



Site Management Plan

Tier 1, High Risk

WDID-1_12CC414256

in Humboldt County

APN: 210-071-004 & 210-071-009

Prepared by:



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Purpose

This Site Management Plan (SMP) has been prepared on behalf of the cannabis cultivator for the Humboldt County property identified as assessor parcel numbers 210-071-004 & 210-071-009, by agreement and in response to the State Water Resources Control Board Cannabis Cultivation Policy (Cannabis Policy), in congruence with Order WQ 2019-0001-DWQ General Waste Discharge Requirements for Discharges of Waste Associated with Cannabis Cultivation Activities (General Order). The General Order implements the Cannabis Policy requirements, specifically those requirements that address waste discharges associated with cannabis cultivation activities. Cannabis cultivators covered under the General Order are subject to the requirements of the Cannabis Policy in its entirety. The Cannabis Policy provides a statewide tiered approach for permitting discharges and threatened discharges of waste from cannabis cultivation and associated activities, establishes a personal use exemption standard, and provides conditional exemption criteria for activities with a low threat to water quality.

Tier Designation

Tiers are defined by the amount of disturbed area. Tier 1 outdoor commercial cultivation activities disturb an area equal to or greater than 2,000 square feet and less than 1 acre (43,560 square feet). Tier 2 outdoor commercial cultivation activities disturb an area equal to or greater than 1 acre. Risk designation for Tier 1 and Tier 2 enrollees under the Cannabis Policy is based on the slope of disturbed areas and the proximity to a surface water body. Characterization is based on the risk designation summarized in Table 1 below.

Table 1: Summary of Risk Designation

Low Risk	Moderate Risk	High Risk
<ul style="list-style-type: none"> No portion of the disturbed area is located on a slope greater than 30 percent, and All of the disturbed area complies with the setback requirements. 	<ul style="list-style-type: none"> Any portion of the disturbed area is located on a slope greater than 30 percent, and All of the disturbed area complies with the setback requirements. 	<ul style="list-style-type: none"> Any portion of the disturbed area is located within the setback requirements.

Thorough assessment of the project area including roads, disturbed areas, legacy features, and cultivation areas classify this enrollment into the **Tier 1, High Risk** designation.

Scope of Report

Tier 1 and Tier 2 cannabis cultivators are required to submit and implement a Site Management Plan that describes how they are complying with the Requirements listed in Attachment A. The description shall describe how all applicable Best Practicable Treatment or Control (BPTC) measures are implemented. Cannabis cultivators within the North Coast Regional Water Quality Control Board jurisdiction are required to submit and implement Site Management Plans that describe how the Requirements are implemented property-wide, to include legacy activities. The SMP includes an Implementation Schedule to achieve compliance, but all work must be completed by the onset of the Winter Period each year. Projects designated as Moderate Risk are also required to have a Site Erosion and Sediment Control (plan) to achieve the goal of minimizing the discharge of sediment off-site. Projects designated as High Risk are also required to have a Disturbed Area Stabilization Plan to achieve the goal of stabilizing the disturbed area to minimize the discharge of sediment off-site and comply with the setback requirements. The cannabis cultivator shall ensure that all site operating personnel are familiar with the contents of the General Order and all technical reports prepared for the property. Projects which have over one acre of cannabis cultivation (total canopy area) are also required to have a Nitrogen Management Plan to describe how nitrogen is stored, used, and applied to crops in a way that is protective of water quality. A copy of the General Order, and technical reports required by the General Order, shall be kept at the cultivation site. Electronic copies of these documents are acceptable. Either format of maintained documents kept on site must be immediately presentable upon request.

Methods

The methods used to develop this SMP include both field and office components. The office component consisted of aerial photography review and interpretation, existing USGS quad map review, GIS mapping of field data, review of on-site photography points, streamflow calculations, general planning, and information gathered from the cannabis cultivator and/or landowner. The field component included mapping of all access roads, vehicle parking areas, Waters of the State, stream crossings, drainage features, cultivation sites, buildings, disturbed areas, and all other relevant site features within the project area and surrounding areas (as feasible). Cultivation areas, associated facilities, roads, and other developed and/or disturbed areas were assessed for discharges and related controllable water quality factors from the activities listed in the General Order. The field assessment also included an evaluation and determination of compliance with all applicable BPTC's per Section 2 of the General Order.

Property Description

The property assessed consists of two contiguous parcels totaling approximately 60 acres located approximately 6 miles southwest of Bridgeville, CA. Elevations range from approximately 2,600 feet to over 2,900 feet above sea level. The property is located in Section 26, T1N-R4E, HB&M, in Humboldt County. The property is located on the Larabee Valley USGS 7.5' Quadrangle. A Class I watercourse, Mule Creek, and unnamed Class II and III tributary watercourses flow through the parcels. Mule Creek connects downstream with Butte Creek which is tributary to the Little Van Duzen River. The Little Van Duzen River flows to the Van Duzen River, to the Eel River, and to the Pacific Ocean.

Project Description

Cannabis cultivation on the property currently consists of four separate cultivation areas that total approximately 11,000 ft² of existing cannabis cultivation (Cultivation Areas A, B, and C), and approximately 11,560 ft² of proposed cultivation (Cultivation Area D), as listed in Table 1. The cultivation areas are located within approximately 43,510 ft² of disturbed areas located mostly along ridgetops. This project is being permitted in Humboldt County to cultivate cannabis. This project was previously enrolled as separate parcels in the North Coast Regional Water Quality Control Board Order No. R1-2015-0023 under WDID-1B161281CHUM and WDID-1B170374CHUM and has since enrolled with State Water Resources Control Board as WDID-1_12CC414256. This project is being classified as Tier 1, High Risk.

Table 1: Cultivation Site Parameters.

Cultivation Area	Land Disturbance Area (ft ²)	General Cultivation Area ¹ (ft ²)	Adjoining Hillslopes (% Grade)
A	16,490	5,100	10
B	2,320	1,100	25
C	8,100	4,800	25
D	16,600	11,560	15
Totals:	43,510	22,560	

Table 2: Project Permitting

Additional Required Permits Related to Project, Type, and Status	
SIUR	Not Required
LSAA/1600	Lake and Streambed Alteration Final Agreement from CDFW – Notification No. 1600-2016-0409-R1 (Parcel 210-071-004)
LSAA/1600	Lake and Streambed Alteration Notification being prepared concurrently on Parcel 210-071-009

Site Management Plan

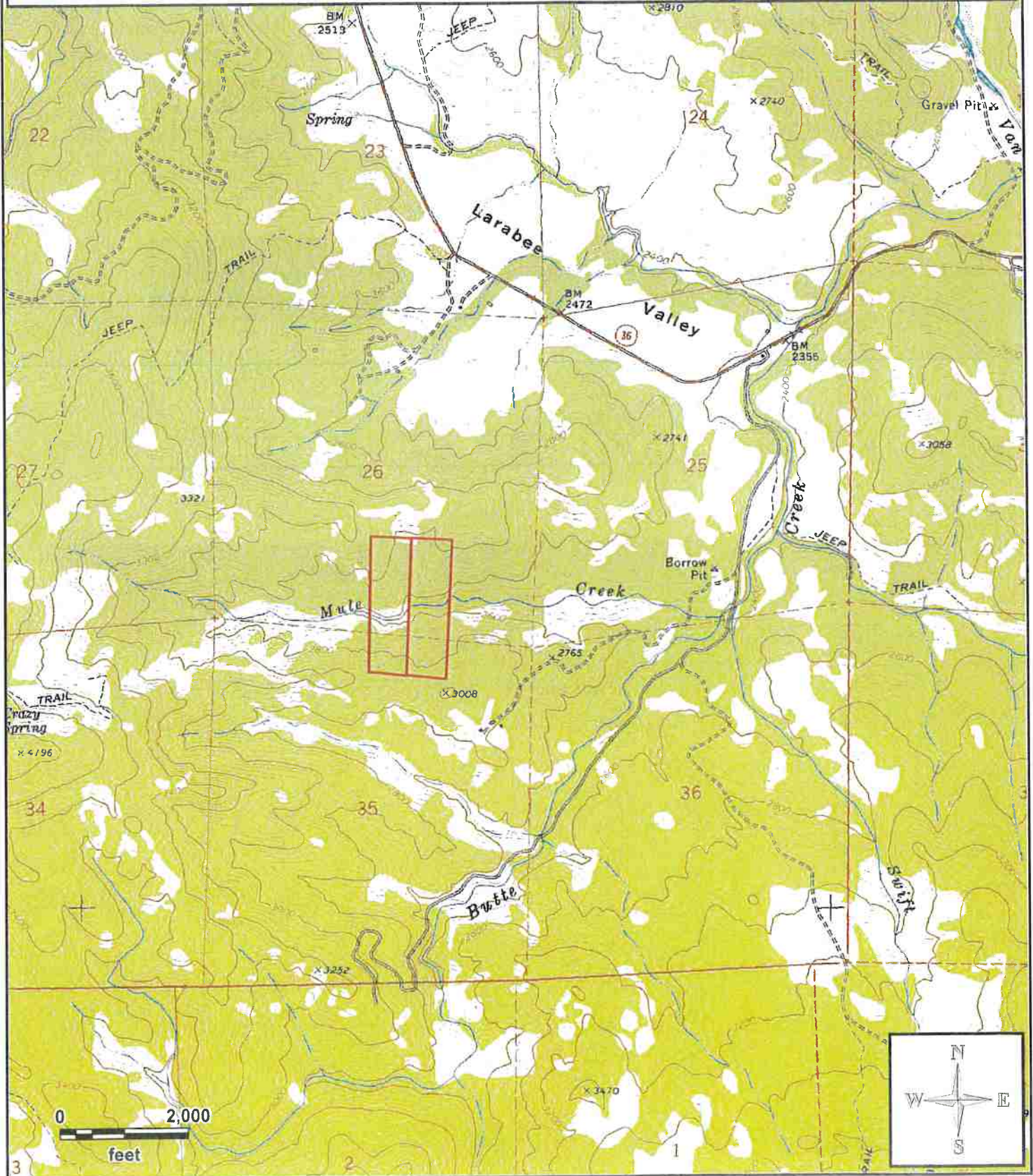
General Location Map WDID - 1_12CC414256



 Property Boundary

Located in Section 26, T1N-R4E, H.B.M.; Humboldt County; Larabee Valley 7.5' USGS Quad Map

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Baseline Assessment of Requirements Related to Water Diversions and Waste Discharge for Cannabis Cultivation

This project was previously enrolled as two separate parcels by two separate landowners, in the North Coast Regional Water Quality Control Board Order No. 2015-0023. A Water Resource Protection Plan (WRPP) was prepared by Timberland Resource Consultants for each of the enrolled parcels. Some mitigations prescribed in the WRPP have since been completed. A re-assessment of the project was conducted and will be used as the baseline assessment for the preparation of this document.

Land Development and Maintenance, Erosion Control, and Drainage Features

Project Compliance Y ☐/N ☒

Roads are being classified as “permanent” (roads appurtenant to the project being used year-round), “seasonal” (roads appurtenant to the project being used primarily during summer months), “legacy” (roads not appurtenant to the project receiving little to no use), and “trail” (being rarely used for occasional access to features on the property).

Roads within the project area appear to have a high native rock component and, based on observations of surface erosion relative to current surface drainage break frequency, are being classified as having low erodibility. This classification will be utilized to determine surface/ditch-line drainage break frequency based on Table 19 of the Handbook for Forest Ranch and Rural Roads, 2014.

TABLE 19. Recommended maximum rolling dip and ditch relief culvert spacing, in feet, based on road gradient and soil erodibility ^{1,2}

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

Currently, the permanent roads on the property appear to have adequate rock surfacing, including road segments through watercourse crossings within riparian setbacks. Roads classified as permanent shall be kept appropriately surfaced (crushed rock, lignin treatments, pavement, or chip-seal) to increase durability during winter use. The segments of Mule Creek Road across these parcels, within the riparian setbacks, as shown on the attached Site Maps, shall be monitored, and as conditions warrant, be graded to improve surface drainage and or rocked to keep a stable surface and minimize sediment runoff.

The majority of the permanent access roads are out-sloped with gentle gradients and adequately drained to allow surface drainage. The section of permanent road south of Mule Creek is a property access road to an adjoining parcel to the south, and is not used by the cannabis cultivator. It has a series of surface drainage features (rolling dips) that have become worn down through summer use. Sites 21 through 30 of the Mitigation Report call for repair and maintenance of these surface drainage features. Two segments of seasonal roads are steep spur roads that provide access to

Cultivation Areas B and C. They have developed ruts and are in need of waterbreak installation, rocking, and grading. See site 17 and sites 34 through 38 of the Mitigation Report for details.

Cultivation Area A is located on hill slopes that range from 10% to 15%. Cultivation Areas B and C are located on located along bench areas that are estimated to have had natural slopes that ranged from 25% to 30% prior to construction. Natural slopes off of the ridgetop towards the west edge of Cultivation Area C were estimated to be in the range of 30% to 35%. This small section of the cultivation area consists of outdoor pots placed on small, hand leveled pads, and did not involve grading or ground disturbance. This site will continue to be monitored throughout its enrollment. Should any of the cultivation areas begin to show signs of sediment delivery, risk level will be reevaluated and site specific treatments may be prescribed.

Past cultivation areas:

Cannabis cultivation previously took place at the location shown as Cultivation Area D at the northern edge of the property, under a previous ownership. This area was not used in 2019 by the current cannabis cultivator and the greenhouses have been taken down. It is located on a graded flat on slopes of approximately 15%. This past cultivation encroached slightly within the 50 foot wide, Class III, riparian setback. This site is in planning stages to become permitted as a proposed future cultivation area by the current cannabis cultivator / landowner. The cannabis cultivator shall plan and construct future cultivation areas so the disturbed areas remain outside of the riparian setback, and remove any existing fencing, wood boxes, and cultivation wastes remaining within the riparian setback. See the Mitigation Report for a more detailed description.

Controllable Sediment Discharge Sources

Controllable sediment discharge sources (CSDS) means sites or locations, both existing and those created by proposed cannabis activities, within the project ownership that meet all the following conditions:

1. is discharging or has the potential to discharge sediment to waters of the state in violation of applicable water quality requirements or other provisions of these General WDRs.
2. was caused or affected by human activity, and
3. may feasibly and reasonably respond to prevention and minimization management measures.

No controllable sediment discharge sources (CSDS) were located on the property.

Cleanup, Restoration, and Mitigation:Project Compliance Y☒/N☐

No areas requiring cleanup, restoration, and mitigation were observed. Past cultivation areas and cultivation areas within riparian setbacks do not require excavation or grading to repair. No revegetation besides seeding and mulching small disturbed areas are being prescribed. These areas are detailed in the Mitigation Report under sites 15A, 15B, and Past Cultivation Areas.

Stream Crossing Installation and Maintenance:Project Compliance Y☐/N☒

There are eight existing watercourse crossings on these parcels shown as sites 01 through 08 on the attached Site Maps. Sites 01 through 04 and sites 06 and 07 are permanent culverts that are undersized for the calculated 100 year peak rainfall event, and Site 05 is a permanent bridge across Mule Creek that is in need of repair and replacement of its abutments. Site 08 is a permanent culvert that is adequately sized and is currently in compliance with the Order. The current condition and the prescribed treatments at each watercourse crossing are described in the Mitigation Report. All existing undersized culverts will be replaced with culverts sized for the 100 year peak streamflow.

A finalized Lake and Streambed Alteration Agreement (LSAA) with the California Department of Fish & Wildlife (CDFW) is needed prior to proposed watercourse crossing upgrades. Site 01 is included in a finalized CDFW LSA Agreement No. 1600-2016-0409-R1, that was prepared and approved for the eastern parcel. An LSAA is currently being prepared that will include the proposed upgrades of the watercourse crossings at sites 02 through 07. The existing culvert diameter and the estimated replacement diameter at each crossing are as follows:

- Site 01 - Replace existing 18 inch diameter culvert with a 36 inch diameter culvert.
- Site 02 - Replace existing 12 inch diameter culvert with a 24 inch diameter culvert.
- Site 03 - Replace existing 12 inch diameter culvert with a 36 inch diameter culvert.
- Site 04 - Replace existing 12 inch diameter culvert with a 24 inch diameter culvert.
- Site 05 - Permanent Bridge.
- Site 06 - Replace existing 18 inch diameter culvert with a 24 inch diameter culvert.
- Site 07 - Replace existing 18 inch diameter culvert with a 24 inch diameter culvert.
- Site 08 - Adequately sized, existing 18 inch diameter culvert.

Additional guidelines, treatments, or restrictions will be set forth in the finalized Lake and Stream Alteration Agreement, and minimum culvert diameters are currently subject to change by CDFW during review of LSAA materials.

Stream Crossing Hydrology

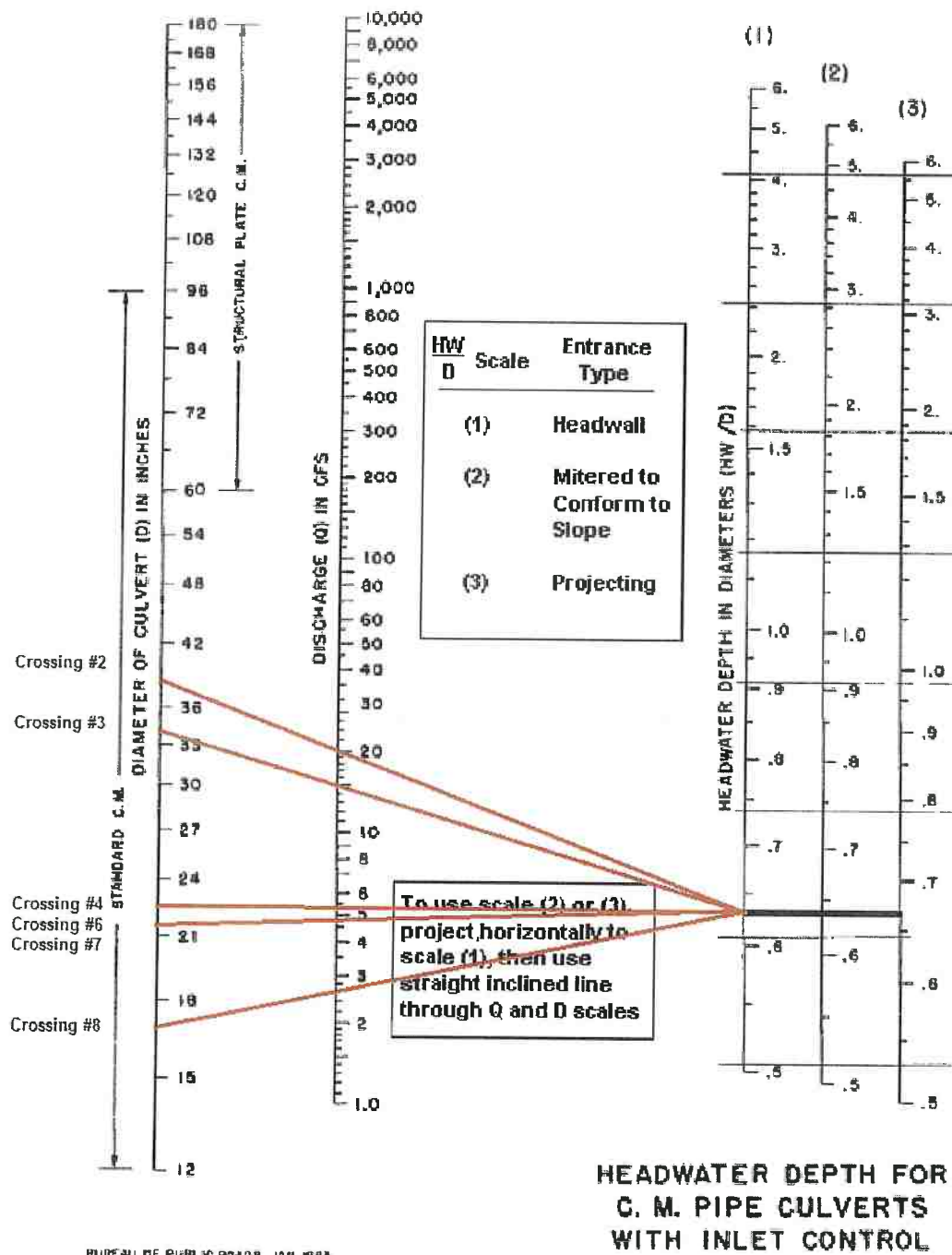
Rationale Method to determine the 100-year peak streamflow as recommended in *"Designing Watercourse Crossings for Passage of 100-year Flood Flows, Wood, and Sediment."* 2017 Peter Cafferata, Thomas Spittler, Michael Wopat, Donald Lindsay, William Short, Drew Coe, Greg Bundros, and Sam Flanagan. The 100-year Return-Period precipitation data is from: http://hdsc.nws.noaa.gov/hdsc/pfds/pfds_map_cont.html?bkmrk=ca.

Rational Method								
No.	Crossing	$T_c = 60((11.9 \times L^3)/H)^{0.385}$			$Q_{100} = CIA$			
		Channel length (to top of basin) (mi) L	Elevation difference (ft) H	Concentration time (min) T_c	Runoff coefficient C	100-year Return-Period Precipitation (in/hr) I*	Area (acres) A	100-yr flood flow (cfs) Q₁₀₀
	2				0.35	3.86	15	20.3
	3				0.35	3.86	11	14.9
	4				0.35	3.86	4	5.4
	6				0.35	3.86	4	5.4
	7				0.35	3.86	3.5	4.7
	8				0.35	3.86	2	2.7

Frequency and Magnitude Method for the Bridge at Crossing #5 to determine the 100-year peak streamflow as recommended in *"Designing Watercourse Crossings for Passage of 100-year Flood Flows, Wood, and Sediment."* 2017 Peter Cafferata, Thomas Spittler, Michael Wopat, Donald Lindsay, William Short, Drew Coe, Greg Bundros, and Sam Flanagan. The 100-year Return-Period precipitation data is from: http://hdsc.nws.noaa.gov/hdsc/pfds/pfds_map_cont.html?bkmrk=ca

Magnitude and Frequency Method for 100-year flood flow > 25 ac								Q₁₀₀ (cfs)
No.	Crossing	Area (acres) A	Basin maximum elevation (ft)* H	Crossing elevation (ft)* N	Area (mi ²) A	Avg. Annual Precipitation (in/yr) P	Elevation (ft/1000) H	North Coast ⁽¹⁾ (NC)
1	5	466	4196	2600	0.728	75	3.398	406.4

Culvert sizing nomograph:



BUREAU OF PUBLIC ROADS JAN. 1963

This is the same culvert sizing nomograph (Figure 12) referenced in *Designing Watercourse Crossings for Passage of 100-year Flood Flows, Wood, and Sediment*. The nomograph is used for a headwater depth ratio (HW/D) of 0.67.

