Site Management Plan
Technical Report
Order WQ 2019-0001-DWQ

For

Received by HCP&BD
5/20/2024

APN 214-234-007

Located on

0 French Road
Miranda, California

January 2020

Prepared for:
Kevin Bourque
APN 214-234-007
WDID 1_12CC418851
P.O. Box 610, Fortuna, CA 95519

Prepared by:
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I. INTRODUCTION AND PROJECT SUMMARY

Tier 1 and Tier 2 Dischargers enrolled in the State Water Resources Control Board (SWRCB) Cannabis Cultivation Policy Order WQ 2019-0001-DWQ, General Waste Discharge Requirements and Waiver of Waste Discharge Requirements for Discharges of Waste Associated with Cannabis Cultivation Activities (General Order) shall submit and implement a Site Management Plan (Plan) that describes how the Discharger is implementing the Best Practical Treatment or Control (BPTC) measures listed in Attachment A of the State Water Resource Control Board's Cannabis Cultivation Policy (approved April 16, 2019). The Plan may include a schedule to achieve compliance, but all work must be completed by the onset of winter period each year. (The due date does not relieve a Discharger from implementing the interim soil stabilization BPTC measures described in Attachment A.)

This report documents Pacific Watershed Associate's (PWA) Site Management Plan (Plan) for Humboldt County APN 214-234-007, located off 0 French Road, in Miranda, CA, as shown on Figure 1. This property is located approximately 4.5 miles north of Redway, Humboldt County, CA, and hereinafter is referred to as the "Project Site."

The Project Site cultivator ("Discharger") has transferred enrollment in the North Coast Regional Water Quality Control Board Order R1-2015-0023 to the State Water Resources Control Board (SWRCB) Cannabis Cultivation Policy Order WQ 2019-0001-DWQ, General Waste Discharge Requirements and Waiver of Waste Discharge Requirements for Discharges of Waste Associated with Cannabis Cultivation Activities (General Order). A Water Resource Protection Plan (WRPP) was prepared and produced for the Discharger by Timberland Resource Consultants, based on site conditions as of July 16, 2017, and is included as a supplemental attachment to this document. Several remedial measures recommended in the WRPP to comply with the Standard Conditions of the Regional Water Quality Control Board's Order have already been implemented by the landowner.

Based on the total disturbance area, slopes of disturbed areas, and riparian setbacks, this property falls within **Tier 2 Low Risk** of the State Water Resources Control Board (SWRCB) Cannabis Cultivation Policy Order WQ 2019-0001-DWQ, General Waste Discharge Requirements and Waiver of Waste Discharge Requirements for Discharges of Waste Associated with Cannabis Cultivation Activities (General Order). Properties that fall into Tier 1 or 2 of the General Order are required to develop a Site Management Plan (Plan). This Plan has been developed for the Discharger based on site inspections made by PWA on the Project Site and references the remedial actions identified in the existing WRPP pertaining to the Project Site. PWA's recommendations for any remediation or corrective actions are a result of water quality requirements under the General Order, including Best Practical Treatment or Control (BPTCs) designed to meet those requirements. This Plan documents the findings of the site visit and inspection conducted on April 16, 2019 by PWA Staff Geologist Michelle Robinson and Staff Wetlands Scientist Greg Davis, when a reconnaissance level investigation of the property was conducted and the conditions noted.

II. CERTIFICATIONS, LIMITATIONS AND CONDITIONS

This Plan has been prepared by, or under the responsible charge of, a California licensed professional geologist at PWA and all information herein, including treatment recommendations, are based on observations, data, and information collected by PWA staff.

This Plan has been prepared to: 1) provide specific BPTC measures to be utilized on the Project Site to minimize potential threats to water quality; 2) provide itemized remedial actions to be taken on the Project Site to correct existing or potential water quality threats or impacts and meet the general waste discharge requirements of the General Order; and 3) provide a revised schedule for the implementation of the itemized remedial actions. The analysis and recommendations submitted in this Plan and attached WRPP are based on PWA's evaluation of the Project Site and activities which fall under the General Order.

In this Plan and attached WRPP, we have described the recent and current conditions of the Project Site and any water resource and water quality risk factors we observed during our site inspections. PWA is not responsible for problems or issues we did not observe on our site inspections, or for changes that have naturally occurred or been made to the property after our site review. The interpretations and conclusions presented in this Plan are based on reconnaissance level site investigations of inherently limited scope. Observations are qualitative, or semi-quantitative, and confined to surface expressions of limited extent and artificial exposures of subsurface materials. Interpretations of problematic geologic, geomorphic or hydrologic features such as unstable hillslopes, erosional processes and water quality threats are based on the information available at the time of our inspection and on the nature and distribution of existing features we observed on the property.

We have also included a schedule of itemized remedial actions that are based on these observations. The remedial actions provided in this Plan have been developed from professional opinions derived in accordance with current standards of professional practice and are valid as of the date of the most recent or most applicable field inspection. No other warranty, expressed or implied, is made. Furthermore, to ensure proper applicability to existing conditions, the information and remedial actions contained in this report shall be regularly reevaluated and it is the responsibility of the landowner and/or lessee operating under the General Order to ensure that no remedial actions or recommendations are inappropriately applied to conditions on the property that have changed since the recommendations were developed.

If site conditions have changed for any reason, the Project Site should be reevaluated and the Plan and associated recommendations revised and updated as required. These conditions include any changes in land management activities or property conditions that have occurred since our site visit (regardless of what they are, how they occurred, or who performed them). Similarly, if the landowner/lessee uses portions of this property not identified or covered under the current Plan, this Plan will need to be updated with the new information, including possible additions or changes to the recommended remedial or corrective actions and BPTCs.

The person, persons, business or other entity listed as the enrollee under the General Order is responsible for complying with all the requirements thereunder, including the WRPP and related recommendations and requirements, regardless of who is operating or cultivating on that Project Site. If the enrollee is not the sole landowner and fails to comply with the Order and its requirements, the landowner or remaining landowners will automatically assume responsibility for

the requirements therein, including all related penalties or actions brought by the SWRCB and/or NCRWQCB.

If at any time in the future the property is to transfer ownership, it is the responsibility of the current owner(s), or their representative(s), to ensure that the information and recommendations contained herein are called to the attention of any future owner or agent for the property. Unless this Plan is modified by the SWRCB or NCRWQCB, the findings and recommendations contained in this Plan shall be utilized as a tool while implementing the Plan remedial actions. Necessary steps shall be taken to see that contractor(s) and subcontractor(s) carry out such recommendations in the field in accordance with the most current Plan and BPTC standards.

PWA will be responsible for the data, interpretations and recommendations developed by PWA, but will not be responsible for the interpretation by others of that information, for implementation of corrective actions by others, or for additional or modified work arising out of those plans, interpretations, and recommendations. PWA assumes no liability for the performance of other workers or suppliers while following PWA's recommendations in the Plan, unless PWA is under contract to perform or oversee those activities. Additionally, PWA is not responsible for changes in applicable or appropriate standards beyond our control, such as those arising from changes in legislation or regulations, or the broadening of knowledge which may invalidate or alter any of our findings or recommended actions.

Any Plan review or construction management services that may be needed or identified in the recommendations sections of this Plan are separate tasks from the preparation of this Plan and are not a part of the contract under which this Plan was prepared. If requested, additional PWA field inspections, surveys, Plan revisions/updates, project layout, design, permitting, construction oversight/management, or other related services arising from tasks described and recommended in the Plan may be performed under separate agreements requiring advance notice and contracting.

PWA's services consist of professional opinions and recommendations made in accordance with generally accepted principles and practices. No warranty, expressed or implied, or merchantability or fitness, is made or intended in connection with our work, by the proposal for consulting or other services, or by the furnishing of oral or written reports or findings. This Plan, as written or as modified in writing, takes precedence over all other communication. If the client desires assurances against project failures, they shall obtain appropriate insurance through their own insurance broker or guarantor.

Prepared by:

Greg Davis, Staff Wetland Scientist
Pacific Watershed Associates, Inc.
P.O. Box 4433, Arcata, California 95518
Plan finalized on date: January 10, 2020

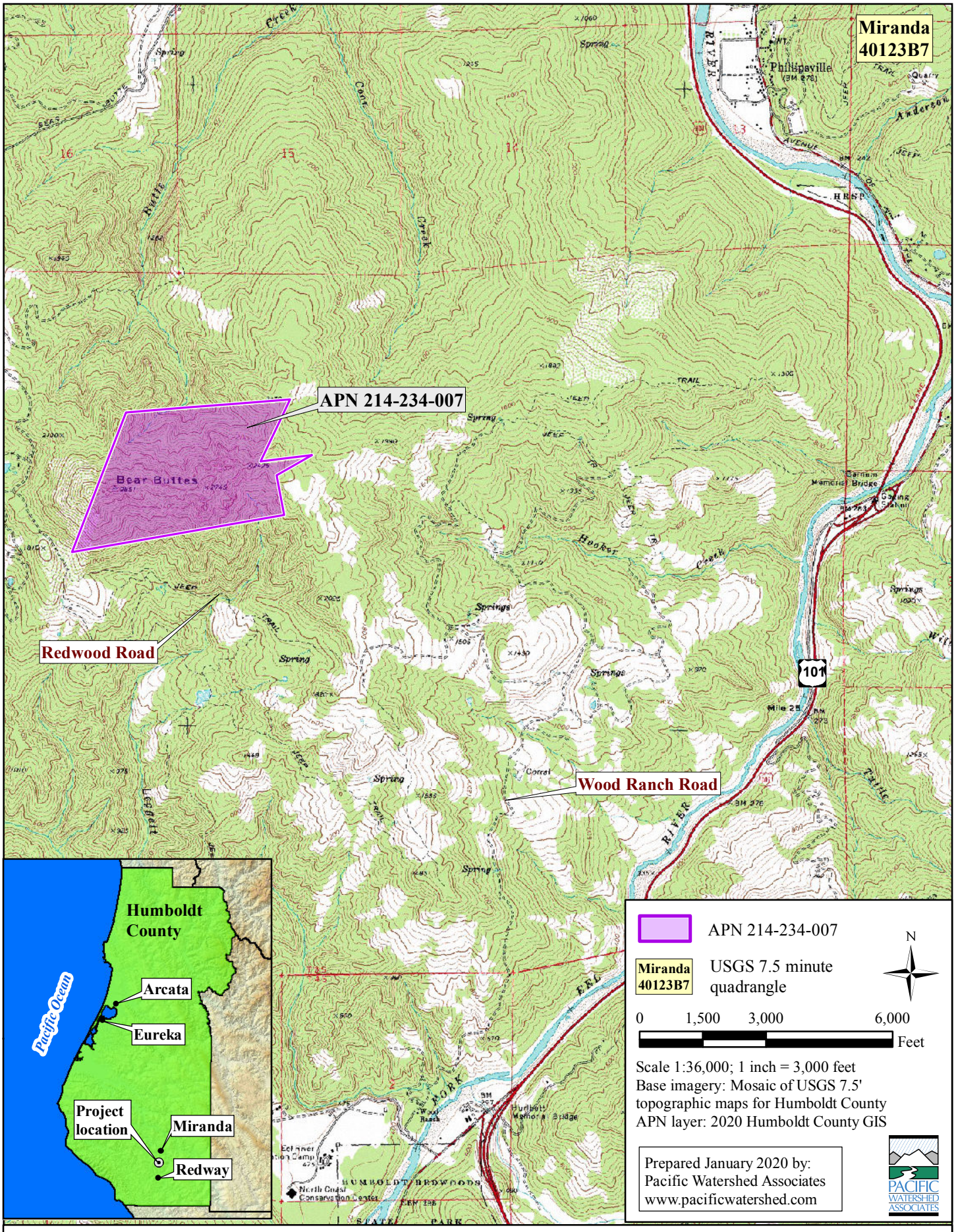

Figure 1. Site Management Plan Location Map for APN 214-234-007, Miranda, Humboldt County, California.

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II. SITE MANAGEMENT PLAN – ORDER WQ 2019-0001-DWQ REQUIREMENTS

1.0 SEDIMENT DISCHARGE BPTC MEASURES

1.1 Site Characteristics

1.1.1 Site Map

See the attached site map, Figure 2 showing access roads, vehicle parking areas, streams, stream crossings, cultivation site(s), disturbed areas, buildings, and other relevant site features as applicable:

- for Region 1 dischargers: legacy waste discharge issues that exist on the property
- erosion prevention BPTC measures
- winterization measures
- sediment control BPTC measures
- storage locations for: fertilizers, pesticides, herbicides, and rodenticides
- petroleum product storage locations
- trash/refuse storage locations
- onsite wastewater treatment system(s), including any domestic wastewater treatment, storage, or disposal area(s)

1.1.2 Access, Maintenance, and Storm Water

The Project Site is accessed by an approximately quarter mile long driveway (see Figure 2, Road 1). The first 200 feet of Road 1 is adjacent to a swale, which is the origin of a Class III watercourse that is conveyed through a culvert near the intersection of Road 1 and Road 2. Due to its proximity to the swale this segment discharges road-related runoff to the crossing, even though there are existing road drainage features that reduce sediment delivery to surface waters. Rolling dips were installed and roads surfaced with rock as part of the recommendations within the WRPP developed by Timberland Resource Consultants (Appendix A).

The cultivation and nursery area have exposed bare ground surfaces but are located on a ridgetop and not in close proximity to surface waters. Surrounding the cultivation site, there are areas where the outboard fillslope of the graded flat are over steepened. These slopes have been stabilized by the establishment of native shrubs, trees, and herbaceous vegetation.

Fine sediment delivery to surface waters on the Project Site will be mitigated by enhancing the existing rolling dips on the road network to make them fully functional and installing additional rolling dips at mapped locations.

1.1.3 Stream Crossings

There is one stream crossing on the Project Site that is located on the parcel boundary. At this crossing, a Class III stream is conveyed across the road

through a 24-inch diameter plastic culvert that is set at the base of fill. The culvert is adequately sized for the 100-year peak streamflow and associated debris, has sufficient barrel extension at the outlet, and both fillslopes are adequately rock armored.

1.1.3.1 Legacy Waste Discharge Issues for Region 1

There is a legacy logging road west of the cultivation area that is duff covered and does not deliver sediment to surface waters. There are no stream crossings on the legacy logging road.

1.2 Sediment Erosion Prevention and Sediment Capture

1.2.1 Erosion Prevention and Sediment Control Measures: BPTCs, Schedule, and Map

Refer to Table 1, for a description of erosion prevention and sediment capture BPTC measures that have been or will be implemented to prevent or limit erosion and capture sediment that has been eroded. The table also includes an implementation schedule for BPTC measures that have not yet been implemented.

An implemented treatment that was recommended in the WRPP from Timberland Resource Consultants was the placement of logs below Road 2 to catch and prevent sediment from delivering to a small pond on an adjacent parcel. Sediment at this location was sourced from concentrated road surface runoff flowing down Road 1 and across Road 2 near Stream Crossing #1. Installation of rolling dips and the application of road rock on Road 1 has reduced sediment transport to this location.

Erosion prevention and sediment control measures will include general road shaping and surfacing to improve existing or create new permanent drainage features to more effectively disconnect concentrated road runoff from surface waters. Other measures include the application of straw mulch and erosion control seed on bare soil areas.

Refer to Figure 2 for the location of erosion prevention and sediment control BPTC measures.

1.2.2 Maintenance Activities – Erosion Prevention and Sediment Control

1.2.2.1 Monitoring and Maintenance

All BPTC measures will be monitored following construction and/or a significant rainfall event. All BPTC measures will be maintained on a regular basis.

1.2.2.2 Captured Sediment

In the event that any excess sediment is generated, all captured sediment will be stabilized and stored in place.

Table 1. Prioritized Implementation Schedule for Best Practicable Treatment or Controls (BPTC).

