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Site Management Plan

(Tier 2, Moderate Risk)

WDID - 1_12CC419104

Humboldt County
APN: 208-241-017-000

Prepared by:

Timberland Resource Consultants

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4/8/2020

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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 Number 208-241-017-000, 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
• 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.	• 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.	• 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 2, Moderate 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 one contiguous parcel totaling 40 acres located approximately 16.5 miles northeast of Bridgeville, California, at an elevation of approximately 2,600 feet above mean sea level. The property is located in Section 36, T2N, R5E, HB&M, Humboldt County, from the Blake Mountain USGS 7.5' Quad. Unnamed Class II and III watercourses flow north-south through the property that drain to the Van Duzen River.

Site Management Plan

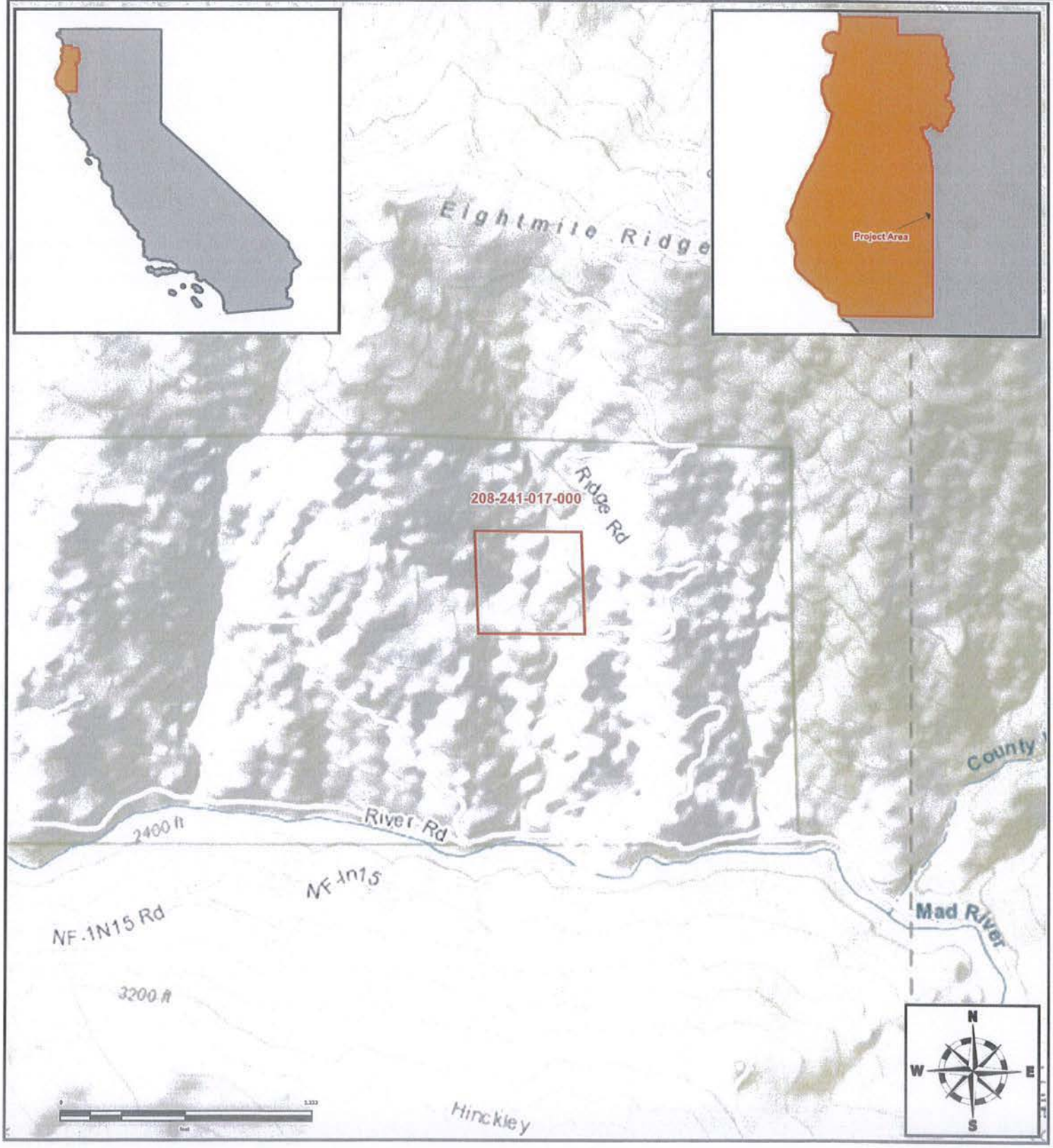
Project General Location Map

Timberland Resource Consultants

Order WQ 2019-0001-DWQ [WDID - 1_12CC419104]
Section 36, T2N, R5E, Humboldt County,
Blake Mountain 7.5' USGS Quadrangle
TRC-185

Map Legend

State of California | Humboldt County | Property Boundary



Project Description

Cannabis cultivation on the property consists of five cultivation areas that are a combination of pots and hoop houses. There is a total general cultivation area[1] of approximately 15,420 ft². The cultivation areas are located within approximately 58,905 ft² of disturbed area which is located in five separate areas on the property. This project is being permitted by Humboldt County to cultivate cannabis. This project was previously enrolled in the North Coast Regional Water Quality Control Board Order No. R1-2015-0023 under WDID-1B161282CHUM and has since enrolled with State Water Resources Control Board as WDID-1_12CC419104. This project is being classified as Tier 2, Moderate Risk.

Table 1: Cultivation Site Parameters.

Cultivation Area	Land Disturbance Area (ft²)	General Cultivation Area[1] (ft²)	Adjoining Hillslopes (% Grade)
A	5,130	3,100	22
B	5,800	4,200	18
C	3,800	2,500	30
D	8,375	3,620	34
E	3,5800	2,000	35
Totals:	58,905	15,420	-

[1] Area refers to the total land disturbance area. The total cannabis canopy area may vary considerably than the disturbance area.

Table 2: Project Permitting

Additional Required Permits Related to Project, Type, and Status	
SIUR	Small Irrigation and Use Registration Filed with Division of Water Rights – #H500602
LSAA/1600	Submitted/Lake and Streambed Alteration Agreement from CDFW – Notification No. 1600-2016-0100-R1
401 Cert	May be required for any work in a waterbody or the riparian setback.

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

This project was previously enrolled 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. 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.

This project is newly enrolled in the State Water Quality Control Board Order No. WQ 2019-0001-DWQ.

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 used for occasional access to features on the property).

Roads within the project area appear to have a low native rock component and, based on observations of surface erosion relative to current surface drainage break frequency, are being classified as having moderate 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

All permanent roads require appropriate surfacing (crushed rock, lignin treatments, pavement, or chip-seal) to increase durability during winter use. During the assessment of the property, portions of seasonal and permanent roads were suffering from erosion and lack of adequately functioning drainage features. All road segments within riparian setbacks, as shown on attached Site Maps, shall be rock surfaced in addition to portions of the seasonal road with steep grades. Sections of permanent roads and seasonal roads require either the maintenance of existing waterbreak features or the installation of new waterbreak features.

The off-stream rain catchment pond has a capacity of approximately 300,000-gallons. The pond is additionally supplemented with water from the surface water diversion above. In 2016, a portion of the pond cutbank failed causing slumping to extend upslope. The cutbank was re-graded to a stable

angle that exposed bare soils. Rill from stormwater runoff has formed in this area as a result of lacking erosion control. The riling leads into the pond giving the false impression of a potential watercourse channel in visible in 2019 aerial imagery. A review of historical aerial imagery from both 2005 and 2016 depicts no evidence of a watercourse channel or riling. Aerial imagery from 2005 was examined to confirm that the Class III ephemeral watercourse, above the Past Cultivation area with the surface water diversion, was in its natural channel. Previous cultivation activities were ceased in this location due to the cultivation site being within riparian areas. All bare soils shall be seeded and straw mulched, including the cutbank of the pond. See attached photographs, Mitigation Report, Treatment Implementation Schedule, and Site Map to follow for site specific details and treatments.

Controllable Sediment Delivery Sites (CSDS) were found on the property. Runoff and sediment from Site 09 was found to be discharging into surface waters. Site 09 is additionally being classified as an unstable area. The site features a natural, channel/bank slope failure in a Class II watercourse resulting from channel migration around outcropping bedrock on the opposing channel bank. The failure is located approximately 10 feet to the right of the rocked pond spillway and 8 feet from the pond embankment. The spillway is lined with geotextile fabric and large rock and appears to be functioning adequately however, the pond has no liner. The proximity of the bank slope failure to the pond impoundment to the presents a potential threat to water quality in the Class II. **We are recommending that the Cultivator have a licensed geologist or engineer examine Site 09 immediately to receive a prescription for the feature.** See the attached photographs, Mitigation Report, Treatment Implementation Schedule, and Site Map to follow for site specific details and treatments.

Moderate riling was identified on permanent and seasonal roads due to a lack of functioning waterbreak features. See the attached Site Map and Mitigation Report to view the locations of waterbreaks requiring maintenance and new proposed waterbreaks. In addition, the portion of the seasonal road from Site 17 to Cultivation Area D will require rock surfacing due to the steep grade of the road.

A portion of Cultivation Area D at Site 20 is located within the outer edge of the riparian setback of a Class II watercourse. Five pots shall be removed from the area that were flagged and located closest to the watercourse. Any bare soils exposed during this process will be seeded and straw mulched. The bank slope of the Class II by the cultivation area is heavily rock armored and well-vegetated with no significant erosion identified during the site visit. Due to this, Site 20 does not pose a high risk threat to water quality and the project has been classified as Moderate Risk.

Site 19 is a cutbank failure on the flat of Cultivation Area D. The cutbank appears to have stabilized, however, the proximity of a Class II and the steep hillslope grade requires treatment. See the attached photographs, Mitigation Report, Treatment Implementation Schedule, and Site Map to follow for site specific details and treatments.

During the site visit, the Cultivator proposed relocating cultivation area to a location below the main residence that has scattered wetland plant profile. **We recommend that the Cultivator have a**

licensed biologist perform a wetland delineation prior to establishing any new cultivation areas on the property.

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

No revegetation besides seeding and mulching disturbed areas and past cultivation areas are being prescribed.

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

Three watercourse crossings (Sites 01, 16, & 18) were identified during the assessment of the property. All the existing culverts are sized for a 100-year storm event. The culvert at Site 18 is partially obstructed at the outlet. The other crossings were functioning adequately. See attached photographs, Mitigation Report, Treatment Implementation Schedule, and Site Map to follow for site specific details and treatments.

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

Currently, no spoils are present on the property. Any/all spoils generated through development or maintenance of roads, driveways, earthen fill pads, or other cleared or filled areas have not been sidecast in any location where they can enter or be transported to surface waters. Any/all 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.

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

Disturbed areas were identified as being within riparian setbacks at Site 20 at Cultivation Area D. All cultivation activities and disturbance will cease at this location. It shall then be seeded and straw mulched. Erosion at Site 09 was observed to be delivering sediment to the watercourse below. **We recommend that Site 09 be evaluated by a licensed geologist or engineer for a prescription.** 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	Disturbance Area Distances and Riparian Setbacks[2]				
	Class I [Setback: 100'][2]	Class II [Setback: 100']	Class III [Setback: 50']	Perennial Spring or Wetland [Setback: 50'][2]	Disturbed Area Within Setbacks [ft²]
Cultivation Area A	>200'	>200'	160'	>200'	0'
Cultivation Area B	>200'	>200'	>200'	>200'	0'
Cultivation Area C	>200'	>200'	100'	>200'	0'
Cultivation Area D	>200'	80'	180'	>200'	80'
Cultivation Area E	>200'	>200'	>200'	>200'	0'
				Total =	80'

[2]This 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☒

Water on the property is derived from a surface water diversion and rain catchment pond. The surface water diversion (POD) supplements an off-stream 300,000-gallon rain catchment pond. The POD is a French drain from a Class III ephemeral watercourse that drains through 1" pipe to the pond below. Both the POD and pond are located on the property and meet and exceed the required water demands for both domestic and agricultural use. The POD and pond are used for cannabis irrigation and domestic use. At present, there are no metering devices or procedures in place to record water usage associated with the irrigation of cannabis. A metering device and/or a procedure to monitor water usage shall be used to record all water used for the irrigation of cannabis and domestic use. No matter the source or means of measurement, per the State General Order, all water used for the irrigation of cannabis shall be recorded daily and recorded water use data shall be kept and maintained for 5 years. Water use may be recorded by meter(s), calculated irrigation times, pump and fill, tank measurements, or any other reasonably accurate means. These records are to be current, maintained, kept on site, and presentable should they be requested. Monthly water usage shall be recorded for annual reporting purposes. For surface water diversions that are used at any point to provide water for the irrigation of cannabis, metering device(s) shall be installed immediately to record water diversion as it is diverted. Records of diverted surface water shall be kept and maintained for 5 years. These records are to be current, maintained, kept on site, and presentable should they be requested. Domestic water shall be metered separately from water used

for the irrigation of cannabis. The method of recording and record keeping for domestic water use shall be the same as reporting for cannabis.

