



# Site Management Plan

(Tier 1, High Risk)

**WDID- 1\_12CC404177**

**Humboldt County**

**APN: 219-081-001-000, 219-081-003-000**

*Prepared by:*



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9/4/2018

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**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 Discharger 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 is two contiguous parcels totaling 80.5 acres located approximately 4.6 miles southwest of Miranda, in Humboldt County, California. The property sits at an elevation of approximately 800' – 995' above mean sea level. The property is located in the southwest ¼ of Section 19, T3S, R3E, HB&M, Humboldt County, of the Ettersburg USGS 7.5' Quad. South Fork Salmon Creek flows southwest-northeast through the property, which is tributary to Salmon Creek, which is tributary to the South Fork Eel River, which is tributary to the main stem Eel River, which terminates in the Pacific Ocean.

### Project Description

Cannabis cultivation on the property consists of eight cultivation areas which utilize light-deprivation hoop houses, and trenches for outdoor cultivation. The hoop houses feature raised beds and in-ground planting and are of varying dimensions. The total cultivation area on the property is 7,120 ft<sup>2</sup>. The cultivation area is located within 60,321 ft<sup>2</sup> of disturbed area. Cultivation Areas A & B are located greater than 200' from surface waters, while Cultivation Areas C, D, E, F, G, & H are within Class I and Class III setbacks. This project is newly enrolled in the State Water Quality Control Board Order No. WQ 2017-0023-DWQ

Table 1: Cultivation Site Parameters.

Cultivation Area	Land Disturbance Area (ft <sup>2</sup> )	Total Cannabis Canopy (ft <sup>2</sup> )	Adjoining Hillslopes (% Grade)
A	5,675	500	15
B	Included Above	900	15
C	1,592	350	12
D	2,562	750	18
E	2,718	750	23
F	15,950	1,350	12
G	Included Above	1,260	12
H	Included Above	1,260	12
Totals:	28,497	7,120	

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 #H502398
LSA-1600	Final Agreement from CDFW - Notification No. 1600-2015-0093-R1



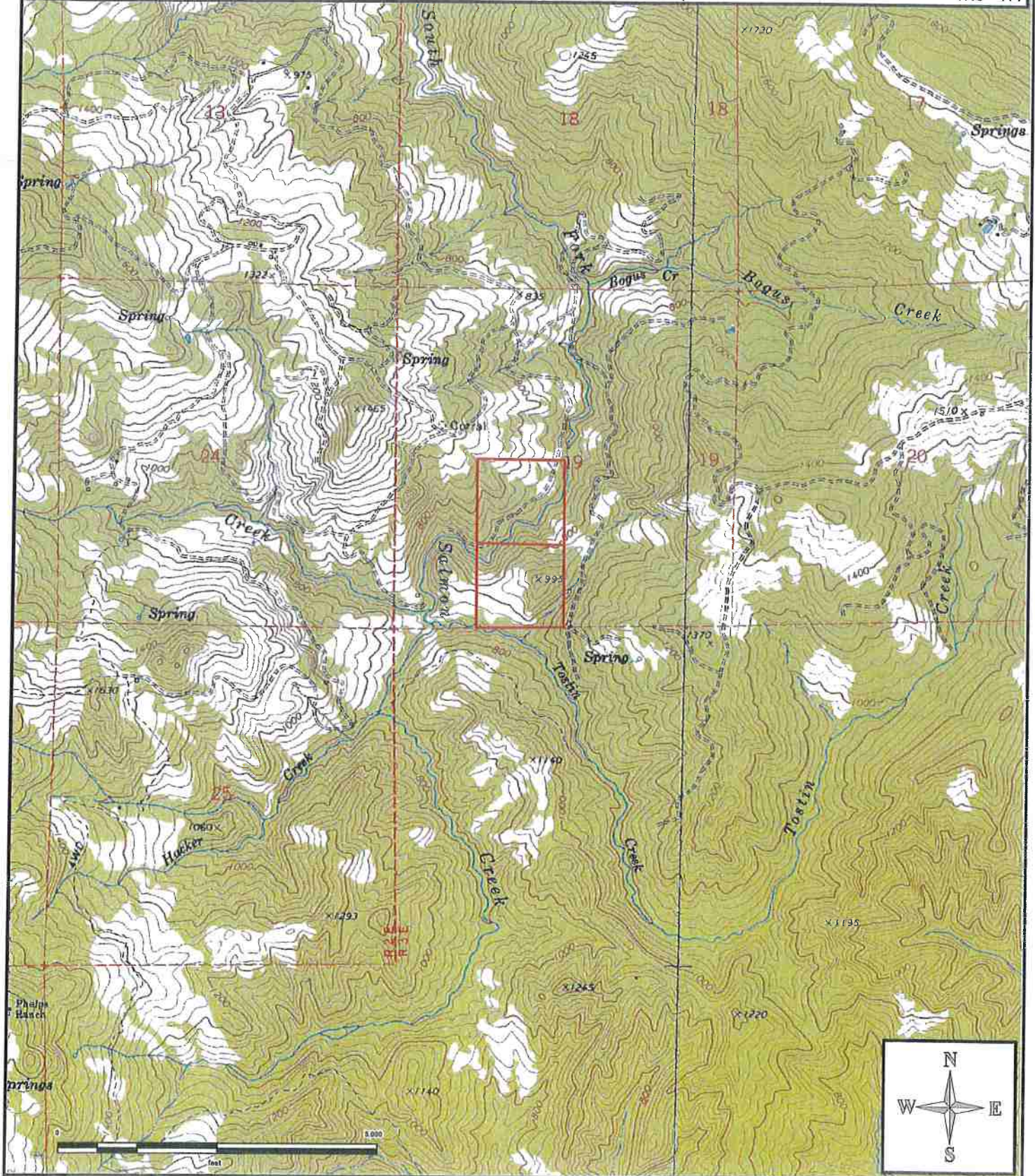
# Site Managment Plan

General Location Map [State ID - 1\_12CC404177]



Located in Section 19, T3S, R3E, HB&M, Humboldt County, of the Ettersburg 7.5' USGS Quad Map

TRC - 414





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

This project is newly enrolled in the State Water Quality Control Board Order No. WQ 2017-0023-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 rarely used for occasional access to features on the property).

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

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

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

Currently, all roads on the property have native surfaces. Roads being classified as permanent shall be appropriately surfaced (crushed rock, lignin treatments, pavement, or chip-seal) to increase durability during winter use.

There were multiple sites on the property where road surface runoff was found to be downcutting into the road fill. Two improperly constructed inboard ditches have resulted in the overtopping and subsequent erosion of the down grade road surfaces. At Site 04, the watercourse is intercepted by an inboard ditch, where it joins another watercourse and bypasses the road through a 24" CMP culvert. See the Mitigation Report, Treatment Implementation Schedule, and Site Map to follow for site specific details.

Cultivation Areas F, G, & H are currently experiencing drainage issues. Water was observed to be seeping into the cultivation area from upslope and concentrating within the project area. The water traveled through the hoop houses and was found delivering potting soil to the Class III watercourse below, identified at Site 29. Site 05 identifies a 12" CMP DRC. This DRC was observed to be too short to avoid erosion of the fill material, and was rusted through. Furthermore, water flowing from

this outlet was found to be delivering to the Class I South Fork Salmon Creek below. See the Mitigation Report, Treatment Implementation Schedule, and Site Map to follow for site specific details.

There were no unstable areas observed on the property.

Cleanup, Restoration, and Mitigation:

Project Compliance Y ☐/N ☒

During the assessment of the property, two legacy indoor cultivation buildings, and two fuel storage tanks were found to be well within the riparian setbacks of a Class III watercourse. Sites 16 & 17 identify two structures, one holding a generator, and two fuel storage tanks which were found to be possible sources of contaminants that were being delivered to Waters of the State. See the Mitigation Report, Treatment Implementation Schedule, and Site Map to follow for site specific details.

Stream Crossing Installation and Maintenance:

Project Compliance Y ☐/N ☒

Five watercourse crossings were identified during the assessment of the property. In addition, one watercourse will be redirected to its potential historic channel, making a total of six crossings to be sized. Of all watercourse crossings on the property, only two are appropriately sized for a 100-year storm event. Two crossings require new structures where there was not one originally, and two require replacement with a larger diameter culvert. Outboard fill armoring and energy dissipating rock to prevent erosion was found to be inadequate, and shall be upgraded with additional rock. See the Mitigation Report, Treatment Implementation Schedule, and Site Map to follow for site specific details.

Table 3: Stream Crossing Hydrology

Site	(ac)		Elevation (ft)	Elevation (ft)	(mi)	(in)
ID_NUMBER	D_AREA	K_VALUE	Culvert_Elevation	Drainage_Divide	LENGTH	CMP_DIA
Site 02	4	0.4	660			24
Site 03	1.5	0.4	680			0
Site 27	2.6	0.4	820			18
Site 28	0.6	0.4	780			0

Site	(ac)		Elevation (ft)	Elevation (ft)	(mi)	(in)
ID_NUMBER	D_AREA	K_VALUE	Culvert_Elevation	Drainage_Divide	LENGTH	CMP_DIA
Site 07	13.6	0.4	700			18
Site 14	8.8	0.4	660			18

Culvert Information and Recommended Diameter									
ID#	Existing Culvert (D) Diameter (in)	Headwall (HW) Height (in)	HW/D (ratio)	Selected Discharge Method	Q100 (cfs)	Culvert Capacity (cfs)	Culvert is Undersized	Recommended Culvert Dia. (in)	Recommendation Based On
Site 02	24	24	1.0	RATIONAL	5	12		18	Q100
Site 03	0	0	0.0	RATIONAL	2	0	TRUE	18	Q100
Site 27	18	18	1.0	RATIONAL	3	6		18	Q100
Site 28	0	0	0.0	RATIONAL	1	0	TRUE	18	Q100

Culvert Information and Recommended Diameter									
The values in the <u>first row</u> of this worksheet cannot be changed without losing formulas. Use the Input Sheet to make the									
ID#	Existing Culvert (D) Diameter (in)	Headwall (HW) Height (in)	HW/D (ratio)	Selected Discharge Method	Q100 (cfs)	Culvert Capacity (cfs)	Culvert is Undersized	Recommended Culvert Dia. (in)	Recommendation Based On
Site 07	18	12	0.7	RATIONAL	16	4	TRUE	36	Q100
Site 14	18	12	0.7	RATIONAL	10	4	TRUE	30	Q100

#### 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 ☒

Six Cultivation areas were identified as being within the riparian setbacks. Cultivation Areas C, D, E, F, G, & H were found to be encroaching on both Class I, and Class III watercourse setbacks. Six past cultivation areas were identified as being within the riparian setbacks. Past Cultivation Areas A – F were also found to be encroaching on both Class I, and Class III watercourse setbacks. Two buildings and two fuel storage tanks were also found to be within the riparian setbacks of a Class III watercourse, and have been identified as Sites 16 & 17. Finally, the three lower cultivation areas (F, G, & H) were found to be delivering potting soil to the Class III watercourse below. All six cultivation areas (C, D, E, F, G & H) will need to be relocated to ensure further sediment delivery into Waters of the State is prevented. The gardens will need to be relocated to an area which is entirely outside of all riparian setbacks. The disturbed soils remaining after the relocation will also need to be seeded and straw mulched to prevent further delivery. Erosion control measures and redirection of surface runoff will be performed to minimize or eliminate erosion and transportation



of sediment at this site. Another location, identified as Site 32, was observed to be inputting water directly into the head of a Class III watercourse. The water appeared clean and clear of any wastes and contaminants, and had no odor or discoloration to it. Site 33 identifies a barn which is used for chemical storage and drying purposes. The barn is well within the Class I riparian setback, and was also observed having a greywater surface discharge. There is also an outhouse, identified as Site 20, that is within the Class I riparian setback. See the Mitigation Report, Treatment Implementation Schedule, and Site Map to follow for site specific details.