Soil Disposal and Spoils Management:Project Compliance Y☐/N☒

Currently, no construction spoils are present on the property. Any spoils generated through future development or maintenance of roads, driveways, earthen fill pads, or other cleared or filled areas shall not be sidecast where they can enter or be transported to surface waters. Any future spoils generated as a result of any future construction projects that are to be stored on the property shall be done so in accordance with the BTPC.

Cultivation soil was noted at two sites. See sites 16 and 39 on the attached maps for the locations and the mitigation report for the proposed treatment. Cannabis cultivators shall store erodible soil, soil amendments, and spoil piles to prevent sediment discharges in storm water (see Term 59 in Section 2, Attachment A of the Cannabis Cultivation Policy).

Riparian and Wetland Protection and Management:Project Compliance Y☐/N☒

Two locations were identified where disturbed areas associated with cultivation areas are located within the riparian setbacks. Site 15A is a cultivation area located within the outer 20 to 25 feet of the riparian setback for a Class II watercourse. Site 15B is a cultivation area located within the outer 10 to 15 feet of the riparian setback for a Class I watercourse. These sites are located on benches of flat topography above the watercourses. The boundaries of the riparian setbacks in these locations were flagged in the field by measuring along the surface of the ground. At both of these locations the cultivator shall remove cultivation and related materials from the riparian setback. Grass seed and mulch bare soils within the riparian setback. Keep cultivation soils and materials contained to the remaining cultivation areas located outside of the riparian setbacks. Install straw wattles or box in the downslope edge of the remaining cultivation area as necessary to prevent soils and or materials from leaving the cultivation area and entering the riparian setback.

A segment of Mule Creek Road, a private, permanent community access road, passes through these parcels and is mostly located within the 100 foot wide riparian setback for Mule Creek. The cultivator shall monitor the road periodically during the winter to ensure the road surface is stable and adequately drained to prevent ponding and potholing on the road surface, and to minimize sediment runoff. Apply clean compacted rock to the road surface as necessary. Prior to any winter period, grade the road surface as necessary to reestablish worn rolling dips and lead out ditches, and to achieve efficient road surface drainage to reduce ponding on the road surface.

See the Mitigation Report, Treatment Implementation Schedule, and Site Map to follow for site specific details and treatments.

Table 4: Riparian and Wetland Protection and Management

Disturbed Area	Disturbed Area Buffer and Riparian Setbacks				
	Class I [Setback: 100']	Class II [Setback: 100']	Class III [Setback: 50']	Perennial Stream or Wetland [Setback: 50']	Disturbed Area Within Setback [ft]
Cultivation Area A	85'	80'	160'	120'	925
Cultivation Area B	>200'	>200'	>200'	>200'	0
Cultivation Area C	>200'	>200'	80'	>200'	0
Past Cultivation	>200'	>200'	40	>200'	200
Total =					1,125

²This enrollment was previously enrolled in RWQCB Order No 2015-0023 and as such may retain reduced setbacks that were applicable under the previous Order.

Water Storage and Use:

Project Compliance Y ☐/N ☒

All water on the property is derived from two permitted groundwater wells and a permitted surface water diversion (POD), that is a shallow well located upslope of an unnamed tributary of Mule Creek. These sources meet and exceed the required water demands for both domestic and agricultural use on these parcels. The wells are used for all of the irrigation and the POD is primarily used for the domestic water source. Water use estimates are provided below. Metering devices to monitor water usage shall be used yearly starting in 2020 to record all water used for the irrigation of cannabis. Monthly water usage shall be recorded for annual reporting purposes. Water meter(s) and water supply infrastructure shall be designed/installed in a manner such that water usage for the irrigation of cannabis can be recorded separately from water used for domestic use. Additionally, if multiple diversions of surface water are used, infrastructure and metering device(s) shall be designed/installed in a manner that each source of surface water is recorded separately.

The permitted groundwater wells are located outside of riparian setbacks. The well on the eastern parcel has a total depth of 390 feet and the well on the eastern parcel as a total depth of 220 feet. A combination of solar panel powered and gas powered well pumps are used for filling nearby water storage tanks. There is approximately 30,000 gallons of water storage on the two parcels. Water tanks are located on stable, flat surfaces far from watercourses.

The surface diversion (POD) intake is shallow well. The POD infrastructure is a 24 inch diameter, concrete cylinder set approximately 3 feet deep. Its use is permitted per an approved Lake and Streambed Alteration Agreement with CDFW (1600-2016-0409-R1). The POD is used outside of the forbearance period for domestic use and to fill storage tanks for irrigation. During the agreed upon forbearance period, up to 200 gallons per day may be used the signed LSA Agreement.

Near the house there is a spring fed unlined Class II wet area / pond. No water is diverted from this pond. The approved LSAA states the following: No water shall be diverted from the man-made pond or inlet spring without prior notification to and approval by CDFW.

Near the northwestern corner of the western parcel, there is man-made, lined rain catchment pond. It is round in shape and approximately 45 feet in diameter, located in a small depression under tree canopy cover. It appears to have been installed years ago by a previous landowner, but not used or maintained recently. It is not currently a planned water source for the current landowner. The pond has a liner in place that is in disrepair, and a berm constructed of boards staked in place and 4 to 8-inch diameter Douglas fir poles. It currently still holds water and is becoming filled with leaves, limbs, small trees, and forest litter. At this site the cultivator shall remove the stakes and wood that make up the pond berm, the pond liner, waterlines, a nearby abandoned water pump, and any other discarded materials relating to the past pond use. The remaining depression may remain to collect forest litter and revegetate naturally. The cultivator shall monitor the site to ensure that it does not develop into a sediment discharge site. Reconstruction of the pond to keep it as an additional water source, or further pond removal involving excavation may require approved grading plans and a Streambed Alteration Agreement from CDFW prior to construction.

Cannabis cultivators should be advised that transition to the state General Order will require additional infrastructure to use bladders for water storage. Per Cannabis Cultivation Policy: Attachment A, Section 2, No. 88 & 89 for cannabis cultivators, bladders shall be safely contained within a secondary containment system with sufficient capacity to capture 110 percent of a bladders maximum volume in the event of bladder failure and if open to rainfall, and/or (whichever is larger) capable to accommodate precipitation and storm water inputs from 24 hours of a 25-year storm event. Secondary containment is recommended in the form of a dirt berm, containment pit, combination of both, or impermeable material with skeletal support.

Irrigation Runoff:

During visits to the property, no irrigation runoff, or evidence of such runoff, was observed at any of the cultivation areas.

Fertilizers, Pesticides, and Petroleum Products:Project Compliance Y ☐/N ☒

Fertilizers, pesticides, and soil amendments are currently stored in structures on the property in a manner in which they cannot enter or be transported into surface waters. Secondary containment was not observed inside of sheds. Per Section 2, Term No. 106, all storage areas shall have appropriate secondary containment structures, as necessary, to protect water quality and prevent spillage, mixing, discharge, or seepage. Potting soils, compost, and other used soils are currently stored in structures, or outside near cultivation areas on flat, stable locations in a manner in which they will not enter or be transported into surface waters. Site 16 is a soil pile being stored for eventual reuse that was uncovered at the time of our assessment. It shall be kept under coverage of a tarp during periods of prolonged rainfall. Cultivation areas shall be maintained so as to prevent nutrients from leaving the site during the growing season and post-harvest. Loose cultivation soil was observed at the east end of the greenhouse at Cultivation Area C, site 39. At this site the cultivator shall install straw wattles or box in the downslope edge of the cultivation area as stated in the Mitigation Report.

Fertilizers and soil amendments shall be applied and used per the manufacturer's guidelines. The use of pesticide products shall be consistent with product labeling and all products on the property are to be stored in closed structures to ensure that they do not enter or are released into surface or ground waters.

Electricity on the eastern parcel is generated by solar panels and also a propane generator. The western parcel is powered by a diesel generator and a 1,000 gallon metal diesel tank equipped with a secondary containment tank. The shed is shown as site 46 on the attached Site Maps. See Site 46 on the attached Mitigation Report for the full description and proposed treatment at the generator shed. Any/all fuel canisters and motor oil containers shall be stored in secondary containment (e.g. plastic totes or sealed metal boxes) when not in use.

On site storage of petroleum products, or other fuels used for commercial activities may require registration as hazardous materials through the California Environmental Reporting System (CERS). Additionally, any waste oil generated from commercial activities (generators) is considered by the state hazardous waste and requires additional reporting. The cannabis cultivator is advised to contact local agencies to find out if such reporting is applicable to current operations.

Cultivation-Related Wastes:Project Compliance Y ☐/N ☒

Cultivation-related wastes, including, but not limited to, used soil bags, fertilizer bags and containers, empty plant pots or containers, dead or harvested plant waste, and spent growth medium, were observed at several locations on the ground where they could possibly enter or be blown into surface waters, or in a manner that could result in residues and pollutants within such materials to migrate or leach into surface water or groundwaters. Specific sites are shown as site 14, 44, and 45. See the Mitigation Report for the description and prescribed treatment at each of these sites. Also, minor amounts of these types of materials were located on the ground in and around the cultivation areas.

To minimize risk of ensnaring wildlife, all used monofilament netting or fencing (e.g. plastic trellis, netting and fencing) that cannot be re-used shall be immediately collected, wound up, and secured with other refuse, and disposed of properly at a waste disposal facility. In addition, 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.

Organic cultivation-related wastes are collected from the cultivation areas and either disposed of properly with general waste, or composted or burned. The cannabis cultivator shall ensure that the locations where organic wastes are stored, composted, or burned are minimized in number and are sited outside of watercourse riparian areas and away from any form of surface runoff.

Non-organic cultivation-related wastes are stored short term in lidded trashcans, garbage bags, and a covered dumpster near the residence and is disposed of regularly at a solid waste transfer station. The cannabis cultivator shall continue to gather and properly dispose of cultivation-related wastes and ensure that wastes are adequately contained from scavenging wildlife, and cannot be transported away from storage areas by wind or surface runoff.

Refuse and Domestic Waste:Project Compliance Y ☐/N ☒

Garbage and refuse are stored on the property within lidded trash cans or a covered dumpster and is disposed of regularly at the nearest solid waste transfer station. The cannabis cultivator shall continue to gather and properly dispose of refuse and ensure that refuse is adequately contained from scavenging wildlife, and cannot be transported away from storage areas by wind or surface runoff.

Human waste is managed by a functioning septic system plumbed to the house. Two outhouses were noted on the western parcel shown as site 48 on the Site Maps and the Mitigation Report. The use of the outhouses shall be discontinued. The structures shall be removed and the holes filled in. Professionally serviced chemical toilets and eventually a permitted septic system are

planned for the western parcel. It is the cannabis cultivator's responsibility to ensure that all waste water disposal is in compliance with the Humboldt County Department of Environmental Health and Human Services.

Annual Winterization Measures

Winterization measures consist of general cleanup and winter-preparation activities that prepare for, anticipated, local winter weather. In project areas that may become inaccessible during periods, or the entirety, of the winter, additional winterization procedures and precautions may be required due to the potential absence of winter monitoring.

- Any exposed soils resulting from winterization activities shall be seeded and straw mulched.
- Any/all areas of exposed soils in and around cultivation areas be seeded and either straw mulched with weed free straw or woodchips.
- All existing culvert inlets, interiors, and outlets shall be cleared of any existing or potential obstructions to include; debris upstream of the culvert such as sediment, loose, moveable rocks, and raftable, small, woody debris.
- Damage or wear to road surfaces (such as rutting, wheel tracks, potholes) that would impair road surface drainage or drainage features (such as outsloping, waterbars, rolling dips, etc.) shall be repaired prior to the Winter Period.
- All existing surface drainage features and sediment capture features shall be maintained if needed to ensure continued function through the Winter Period.
- All fertilizers and petroleum products will be stored in an area located outside of riparian setbacks, completely sealed, placed in a secondary containment (liquids), and stored in a manner that prevents contact with precipitation and surface runoff.
- Chemical toilets will be removed from the property until need resumes the following cultivation season, or at a minimum serviced and left unused during periods when not in use.
- Water storage tank lids shall be appropriately closed to prevent the access of wildlife.
- All refuse/trash shall be removed and disposed of appropriately.
- All inorganic material capable of being transported by wind or rain shall be secured and stored appropriately.

**STATEMENT OF CONTINGENT AND LIMITING CONDITIONS CONCERNING
THE PREPARATION AND USE OF REPORTS ADDRESSING GENERAL
WASTE DISCHARGE REQUIREMENTS UNDER ORDER WQ 2019-0001-DWQ**

Prepared by Timberland Resource Consultants

1. This document has been prepared for the property within APN 210-071-004 & 210-071-009, in Humboldt County, for enrollment in the General Waste Discharge Order WQ 2019-0001-DWQ.
2. Timberland Resource Consultants does not assume any liability for the use or misuse of the information in this document.
3. The information is based upon conditions apparent to Timberland Resource Consultants at the time inspection(s) were conducted. Changes due to land use activities or environmental factors occurring after inspection, have not been considered in this document.
4. Maps, photos, and any other graphical information presented in this report are for illustrative purposes. Their scales are approximate, and they are not to be used for locating and establishing boundary lines.
5. The conditions presented in this document may differ from those made by others or from changes on the property occurring after inspections were conducted. Timberland Resource Consultants does not guarantee this work against such differences.
6. Timberland Resource Consultants did not conduct an investigation on a legal survey of the property.
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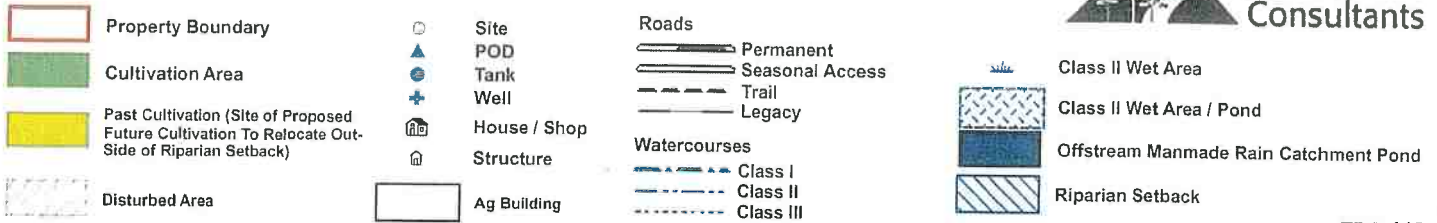


Ron Pelletier

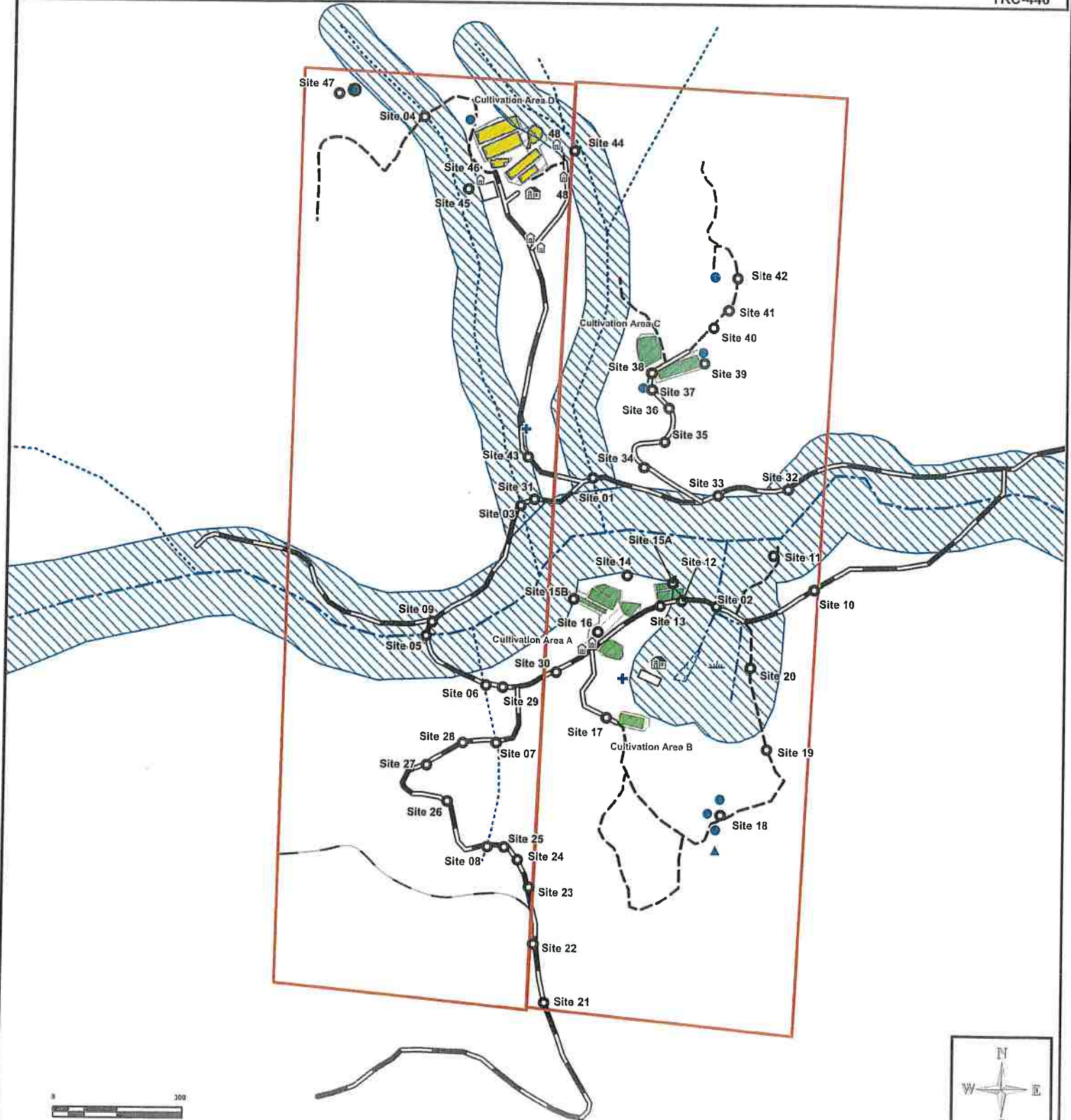
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Site Management Plan