Water is stored in twenty 2,500-gallon tanks, six 3,000-gallon tanks, four 3,500-gallon tanks, and eight 5,000-gallon tanks. Water storage tanks were found to have lids in place to prevent access and entrapment of wildlife. Tank lids shall be kept closed at all times when access is not needed. Tanks that do not utilize lids shall be retrofitted to be enclosed from wildlife. Overflow prevention measures shall be installed on water storage and transfer infrastructure or water storage tanks to prevent the overflowing of tanks and unnecessary waste of water resources when water storage infrastructure has filled. Water conservation measures such as drip line irrigation, morning or evening watering, and mulch or cover cropping of cultivated topsoils shall also be implemented.

At this time, the cannabis cultivator has approximately 422,000 gallons of water storage installed. Based on estimates, this volume of storage is sufficient to allow for full forbearance during the required period from April 1st to October 31st. Monthly water usage estimates and the season total are as follows below.

Table 5: Annual Water Use

2019	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Cannabis Irrigation	0	0	0	0	4,600	18,750	27,300	32,600	38,100	20,950	9,450	0
										Total AG Water Use =		151,750

There is domestic water use at this time on this property. Water meter(s), or water usage procedures, 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 there are multiple diversions of surface water, infrastructure/metering device(s) shall be designed/installed in a manner that each source of surface water is recorded separately.

A Lake and Streambed Alteration Agreement with the California Department of Fish and Wildlife, as well as an Initial Statement of Water Diversion and Use and a Small Irrigation and Use Registration with the California State Water Resource Control Board Division of Water Rights, has been finalized as of the writing of this assessment. Any additional guidelines, treatments, or restrictions set forth under the finalized Lake and Stream Agreement shall be followed.

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

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

Fertilizers, pesticides, potting soils, compost, and other soils and soil amendments are stored currently on the property in a manner in which they will not enter or be transported into surface waters and so that nutrients or other pollutants will not be leached into groundwater. However, the storage shed in which the fertilizers and pesticides are stored is located within the riparian zone of a Class II at Site 07. This structure shall be relocated outside of the riparian zone. Cultivation areas are currently maintained so as to prevent nutrients from leaving the site during the growing season and post-harvest.

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.

Currently, no bulk fuel storage or petroleum products are present on the property. Small quantities of fuel are also stored within hand cans and fuel canisters, and motor oil is stored in the original motor oil container, alongside small generators that power fertilizer mixing tanks. Neither the fuel and motor oil or the small generators have secondary containment or cover.

Any/all fuel canisters, motor oil containers, and generators (large or small) shall be stored in secondary containment (e.g. drip pans, plastic totes, or sealed metal boxes) while being stored long term or not in immediate use, wherever these materials are used anywhere on the property. See the Mitigation Report, Treatment Implementation Schedule, and Site Map to follow for site specific details and treatments.

Should the cannabis cultivator at any point in the future obtain fuel storage or petroleum products, any/all future petroleum products and other liquid chemicals, including but not limited to diesel, biodiesel, gasoline, and oils shall be stored so as to prevent their spillage, discharge, or seepage into receiving waters. Storage tanks and containers shall be of suitable material and construction to be compatible with the substance(s) stored and conditions of storage such as pressure and temperature. Above ground storage tanks and containers shall be provided with a secondary means of containment for the entire capacity of the largest single container and sufficient cover shall be provided to prevent any/all precipitation from entering said secondary containment vessel. Cannabis cultivators shall ensure that diked areas are sufficiently impervious to contain discharged chemicals. Cannabis cultivators shall implement spill prevention, control, and countermeasures (SPCC) and have appropriate cleanup materials available onsite if the volume of a fuel container is greater than 1,320 gallons. Underground storage tanks 110 gallons and larger shall be registered with the appropriate County department and comply with state and local requirements for leak detection, spill overflow, corrosion protection, and insurance coverage. 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 addition reporting. This cannabis cultivator is advised to contact local agencies to find out if such reporting applies to current operations.

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

Cultivation-related waste was found around the Past Cultivation site shown on the Site Map. Empty plant pots and organic cultivation waste shall be removed from this location and stored in locations where they cannot 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.

Organic cultivation-related wastes from current cultivation areas are collected from the cultivation areas and either disposed of properly with general waste or composted. The cannabis cultivator shall ensure that the locations where organic wastes are stored or composted 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 in lidded trashcans and garbage bags adjacent to or in the residence, sheds, and cultivation areas and are 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 and garbage bags and are 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 septic system on site. It is the cannabis cultivator's responsibility to ensure compliance of such action 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 both prepare for, and utilize, 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 resulting from vehicular use to road surfaces (such as rutting or wheel tracks) and/or road surfacing (such as rock) 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 208-241-017-000, 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.

7. Persons using this document are advised to contact Timberland Resource Consultants prior to such use.

8. Timberland Resource Consultants will not discuss this document or reproduce it for anyone other than the Client for which this document was prepared without authorization from the Client.

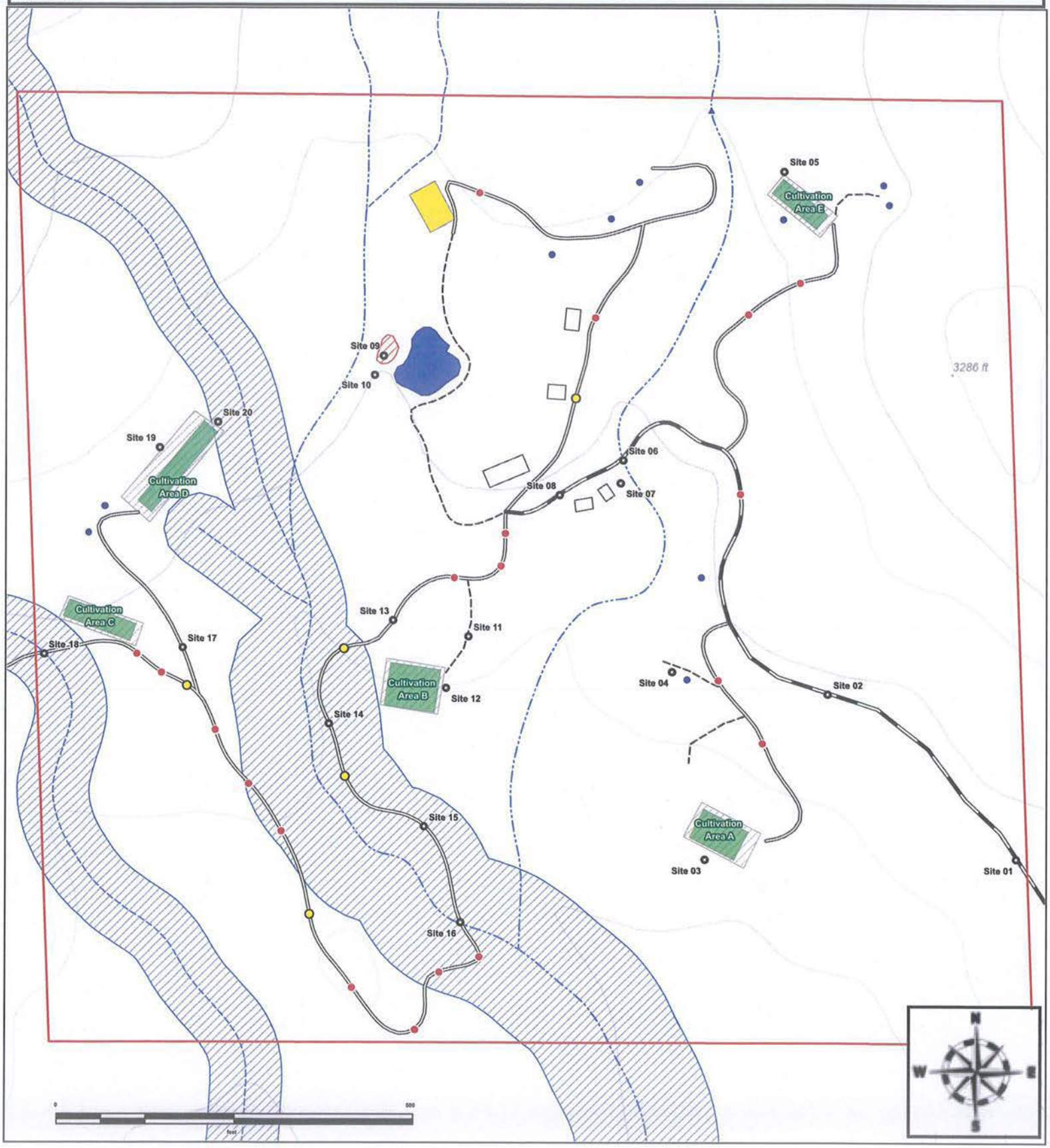
Anna Urias

Anna Urias

Timberland Resource Consultants

Site Management Plan
Project Site Map

Order WQ 2019-0001-DWQ [WDID - 1_12CC419104]
Section 36, T2N, R5E, Humboldt County,
Blake Mountain 7.5' USGS Quadrangle
TRC-185