Table 4: Riparian and Wetland Protection and Management

Cultivation Area	Disturbance Area Distances and Encroachments				
	Class I [Setback: 150'] <sup>1</sup>	Class II [Setback: 100'] <sup>1</sup>	Class III [Setback: 50'] <sup>1</sup>	Perennial Spring [Setback: 150'] <sup>1</sup>	Disturbed Area Within Setbacks [ft <sup>2</sup> ]
A	>200'		>200'		
B	>200'		>200'		
C	109'		>200'		1,592
D	72'		134'		2,562
E	70'		58'		2,718
F	>200'		35'		4,870
G	>200'		32'		Included Above
H	>200'		33'		Included Above
Past Cultivation Area A	40'				
Past Cultivation Area B	30'				
Past Cultivation Area C	50'				
Past Cultivation Area D	25'				
Past Cultivation Area E	30'				

Past Cultivation Area F	20'				
Past Cultivation Area G	>200'				
Past Cultivation Area H	180'				
Total=					11,742

On the upper parcel there is approximately 600' of road that is within the Class I riparian setback. These roads have a high native rock content and were found to have adequate surfacing and drainage features to minimize the amount of eroded sediment from the road surface. None of these roads were found to be delivering to the Class I South Fork Salmon Creek below.

#### Water Storage and Use:

Project Compliance Y ☐/N ☒

All water on the property is derived from two surface water points of diversion (POD). POD 01 is on the upper portion of the northern parcel, and diverts surface water from the head of an unnamed Class II watercourse. Water diverted from this source is used for both agricultural and domestic needs. POD 02 is also on the northern parcel, and diverts water from the Class I South Fork Salmon Creek which runs through the property. POD 02 has an existing Lake and Streambed Alteration (LSA) Agreement with California Department of Fish and Wildlife, under No. 1600-2015-0093-R1. Under this agreement, the Cultivator is allowed to divert, at most, 10 gallons per minute. Water diverted from this source is used for agricultural needs. At present, there are no metering devices in place to record water usage associated with the irrigation of cannabis, or domestic needs.

After diverting from these two sources, water is pumped to one 40,000-gallon pioneer tank, and one 25,000-gallon pioneer tank, one on each parcel. From there, the water is gravity-fed to a number of smaller tanks, where they are again pumped for irrigation purposes. The Cultivator utilizes drip irrigation, top mulching, as well as hand watering techniques. They claim hand watering is only performed once a week.

At this time, the Cultivator has six water storage tanks, ranging from 1,550 gallons, to 40,000 gallons in size. The total water tank storage capacity located on the site is 100,750 gallons. All water storage tanks were found to have properly sealing lids in place. The Cultivator also has a proposed off-stream rainwater catchment pond that has yet to be installed. The pond project is currently not approved, as permits and a grading plan have yet to be obtained, although the Cultivator hopes it will be constructed no later than Summer of 2019. The pond is estimated to have a 3.1 acre-foot capacity, or approximately 1,000,000 gallons of water storage.

Table 5: Estimated Annual Water Use

	Jan	Feb	March	April (25%)	May (60%)	Jun (80%)	Jul (100%)	Aug (100%)	Sep (70%)	Oct (20%)	Nov	Dec
Agriculture				14,962	34,750	46,333	57,916	57,916	40,541	11,583		
Sq. ft. =												
7,120												

% = percent of peak usage

Total AG Water Use =	264,000
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Under the Cultivation and Operations plan for this property, the Cultivator calculated their agriculturally-related water needs based off of a 2,000-plant cultivation plan. Under this assumption, their annual water needs for the irrigation of cannabis has been determined to be 264,000 gallons.

This volume of storage is insufficient to allow for full forbearance during the required period. A reservoir as large as the planned pond would be adequate for the storage of water necessary to allow for full forbearance of surface water during the required period. Due to the fact that the pond is not yet constructed, actions must be taken to ensure compliance with the Forbearance Period prior to pond construction. Since the Cultivator currently lacks adequate water storage for a full year of cultivation, they are planning on altering their cultivation methods and irrigated space in order to comply with forbearance. Once sufficient, supplemental water storage is obtained by the Cultivator, they plan on resuming their full-year cultivation practices. If the Cultivator plans on completing a full cultivation season, they are required to install and fill a minimum of 163,250 gallons of water storage prior to the onset of the next forbearance period. As an alternative, the Cultivator may also purchase legal water to aid in supplementing their water needs during forbearance. Water metering device(s) shall be installed in 2019 to meter water used for the irrigation of cannabis, and domestic uses separately. Recorded water use data shall be used to determine remaining 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 onset of the Forbearance Period for 2020.

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

#### Irrigation Runoff:

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

#### Fertilizers, Pesticides, and Petroleum Products:

Project Compliance Y ☐/N ☒

Fertilizers, potting soils, compost, and other soils and soil amendments are not currently stored in structures 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. They are stored under the cover of the storage shed identified as Site 31. While this location is acceptable as it is outside of all riparian setbacks, the cans are intermixed with gasoline and motor oil cans within the storage shed. None of the products were found to be within any form of secondary containment. However, the fertilizers and soil amendments are applied and used per the



**STATEMENT OF CONTINGENT AND LIMITING CONDITIONS CONCERNING  
THE PREPARATION AND USE OF REPORTS ADDRESSING GENERAL  
WASTE DISCHARGE REQUIREMENTS UNDER ORDER WQ 2017-0023-DWQ**

**Prepared by Timberland Resource Consultants**

1. This document has been prepared for the property within APNs 219-081-001-000 & 219-081-003-000, in Humboldt County, for enrollment in the General Waste Discharge Order WQ 2017-0023-DWQ.
2. Timberland Resource Consultants does not assume any liability for the use or misuse of the information in this document.
3. The information is based upon conditions apparent to Timberland Resource Consultants at the time inspection(s) were conducted. Changes due to land use activities or environmental factors occurring after inspection, have not been considered in this document.
4. Maps, photos, and any other graphical information presented in this report are for illustrative purposes. Their scales are approximate, and they are not to be used for locating and establishing boundary lines.
5. The conditions presented in this document may differ from those made by others or from changes on the property occurring after inspections were conducted. Timberland Resource Consultants does not guarantee this work against such differences.
6. Timberland Resource Consultants did not conduct an investigation on a legal survey of the property.
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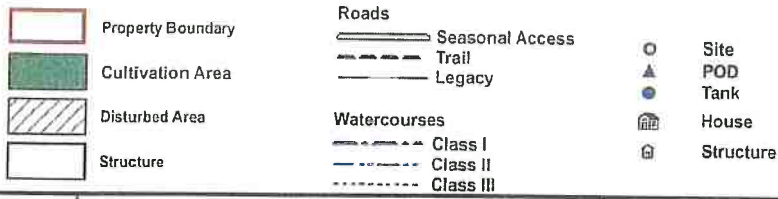


Jessie Cahill

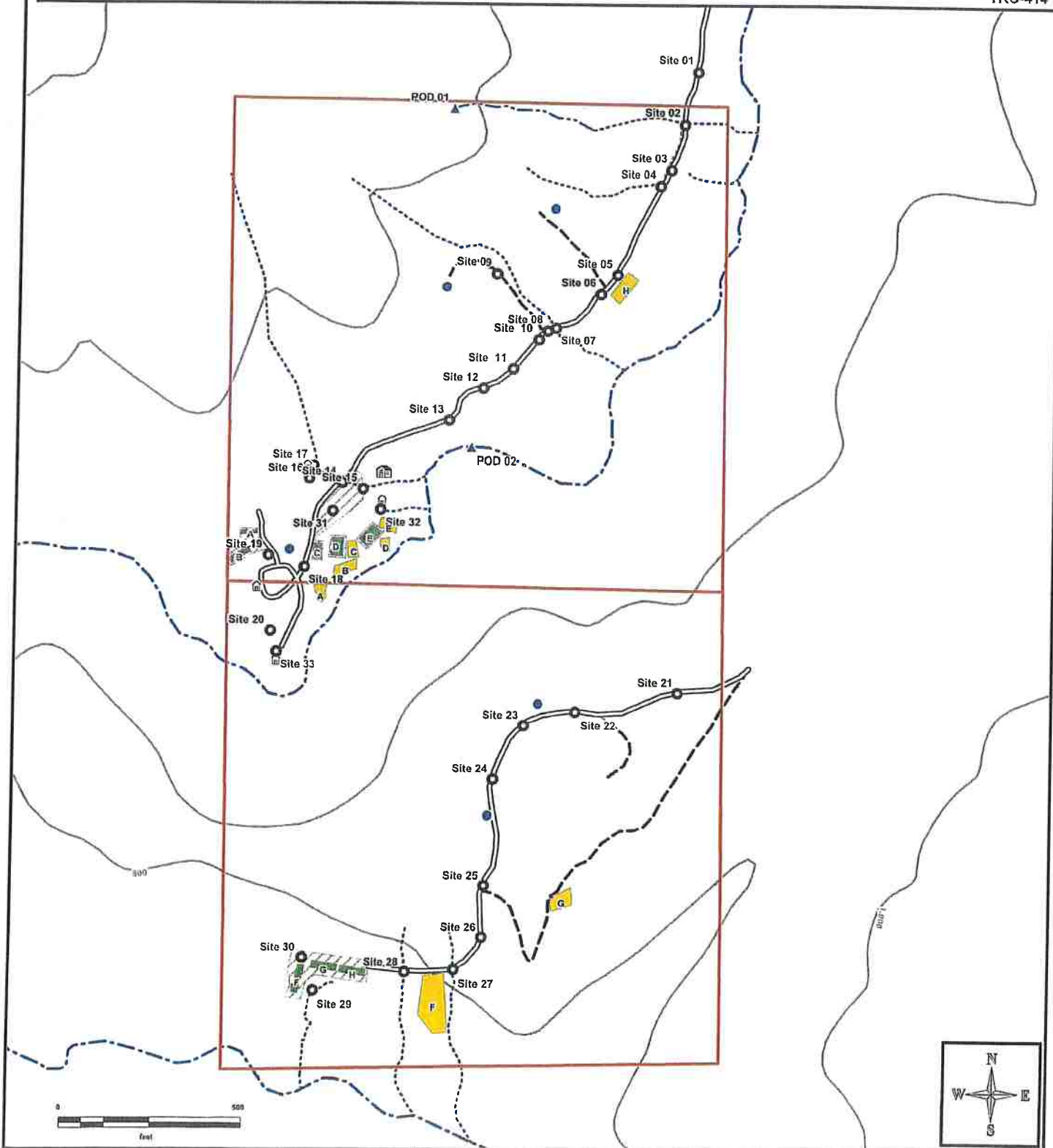
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# Site Management Plan

Site Map [State ID - 1\_12CC404177]