Site Map WDID - 1_12CC414256

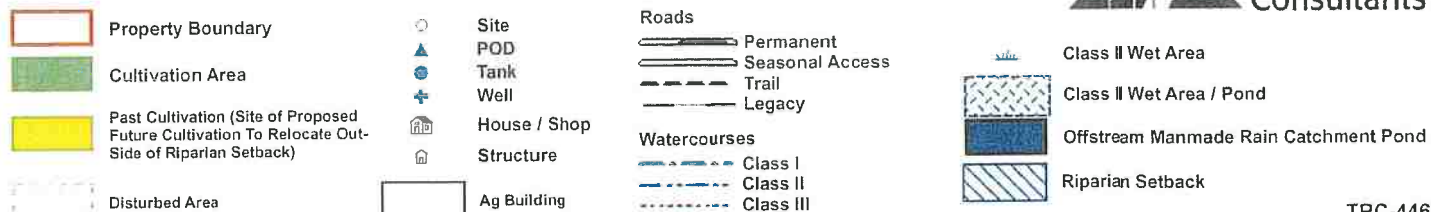


TRC-446

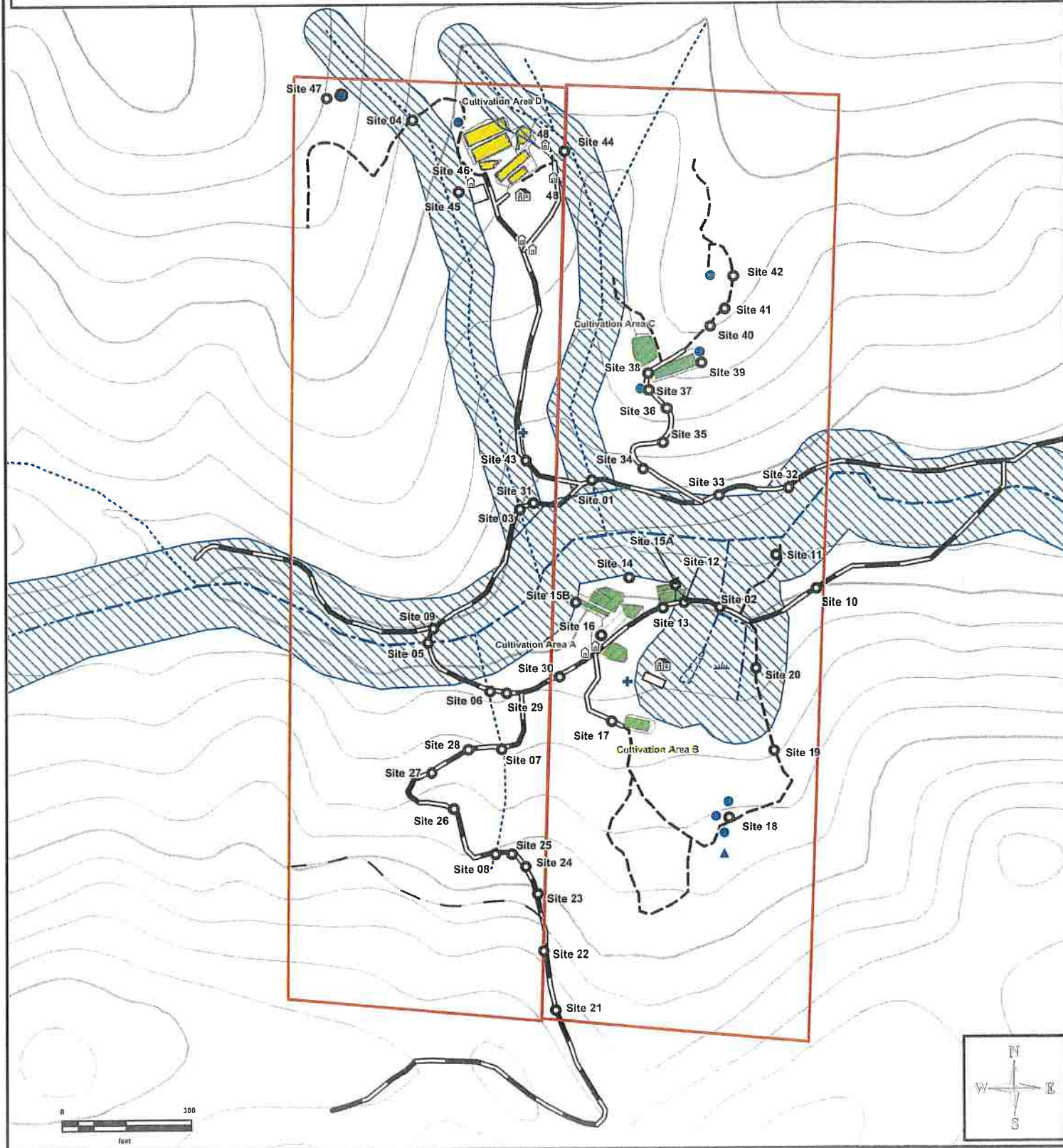


Site Management Plan

Site Map WDID - 1_12CC414256

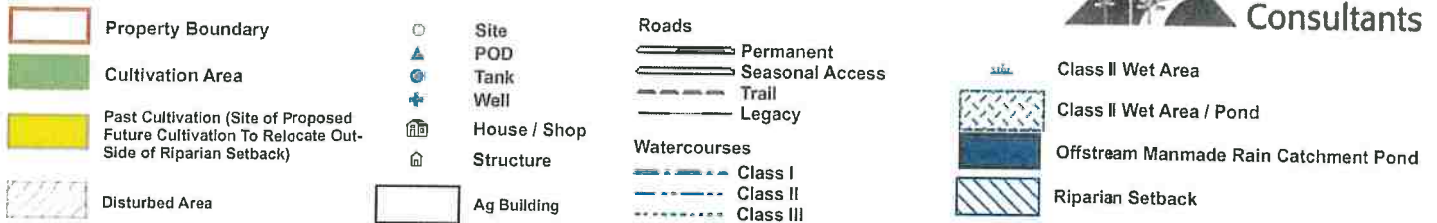


TRC-446

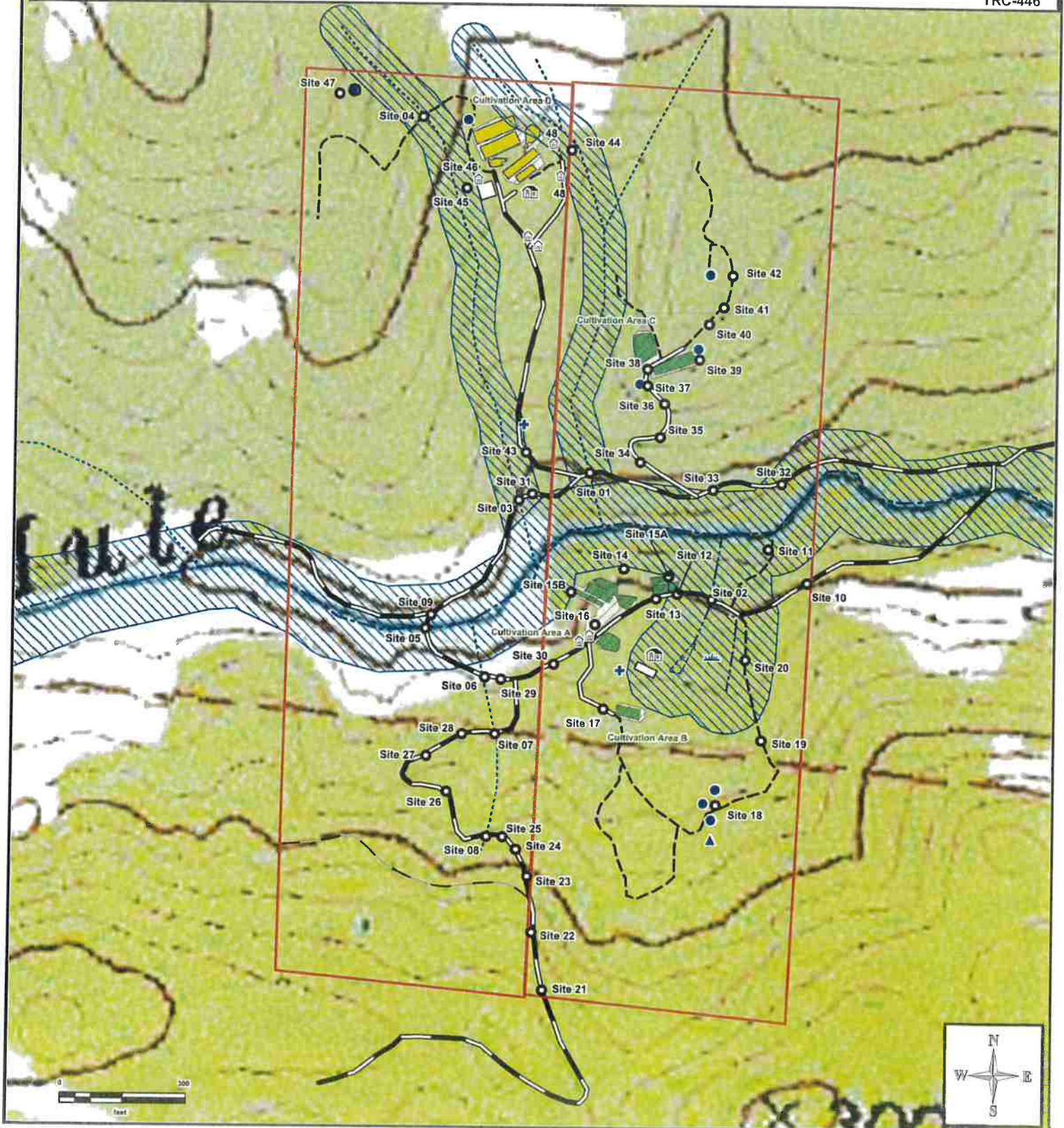


Site Management Plan

Site Map WDID - 1_12CC414256

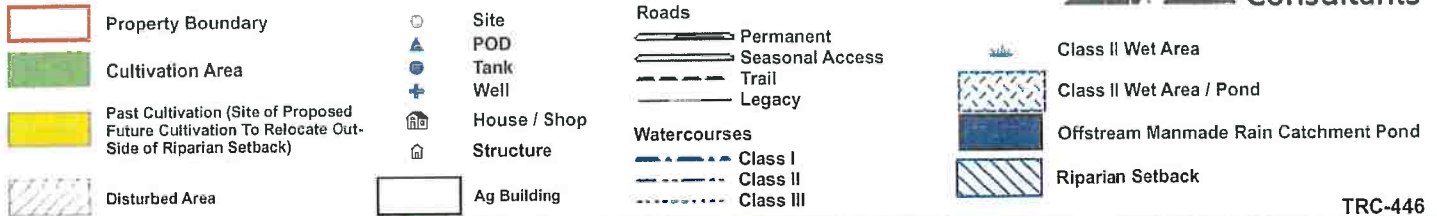


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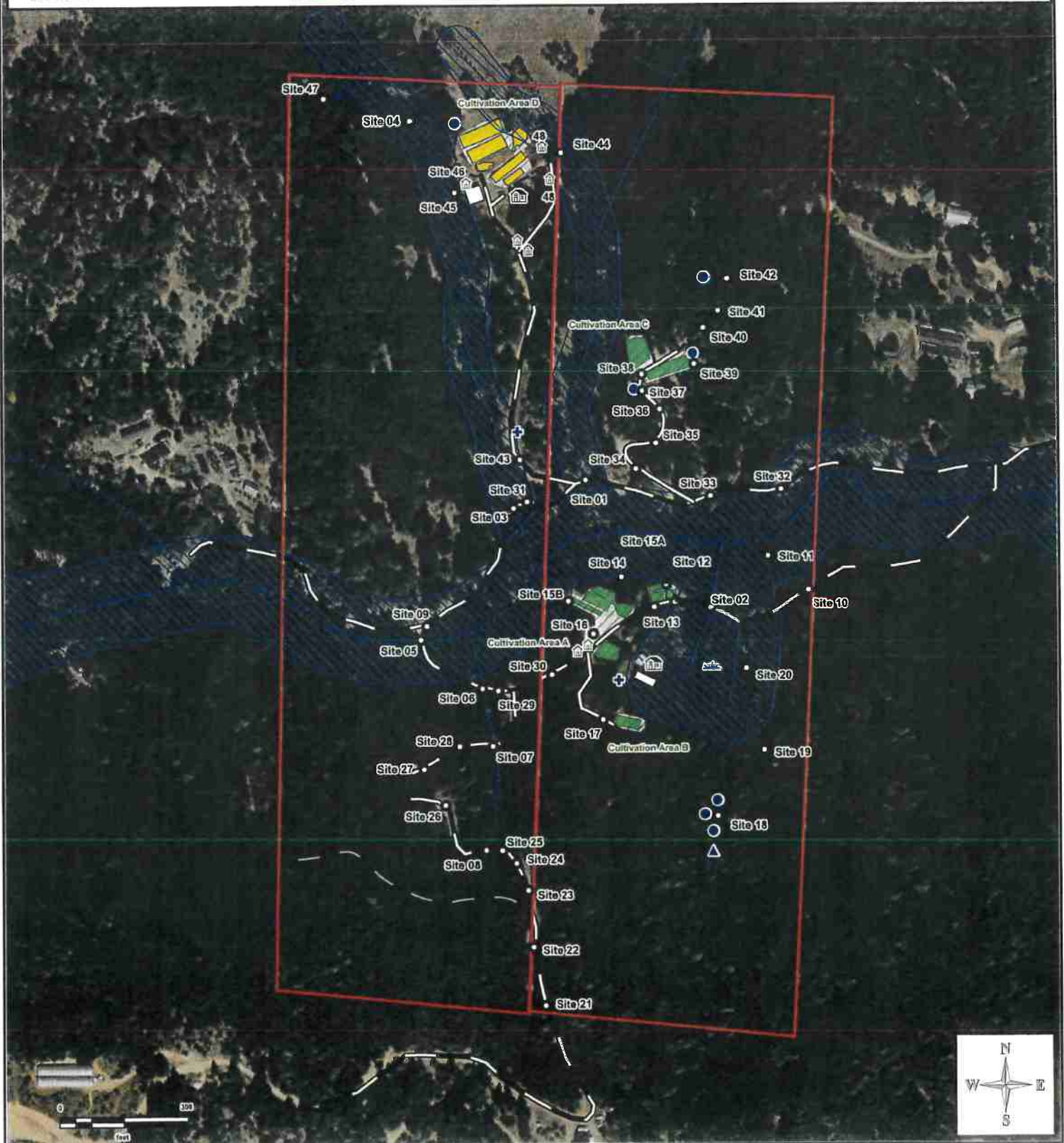



Site Management Plan

Site Map WDID - 1_12CC414256



TRC-446



 Timberland Resource Consultants	Treatment Implementation Schedule
Unique Point	Proposed Work Completion Date
Site 01	Interim measures Immediately; Mitigation measures prior to 10/15/21 pending the approval of any required permits
Site 02	Interim measures Immediately; Mitigation measures prior to 10/15/21 pending the approval of any required permits
Site 03	Interim measures Immediately; Mitigation measures prior to 10/15/21 pending the approval of any required permits
Site 04	Interim measures Immediately; Mitigation measures prior to 10/15/21 pending the approval of any required permits
Site 05	Prior to 10/15/21 pending the approval of any required permits
Site 06	Interim measures Immediately; Mitigation measures prior to 10/15/21 pending the approval of any required permits
Site 07	Interim measures Immediately; Mitigation measures prior to 10/15/21 pending the approval of any required permits
Site 08	Immediately
Site 09	Prior to 10/15/20
Site 10	Immediately and prior to 10/15 of any year
Site 11	Immediately
Site 12	Immediately
Site 13	Immediately
Site 14	Immediately
Site 15A	As soon as feasible, but no later than 10/15
Site 15B	As soon as feasible, but no later than 10/15
Site 16	Immediately
Site 17	Immediately
Site 18	Immediately
Site 19	Immediately
Site 20	Immediately
Site 21	Annually prior to 10/15
Site 22	Annually prior to 10/15
Site 23	Annually prior to 10/15
Site 24	Annually prior to 10/15
Site 25	Annually prior to 10/15
Site 26	As soon as feasible, but no later than 10/15
Site 27	Annually prior to 10/15
Site 28	Annually prior to 10/15
Site 29	Annually prior to 10/15
Site 30	Annually prior to 10/15
Site 31	Annually prior to 10/15
Site 32	Annually prior to 10/15
Site 33	Annually prior to 10/15
Site 34	As soon as feasible, but no later than 10/15
Site 35	As soon as feasible, but no later than 10/15
Site 36	As soon as feasible, but no later than 10/15
Site 37	As soon as feasible, but no later than 10/15
Site 38	As soon as feasible, but no later than 10/15
Site 39	Immediately
Site 40	Annually prior to 10/15
Site 41	Annually prior to 10/15
Site 42	Annually prior to 10/15
Site 43	As soon as feasible, but no later than 10/15
Site 44	Immediately
Site 45	As soon as feasible, but no later than 10/15
Site 46	Immediately
Site 47	Prior to 10/15/20
Site 48	Immediately
Cultivation Area D	Immediately
POD	Immediately
Mule Creek Road	As required
Wells	Immediately
Portable fuel canisters	Immediately
Fertilizer Storage	Immediately



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Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 01	-123.690905 40.429709	Permanent	X	X	X	Interim measures Immediately; Mitigation measures prior to 10/15/21 pending the approval of any required permits	
Current Condition: Existing watercourse crossing is an 18 inch diameter culvert that is undersized for the calculated 100 year peak streamflow.						Prescribed Action: Interim Measure: Follow the Winterization and Interim Treatments for Erosion Control at Crossings BMPs that are attached. Replace with a minimum 36 inch diameter culvert per the approved Lake and Streambed Alteration Agreement No. 1600-2016-0409-R1.	
Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 02	-123.689868 40.428912	Permanent	X	X	X	Interim measures Immediately; Mitigation measures prior to 10/15/21 pending the approval of any required permits	
Current Condition: Existing watercourse crossing is a 12 inch diameter culvert that is undersized for the calculated 100 year peak streamflow.						Prescribed Action: Interim Measure: Follow the Winterization and Interim Treatments for Erosion Control at Crossings BMPs that are attached. Replace culvert. Minimum culvert diameter, length, and specifications are pending approval by CDFW in a Lake and Streambed Alteration Agreement that is in process.	
Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 03	-123.691498 40.429528	Permanent	X	X	X	Interim measures Immediately; Mitigation measures prior to 10/15/21 pending the approval of any required permits	
Current Condition: Existing watercourse crossing is a 12 inch diameter culvert that is undersized for the calculated 100 year peak streamflow.						Prescribed Action: Interim Measure: Follow the Winterization and Interim Treatments for Erosion Control at Crossings BMPs that are attached. Replace culvert. Minimum culvert diameter, length, and specifications are pending approval by CDFW in a Lake and Streambed Alteration Agreement that is in process.	
Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 04	-123.692369 40.431965	Trail	X	X	X	Interim measures Immediately; Mitigation measures prior to 10/15/21 pending the approval of any required permits	
Current Condition: Existing watercourse crossing is a 12 inch diameter culvert that is undersized for the calculated 100 year peak streamflow.						Prescribed Action: Interim Measure: Follow the Winterization and Interim Treatments for Erosion Control at Crossings BMPs that are attached. Replace culvert. Minimum culvert diameter, length, and specifications are pending approval by CDFW in a Lake and Streambed Alteration Agreement that is in process.	



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Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 05	-123.692253 40.4287	Permanent	X	X	X	Prior to 10/15/21 pending the approval of any required permits	
Current Condition: Existing permanent 40 foot long, double wide railcar bridge across Class I Mule Creek. Railcars appear to have been installed atop an older bridge constructed of logs, with partially buried logs for abutments. The old log bridge under the railcars are decaying and some have broken off and are obstructing the watercourse.						Prescribed Action: Replace bridge abutments with concrete geo-blocks, remove old bridge debris from the watercourse, and rock armor banks. All work shall be done following specifications that are pending approval by CDFW in a Lake and Streambed Alteration Agreement that is in process.	
Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 06	-123.691748 40.428394	Permanent	X	X	X	Interim measures Immediately; Mitigation measures prior to 10/15/21 pending the approval of any required permits	
Current Condition: Existing watercourse crossing is an 18 inch diameter culvert that is undersized for the calculated 100 year peak streamflow.						Prescribed Action: Interim Measure: Follow the Winterization and Interim Treatments for Erosion Control at Crossings BMPs that are attached. Replace culvert. Minimum culvert diameter, length, and specifications are pending approval by CDFW in a Lake and Streambed Alteration Agreement that is in process.	
Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 07	-123.691655 40.428034	Permanent	X	X	X	Interim measures Immediately; Mitigation measures prior to 10/15/21 pending the approval of any required permits	
Current Condition: Existing watercourse crossing is an 18 inch diameter culvert that is undersized for the calculated 100 year peak streamflow.						Prescribed Action: Interim Measure: Follow the Winterization and Interim Treatments for Erosion Control at Crossings BMPs that are attached. Replace culvert. Minimum culvert diameter, length, and specifications are pending approval by CDFW in a Lake and Streambed Alteration Agreement that is in process.	
Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 08	-123.691708 40.427382	Permanent	X	X	-	Immediately	
Current Condition: Existing, functioning watercourse crossing is an appropriately sized, 18 inch diameter culvert with a 15 foot long downspout attached.						Prescribed Action: Follow the Winterization and Interim Treatments for Erosion Control at Crossings BMPs that are attached.	
Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 09	-123.692204 40.428787	Permanent	X	X	-	Prior to 10/15/20	
Current Condition: Road surface approaches to the permanent bridge.						Prescribed Action: Apply clean, compacted rock to the road surface for 50 feet each side of the bridge as necessary to maintain a stable road surface and to minimize sediment from entering the watercourse.	



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Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 10	-123.689069 40.429024	Permanent	X	-	-	Immediately and prior to 10/15 of any year	
Current Condition: Existing 12 inch diameter ditch relief culvert. Minor vegetation and debris has accumulated at the inlet and the outlet.						Prescribed Action: Clean out the inlet and the outlet of the ditch relief culvert. Monitor this site throughout the winter to ensure that the ditch relief culvert is functioning.	
Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 11	-123.689403 40.429236	Trail	X	-	-	Immediately	
Current Condition: Remaining components to a hydroelectric system that is no longer in use.						Prescribed Action: Remove the remaining hydroelectric system and associated waterlines and electric wires and store outside of riparian setbacks or dispose of properly.	
Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 12	-123.690158 40.428943	Permanent	X	-	-	Immediately	
Current Condition: Rocked rolling dip needed at this location.						Prescribed Action: Install and maintain rocked rolling dip at this location to cross drain the road surface and prevent ponding on the road surface.	
Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 13	-123.690331 40.42891	Permanent	X	-	-	Immediately	
Current Condition: Rocked rolling dip needed at this location.						Prescribed Action: Install and maintain rocked rolling dip at this location to cross drain the road surface and prevent ponding on the road surface.	
Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 14	-123.690606 40.429099	-	X	-	-	Immediately	
Current Condition: Metal, wood, and plastic hoop house material stored or discarded on the edge of the Class I riparian setback becoming overgrown with vegetation.						Prescribed Action: Remove materials and store in a secure location or dispose of properly.	
Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 15A	-123.690233 40.429054	-	X	X	-	As soon as feasible, but no later than 10/15	
Current Condition: Cultivation area partially located within the 100 foot riparian setback for a Class II watercourse. The riparian setback was identified on the ground at this location.						Prescribed Action: Remove cultivation and related materials from the riparian setback. Grass seed and mulch bare soils within the riparian setback. Keep cultivation soils and materials contained to the remaining cultivation areas located outside of the riparian setbacks. Install straw wattles or box in the downslope edge of the remaining cultivation area as necessary to prevent soils and or materials from leaving the cultivation area and entering the riparian setback.	



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Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 15B	-123.691044 40.428946	-	X	X	-	As soon as feasible, but no later than 10/15	
Current Condition: Cultivation area partially located within the 100 foot riparian setback for a Class I watercourse. The riparian setback was identified on the ground at this location.						Prescribed Action: Remove cultivation and related materials from the riparian setback. Grass seed and mulch bare soils within the riparian setback. Keep cultivation soils and materials contained to the remaining cultivation areas located outside of the riparian setbacks. Install straw wattles or box in the downslope edge of the remaining cultivation area as necessary to prevent soils and or materials from leaving the cultivation area and entering the riparian setback.	
Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 16	-123.690835 40.428741	-	X	-	-	Immediately	
Current Condition: Soil storage area.						Prescribed Action: All potting soil or soil amendments, when not in use, shall be 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 groundwater.	
Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 17	-123.690752 40.428204	Seasonal	X	-	-	Immediately	
Current Condition: Steep pitch of seasonal road to Cultivation Area B is developing ruts along its surface.						Prescribed Action: Install and maintain a waterbreak at the top of the steep pitch near Cultivation Area B immediately and prior to each winter. Apply compacted rock along the seasonal road that accesses Cultivation Area B.	
Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 18	-123.689802 40.427602	Trail	X	-	-	Immediately	
Current Condition: Existing waterbreak near the Point of Diversion (POD) becoming worn down.						Prescribed Action: Reconstruct and maintain a waterbreak at this location prior to each winter.	
Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 19	-123.689429 40.428017	Trail	X	-	-	Immediately	
Current Condition: Existing waterbreak in need of reconstruction.						Prescribed Action: Reconstruct and maintain a waterbreak at this location prior to each winter.	