Schedule	Map Point or Location	Summary of Corrective Actions/Recommendations
CA – Cultivation Area RD – Rolling Dip RDNR – Rolling Dip Needs Repair SC – Stream Crossing W – Winterization <E> – Existing <P> – Proposed OWTS – Onsite Wastewater Treatment System		
	Cultivation Areas	
Nov 15 – Dec 15 Annually	<P> BPTC/W; Cultivation Area (GH #1-3, Nursery)	1) Winter cover crops should be planted in the raised beds or tarped to prevent wind transport of soil.
Nov 15 – Dec 15 Annually as Needed	<P> BPTC/W; Graded Flat for Nursery and the Bare Soil Area between the Shed and Greenhouses	1) Seed and mulch all bare soil areas with 1) barley or wheat-based erosion control seed that does not contain Annual or Perennial Ryegrass and 2) weed-free rice straw.
	Roads	
8/15/2020	<E>/<P> BPTC; RD	1) Rolling dips will be installed at mapped locations along the main road to reduce hydrologic connectivity and sediment delivery to the stream network (See Figure 2). 2) Monitor and maintain all existing (functioning) rolling dips to ensure proper functioning. 3) Generally, road surfaces are rocky; however, roads will be rocked as needed to reduce surface erosion.
8/15/2020	<P> BPTC; RDNR	1) Repair the rolling dip at the mapped location to ensure it is functioning properly. See PWA Typical Drawings #10, #11, and #19A – C, for proper rolling dip construction designs.
	OWTS	
12/15/2020	OWTS & Portable (chemical) toilets	1) The Order requires one or more county-approved (permitted) OWTS on the Project Site. Proof of permitting through the Humboldt County Division of Environmental Health (HCDEH) is required. Work with a qualified professional towards getting an OWTS permitted and installed on your property. 1) Continue utilizing the regularly serviced portable (chemical) toilet until the OWTS can be designed, permitted, and constructed.
4/15/2020	Domestic Water (Graywater)	1) Follow graywater guidelines and regulations described in Chapter 15 "Alternative Water Sources for Non-potable Applications" of the 2019 California Plumbing Code. 2) "Graywater" includes but is not limited to wastewater from bathtubs, showers, bathroom washbasins, clothes washing machines, and laundry tubs; but does not include wastewater from kitchen sinks or dishwashers.

Schedule	Map Point or Location	Summary of Corrective Actions/Recommendations
CA – Cultivation Area RD – Rolling Dip RDNR – Rolling Dip Needs Repair SC – Stream Crossing W – Winterization <E> – Existing <P> – Proposed OWTS – Onsite Wastewater Treatment System		
Petroleum Products		
12/15/2020	<E> BPTC; Petroleum	1) Continue to store petroleum products under sufficient cover and within secondary containment. 2) Keep spill prevention kits accessible to areas where petroleum products are used.
Stream Crossings		
Annually, prior to and after the rain season	BPTC/W; SC #1	1) Monitor and maintain (clean) the culvert inlet/outlet of SC #1 to prevent plugging.
All BPTC measures will conform to the State Water Resources Control Board Order WQ 2019-0001-DWQ guidelines. All BPTC measures are outlined in Section 2 of Attachment A of the General Order.		

1.2.3 Erosion Control BPTC Measures – Interim and Long-term

Please refer to Table 1 for more information regarding erosion control BPTC measures and implementation schedules.

2.0 FERTILIZER, PESTICIDE, HERBICIDE, & RODENTICIDE BPTC MEASURES

2.1 Summary Table

The landowner only uses fertilizers and pesticides for cultivation purposes. No herbicides or rodenticides are used onsite. Table 2 identifies the products used at the site, when they are delivered to the site, and how they are stored and used at the site. Table 2 also describes how products are removed from the site or stored to prevent discharge if they are not consumed before the winter season. The landowner reported that all products are brought to the property as needed and are stored inside plastic totes within the shed in a locked space. The product mixes are typically made in 5-gallon buckets and applied with a sprayer on a weekly basis. Mixes are used in their entirety and the sprayers are rinsed clean. Nutrients and fertilizers are taken off site at the end of the cultivation season to a storage unit. All plastic bottles generated from these products are recycled at a sanitation center in Eureka.

Table 2. Fertilizer and Pesticide Storage and Use

	Product	When Delivered	How Stored	How Used	How Products Are Removed from the Site or Stored to Prevent Discharge If They Are Not Consumed Before the Winter Season
FERTILIZERS	General Hydroponics 3 Part (micro/grow/bloom)	Bought and delivered personally as needed	Plastic totes inside shed	Fertilizers are put into a 550-gallon tank, mixed using a sump pump, and applied twice a week	Excess nutrients left over at the end of the season are taken to a storage unit for the winter
	Vegbloom Shine (phosphorous/potassium bloom booster)				
	Aurora Nutrients Infinity				
PESTICIDES	Lost Coast Plant Therapy	Bought and delivered personally as needed	Plastic totes inside shed	Mixed in 5-gallon bucket and applied with sprayer	If products are not used to completion before onset of winter, they are taken to a storage unit for the winter
	Triact				
	Azaguard				
	PFR 97				
	Mycotrol WP				

2.2 Site Map

Figure 2 identifies the locations of fertilizer and pesticide storage.

2.3 Bulk Fertilizers and Chemical Concentrates

All fertilizers and soil amendments are applied throughout the growing season. Any excess fertilizers or amendments are stored inside a metal nutrient closet within the shop. All empty containers are disposed of at Humboldt Waste Management Authority in Eureka.

2.4 Spill Prevention and Cleanup

The likelihood of chemical spills will be minimized by storing all fertilizers, pesticides, and herbicides off of the ground and in designated enclosed containers and structures. Spill cleanup will be initiated as quickly as possible after occurrence. In the event of spills on pavement or concrete, solid materials will be removed utilizing a broom/brush and pan or vacuum. Affected paved surfaces will be decontaminated using a mild detergent and water. Liquid chemical spills on pavement or concrete will be captured using absorbent materials. Spills of solid or liquid materials on soil will be cleaned by removal of the spilled materials and contaminated soil using a shovel and/or absorbent materials. Contaminated soil will be stored in a labelled sealed container. Disposal of contaminated materials will be conducted in accordance with manufacturer's instructions and local regulations.

3.0 PETROLEUM PRODUCT BPTC MEASURES

3.1 Summary Table

Table 3 identifies the petroleum products used at the site, when they are delivered to the site, and how they are stored and used at the site.

Table 3. Petroleum Product Storage and Use

Product Name	When Delivered	How Stored	How Used	How Products Are Removed from the Site or Stored to Prevent Discharge If They Are Not Consumed Before the Winter Season
Unleaded Gasoline	Bought and delivered personally as needed	Stored in small gas cans outside of the shed within totes and under cover.	Used to power generators and water pump	All empty gas cans are stored outside of the shed within totes and under cover.
Propane	Bought and delivered personally as needed	Stored in 5-gallon tanks outside of the shed within totes and under cover.	Used to heat the shed and shower water	Propane remains in the tanks if they are not consumed before the winter.

3.2 Site Map

Petroleum products are stored outside the cabin/shed within secondary containment and under cover.

3.3 Handling

Please refer to Table 3, above, for more information regarding petroleum delivery, storage, application, and disposal. Refer to Table 1 for specific BPTC measures for handling and storage of petroleum products onsite.

3.4 Spill Prevention and Cleanup

The likelihood of petroleum spills will be minimized by storing all petroleum off of the ground and in designated enclosed containers and structures. Spill cleanup will be initiated as quickly as possible after occurrence. Liquid petroleum spills on pavement or concrete will be captured using absorbent materials. Spills of liquid materials on soil will be cleaned by removal of the spilled materials and contaminated soil using a shovel and/or absorbent materials. Contaminated soil will be stored in a labelled sealed container. Disposal of contaminated materials will be conducted in accordance with manufacturer's instructions and local regulations. Spill prevention cleanup kits will be readily available and located where fuel is stored and where refueling occurs.

4.0 TRASH/REFUSE, AND DOMESTIC WASTEWATER BPTC MEASURES

4.1 Types, Containment, and Disposal of Trash/Refuse

Trash and refuse typically includes domestic waste such as general household trash and organic materials. Cultivation-related wastes include organic wastes (cannabis stems, leaves, roots, etc.), plastic pots and planting materials, plastic containers, and degraded plastic tarps. Cultivation materials are reused if possible, otherwise they are disposed of. Trash is stored outside of the shed and is taken off sight once every two weeks via large utility or dump trailer. Trash generated on the Project Site is taken to the Humboldt Waste Management Authority in Eureka.

4.1.1 Site Map

Trash/refuse are stored outside of the shed (Figure 2).

4.2 Domestic Wastewater Generation and Disposal

Refer to Table 2 for specific BPTC measures and implementation schedules for domestic wastewater generation and disposal.

4.2.1 Domestic Wastewater Generation

There are 2 employees at the Project Site during the cultivation season that contribute to domestic wastewater generation. There is a utility sink, as well as a hand washing station, outside of the shed.

4.2.2 Domestic Wastewater Disposal

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

Currently, there is not an onsite wastewater treatment system on the Project Site. The Order requires one or more county-approved (permitted) OWTS on the Project Site. Proof of permitting through the Humboldt County Division of Environmental Health (HCDEH) is required.

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

An ADA portable chemical toilet is on the property year-round across the road from the shed (Figure 2). The chemical toilet is serviced weekly or biweekly depending on available of the service company.

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 are no outhouses or similar facilities on the Project Site.

4.2.3 Site Map

Figure 2 identifies the location of the portable toilet onsite.

5.0 WINTERIZATION BPTC MEASURES

5.1 Winterization Activities

Please refer to Table 1 for information regarding winterization activities and implementation schedules.

Proposed winterization activities include the application of straw mulch and erosion control seed on the graded pad for the nursery, tarping or planting cover crops on the raised beds, and monitoring the culvert inlet and outlet of SC #1 to ensure it is open and free of debris.

5.2 Maintenance of Drainage or Sediment Capture Features

Please refer to Table 1 for information regarding winterizations activities and implementation schedules.

5.3 Revegetation

No land disturbance activities requiring winter revegetation is planned or anticipated.

5.4 BPTC Measures That Cannot Be Completed Before Onset of Winter

Please refer to Table 1 for information regarding winterizations activities and implementation schedules.

5.5 Legacy Waste Discharge Issues for Specific Regions

There are no legacy waste discharge issues at the Project Site.

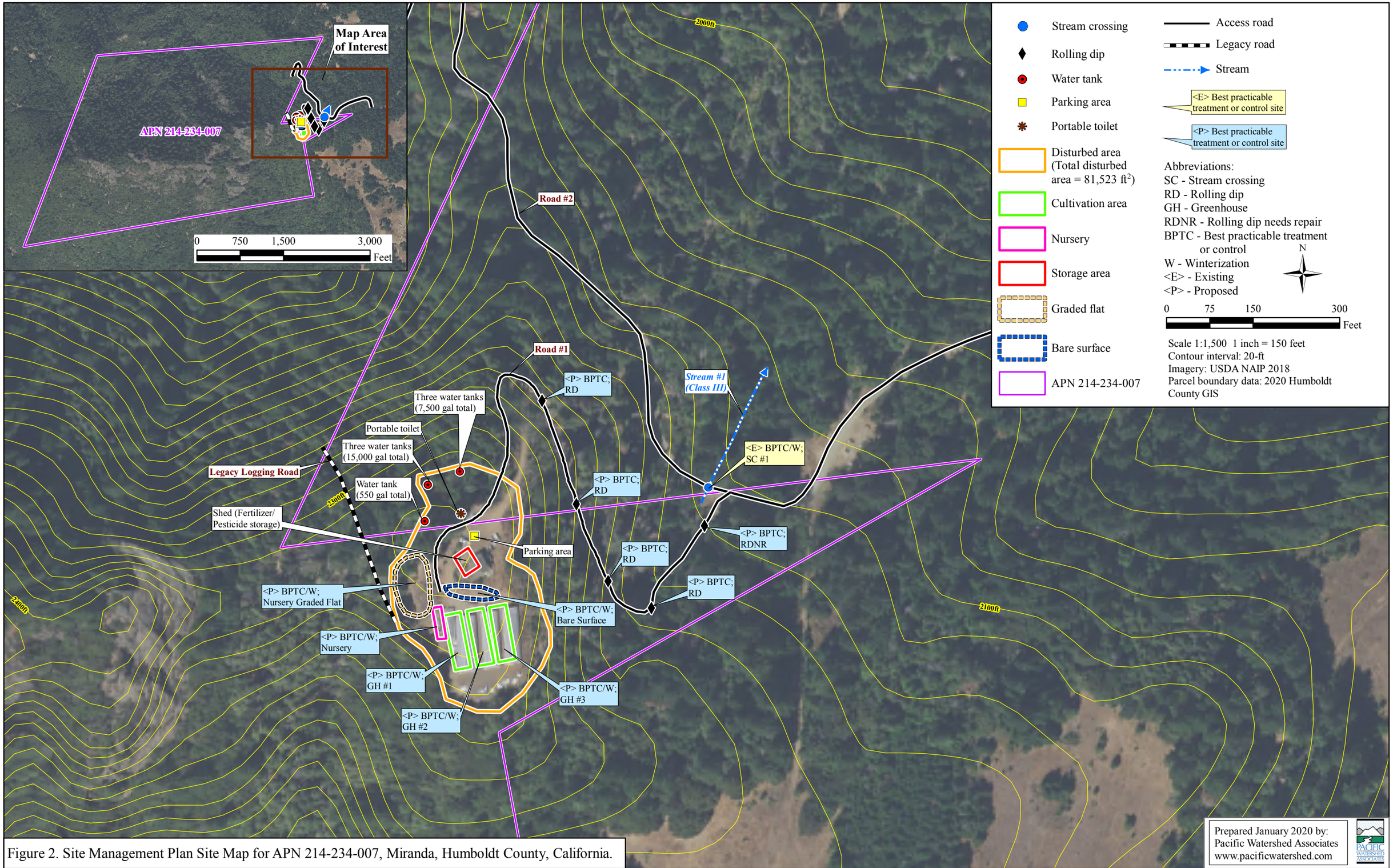

Figure 2. Site Management Plan Site Map for APN 214-234-007, Miranda, Humboldt County, California.

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IV. LEGALLY RESPONSIBLE PERSON CERTIFICATION/SIGNATURES

This Site Management Plan has been prepared by Pacific Watershed Associates on behalf of the Discharger.

"I have read and understand this Site Management Plan, including Section II – Certifications, Conditions and Limitations, and the associated attachments. I agree to comply with the requirements of the State Water Resources Control Board (SWRCB) Cannabis Cultivation Policy Order WQ 2019-0001-DWQ, General Waste Discharge Requirements and Waiver of Waste Discharge Requirements for Discharges of Waste Associated with Cannabis Cultivation Activities (General Order), including the recommendations and actions listed in this Site Management Plan."

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

Name of Legally Responsible Person (LRP): _____

Title (owner, lessee, operator, etc.): _____

Signature: _____ Date: _____

APPENDIX A

Water Resources Protection Plan (WRPP) for Kevin Bourque

County APN **214-234-007**.

Water Resource Protection Plan

APN 214-234-007

180101060405TRC26

Submitted to:

Kevin Bourque

Prepared by:

Timberland Resource Consultants

165 South Fortuna Blvd

Fortuna, CA 95540

Purpose

This Water Resource Protection Plan (WRPP) has been prepared on behalf of the property owner, Ryan Zuccaro, by agreement and in response to the California Water Code Section 13260(a), which requires that any person discharging waste or proposing to discharge waste within any region that could affect the quality of the waters of the state, other than into a community sewer system, shall file with the appropriate regional water board a Report of Waste Discharge (ROWD) containing such information and data as may be required by the Regional Water Board. The Regional Water Board may waive the requirements of Water Code section 13260 for specific types of discharges if the waiver is consistent with the Basin Plan and in the public interest. Any waiver is conditional and may be terminated at any time. A waiver should include monitoring requirements to verify the adequacy and effectiveness of the waiver's conditions. Order R1-2015-0023 conditionally waives the requirement to file a ROWD for discharges and associated activities described in finding 4.

Scope of Report

Order No. R1-2015-0023 states that "Tier 2 Dischargers and Tier 3 Dischargers who intend to cultivate cannabis before, during, or following site cleanup activities shall develop and implement a water resource protection plan that contains the elements listed and addressed below. Dischargers must keep this plan on site, and produce it upon request by Regional Water Board staff. Management practices shall be properly designed and installed, and assessed periodically for effectiveness. If a management measure is found to be ineffective, the plan must be adapted and implemented to incorporate new or additional management practices to meet standard conditions. Dischargers shall certify annually to the Regional Water Board individually or through an approved third party program that the plan is being implemented and is effectively protecting water quality, and report on progress in implementing site improvements intended to bring the site into compliance with all conditions of this Order."

Methods

The methods used to develop this WRPP include both field and office components. The office component consisted of reviewing soil maps (California Cooperative Soil-Vegetation Survey), CGS Geomorphic Features Map (North Coast Watersheds Mapping, DMG CD 99-002, 1999). The field component included identifying and accurately mapping all watercourses, wet areas, and wetlands located downstream of the cultivation areas, associated facilities, and all appurtenant roads accessing such areas. An accurate location of the Waters of the State is necessary to make an assessment of whether potential and existing erosion sites/pollution sites have the potential to discharge waste to an area that could affect waters of the State (including groundwater). Next, all cultivation areas, associated facilities, and all appurtenant roads accessing such areas were assessed for discharges and related controllable water quality factors from the activities listed in Order R1-2015-0023, Finding 4a-j. The field assessment also included an evaluation and determination of compliance with the Standard Conditions per Provision I.B of Order No. R1-2015-

0023. The water resource protection plans required under Tier 2 are meant to describe the specific measures a discharger implements to achieve compliance with standard conditions. Therefore, all required components of the water resource protection plan per Provision I.B of Order No. R1-2015-0023 were physically inspected and evaluated. A comprehensive summary of each Standard Condition as it relates to the subject property is appended.

