

# Water Resource Protection Plan

**WDID#: 1B161523CHUM**

**TRCID#:180101050703TRC252**



*Submitted to:*

**Ivan Jiminez**

*Prepared by:*

**Timberland Resource Consultants**

**165 South Fortuna Blvd**

**Fortuna, CA 95540**

**02/09/2018**

## **Purpose**

This WRPP has been prepared on behalf of the property owner, Ivan Jiminez, for APN 208-271-011 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 aerial photography review and interpretation, existing USGS quad map review, GIS mapping of field data, review of on-site photography points, streamflow calculations, and general planning. 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.

## 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>).

## 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](mailto: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.

## Property Description

The site consists of a 40 acre parcel composed of oak woodlands. The slope of the property varies from 5%-20% with elevations ranging from 3,600 to 3,700 ft. The property is located within the SW ¼ of Section 32, Township 2N, Range 5E, Humboldt County.

This project currently consists of three cultivation sites (CS) that total 17,900 square feet.

- CS #1 consists of two 20' by 60' greenhouse and two 20' by 100' greenhouses. These greenhouses are located on three terraces that traverse a 14% slope. The total developed area equates to approximately 15,000 square feet. The nearest surface water is a Class III watercourse approximately 21' away from the southwest greenhouse.
- CS #2 is made up of an approximately 17,000 square foot landing that contains two 20' by 100' greenhouses and 26 one hundred gallon smart pots. The nearest surface water is a Class III watercourse approximately 330' away.
- CS #3 consists of two 20' by 100' greenhouses on two terraces. The terraces are cut into an 18% slope. The nearest surface water is a Class III watercourse approximately 107' away.

Agricultural water for this project is currently sourced from an existing well. This well directly diverts groundwater from an unknown depth. The nearest surface water is a small Class III watercourse approximately 150' to the west.

### Assessment of Standard Conditions

Assessment of Standard Conditions consisted of field examinations on 01/17/2018 and 02/09/2018. Data was also sourced from a Lake and Streambed Alteration Agreement submitted by Chris Carroll of Timberland Resource Consultants. The examination evaluated areas near, and areas with the potential to directly impact, watercourses for sensitive conditions. This includes but is 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