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Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 20	-123.689576 40.42853	Trail	X	-	-	Immediately	
Current Condition: Existing waterbreak at a bank seep along inboard edge of ATV trail in need of reconstruction.						Prescribed Action: Reconstruct and maintain a waterbreak at this location prior to each winter. Or install and maintain a rocked rolling dip at this location.	
Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 21	-123.691216 40.426411	Permanent	X	-	-	Annually prior to 10/15	
Current Condition: Existing rolling dip becoming worn from normal, seasonal vehicle use.						Prescribed Action: Repair and maintain the rolling dip per the specifications in the attached BMPS: Rocked Rolling Dip Design and Placement.	
Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 22	-123.691314 40.426778	Permanent	X	-	-	Annually prior to 10/15	
Current Condition: Existing rolling dip becoming worn from normal, seasonal vehicle use.						Prescribed Action: Repair and maintain the rolling dip per the specifications in the attached BMPS: Rocked Rolling Dip Design and Placement.	
Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 23	-123.691361 40.427132	Permanent	X	-	-	Annually prior to 10/15	
Current Condition: Existing rolling dip becoming worn from normal, seasonal vehicle use.						Prescribed Action: Repair and maintain the rolling dip per the specifications in the attached BMPS: Rocked Rolling Dip Design and Placement.	
Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 24	-123.69146 40.427303	Permanent	X	-	-	Annually prior to 10/15	
Current Condition: Existing rolling dip becoming worn from normal, seasonal vehicle use.						Prescribed Action: Repair and maintain the rolling dip per the specifications in the attached BMPS: Rocked Rolling Dip Design and Placement.	
Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 25	-123.691573 40.427382	Permanent	X	-	-	Annually prior to 10/15	
Current Condition: Existing rolling dip becoming worn from normal, seasonal vehicle use.						Prescribed Action: Repair and maintain the rolling dip per the specifications in the attached BMPS: Rocked Rolling Dip Design and Placement.	



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Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 26	-123.692045 40.427663	Permanent	X	-	-	As soon as feasible, but no later than 10/15	

Current Condition: Proposed rolling dip location.

Prescribed Action: Install and maintain a rolling dip per the specifications in the attached BMPS: Rocked Rolling Dip Design and Placement.

Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 27	-123.692222 40.427888	Permanent	X	-	-	Annually prior to 10/15	

Current Condition: Existing rolling dip becoming worn from normal, seasonal vehicle use.

Prescribed Action: Repair and maintain the rolling dip per the specifications in the attached BMPS: Rocked Rolling Dip Design and Placement.

Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 28	-123.691929 40.428032	Permanent	X	-	-	Annually prior to 10/15	

Current Condition: Existing rolling dip becoming worn from normal, seasonal vehicle use.

Prescribed Action: Repair and maintain the rolling dip per the specifications in the attached BMPS: Rocked Rolling Dip Design and Placement.

Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 29	-123.691613 40.428383	Permanent	X	-	-	Annually prior to 10/15	

Current Condition: Existing rolling dip becoming worn from normal, seasonal vehicle use.

Prescribed Action: Repair and maintain the rolling dip per the specifications in the attached BMPS: Rocked Rolling Dip Design and Placement.

Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 30	-123.691177 40.428484	Permanent	X	-	-	Annually prior to 10/15	

Current Condition: Existing rolling dip becoming worn from normal, seasonal vehicle use.

Prescribed Action: Repair and maintain the rolling dip per the specifications in the attached BMPS: Rocked Rolling Dip Design and Placement.

Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 31	-123.691386 40.429568	Permanent	X	X	-	Annually prior to 10/15	

Current Condition: Existing road surface drainage feature (dip and lead-out drain) becoming worn from normal, seasonal vehicle use.

Prescribed Action: Repair and maintain the road surface drainage feature in a manner that minimizes sediment delivery to Mule Creek. See the specifications in the attached BMPS.



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Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 32	-123.689295 40.429655	Permanent	X	X	-	Annually prior to 10/15	
Current Condition: Existing road surface drainage feature (dip and lead-out drain) becoming worn from normal, seasonal vehicle use.						Prescribed Action: Repair and maintain the road surface drainage feature in a manner that minimizes sediment delivery to Mule Creek. See the specifications in the attached BMPS.	
Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 33	-123.689872 40.429611	Permanent	X	X	-	Annually prior to 10/15	
Current Condition: Existing road surface drainage feature (dip and lead-out drain) becoming worn from normal, seasonal vehicle use.						Prescribed Action: Repair and maintain the road surface drainage feature in a manner that minimizes sediment delivery to Mule Creek. See the specifications in the attached BMPS.	
Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 34	-123.690486 40.42978	Seasonal	X	-	-	As soon as feasible, but no later than 10/15	
Current Condition: Steep pitch of very rocky seasonal road to Cultivation Area C is developing wheel ruts along its surface.						Prescribed Action: Install and maintain a waterbreak at this location prior to each winter. Grade the road surface to achieve an outsloped drainage pattern where feasible and compact the native rock road surface.	
Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 35	-123.690324 40.429942	Seasonal	X	-	-	As soon as feasible, but no later than 10/15	
Current Condition: Steep pitch of very rocky seasonal road to Cultivation Area C is developing wheel ruts along its surface.						Prescribed Action: Install and maintain a waterbreak at this location prior to each winter. Grade the road surface to achieve an outsloped drainage pattern where feasible and compact the native rock road surface.	
Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 36	-123.690294 40.430157	Seasonal	X	-	-	As soon as feasible, but no later than 10/15	
Current Condition: Steep pitch of very rocky seasonal road to Cultivation Area C is developing wheel ruts along its surface.						Prescribed Action: Install and maintain a waterbreak at this location prior to each winter. Grade the road surface to achieve an outsloped drainage pattern where feasible and compact the native rock road surface.	
Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 37	-123.690437 40.430272	Seasonal	X	-	-	As soon as feasible, but no later than 10/15	
Current Condition: Steep pitch of very rocky seasonal road to Cultivation Area C is developing wheel ruts along its surface.						Prescribed Action: Install and maintain a waterbreak at this location prior to each winter. Grade the road surface to achieve an outsloped drainage pattern where feasible and compact the native rock road surface.	



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Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 38	-123.690441 40.430376	Seasonal	X	-	-	As soon as feasible, but no later than 10/15	

Current Condition: Steep pitch of very rocky seasonal road to Cultivation Area C is developing wheel ruts along its surface.

Prescribed Action: Install and maintain a waterbreak at this location prior to each winter. Grade the road surface to achieve an outloped drainage pattern where feasible and compact the native rock road surface.

Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 39	-123.690009 40.430442	-	X	-	-	Immediately	

Current Condition: Cultivation soil at the east end of Cultivation Area C

Prescribed Action: Keep cultivation soil and materials contained to the cultivation area. Install straw wattles or box in the downslope edge of the cultivation area as necessary to keep soil and or materials contained to the cultivation area.

Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 40	-123.689934 40.43067	Trail	X	-	-	Annually prior to 10/15	

Current Condition: Waterbreak in need of reconstruction.

Prescribed Action: Reconstruct and maintain a waterbreak at this location prior to each winter.

Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 41	-123.689815 40.430779	Trail	X	-	-	Annually prior to 10/15	

Current Condition: Waterbreak in need of reconstruction.

Prescribed Action: Reconstruct and maintain a waterbreak at this location prior to each winter.

Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 42	-123.689744 40.430982	Trail	X	-	-	Annually prior to 10/15	

Current Condition: Waterbreak in need of reconstruction.

Prescribed Action: Reconstruct and maintain a waterbreak at this location prior to each winter.

Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 43	-123.691447 40.429834	Permanent	X	-	-	As soon as feasible, but no later than 10/15	

Current Condition: Existing rolling dip becoming worn.

Prescribed Action: Install and maintain a rocked rolling dip per the specifications in the attached BMPS: Rocked Rolling Dip Design and Placement.



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Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 44	-123.691117 40.431768	-	X	-	-	Immediately	
Current Condition: Remnant cultivation related waterlines and materials within and nearby the Class III watercourse.						Prescribed Action: Remove and dispose of the cultivation related waterlines and materials within and nearby the Class III watercourse.	
Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 45	-123.69199 40.431515	-	X	-	-	As soon as feasible, but no later than 10/15	
Current Condition: Greenhouse material and cultivation debris consisting of metal and plastic pipe, and lumber are stored within the riparian setback, some of which has access to the Class III watercourse. A small amount of composted plant waste and used soil was also at this location within the riparian setback. A 250 square foot metal cargo shed is also at this location.						Prescribed Action: Remove the greenhouse materials and cultivation waste and store at a location outside of the riparian setback or dispose of properly. The 250 square foot metal cargo storage shed may remain at its location for storage of hand tools and solid materials (i.e. fence posts, lumber, metal, pipe, etc.). No liquids, chemicals, petroleum products or fertilizers shall be stored at this location.	
Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 46	-123.691893 40.431577	-	X	-	-	Immediately	
Current Condition: The generator shed extends into the 50 foot wide riparian setback for the Class III watercourse by approximately 2 to 3 feet. The shed provides full protection from weather and has a compacted rock floor. It houses a 1,000 gallon metal diesel tank equipped with secondary containment, a diesel generator mounted on a small concrete pad, and 1 gallon jugs of motor oil. All of these items are in the section of the shed that is located outside of the riparian setback.						Prescribed Action: Install a drip pan under the generator to contain small oil leaks and or spills. Store motor oil jugs or hand gas containers inside of secondary containment (e.g. plastic totes or sealed metal boxes) while being stored long term inside of the shed. Adequate quantities of absorbent materials shall be stored in the generator shed. Should a spill occur, absorbent materials will be applied immediately as directed on product labeling. Following treatment, absorbent materials will be removed and disposed of appropriately.	
Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 47	-123.693074 40.432104	-	X	X	-	Prior to 10/15/20	
Current Condition: A round rain catchment pond of approximately 45 feet in diameter is located in a small depression under tree canopy cover. It appears to have been installed years ago by a previous landowner, but not used or maintained recently. It is not currently a planned water source for the current landowner. The pond has a liner in place that is in disrepair, and a berm constructed of boards staked in place and 4 to 8 inch diameter Douglas fir poles. It currently still holds water and is becoming filled with leaves, limbs, small trees, and forest litter.						Prescribed Action: Remove the stakes and wood that make up the pond berm and allow the pond to partially drain. Remove the pond liner, waterlines, a nearby abandoned water pump, and any other discarded materials relating to the past pond use. The remaining depression may remain to collect forest litter and revegetate naturally. Monitor the site to ensure that it does not develop into a sediment discharge site. Reconstruction of the pond to keep it as an additional water source, or further pond removal involving excavation may require approved grading plans and a Streambed Alteration Agreement from CDFW prior to construction.	



SMP - Mitigation Report

WDID# - 1_12CC414256

Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 48	-123.691197 40.4316911	-	X	-	-	Immediately	
Current Condition: Existing Outhouses						Prescribed Action: The use of the outhouses shall be discontinued. The structures shall be removed and the holes filled in. Ensure that all waste water disposal is in compliance with the Humboldt County Department of Environmental Health and Human Services.	
Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Cultivation Area D	-123.691642 40.4317549	-	X	-	-	Immediately	
Current Condition: Past cultivation areas have had greenhouse structures removed. This site was partially located within the 50 foot wide riparian setback for the Class III watercourse. The riparian setback was identified on the ground at this location. This site is currently in planning stages for a proposed, future, permitted cultivation site.						Prescribed Action: Remove any remaining fencing, pots, wooden boxes, and other cultivation-related wastes and materials from within the 50 foot wide riparian setback. Seed and mulch areas of bare soil within the riparian setback with native grass seed and weed free straw (or woodchips). Plan and construct future cultivation areas so disturbed areas remain outside of the riparian setback and in a manner that keeps cultivation soils and materials contained to the immediate cultivation area, outside of the riparian setback.	
Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
POD	-123.689838 40.427378	-	X	X	X	Immediately	
Current Condition: Approved Point of Diversion.						Prescribed Action: Continue use of the permitted POD per the approved Lake and Steamed Alteration Agreement No. 1600-2016-0409-R1. Remove all unused waterlines and diversion debris and dispose of properly. Prior to the 2020 growing season, install water meters to record all water usage for the irrigation of cannabis and domestic use. Monthly water usage shall be recorded for annual reporting purposes. Also, water storage tank lids shall be kept closed to prevent the access of wildlife and water conservation measures shall be implemented (e.g. drip line irrigation, morning or evening watering, and mulch or cover cropping of cultivated top soils, etc.).	
Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Mule Creek Road		Permanent	X	X	-	As required	
Current Condition: A segment of Mule Creek Road, a private, permanent community access road, passes through these parcels and is mostly located within the 100 foot wide riparian setback for Mule Creek.						Prescribed Action: Monitor the road periodically during winter to ensure the road surface is stable and adequately drained to prevent ponding and potholing on the road surface, and to minimize sediment runoff. Apply clean compacted rock to the road surface as necessary. Prior to any winter period, grade the road surface as necessary to reestablish worn rolling dips and lead out ditches, and to achieve efficient road surface drainage to reduce ponding on the road surface.	



SMP - Mitigation Report

WDID# - 1_12CC414256

Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Wells		-	X	X	-	Immediately	
Current Condition: Two Groundwater Wells						Prescribed Action: Prior to the 2020 growing season, install water meters to record all water usage for the irrigation of cannabis and domestic use. Monthly water usage shall be recorded for annual reporting purposes. Also, water storage tank lids shall be kept closed to prevent the access of wildlife and water conservation measures shall be implemented (e.g. drip line irrigation, morning or evening watering, and mulch or cover cropping of cultivated top soils, etc.).	
Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Portable fuel cannisters		-	X	-	-	Immediately	
Current Condition: All liquid petroleum products (e.g. any size container of any petroleum product) requires secondary containment while not in use and cover from precipitation during the wet season.						Prescribed Action: All liquid petroleum products and their containers shall be stored in secondary containment (e.g. plastic totes, sealed metal boxes, or within the enclosed generator shed) while not in use, wherever these materials are used. Adequate quantities of absorbent materials shall be stored at locations where these types of materials are used and stored. Should a spill occur, absorbent materials will be applied immediately and allowed to absorb as much material as possible. Following treatment, absorbent materials as well as any contaminated soil will be removed and disposed of appropriately.	
Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Fertilizer Storage		-	X	-	-	Immediately	
Current Condition: Fertilizers and pesticides are stored inside of sheds and the Ag Building outside of riparian setbacks. Secondary containment was not observed inside of sheds.						Prescribed Action: All fertilizer and pesticide storage areas shall have appropriate secondary containment structures, as necessary, to protect water quality and prevent spillage, mixing, discharge, or seepage. See Order WQ 2017-0023-DWQ, Attachment A, Section 2 - Requirements Related To Water Diversions And Waste Discharge For Cannabis Cultivation, Term No. 106.	

BMP: Winterization and Interim Treatments for Erosion Control

• **Roads**

- Existing or newly installed road surface drainage structures such as water bars, rolling dips, ditch relief culverts, and intentionally in/out-sloped segments of road shall be maintained to ensure continued function of capturing and draining surface runoff.
- Hand tool kick-outs (lead out ditch) for existing wheel rut, surface run-off confinement.
- Temporary waterbar/cross-wattles installed on road/trail sections of concentrating surface runoff.
- Clean existing ditch relief culvert inlets, outlets, and contributing ditch lines of current and potential blockage debris by hand.
- Hand place energy dissipating rock/small woody debris at ditch relief culvert outlets where erosion is occurring.
- Wattles/straw bales placed at road runoff delivery sites.
- Touch-up with hand tools of existing surface drainage structures (kick-outs, rolling dips, and waterbars).
- Seed and straw un-used, or to be abandoned, road surfaces where erosion is occurring.
- Frequent use of un-surfaced roads should be avoided, particularly when road surfaces are soft/saturated.

• **Crossings**

- Clean inlets, outlets, and channels above of current and potential blockage debris by hand.
- Hand place energy dissipating rock/small woody debris at ditch relief culvert outlets.
- Hand placement of rock armor around culvert inlets.
- Install staked wattles along the outboard road edge of out-sloped watercourse crossings where direct delivery of road surface runoff is occurring.
- Hand placement of rock on crossing fill faces where erosion is/may occur as a result of poor crossing construction.

• **Cultivation Areas**

- Use hand tools to capture cultivation related soils that are not contained (soil from post-harvest plant removal, soil/planter removal, general spillage).
- Treat beds, pots, new soil storage piles, spent soil piles, and soil disposal piles with cover crops for soil stability and potentially nitrogen fixing/soil amendment.
- Bagged potting soil should be covered.
- Install staked wattles or an earthen berm around cultivation soils piles prior to the winter period, annually.
- Any soil amendment, fertilizer, herbicide, or pesticide that is not 100% sealed should be stored under cover.
- Cultivation sites with poor or concentrating drainage can have wattles or bales installed prior to winter to help prevent sediment and nutrients from leaving the site.
- Plastic netting shall be disposed of or stored where it is inaccessible to wildlife.
- Tarps/dep covers shall be stored so they cannot be blown away.
- General waste from growing season gathered up and disposed of.
- Exposed soil surfaces in the cultivation area, as well as graded fill slopes should be seeded, strawed, mulched, jute netted as needed.

• **General Areas**

- Remove all refuse prior to leaving property for the season.
- Back fill pit toilets to be abandoned.

BMP: General Recommendations

- **Fertilizers, soil amendments, and pesticides**
 - Fertilizer, soil amendments, and pesticide use it to be recorded in such a manner that cumulative annual totals are recorded for annual reporting.
 - Store in-use fertilizers in a securable storage container, such as a tote or deck box, adjacent to the mixing tanks.
- **Petroleum products and hazardous materials**
 - Utilize spill trays/containment structures and cover over the containment when using, fueling, changing oil on portable generators or petroleum powered water pumps to prevent the potential for leeching, seepage or spillage of petroleum products.
 - It is recommended that all petroleum products and other chemicals are registered with the California Environmental Reporting System (CERS) to satisfy future licensing requirements.
- **Water storage and Use**
 - Water use shall be designed and metered such that water used for the irrigation of cannabis will be recorded separately from domestic use. Water use for the irrigation of cannabis is to be recorded monthly for annual reporting.
 - Ensure lids are secured on all water storage tanks to prevent wildlife from becoming entrapped within the tank.
 - Install float valves, or implement another equivalent system, on all applicable water storage and transfer tanks to prevent unnecessary water diversion and the overflowing of water tanks.

BMP: General Operations BMPs

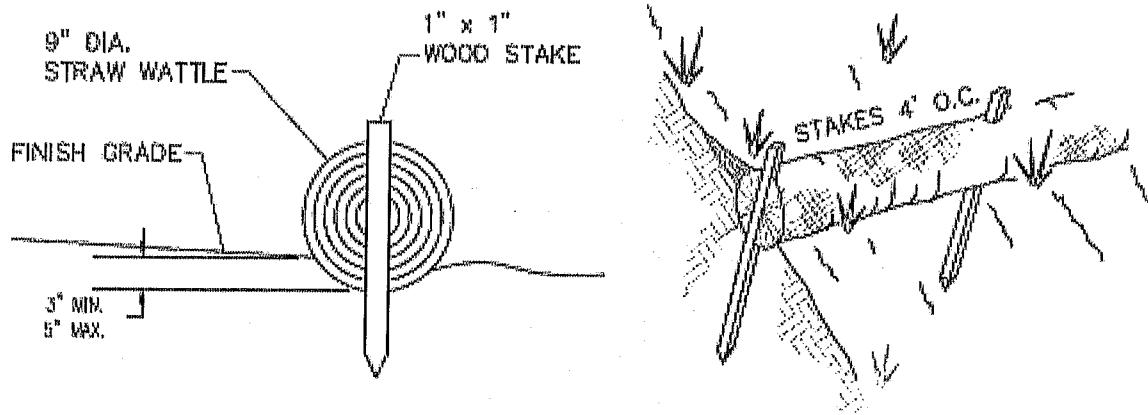
- If operations require moving of equipment across a flowing stream, such operations shall be conducted without causing a prolonged visible increase in stream turbidity. For repeated crossings, the operator shall install a bridge, culvert, or rock-lined crossing.
- During construction in flowing water, which can transport sediment downstream, the flow shall be diverted around the work area by pipe, pumping, temporary diversion channel or other suitable means. When any dam or artificial obstruction is being constructed, maintained, or placed in operation, sufficient water shall at all times be allowed to pass downstream to maintain fish life below the dam. Equipment may be operated in the channel of flowing live streams only as necessary to construct the described construction.
- Disturbance or removal of vegetation shall not exceed the minimum necessary to complete operations. The disturbed portion of any stream channel shall be restored to as near their original condition as possible. Restoration shall include the mulching of stripped or exposed dirt areas at crossing sites prior to the end of the work period.
- Structures and associated materials not designed to withstand high seasonal flow shall be removed to areas above the high-water mark before such flows occur.
- No debris, soil, silt, sand, bark, slash, sawdust, rubbish, cement or concrete washing, oil or petroleum products, or other organic or earthen material from any logging, construction, or associated activity of whatever nature shall be allowed to enter into or be placed where it may be washed by rainfall or runoff into waters of the State. When operations are completed, any excess materials or debris shall be removed from the work area. No rubbish shall be deposited within 150 feet of the high-water mark of any stream.

