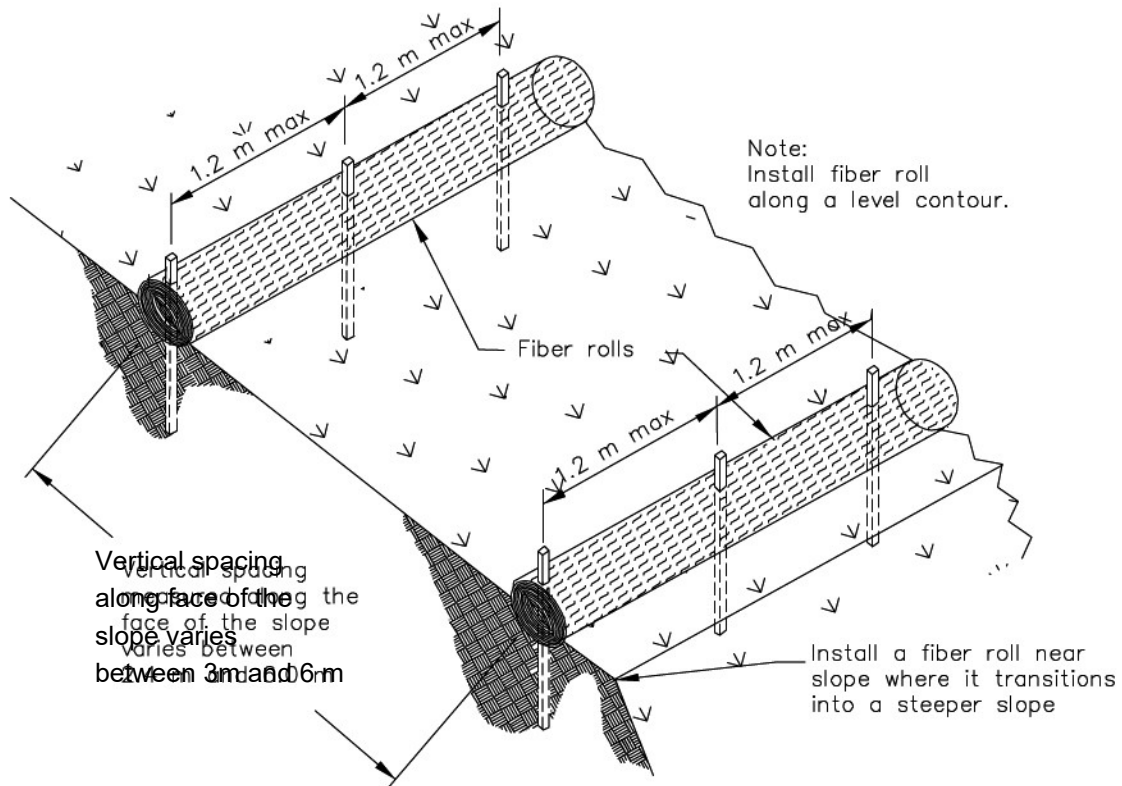
PERSPECTIVE
TEMPORARY FIBER ROLL (TYPE 1)



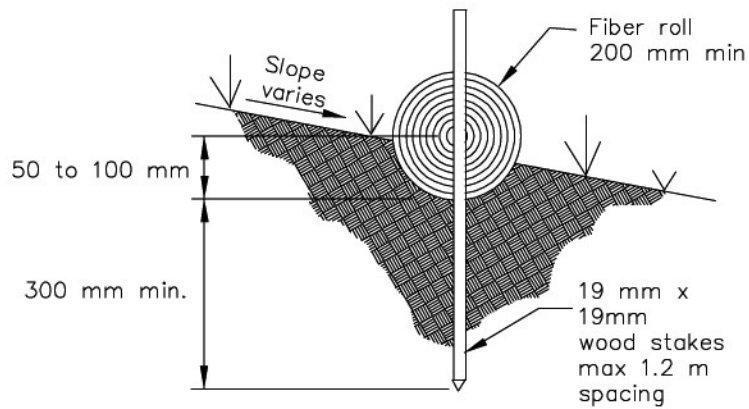
PERSPECTIVE
TEMPORARY FIBER ROLL (TYPE 2)

TEMPORARY WATER POLLUTION CONTROL DETAILS





TYPICAL FIBER ROLL INSTALLATION
N.T.S.



ENTRENCHMENT DETAIL
N.T.S.

N.T.S.