Methods

Identified Sites Requiring Remediation

Location	Map Point Description	Associated Standard Condition	Temporary BMP	Permanent BMP	Treatment Priority	Time Schedule for completion of Permanent BMP	Completion Date
Road Point #4 GPS 962 N 40.18363196' W -123.82642594'	Main Access Road	A.1.a.	N/A	Reshape armor rolling dip to ensure surface water discharge. Armoring ensures stability and longevity	2	10/15/17	
Road Point #5 GPS 963 N 40.1835903' W -123.82619008'	Main Access Road	A.1.a.	N/A	Reshape armor rolling dip to ensure surface water discharge. Armoring ensures stability and longevity Reshape, woven geotextile and surface rock application on approximately 300'. Starting from Road Point #5 to Stream Crossing #1	2	10/15/17	
Road Point #6 GPS 964 N 40.18398089' W-123.82568792'	Main Access Road	A.1.a.	N/A	Reshape and armor rolling dip to ensure surface water discharge along with stability and longevity of dip	2	10/15/17	

Road Point #7 GPS 967 N 40.18490525' W -123.82379176'	Main Access Road	A.1.a	N/A	Reshape and armor rolling dip to ensure surface water discharge along with stability and longevity of dip	2	10/15/17	
Road Point #8 GPS 968 N 40.18490027' W -123.82322841'	Main Access Road	A.1.a	N/A	Placement of 18"-30' ditch relief culvert to break inboard ditch hydrology	2	10/15/17	
Erosion Point #1 GPS 930 N 40.18421735' W -123.82546496'	Main Access Road and Agricultural/Wildlife Pond	A.1.a	N/A	Sediment from above road segment delivering to agriculture/wildlife pond Filling of pond and reducing capacity Placement of a series of log catchment structures	2	10/15/17	
Erosion Point #2 GPS 932/937/943 N 40.18308839' W -123.82732507'	Surrounding Cultivation Sites	A.1.a	N/A	Cutbanks surrounding cultivation sites at a 40-45% slope Cutbanks experiencing surface erosion. Due to steepness of slopes, areas to be seeded and straw mulched as needed.	2	10/15/17	
Stockpile #1 GPS 938 N 40.18340573' W -123.8274653'	Between Greenhouse and residence	A.1.a	N/A	Stockpile of cultivation relating material including pvc pipe, metal posts and bamboo poles. Material not in close proximity to watercourse Securing material during winter is necessary to prevent transport to lower elevations where material may enter waterways	2	10/15/17	

Stream Crossing #1 GPS 964 N 40.18398089' W -123.82568792'	Near Agriculture/Wildlife Pond	A.2.a	N/A	Placement of new 24"-30' culvert to ensure transport of seasonal drainage and woody/herbaceous material passage	2	10/15/17	
Stream Crossing #2 GPS 965 N 40.18475018' W -123.82434723'	Main Access Road	A.2.a	N/A	Existing 24"-20' ditch relief culvert-In good condition Outlet experiencing down cutting and bank loss Removal of perched material and rock armor channel Placement of 1/4" rip rap within channel and along toe of bank 10' x 8' x 3'=1 cubic yard	2	10/15/17	
Road Point #3 GPS 969 N 40.18457023' W -123.82292407'	Main Access Road	A.2.a	N/A	Placement of a 24"-20' stream crossing culvert	2	10/15/17	
Water Storage and Use GPS 957 N 40.18411827' W -123.82757334' GPS 951 N 40.18382088' W -123.82784626'	Storage Tanks	A.5.a	N/A	Placement of water meter at well source	2	4/15/17	
Water Storage and Use Throughout	Throughout	A.5.a	N/A	Conduct monitoring and reporting on application rates	2	4/15/17	

Irrigation Efficiency	All Cultivation Sites	A.6.a	N/A	Conduct monitoring and reporting on application rates	2	4/15/17	
Fertilizers and Soil Amendments	Throughout	A.7.a	N/A	Conduct monitoring and reporting on application rates	2	10/15/17	
Petroleum	Throughout	A.9.a	N/A	Provide drip trays for all generators and gas tanks	2	4/15/17	

Coordinates associated with sites UTM 10 NAD 83

Treat Priority: The time frame for treatment of each specific site.

(1) Indicates a very high priority with treatment being planned to occur immediately.

(2) Indicates a high priority site with treatment to occur prior to the start of the winter period (Nov. 15).

(3) Indicates a moderate priority with treatment being planned to occur within a year 1, or prior to the winter period (Nov. 15) of the 2nd season of operations.

(4) Indicates a low priority with treatment being planned to occur in the shortest time possible, but no later than the expiration of this Order (five years).

Identified Sites Not Requiring Mitigation

Site	Description	Planned Monitoring

Monitoring Plan

Tier 2 Dischargers shall include a monitoring element in the water resource protection plan that at a minimum provides for periodic inspection of the site, checklist to confirm placement and efficacy of management measures, and document progress on any plan elements subject to a time schedule. Tier 2 Dischargers shall submit an annual report (Appendix C) by March 31 of each year that documents implementation and effectiveness of management measures during the previous year. Tier 2 annual reporting is a function that may be provided through an approved third party program.

Monitoring of the site includes visual inspection and photographic documentation of each feature of interest listed on the site map, with new photographic documentation recorded with any notable changes to the feature of interest. At a minimum, all site features must be monitored annually, to provide the basis for completion of the annual re-certification process. Additionally, sites shall be monitored at the following times to ensure timely identification of changed site conditions and to determine whether implementation of additional management measures is necessary to iteratively prevent, minimize, and mitigate discharges of waste to surface water: 1) just prior to October 15 to evaluate site preparedness for storm events and storm water runoff, 2) following the accumulation of 3" total precipitation or by November 15, whichever is sooner, and 3) following any rainfall event with an intensity of 3" precipitation in 24 hours. Precipitation data can be obtained from the National Weather Service Forecast Office (e.g. by entering the zip code of the parcel location at http://www.srh.noaa.gov/forecast).

Inspection Personnel Contact Information:

Todd W. Golder

Timberland Resource Consultants

165 South Fortuna Blvd, Fortuna CA 95540

707-601-7014

Monitoring Plan Reporting Requirements

Order No. R1-2015-0023, Appendix C must be submitted to the Regional Water Board or approved third party program upon initial enrollment in the Order (NOI) and annually thereafter by March 31. Forms submitted to the Regional Water Board shall be submitted electronically to northcoast@waterboards.ca.gov. If electronic submission is infeasible, hard copies can be submitted to: North Coast Regional Water Quality Control Board, 5550 Skylane Boulevard, Suite A, Santa Rosa, CA 95403.

Water Resource Protection Plan

Assessment of Standard Conditions

APN 214-234-007

180101060405TRC26

Assessment of Standard Conditions consisted of field examinations in the summer of 2016. The examination evaluated areas near, and areas with the potential to directly impact, watercourses for sensitive conditions including, but not limited to, existing and proposed roads, skid trails and landings, unstable and erodible watercourse banks, unstable upslope areas, debris, jam potential, inadequate flow capacity, changeable channels, overflow channels, flood prone areas, and riparian zones. Field examinations also evaluated all roads and trails on the property, developed areas, cultivation sites, and any structures and facilities appurtenant to cultivation on the property. Anywhere the Standard Conditions are not met on the property, descriptions of the assessments and the prescribed treatments are outlined following each associated section below.

Summary of Standard Conditions Compliance

1. Site maintenance, erosion control, and drainage features Y☐/N ☒
2. Stream crossing maintenance Y☐/N ☒
3. Riparian and wetland protection and management Y ☒ /N☐
4. Spoils management Y☒/N ☐
5. Water storage and use Y☐/N☒
6. Irrigation runoff Y ☐ /N ☒
7. Fertilizers and soil amendments Y☒ /N☐
8. Pesticides and herbicides? Y ☒ /N☐
9. Petroleum products and other chemicals Y☐/N☒
10. Cultivation-related wastes Y ☒ /N☐
11. Refuse and human waste Y☒/N☐

A. Standard Conditions, Applicable to all Dischargers

1. Site maintenance, erosion control and drainage features

A) Roads shall be maintained as appropriate (with adequate surfacing and drainage features) to avoid developing surface ruts, gullies, or surface erosion that results in sediment delivery to surface waters.

B) Roads, driveways, trails, and other defined corridors for foot or vehicle traffic of any kind shall have adequate ditch relief drains or rolling dips and/or other measures to prevent or minimize erosion along the flow paths and at their respective outlets

C) Roads and other features shall be maintained so that surface runoff drains away from potentially unstable slopes or earthen fills. Where road runoff cannot be drained away from an unstable feature, an engineered structure or system shall be installed to ensure that surface flows will not cause slope failure.

D) Roads, clearings, fill prisms, and terraced areas (cleared/developed areas with the potential for sediment erosion and transport) shall be maintained so that they are not hydro logically connected[1], as feasible, from surface waters, including wetlands, ephemeral, intermittent and perennial streams.

E) Ditch relief drains, rolling dip outlets, and road pad or terrace surfaces shall be maintained to promote infiltration/dispersal of outflows and have no apparent erosion or evidence of soil transport to receiving waters.

Connected roads are road segments that deliver road surface runoff, via the ditch or road surface, to a stream crossing or to a connected drain that occurs within the high delivery potential portion of the active road network. A connected drain is defined as any cross-drain culvert, water bar, rolling dip, or ditch-out that appears to deliver runoff to a defined channel. A drain is considered connected if there is evidence of surface flow connection from the road to a defined channel or if the outlet has eroded a channel that extends from the road to a defined channel. (http://www.forestsandfish.com/documents/Road_Mgmt_Survey.pdf)

Road Point #1: GPS 959

- Rolling Dip functioning

Road Point #2: GPS 960

- Rolling Dip functioning

Road Point #3: GPS 961

- Rolling Dip functioning

Road Point #4: GPS 962

- Reshape and armor rolling dip to ensure surface water discharge along with stability and longevity of dip

Road Point #5: GPS 963

- Placement of armor rolling dip to ensure surface water discharge along with stability and longevity of dip

- Reshape, woven geotextile and surface rock application on approximately 300'.
- Starting from Road Point #5 to Stream Crossing #1

Road Point #6: GPS 964

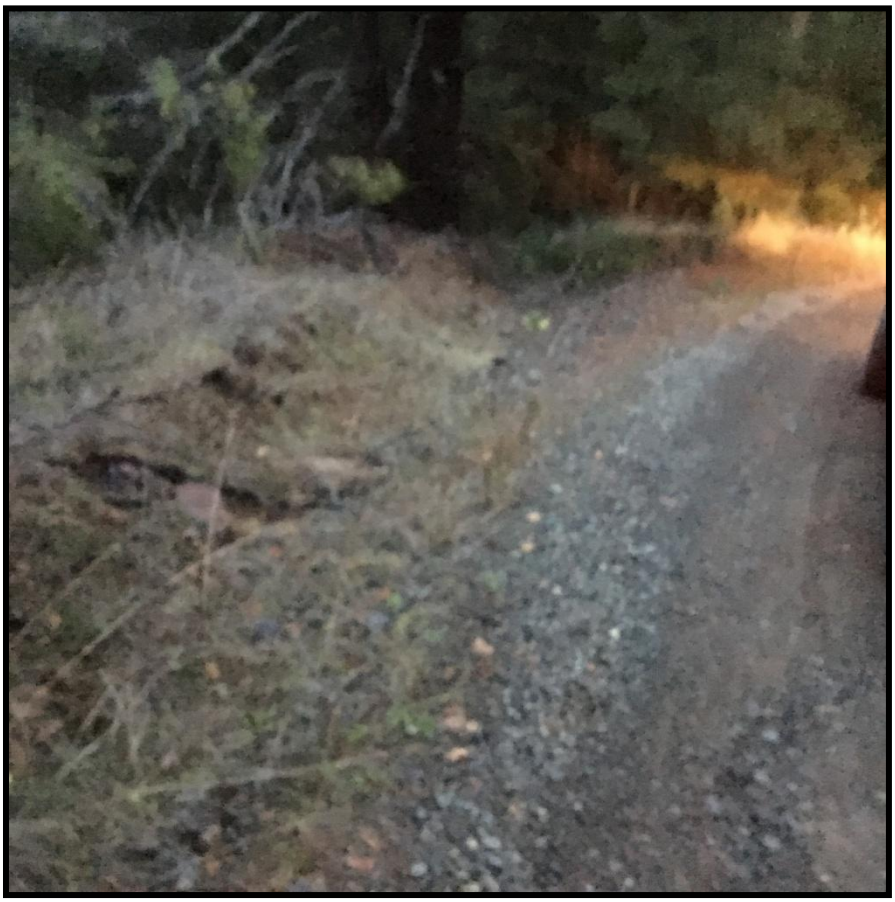
- Placement of armor rolling dip to convey surface runoff into seasonal drainage.

Road Point #7: GPS 967

- Placement of armor rolling dip to convey surface runoff on the outboard side of the road

Road Point #8: GPS 968

- Placement of 18"-30' ditch relief culvert to break inboard ditch hydrology



Erosion Point #1 GPS 930

- Sediment from above road segment delivering to agriculture/wildlife pond
- Filling of pond and reducing capacity
- Placement of a series of log catchment structures

Erosion Point #2 GPS 932/937/943

- Cutbanks surrounding cultivation sites at a 40-45% slope
- Soil is permeable and no evidence of rill formation
- Litter movement is evident
- Cutbanks experiencing surface erosion.
- Due to steepness of slopes, areas to be seeded and straw mulched as needed.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* ***All erosion related sites shall be monitored prior to and following prescribed treatments***

**** Refer to Figure 28/36-Rolling Dip Types -The Handbook for Forest, Ranch and Rural Road***

**** Refer to Figure 79-Rip Rap Application -The Handbook for Forest, Ranch and Rural Road***

F) Stockpiled construction materials are stored in a location and manner so as to prevent their transport to receiving waters.

Stockpile #1: Near Residence Structure-GPS 938

- Stockpile of cultivation relating material including pvc pipe, metal posts and bamboo poles.
- Material not in close proximity to watercourse
- Securing material during winter is necessary to prevent transport to lower elevations where material may enter waterways

2. Stream Crossing Maintenance

Culverts and stream crossings shall be sized to pass the expected 100-year peak streamflow.

Culverts and stream crossings shall be designed and maintained to address debris associated with the expected 100-year peak streamflow.

Culverts and stream crossings shall allow passage of all life stages of fish on fish-bearing or restorable streams, and allow passage of aquatic organisms on perennial or intermittent streams.

Stream crossings shall be maintained so as to prevent or minimize erosion from exposed surfaces adjacent to, and in the channel and on the banks.

Culverts shall align with the stream grade and natural stream channel at the inlet and outlet where feasible.[2]

Stream crossings shall be maintained so as to prevent stream diversion in the event that the culvert/crossing is plugged, and critical dips shall be employed with all crossing installations where feasible.[3]

Stream Crossing #1: GPS 964

- Placement of new 24"-30' culvert to ensure transport of seasonal drainage and woody/herbaceous material passage

[2] At a minimum, the culvert shall be aligned at the inlet. If infeasible to align the culvert outlet with the stream grade or channel, outlet armoring or equivalently effective means may be applied.

[3] If infeasible to install a critical dip, an alternative solution may be chosen.

Stream Crossing #2: GPS 965

- Existing 24"-20' ditch relief culvert-In good condition
- Outlet experiencing down cutting and bank loss
- Removal of perched material and rock armor channel
- Placement of 1/4" rip rap within channel and along toe of bank
- 10' x 8' x 3'=1 cubic yard

Stream Crossing #3: GPS 969

- Placement of a 24"-20' stream crossing culvert
- No Photo

**** All stream crossings are sized for the 100 year storm event using the rationale method.***

3. Riparian and Wetland Protection and Management

For Tier 1 Dischargers, cultivation areas or associated facilities shall not be located within 200 feet of surface waters. While 200 foot buffers are preferred for Tier 2 sites, at a minimum, cultivation areas and associated facilities shall not be located or occur within 100 feet of any Class I or II watercourse or within 50 feet of any Class III watercourse or wetlands. The Regional Water Board for Tier 1 Dischargers, cultivation areas or associated facilities shall not be located within 200 feet of surface waters. While 200 foot buffers are preferred for Tier 2 sites, at minimum, cultivation areas and associated facilities shall not be located or occur within 100 feet of any Class I or II watercourse or within 50 feet of any Class III watercourse or wetlands. The Regional Water Board or its or its Executive Officer may apply additional or alternative[4] conditions on enrollment, including site-specific riparian buffers and other BMPs beyond those identified in water resource protection plans to ensure water quality protection.

Buffers shall be maintained at natural slope with native vegetation.