TRC-414





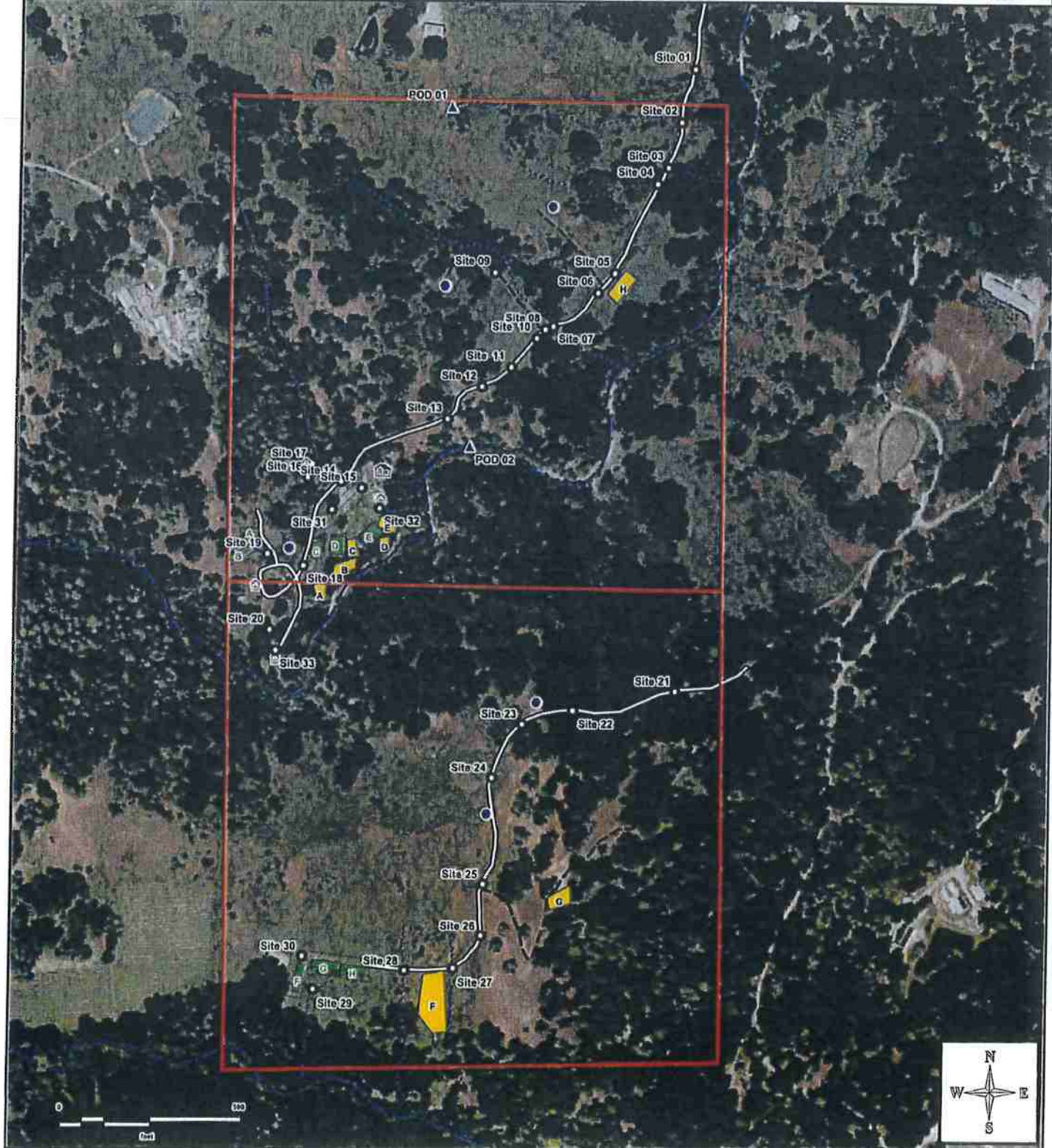
# Site Management Plan

## Site Map [State ID - 1\_12CC404177]



- |                   |                     |           |
|-------------------|---------------------|-----------|
| Property Boundary | Roads               | Site      |
| Cultivation Area  | Seasonal Access     | POD       |
| Disturbed Area    | Trail               | Tank      |
| Structure         | Legacy              | House     |
|                   | <b>Watercourses</b> | Structure |
|                   | Class I             |           |
|                   | Class II            |           |
|                   | Class III           |           |

TRC-414







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## Treatment Implementation Schedule

Unique Point	Proposed Work Completion Date
Site 01	Prior to 10/15/19 pending the approval of any required permits
Site 02	Prior to 10/15/19 pending the approval of any required permits
Site 03	Prior to 10/15/19 pending the approval of any required permits
Site 04	Prior to 10/15/19 pending the approval of any required permits
Site 05	Prior to 10/15/19 pending the approval of any required permits
Site 06	Prior to 10/15/19 pending the approval of any required permits
Site 07	Prior to 10/15/19
Site 08	Prior to 10/15/19
Site 09	Annually prior to 10/15
Site 10	Prior to 10/15/19
Site 11	Prior to 10/15/19
Site 12	Prior to 10/15/19
Site 13	Prior to 10/15/19 pending the approval of any required permits
Site 14	Prior to 10/15/19 pending the approval of any required permits
Site 15	Prior to 10/15/19
Site 16	Prior to 10/15/19 pending the approval of any required permits
Site 17	Prior to 10/15/19 pending the approval of any required permits
Site 18	Prior to 10/15/20 pending the approval of any required permits
Site 19	Immediately
Site 20	Immediately
Site 21	-
Site 22	-
Site 23	-
Site 24	Prior to 10/15/19 pending the approval of any required permits
Site 25	Prior to 10/15/19 pending the approval of any required permits
Site 26	Prior to 10/15/19
Site 27	Prior to 10/15/19
Site 28	Prior to 10/15/19 pending the approval of any required permits
Site 29	Interim measures Immediately; Mitigation measures prior to 10/15/19 pending the approval of
Site 30	Prior to 10/15/19
Site 31	Immediately
Site 32	Immediately
Site 33	Prior to 10/15/21 pending the approval of any required permits
POD 01	Immediately
POD 02	-



# SMP - Mitigation Report

WDID# - 1\_12CC404177

Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 01	-123.883471 40.188092	Permanent	X	X	-	Prior to 10/15/19 pending the approval of any required permits	
Current Condition: Water was observed to be pooling within the inboard ditch and spilling over onto the road surface.						Prescribed Action: Install a new rocked rolling dip or DRC to allow adequate drainage of the inboard ditch and road surface. See attached BMP's, Rocked Rolling Dip Design and Placement BMP, and Ditch Relief Culvert BMP.	
Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 02	-123.883591 40.1877	Permanent	X	X	-	Prior to 10/15/19 pending the approval of any required permits	
Current Condition: 24" CMP crossing over a Class III watercourse. Increased flows were observed at this location as the up slope watercourse at Site 04 joins the inboard ditch and continues flow to this site. Crossing was observed to have experienced erosion of the outboard fill. Rock armoring and energy dissipating rock at outlet were found to be insufficient to prevent erosion and limit water velocity.						Prescribed Action: Fill in the eroded section of the road prism, and install new large, angular rock. Rock will be placed for armoring the outlet, as well as energy dissipation beneath the outlet in order to limit the velocity of discharged water and prevent erosion of the fill material. See attached BMP's, Permanent Culvert Crossing BMP, and Stream Bank Armoring BMP.	
Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 03	-123.883713 40.187363	Permanent	X	X	X	Prior to 10/15/19 pending the approval of any required permits	
Current Condition: Location of road surface above potential historic channel of redirected watercourse that has since joined the inboard ditch and been transported downslope to Site 02.						Prescribed Action: Install a new 18" culverted watercourse crossing at this location to connect the watercourse to the potential historic channel below. See attached BMP's, Permanent Culvert Crossing BMP.	
Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 04	-123.883814 40.187244	-	X	X	X	Prior to 10/15/19 pending the approval of any required permits	
Current Condition: Watercourse moves down hillside and into a knick point, where it was observed to be causing erosion and sediment deposition into the inboard ditch.						Prescribed Action: Excavate the channel from the inboard ditch back to the flagged location, lay the bank back to a stable 2:1, and rock armor the inboard ditch. Clean and maintain the inboard ditch to prevent sediment deposition and potential feature overtopping. See attached BMP's, Stream Bank Armoring BMP.	
Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 05	-123.884216 40.186584	Seasonal	X	X	X	Prior to 10/15/19 pending the approval of any required permits	
Current Condition: 12" CMP DRC. Observed to be rusted through, which is causing erosion of the fill prism. The DRC was found to be hydrologically connected to the Class I watercourse below, and transporting concentrated sediment from the inboard ditch.						Prescribed Action: The culvert will be replaced with a functioning pipe. Large angular rock will be placed around and below the outlet to serve as rock armoring and energy dissipation for the discharged water. See attached BMP's, Permanent Culvert Crossing BMP, and Stream Bank Armoring BMP.	
Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 06	-123.884374 40.186439	Seasonal	X	X	-	Prior to 10/15/19 pending the approval of any required permits	
Current Condition: Heavy concentration of water in the inboard ditch which flows down slope and feeds into the DRC at Site 05.						Prescribed Action: Install a new DRC to help break up the flow of water that reaches Site 05. See attached BMP's, Ditch Relief Culvert BMP.	



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## SMP - Mitigation Report

WDID# - 1\_12CC404177

Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 07	-123.88481 40.186182	Seasonal	X	X	X	Prior to 10/15/19	
Current Condition: 18" CPP crossing on a Class III watercourse. Erosion of the outboard fill and lack of rock armoring and energy dissipating rock was also observed. This culvert was determined to be undersized to pass flows associated with a 100-year peak streamflow scenario.						Prescribed Action: Install a new, 36" culverted watercourse crossing. Large, angular rock will be placed for armoring the outlet, as well as energy dissipating rock beneath the outlet to limit the velocity of discharged water, and prevent erosion of the fill material. See attached BMP, Permanent Culvert Crossing BMP, and Stream Bank Armoring BMP.	
Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 08	-123.884889 40.18616	Permanent	X	X	-	Prior to 10/15/19	
Current Condition: Existing DRC that has been filled in with sediment and was observed to be overtopped by water flow.						Prescribed Action: Repair and maintain the inboard ditch per the specifications set forth in the BMP's.	
Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 09	-123.885392 40.186577	Trail	X	X	-	Annually prior to 10/15	
Current Condition: Steep section of access trail that has significant concentrated road surface runoff that was observed to be cutting into the road surface.						Prescribed Action: Install a new waterbar per the specifications set forth in the attached BMP's. See attached BMP's, Waterbar Construction BMP.	
Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 10	-123.884971 40.186095	Permanent	X	X	-	Prior to 10/15/19	
Current Condition: Water was observed to be running down the road and gullying the inside of the road surface.						Prescribed Action: Install a new rolling dip to drain the road surface only, do not drain the inboard ditch at this location. See attached BMP's, Rolling Dip Design and Placement BMP.	
Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 11	-123.885213 40.185878	Permanent	X	X	-	Prior to 10/15/19	
Current Condition: Inboard ditch was found to be filled in with sediment, and was being overtopped. Water was observed running down the road and eroding the road surface.						Prescribed Action: Install a new rolling dip to drain both the road surface and the inboard ditch at this location. See attached BMP's, Rolling Dip Design and Placement BMP.	
Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 12	-123.885494 40.185729	Permanent	X	X	-	Prior to 10/15/19	
Current Condition: Water was observed to be flowing down the road, eroding the road surface.						Prescribed Action: Install and maintain a new inboard ditch to alleviate the flow of water on the edge of the road surface.	
Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 13	-123.885824 40.185485	Permanent	X	X	-	Prior to 10/15/19 pending the approval of any required permits	
Current Condition: Water was observed to be flowing down the road, eroding the road surface.						Prescribed Action: Install and maintain a new inboard ditch from this location, down to Site 14.	





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Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 14	-123.886851 40.185012	Permanent	X	X	X	Prior to 10/15/19 pending the approval of any required permits	
<p>Current Condition: 18" plastic culverted crossing on a Class III watercourse. Inlet was observed to have adequate rock armoring to avoid erosion. The culvert was determined to be undersized to pass flows associated with a 100-year peak streamflow scenario.</p>						<p>Prescribed Action: Install a new, 30" culverted watercourse crossing at this location per the specifications set forth in the BMP's. See attached BMP's, Permanent Culvert Crossing BMP.</p>	
Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 15	-123.886649 40.184965	-	X	X	X	Prior to 10/15/19	
<p>Current Condition: Outlet of the culvert inlet located up slope, at Site 14. Significant erosion of the outlet channel was observed.</p>						<p>Prescribed Action: The outlet channel will be laid back to a stable 2:1, and will be rock armored to ensure minimal to no erosion occurs at this site. See attached BMP's, Permanent Culvert Crossing BMP.</p>	
Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 16	-123.887178 40.185038	-	X	X	X	Prior to 10/15/19 pending the approval of any required permits	
<p>Current Condition: 2 old, empty, fuel storage tanks within the riparian setback of a Class III watercourse. The fuel tanks were observed to be lacking cover and sidewall protection. The tanks did have a secondary containment basin, but they were both observed to be filled with rainwater.</p>						<p>Prescribed Action: The fuel storage tanks will be removed with as little disturbance to the riparian area as possible. The tanks will be relocated to a suitable location, outside of all riparian setbacks. All stream channel and surrounding areas which are disturbed by the removal of these structures will be treated with erosion control measures to mitigate the amount of sediment deposited into Waters of the State. See attached BMP's, General Erosion Control BMP.</p>	
Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 17	-123.887135 40.185138	-	X	X	X	Prior to 10/15/19 pending the approval of any required permits	
<p>Current Condition: Two legacy indoor cultivation structures which are no longer in use. The structures were determined to be within the riparian setbacks of a Class III watercourse. One structure also houses an old generator which appears to have been out of commission for a number of years.</p>						<p>Prescribed Action: The structures will be taken down and removed with as little disturbance to the riparian area as possible. All organic and inorganic wastes will be removed and disposed of appropriately, and the materials from the structure will be relocated to a location outside of all riparian setbacks. All stream channel and surrounding areas which are disturbed by the removal of these structures will be treated with erosion control measures to mitigate the amount of sediment deposition into Waters of the State. See attached BMP's, General Erosion Control BMP.</p>	
Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 18	-123.887204 40.184384	Seasonal	X	X	-	Prior to 10/15/20 pending the approval of any required permits	
<p>Current Condition: Water pooling was observed on the inboard side of the road, and on the road surface.</p>						<p>Prescribed Action: Install a new inboard ditch from this location, to Site 14. Install a new Type-1 or Type-2 rolling dip to drain the road surface. See attached BMP's, Rolling Dip Design and Placement BMP.</p>	