BMP: General Erosion Control

- Timing for soil stabilization measures within the 100 feet of a watercourse or lake: For areas disturbed from May 1 through October 15, treatment shall be completed prior to the start of any rain that causes overland flow across or along the disturbed surface. For areas disturbed from October 16 through April 30, treatment shall be completed prior to any day for which a chance of rain of 30 percent or greater is forecast by the National Weather Service or within 10 days, whichever is earlier.
- Within 100 feet of a watercourse or lake, the traveled surface of logging roads shall be treated to prevent waterborne transport of sediment and concentration of runoff that results from operations. Treatment may consist of, but not limited to, rocking, out sloping, rolling dips, cross drains, water bars, slope stabilization measures, or other practices appropriate to site-specific conditions.
- The treatment for other disturbed areas within 100 feet of a watercourse or lake, including: (A) areas exceeding 100 contiguous square feet where operations have exposed bare soil, (B) approaches to road watercourse crossings out to 100 feet or the nearest drainage facility, whichever is farthest, (C) road cut banks and fills, and (D) any other area of disturbed soil that threatens to discharge sediment into waters in amounts deleterious to the quality and beneficial uses of water, shall be grass seeded and mulched with straw or fine slash. Grass seed shall be applied at a rate exceeding 100 pounds per acre. Straw mulch shall be applied in amounts sufficient to provide at least 2- 4-inch depth of straw with minimum 90% coverage. Slash may be substituted for straw mulch provided the depth, texture, and ground contact are equivalent to at least 2 - 4 inches of straw mulch. Any treated area that has been subject to reuse or has less than 90% surface cover shall be treated again prior to the end of operations.
- Within 100 feet of a watercourse or lake, where the undisturbed natural ground cover cannot effectively protect beneficial uses of water from operations, the ground shall be treated with slope stabilization measures described in #3 above per timing described in #1 above.
- Side cast or fill material extending more than 20 feet in slope distance from the outside edge of a landing which has access to a watercourse or lake shall be treated with slope stabilization measures described in #3 above. Timing shall occur per #1 above unless outside 100 feet of a watercourse or lake, in which completion date is October 15.
- All roads shall have drainage and/or drainage collection and storage facilities installed as soon as practical following operations and prior to either (1) the start of any rain which causes overland flow across or along the disturbed surface within 100 feet of a watercourse or lake protection, or (2) any day with a National Weather Service forecast of a chance of rain of 30 percent or more, a flash flood warning, or a flash flood watch.

BMP: General Erosion Control (Cont.)

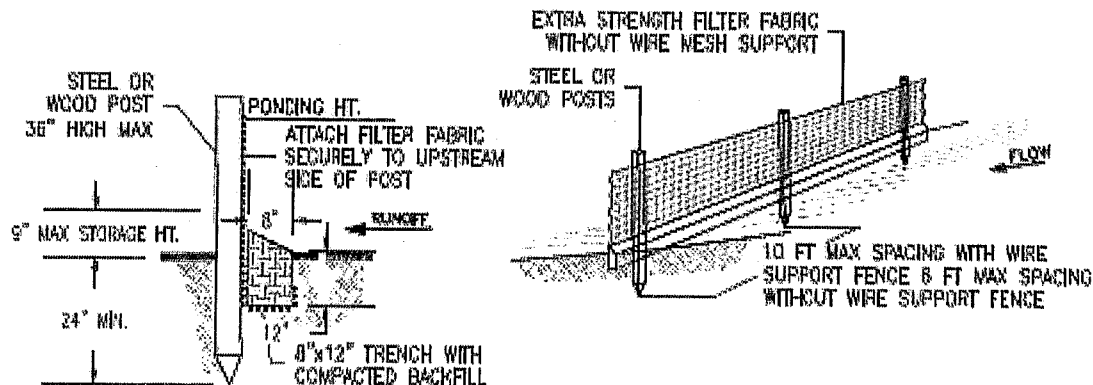
- Erosion control and sediment detention devices and materials shall be incorporated into the cleanup/restoration work design and installed prior to the end of project work and before the beginning of the rainy season. Any continuing, approved project work conducted after October 15 shall have erosion control works completed up-to-date and daily.
- Erosion control materials shall be, at minimum, stored on-site at all times during approved project work between May 1 and October 15.
- Approved project work within the 5-year flood plain shall not begin until all temporary erosion controls (straw bales or silt fences that are effectively keyed-in) are installed downslope of cleanup/restoration activities.
- Non-invasive, non-persistent grass species (e.g., barley grass) may be used for their temporary erosion control benefits to stabilize disturbed slopes and prevent exposure of disturbed soils to rainfall.
- Upon work completion, all exposed soil present in and around the cleanup/restoration sites shall be stabilized within 7 days.
- Soils exposed by cleanup/restoration operations shall be seeded and mulched to prevent sediment runoff and transport.
- Straw Wattles (if used) 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. Wattles shall be installed so that the wattle is in firm contact with the ground surface.

BMP: General Erosion Control (Cont.)**STRAW WATTLE NOTES:**

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 ADJUTED 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.

STRAW WATTLE INSTALLATION DETAIL

NTS

**SILT FENCE NOTES:**

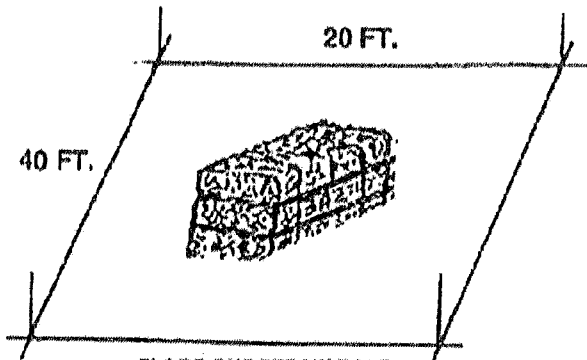
1. THE CONTRACTOR SHALL INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT.
2. CONTRACTOR SHALL REMOVE SEDIMENT AS NECESSARY. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND IN AN AREA THAT CAN BE PERMANENTLY STABILIZED.
3. SILT FENCE SHALL BE PLACED ON SLOPE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

SILT FENCE DETAILS

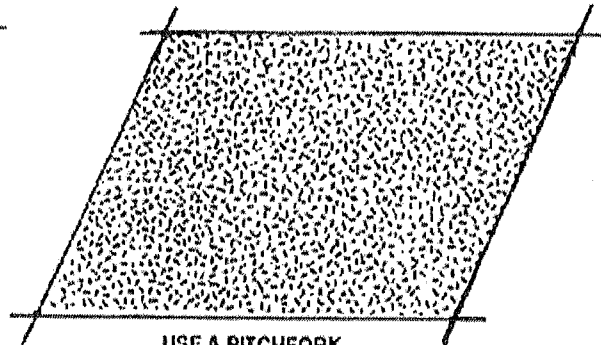
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BMP: General Erosion Control (Cont.)

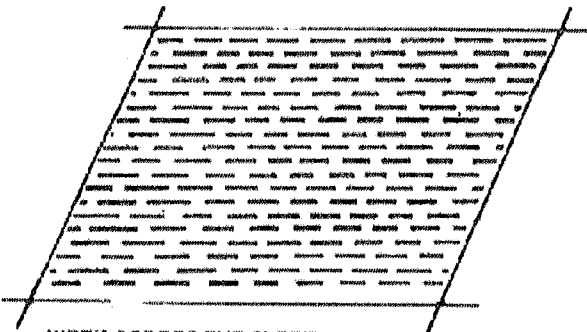


BMP: General Erosion Control (Cont.)**SPREAD THE STRAW****MARK OFF 800 SQ FT. PLOTS**

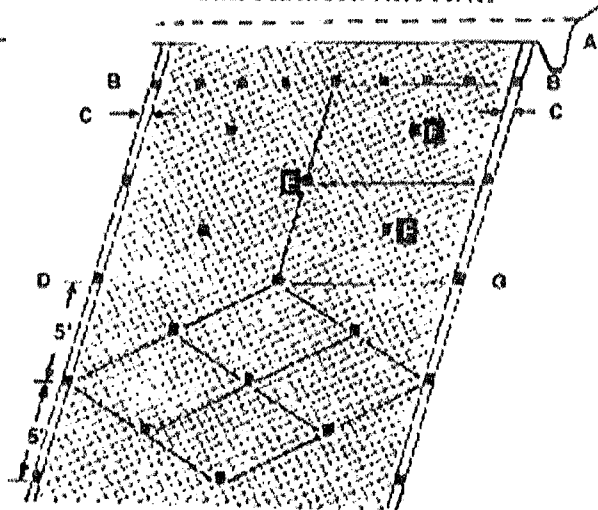
PLACE ONE STRAW BALE
PER PLOT (~74 POUNDS).
THIS IS EQUIVALENT
TO 2 TONS PER ACRE.

SPREAD EVENLY

USE A PITCHFORK,
SPADING FORK,
OR BY HAND

ANCHOR THE STRAW**CRIMP BY HAND****OR****USE PLASTIC NETTING**

WORK ACROSS THE SLOPE.
PUNCH STRAW 4 INCHES DEEP.
A SQUARE END SPADE WORKS WELL.
MAKE PUNCH EVERY 12 INCHES.



A. LAY BIRD CONTROL NETTING OR SIMILAR
MATTING IN STRIPS DOWN THE SLOPE OVER
THE STRAW. BURY UPPER END IN 6-8 INCH
DEEP AND WIDE TRENCH.. MOST NETTING
COMES IN 14 TO 17 FT. WIDE ROLLS.

B. SECURE THE UPPER END WITH STAKES
EVERY 2 FEET.

C. OVERLAP SEAMS ON EACH SIDE 4-5 INCHES.

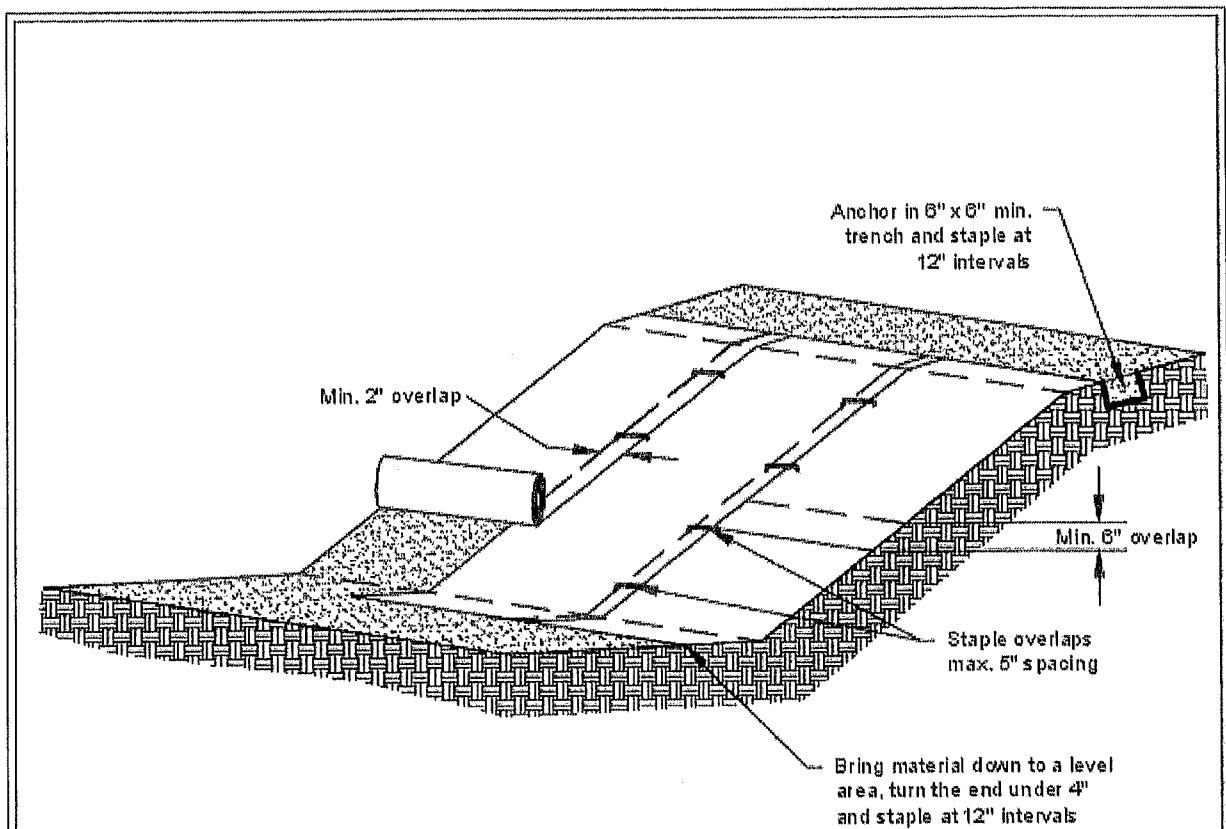
D. SECURE SEAMS WITH STAKES EVERY 5 FEET.

E. STAKE DOWN THE CENTER EVERY 5 FEET.

F. STAKE MIDDLES TO CREATE DIAMOND PAT
TERN THAT PROVIDES STAKES SPACED 4-5
FEET APART.

G. USE POINTED 1X2 INCH STAKES 8 TO 9
INCHES LONG. LEAVE 1 TO 2 INCH TOP
ABOVE NETTING, OR USE "U" SHAPED
METAL PINS AT LEAST 9 INCHES LONG.

NOTE: WHEN JOINING TWO STRIPS, OVERLAP
UPPER STRIP 3 FEET OVER LOWER STRIP
AND SECURE WITH STAKES EVERY 2
FEET LIKE IN "B" ABOVE

BMP: General Erosion Control (Cont.)**Notes:**

1. Slope surface shall be smooth before placement for proper soil contact.
2. Stapling pattern as per manufacturer's recommendations.
3. Do not stretch blankets/matting tight - allow the rolls to mold to any irregularities.
4. For slopes less than 3H:1V, rolls may be placed in horizontal strips.
5. If there is a berm at the top of the slope, anchor upslope of the berm.
6. Lime, fertilize, and seed before installation. Planting of shrubs, trees, etc. should occur after installation.

NOT TO SCALE



DEPARTMENT OF
ECOLOGY
State of Washington

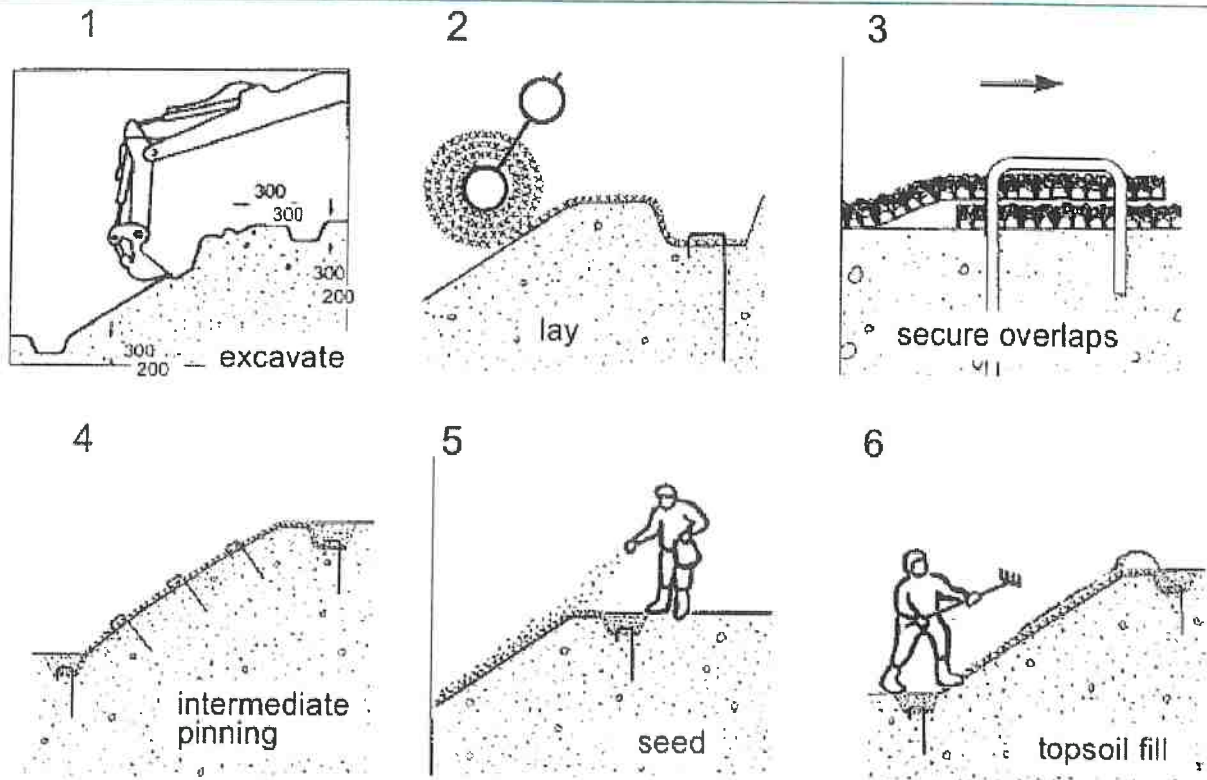
Slope Installation

Revised June 2018

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BMP: General Erosion Control (Cont.)

Installation of a geosynthetics mat - Enkamat



BMP: General Erosion Control (Cont.)

TABLE 34. Guidelines for erosion and sediment control application

Timing of application	Technique	Portion of road and construction area treated
Erosion control during construction	Hydromulching, hydroseeding	Road fill slopes, cut slopes, bare soil areas
	Dry seeding	Road fill slopes, cut slopes, bare soil areas
	Wood chip, straw, Excelsior or tackified mulch	Road fill slopes, cut slopes, bare soil areas
	Straw wattles	Road fill slopes and cut slopes
	Gravel surfacing	Road, landing and turnout surfaces
	Dust palliative	Road surfaces
	Minimize disturbance (soil and vegetation)	All areas peripheral to construction
Sediment control during construction	Sediment basin	Roadside ditches, turnouts and small stream crossings
	Sediment traps (e.g., silt fences, straw bales barriers, woody debris barriers)	Road fill slopes, cutbanks, bare soil areas and ditches
	Straw bale dams	Ditches and small streams
	Sumps and water pumps	Stream channels and stream crossings
	Streamflow diversions (e.g., temporary culverts, flex pipe, etc.)	Stream channels and stream crossings
	Surface diversion and dispersion devices (pipes, ditches, etc.)	All disturbed bare soil areas
	Road shaping	Road and landing surfaces
Permanent erosion control	Gravel surfacing	Road, landing and turnout surfaces
	Bituminous or asphalt surfacing	Road surface
	Rolling dips	Road surface
	Ditch relief culverts	Roadbed and road fill
	Downspouts and berm drains	Road fill slopes
	Waterbars	Road and landing surfaces
	Berms	Road surface and roadside areas
	Ditches	Road and landing surfaces
	Riprap	Road fill slopes, stream crossing fills, cutbanks, stream and lake banks
	Soil bioengineering	Road fill slopes, cut slopes, stream crossings, streambanks
	Tree planting	Road fill slopes, cutbanks, bare soil areas, stream crossings, streambanks

HANDBOOK FOR FOREST, RANCH AND RURAL ROADS

BMP: Permanent Culvert Crossing

- New culvert installations shall be sized to accommodate flows associated with a 100-year storm event.
- If the new culvert is replacing a poorly installed old culvert, the crossing may need to be abandoned to the following standard:
 - When fills are removed they shall be excavated to form a channel that is as close as feasible to natural watercourse grade and orientation, and that is wider than the natural channel.
 - Excavated banks shall be laid back to a 2:1 (50%) or natural slope.
- New culverts shall be placed at stream gradient, or have downspouts, or have energy dissipaters at outfall.
 - Align culverts with the natural stream channel orientation to ensure proper function, prevent bank erosion, and minimize debris plugging. See Figure 97 below.
 - Place culverts at the base of the fill and at the grade of the original streambed or install a downspout past the base of the fill. Downspouts should only be installed if there are no other options.
 - Culverts should be set slightly below the original stream grade so that the water drops several inches as it enters the pipe.
 - Culvert beds should be composed of rock-free soil or gravel, evenly distributed under the length of the pipe.
 - Compact the base and sidewall material before placing the pipe in its bed.
 - Lay the pipe on a well-compacted base. Poor basal compaction will cause settling or deflection in the pipe and can result in separation at a coupling or rupture in the pipe wall.
 - Backfill material should be free of rocks, limbs, or other debris that could dent or puncture the pipe or allow water to seep around the pipe.
 - Cover one end of the culvert pipe, then the other end. Once the ends are secure, cover the center.
 - Tamp and compact backfill material throughout the entire process, using water as necessary for compaction.
 - Backfill compacting will be done in 0.5 – 1.0 foot lifts until 1/3 of the diameter of the culvert has been covered.
 - Push layers of fill over the crossing to achieve the final design road grade, road fill above the culvert should be no less than one-third to one-half the culvert diameter at any point on the drivable surface.
- Critical dips shall be installed on culvert crossings to eliminate diversion potential. Refer to Figure 84 below.
- Road approaches to crossings shall be treated out to the first drainage structure (i.e. waterbar, rolling dip, or hydrologic divide) to prevent transport of sediment.
- Road surfaces and ditches shall be disconnected from streams and stream crossings to the greatest extent feasible. Ditches and road surfaces that cannot be feasible disconnected from streams or stream crossings shall be treated to reduce sediment transport to streams.
- If downspouts are used, they shall be secured to the culvert outlet and shall be secure on fill slopes.
- Culverts shall be long enough so that road fill does not extend or slough past the culvert ends.
- Inlet of culverts, and associate fill, shall be protected with appropriate measures that extend at least as high as the top of the culvert.
- Outlet of culverts shall be armored with rock if road fill sloughing into channel can occur.
- Armor inlets and outlets with rock, or mulch and seed with grass as needed (not all stream crossings need to be armored).
- Where debris loads could endanger the crossing, a debris catchment structure shall be constructed upstream of the culvert inlet.
- Bank and channel armoring may occur, when appropriate, to provide channel and bank stabilization.