Buffers shall be of sufficient width to filter wastes from runoff discharging from production lands and associated facilities to all wetlands, streams, drainage ditches, or other conveyances. Riparian and wetland areas shall be protected in a manner that maintains their essential functions, including temperature and microclimate control, filtration of sediment and other pollutants, nutrient cycling, woody debris recruitment, groundwater recharge, streambank stabilization, and flood peak attenuation and flood water storage.

- Standard condition is being met at this time

4. Spoils Management

[4] Alternative site-specific riparian buffers that are equally protective of water quality may be necessary to accommodate existing permanent structures or other types of structures that cannot be relocated.

Spoils[5] shall not be stored or placed in or where they can enter any surface water.

Spoils shall be adequately contained or stabilized to prevent sediment delivery to surface waters.

Spoils generated through development or maintenance of roads, driveways, earthen fill pads, or other cleared or filled areas shall not be sidecast in any location where they can enter or be transported to surface waters.

- Standard condition is being met at this time

5. Water Storage and Use

Size and scope of an operation shall be such that the amount of water used shall not adversely impact water quality and/or beneficial uses, including and in consideration with other water use by operations, instream flow requirements and/or needs in the watershed, defined at the scale of a HUC-12[6] watershed or at a smaller hydrologic watershed as determined necessary by the Regional Water Board Executive Officer.

Water conservation measures shall be implemented. Examples include use of rainwater catchment systems or watering plants with a drip irrigation system rather than with a hose or sprinkler system.

For Tier 2 Dischargers, if possible, develop off-stream storage facilities to minimize surface water diversion during low flow periods.
Water is applied using no more than agronomic rates.[7]

Diversion and/or storage of water from a stream should be conducted pursuant to a valid water right and in compliance with reporting requirements under Water Code section 5101.
Water storage features, such as ponds, tanks, and other vessels shall be selected, sited, designed, and maintained so as to insure integrity and to prevent release into waters of the state in the event of a containment failure.

[5] Spoils are waste earthen or organic materials generated through grading or excavation, or waste plant growth media or soil amendments. Spoils include but are not limited to soils, slash, bark, sawdust, potting soils, rock, and fertilizers.

[6] See definition and link to maps at: http://water.usgs.gov/GIS/huc.html

[7] "Agronomic rates" is defined as the rates of fertilizer and irrigation water that a plant needs to enhance soil productivity and provide the crop or forage growth with needed nutrients for optimum health and growth, without having any excess water or nutrient percolate beyond the root zone.

Irrigation is obtained from two sources

1. Agricultural Well located on adjacent parcel
   - WRPP written for adjacent property-Water meter to be placed on well

2. Livestock/Wildlife pond
   - Pumped to two (2) sets of storage tanks
   - Pond has the potential of being expanding to increase capacity

- 1st Set- Three (3) 5000 gallon storage tanks (GPS 957)
  - Float assembly within storage tanks
  - Delivered by a 1" Polyethylene pipe to lower greenhouses

- 2nd Set- Three (3) 5000 gallon storage tanks (GPS 952-953)
- Float assembly within storage tanks
- Delivered by a 1" polyethylene pipe to mixing tank.

- 550 gallon mixing tank (GPS 954)

Irrigation delivered to three (3) greenhouses

Greenhouse #1: (GPS 932,933,938,939)

- 96' x 30'= 2880 Square feet
- Three raised beds-8' x 90'= 720 sqft x 3= 2160 square feet
- Raised beds drip on irrigation system
- For water conservation purposes, weed free straw much or wood chips to be placed around plants

Greenhouse #2: (GPS 934,935,940,941)

- 96' x 30'= 2880 Square feet
- Three raised beds-8' x 90'= 720 sqft x 3= 2160 square feet
- Raised beds on drip irrigation system
- For water conservation purposes, weed free straw much or wood chips to be placed around plants

Greenhouse #3: (GPS 936,937,942, 943)

96' x 30'= 2880 Square feet

- Three raised beds-8' x 90'= 720 sqft x 3= 2160 square feet
- Raised beds on drip irrigation system
- For water conservation purposes, weed free straw much or wood chips to be placed around plants

Smart Pot Sites: (GPS 944-945,956)

- Seventy five (75) plants
- 65 gallon pots
- Upper Terrace
  - Square footage= 60' x 20'=1200 square feet
- Lower Terrace
  - Square footage= 60' x 4'=240 square feet
- Site on drip irrigation
- For water conservation purposes, weed free straw much or wood chips will be placed around plants

- Smart pots to be moved into greenhouse next season and incorporated into raised bed square footage

Available/Utilized Water

Raised Bed = 2880 square feet per greenhouse x 3 = 8640 square foot

- Plants are watered @ 1.5 gallons per 10 sqft

8640 sqft/10 sqft=864 x 1.5=1296 per watering

1296 gallons x 15 days of watering/month = 19,440 gallons

1296 gallons x 30 days of watering/month = 38,880 gallons

19,440 gallons/month x 6 months= 116,640 gallons

38,880 gallons/month x 6 months= 233,280 gallons

Full Term- Smart Pots

Watering per plant

- 5 gallons per watering
- Approximately 75 plants

5 gallons x 15 days= 75 gallons per month/per plant
5 gallons x 30 days= 150 gallons per month/per plant

75 plants x 75 gallons/month= 5,625 gallons per month
75 plants x 150 gallons/month= 11,250 gallons per month

5625 gallons x 6 months= 33,750 gallons per season
11,250 gallons x 6 months= 67,500 gallons per season

Standard condition is not being met at this time

- Water meter installation is needed
- Irrigation schedule will be documented and reported in 2017

6. Irrigation Runoff

Implementing water conservation measures, irrigating at agronomic rates, applying fertilizers at agronomic rates and applying chemicals according to the label specifications, and maintaining stable soil and growth media should serve to minimize the amount of runoff and the concentration of chemicals in that water. In the event that irrigation runoff occurs, measures shall be in place to treat/control/contain the runoff to minimize the pollutant loads in the discharge. Irrigation runoff shall be managed so that any entrained constituents, such as fertilizers, fine sediment and suspended organic particles, and other oxygen consuming materials are not discharged to nearby watercourses. Management practices include, but are not limited to, modifications to irrigation systems that reuse tailwater by constructing off-stream retention basins, and active (pumping) and or passive (gravity) tailwater recapture/redistribution systems. Care shall be taken to ensure that irrigation tailwater is not discharged towards or impounded over unstable features or landslides.

- The irrigation system for all cultivation sites are hand watered.
- Future water conservation practices includes converting system to a drip irrigation system
- Due to the distance between the greenhouses and watercourses there should be no hydrological connectivity between irrigation and watercourse.
- Refer to irrigation schedule. Additional monitoring and reporting to take place in 2017.

7. Fertilizers and Soil Amendments

Fertilizers, potting soils, compost, and other soils and soil amendments shall be stored in locations and in a manner in which they cannot enter or be transported into surface waters and such that nutrients or other pollutants cannot be leached into groundwater.

Fertilizers and soil amendments shall be applied and used per packaging instructions and/or at proper agronomic rates.

Cultivation areas shall be maintained so as to prevent nutrients from leaving the site during the growing season and post-harvest.

- Permanent shipping container (GPS 812-815) stores all organic fertilizers and soil amendments.

Soil Mix

1) Black Gold Natural Organic Potting Soil

- Purchased by the bag
- Combination of organic matter and drainage enhancers. Includes sphagnum peat moss, compost and finely ground forest products for water retention. Coarse perlite and pumice are incorporated for a moist, yet aerated root zone.

2) Roots Organic Green Fields

- Purchased by the bag
- Ocean-nutrient-based growing mix designed for both the vegetative-and flowering phases of mature plants.
- Composted Forest Material, Peat Moss, Perlite, Coco Fiber, Pumice, Worm Castings, Crab Meal, Feather Meal, Fish Meal, Bat Guano, Soybean Meal, Fish Bone Meal, Kelp Meal

Liquid Organic Fertilizers

- Five hundred fifty (550) gallon storage tank is used for mixing tank.

Cutting Edge Hydroponic Nutrients-GROW:

Comprised of a high quality Nitrogen and Calcium base, fortified with micro nutrients. **Micro** is to be used throughout the entire growth cycle of a plant, regardless of vegetative or flowering cycles.

N 6.00% – P 0.00% – K 0.00%

Grow

To be used in the vegetative stage, adds more Nitrogen for growth, and Potassium to enhance the plant's photosynthetic rate and energy transfer throughout the plant.

N 2.00% – P 1.00% – K 6.00%

Bloom is the second component of the base three part blooming formula, to be used in conjunction with the **micro**. Bloom is a Phosphorus heavy formula for enhancing flower production, as well as to encourage a plant to shift it's hormonal signals from vegetative to flowering. Bloom also contains Potassium to enhance the plant's photosynthetic rate and energy transfer throughout the plant.

N 0.00% – P 6.00% – K 5.00%

Plant Amp

Calcium is the basis of cell wall development in a plant and the organic Calcium in Plant AMP is extremely soluble, providing an easily utilized source of Calcium.

350 ml in combination with Mag-Amped per 100 gallons

Mag-Amped is a Magnesium product, proprietary, proven formula, is readily available and easy for the plant to uptake, with an excellent overall solubility.

Magnesium is essential for chlorophyll production in plants, in turn chlorophyll is the component in photosynthesis, essentially starting the process through collection of light energy.

350 ml in combination with Plant Amp per 100 gallons

BLOOM:

Micro= 800 ml per 100 gallons
Bloom= 1600 ml per 100 gallons
Cal/Magnesium= 500 ml per 100 gallons

PHUP

N0.00% – P0.00% – K45.00%

pH Up is a strong alkali formula for raising pH.

Earth Juice SeaBlast- Bloom

N3.00% – P26.00% – K22.00%

Water-Soluble Plant Food with seaweed, fossilized guano, steamed bone meal and micronutrients.

Flowering and fruiting plants

Earth Juice Sugar Peak Grand Finale

N0.00% – P6.00% – K4.00%

Natural- molasses based liquid formulations

Finishing/Ripening formula that will assist and serve to maximize the production of essential oils, resins, fragrances and yields of determinate flowering and fruiting plants.

Botanicare Pure Blend Pro-Bloom

N 2.0% – P 3.0% – K 5.0%

Derived from fish meal, composted seabird guano, kelp, rock phosphate, Potassium carbonate, Magnesium carbonate and calcium carbonate

Botanicare Liquid Karma

Derived from Kelp Seaweed extract

N 0.10% – P 0.10% – K 0.50%

Also contains:

.5% humic acid derived from Leonardite

.01 Yucca extract

Dry Amendments

Roots Organics-Seabird Guano

N1.00% – P0.00% – K12.00%

Source of phosphate and calcium

Glacial Mineral Dust

Calcium(Ca)1.4%
Magnesium(Mg)0.562%
Cobalt(CO)0.00234%
Iron(Fe).0.95%
Sodium (Na) 1.25%

Natural mineral product, which is produced over many thousands of years by piedmont glacial action.

High in natural silica and provides an excellent source of calcium, iron, magnesium and potassium, and trace elements and micronutrients.

Crab Meal
N 4.00% – P 3.00% – K 0.00%

Derived from Dungeness crab meal

Organic nutrients, including nitrogen, phosphorous and calcium

Bone Meal
N 2.00% – P 11.00% – K 0.00%

Bone meal fertilizer is used to increase phosphorus.

8. Pesticides/Herbicides

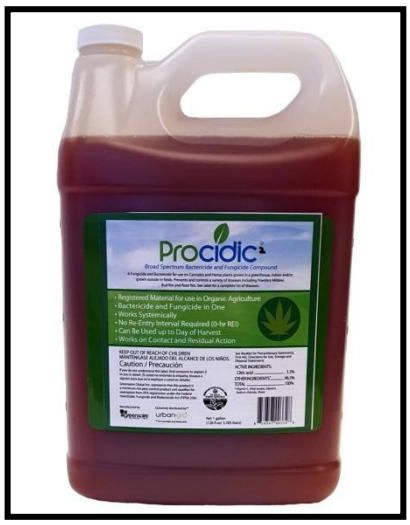
At the present time, there are no pesticides or herbicides registered specifically for use directly on cannabis and the use of pesticides on cannabis plants has not been reviewed for safety, human health effects, or environmental impacts. Under California law, the only pesticide products not illegal to use on cannabis are those that contain an active ingredient that is exempt from residue tolerance requirements and either registered and labeled for a broad enough use to include use on cannabis or exempt from registration requirements as a minimum risk pesticide under FIFRA section 25(b) and California Code of Regulations, title 3, section 6147. For the purpose of compliance with conditions of this Order, any uses of pesticide products shall be consistent with product labeling and any products on the site shall be placed, used, and stored in a manner that ensures that they will not enter or be released into surface or ground waters.

- Pesticides are applied once a week from June through August.
- Applied once a week up to the day of harvest.

1) Greenclean Spider Mite Killer and Powdery Mildew Fungicide

- **Triple-action spider mite killer spray coats, suffocates, burns and dehydrates mites and eggs**
- **Dehydrates powdery mildew and coats spores to limit reproduction**
- **Safe and non-toxic for plants consumed by people; for use on fruits and flowers through harvest**

- **All natural and rated as "minimum risk pesticide" and exempt from EPA regulation**
- **Kills spider mites, broad mites, russet mites, powdery mildew and other soft-bodied pests and fungus**



2) Prosidic

- **Agricultural bactericide and fungicide compound**
- **Used as a preventative against mildew and mold**
- **Spray application during rainy days**

Alternate with:

3) OxiDate 2.0

- **Environmentally friendly broad-spectrum Bactericide and Fungicide**
- **Active Ingredients:**

  Hydrogen Dioxide:.....27.1%
  Peroxyacetic Acid:.....2.0%
  Other ingredients:.....70.9%

4) Azotrel

- **Biological Insecticide, Repellent, Antifeedant and Insect Growth Regulator**
- **OMRI listed**

- Standard condition is being met at this time.

9. Petroleum products and other chemicals

Petroleum products and other liquid chemicals, including but not limited to diesel, biodiesel, gasoline, and oils shall be stored so as to prevent their spillage, discharge, or seepage into receiving waters. Storage tanks and containers must be of suitable material and construction to be compatible with the substance(s) stored and conditions of storage such as pressure and temperature.

Above ground storage tanks and containers shall be provided with a secondary means of containment for the entire capacity of the largest single container and sufficient freeboard to contain precipitation.

Dischargers shall ensure that diked areas are sufficiently impervious to contain discharged chemicals.

Discharger(s) shall implement spill prevention, control, and countermeasures (SPCC) and have appropriate cleanup materials available onsite.

Underground storage tanks 110 gallons and larger shall be registered with the appropriate County Health Department and comply with State and local requirements for leak detection, spill overflow, corrosion protection, and insurance coverage.

- Gas tanks and generator stored under roof of residence
- Provide spill trays for all generators and gas containers

10. Cultivation-related wastes

Cultivation-related wastes including, but not limited to, empty soil/soil amendment/ fertilizer/pesticide bags and containers, empty plant pots or containers, dead or harvested plant waste, and spent growth medium shall, for as long as they remain on the site, be stored[8] at locations where they will not enter or be blown into surface waters, and in a manner that ensures that residues and pollutants within those materials do not migrate or leach into surface water or groundwater.

- Standard condition is being met at this time

11. Refuse and human waste

Disposal of domestic sewage shall meet applicable County health standards, local agency management plans and ordinances, and/or the Regional Water Board's Onsite Wastewater Treatment System (OWTS) policy, and shall not represent a threat to surface water or groundwater.

Refuse and garbage shall be stored in a location and manner that prevents its discharge to receiving waters and prevents any leachate or contact water from entering or percolating to receiving waters.

Garbage and refuse shall be disposed of at an appropriate waste disposal location.

- Bathroom facility consists of seasonal port a potty that is brought on site during seasonal use.
- In order to meet standards, waste disposal system will either need to permitted or an engineer will need to document that it can be permitted.
- Garbage and refuse is regularly hauled to Eureka Recology

12. Remediation/Cleanup/Restoration

Remediation/cleanup/restoration activities may include, but are not limited to, removal of fill from watercourses, stream restoration, riparian vegetation planting and maintenance, soil stabilization, erosion control, upgrading stream crossings, road outsloping and rolling dip installation where safe and suitable, installing ditch relief culverts and overside drains, removing

[8] Plant waste may also be composted, subject to the same restrictions cited above for cultivation-related waste storage.

berms, stabilizing unstable areas, reshaping cutbanks, and rocking native-surfaced roads. Restoration and cleanup conditions and provisions generally apply to Tier 3

sites, however owners/operators of Tier 1 or 2 sites may identify or propose water resource improvement or enhancement projects such as stream restoration or riparian planting with native vegetation and, for such projects, these conditions apply similarly. Appendix B accompanying this Order includes environmental protection and mitigation measures that apply to cleanup activities such as: temporal limitations on construction; limitations on earthmoving and construction equipment; guidelines for removal of plants and revegetation; conditions for erosion control, limitations on work in streams, riparian and wetland areas; and other measures.