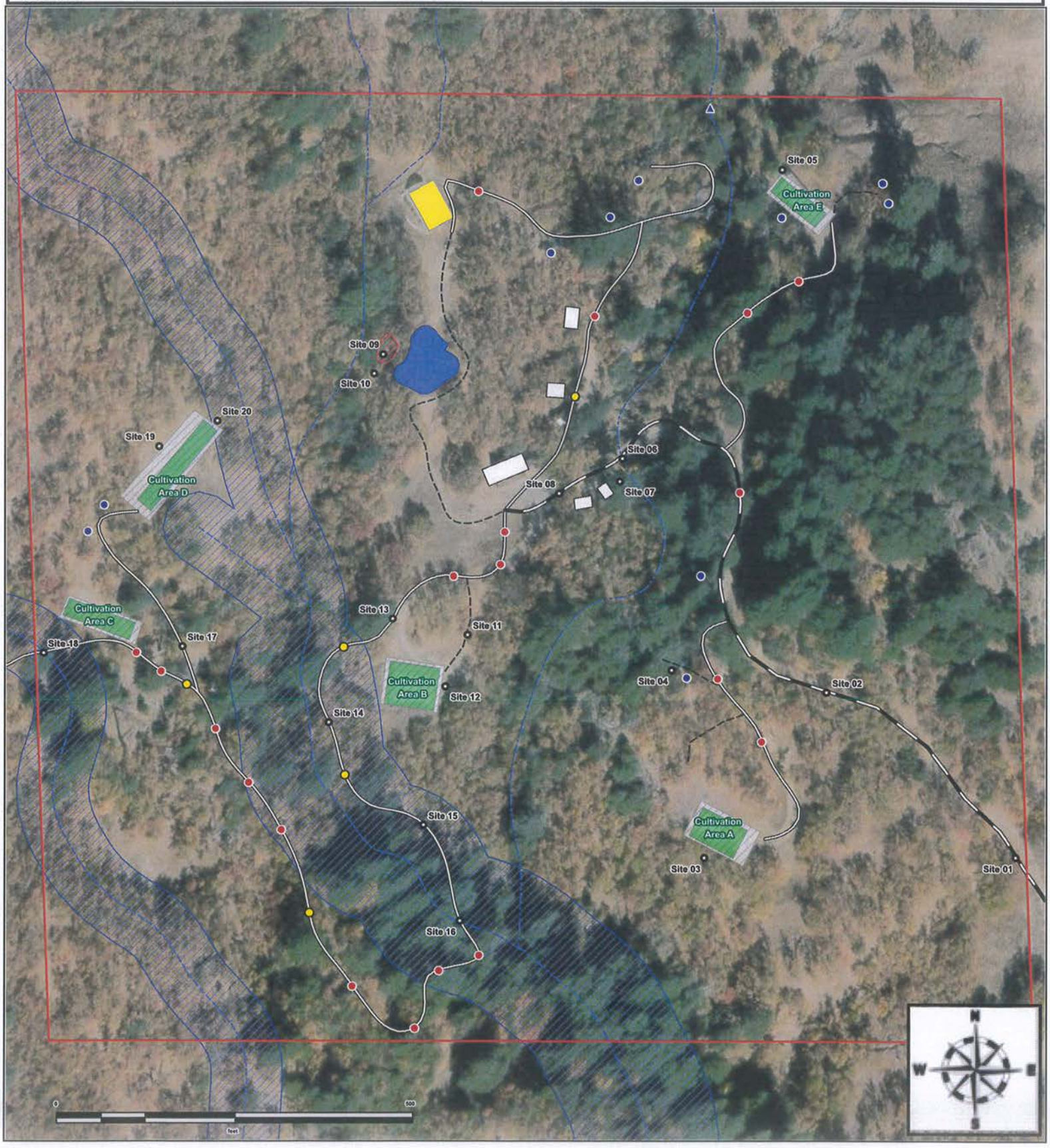
Site Management Plan

Project Site Map

Order WQ 2019-0001-DWQ [WDID - 1_12CC419104]
Section 36, T2N, R5E, Humboldt County,
Blake Mountain 7.5' USGS Quadrangle
TRC-185

Map Legend

- Property Boundary
- Disturbed Area
- Unstable Area
- Pond
- Structure
- Past Cultivation
- Cultivation Area
- Watercourse Setback
- Roads
  - Permanent
  - Seasonal
  - Trail
- Watercourses
  - Class II
  - Class III
- Site
- Tank
- POD
- Install waterbreak
- Maintain waterbreak



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Treatment Implementation Schedule

Unique Point	Proposed Work Completion Date
Immediately	
Site 09	Immediately
Site 10	Immediately
Site 11	Immediately
Past Cultivation Areas	Immediately
Water Storage and Use	Immediately
Liquid Petroleum Products	Immediately
Generators and Gas Powered Pumps	Immediately
Prior to 10/15/20	
Existing waterbreak	Prior to 10/15/20
Proposed waterbreak	Prior to 10/15/20
Site 01	Prior to 10/15/20
Site 02	Prior to 10/15/20
Site 03	Prior to 10/15/20
Site 05	Prior to 10/15/20
Site 06	Prior to 10/15/20
Site 07	Prior to 10/15/20
Site 08	Prior to 10/15/20
Site 15	Prior to 10/15/20
Site 17	Prior to 10/15/20
Site 18	Prior to 10/15/20
Site 19	Prior to 10/15/20
Site 20	Prior to 10/15/20
As soon as feasible, but no later than 10/15	
Site 04	As soon as feasible, but no later than 10/15

Timberland Resource Consultants

SMP - Mitigation Report

WDID# - 1_12CC419104

Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 01	-123.559729 40.509791	Permanent	X	X	-	Prior to 10/15/20	
Current Condition: An existing 24" diameter culvert on a Class III watercourse is appropriately sized for a 100-year storm event but it lacks a critical dip.						Prescribed Action: A critical dip shall be installed to the specifications in the attached BMP's: Culvert Design and Installation.	

Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 02	-123.560681 40.510425	Permanent	X	X	-	Prior to 10/15/20	
Current Condition: A low point in the road lacks adequate outsloping causing surface runoff to collect in this location.						Prescribed Action: The road shall be outsloped to the specifications in the attached BMP: Road Outsloping.	

Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 03	-123.561303 40.509788	-	X	X	-	Prior to 10/15/20	
Current Condition: French drain with a "T" energy dissipater at the outlet draining the Cultivation Area A flat. The flat has standing water around the edges of the green house.						Prescribed Action: A single hand trench shall be dug the length of the greenhouse and perpendicular to the cut bank to drain surface runoff over and onto the fill slope.	

Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 04	-123.561467 40.51051	-	X	X	-	As soon as feasible, but no later than 10/15	
Current Condition: Three of five 2,500-gallon water storage tanks are located in the riparian zone of a Class II watercourse.						Prescribed Action: The three water tanks located closest to the Class II watercourse shall be relocated to an area that is a minimum of 100-feet from a Class II and 50-feet from a Class III watercourse.	

Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 05	-123.560903 40.512441	-	X	X		Prior to 10/15/20	
Current Condition: Cultivation Area E has standing water at the base of the cutbank.						Prescribed Action: Improve the drainage on the flat of Cultivation Area E through the addition of a single hand trench shall be dug the length of the greenhouse and perpendicular to the cut bank to drain surface runoff over and onto the fill slope.	

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SMP - Mitigation Report

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Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 06	-123.561715 40.511327	Permanent	X	X	-	Prior to 10/15/20	

Current Condition: The approaches to the bridge spanning a Class II watercourse lack adequate surface rocking. The bridge is located on a section of permanent road.

Prescribed Action: Both approaches shall be rock surfaced in continuance with the rock surfacing of the permanent road that crosses the bridge.

Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 07	-123.561727 40.511238	-	X	X	-	Prior to 10/15/20	

Current Condition: A permanent structure, used for fertilizer and amendment storage, is located within the riparian setback of a Class II watercourse.

Prescribed Action: The structure does not present a threat to water quality however; any materials that have the ability to transfer or leech into a watercourse shall be removed and relocated a minimum of 100 feet from the Class II watercourse. In addition, all cultivation

Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 08	-123.562037 40.511192	Permanent	X	X	-	Prior to 10/15/20	

Current Condition: The road lacks adequate outsloping in this location.

Prescribed Action: The road shall be appropriately outsloped to the specifications in the attached BMP: Road Outsloping.

Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 09	-123.562926 40.511729	-	X	X	-	Immediately	

Current Condition: Location of a bank slope failure and unstable area situated above a Class II watercourse that is approximately 10 feet to the right of the rocked spillway for the pond and 6 feet from the pond impoundment. Runoff and sediment from Site 09 were found to be discharging into surface waters. The proximity of the bank slope failure to the pond impoundment to the presents a threat to water quality in the Class II below if the impoundment were to fail.

Prescribed Action: This site shall be examined immediately by a qualified geologist or engineer to determine if further actions are needed.

Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 10	-123.562971 40.511655	-	X	X	-	Immediately	

Current Condition: Location of the pond's spillway which drains into a Class II watercourse. The spillway is functioning adequately and is heavily rocked and lined with a geotextile fabric.

Prescribed Action: The spillway is in close proximity to the unstable area at Site 09. The site should be examined by a licensed geologist to determine if it is compounding the issues at Site 09.

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Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 11	-123.562496 40.510647	Trail	X	X	-	Immediately	
Current Condition: Trail providing redundant access to Cultivation Area B from the seasonal road.						Prescribed Action: Discontinue use of this trail and seed and straw mulch any bare soils.	

Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 12	-123.562608 40.510448	-	-	X	-	-	
Current Condition: A French drain that drains the flat of Cultivation Area B into a well vegetated, stable area below.						Prescribed Action: None.	

Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 13	-123.562875 40.510708	Seasonal	-	X	-	-	
Current Condition: Existing 18" diameter ditch relief culvert that is functioning adequately. The feature drains the inboard ditch line of a seasonal road and has rock armoring at the inlet and outlet.						Prescribed Action: None.	

Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 14	-123.563198 40.51031	Seasonal	-	X	-	-	
Current Condition: Existing 18" diameter ditch relief culvert that is functioning adequately. The feature drains surface runoff from Cultivation Area B and has rock armoring at the inlet and outlet.						Prescribed Action: None.	

Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 15	-123.562718 40.509915	Seasonal	X	X	-	Prior to 10/15/20	
Current Condition: A portion of the seasonal road is located within the riparian zone of Class II watercourse.						Prescribed Action: Any sections of roads located within 100 feet of the Class II watercourse and any riparian zone shall receive surface rocking.	

Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 16	-123.562533 40.509546	Seasonal	X	X	-	-	
Current Condition: Existing 40" diameter culvert on a Class II watercourse that is appropriately sized for a 100-year storm event and functioning adequately.						Prescribed Action: None.	

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Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 17	-123.563938 40.510602	Seasonal	X	X	-	Prior to 10/15/20	

Current Condition:	Prescribed Action:
An portion of road with an approximate 40% grade, from Site 17 to Cultivation Area D, lacks adequate surface drainage structures and rock surfacing.	Steep drainage structures shall be installed every 50 feet from Site 17 to Cultivation Area D. In addition, this section of road will receive appropriate rock surfacing. See specifications in the attached BMP: Steep Road Drainage Features.

Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 18	-123.56464 40.510578	Seasonal	X	X	-	Prior to 10/15/20	

Current Condition:	Prescribed Action:
Existing 36" diameter culvert on a Class III watercourse that is functioning adequately and appropriate sized for a 100-year storm event. The outlet is partially obstructed with rock.	Clear and maintain all obstructions 3-feet from the inlet and outlet of the culvert.

Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 19	-123.564057 40.511374	-	X	X	-	Prior to 10/15/20	

Current Condition:	Prescribed Action:
The location of a cut slope failure on the Cultivation Area D flat. A portion of the cut slope has been rock armored and the hill slope above is well vegetated and stable. The flat features a minimal, stable fill slope and has an adjoining hillslope grade of 34 percent. The cut slope failure is not located within the riparian zone of the Class II watercourse and does not currently pose a threat to water quality. Additionally, the flat lacks adequate drainage feature for surface runoff.	The cut slope failure shall be rock armored to provide erosion control and stability. Hand trenches shall be dug perpendicular to the cut bank to drain surface runoff onto the fill slope. See specifications in the attached BMP: Armor

Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 20	-123.563763 40.511472	-	X	X	-	Prior to 10/15/20	

Current Condition:	Prescribed Action:
Five pots in Cultivation Area D are located within the most outer bounds of the riparian zone of a Class II watercourse. The Cultivation Area and pots are currently located on bedrock with a well vegetated fill slope and do not pose a threat to water quality.	The five pots shall be removed from the riparian setback and any bare soils exposed during the process shall be seeded and straw mulched. The portion of Cultivation Area D that shall be decommissioned has been flagged.

Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Proposed waterbreak	-123.563917 40.510456	Seasonal	X	X	-	Prior to 10/15/20	

Current Condition:	Prescribed Action:
The road lacks adequate drainage structure features.	A rolling dip or waterbar shall be installed to the specifications in the attached BMP's: Waterbar Construction & Rolling Dip Design and Placement.

Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Existing waterbreak	-123.56417 40.510578	Seasonal	X	X	-	Prior to 10/15/20	

Current Condition:	Prescribed Action:
The existing drainage structures are not functioning adequately.	The existing drainage feature shall be repaired and maintained to the specifications in the appropriate attached BMP: Waterbar Construction or Rolling Dip Design and Placement.

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SMP - Mitigation Report

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Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Spatial reference	-123.562943 40.512299	-	-	-	-	-	

Current Condition: Spatial reference to the French drain surface water diversion (POD) used for cannabis irrigation and domestic use.

Prescribed Action: None.

Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Past Cultivation Areas		-	-	-	-	Immediately	

Current Condition: Past cultivation areas that are no longer used with remaining cultivation-related materials, fencing, wastes, and soils.

Prescribed Action: Remove any remaining fencing, pots, or other cultivation-related wastes and materials from these areas. Seed and mulch the Past Cultivation Area, and any Disturbed Area associated with its removal, with native grass seed and weed free straw(or woodchips). If cultivation soil is not re-used, contour the cultivation-related soils into the ground outside of any riparian buffer areas, and seed and mulch the contoured soils with native grass seed and weed free straw.

Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Water Storage and Use		-	-	-	-	Immediately	

Current Condition: Currently, there is enough water storage on the property to meet forbearance requirements during the required period from April 1st to October 31st. At present, there are no devices or procedures in place to record water usage associated with the irrigation of cannabis and domestic use.

Prescribed Action: Recorded water use data shall be used to determine remaining, or exact, storage needs to meet full forbearance. Any additional storage needed to meet water needs during the Forbearance Period shall be installed and filled prior to the Forbearance Period for 2021. Less water storage may be sufficient if recorded water usage numbers determine that actual water use is less than estimates. Water metering devices, or procedures for the wells, shall be installed to record all water diverted, pumped, and used water for the irrigation of cannabis and domestic use. 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 there are multiple sources of water, infrastructure/metering device(s) shall be design/installed in a manner that each source of water is recorded separately. Monthly water usage shall be recorded for annual reporting purposes. Also, water storage tank lids shall be appropriately closed to prevent the access of wildlife and, if not currently implemented, water conservation measures such as drip line irrigation, morning or evening watering, and mulch or cover cropping of cultivated top soils shall also be implemented.

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Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Liquid Petroleum Products		-	-	X	-	Immediately	

Current Condition: All liquid petroleum products (e.g. any size container of any petroleum product) requires secondary containment while not in immediate use and cover from precipitation during the wet season. Adequate quantities of absorbent materials shall also be stored at all locations where these types of materials are used and stored.

Prescribed Action: Any/all liquid petroleum products and their containers shall be stored in secondary containment (e.g. plastic totes or sealed metal boxes) while being stored long term or not in immediate use, wherever these materials are used anywhere on the property. Adequate quantities of absorbent materials (e.g. purpose made materials for oil and fuel spills, cat litter) shall be stored at all locations where these types of materials are used and stored. 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. See attached BMPs: Generator, Fuel, and Oil Management for further details.

Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Generators and Gas Powered Pumps		Legacy	X	X	-	Prior to 10/15/21	

Current Condition: All liquid petroleum powered generators and pumps require secondary containment, and cover from precipitation during the wet season. Adequate quantities of absorbent materials shall also be stored at all locations where the generators and gas powered pumps are used and stored.

Prescribed Action: Any/all liquid petroleum powered generators or pumps (large or small) shall be stored in secondary containment (e.g. plastic totes, sealed metal boxes, drip pans, pre-fabricated portable containment berms or fabricated and lined containment basins) while being stored long term or not in immediate use, wherever these materials are used anywhere on the property. Adequate quantities of absorbent materials shall be stored at all locations where these types of materials are used and stored. 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. See attached BMPs: Generator, Fuel, and Oil Management for further details.

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.

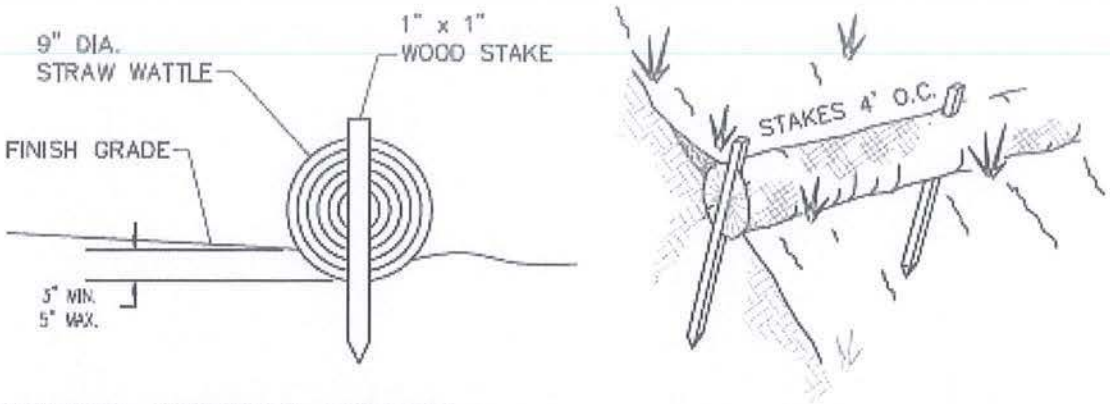
- Side cast or fill material extending more than 20 feet in slope distance from the outside edge of a landing which has access to a watercourse or lake shall be treated with slope stabilization measures described in #3 above. Timing shall occur per #1 above unless outside 100 feet of a watercourse or 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.)

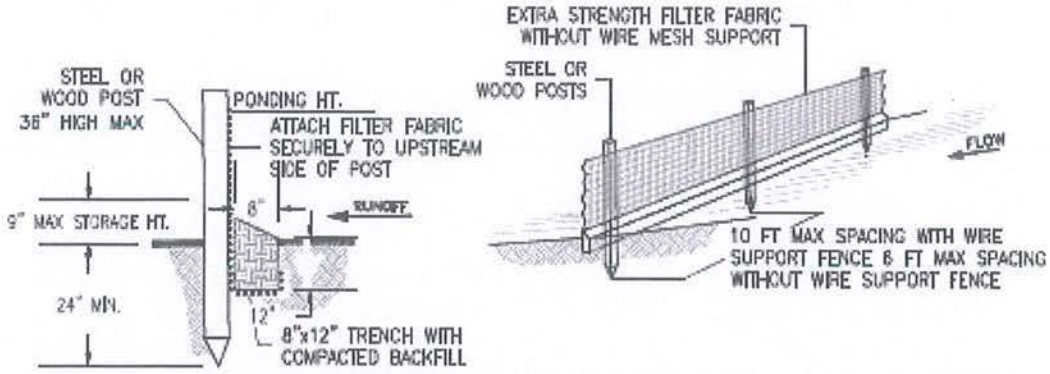


STRAW WATTLE NOTES:

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 ABUTTED TO EACH OTHER SNUGLY OR OVERLAPPED BY SIX INCHES.
2. STRAW ROLL INSTALLATION REQUIRES THE PLACEMENT AND SECURE STAKING OF THE ROLL IN A TRENCH, 3"–5" DEEP. RUNOFF MUST NOT BE ALLOWED TO RUN UNDER OR AROUND THE ROLL.

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

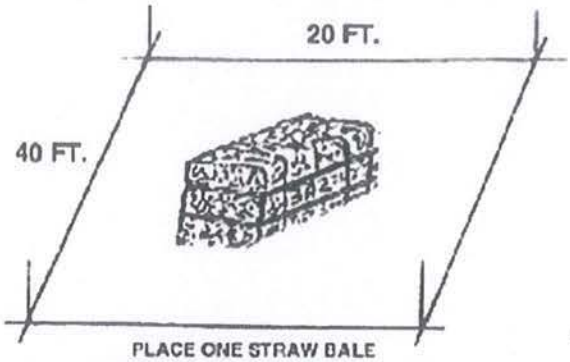
NTS

BMP: General Erosion Control (Cont.)

BMP: General Erosion Control (Cont.)

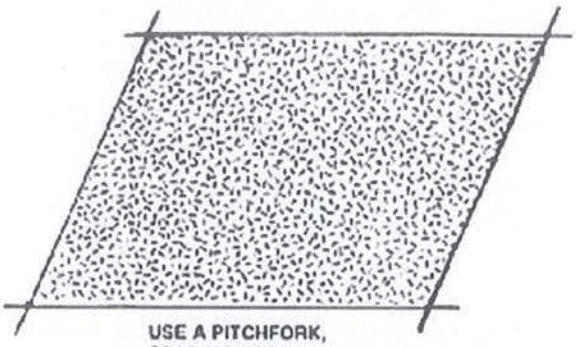
SPREAD THE STRAW

MARK OFF 800 SQ FT. PLOTS



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

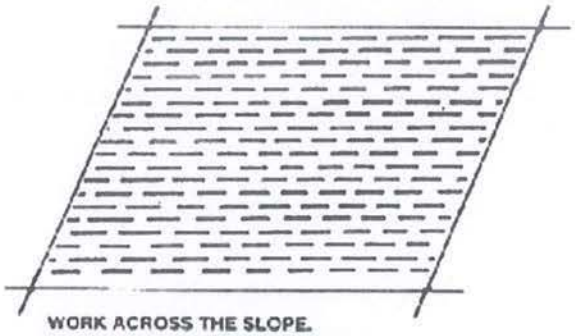
SPREAD EVENLY



USE A PITCHFORK, SPADING FORK, OR BY HAND

ANCHOR THE STRAW

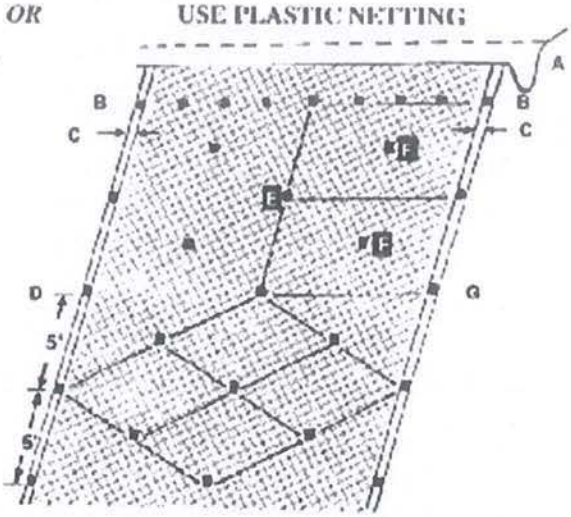
CRIMP BY HAND



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

OR

USE PLASTIC NETTING



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.

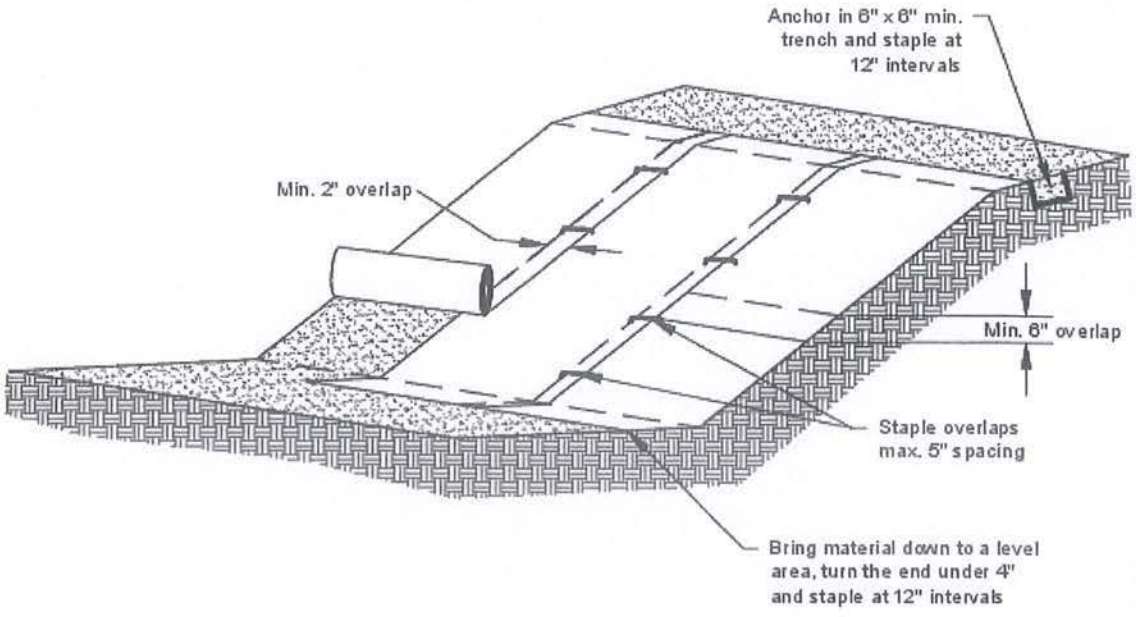
E. STAKE DOWN THE CENTER EVERY 5 FEET.