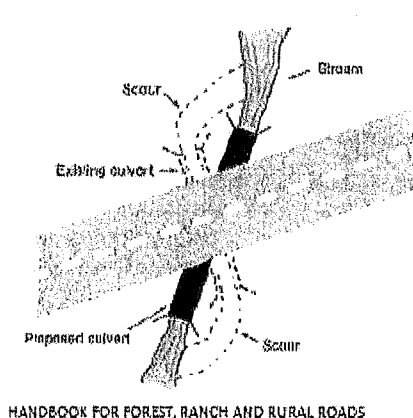


FIGURE 97. Culvert alignment should be in relation to the stream and not the road. It is important that the stream enters and leaves the culvert in a relatively straight horizontal alignment so streamflow does not have to turn to enter the inlet or discharge into a bank as it exits. This figure shows a redesigned culvert installation that replaces the bending alignment that previously existed. Channel turns at the inlet increase plugging potential because wood going through the turn will not align with the inlet. Similarly, channel turns at the inlet and outlet are often accompanied by scour against the channel banks (Wisconsin Transportation Information Center, 2004).

HANDBOOK FOR FOREST, RANCH AND RURAL ROADS

BMP: Permanent Culvert Crossing Design (Critical Dip and Hydrologic Disconnect Placement)

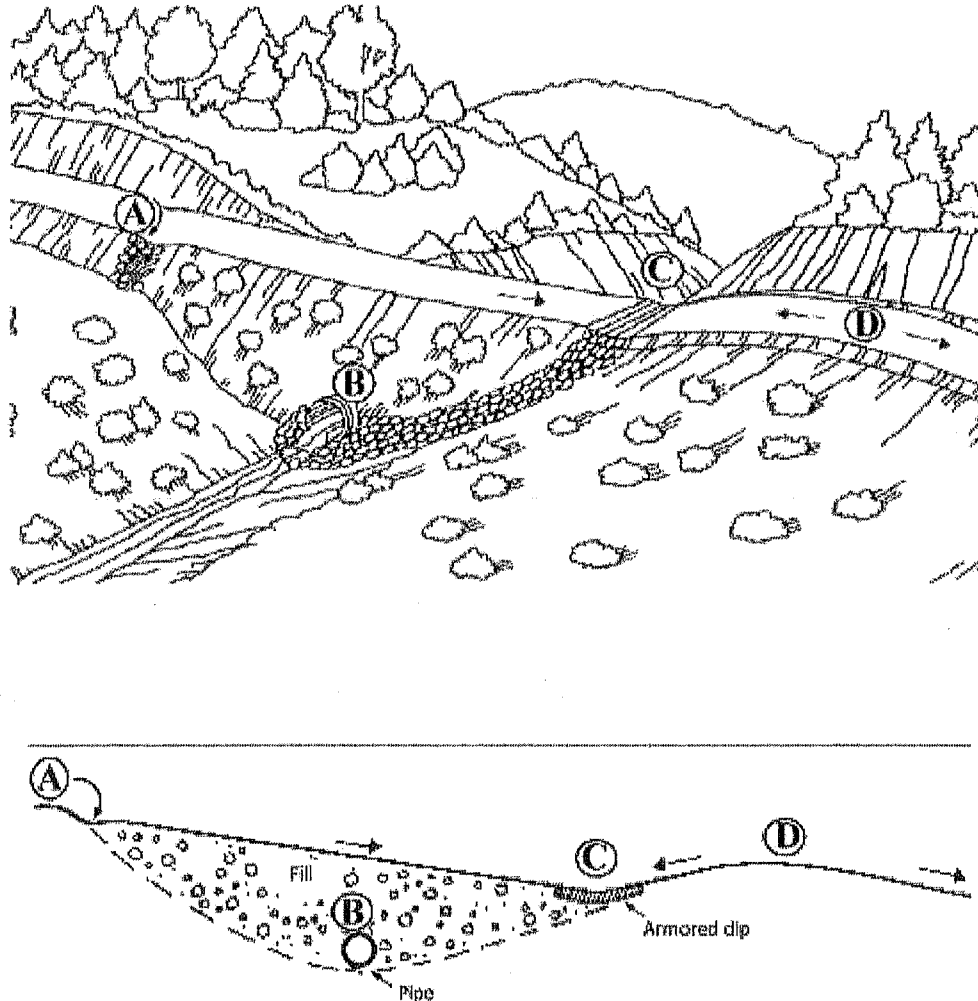
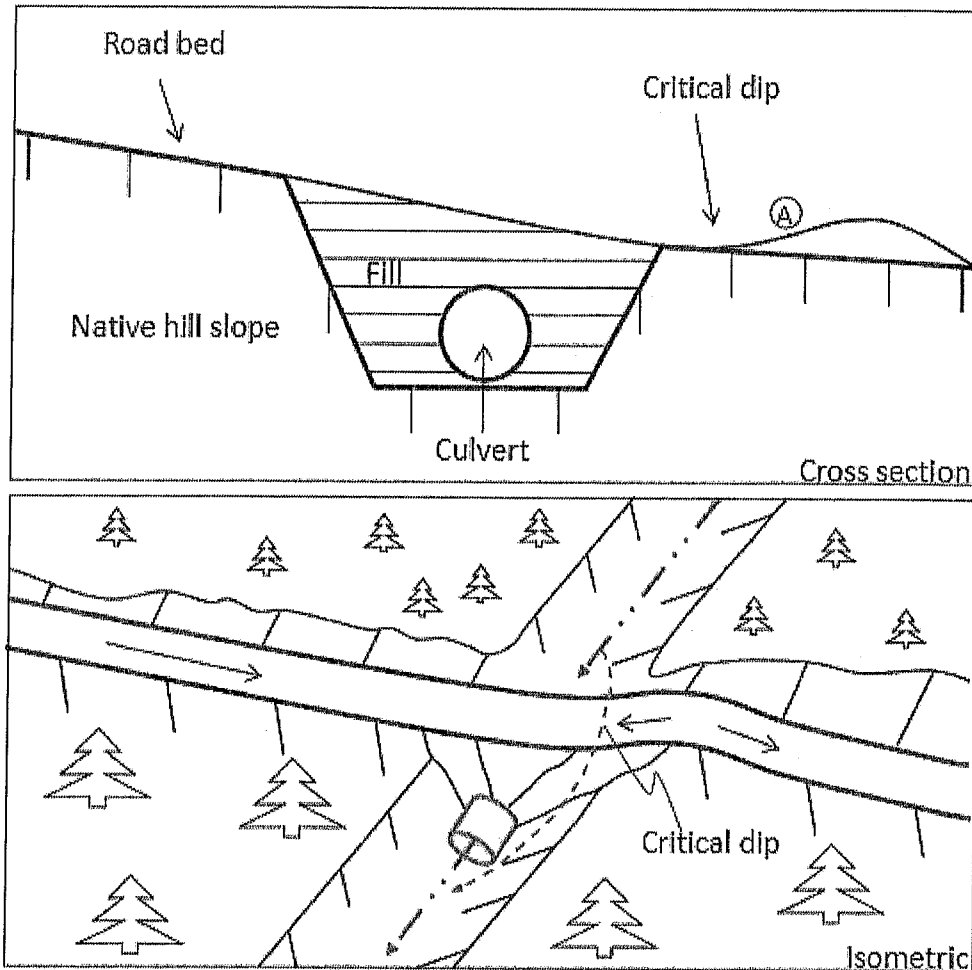


FIGURE 84. Critical dips or dipped crossing fills should be centered near a stream crossing's down-road hinge line, not over the centerline of the crossing where overtopping could cause washout or severe erosion of the fill. If the stream crossing culvert (B) plugs, water will pond behind the fill until reaching the critical dip or low point in the crossing (C) and flowing back down into the natural stream channel. The down-road ditch must be plugged to prevent streamflow from diverting down the ditch line. For extra protection in this sketch, diprap armor has been placed at the critical dip outfall and extending downslope to the stream channel. This is only required or suggested on stream crossings where the culvert is highly likely to plug and the crossing fill overtopped. The dip at the hinge line is usually sufficient to limit erosion damage during an overtopping event. Road surface and ditch runoff is disconnected from the stream crossing by installing a rolling dip and ditch relief culvert just up-road from the crossing (A) (Keller and Sherar, 2003).

BMP: Permanent Culvert Crossing Design (Critical Dip)

Typical Critical Dip Design for Stream Crossings with Diversion Potential



Critical Dip Construction:

1. Critical dip will be constructed on the lower side of crossing.
2. Critical dip will extend from the outbank to the outside edge of the road surface. Be sure to fill inboard ditch, if present.
3. Critical dip will have a reverse grade (A) from cutbank to outside edge of road to ensure flow will not divert outside of crossing.
4. The rise in the reverse grade will be carried for about 10 to 20 feet and then return to original slope.
5. The transition from axis of bottom, through rising grade, to falling grade, will be in the road distance of at least 15 to 30 feet.
6. Critical dips are usually built perpendicular to the road surface to ensure that flow is directed back into the stream channel.

BMP: Permanent Culvert Crossing Design (Culvert Orientation)

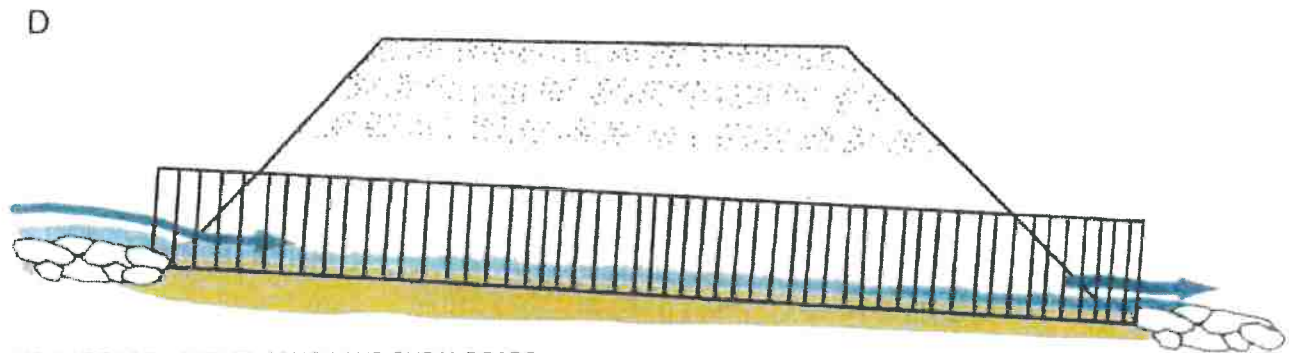
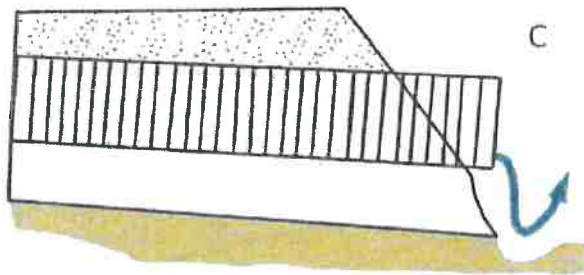
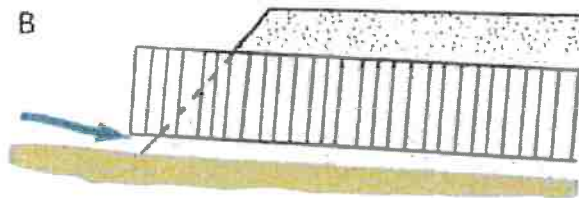
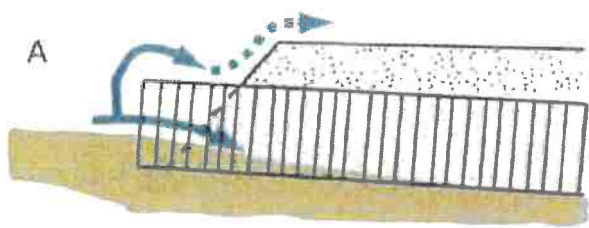
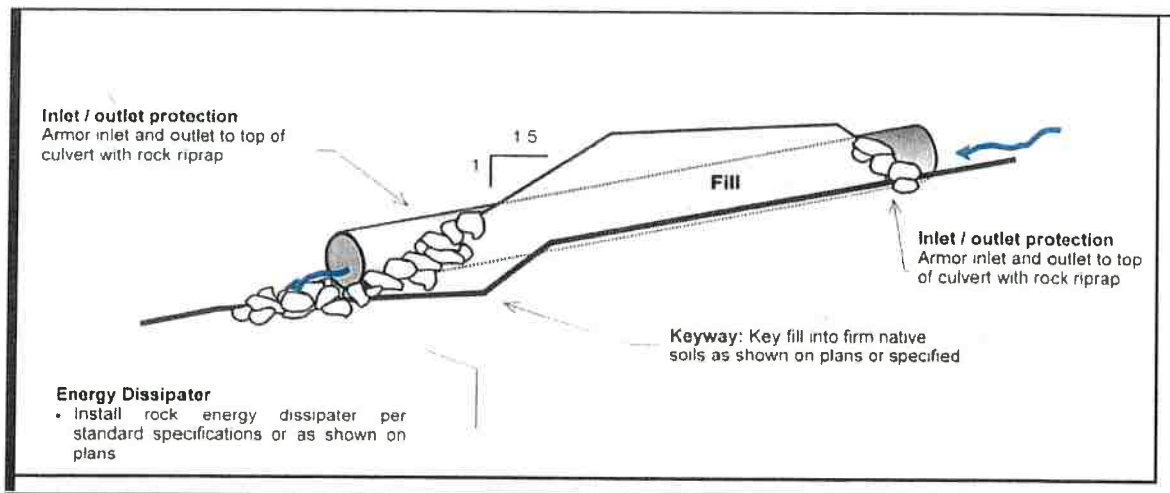
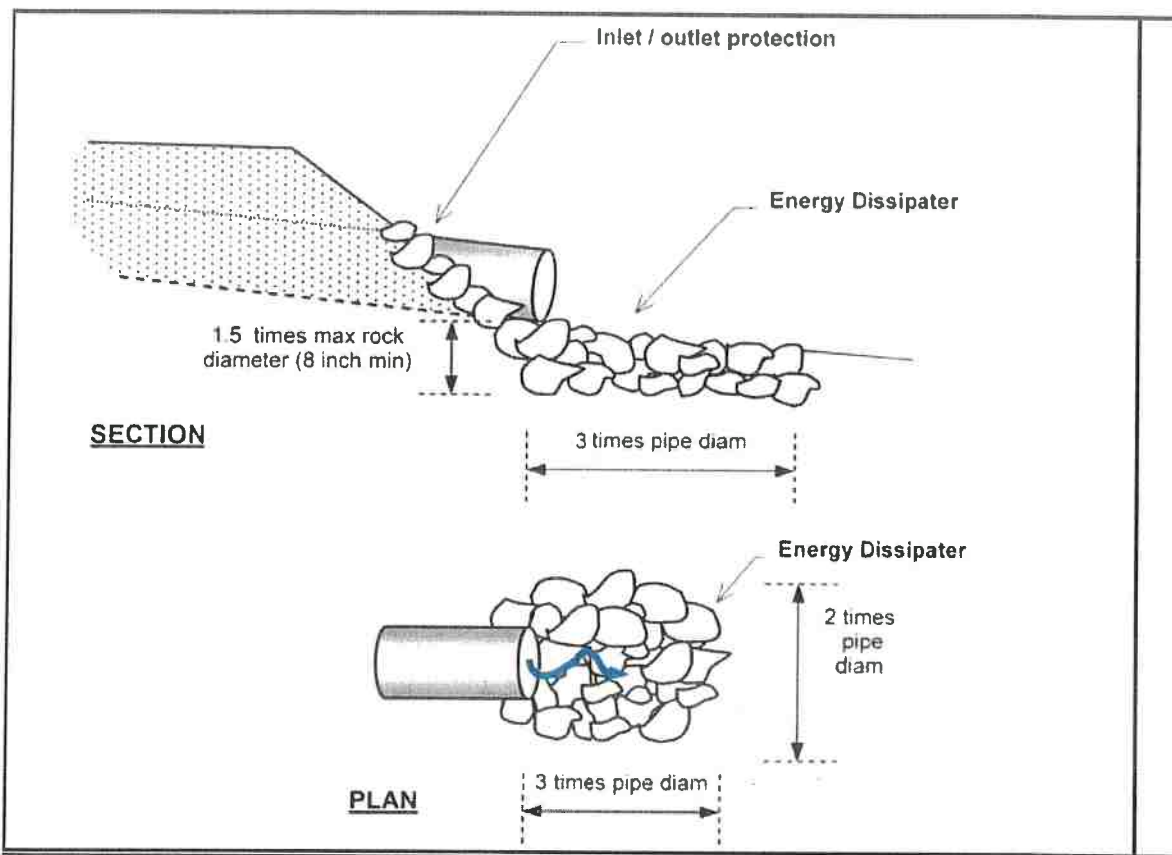


FIGURE 155. Proper culvert installation involves correct culvert orientation, setting the pipe slightly below the bed of the original stream, and backfilling and compacting the fill as it is placed over the culvert. Installing the inlet too low in the stream (A) can lead to culvert plugging, yet if set too high (B) flow can undercut the inlet. If the culvert is placed too high in the fill (C), flow at the outfall will erode the fill. Placed correctly (D), the culvert is set slightly below the original stream grade and protected with armor at the inlet and outlet. Culverts installed in fish-bearing stream channels must be inset into the streambed sufficiently (>25% embedded) to have a natural gravel bottom throughout the culvert (Modified from: MDSL, 1991).

BMP: Permanent Culvert Crossing Design (Inlet and Outlet Armoring)



Riprap installed to protect the inlet and outlet of a stream crossing culvert from erosion or for energy dissipation should be keyed into the natural channel bed and banks to an approximate depth of about 1.5x the maximum rock thickness. Riprap should be placed at least up to the top of the culvert at both the inlet and outlet to protect them from splash erosion and to trap any sediment eroded from the newly constructed fill slope above.

BMP: Permanent Culvert Crossing Design (Inlet and Outlet Armoring) Cont.

- Inlets of culverts and associate fills shall be protected with rock armoring that extends at least as high as the top of the culvert.
- Outlets of culverts shall be provided a rock energy dissipater at the outfall of the culvert.
- Outlets of culverts and associate fills shall be protected with rock armoring that extends at least as high as the top of the culvert if road fill sloughing into channel can occur.
- Prior to inlet and outlet rocking, the inlet and outlets shall be prepared. Preparation will include removal of vegetation and stored materials from the inlet and outlet.
- Inlets may require construction of an inlet basin.
- Slopes at the outlet should be shaped to a 2:1 or natural slope prior to placing rock armor.
- Rock used at culvert inlets and outlets should be a matrix of various sized rocks and rip-rap that range from a 3" dia. to a 2' dia.
- The largest rocks should be places at the base of the culvert or fill. Incrementally smaller rocks shall be placed over the larger rocks at the armoring extend up the slope. Voids and spaces shall be back filled with smaller gravels and rocks.

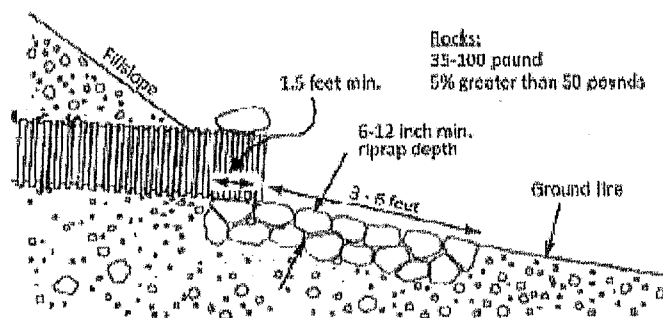


FIGURE 107A. Riprap armor at culvert outlet (Modified from: Keller et al., 2011).

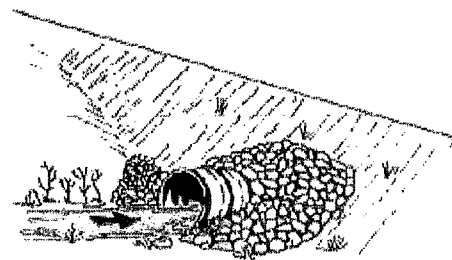


FIGURE 107B. Riprap armor at culvert inlet (Keller and Shera, 2003).

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BMP: Stream Bank Armoring (Riprap)

- Riprap should be installed on top of geotextile fabric or a clean mixture of coarse gravel and sand.
- The riprap should be keyed into the streambed and extend below the maximum expected scour depth with an adequately sized key base width at a thickness of a minimum of 2x the median (D50) rock diameter with the largest stone sizes placed at the base of the riprap structure.
- The armor should be set into the streambank so it does not significantly protrude into, or constrict, the natural channel, or otherwise reduce channel capacity.
- The riprap should extend along the length of unstable or over steepened bank and up the bank sufficiently to encompass the existing bank instability and/or design flood elevations.

BMP: Crossing Abandonment

- Excavate and removing all fill materials placed in the stream channel when the crossing was originally built.
- Excavated banks shall be laid back to a 2:1 (50%) or natural slope to prevent slumping and soil movement.
- Fill material should be excavated to recreate the original channel grade (slope) and orientation.
- All bare soils should then be mulched, seeded, and planted to minimize erosion until vegetation can protect the soil surface.
- The approaching road segments shall be cross-road(waterbars) drained to prevent road runoff from discharging across the freshly excavated channel sideslopes.
- When fills are removed, they shall be excavated to form a channel that is as close as feasible to natural watercourse grade and orientation.
- The excavated channel bed should be as wide, or slightly wider than, the original watercourse channel.
 - This can be better determined by observing the channel width of the watercourse up slope of crossing to be removed at a point in which the crossing or any other disturbance has not affected the natural channel slope and width.
- Temporary crossings shall be removed by November 15.
 - Any temporary culvert crossing left in after October 15 or installed between October 15 and May 1, shall be sized to accommodate the estimated 100-year flow.
- In certain situations, bank and channel rock and woody debris armoring may be appropriate to provide channel and bank stabilization.