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Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 19	-123.887558 40.184468	-	X	X	-	Immediately	
Current Condition: Outhouse.						Prescribed Action: The use of the outhouse is to be discontinued immediately. All exposed pits resulting from toilet removal are to be filled in. All future domestic wastewater generated on site is to be contained via a septic system and/or portable/chemical toilets, which are to be serviced as required by licensed personnel. All aspects of domestic wastewater storage, transportation, and disposal are required to be done so in compliance with the Humboldt County Department of Environmental Health and Human Services.	
Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 20	-123.887517 40.18391	Legacy	X	X	-	Immediately	
Current Condition: Outhouse that is within the setback of the Class I South Fork Salmon Creek.						Prescribed Action: The use of the outhouse is to be discontinued immediately. All exposed pits resulting from toilet removal are to be filled in. All future domestic wastewater generated on site is to be contained via a septic system and/or portable/chemical toilets, which are to be serviced as required by licensed personnel. All aspects of domestic wastewater storage, transportation, and disposal are required to be done so in compliance with the Humboldt County Department of Environmental Health and Human Services.	
Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 21	-123.88353 40.18349	Seasonal	-	-	-	-	
Current Condition: Existing low point that drains the road surface.						Prescribed Action: None.	
Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 22	-123.884527 40.183339	Seasonal	-	X	-	-	
Current Condition: Existing Type-2 rolling dip that was observed to be functioning adequately.						Prescribed Action: None. The site will be monitored throughout the year to ensure that the feature continues to function adequately.	
Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 23	-123.885024 40.183235	Seasonal	-	X	-	-	
Current Condition: Existing low point that drains the road surface.						Prescribed Action: None.	
Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 24	-123.885305 40.182837	Seasonal	X	X	-	Prior to 10/15/19 pending the approval of any required permits	
Current Condition: 18" plastic culvert that was improperly installed. Inlet is located part way in the road surface. Culvert was also observed to be filling with sediment.						Prescribed Action: Remove the existing culvert, and install a new Type-2 rolling dip to drain the road surface. See attached BMP's, Rolling Dip Design and Placement BMP.	



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Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 25	-123.885365 40.18205	Seasonal	X	X	-	Prior to 10/15/19 pending the approval of any required permits	
Current Condition: Steep section of seasonal access road with an 18% slope. The road is well vegetated aside from wheel ruts that were observed to be confining the road surface runoff, making the outslowing ineffective.						Prescribed Action: Install a new Type-2 rolling dip to properly drain the road surface. See attached BMP's, Rolling Dip Design and Placement BMP.	
Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 26	-123.885373 40.181671	Seasonal	X	X	-	Prior to 10/15/19	
Current Condition: Water was observed to be seeping onto the road from the intersection up slope. The water was running down and eroding the road surface.						Prescribed Action: Install a new Type-2 rolling dip to properly drain the road surface. See attached BMP's, Rolling Dip Design and Placement BMP.	
Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 27	-123.885636 40.181429	Seasonal	X	X	-	Prior to 10/15/19	
Current Condition: 18" CPP crossing on a Class III watercourse. Inlet and outlet were found to be obstructed.						Prescribed Action: Clear the inlet and outlet of obstructions. Rock armor the inlet and outlet, as well as place energy dissipating rock beneath the outlet to reduce the velocity of discharged water, and prevent erosion. See attached BMP's, Permanent Culvert Crossing Design (Inlet and Outlet Armoring).	
Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 28	-123.886108 40.181407	Seasonal	X	X	X	Prior to 10/15/19 pending the approval of any required permits	
Current Condition: Class III watercourse crossing that currently lacks a structure. Water was observed to be flowing sub surface as it bypassed the road, causing erosion of the outboard edge.						Prescribed Action: Install a new, 30" culverted watercourse crossing at this location. Minimum 40' of culvert will be required to clear the road prism. See attached BMP's, Permanent Culvert Crossing BMP.	
Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 29	-123.886998 40.181263	Seasonal	X	X	-	Interim measures Immediately; Mitigation measures prior to 10/15/19 pending the approval of any required permits	
Current Condition: Specific location where potting soil from Cultivation Areas F, G, & H deliver to the Class III watercourse below.						Prescribed Action: Interim measure: Seed and straw mulch the beds of the hoop houses to prevent any soil transport down grade. Install straw wattles between this location and the cultivation flat to capture any sediment that will be eroded. Permanent measure: Install a drainage ditch from this location, to Site 30. Place energy dissipating rock along the ditch to decrease water velocity, and limit the erosion of the ditch. See attached BMP's, General Erosion Control BMP.	
Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 30	-123.887118 40.181505	Seasonal	X	X	-	Prior to 10/15/19	
Current Condition: Poorly drained flat holding Cultivation Areas F, G, & H, that was found to be delivering sediment to the Class III watercourse down slope.						Prescribed Action: Install a new drainage trench along the back side of the flat (north and west sides), that exits down between Cultivation Areas F & G, and ends at Site 29. Install large, angular, energy dissipating rock to reduce water velocity and minimize erosion of the ditch.	





# SMP - Mitigation Report

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Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 31	-123.886937 40.1848	-	X	X	-	Immediately	
Current Condition: Storage shed holding a generator, fuel, fertilizers, and oils. All product cans were found to be intermixed and lacking secondary containment.						Prescribed Action: Fertilizers will be stored in a location that is physically separated from the fuel storage location. Secondary containment basins will be acquired and installed for both the fuel storage tanks and the fertilizers. Secondary containment basins are required to be, at minimum, equal to or greater than the volume of liquids that they are stored under. See attached BMP's, General Recommendations BMP.	
Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 32	-123.886469 40.184815	-	X	X	-	Immediately	
Current Condition: A storage shed that was found to have a black ABS sewer pipe that was missing it's plug. Subsequently, water was found to be leaving the pipe and flowing directly into the head of a Class III watercourse. The water was observed to be odorless, as well as clean and clear of any obvious contaminants.						Prescribed Action: The Cultivator shall install a properly sized plug in order to seal the pipe off and prevent the input of water into the watercourse.	
Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
Site 33	-123.887455 40.183756	-	X	X	-	Prior to 10/15/21 pending the approval of any required permits	
Current Condition: Greywater surface discharge that originates from a sink located in the barn structure within the Class I riparian setback. The barn was also determined to be used for drying, and chemical storage.						Prescribed Action: Pursuant with Humboldt County Department of Health and Human Services, greywater must be discharged, at minimum, 6" below the earth's surface, preferably in a small pit containing drain rock. This ensures that the pipe does not back up, and the discharged water has adequate time to disperse into the soil. The location of the discharged greywater is also required to be outside of all riparian setbacks. The use of the structure for chemical storage will need to be discontinued. Due to the fact that the storage structure is within the riparian setback, the possibility of leaked chemicals entering Waters of the State is a likely outcome in the case of a container leak or failure.	
Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
POD 01	-123.88585 40.187783	-	X	X	-	Immediately	
Current Condition: Surface water diversion from a Class II watercourse. The diversion structure was found to be lacking an in-line meter for recording and annual reporting purposes.						Prescribed Action: The Cultivator shall install an inline meter to record the volume of water diverted from this source for annual reporting purposes.	
Unique Point	Lat-Long NAD 83	Road Type	Mitigation Planned	Monitor	1600	Treatment Priority	Date Completed
POD 02	-123.885593 40.185278	-	-	-	-	-	
Current Condition: Surface water diversion from a Class I watercourse.						Prescribed Action: None.	

## **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 DRC inlets, outlets, and contributing ditch lines of current and potential blockage debris by hand.
- Hand place energy dissipating rock/small woody debris at DRC 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/SWD at DRC 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.



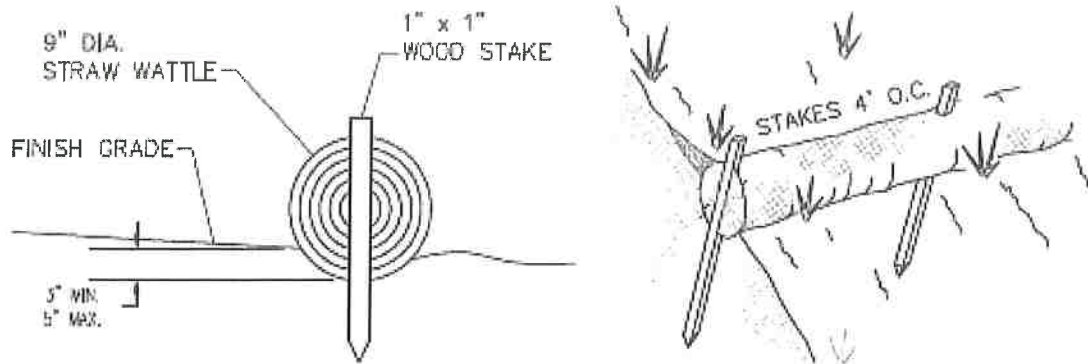
### **BMP: General Erosion Control**

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

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

- Erosion control and sediment detention devices and materials shall be incorporated into the cleanup/restoration work design and installed prior to the end of project work and before the beginning of the rainy season. Any continuing, approved project work conducted after October 15 shall have erosion control works completed up-to-date and daily.
- Erosion control materials shall be, at minimum, stored on-site at all times during approved project work between May 1 and October 15.
- Approved project work within the 5-year flood plain shall not begin until all temporary erosion controls (straw bales or silt fences that are effectively keyed-in) are installed downslope of cleanup/restoration activities.
- Non-invasive, non-persistent grass species (e.g., barley grass) may be used for their temporary erosion control benefits to stabilize disturbed slopes and prevent exposure of disturbed soils to rainfall.
- Upon work completion, all exposed soil present in and around the cleanup/restoration sites shall be stabilized within 7 days.
- Soils exposed by cleanup/restoration operations shall be seeded and mulched to prevent sediment runoff and transport.
- Straw Wattles (if used) shall be installed with 18 or 24-inch wood stakes at four feet on center. The ends of adjacent straw wattles shall be abutted to each other snugly or overlapped by six inches. Wattles shall be installed so that the wattle is in firm contact with the ground surface.