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/mattings 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

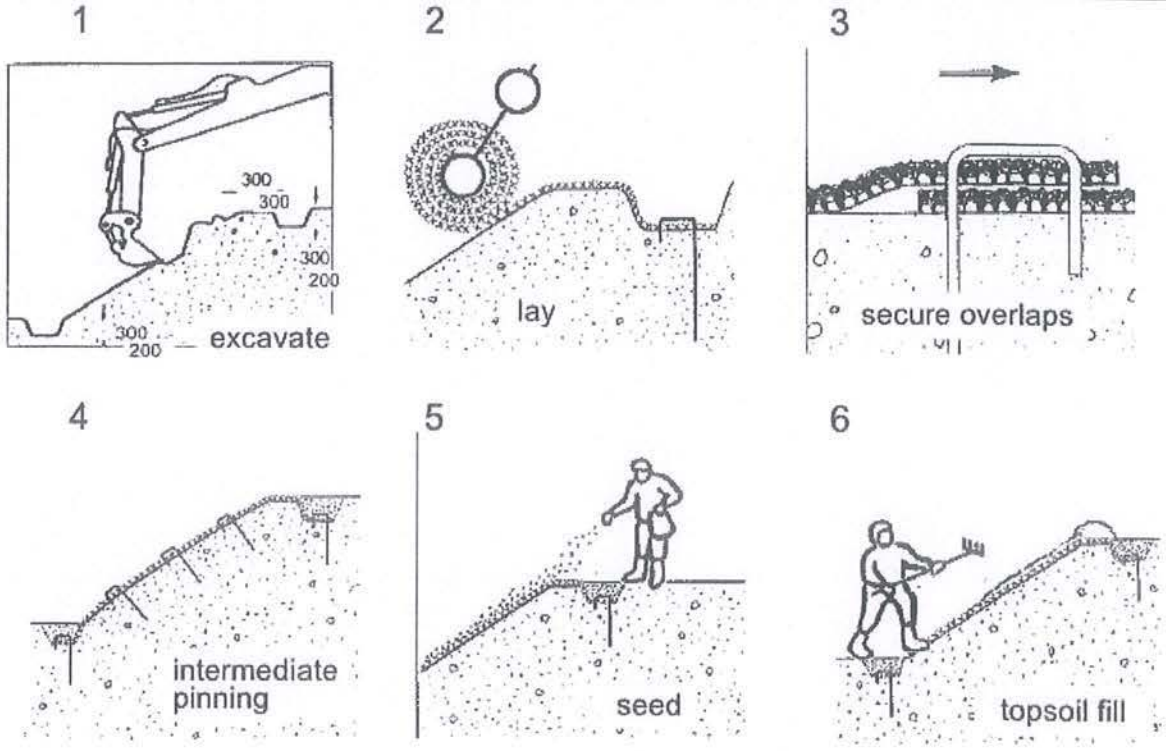
DEPARTMENT OF ECOLOGY
State of Washington

Slope Installation

Revised June 2016

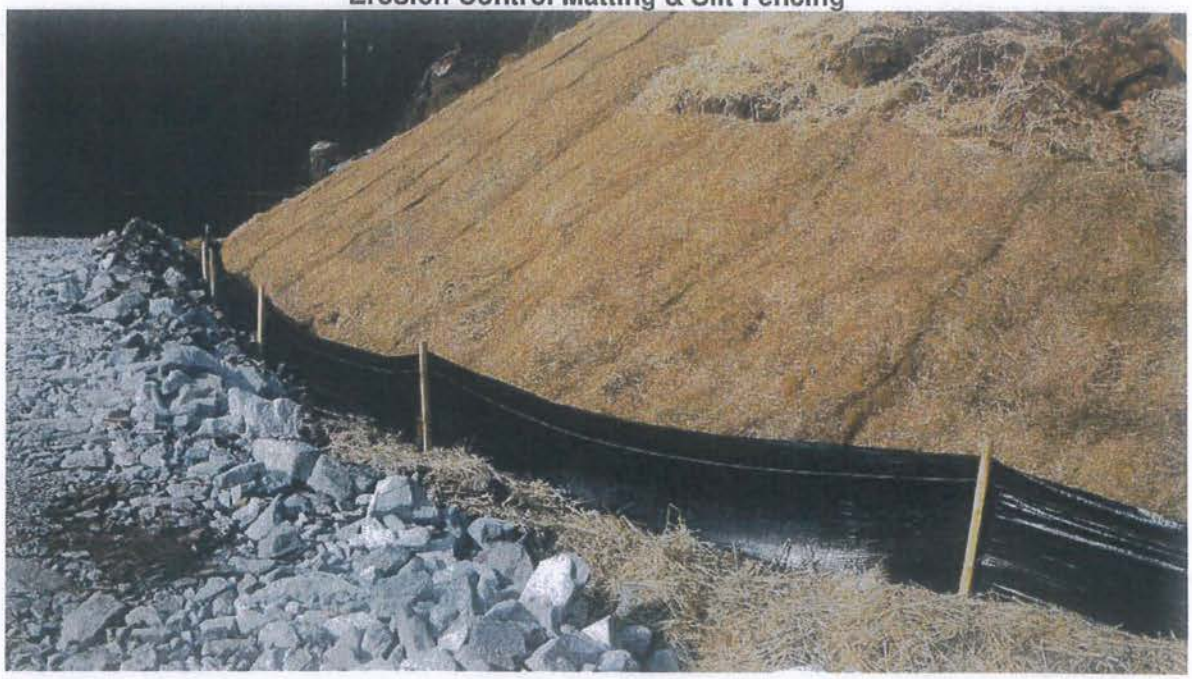
BMP: General Erosion Control (Cont.)

Installation of a geosynthetics mat - Enkamat



Erosion Control Measures (Cont.)

Erosion Control Matting & Silt Fencing



Jute netting & Straw-wattles

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
Permanent erosion control	Road shaping	Road and landing surfaces
	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

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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.

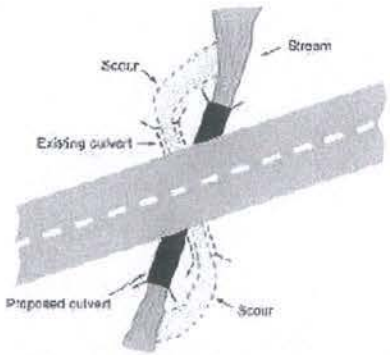

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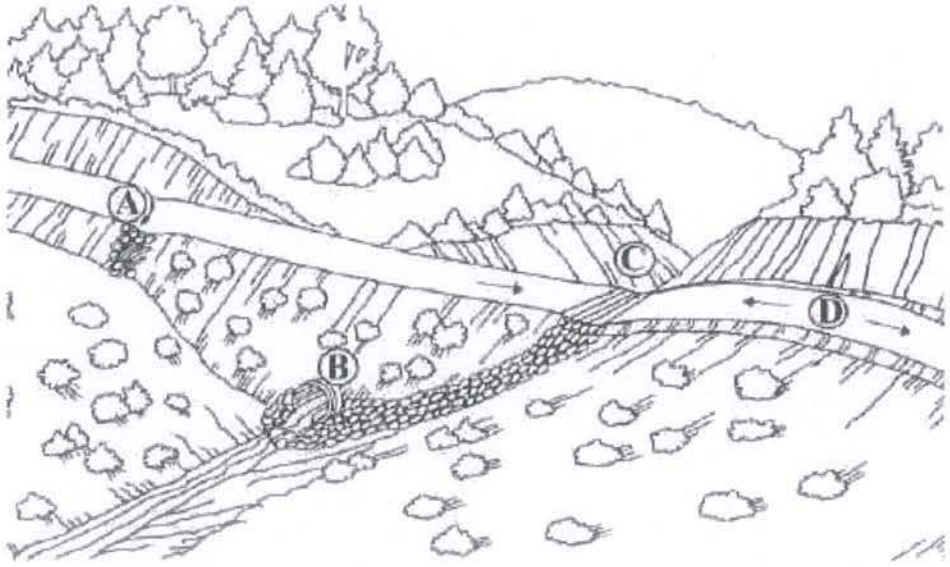
FIGURE 97. *Culvert alignment should be in relation to the stream and not the road. It is important that the stream enters and leaves the culvert in a relatively straight horizontal alignment so streamflow does not have to turn to enter the inlet or discharge into a bank as it exits. This figure shows 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).*

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



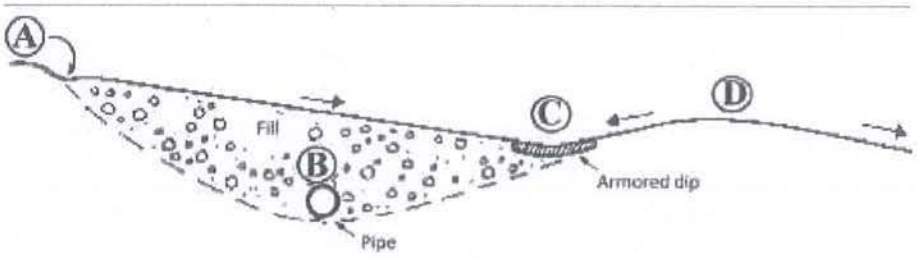


FIGURE 84. *Critical dips or dipped crossing fills should be centered near a stream crossing's down-road hingeline, not over the centerline of the crossing where overtopping could cause washout or severe erosion of the fill. If the stream crossing culvert (B) plugs, water will pond behind the fill until 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, riprap 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 erosional 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).*

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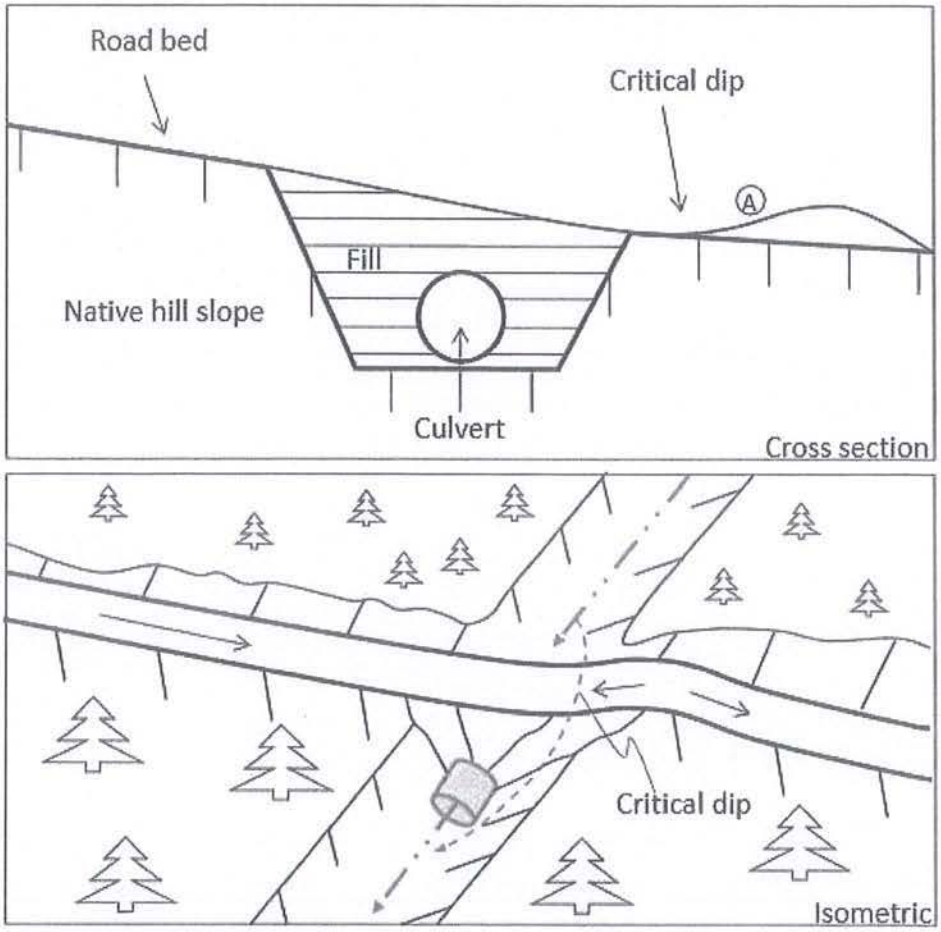
BMP: Permanent Culvert Crossing Design (Critical Dip)