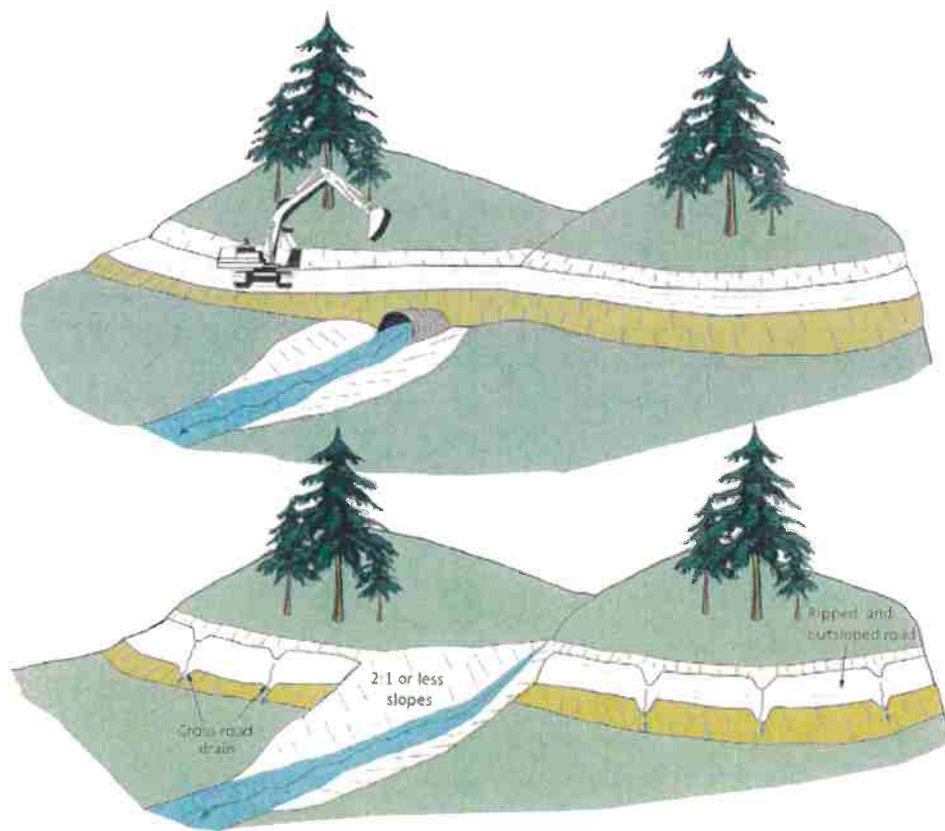
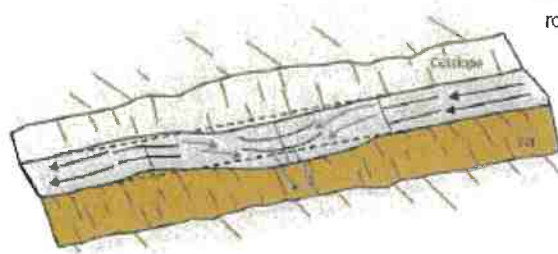


FIGURE 263. On roads that are to be closed (decommissioned), all stream crossing culverts and fills should be removed. Stream crossing excavations are best performed using an excavator. The original channel should be excavated and exhumed down to the former streambed, with a channel width equal or greater than the natural channel above and below the crossing. Sideslopes should be laid back to a stable angle, typically a 2:1 (50%) gradient, or less. Spoil can be endhauled off-site or stored on the road bench adjacent the crossing, provided it is placed and stabilized where it will not erode or fail and enter the stream.

BMP: Rolling Dip Design and Placement

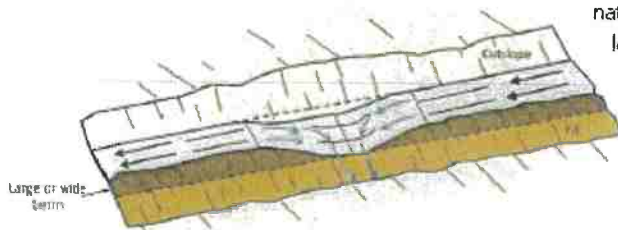
BMP: Rolling Dip Design and Placement (Types)

Type 1 Rolling Dip (Standard)



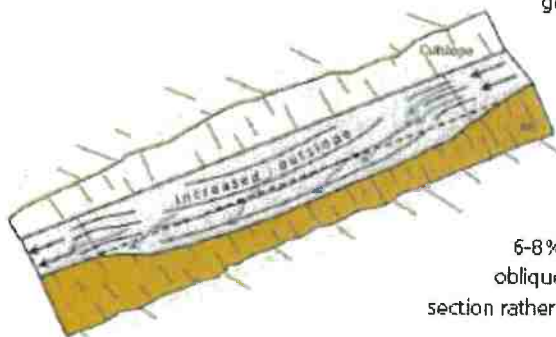
Type 1 rolling dips are used where road grades are less than about 12-14% and road runoff is not confined by a large through cut or berm. The axis of the dip should be perpendicular to the road alignment and sloped at 3-4% across the road tread. Steep roads will have longer and more abrupt dip dimensions to develop reverse grade through the dip axis. The road tread and/or the dip outlet can be rocked to protect against erosion, if needed.

Type 2 Rolling Dip (Through-cut or thick berm road reaches)



Type 2 rolling dips are constructed on roads up to 12-14% grade where there is a through cut up to 3 feet tall, or a wide or tall berm that otherwise blocks road drainage. The berm or native through cut material should be removed for the length of the dip, or at least through the axis of the dip, to the extent needed to provide for uninterrupted drainage onto the adjacent slope. The berm and slope material can be excavated and endhauled, or the material can be sidecast onto native slopes up to 45%, provided it will not enter a stream.

Type 3 Rolling Dip (Steep road grade)



Type 3 rolling dips are utilized where road grades are steeper than about 12% and it is not feasible to develop a reverse grade that will also allow passage of the design vehicle (steep road grades require more abrupt grade reversals that some vehicles may not be able to traverse without bottoming out).

Instead of relying on the dip's grade reversal to turn runoff off the roadbed, the road is built with an exaggerated outslope of 6-8% across the dip axis. Road runoff is deflected obliquely across the dip axis and is shed off the outsloped section rather than continuing down the steep road grade.

FIGURE 36. Rolling dip types

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BMP: Rolling Dip Design and Placement

FIGURE 33A. Rolling dip constructed on a rock surfaced rural road. The rolling dip represents a change-in-grade along the road alignment and acts to discharge water that has collected on, or is flowing down, the road surface. This road was recently converted from a high maintenance, insloped, ditched road to a low maintenance, outsloped road with rolling dips.



FIGURE 33B. This side view of an outsloped road shows that the rolling dip does not have to be deep or abrupt to reverse road grade and effectively drain the road surface. This outsloped forest road has rolling dips that allow all traffic types to travel the route without changing speed.



BMP: Waterbar/Rolling Dip Combined with DRC



FIGURE 39.

Waterbars are often used to drain surface runoff from seasonal, unsurfaced roads. Because they are easily broken down by vehicles, waterbars are only used on unsurfaced roads where there is little or no wet weather traffic. In this photo, a waterbar and ditch relief culvert are used to drain all road surface and ditch runoff from the insloped road prism.

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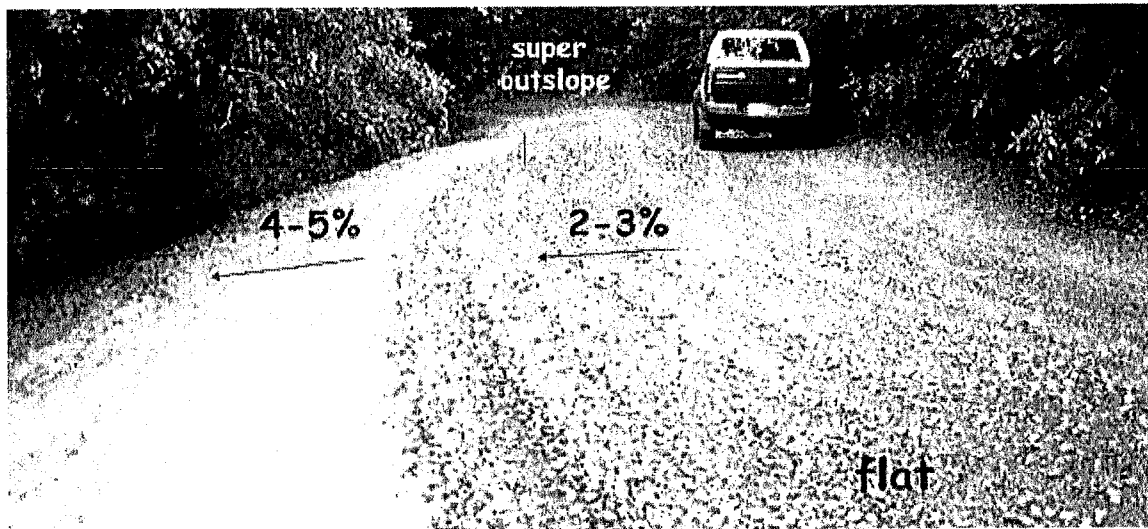
Diagram shows and discussed the use of a waterbar. However, a DRC combined with a rolling dip structure provides the same surface and ditch drainage for roads used year-round. Just as with the waterbar in the photo above, The DRC is installed just upslope from the rolling dip. This also creates a fail-safe should the DRC become plugged or overwhelmed.



FIGURE 238. Traffic and surface runoff from gravelled roads often produces surface erosion, turbid runoff and fine sediment transport that can be delivered to streams. Where ditches can't be eliminated, sediment traps and roadside settling basins can be installed to capture and remove most of the eroded sediment. This settling basin has been constructed along the inside ditch just before a stream crossing culvert inlet (see arrow). Eroded sediment from the road and ditch are deposited in the basin before flow is released to the stream. Fine sediments have filled about 1/3 of this basin and vegetation is now growing. Sediment basins require periodic maintenance to maintain their storage capacity.

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BMP: Road Outsloping



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FIGURE 29. Road shape changes as the road travels through the landscape. For example, an out-sloped road will have a steep or "banked" outslope through inside curves, a consistent outslope through straight reaches and a flat or slightly insloped shape as it goes through an outside curve. The road may have an outslope of 2-3% across the travel surface while the shoulder is more steeply outsloped to ensure runoff and sediment will leave the roadbed.

BMP: Steep Road Drainage Structures



FIGURE 55. Steep roads that go straight up or down a hillside are very difficult to drain. This steep, fall line road developed a through cut cross section that was drained using lead out ditches to direct runoff off the road and onto the adjacent, vegetated hillside. The road was "outsloped" to drain runoff to the right side, and the lead out ditch was built slightly steeper than the road grade, to be self-cleaning. Four lead out ditches have been constructed at 100-foot intervals to the bottom of the hillside.

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BMP: Ditch Relief Culvert

- Install ditch relief culverts at an oblique (typically 30 degree) angle to the road so that ditch flow does not have to make a sharp angle turn to enter the pipe. On low gradient roads (<5%), where ditch flow is slow, ditch relief culverts can be installed at right angles to the road.
- Install ditch relief culverts (DRC) to outlet at, and drain to, the base of the fill
- If it cannot be installed at the base of the fill, install the DRC with a grade steeper than the inboard ditch draining to the culvert inlet, and then install a downspout on the outlet to carry the culverted flow to the base of the fillslope or energy dissipater material at outlet to prevent erosion or the outboard road fill.
- Downspouts longer than 20 feet should be secured to the hillslope for stability.
- Ditch relief culverts should not carry excessive flow such that gullying occurs below the culvert outlet or such that erosion and down-cutting of the inboard ditch is occurring.
- Do not discharge flows from ditch relief culverts onto unstable areas or highly erodible hillslopes.
- If the ditch is on an insloped or crowned road, consider reshaping road outslipping to drain the road surface. The ditch and the ditch relief culvert would then convey only spring flow from the cutbank and hillslope runoff, and not turbid runoff from the road surface.

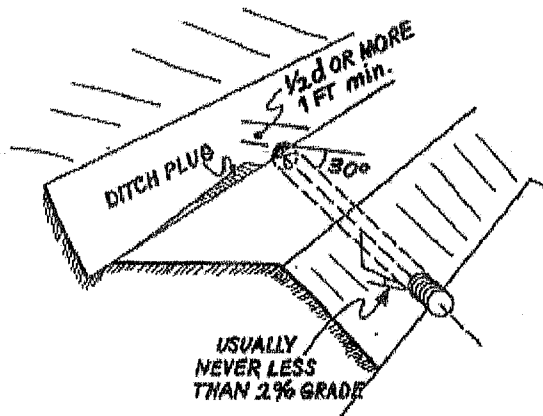
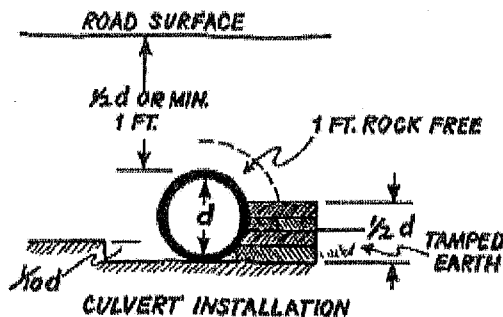


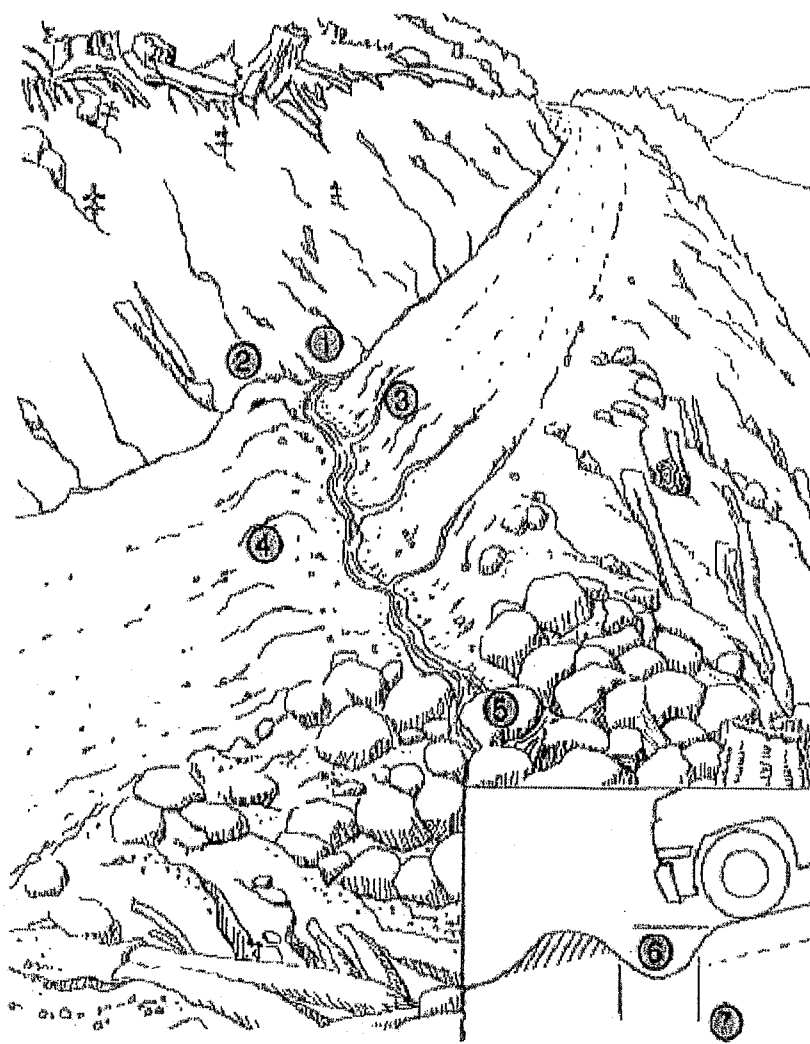
FIGURE 48. The elements of a properly installed ditch relief culvert. The culvert is angled at about 30 degrees to the road alignment to help capture flow and prevent culvert plugging or erosion of the inlet area. It is set at the base of the fill (ideally) or with a grade slightly steeper than the grade of the contributing ditch (but never with a grade less than 2 percent) (USDA-SCS, 1983). At a minimum, the grade of the ditch relief culvert should be sufficient to prevent sediment accumulation at the inlet or deposition within the culvert itself (it should be self-cleaning) (USDA-SCS, 1983).



BMP: Waterbar Construction

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 outbank 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).

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BMP: Storage Bladders

- Storage bladders shall be located and designed to minimize the potential for impacts due to rolling and/or failure. Storage bladders should be stored on flat slopes where stability will not be affected.
- Storage bladders shall be located to minimize the potential for water to flow into a watercourse in the event of a catastrophic failure.
- Bladders shall not be used unless the bladder is safely contained within a secondary containment system with sufficient capacity to capture 110 percent of a bladders maximum volume in the vent of bladder failure.
- Secondary containment is recommended in the form of a dirt berm, containment pit, combination of both, or impermeable material with skeletal support. The containment should be capable of holding 110 percent of the bladders volume.
- Secondary containment systems shall be of sufficient strength and stability to withstand the forces of released contents in the event of catastrophic bladder failure.
- Secondary containment systems that are exposed to precipitation shall be designed and maintained with sufficient capacity to accommodate precipitation and storm water inputs from a 25-year, 24-hour storm event.
- Bladders and containment systems shall be periodically inspected to ensure integrity.



This is an example of a containment pit which will assist in mitigating the impacts if this storage bladder failed.

BMP: Cultivation Site Restoration

- Remove all cultivation and associated materials from designated cultivation site.
 - This includes plant mass, root balls, potting containers, cultivation medium and any materials associated with the preparation, cultivation, and harvest of commercial cannabis.
 - Cultivation medium removed from the site shall be stored/disposed of in compliance with Order conditions related to spoils management.
- All disturbed and/or unstable slopes shall be stabilized and returned to pre-project conditions.
 - Slopes shall be contoured as close as feasible to natural grade and aspect.
 - Temporary erosion control shall be applied to prevent sediment run-off.
- Soil exposed as a result of project work, soil above rock riprap, and interstitial spaces between rocks shall be revegetated with native species by live planting, seed casting, or hydroseeding prior to the rainy season of the year work is completed.
 - Native plants characteristic of the local habitat shall be used for revegetation when implementing and maintaining cleanup/restoration work in riparian and other sensitive areas.
 - Native forbes and graminoids shall be planted to replace sediment stabilization, sediment filtration and nutrient filtration
 - Native trees and shrubs shall be planted to replace bank stabilization, inputs of large woody debris and temperature control within riparian areas.
 - Restoration of the quality/health of the riparian stand shall promote: 1) shade and microclimate controls; 2) delivery of wood to channels, 3) slope stability and erosion control, 4) ground cover, and 5) removal of excess nutrients.

Monitoring Plan

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. See Required Monitoring tables below for site specific monitoring and reporting requirements. Cannabis cultivators are required to perform all of the following maintenance:

- Remove any wood debris that may restrict flow in a culvert.
- 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.
- Maintain records of access road and drainage feature maintenance for annual reporting.

Cannabis cultivators that are operating in areas that are, or may become, inaccessible during winter months due to extreme weather such as snow, road closures, seasonal access roads to the property, or any other such conditions shall make additional efforts to enhance winterization measures in the absence of monitoring during storm events.

Monitoring Requirements

(Tier 1, High Risk, < 1 acre of cultivation)

Monitoring Requirement	Description
Winterization Measures Implemented	Report winterization procedures implemented, any outstanding measures, and the schedule for completion.
Tier Status Confirmation	Report any changes in the tier status.
Third Party Identification	Report any change in third party status as appropriate.
Surface Water Runoff	Report any conditions of surface water runoff, including location, duration, source of runoff (irrigation water, storm water, etc.)
Soil Erosion Control	Report any indications of soil erosion (e.g. gully, turbid water discharge, landslide, etc.)
Sediment Capture	Report the status of sediment capture measures (e.g. silt fence, fiber rolls, settling basin, etc.)
Erosion/Sediment Capture Maintenance	Report maintenance activities to maintain the effectiveness of erosion control and sediment capture measures (e.g. reinstallation of straw mulch, hydroseeding, tarp placement, removal or

	stabilization of sediment captured, removal of settled sediment in a basin, etc.)
Stabilization of Disturbed Areas	Dischargers characterized as high risk (with any portion of the disturbed area within the riparian setbacks), shall provide a status report describing activities performed to stabilize the disturbed area within the setback
Material(s) Storage Erosion/Spills Prevention	Report materials delivered or stored at the site that could degrade water quality if discharged off-site (e.g. potting soil, manure, chemical fertilizer, gasoline, herbicides, pesticides, etc.)
Holding Tank, Septic Tank, or Chemical Toilet Servicing	Septic tank, or chemical toilet servicing report the dates, activity, and name of the servicing company for servicing holding tanks or chemical toilets

Please note the following information for the table below:

1. Constituents shall be monitored with a calibrated instrument.
2. Samples shall be representative of storm water discharging from the disturbed area.
3. Monitoring shall be performed during all months in which activity is occurring at the site until winterization is complete. Monitoring is not required after winterization is complete for unoccupied sites during the winter months.

The following monitoring and reporting activities are required on a monthly basis for **ALL MONTHS** until winterization procedures are completed:

Constituent	Frequency
Turbidity	Once per calendar month when precipitation exceeds 0.25 in/day or when storm water runoff from the site is generated
pH	Once per calendar month when precipitation amount is forecast to exceed 0.25 in/day

Annual Reporting

Annual Reports shall be submitted to the North Coast Regional Water Quality Control Board by March 1st following the year being monitored. The first Annual Report for this enrollment shall be submitted by March 1st, 2020 and report on monitoring done during the 2019 calendar year. Annual reporting is required each subsequent year of enrollment.

Attachments

Implementation of Applicable BPTC Measures

Assessment of applicable BPTC measures consisted of a field examination on October 11, 2019. Anywhere applicable BPTC measures are not met on the property, descriptions of the assessments and the prescribed treatments are outlined following each associated section below.