## BMP: General Erosion Control (Cont.)

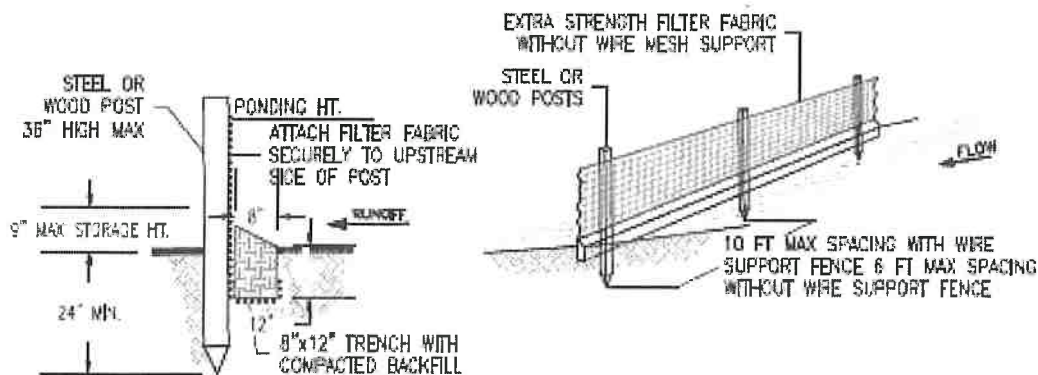


### STRAW WATTLE NOTES:

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

### STRAW WATTLE INSTALLATION DETAIL

NTS



### SILT FENCE NOTES:

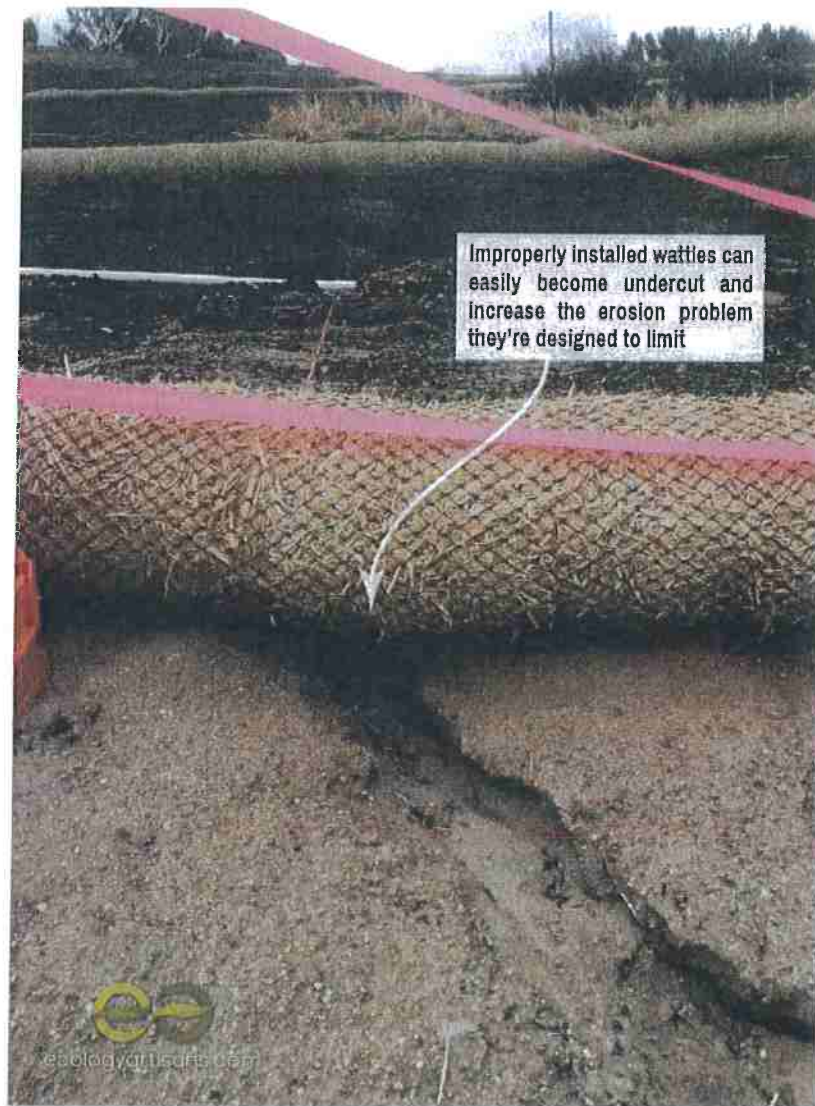
1. THE CONTRACTOR SHALL INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT.
2. CONTRACTOR SHALL REMOVE SEDIMENT AS NECESSARY. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND IN AN AREA THAT CAN BE PERMANENTLY STABILIZED.
3. SILT FENCE SHALL BE PLACED ON SLOPE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

### SILT FENCE DETAILS

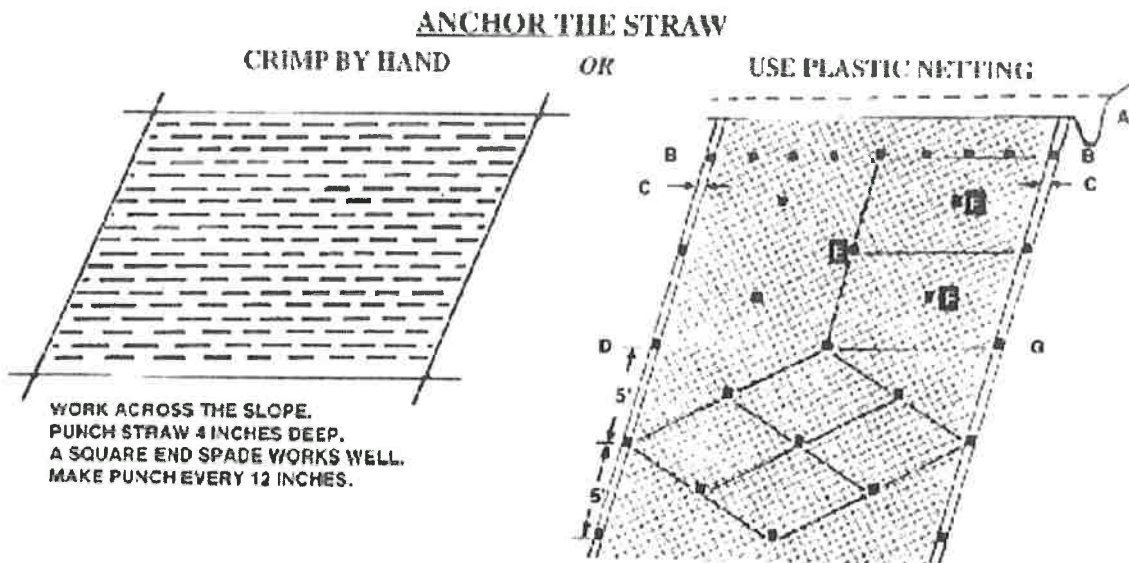
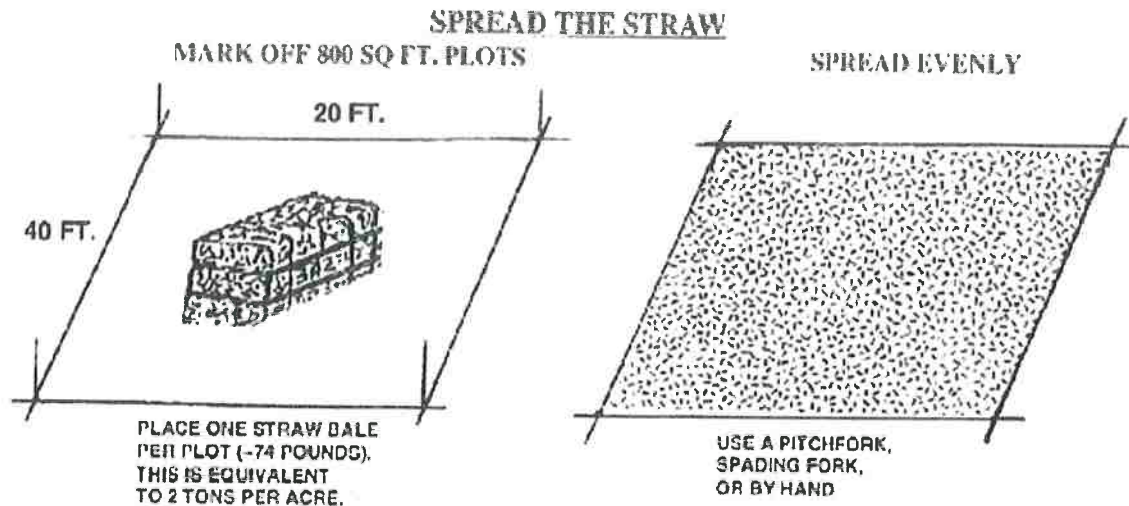
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**BMP: General Erosion Control (Cont.)**



## BMP: General Erosion Control (Cont.)



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.

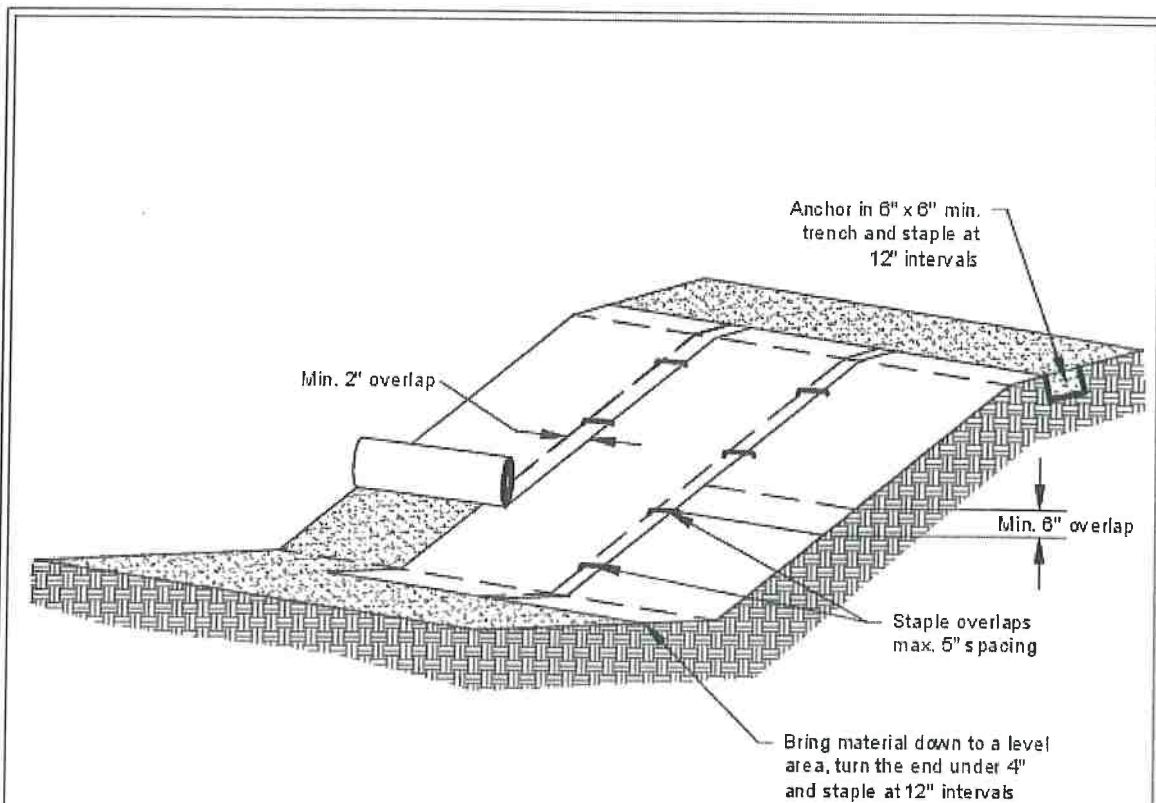
E. STAKE DOWN THE CENTER EVERY 5 FEET.

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

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

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

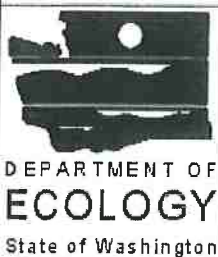
## BMP: General Erosion Control (Cont.)



### Notes:

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

NOT TO SCALE



## Slope Installation

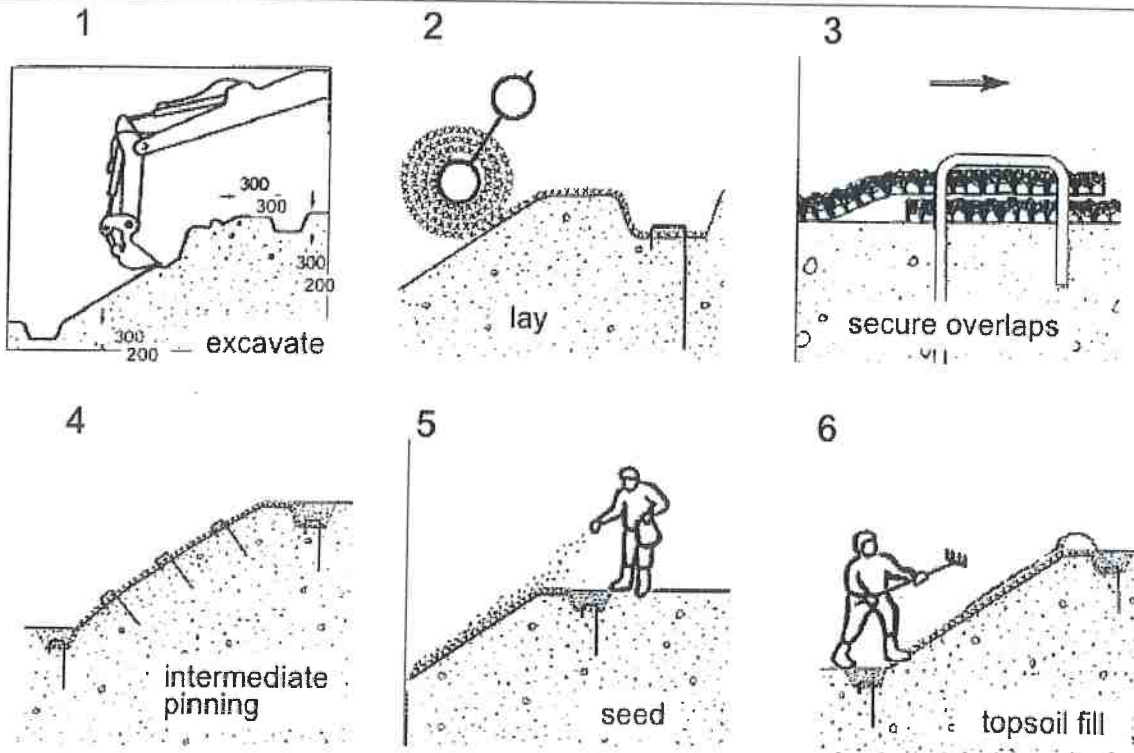
Revised June 2016

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

## Installation of a geosynthetics mat - Enkamat



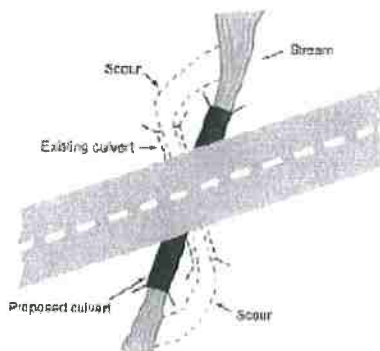
**BMP: General Erosion Control (Cont.)****TABLE 34. Guidelines for erosion and sediment control application**