Mitigation measures are listed in the Water Resource Protection Plan and also noted above in the Remediation table.

Recommended Seed Mix

1. Bromus carinatus, Ca Brome	**12 lbs.**
2. Festuca idahoensis, Idaho Fescue	**8 lbs**
3. Nassella pulchra, Purple Needlegrass	**5 lbs.**
4. Danthonia californica, Ca Oatgrass	**5 lbs.**
5. Poa secunda, Pine Bluegrass	**3 lbs.**
Total	**36 lbs/acre**

Because of the slow germination rates associated with native perennial grasses, it is necessary to apply a nurse crop in order to protect the soil surface and compete with introduced species. Quick germinating species such as Regreen is recommended.

6.Triticum aestivum, Regreen -Wheat x wheatgrass hybrid	**10 lb. per acre**

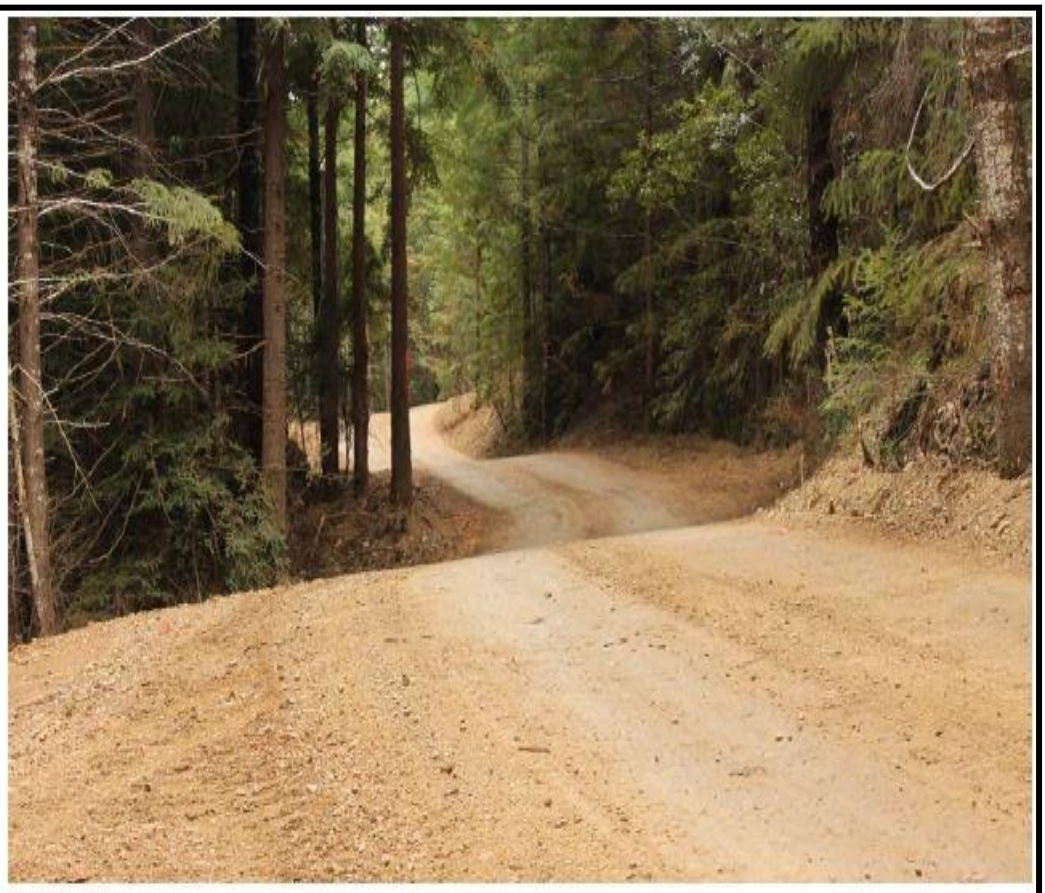
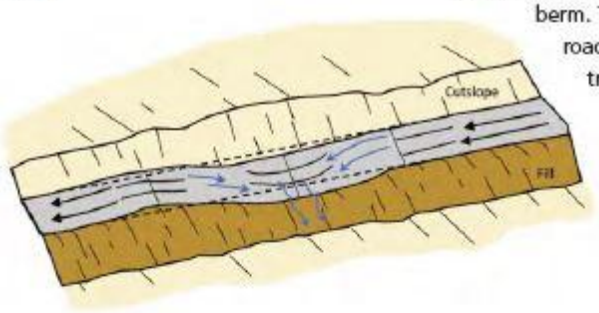


FIGURE 28. *Well built, outsloped road displaying minimum cut, smooth free draining surface, and no outside berm. The road contours the topography and its rolling grade and rolling dips disperse surface runoff.*

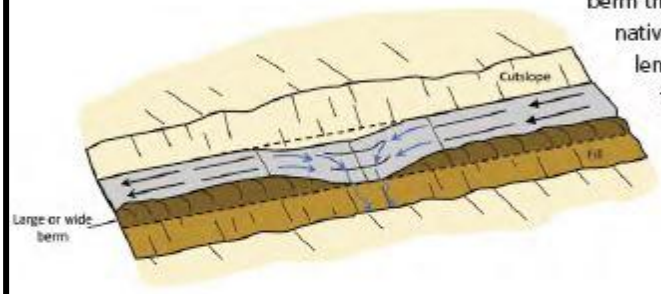
HANDBOOK FOR FOREST. RANCH. AND RURAL ROADS

Type 1 Rolling Dip
(Standard)



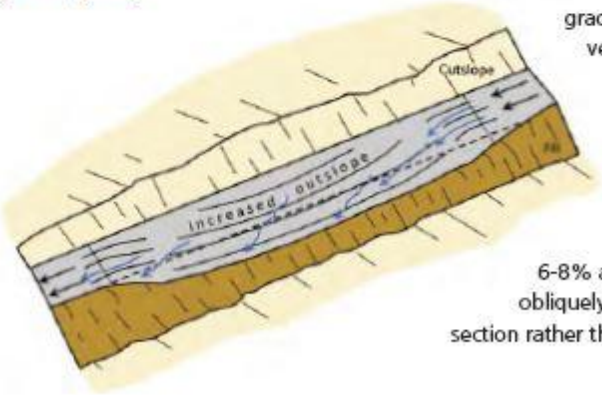
Type 1 rolling dips are used where road grades are less than about 12-14% and road runoff is not confined by a large through cut or berm. The axis of the dip should be perpendicular to the road alignment and sloped at 3-4% across the road tread. Steep roads will have longer and more abrupt dip dimensions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

HANDBOOK FOR FOREST, RANCH AND RURAL ROADS

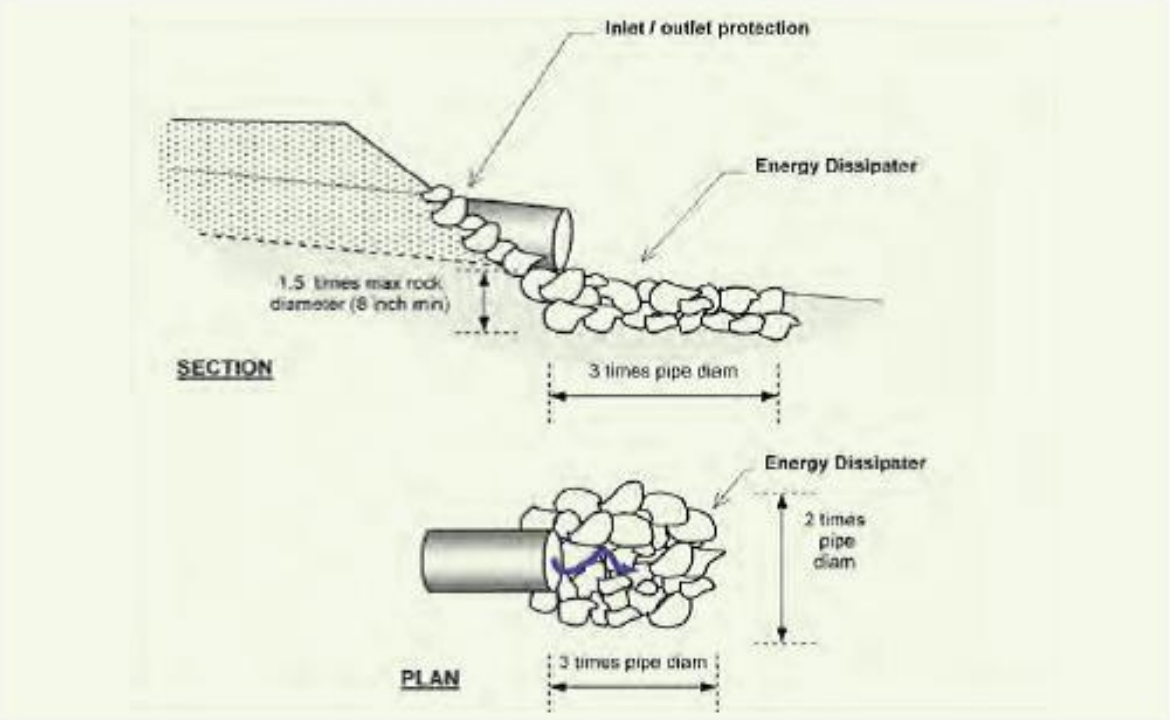


FIGURE 78. *Riprap as outlet energy dissipation (Best, 2013).*

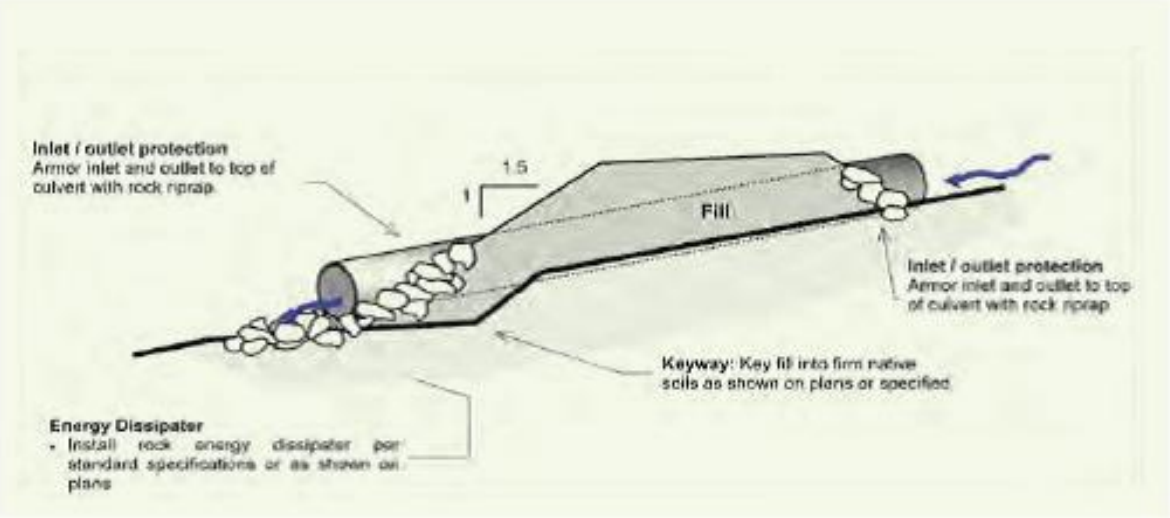
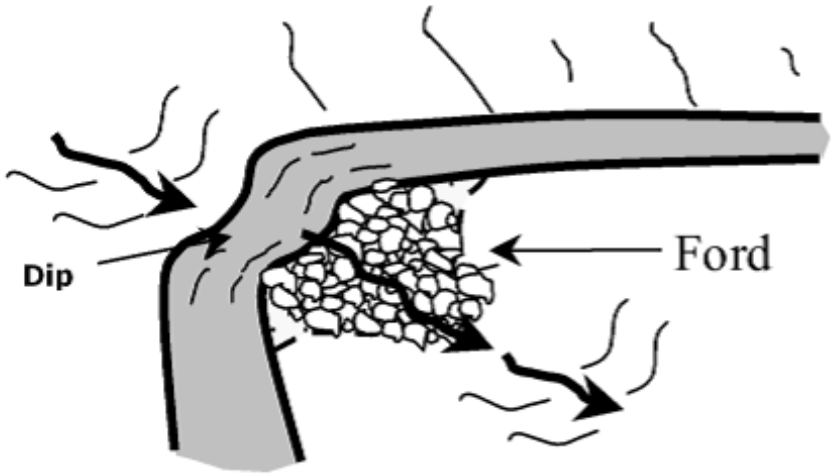


FIGURE 79. *Riprap as inlet protection and outlet energy dissipation (Modified from: Best, 2013).*

FORD: A large dip is graded into the road at the axis of the stream channel. The outside fill face is dished out to form a spillway with large rock. On large watercourses, rock is keyed several feet into firm native soils. The road surface is rocked with 6" of minus rock .



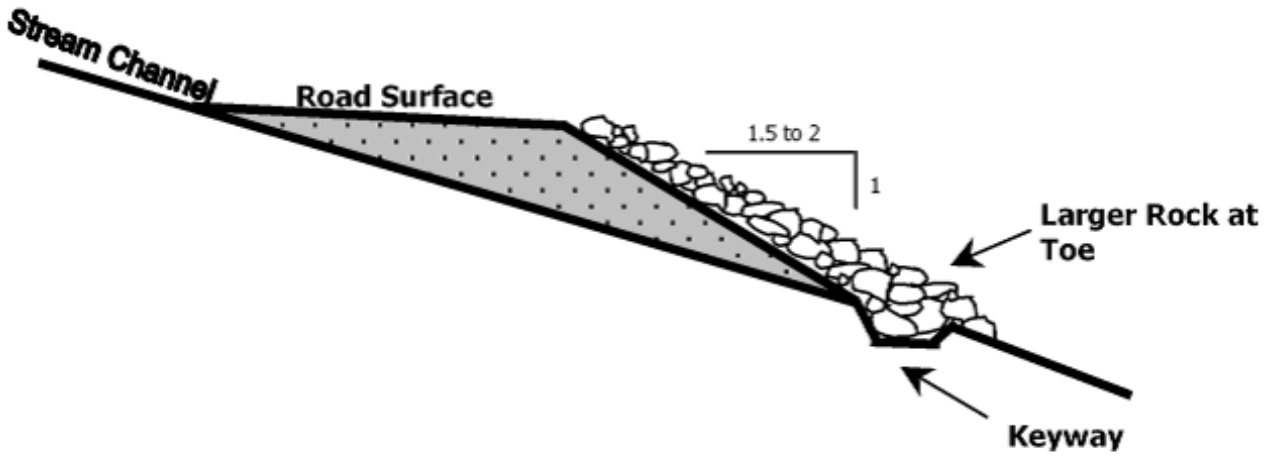


FIGURE 121D. *Well graded rock armor is then backfilled into the structure and spread across the breadth of the U-shaped stream crossing, and about one-third the way up the roadbed, so that streamflow will only flow over or come in contact with resistant armor material. The armor must be spread and compacted across the design width of the expected flood flow channel width so peak flows will not flank the armored structure.*

FIGURE 121E. *Two weeks after this armored fill was constructed, a storm flow event occurred and the structure maintained its function and integrity. The road approaches had not yet been compacted or surfaced with road rock.*

FIGURE 121F. *The same armored fill as it appeared after the first winter flood flows. No maintenance was required to reopen the road. It is also clear that no stream diversion is possible at this stream crossing site, and the volume of fill within the crossing has been reduced to the minimum amount needed to maintain a relatively smooth driving surface on this low volume road.*

FIGURE 120. *This armored fill crossing of a steep, ephemeral stream was constructed to provide a low maintenance crossing. The crossing has been deeply dipped to reduce the volume of road fill and to eliminate the potential for stream diversion. The fill slope has been heavily armored through the axis of the crossing to contain flood flows and prevent down-cutting. Armored fills cannot be used on fish bearing streams.*

HANDBOOK FOR FOREST, RANCH AND RURAL ROADS

APPENDIX B

Lake or Streambed Alteration Agreement (LSAA)

Humboldt County APN **214-234-007**.

CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE
REGION 1 – NORTHERN REGION
619 Second Street
Eureka, CA 95501

STREAMBED ALTERATION AGREEMENT
NOTIFICATION NO. 1600-2019-0543-R1
Unnamed Tributary to Coon Creek, Tributary to South Fork Eel River, Tributary to the Eel River and the Pacific Ocean

Kevin Bourque
Bourque Stream Crossing Project
One Encroachment

This Lake or Streambed Alteration Agreement (Agreement) is entered into between the California Department of Fish and Wildlife (CDFW) and Kevin Bourque (Permittee).

RECITALS

WHEREAS, pursuant to Fish and Game Code (FGC) section 1602, the Permittee initially notified CDFW on June 28, 2019, that the Permittee intends to complete the project described herein.

WHEREAS, pursuant to FGC section 1603, CDFW has determined that the project could substantially adversely affect existing fish or wildlife resources and has included measures in the Agreement necessary to protect those resources.