Typical Critical Dip Design for Stream Crossings with Diversion Potential

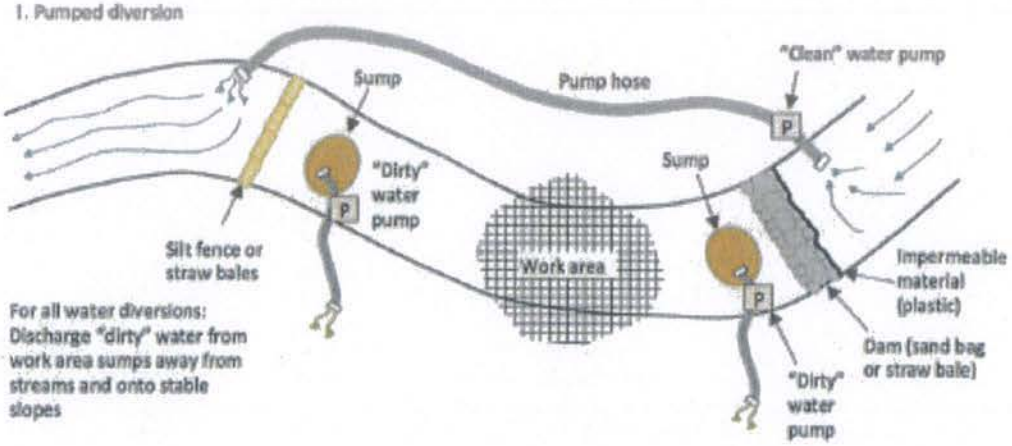


Critical Dip Construction:

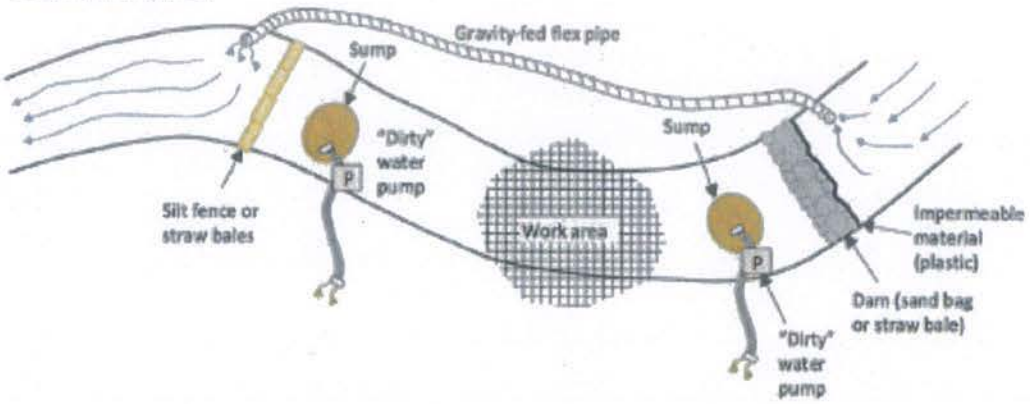
1. Critical dip will be constructed on the lower side of crossing.
2. Critical dip will extend from the cutbank to the outside edge of the road surface. Be sure to fill inboard ditch, if present.
3. Critical dip will have a reverse grade (A) from cutbank to outside edge of road to ensure flow will not 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 (Cofferdam Construction and Use Specifications)

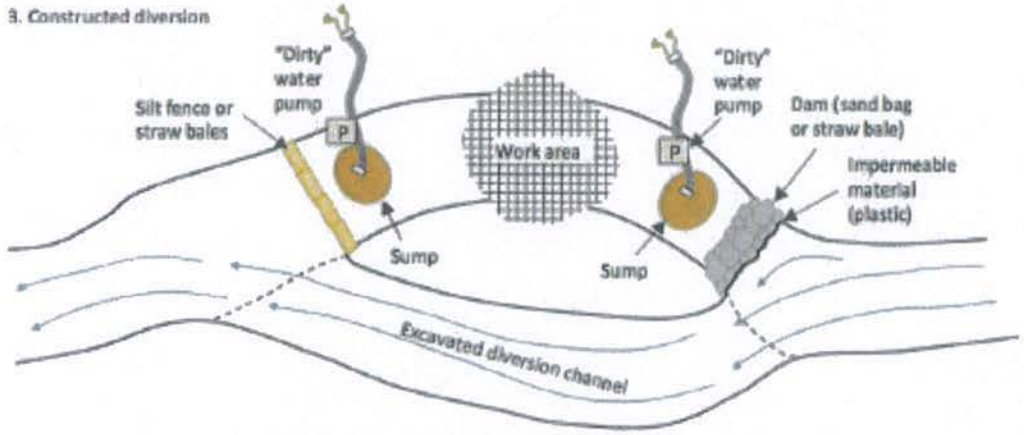
1. Pumped diversion



2. Gravity-fed diversion



3. Constructed diversion



BMP: Permanent Culvert Crossing Design (Cofferdam Construction and Use Specifications)

FIGURE 197. *Flex pipe stream diversion around a road construction site. The inlet to this 6 inch diameter flex pipe inlet collects clear streamflow from a retention dam above the project site and gravity feeds it around the project area and back into the natural channel downstream from construction work (see photo).*

FIGURE 198. *Sand bag retention dam on this small stream was used to pond streamflow so it could be pumped around a culvert installation site. The green intake hose is screened to keep out rocks and debris while the red pump hose extends several hundred feet around the project work area.*

FIGURE 199. *For larger streams, pump trucks, large pumps or multiple small pumps can be used to pump streamflow around project work sites. Here, a pump truck is used to temporarily divert flow in a fish bearing stream where dual culverts are being replaced with a railcar bridge. Young fish were removed from this fish bearing stream before project work started.*

BMP: Permanent Culvert Crossing Design (Culvert Orientation)

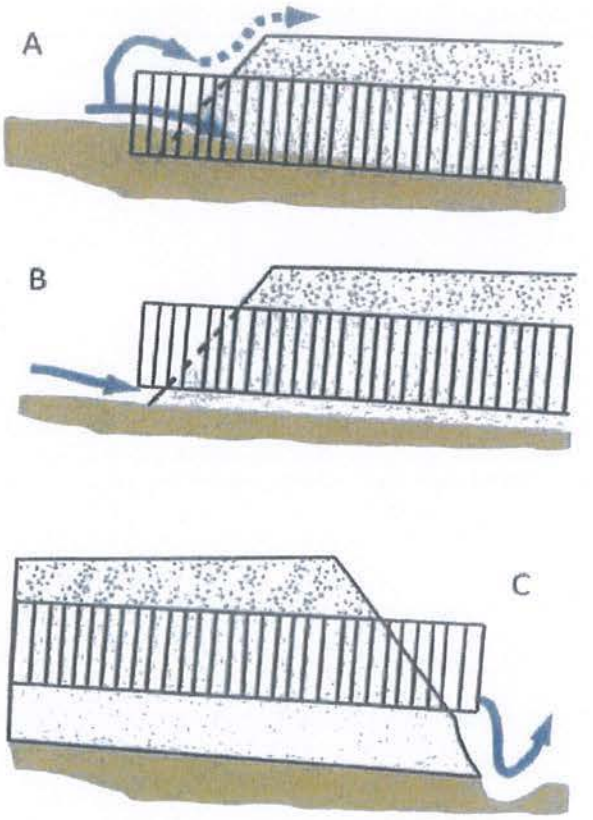


FIGURE 155. *Proper culvert installation involves correct culvert orientation, setting the pipe slightly below the bed of the original stream, and backfilling and compacting the fill as it is placed over the culvert. Installing the inlet too low in the stream (A) can lead to culvert plugging, yet if 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).*

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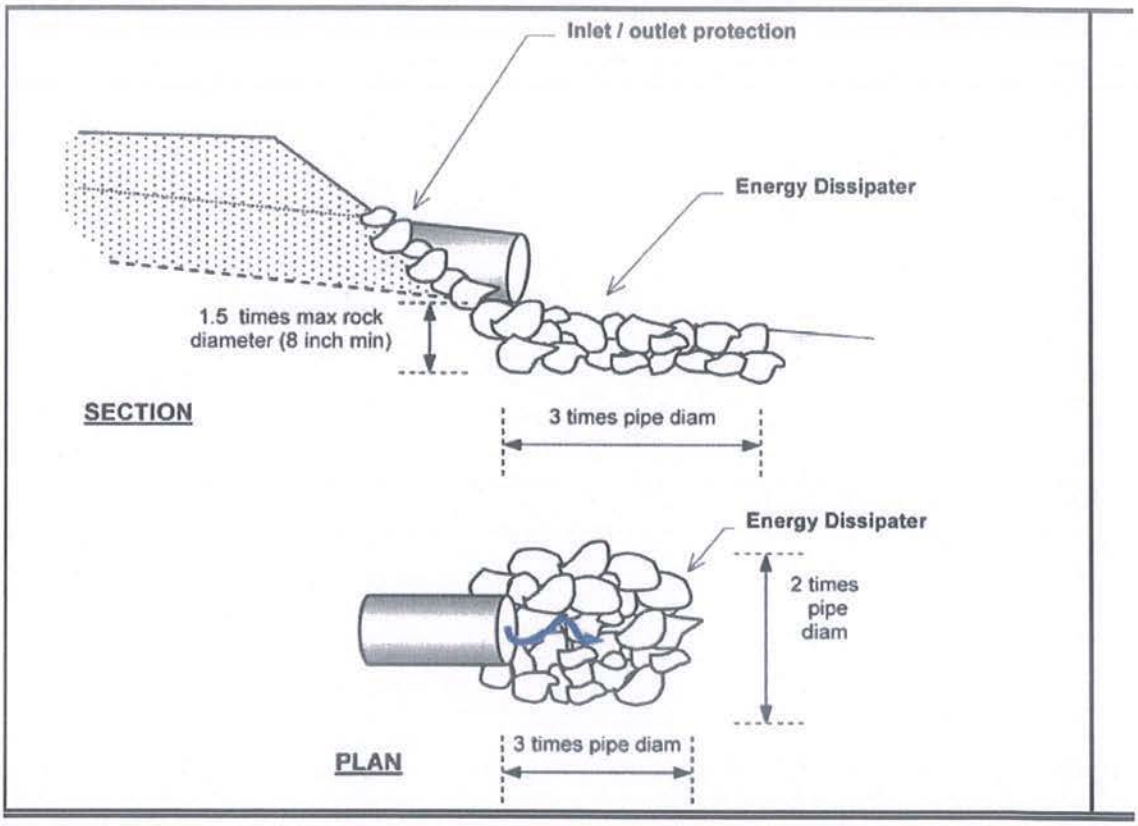
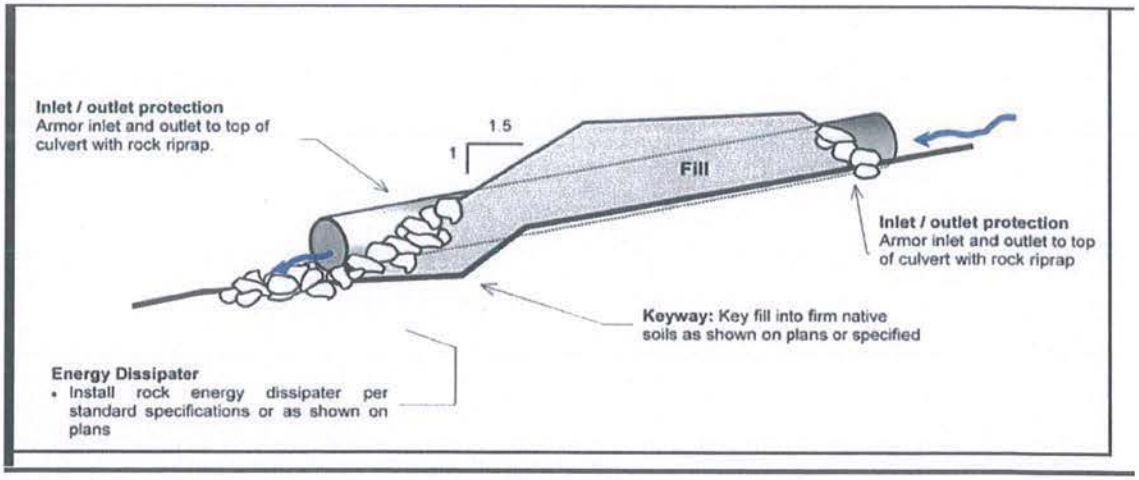
BMP: Permanent Culvert Crossing Design (Inlet and Outlet Armoring)





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: Rolling Dip Design and Placement

- Rolling dips are drainage structures designed to force surface water to be drained from the road surface.
- The road shall dip into, and rise out of, the rolling dip to eliminate the potential of road surface runoff to run further down road way.
- The rolling dip shall be constructed with clean native materials or rock surfaced where specified.
- The rolling dips outlet may be armored to resist down-cutting and erosion of the outboard road fill.
- Do not discharge rolling dips into any areas that show signs of instability or active landsliding.
- If the rolling dip is designed to divert both road surface and ditch runoff, block the down-road ditch with compacted fill in order to force all ditch flows through the trough (low point) of the rolling dip.