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



**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).

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

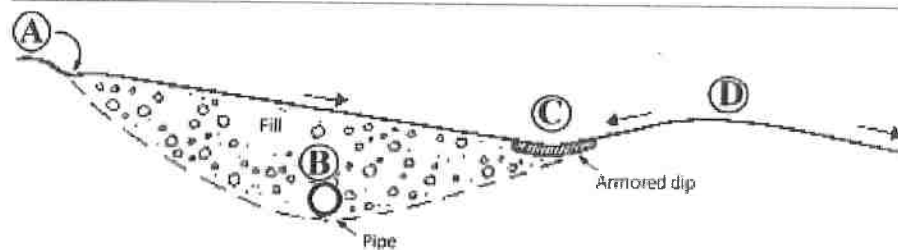
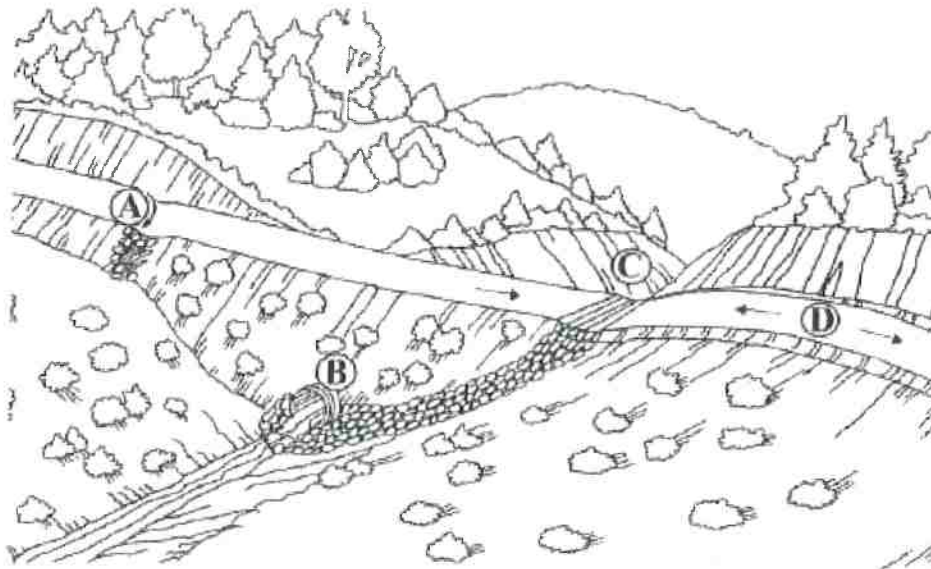
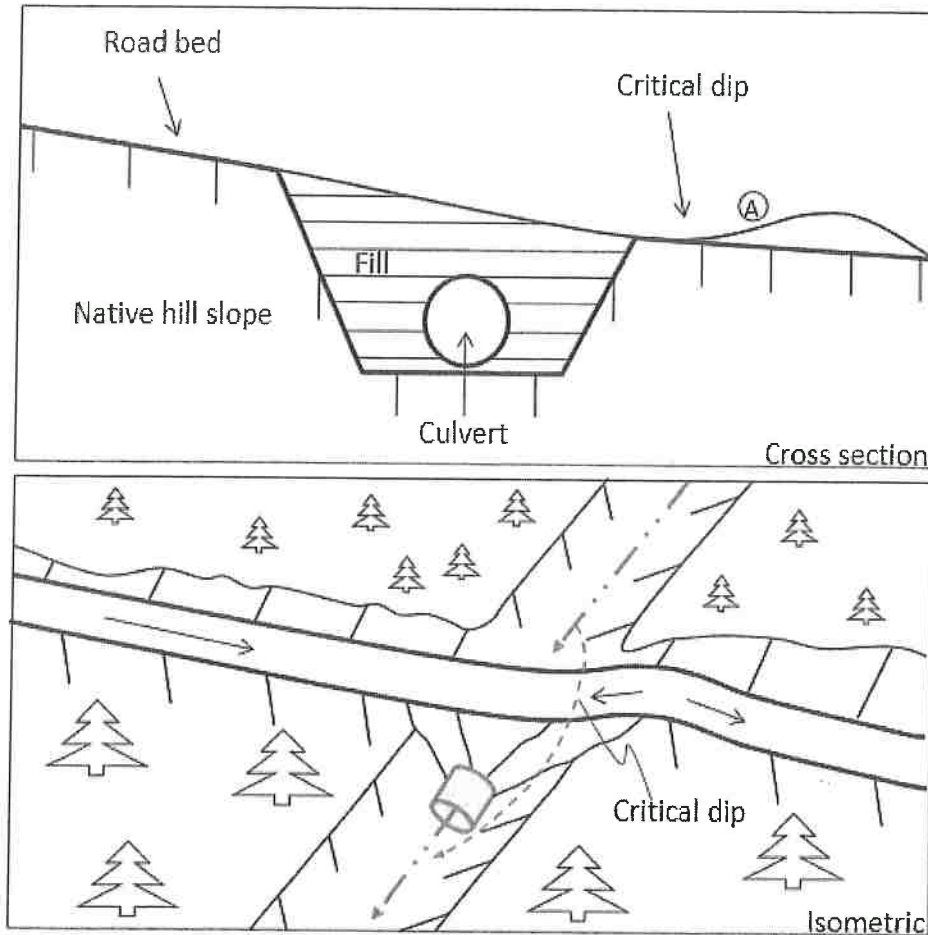


FIGURE 84. Critical dips or dipped crossing fills should be centered near a stream crossing's down-road hingeline, not over the centerline of the crossing where overtopping could cause washout or severe erosion of the fill. If the stream crossing culvert (B) plugs, water will pond behind the fill until 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, diprap armor has been placed at the critical dip outfall and extending downslope to the stream channel. This is only required or suggested on stream crossings where the culvert is highly likely to plug and the crossing fill overtopped. The dip at the hinge line is usually sufficient to limit 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).

## BMP: Permanent Culvert Crossing Design (Critical Dip)

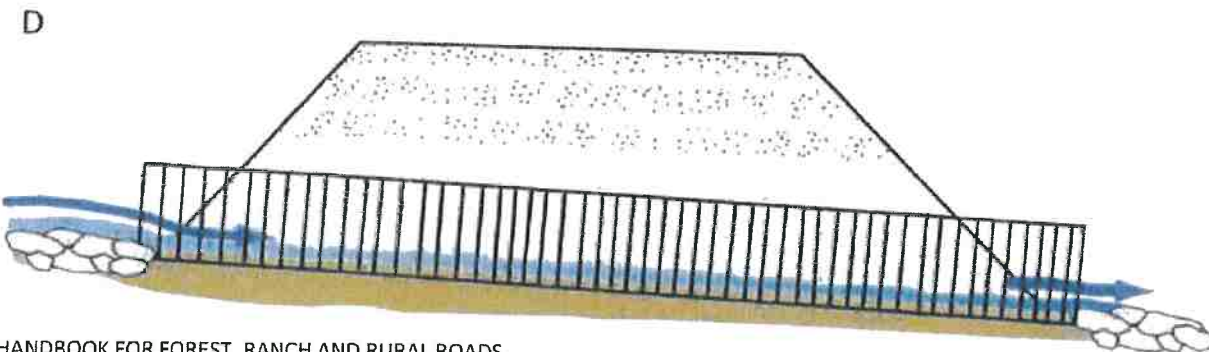
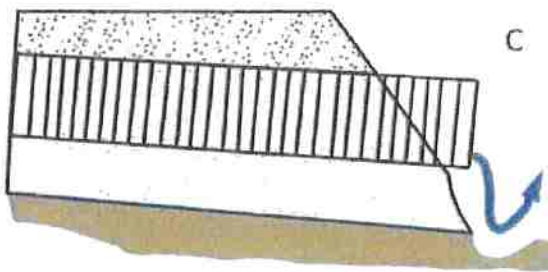
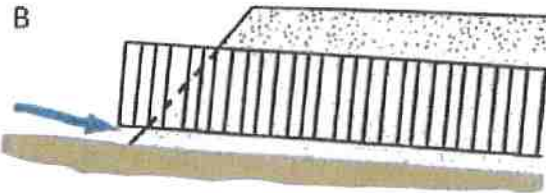
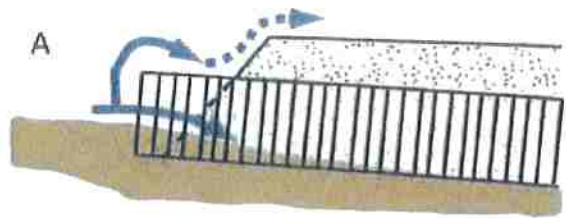
### Typical Critical Dip Design for Stream Crossings with Diversion Potential



#### **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 (Culvert Orientation)

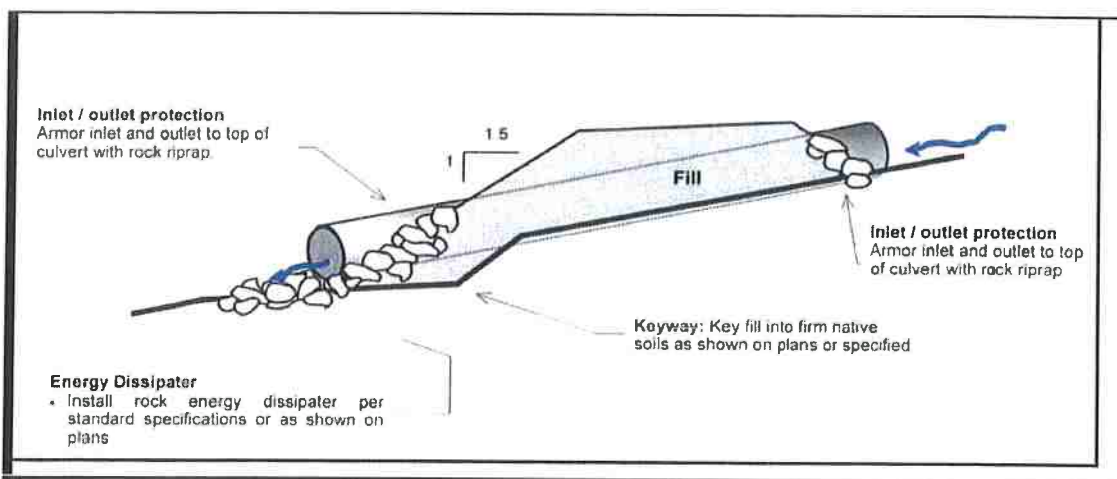
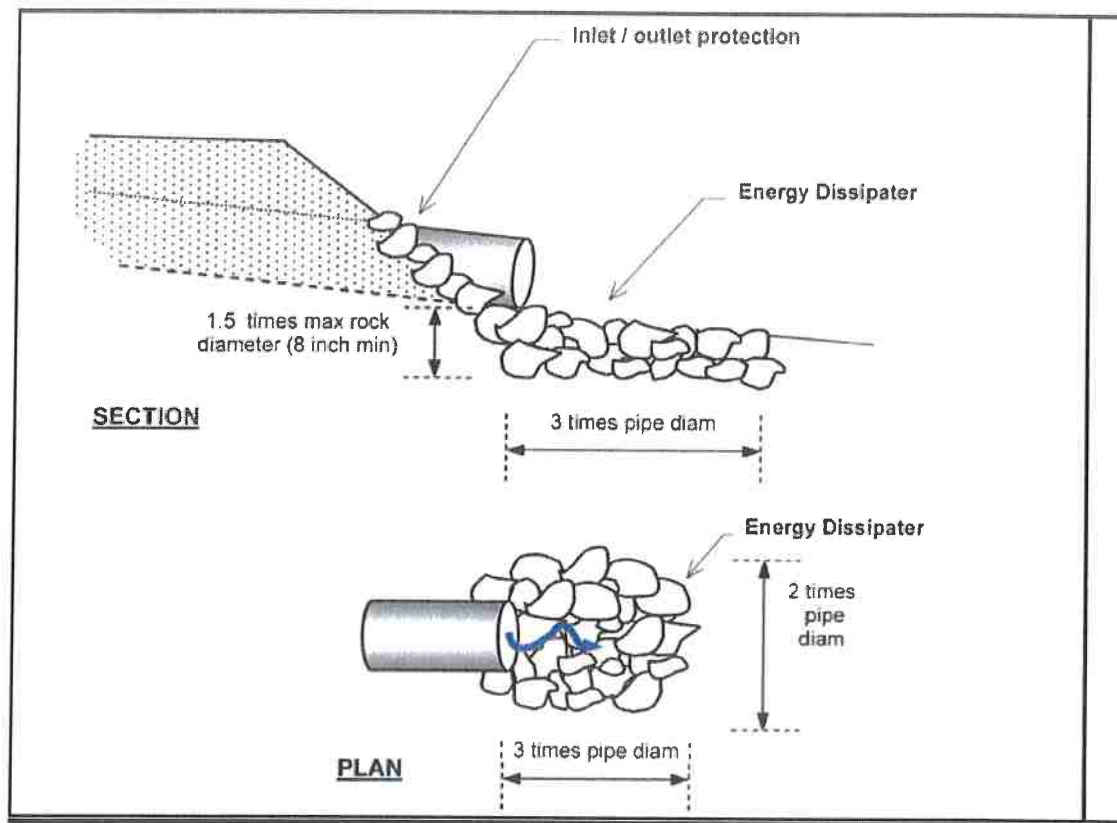