WHEREAS, the Permittee has reviewed the Agreement and accepts its terms and conditions, including the measures to protect fish and wildlife resources.

NOW THEREFORE, the Permittee agrees to complete the project in accordance with the Agreement.

PROJECT LOCATION

The project to be completed is located within the South Fork Eel River watershed, approximately 2.5 miles SW of the town of Phillipsville, County of Humboldt, State of California. The project is located in Section 22, T3S, R3E, Humboldt Base and Meridian; in the Miranda U.S. Geological Survey 7.5-minute quadrangle; Humboldt County Assessor's Parcel Number 214-234-007.

PROJECT DESCRIPTION

The project is limited to one encroachment (Table 1) to provide appropriate stream crossing infrastructure in an unnamed tributary to Coon Creek, tributary to South Fork Eel River.

Table 1. Project Encroachments with Description

ID	Latitude/Longitude	Description
Crossing-1	40.184038, -123.825818	Use and maintenance of unpermitted 24" diameter culvert.

The Permittee disclosed an off-parcel groundwater well located at 40.186443, -123.825267. This well is located on Humboldt APN 214-234-006, and serves as the source for irrigation water on Humboldt APN 214-234-007. CDFW did not evaluate hydraulic connection of the wells to surface water, nor was a hydrogeologic evaluation prepared by a licensed geologist provided for CDFW review.

No other projects that may be subject to FGC1602 were disclosed. This Agreement does not retroactively permit any stream crossings, water diversions or other encroachments not described in Table 1.

PROJECT IMPACTS

Existing fish or wildlife resources the project could substantially adversely affect include: onsite Foothill Yellow-legged Frog (*Rana boylii*), Coastal Giant Salamander (*Dicamptodon tenebrosus*), Southern Torrent Salamander (*Rhyacotriton variegatus*) and amphibians, reptiles, aquatic invertebrates, mammals, birds, and other aquatic and riparian species; and downstream Chinook Salmon (*Oncorhynchus tshawytscha*), Coho Salmon (*O. kisutch*), and Steelhead Trout (*O. mykiss*).

The adverse effects the project could have on the fish or wildlife resources identified above include:

Impacts to water quality:
temporary increase in fine sediment transport;

Impacts to bed, channel, or bank and direct effects on fish, wildlife, and their habitat:
loss or decline of riparian habitat;
direct impacts on benthic organisms;

Impacts to natural flow and effects on habitat structure and process:
direct and/or incidental take;
indirect impacts;
impediment of up- or down-stream migration;
water quality degradation; and
damage to aquatic habitat and function.

MEASURES TO PROTECT FISH AND WILDLIFE RESOURCES

1. Administrative Measures

The Permittee shall meet each administrative requirement described below.

1.1 Documentation at Project Site. The Permittee shall make the Agreement, any extensions and amendments to the Agreement, and all related notification materials and California Environmental Quality Act (CEQA) documents, readily available at the project site at all times and shall be presented to CDFW personnel, or personnel from another state, federal, or local agency upon request.

1.2 Providing Agreement to Persons at Project Site. The Permittee shall provide copies of the Agreement and any extensions and amendments to the Agreement to all persons who will be working on the project at the project site on behalf of the Permittee, including but not limited to contractors, subcontractors, inspectors, and monitors.

1.3 Notification of Conflicting Provisions. The Permittee shall notify CDFW if the Permittee determines or learns that a provision in the Agreement might conflict with a provision imposed on the project by another local, state, or federal agency. In that event, CDFW shall contact the Permittee to resolve any conflict.

1.4 Project Site Entry. The Permittee agrees to allow CDFW employees access to any property it owns and/or manages for the purpose of inspecting and/or monitoring the activities covered by this Agreement, provided CDFW: a) provides 24 hours advance notice; and b) allows the Permittee or representatives to participate in the inspection and/or monitoring. This condition does not apply to CDFW enforcement personnel. As a result of field inspection, CDFW may require that additional measures be applied to specific activities to protect sensitive biological resources. Such measures may be amended into this Agreement with the agreement of both parties, or if an exception to authorized activities is identified, Permittee may be asked to submit separate written notification to CDFW Northern Region.

1.5 Adherence to Existing Authorizations. All water diversion facilities that the Permittee owns, operates, or controls shall be operated and maintained in accordance with current law and applicable water rights.

1.6 Change of Conditions and Need to Cease Operations. If conditions arise, or change, in such a manner as to be considered deleterious by CDFW to the stream or wildlife, operations shall cease until corrective measures approved by CDFW are taken. This includes new information becoming available that indicates bypass flows, diversion rates or other measures provided in this agreement are not providing adequate protection to keep aquatic life downstream in good condition or to avoid "take" or "incidental take" of federal or State listed species.

1.7 Notification to the California Natural Diversity Database. If any special status species are observed at any time during the project, a qualified Biologist shall

submit California Natural Diversity Data Base (CNDDB) forms to the CNDDB within five (5) working days of the sightings. A summary of CNDDB submissions shall be included with the completion notification. Forms and instructions for submissions to the CNDDB may be found at: https://www.wildlife.ca.gov/Data/CNDDB/Submitting-Data.

2. Avoidance and Minimization Measures

To avoid or minimize adverse impacts to fish and wildlife resources identified above, the Permittee shall implement each measure listed below.

2.1 Permitted Project Activities. Except where otherwise stipulated in this Agreement, all work shall be in accordance with Permittee Notification, together with all maps, Best Management Practices (BMPs), photographs, drawings, and other supporting documents submitted with the Notification and received on June 28, 2019.

2.2 Listed Species. This Agreement does not allow for the take, or incidental take of any state or federal listed threatened, endangered, or candidate species. No direct or indirect impacts shall occur to any threatened or endangered species as a result of implementing the project or the project's activities. If the project could result in the "take" of a state listed threatened or endangered species, the Permittee has the responsibility to obtain from CDFW, a California Endangered Species Act Permit (CESA section 2081).

2.3 Cannabis Cultivation Policy. If Cannabis cultivation occurs on the project parcel, Permittee shall comply with all requirements of the State Water Resource Control Board (SWRCB) Cannabis Cultivation Policy - Principles and Guidelines for Cannabis Cultivation (Cannabis Policy), dated April 16, 2019, or the latest version.

Project Timing

2.4 Work Period. All work, not including diversion of water, shall be confined to the period **June 15 through October 15** of each year. Work within the active channel of a stream shall be restricted to periods of **dry weather**. Precipitation forecasts and potential increases in stream flow shall be considered when planning construction activities. Construction activities shall cease and all necessary erosion control measures shall be implemented prior to the onset of precipitation. Limited vegetation removal may occur outside of this work period as per Measure 2.4.

2.5 Extension of the Work Period. If weather conditions permit, and the Permittee wishes to extend the work period after October 15, a written request shall be made to CDFW **at least 10-working days before the proposed work period variance**. Written approval (letter or e-mail) for the proposed time extension must be received from CDFW prior to activities continuing past October 15.

Vegetation Management

2.6 Prohibited Plant Species. Permittee shall not plant, seed or otherwise introduce invasive plant species within the Project area. Prohibited invasive plant species include those identified in the California Invasive Plant Council's inventory database, which is accessible at: https://www.cal-ipc.org/plants/inventory/.

2.7 Minimum Vegetation Removal. Permittee shall limit the disturbance or removal of native vegetation to the minimum necessary to achieve design guidelines and standards for the Authorized Activity. Permittee shall take precautions to avoid damage to vegetation outside the work area.

2.8 Vegetation Maintenance. Permittee shall limit vegetation management (e.g., trimming, pruning, or limbing) and removal for the purpose of stream crossing maintenance to the use of hand tools. Vegetation management shall not include treatment with herbicides.

General Stream Protection Measures

2.9 Fish and Aquatic Amphibians. If possible, work shall be conducted when the affected stream channel is void of surface water. If surface water is present during construction, the Permittee shall: a) have a biologist or other qualified professional survey the site and adjacent area for fish, amphibians, and turtles three days or less before commencing project activities and b) if fish, amphibians, or turtles are detected, CDFW's Jonathan Hollis will be contacted by phone or email at (707) 441-5842 or Jonathan.Hollis@wildlife.ca.gov and work shall not commence until authorized by CDFW.

2.10 Stream Protection. No debris, soil, silt, sand, bark, slash, sawdust, rubbish, cement or concrete washings, oil or petroleum products, or other material deleterious to fish, plant life, mammals or bird life shall be allowed to enter into or be placed where it may be washed by rainfall or runoff into the stream.

2.11 No Dumping. Permittee shall not deposit, permit to pass into, or place where it can pass into a stream, lake, or other Waters of the State any material deleterious to fish and wildlife, or abandon, dispose of, or throw away within 150 feet of a stream, lake, or other Waters of the State any cans, bottles, garbage, motor vehicle or parts thereof, rubbish, litter, refuse, waste, debris, or the viscera or carcass of any dead mammal, or the carcass of any dead bird.

2.12 Equipment Maintenance. Refueling of machinery or heavy equipment, or adding or draining oil, lubricants, coolants or hydraulic fluids shall not take place within stream bed, channel and bank. All such fluids and containers shall be disposed of properly off-site. Heavy equipment used or stored within stream bed, channel and bank shall use drip pans or other devices (e.g., absorbent blankets, sheet barriers or other materials) as needed to prevent soil and water contamination.

2.13 Hazardous Spills. Any material, which could be hazardous or toxic to aquatic life and enters a stream (i.e. a piece of equipment tipping-over in a stream and dumping oil, fuel or hydraulic fluid), the Permittee shall immediately notify the California Emergency Management Agency State Warning Center at 1-800-852-7550, and immediately initiate clean-up activities. CDFW shall be notified by the Permittee within 24 hours at 707-445-6493 and consulted regarding clean-up procedures.

2.14 Clean-up. Structures and associated materials not designed to withstand high seasonal flows shall be removed to areas above the ordinary high water mark before such flows occur or the end of the yearly work period, whichever comes first. All project materials and debris shall be removed from the project site and properly disposed of off-site upon project completion.

2.15 Erosion Control Measures

2.15.1 Seed and Mulch. Upon completion of construction operations and/or the onset of wet weather, Permittee shall stabilize exposed soil areas within the work area by applying mulch and seed. Permittee shall restore all exposed or disturbed areas and access points within the stream and riparian zone by applying local native and weed free erosion control grass seeds. Locally native wildflower and/or shrub seeds may also be included in the seed mix. Permittee shall mulch restored areas using at least two to four inches of weed-free clean straw or similar biodegradable mulch over the seeded area. Alternately, Permittee may cover seeding with jute netting, coconut fiber blanket, or similar non-synthetic monofilament netting erosion control blanket.

2.15.2 Erosion and Sediment Barriers. Permittee shall monitor and maintain all erosion and sediment barriers in good operating condition throughout the work period and the following rainy season, defined herein to mean October 15 through June 15. Maintenance includes, but is not limited to, removal of accumulated sediment, replacement of damaged sediment fencing, coir rolls/logs and/or straw bale dikes and ensuring drainage structures and altered streambeds and banks remain sufficiently armored and/or stable. If the sediment barrier fails to retain sediment, Permittee shall employ corrective measures, and notify the department immediately.

2.15.3 Cover Spoil Piles. Permittee shall have readily available erosion control materials such as wattles, natural fiber mats, or plastic sheeting, to cover and contain exposed spoil piles and exposed areas in order to prevent sediment from moving into a stream or lake. Permittee shall apply and secure these materials prior to rain events to prevent loose soils from entering a stream, lake, or other Waters of the State.

2.15.4 Prohibition on Use of Monofilament Netting. To minimize the risk of ensnaring and strangling wildlife, Permittee shall not use any erosion control materials that contain synthetic (e.g., plastic or nylon) monofilament netting, including photo- or biodegradable plastic netting. Geotextiles, fiber rolls, and other erosion control measures shall be made of loose-weave mesh, such as jute, hemp, coconut (coir) fiber, or other products without welded weaves.

Stream Crossings

2.16 Road Approaches. The Permittee shall treat road approaches to new or re-constructed permanent crossings to minimize erosion and sediment delivery to the watercourse. Permittee shall ensure road approaches are hydrologically disconnected to the maximum extent feasible to prevent sediment from entering the crossing site, including when a Stream Crossing is being constructed or reconstructed. Road approaches shall be armored from the crossing for a minimum of *50 feet in both directions,* or to the nearest effective water bar or point where road drainage does not drain to the crossing, with durable, clean, screened, angular rock.

2.17 Excavated Fill. Excavated fill material shall be placed in upland locations where it cannot deliver to a watercourse. To minimize the potential for material to enter the watercourse during the winter period, all excavated and relocated fill material shall be tractor contoured (to drain water) and tractor compacted to effectively incorporate and stabilize loose material into existing road and/or landing features.

2.18 Runoff from Steep Areas. The Permittee shall make preparations so that runoff from steep, erodible surfaces will be diverted into stable areas with little erosion potential or contained behind erosion control structures. Erosion control structures such as straw bales and/or siltation control fencing shall be placed and maintained until the threat of erosion ceases. Frequent water checks shall be placed on dirt roads, cat tracks, or other work trails to control erosion.

2.19 Crossing Maintenace. The Permittee shall provide site maintenance for the life of the structures, including, but not limited to, re-applying erosion control to minimize surface erosion and ensuring drainage structures, streambeds and banks remain sufficiently armored and/or stable.

2.19.1 The placement of armoring shall be confined to the work period when the stream is dry or at its lowest flow

2.19.2 No heavy equipment shall enter the wetted stream channel.

2.19.3 No fill material, other than clean rock, shall be placed in the stream channel.

2.19.4 Rock shall be sized to withstand washout from high stream flows, and

extend above the ordinary high water level.

2.19.5 Rock armoring shall not constrict the natural stream channel width and shall be keyed into a footing trench with a depth sufficient to prevent instability.

2.20 Culvert Installation.

2.20.1 Permanent culverts shall be sized to accommodate the estimated 100-year flood flow [i.e. ≥1.0 times the width of the bankfull channel width or the 100-year flood size, whichever is greater], including debris, culvert embedding, and sediment loads.

2.20.1 Where diversion potential exists, a critical dip shall be installed to direct flood flow over the crossing fill and back into the channel. Critical dips shall be constructed to accommodate the entire estimated 100-year flood flow and may be installed by lowering the existing fill over the crossing or by constructing a deep, broad rolling dip over the crossing surface to prevent flood flow from diverting down the road.

2.20.2 If the project is located in a high to very high Fire Hazard Severity Zone as designated by CAL FIRE, CDFW recommends culvert materials consist of corrugated metal pipe (CMP). Use of High Density Polyethylene (HDPE) pipe is discouraged.
http://www.fire.ca.gov/fire_prevention/fire_prevention_wildland_zones_maps

2.20.3 Existing fill material in the crossing shall be excavated down vertically to the approximate original channel and outwards horizontally to the approximate crossing hinge points (transition between naturally occurring soil and remnant temporary crossing fill material) to remove any potential unstable debris and voids in the older fill prism.

2.20.4 Culvert shall be installed to grade (not perched or suspended), aligned with the natural stream channel, and extend lengthwise completely beyond the toe of fill. If culvert cannot be set to grade, it shall be oriented in the lower third of the fill face, and a downspout or energy dissipator (such as boulders, rip-rap, or rocks) shall be installed above or below the outfall as needed to effectively control stream bed, channel, or bank erosion (scouring, headcutting, or downcutting). The Permittee shall ensure basins are not constructed and channels are not be widened at culvert inlets.

2.20.5 Culvert bed shall be composed of either compacted rock-free soil or crushed gravel. Bedding beneath the culvert shall provide for even distribution of the load over the length of the pipe, and allow for natural settling and compaction to help the pipe settle into a straight profile. The crossing backfill materials shall be free of rocks, limbs, or other debris that could allow water to seep around the pipe, and shall be compacted.

2.20.6 Culvert inlet, outlet (including the outfall area), and fill faces shall be armored where stream flow, road runoff, or rainfall energy is likely to erode fill material and the outfall area.

CONTACT INFORMATION

Any communication that Permittee or CDFW submits to the other shall be in writing and any communication or documentation shall be delivered to the address below by U.S. mail, fax, or email, or to such other address as Permittee or CDFW specifies by written notice to the other.

To Permittee:

Kevin Bourque
PO Box 610
Fortuna, California 95540
707-267-4297
onedropcultivators@gmail.com

To CDFW:

Department of Fish and Wildlife
Attn: Lake and Streambed Alteration Program – Jonathan Hollis
Notification #1600-2019-00542-R1
619 Second Street
Eureka, California 95501

LIABILITY

Permittee shall be solely liable for any violation of the Agreement, whether committed by the Permittee or any person acting on behalf of the Permittee, including its officers, employees, representatives, agents or contractors and subcontractors, to complete the project or any activity related to it that the Agreement authorizes.