BMP: Rocked Rolling Dip Design and Placement

- Rocked rolling dips are drainage structures designed to carry known sources of surface water across road ways or from known persistently wet segments of road such as swales without defined watercourses or road segments with heavy bank/road seepage.
- The road shall dip into, and rise out of, the rocked rolling dip to minimize diversion potential.
- The rocked rolling dip shall be constructed with clean rock that is large enough to remain in place during peak flows. Rock size shall vary relative to the anticipated flow through the dip with larger rock used in location where greater flow is anticipated.
- The rocked rolling dips inlet and outlet shall be armored to resist down-cutting and erosion.
- The entire width of the rocked rolling dip shall be rock armored to a minimum of 5-feet from the centerline of the dipped portion of the rolling dip.
- If a keyway is necessary, the rocked rolling dip keyway at the base of the dip shall be of sufficient size, depth and length to support materials used in the rocked rolling dip construction back up to the road crossing interface.
- Do not discharge rolling dips into any areas that show signs of instability or active landsliding.
- If the rolling dip is designed to divert both road surface and ditch runoff, block the down-road ditch with compacted fill.
- The rolling dip should be designed as a broad feature ranging from 10-100 feet long so that it is drivable by most types of vehicular traffic and not significantly inhibit traffic and road use.

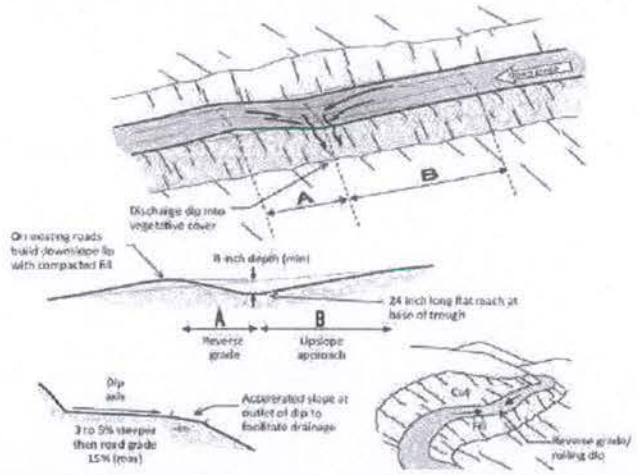


FIGURE 34. *A classic Type I rolling dip, where the excavated up-road approach (B) to the rolling dip is several percent steeper than the approaching road and extends for 60 to 80 feet to the dip axis. The lower side of the structure reverses grade (A) over approximately 15 feet or more, and then falls down to rejoin the original road grade. The dip must be deep enough that it is not obliterated by normal grading, but not so deep that it is difficult to negotiate or a hazard to normal traffic. The outward cross-slope of the dip axis should be 3% to 5% greater than the up-road grade (B) so it will drain properly. The dip axis should be out-sloped sufficiently to be self-cleaning, without triggering excessive downcutting or sediment deposition in the dip axis (Modified from: Best, 2013).*

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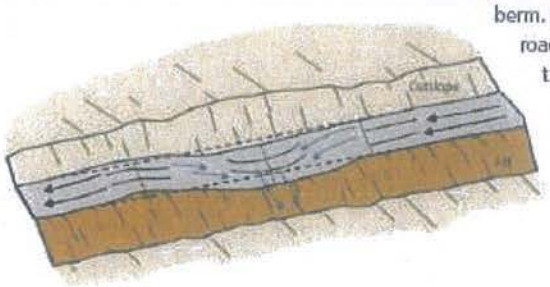
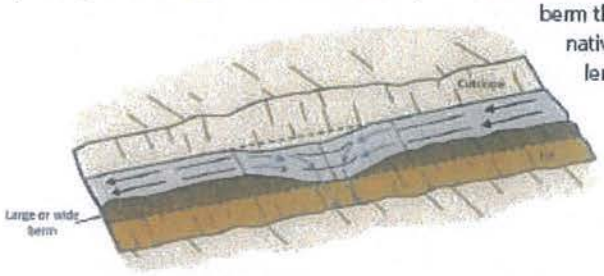
BMP: Rolling Dip Design and Placement (Types)

Type 1 Rolling Dip
(Standard)



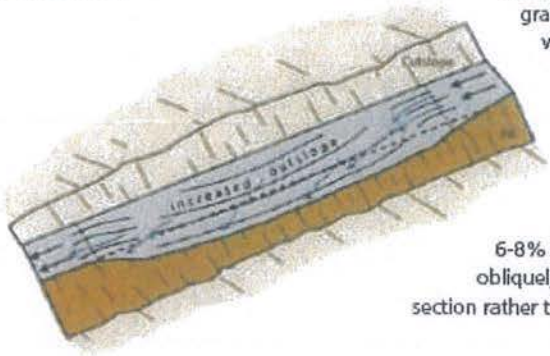
Type 1 rolling dips are used where road grades are less than about 12-14% and road runoff is not confined by a large through cut or berm. The axis of the dip should be perpendicular to the road alignment and sloped at 3-4% across the road tread. Steep roads will have longer and more abrupt dip dimensions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

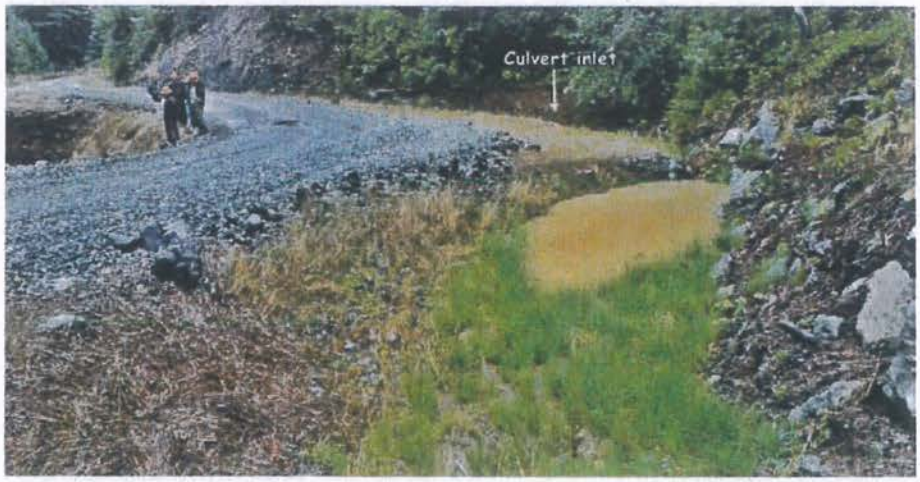

FIGURE 238. *Traffic and surface runoff from graveled roads often produces surface erosion, turbid runoff and fine sediment transport that can be delivered to streams. Where ditches can't be eliminated, sediment traps and roadside settling basins can be installed to capture and remove most of the eroded 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

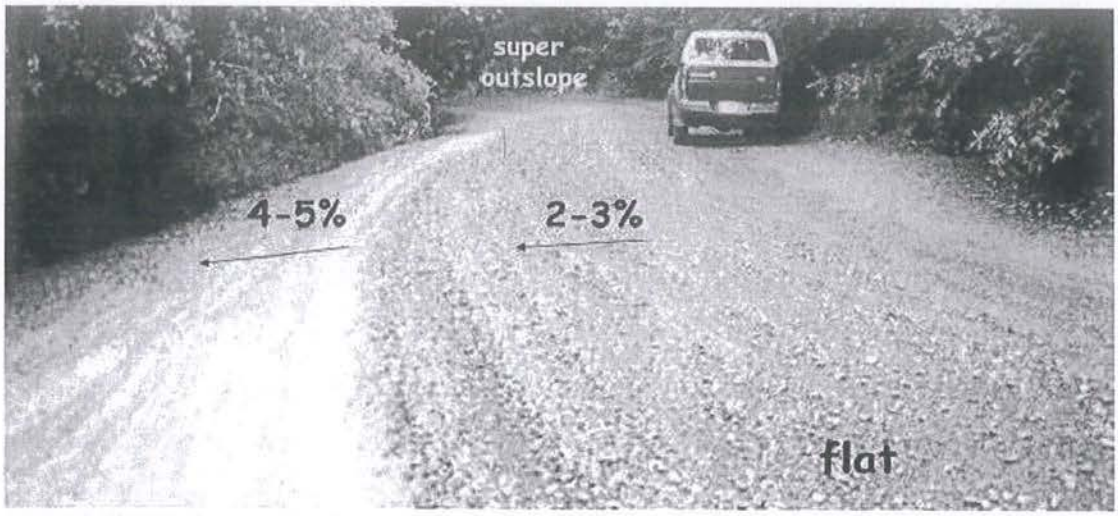

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FIGURE 29. *Road shape changes as the road travels through the landscape. For example, an outsloped road will have a steep or "banked" outslope through inside curves, a consistent outslope through straight reaches and a flat or slightly insloped shape 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 Features

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 outsloping 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.

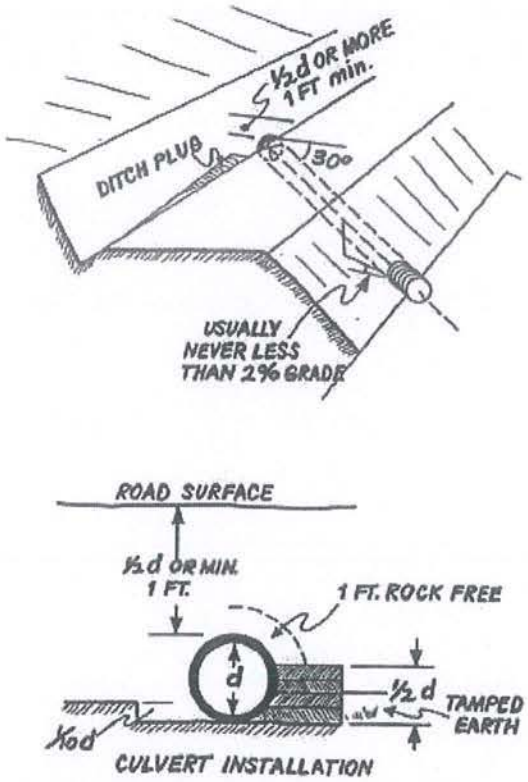

FIGURE 48. *The elements of a properly installed ditch relief culvert. The culvert is angled at about 30 degrees to the road alignment to help capture flow and prevent culvert plugging or erosion of the inlet area. It is set at the base of the fill (ideally) or with a grade slightly steeper than the 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).*