Summary of BPTC Measures Compliance

1. Sediment Discharge BPTC Measures Y ☐/N ☒
2. Fertilizer, Pesticide, Herbicide, and Rodenticide BPTC Measures Y ☐/N ☒
3. Petroleum Product BPTC Measures Y ☐/N ☒
4. Trash/Refuse, and Domestic Wastewater BPTC Measures Y ☐/N ☒
5. Winterization BPTC Measures Y ☐/N ☒

1. Sediment Discharge BPTC Measures

1.1. Site Characteristics

- 1.1.1. Provide a map showing access roads, vehicle parking areas, streams, stream crossings, cultivation site(s), disturbed areas, buildings, and other relevant site features.

See attached Site Maps.

- 1.1.2. Describe the access road conditions including estimating vehicle traffic, road surface (e.g., paved, rocked, or bare ground), and maintenance activities. Describe how storm water is drained from the access road (e.g., crowned, out slope, armored ditch, culverts, rolling dips, etc.).

See sections "Land Development and Maintenance, Erosion Control, and Drainage Features" above, and the attached Mitigation Report, Site Maps, and Treatment Implementation Schedule for site specific descriptions, treatments, and the implementation schedule.

- 1.1.3. Describe any vehicle stream crossing including the type of crossing (e.g., bridge, culvert, low water, etc.).

See the section titled "Stream Crossing Installation and Maintenance" or the attached Mitigation Report and Site Maps for site specific details and treatment schedules.

- 1.1.3.1. For Region 1 Dischargers, identify, discuss, and locate on the site map any legacy waste discharge issues that exist on the property.

Not applicable. No legacy waste discharge issues were identified during the assessment of the property.

- 1.2. Sediment Erosion Prevention and Sediment Capture (Moderate risk Tier 1 or Tier 2 Dischargers are required to submit a Site Erosion and Sediment Control Plan. Those Dischargers may refer to that plan rather than repeat it here)

1.2.1. Erosion Prevention BPTC Measures

- 1.2.1.1. Describe the BPTC measures that have been, or will be implemented to prevent or limit erosion. Provide an implementation schedule for BPTC measures that have not yet been implemented. Identify the erosion prevention BPTC measures on a site map.

See the attached Mitigation Report, Site Maps, and Treatment Implementation Schedule for site specific descriptions, treatments, and the implementation schedule.

- 1.2.1.1.1. The description shall address physical BPTC measures, (e.g., placement of straw mulch, plastic covers, slope stabilization, soil binders, culvert outfall armoring, etc.) and biological BPTC measures (vegetation preservation/replacement, hydro seeding, etc.).

See the attached Mitigation Report and Best Management Practices (BMPs) for descriptions of physical BPTC measures being prescribed. There are no biological BPTC measures being prescribed.

1.2.2. Sediment Control BPTC Measures

- 1.2.2.1. Describe the BPTC measures that have been, or will be implemented to capture sediment that has been eroded. Provide an implementation schedule for BPTC measures that have not yet been implemented. Identify the sediment control BPTC measures on a site map.

Not applicable. No BPTC measures have been, or will need to be, implemented to capture sediment that has been eroded.

- 1.2.2.1.1. The description shall address physical BPTC measures, (e.g., placement of silt fences, fiber rolls, or settling ponds/areas, etc.) and biological BPTC measures (vegetated outfalls, hydro seeding, etc.).

See sections "Land Development and Maintenance, Erosion Control, and Drainage Features" and "Riparian and Wetland Protection and Management" above, and the attached Mitigation Report and BMPs for descriptions of physical and biological BPTC measures being prescribed.

1.2.3. Maintenance Activities - Erosion Prevention and Sediment Control

- 1.2.3.1. Describe how the erosion prevention and sediment control BPTC measures will be monitored and maintained to protect water quality.

Erosion prevention BPTC measures and all corresponding work shall be inspected prior to and in conjunction with winter monitoring, as described above under the "Monitoring Plan" to ensure proper placement, installation, and function remain intact prior to and throughout the Winter Period.

- 1.2.3.2. Describe how any captured sediment will be either stabilized in place, excavated and stabilized on-site, or removed from the site.

Not applicable.

- 1.2.4. Erosion control BPTC measures: Describe the interim soil stabilization, if applicable and long-term BPTC measures implemented to prevent sediment transport at each identified disturbed area(s) and improperly constructed features.

See sections "Land Development and Maintenance, Erosion Control, and Drainage Features" and "Riparian and Wetland Protection and Management" above, and the attached Mitigation Report and BMPs for descriptions of BPTC measures being prescribed.

2. Fertilizer, Pesticide, Herbicide, and Rodenticide BPTC Measures

- 2.1. Provide a summary table that identifies the products used at the site, when they are delivered to the site, how they are stored, and used at the site. If products are not consumed during the growing season, describe how they are removed from the site or stored to prevent discharge over the winter season.

Not applicable.

- 2.2. Provide a site map that locates storage locations.

See attached Site Map.

- 2.3. Describe how bulk fertilizers and chemical concentrates are stored, mixed, applied, and how empty containers are disposed.

Not applicable.

- 2.4. Describe procedures for spill prevention and cleanup.

The cannabis cultivator shall obtain adequate quantities of absorbent materials and ensure that they are stored at all locations where the materials above are used, stored, or mixed. Should a spill of these materials occur, absorbent materials will be applied immediately and allowed enough time to absorb as much material as possible.

Following treatment, absorbent materials applied will be removed and disposed of appropriately as per the manufacturer's guidelines.

3. Petroleum Product BPTC Measures

- 3.1. Provide a summary table that identifies the products used at the site, when they are delivered to the site, how they are stored, and used at the site. If products are not consumed during the growing season, describe how they are removed from the site or stored to prevent discharge over the winter season.

See comprehensive table under 3.3.

- 3.2. Provide a site map that locates storage locations.

See attached Site Map.

- 3.3. Describe how fuels, lubricants, and other petroleum products are stored, mixed, applied, and empty containers are disposed.

Petroleum Products

Products used on site	When they are delivered to site	How they are stored and used	How removed or stored
Gasoline	Brought to site when needed throughout the year.	Stored in standard 5-gallon gasoline canisters, separately from fertilizers, inside of structures when not in use. Used to fuel equipment.	Stored in standard 5-gallon gasoline canisters, separately from fertilizers, inside of structures when not in use.
Diesel	Brought to site when needed throughout the year.	Stored in a 1,000-gallon steel tank with secondary containment tank, inside the fully enclosed generator shed. Used to fuel a generator that powers the western parcel.	Stored in a 1,000-gallon steel fuel tank with secondary containment within the generator shed.
Motor oil	Brought to site when needed throughout the year.	Stored in their containers inside of the enclosed generator shed with built-in secondary containment. Used to lubricate internal combustion engines.	After oil changes, the used motor oil is stored in either the container it came in or in sealed 5-gallon buckets for later disposal at an appropriate waste disposal facility.

- 3.4. Describe procedures for spill prevention and cleanup.

Adequate quantities of absorbent materials are stored at all locations where these types of materials are used, stored, or mixed. Should a spill of these materials occur, absorbent materials will be applied immediately and allowed enough time to absorb as much material as possible. Following treatment, absorbent materials applied as well as any contaminated soil will be removed and disposed of appropriately for the spilled material.

4. Trash/Refuse, and Domestic Wastewater BPTC Measures

- 4.1. Describe the types of trash/refuse that will be generated at the site. Describe how the material is contained and properly disposed of.

Domestic and commercial cannabis trash and refuse will be generated at the site. The trash/refuse is stored securely in trash bags and trash bins at the cultivation areas and residence prior to disposal at an appropriate waste disposal facility.

- 4.1.1. Provide a site map that locates the trash/refuse storage locations.

Trash and refuse are stored in trash bags, lidded trash cans, and a covered dumped trailer at mapped cultivation areas. See attached Site Map.

- 4.2. Describe the number of employees, visitors, or residents at the site.

There are two regular employees who are at the site during the cultivation season. Additional employees may be needed on the property for short periods of time to complete projects requiring additional employees. Visitors are occasionally on site, including consultants and regulatory agencies. There is also a full-time residence on the property as well.

- 4.2.1. Describe the types of domestic wastewater generated at the site (e.g., household generated wastewater or chemical toilet).

Domestic sewage and wastewater (greywater) are generated on site.

- 4.2.2. Describe how the domestic wastewater is disposed.

- 4.2.2.1. Permitted onsite wastewater treatment system (e.g., septic tank and leach lines).

Domestic sewage is disposed via a functioning septic system at the house. Professionally serviced chemical toilets and eventually a permitted septic system are planned for the western parcel.

- 4.2.2.2. Chemical toilets or holding tank. If so, provide the name of the servicing company and the frequency of service.

The cannabis cultivator intends to obtain portable chemical toilets as needed during the cultivation season.

- 4.2.2.3. Outhouse, pit privy, or similar. Use of this alternative requires approval from the Regional Water Board Executive Officer; include the approval from the Executive Officer and any conditions imposed for use of this alternative.

Two outhouses were found on the property during the site assessment. The cannabis cultivator intends to discontinue and remove the outhouse and obtain portable chemical toilets as needed during the cultivation season.

- 4.2.2.3.1. Provide a site map that locates any domestic wastewater treatment, storage, or disposal area.

See attached Site Map for locations of the residence and two outhouses to be removed (Site 48).

5. Winterization BPTC Measures

- 5.1. Describe activities that will be performed to winterize the site and prevent discharges of waste. The description should address all the issues listed above.

See Mitigation Report and Annual Winterization Measures for prescribed general winterization measures that will be performed prior to each Winter Period, and site-specific interim measures that will be performed prior to the Winter Period until permanent, prescribed treatments can be executed.

- 5.2. Describe maintenance of all drainage or sediment capture features (e.g., drainage culverts, drainage trenches, settling ponds, etc.) to remove debris, soil blockages, and ensure adequate capacity exists.

Existing drainage structures will be maintained or repaired as feasible and necessary with hand tools during annual winterization and winter monitoring. Prescribed repair and maintenance will be executed in accordance with the Mitigation Report and Treatment Implementation Schedules.

- 5.3. Describe any revegetation activities that will occur either at the beginning or end of the precipitation season.

Not applicable.

- 5.4. If any BPTC measure cannot be completed before the onset of Winter Period, contact the Regional Water Board to establish a compliance schedule.

See the attached Mitigation Report and Treatment Implementation Schedule for site descriptions, treatments, and the implementation schedule.

- 5.5. For Region 1 Dischargers, describe any activities that will be performed to address legacy waste discharge issues. Region 6 Dischargers should consult with Regional Water Board staff to confirm if any other activities in addition to BPTCs are necessary to address legacy waste discharge issues.

No legacy waste discharge issues were identified during the assessment of the property.

Disturbed Area Stabilization Plan

(Tier 1, High Risk)

1. Site Description

- 1.1. Describe the site (e.g., topography, vegetation, elevation, historic precipitation patterns, soil types, surface waterbodies, etc.).

See the Property Description, Project Description, General Location Map, and Site Maps, in the above pages.

- 1.2. Provide a site map that shows the location of all water bodies, the applicable setback(s), all disturbed areas within the setback(s), and the storm water runoff sampling location.

See the attached Site Maps, General Location Map, in the above pages. Storm water sampling locations would likely be at the bridge location at Site 05 and downstream at Site 11.

- 1.3. Describe how the area was disturbed (e.g., previously existing condition, timber harvest, grading activities, etc.) and the level of disturbance.

The disturbed areas within the setback were originally logging roadside areas, landings, and skid trails. Further development came later as the area was subdivided and home sites were developed. The current "disturbed areas" with the riparian setbacks are slight encroachments into the setbacks by cultivation areas on these previously developed areas.

- 1.4. Describe the native vegetation that typically exists in the disturbed area.

The areas of the parcels south of Mule Creek are covered with Douglas-fir timber mixed with tanoak and Pacific Madrone. North of Mule Creek on these parcels are also dominated by Douglas-fir timber mixed with tanoak and Madrone, but also contains small grass openings and oak woodland.

2. Erosion Prevention BPTC Measures

- 2.1. Describe the BPTC measures that have been, or will be implemented to prevent or limit erosion. Provide an implementation schedule for BPTC measures that have not yet been implemented. Identify the erosion prevention BPTC measures on a site map.

See the Mitigation Report, Treatment Implementation Schedule, and Site Maps for site specific details at sites 15A, 15B, and the Past Cultivation Area.

- 2.1.1. The description shall address physical BPTC measures, (e.g., placement of straw mulch, plastic covers, slope stabilization, soil binders, culvert outfall armoring, etc.) and biological BPTC measures (vegetation preservation/replacement, hydro seeding, etc.).

See Site Map, Treatment Implementation Schedule, Mitigation Report, for site specific details at sites 15A, 15B, and the Past Cultivation Area.

3. Sediment Control BPTC Measures

- 3.1. Describe the BPTC measures that have been, or will be, implemented to capture sediment that has been eroded. Provide an implementation schedule for BPTC measures that have not yet been implemented. Identify the sediment control BPTC measures on a site map.

There are no locations or measures necessary for the capture of sediment that has been eroded. See Site Map, Treatment Implementation Schedule, Mitigation Report, for site specific details at sites 15A, 15B, and the Past Cultivation Area.

- 3.1.1. The description shall address physical BPTC measures, (e.g., placement of silt fences, fiber rolls, or settling ponds/areas, etc.) and biological BPTC measures (vegetated outfalls, hydro seeding, etc.).

All exposed soil within the portions of the disturbed areas within the riparian setback shall be treated as stated in the Mitigation Report, for sites 15A, 15B, and the Past Cultivation Area.

4. Maintenance Activities - Erosion Prevention and Sediment Control

- 4.1. Describe how the erosion prevention and sediment control BPTC measures will be monitored and maintained to protect water quality.

All treatments and mitigations will be monitored for proper function throughout the Winter Period during required monitoring as required in the Monitoring Plan above.

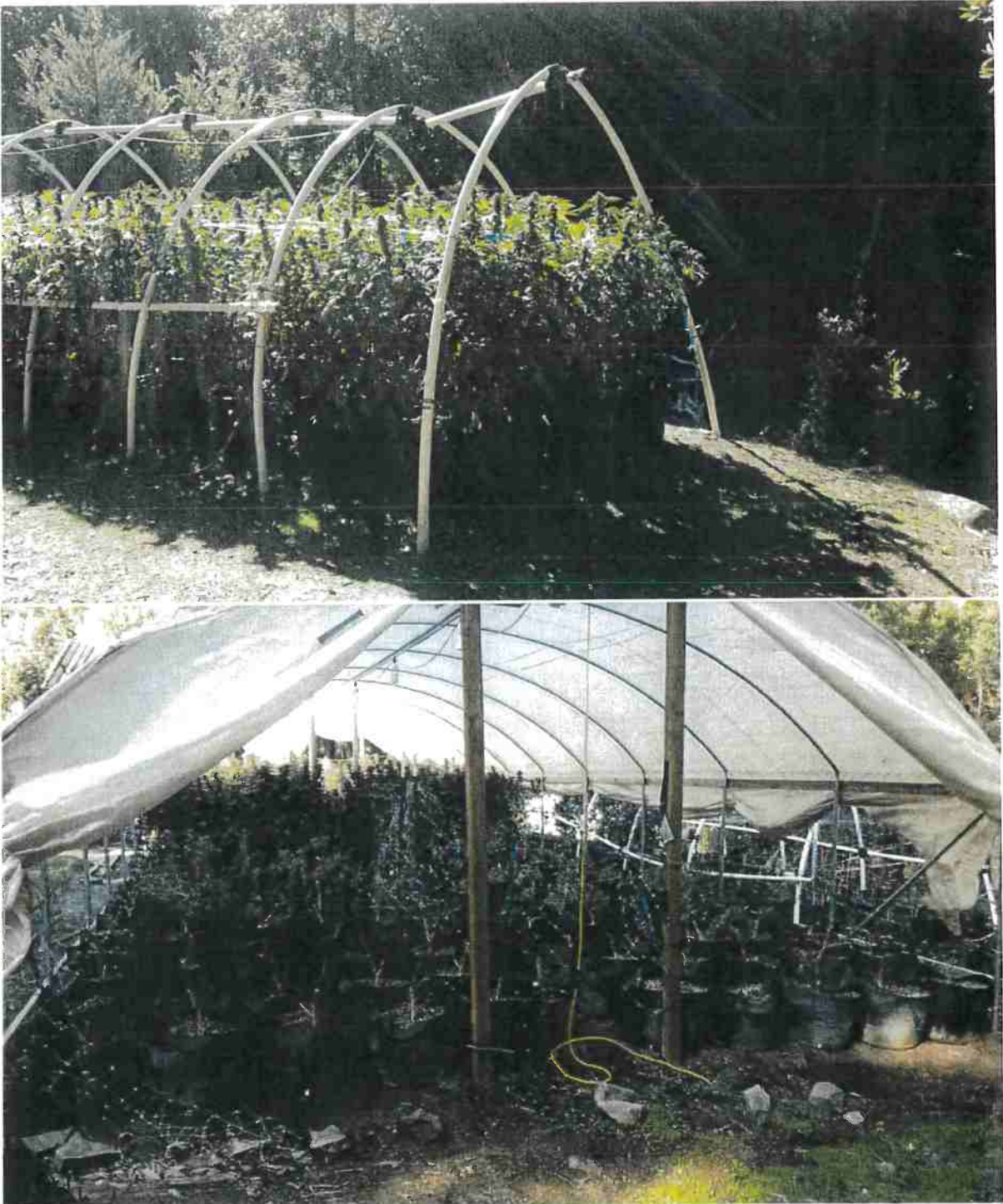
- 4.2. Describe how any captured sediment will be either stabilized in place, excavated and stabilized on-site, or removed from the site.

It is not anticipated to be necessary. However, any sediment captured behind straw wattles will be stabilized in place by continued seeding and mulching as necessary.

5. Long Term Stabilization Measures

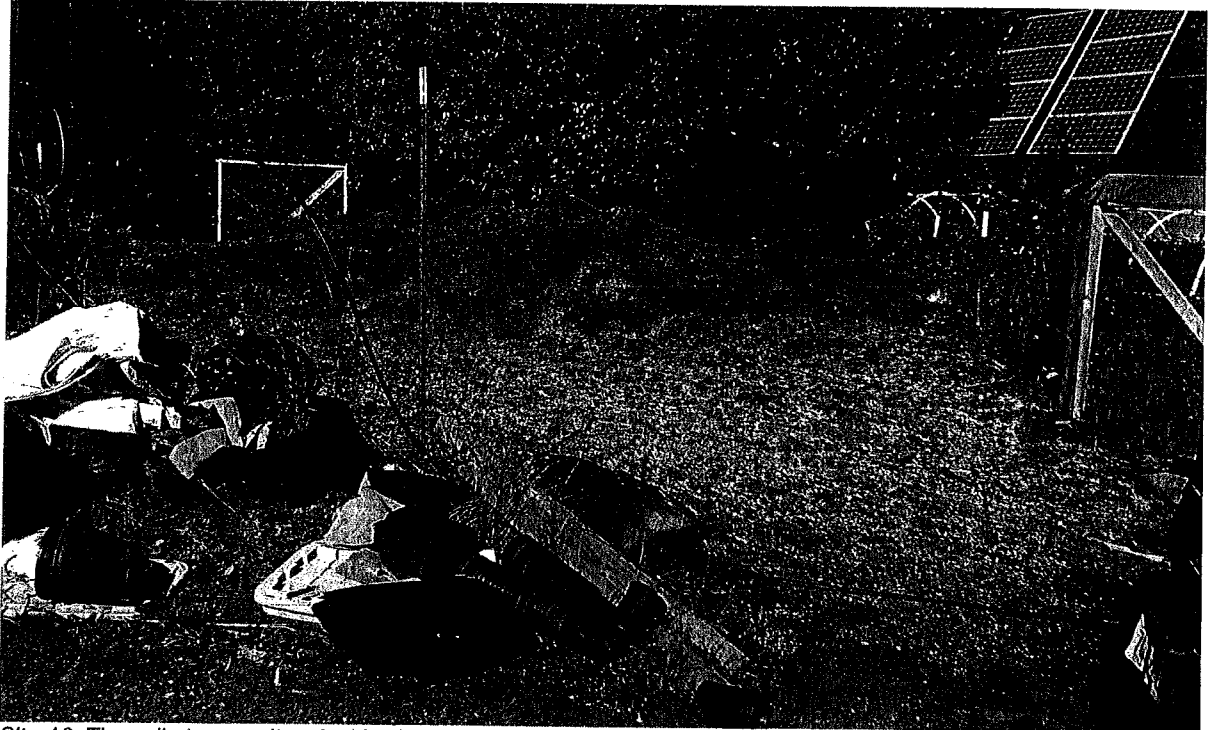
- 5.1. Describe any revegetation activities designed to provide long term stabilization, that will occur either at the beginning or end of the precipitation season.

See 3.1.1 above.

Pictures:

Site 15A top, Site 15B bottom: Cultivation areas partially located within the 100 foot riparian setbacks. At these sites, the cultivator shall remove the cultivation and related materials from the riparian setback. Grass seed and mulch bare soils within the riparian setback. Install straw wattles or box in the downslope edge of the remaining cultivation area as necessary to prevent soils and or materials from leaving the cultivation area and entering the riparian setback. Photo Date: 10/11/2019.

Pictures:



Site 16: The soil storage site. At this site, the cultivator shall cover the pile to protect from rainfall and erosion, and to prevent discharge to waters of the state, and to minimize leaching of waste constituents into groundwater. Photo Date: 10/11/2019.

Pictures:



Site 18: The ATV Trail at Site 18. It is an existing waterbreak near the Point of Diversion (POD) that has become worn down. At this site the cultivator shall reconstruct and maintain the waterbreak at this location prior to each winter. Photo Date: 10/11/2019.

Pictures:

Site 45: Greenhouse material and cultivation debris consisting of metal and plastic pipe, and lumber are stored within the riparian setback, some of which has access to the Class III watercourse. A small amount of composted plant waste and used soil was also at this location within the riparian setback. A 250 square foot metal cargo shed is also at this location. Remove the greenhouse materials and cultivation waste as stated in the Mitigation Report. Photo Date: 10/11/2019.