This Agreement does not constitute CDFW's endorsement of, or require the Permittee to proceed with the project. The decision to proceed with the project is the Permittee's alone.

SUSPENSION AND REVOCATION

CDFW may suspend or revoke in its entirety this Agreement if it determines that the Permittee or any person acting on behalf of the Permittee, including its officers, employees, representatives, agents, or contractors and subcontractors, is not in compliance with the Agreement.

Before CDFW suspends or revokes the Agreement, it shall provide the Permittee written notice by certified or registered mail that it intends to suspend or revoke. The notice shall state the reason(s) for the proposed suspension or revocation, provide the Permittee an opportunity to correct any deficiency before CDFW suspends or revokes the Agreement, and include instructions to the Permittee, if necessary, including but not limited to a directive to immediately cease the specific activity or activities that caused CDFW to issue the notice.

ENFORCEMENT

Nothing in the Agreement precludes CDFW from pursuing an enforcement action against the Permittee instead of, or in addition to, suspending or revoking the Agreement.

Nothing in the Agreement limits or otherwise affects CDFW's enforcement authority or that of its enforcement personnel.

OTHER LEGAL OBLIGATIONS

This Agreement does not relieve Permittee or any person acting on behalf of Permittee, including its officers, employees, representatives, agents, or contractors and subcontractors, from complying with, or obtaining any other permits or authorizations that might be required under, other federal, state, or local laws or regulations before beginning the project or an activity related to it. For example, if the project causes take of a species listed as threatened or endangered under the Endangered Species Act (ESA), such take will be unlawful under the ESA absent a permit or other form of authorization from the U.S. Fish and Wildlife Service or National Marine Fisheries Service.

This Agreement does not relieve Permittee or any person acting on behalf of Permittee, including its officers, employees, representatives, agents, or contractors and subcontractors, from complying with other applicable statutes in the Fish and Game Code including, but not limited to, Fish and Game Code sections 2050 *et seq.* (threatened and endangered species), section 3503 (bird nests and eggs), section 3503.5 (birds of prey), section 5650 (water pollution), section 5652 (refuse disposal into water), section 5901 (fish passage), section 5937 (sufficient water for fish), and section 5948 (obstruction of stream).

Nothing in the Agreement authorizes the Permittee or any person acting on behalf of the Permittee, including its officers, employees, representatives, agents, or contractors and subcontractors, to trespass.

AMENDMENT

CDFW may amend the Agreement at any time during its term if CDFW determines the amendment is necessary to protect an existing fish or wildlife resource.

The Permittee may amend the Agreement at any time during its term, provided the amendment is mutually agreed to in writing by CDFW and the Permittee. To request an amendment, the Permittee shall submit to CDFW a completed CDFW "Request to Amend Lake or Streambed Alteration" form and include with the completed form payment of the corresponding amendment fee identified in CDFW's current fee schedule (see Cal. Code Regs., tit. 14, § 699.5).

TRANSFER AND ASSIGNMENT

This Agreement may not be transferred or assigned to another entity, and any purported transfer or assignment of the Agreement to another entity shall not be valid or effective, unless the transfer or assignment is requested by the Permittee in writing, as specified below, and thereafter CDFW approves the transfer or assignment in writing.

The transfer or assignment of the Agreement to another entity shall constitute a minor amendment, and therefore to request a transfer or assignment, the Permittee shall submit to CDFW a completed CDFW "Request to Amend Lake or Streambed Alteration" form and include with the completed form payment of the minor amendment fee identified in CDFW's current fee schedule (see Cal. Code Regs., tit. 14, § 699.5).

EXTENSIONS

In accordance with Fish and Game Code section 1605, subdivision (b), Permittee may request one extension of the Agreement, provided the request is made prior to the expiration of the Agreement's term. To request an extension, Permittee shall submit to CDFW a completed CDFW "Request to Extend Lake or Streambed Alteration" form and include with the completed form payment of the extension fee identified in CDFW's current fee schedule (see Cal. Code Regs., tit. 14, § 699.5). CDFW shall process the extension request in accordance with Fish and Game Code section 1605, subdivisions (b) through (e).

If Permittee fails to submit a request to extend the Agreement prior to its expiration, Permittee must submit a new notification and notification fee before beginning or continuing the project the Agreement covers (Fish & G. Code § 1605, subd. (f)).

EFFECTIVE DATE

The Agreement becomes effective on the date of CDFW's signature, which shall be: 1) after the Permittee signature; 2) after CDFW complies with all applicable requirements under the California Environmental Quality Act (CEQA); and 3) after payment of the applicable FGC section 711.4 filing fee listed at http://www.wildlife.ca.gov/habcon/ceqa/ceqa_changes.html.

TERM

This Agreement shall **expire five years** from date of execution, unless it is terminated or extended before then. All provisions in the Agreement shall remain in force throughout its term. The Permittee shall remain responsible for implementing any provisions specified herein to protect fish and wildlife resources after the Agreement expires or is terminated, as Fish and Game Code section 1605, subdivision (a)(2) requires.

AUTHORITY

If the person signing the Agreement (signatory) is doing so as a representative of Permittee, the signatory hereby acknowledges that he or she is doing so on Permittee's behalf and represents and warrants that he or she has the authority to legally bind Permittee to the provisions herein.

AUTHORIZATION

This Agreement authorizes only the project described herein. If Permittee begins or completes a project different from the project the Agreement authorizes, Permittee may be subject to civil or criminal prosecution for failing to notify CDFW in accordance with Fish and Game Code section 1602.

CONCURRENCE

The undersigned accepts and agrees to comply with all provisions contained herein.

FOR KEVIN BOURQUE

Kevin Bourque — Date: 10/15/19

FOR DEPARTMENT OF FISH AND WILDLIFE

Cheri Sanville — Date: 10/18/19

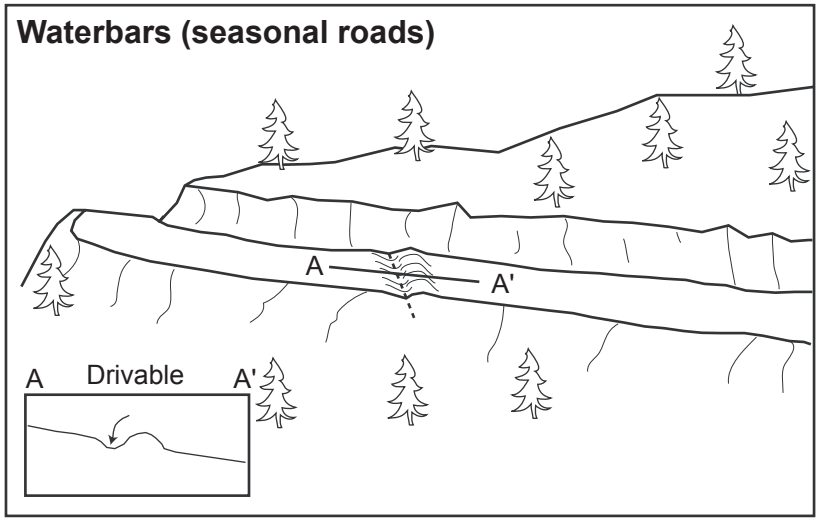
Senior Environmental Scientist Supervisor

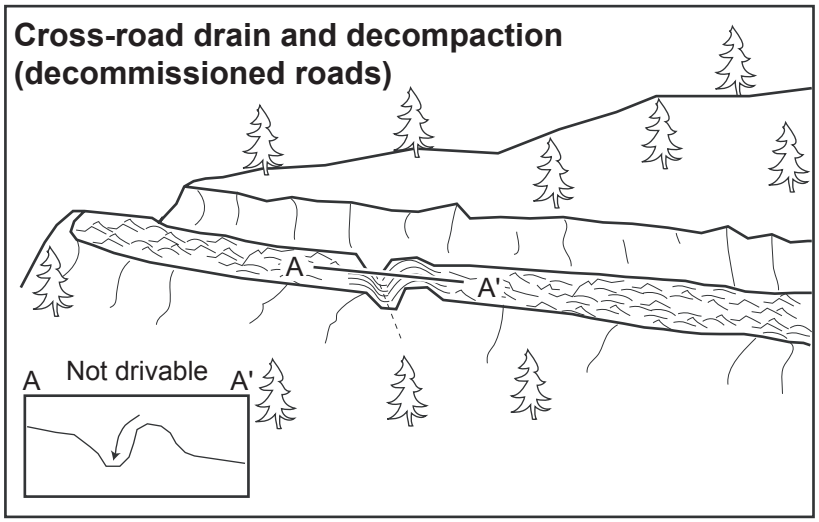
Prepared by: Jonathan Hollis, Environmental Scientist, August 19, 2019

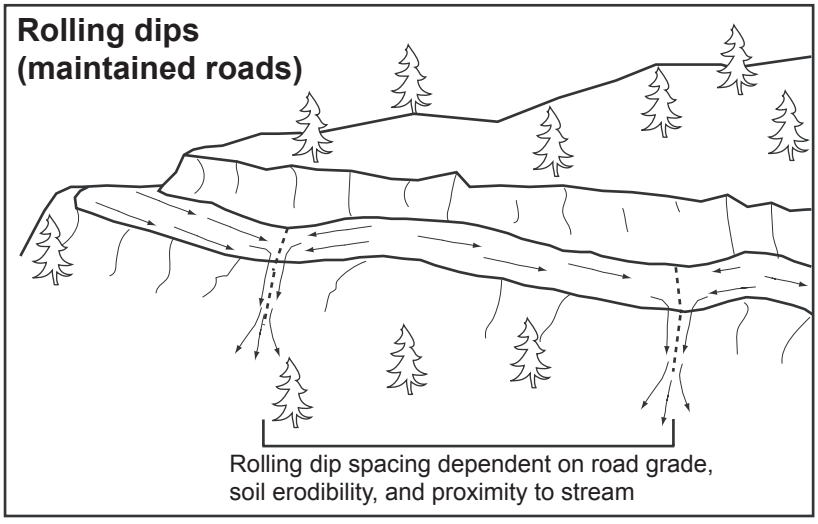
APPENDIX C

Pacific Watershed Associates Typical Drawings

Typical Methods for Dispersing Road Surface Runoff with Waterbars, Cross-road Drains, and Rolling Dips







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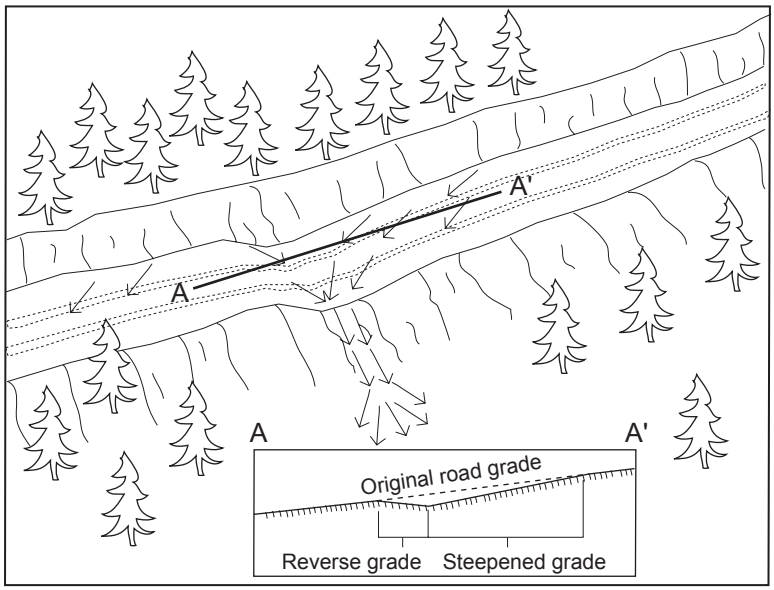
Typical Road Surface Drainage by Rolling Dips



Rolling dip installation:

1. Rolling dips will be installed in the roadbed as needed to drain the road surface.
2. Rolling dips will be sloped either into the ditch or to the outside of the road edge as required to properly drain the road.
3. Rolling dips are usually built at 30 to 45 degree angles to the road alignment with cross road grade of at least 1% greater than the grade of the road.
4. Excavation for the dips will be done with a medium-size bulldozer or similar equipment.
5. Excavation of the dips will begin 50 to 100 feet up road from where the axis of the dip is planned as per guidelines established in the rolling dip dimensions table.
6. Material will be progressively excavated from the roadbed, steepening the grade unitl the axis is reached.
7. The depth of the dip will be determined by the grade of the road (see table below).
8. On the down road side of the rolling dip axis, a grade change will be installed to prevent the runoff from continuing down the road (see figure above).
9. The rise in the reverse grade will be carried for about 10 to 20 feet and then return to the original slope.
10. The transition from axis to bottom, through rising grade to falling grade, will be in a road distance of at least 15 to 30 feet.

Table of rolling dip dimensions by road grade

Road grade %	**Upslope approach distance** (from up road start to trough) ft	**Reverse grade distance** (from trough to crest) ft	**Depth at trough outlet** (below average road grade) ft	**Depth at trough inlet** (below average road grade) ft
<6	55	15 - 20	0.9	0.3
8	65	15 - 20	1.0	0.2
10	75	15 - 20	1.1	0.01
12	85	20 - 25	1.2	0.01
>12	100	20 - 25	1.3	0.01

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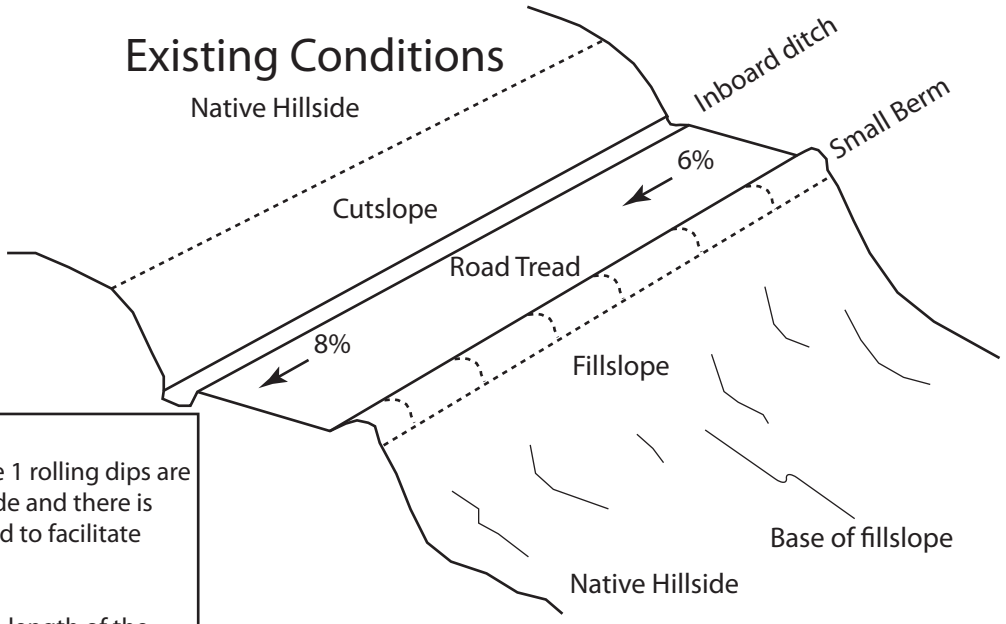
Standard (Type 1) Rolling Dip Construction



Notes

Rolling dip type 1 existing conditions: Type 1 rolling dips are utilized when roads are less than 12-14% grade and there is proximal outfall adjacent to the outboard road to facilitate road drainage.