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BMP: Waterbar Construction

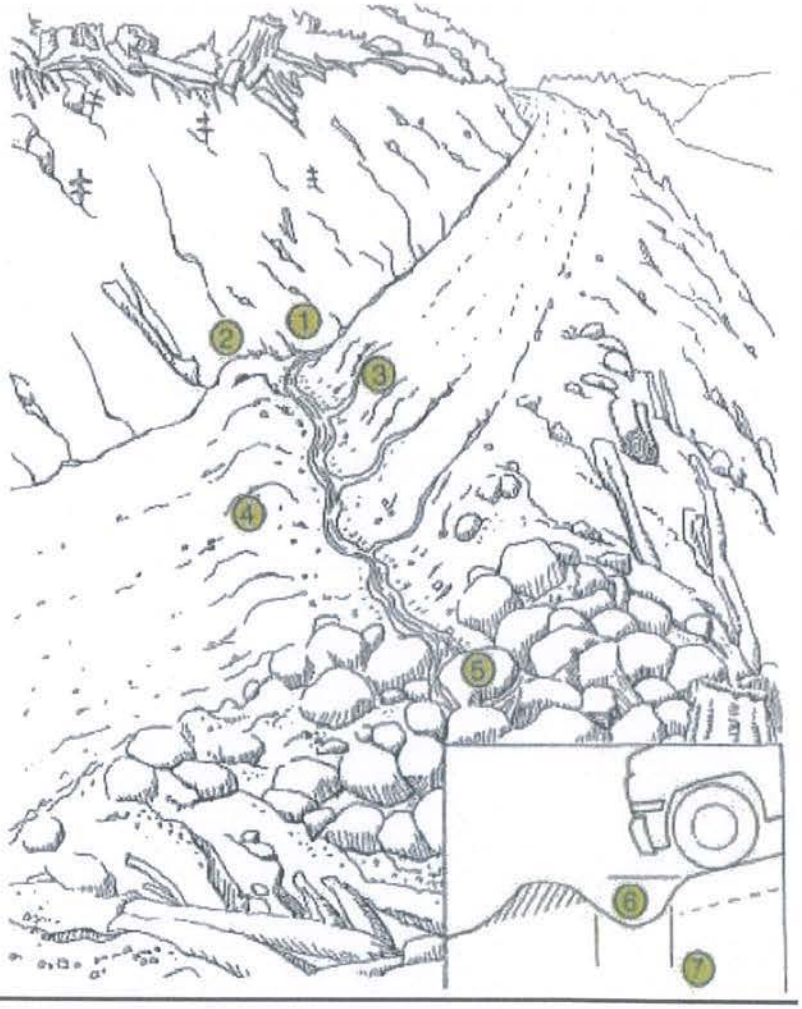

FIGURE 40. *Waterbars are constructed on unsurfaced forest and ranch roads that will have little or no traffic during the wet season. The waterbar should be extended to the cutbank to intercept all ditch flow (1) and extend beyond the shoulder of the road. A berm (2) must block and prevent ditch flow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

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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 gramminoids 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 2, Moderate, < 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. gullying, 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. Annual Reporting for this enrollment shall be submitted by March 1st, 2021 and report on monitoring done during the 2020 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 March 31, 2020. 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 Map.

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 section "Land Development and Maintenance, Erosion Control, and Drainage Features" above, 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 sections "Land Development and Maintenance, Erosion Control, and Drainage Features", "Riparian and Wetland Protection and Management" in addition to the "Site Erosion and Sediment Control Plan" and attached Mitigation Report, Site Maps, and Treatment Implementation Schedule for site specific descriptions of physical BPTC measures being prescribed. In addition. See the "Site Erosion and Sediment Control Plan" attached below.

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 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. In addition, see the "Site Erosion and Sediment Control Plan" attached below.

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.

See the "Site Erosion and Sediment Control Plan" attached below and the attached Mitigation Report, Site Maps, and Treatment Implementation Schedule for site specific descriptions, treatments, and the implementation schedule.

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", the attached Mitigation Report and BMPs for descriptions of physical and biological BPTC measures being prescribed. In addition, see the "Site Erosion and Sediment Control Plan" attached below.

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.

See the "Site Erosion and Sediment Control Plan" attached below.

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 the "Site Erosion and Sediment Control Plan" attached below.

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.

See comprehensive table under 2.3

2.2. Provide a site map that locates storage locations.

See attached Site Map. Fertilizers and soil amendments are currently stored properly in sheds south east of the primary residence.

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

Fertilizer, Pesticides, and Herbicide Products used on Site

Product	Delivery and Storage	On-site usage	How removed or stored
Diamond Nectar 0-1-1	Brought to property as needed. Stored within the shipping sheds with all other fertilizers and amendments over winter or alongside mixing tanks while in use. Stored alongside mixing tanks while in use.	Mixed into tank with water. It is then dripline watered to plants as needed.	Stored within the storage structures over winter. Empty containers are disposed of at an appropriate waste disposal facility.
Great White	Brought to property as needed. Stored within the shipping sheds with all other fertilizers and amendments over winter or alongside mixing tanks while in use. Stored alongside mixing tanks while in use.	Spray applied to plants as needed.	Stored within the storage structures over winter. Empty containers are disposed of at an appropriate waste disposal facility.

2.4. Describe procedures for spill prevention and cleanup.

Pesticides and liquid fertilizer containers are stored within a covered structure, within secured containers, with their lids secured after their use.

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. Used to fuel equipment.	Stored in standard 5-gallon gasoline canisters in storage sheds
Motor oil	Brought to site when needed throughout the year.	Stored in the shed and 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.

3.4. Describe procedures for spill prevention and cleanup.

Any/all fuel canisters, motor oil containers, and generators, large or small, shall be stored in secondary containment (e.g. drip pans, plastic totes, or sealed metal boxes) while being stored long term or not in immediate use, wherever these materials are used anywhere on the property. 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 refuse will be generated at the site. The refuse is securely stored in trash bags, trash bins, and a utility trailer at the cultivation areas, residences, and within a contained refuse storage shed adjacent to the residences prior to disposal at an appropriate waste disposal facility.

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

Refuse is stored in trash bags, trash bins, and a storage sheds at the primary residence. See attached Site Map.

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

Three regular employees are at the site during the cultivation season. Additional employees are brought onto 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 of via a septic system. Greywater from seasonally used travel trailers and outdoor sinks is disposed of nearby where it is generated and allowed to infiltrate.

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

Not applicable.

4.2.2.3. Outhouse, pit privy, or similar. The 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.

Not applicable.

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 residences with attached septic and greywater systems.

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 maintenanced 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.

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

Site Erosion and Sediment Control Plan

(Tier 2, Moderate 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, Stream Crossing Installation and Maintenance for historic precipitation patterns, Site Maps, Overview Maps (if included), in the above pages.

1.2. Site Disturbances – Provide a site map that shows the location of all of the applicable following items. For each mapped item, provide a description of the item.

See the attached Site Map, General Location Map, Overview Maps (if included), in the above pages.

1.2.1. Historic (Existing) Disturbances (e.g., access/site roads, buildings, stream crossings, disturbed areas, graded areas, cultivation areas, vehicle parking areas, disturbed vegetation areas, etc.).

Not applicable.

1.2.2. Recent or Planned Disturbances (e.g., access/site roads, buildings, disturbed areas, graded areas, cultivation areas, vehicle parking areas, vegetation removal areas, etc.).

Not applicable.

1.2.3. Areas of Special Concern (e.g., describe any existing or planned stream or wetland crossing, any culverts, any slope that shows evidence of past failure, or evidence of instability (e.g., cracks in retaining walls, surface cracks in soil, bulging soil, groundwater discharge areas, sunken road beds, downslope leaning trees or utility poles, etc.).

There is one Area of Special Concern found on the property. Controllable Sediment Delivery Sites (CSDS) were found on the property. Runoff and sediment from Site 09 were found to be discharging into surface waters. Site 09 is additionally being classified as an unstable area. The site features a bank slope failure situated above a Class II watercourse that is approximately 10 feet to the right of the rocked spillway for the pond and 6 feet from the pond impoundment. The spillway is lined with geotextile fabric and large rock and appears to be functioning adequately, however the pond has no liner. The proximity of the bank slope failure to the pond impoundment to the presents a threat to water quality in the Class II below if the impoundment were to fail. We are recommending that the Cultivator has

a qualified geologist or engineer examine Site 09 immediately to receive a prescription for the feature. See the attached photographs, Mitigation Report, Treatment Implementation Schedule, and Site Map to follow for site specific details and treatments.

1.2.4. Describe and show on the site map, the storm water runoff sampling locations.

Not applicable.

1.3. Erosion Prevention BPTC Measures

1.3.1. 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.

A qualified geologist or engineer shall prescribe erosion prevention BPTC measures for Site 09.

1.3.1.1. 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.).

A qualified geologist or engineer shall prescribe physical BPTC measures for Site 09.

1.4. Sediment Control BPTC Measures

1.4.1. 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.

A qualified geologist or engineer shall prescribe sediment control BPTC measures for Site 09.

1.4.1.1. 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.).

A qualified geologist or engineer shall prescribe sediment control BPTC measures for Site 09.

1.5. Maintenance Activities - Erosion Prevention and Sediment Control

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

A qualified geologist or engineer shall prescribe how erosion prevention and sediment control BPTC measures will be monitored and maintained to protect water quality for Site 09.

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

A qualified geologist or engineer shall prescribe how any captured sediment will be either stabilized in place, excavated and stabilized on-site, or removed from the site.

2. Winterization

2.1. Prevention

2.1.1. Describe the BPTC measures that will be implemented before winter precipitation occurs to prevent erosion of disturbed areas, including the cultivation area.

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.

2.1.2. 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.

See Section 1.5. above.

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

Not applicable.

Photographs

Photo Dates: March 31st, 2020.

Site 09 of the instream bank slope failure. This site should be examined by a licensed geologist or engineer immediately.

Rocked spillway the drains into a Class II watercourse.

Photographs

French drain surface water diversion.

Off-stream pond with a pipe feeding from the surface water diversion above. Riling is presently leading into the pond.

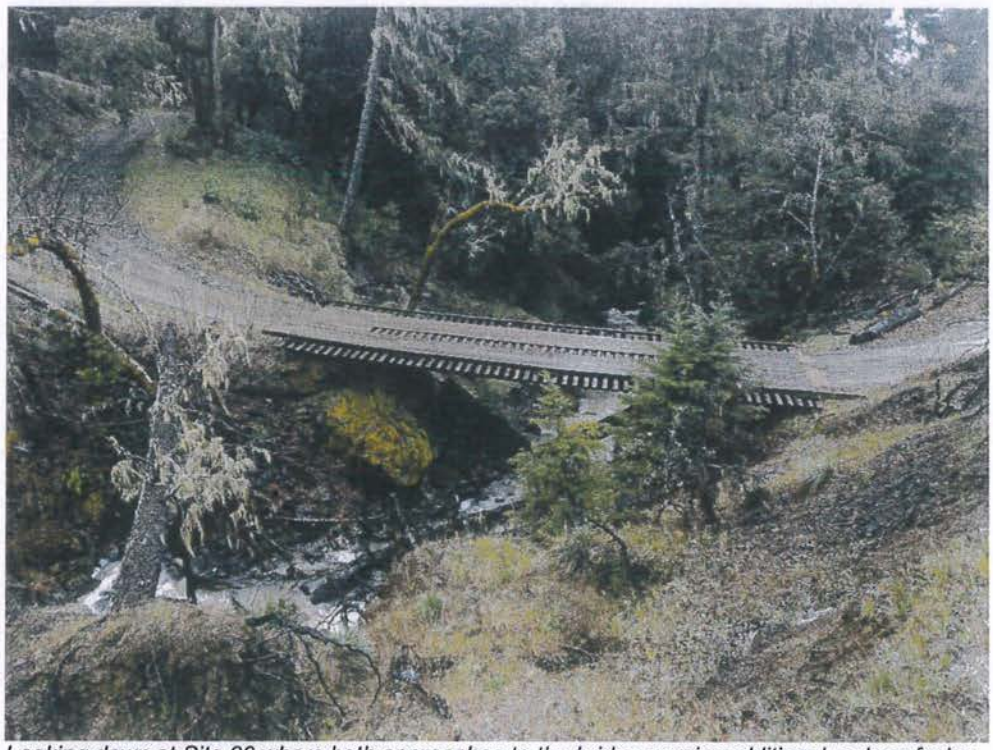
Photographs

Past Cultivation site where cultivation materials shall be removed.

Site 19 with the cutbank failure.

Photographs

Site 20 at Cultivation Area D where five pots shall be removed and the area shall be seeded and straw mulched.



Looking down at Site 06 where both approaches to the bridge require additional rock surfacing.

Photographs

Improper storage of generators.

Cultivation Area B.

Photographs

Cultivation Area E.

Cultivation Area C.