**FIGURE 155.** Proper culvert installation involves correct culvert orientation, setting the pipe slightly below the bed of the original stream, and backfilling and compacting the fill as it is placed over the culvert. Installing the inlet too low in the stream (A) can lead to culvert plugging, yet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

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

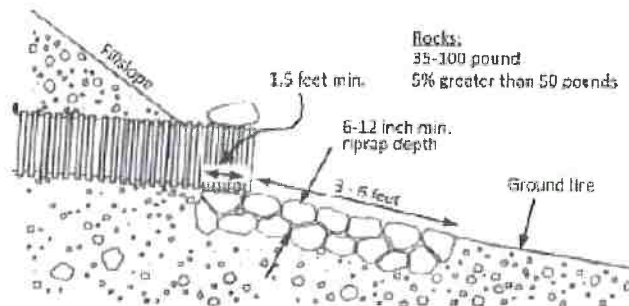


FIGURE 107A. Riprap armor at culvert outlet (Modified from: Keller et al. 2011).

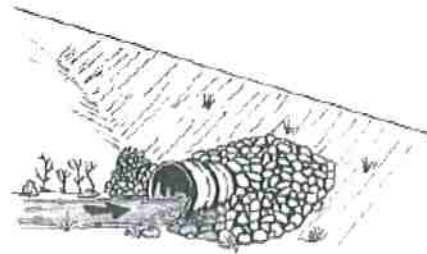


FIGURE 107B. Riprap armor at culvert inlet (Keller and Sharar, 2003).

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## **BMP: Stream Bank Armoring (Riprap)**

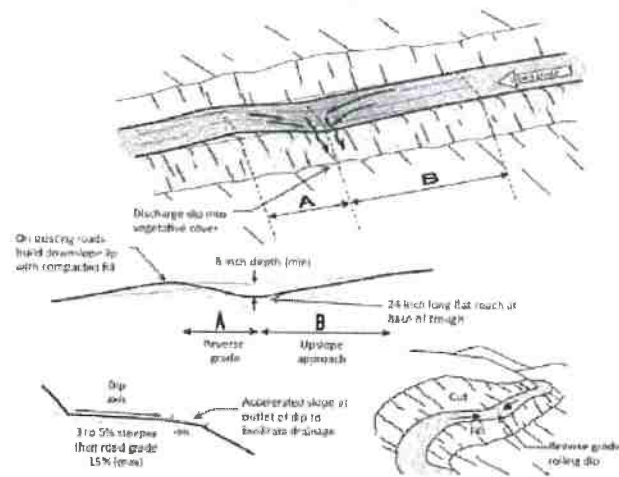
- Riprap should be installed on top of geotextile fabric or a clean mixture of coarse gravel and sand.
- The riprap should be keyed into the streambed and extend below the maximum expected scour depth with an adequately sized key base width at a thickness of a minimum of 2x the median (D50) rock diameter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

## BMP: 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.



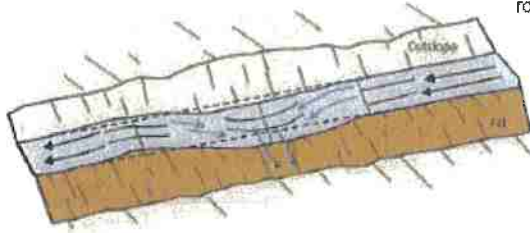
**FIGURE 34.** A classic Type I rolling dip, where the excavated up-road approach (B) to the rolling dip is several percent steeper than the approaching road and extends for 60 to 80 feet to the dip axis. The lower side of the structure reverses grade (A) over approximately 15 feet or more, and then 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 downsloping or sediment deposition in the dip axis (Modified from: Best, 2013).

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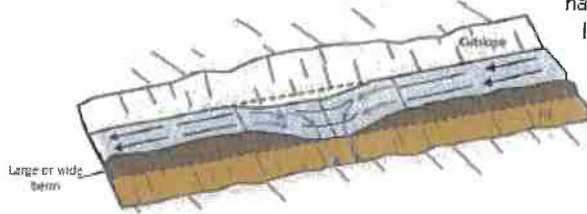
## BMP: Rolling Dip Design and Placement (Types)

### Type 1 Rolling Dip (Standard)



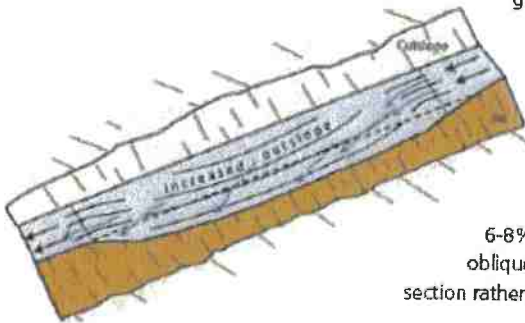
Type 1 rolling dips are used where road grades are less than about 12-14% and road runoff is not confined by a large through cut or berm. The axis of the dip should be perpendicular to the road alignment and sloped at 3-4% across the road tread. Steep roads will have longer and more abrupt dip dimensions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



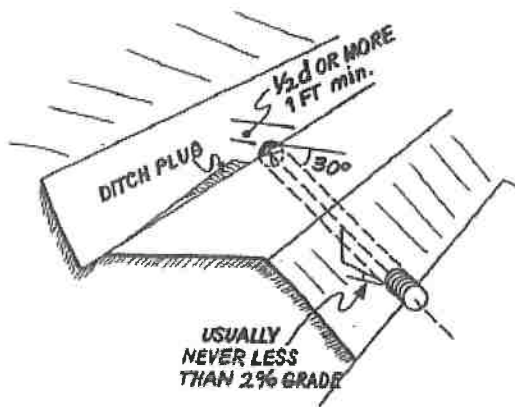
**FIGURE 33B.**

*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.*

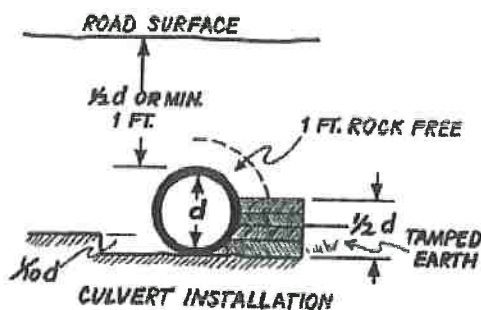


## BMP: Ditch Relief Culvert

- 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).





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

### Monitoring Requirements

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

Monitoring Requirement	Description
Winterization Measures Implemented	Report winterization procedures implemented, any outstanding measures, and the schedule for completion.
Tier Status Confirmation	Report any changes in the tier status.
Third Party Identification	Report any change in third party status as appropriate.

### Annual Reporting

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

# Attachments



## Implementation of Applicable BPTC Measures

Assessment of applicable BPTC measures consisted of a field examination on February 18, 2019. Anywhere applicable BPTC measures are not met on the property, descriptions of the assessments and the prescribed treatments are outlined following each associated section below.

### Summary of BPTC Measures Compliance

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

### 1. Sediment Discharge BPTC Measures

#### 1.1. Site Characteristics

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

**See attached Site 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.).

**The access road was observed to be primarily in good condition. Failing inboard ditches has resulted in the erosion of the road surface, and multiple water pooling locations.**

**Currently, there are two residents that stay in the main house and the yurt nearest the house during the cultivation season. Throughout this time 2-4 people will be hired on for work, and will stay in the second yurt on the property. During cultivation season, vehicle traffic to and from the property is reduced to once a week, while vehicle traffic during the winter months is limited to once a month.**

**Existing drainage features found on the property included DRC's, IBD's, Type-2 rolling dips, and culverted watercourse crossings. There were multiple sites on the property where road surface runoff was found to be downcutting into the road fill. Two improperly constructed inboard ditches have resulted in the overtopping and subsequent erosion of the down grade road surface. At Site 04, the watercourse is intercepted by**

an inboard ditch, where it joins another watercourse and bypasses the road through a 24" CMP culvert. See the Mitigation Report, Treatment Implementation Schedule, and Site Map to follow for site specific details.

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

Currently, all roads on the property have native surfaces. Roads being classified as permanent shall be appropriately surfaced (crushed rock, lignin treatments, pavement, or chip-seal) to increase durability during winter use.

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

Five watercourse crossings were identified during the assessment of the property. In addition, one watercourse will be redirected to its potential historic channel, making a total of six crossings to be sized. Of all watercourse crossings on the property, only two are appropriately sized for a 100-year storm event. Two crossings require new structures where there was not one originally, and two require replacement with a larger diameter culvert. Outboard fill armoring and energy dissipating rock to prevent erosion was found to be inadequate, and shall be upgraded with additional rock. See the Mitigation Report, Treatment Implementation Schedule, and Site Map to follow for site specific details.

- 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.

**There were no legacy erosion sites located anywhere on the property.**

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

#### 1.2.1. Erosion Prevention BPTC Measures

- 1.2.1.1. Describe the BPTC measures that have been, or will be implemented to prevent or limit erosion. Provide an implementation schedule for BPTC

measures that have not yet been implemented. Identify the erosion prevention BPTC measures on a site map.

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

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.**

#### 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 Mitigation Report, Treatment Implementation Schedule, and Site Map to follow for site specific details.**

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.).

**No areas on the property called for physical BPTC measures of this kind.**

#### 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 and sediment control BPTC measures will be monitored and maintained in a number of ways. All culverted watercourse crossings and the ditch relief culverts will be monitored to ensure that the inlets and outlets remain free of any blockages which could restrict water flow through the pipe. Maintenance of these crossings will include hand work to remove any sediment or large debris that may clog the culvert in any way.**



Road drainage features will be monitored to ensure that sediment accumulation does not occur at such an amount as to allow the feature to be overtopped, rendering it ineffective. Road drainage features will be maintained by clearing any deposited sediment with a shovel or similar tool, to allow the features to function properly and keep the roads free of surface water flows.

All seeding that is to take place will be monitored to ensure that the vegetation is taking root to bind the soil in place. These seeding locations will be maintained by continuously seeding and straw mulching until vegetation does take root.

- 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.

**Any significant captured sediment behind the wattles between Sites 29 and 30 shall be seeded and straw mulched. If the wattles become backfilled with debris and begin to overtop, they shall be cleared out. This debris from the wattles shall be contoured into the grass hillside downslope, away from any surface runoff. The wattles shall be replaced if they have degraded to the point that they no longer function as intended. Captured sediment by drainage features elsewhere on the property will be allowed to stabilize and vegetate in place.**

- 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.