Design Notes:

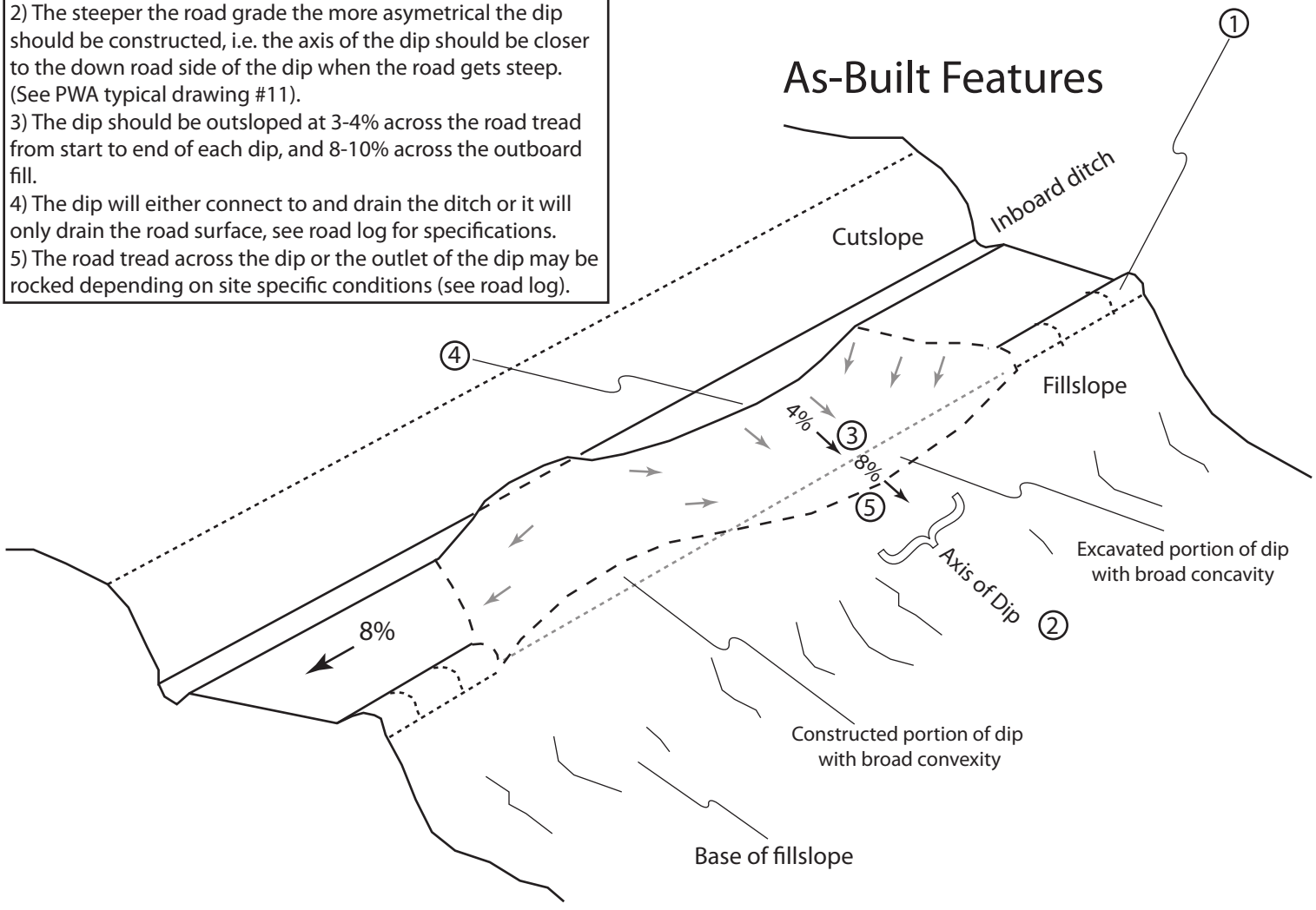
1) The berm should be removed for the entire length of the dip.

2) The steeper the road grade the more asymetrical the dip should be constructed, i.e. the axis of the dip should be closer to the down road side of the dip when the road gets steep. (See PWA typical drawing #11).

3) The dip should be outsloped at 3-4% across the road tread from start to end of each dip, and 8-10% across the outboard fill.

4) The dip will either connect to and drain the ditch or it will only drain the road surface, see road log for specifications.

5) The road tread across the dip or the outlet of the dip may be rocked depending on site specific conditions (see road log).



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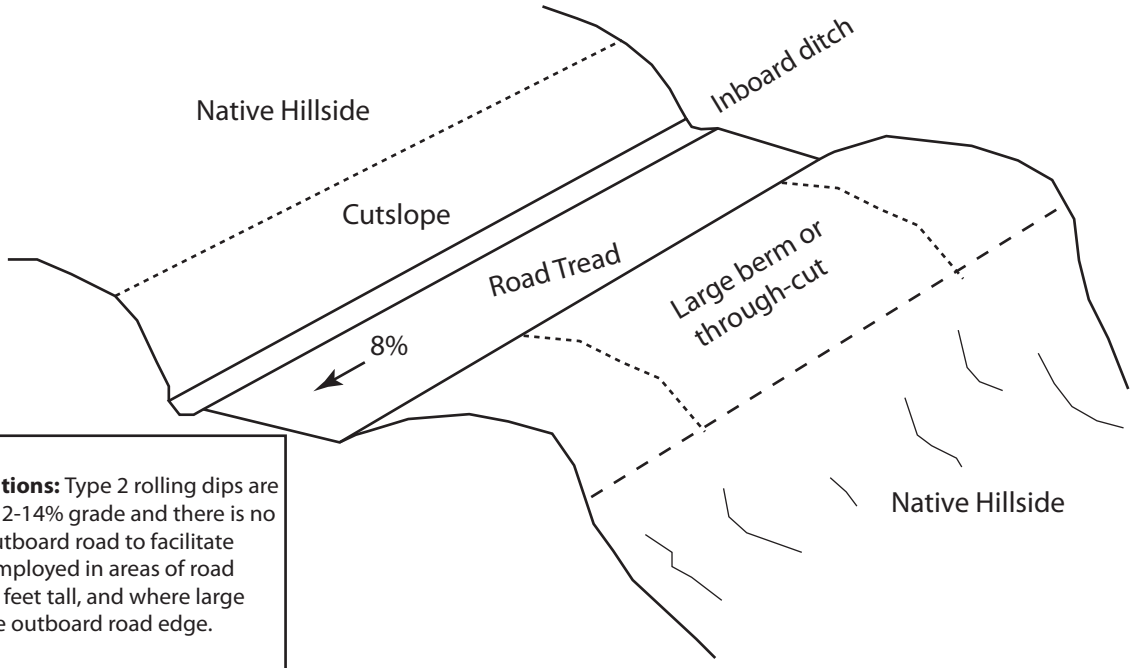
PWA Typical Drawing #19a

Type 2 Rolling Dip Construction

(Through-cut or thick berm road reaches)



Notes

Rolling dip type 2 existing conditions: Type 2 rolling dips are utilized when roads are less than 12-14% grade and there is no proximal outfall adjacent to the outboard road to facilitate road drainage. These should be employed in areas of road through-cuts generally less than 3 feet tall, and where large wide and/or tall berms exist on the outboard road edge.

Design Notes:

1) The berm or native hillside should be removed for the entire length of the excavated portion of the dip, or, at a minimuim through the axis of the dip.

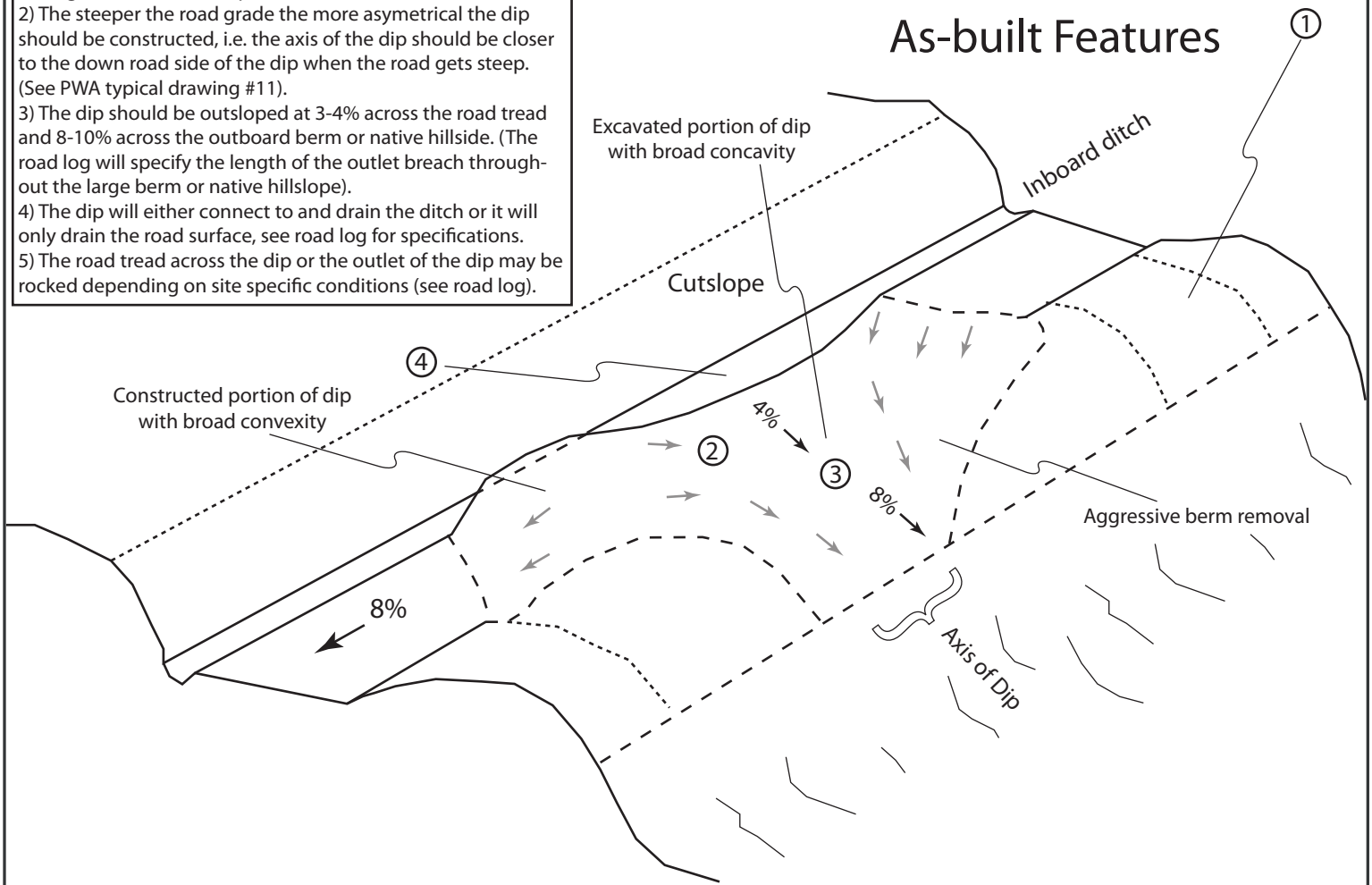
2) The steeper the road grade the more asymetrical the dip should be constructed, i.e. the axis of the dip should be closer to the down road side of the dip when the road gets steep. (See PWA typical drawing #11).

3) The dip should be outsloped at 3-4% across the road tread and 8-10% across the outboard berm or native hillside. (The road log will specify the length of the outlet breach through-out the large berm or native hillslope).

4) The dip will either connect to and drain the ditch or it will only drain the road surface, see road log for specifications.

5) The road tread across the dip or the outlet of the dip may be rocked depending on site specific conditions (see road log).

As-built Features



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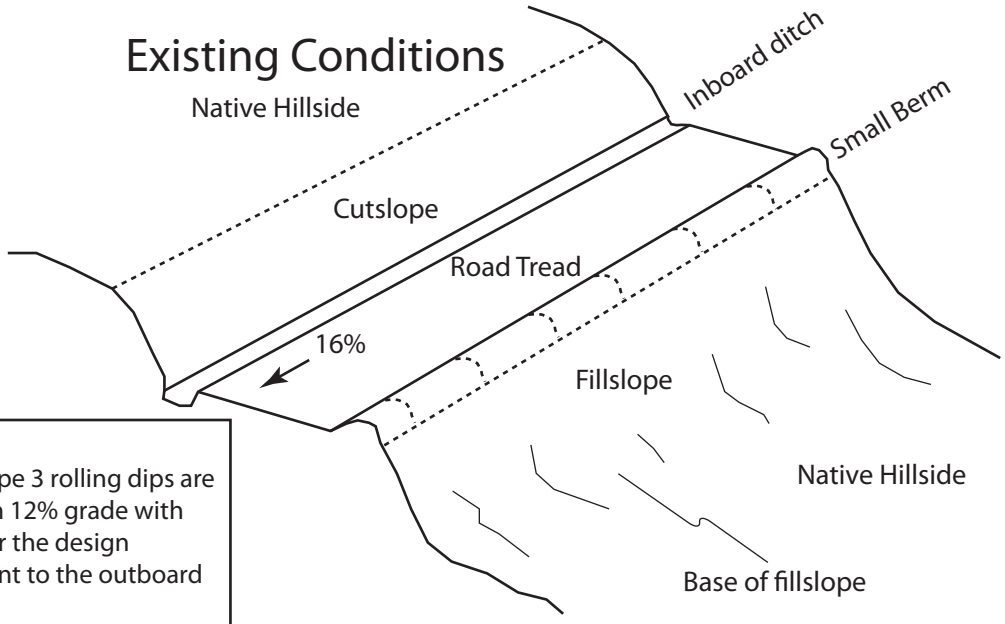
PWA Typical Drawing #19b

Type 3 Rolling Dip Construction
(steep slope outslope)



Notes

Rolling dip type 3 existing conditions: Type 3 rolling dips are utilized when roads grades are steeper than 12% grade with little opportunity to create reverse grade for the design vehicle, and there is proximal outfall adjacent to the outboard road to facilitate road drainage.

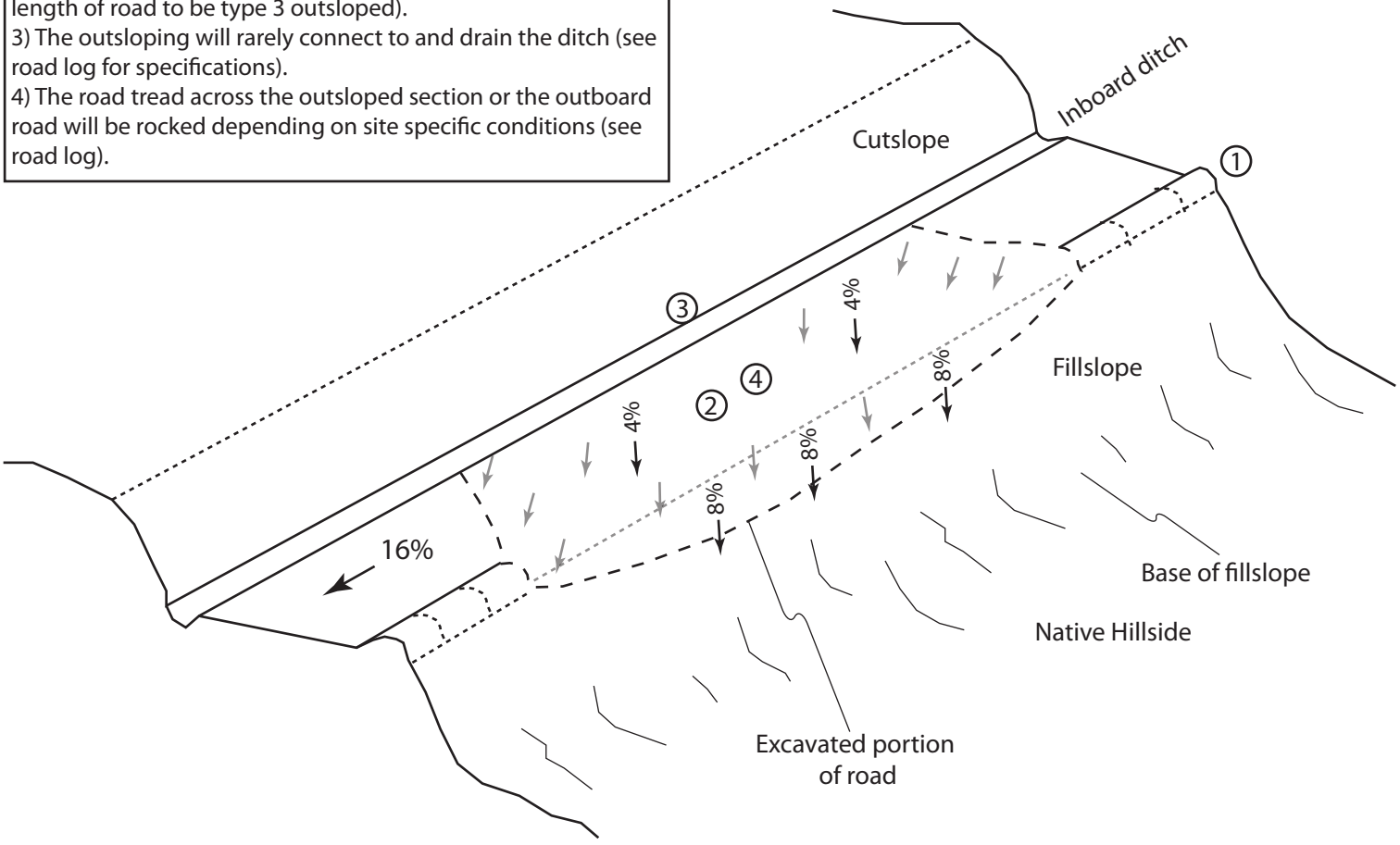
Design Notes:

1) The berm should be removed for the entire length of the outsloped section.

2) The dip should be outsloped at 2-4% across the road tread and 4-8% across the outboard fill. (The road log will specify the length of road to be type 3 outsloped).

3) The outsloping will rarely connect to and drain the ditch (see road log for specifications).

4) The road tread across the outsloped section or the outboard road will be rocked depending on site specific conditions (see road log).



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PWA Typical Drawing #19c