**No interim soil stabilization measures were prescribed for this property.**

## **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.**

- 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
<b>Fertilizers:</b> Earthworm guano, Chicken manure, Dr. Earth, Bat guano, Molasses, Tlab Soil Life	Brought to site in May of 2018. Stored within the shed identified as Site 31.	Mixed into tank with water and fed through drip lines, as well as hand-watered once a week during the cultivation period.	Removed from the property by the Cultivator and disposed of appropriately at Redway Transfer Station.
<b>Pesticides/Fungicides:</b> Plant Therapy, Neem Oil, Mildew Cure.	Brought to site in May of 2018. Stored within the shed identified as Site 31.	Mixed into tank with water and fed through drip lines, as well as hand-watered once a week during the cultivation period.	Removed from the property by the Cultivator and disposed of appropriately at Redway Transfer Station.

2.4. Describe procedures for spill prevention and cleanup.

Due to the presence of pesticides and fertilizers on site, a cleanup kit is required in case of a spill. The Cultivator will acquire absorbent materials to be applied immediately following a chemical spill and give it enough time to absorb as much of the spill as possible. Following the absorption of spilled chemicals post-application, it is to be removed and disposed of appropriately as per the manufacturer's guidelines. The cleanup kits shall be located anywhere pesticides, herbicides, fertilizers, soil amendments, petroleum products, and synthetic oils are stored or mixed.

### 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 in May of 2018.	Stored in standard 5-gallon gasoline canisters, with fertilizers and oil in the storage shed identified as Site 31. Used to fuel equipment such as a weed wacker and a generator.	Empty bins are removed via the cultivator. They are put in contractor bags that are then placed in sealing trash cans, and hauled off in a travel trailer to Redway Transfer Station by the Cultivator.
Motor Oil	Brought to site in May of 2018.	Stored in totes in the storage shed identified as Site 31. Used for the weed wacker and generator.	Empty bins are removed via the cultivator. They are put in contractor bags that are then placed in sealing trash cans, and hauled off in a travel trailer to Redway Transfer Station by the Cultivator.

There are two generators, and subsequent fuel storage locations on the property. The first, identified as Sites 16 & 17, are required to be relocated or removed completely, as they are encroaching on the Class III riparian setbacks. The second location is identified as Site 31, and is a shed holding a generator and subsequent fuel storage. The generator and fuel are located in a shed with cover and complete side wind protection. Both the generator and the fuel storage tanks were found to be lacking secondary containment basins, which threaten the surrounding environment in the case of a generator or fuel tank leak or failure. The Cultivator shall acquire a new form of secondary containment and install it beneath both the generator, and the fuel storage tanks. The size of the secondary containment basin must be equal to or greater than the total volume of liquids it is stored under.

#### 3.4. Describe procedures for spill prevention and cleanup.

Adequate quantities of absorbent materials are to be 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.

Trash is generated on site via the residence structure, and also through cultivation-related activities. The trash is contained in contractor bags and stored in large,



covered trash cans that are stored in a travel trailer. The trash is then removed from the property by the Cultivator every two weeks, and properly disposed of at Redway Transfer Station.

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

**Trash is stored in a travel trailer that is not currently on the site. The trailer is brought to the site during the beginning of the cultivation period, and is removed at the start of the winter months.**

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

**There are two residents during the cultivation season, and intermittently 2-4 workers during the same period. The residence is not occupied during the winter months.**

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

**Domestic sewage as well as greywater are generated from the single residence structure located on the property. Greywater is also generated via a sink located in the barn, which is identified as Site 33 on the Site Map.**

- 4.2.2. Describe how the domestic wastewater is disposed.

**Domestic wastewater is disposed of via Wycoff's Plumbing, out of Fortuna California. The septic tank is serviced as needed based on time of year, and number of people on the property.**

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

**There is one septic tank on the property, which is serviced by Wycoff's Plumbing, out of Fortuna California.**

- 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. 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.

**There were two outhouses located on the property, which are identified as Sites 19 & 20.**

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

**Wastewater storage locations include the two outhouses identified as Sited 19 & 20.**

## **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 every 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 and sediment capture features (watercourse crossing culverts, ditch relief culverts, rolling dips, water bars) will be checked and cleared of any debris and soil blockages prior to the winter period and as needed during wintertime monitoring. Damaged drainage and sediment capture features will be repaired as necessary, and feasible, with hand tools during winter monitoring.**

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

**See attached Mitigation Report and Treatment Implementation Schedule above.**

- 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 attached Mitigation Report and Treatment Implementation Schedule above.**

- 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.

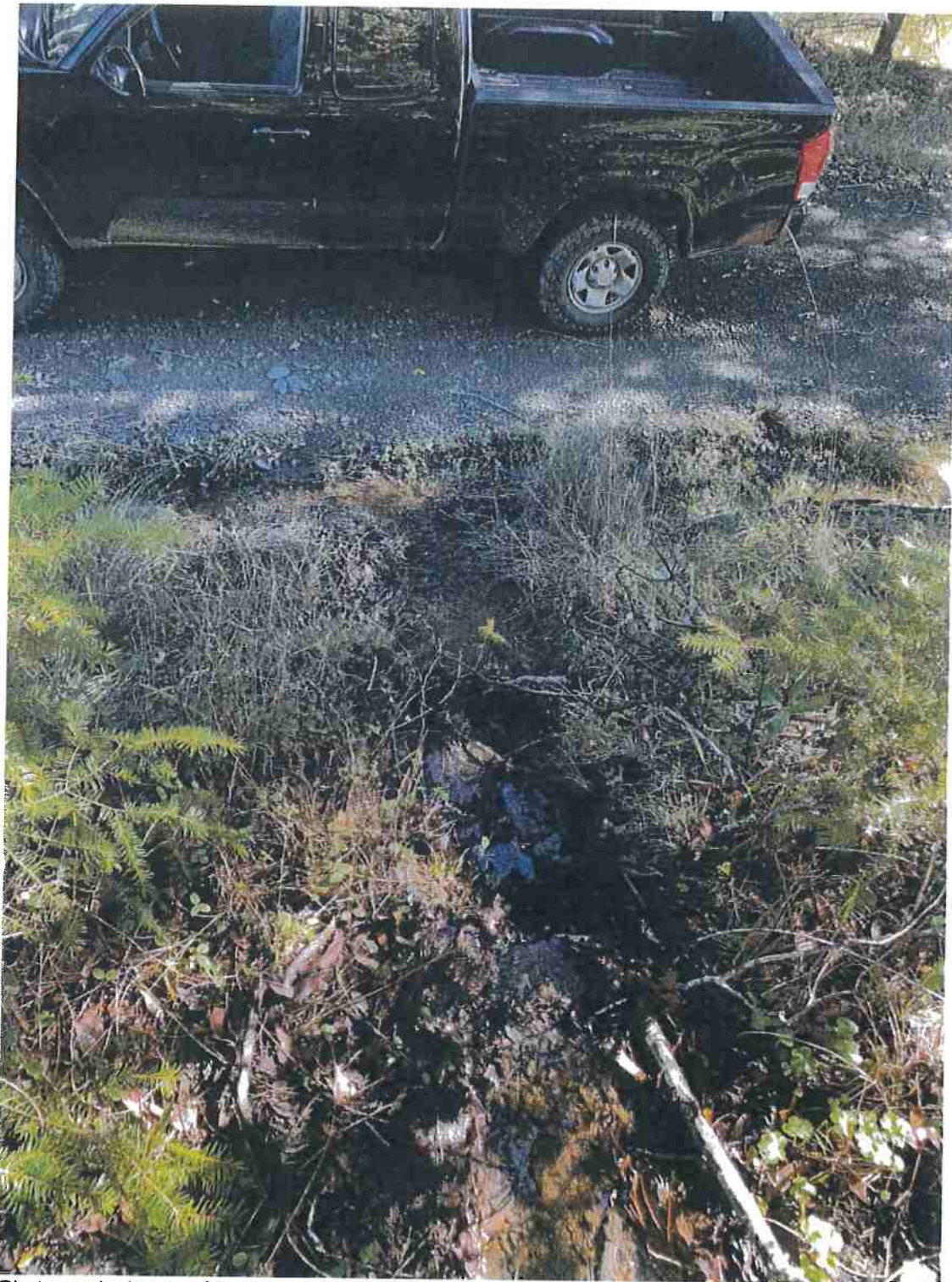
**There were no legacy waste discharge issues observed on the property.**

Photographs:



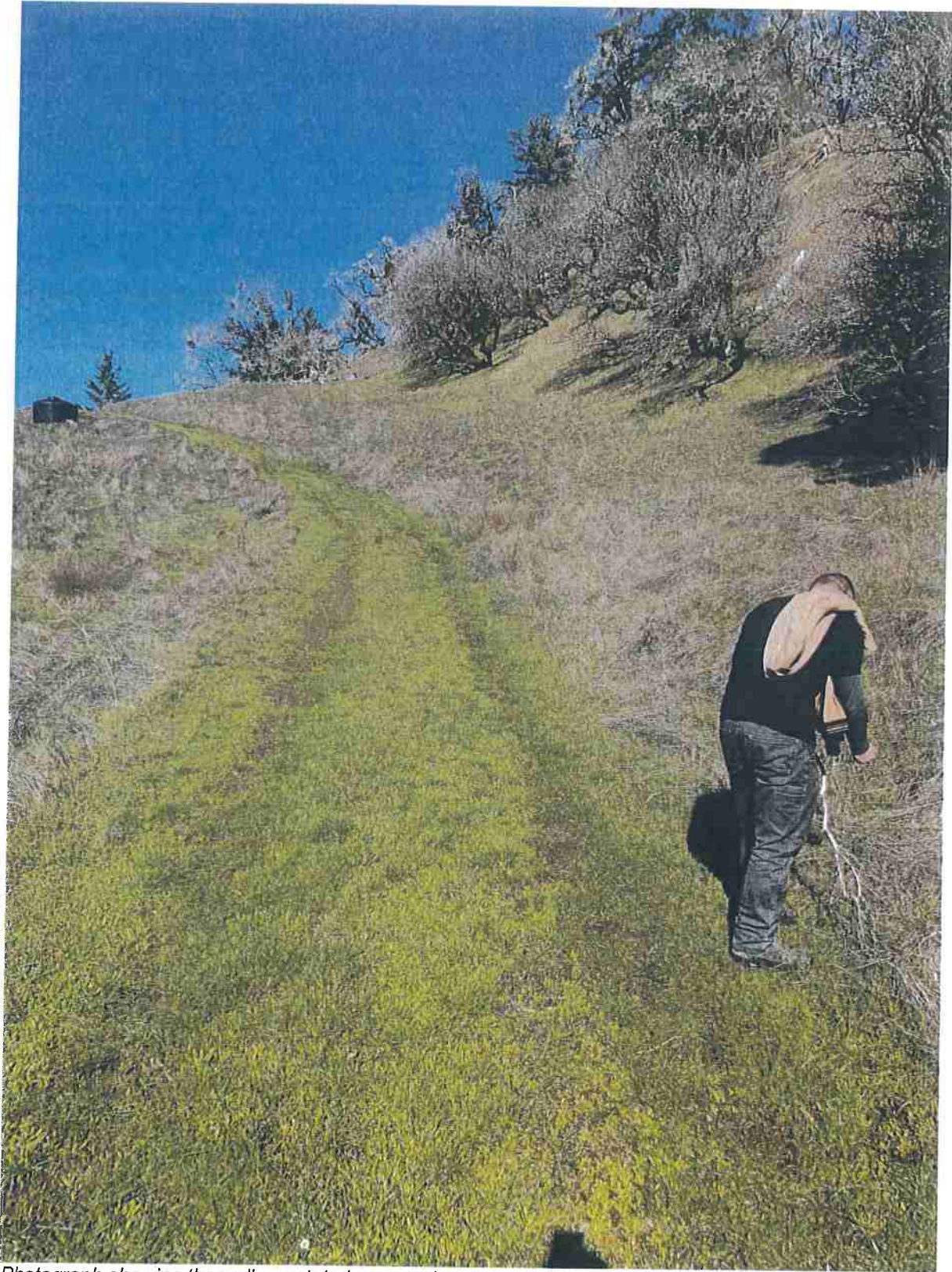
*Photograph showing Cultivation Area D, and the three trenches used for outdoor cultivation purposes.*





*Photograph showing Site 04 where the watercourse joins an inboard ditch after bypassing a knick point.*





*Photograph showing the well-vegetated seasonal access road on the lower parcel.*