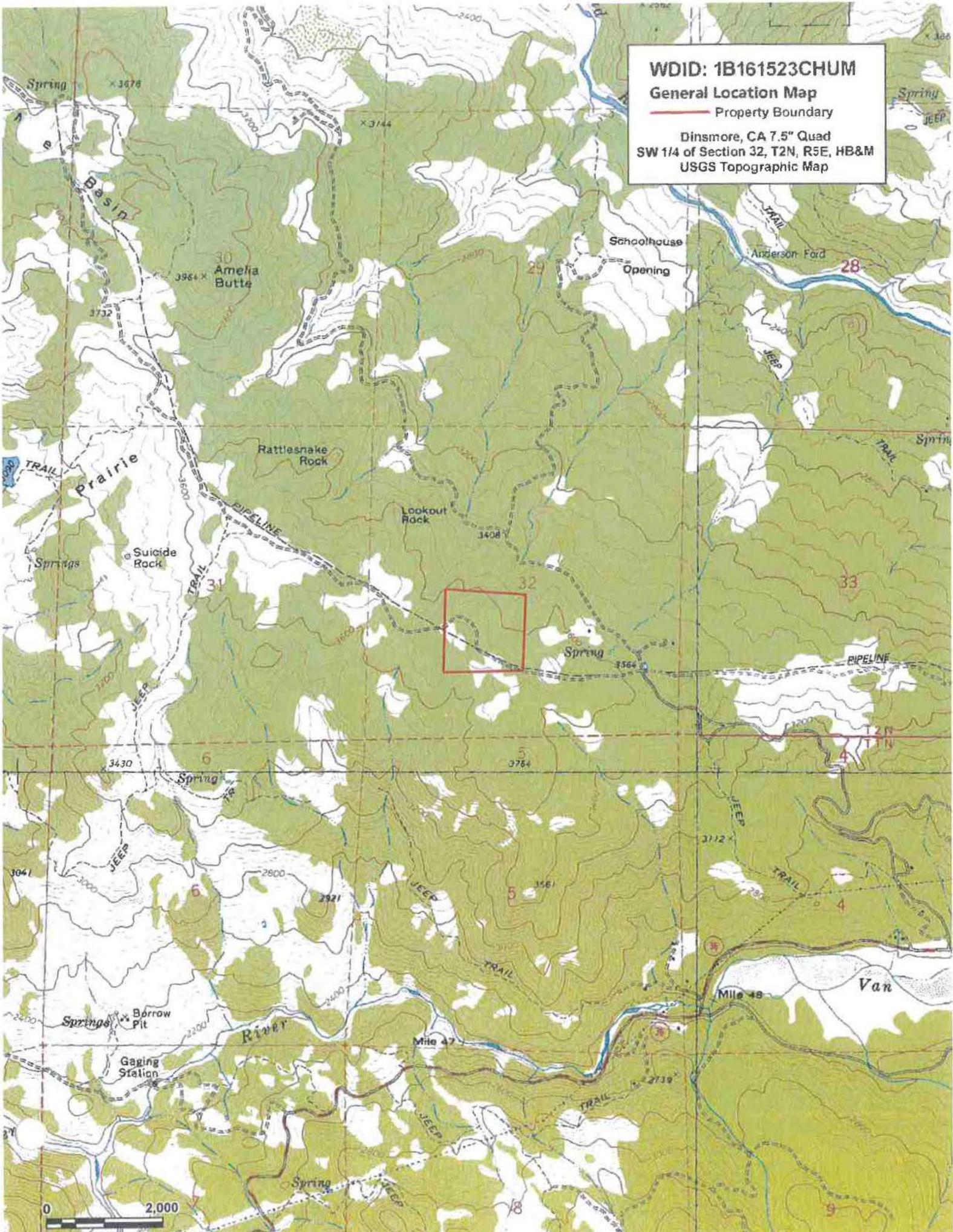
1. Site maintenance, erosion control, and drainage features Y/N
2. Stream crossing maintenance Y/N
3. Riparian and wetland protection and management Y/N
4. Spoils management Y/N
5. Water storage and use Y/N
6. Irrigation runoff Y/N
7. Fertilizers and soil amendments Y/N
8. Pesticides and herbicides?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

WDID: 1B161523CHUM

General Location Map

Property Boundary

Dinsmore, CA 7.5" Quad  
SW 1/4 of Section 32, T2N, R5E, HB&M  
USGS Topographic Map



### Mitigation Report (Identified Sites Requiring Remediation)

\*Time schedule for treatment accounts for appropriate permit approvals and allowed seasons of operation.

Unique Map Point(s)	Map Point Description	Associated Standard Condition	Temporary BMP	Permanent BMP	Priority for Action	Time Schedule for completion of Permanent BMP	Completion Date
MP #1	Existing road surface is discharging into Class III watercourse	A.1.a. A.1.d.	Seed and mulch 50' of road surface leading to watercourse	Install cross drain on road surface at least 50' from watercourse	2	10/15/2018	
MP #2 – MP #3	Road run-off concentrating along road surface resulting in surface erosion	A.1.b.	N/A	Crown road segment	3	10/15/2019	
MP #4	Developed landing is hydrologically connected with Class III watercourse	A.1.d.	Remove all cultivation-related waste and materials from the 50' riparian buffer	Construct earthen berm along outboard edge of landing	2	10/15/2018	
SC #1	Existing 12" diameter CPP located on Class III watercourse is undersized for the expected 100-year peak streamflow	A.2.	N/A	Upgrade crossing with a minimum 18" diameter CMP per attached specifications	3	10/15/2019	
SC #2	Existing vegetated dirt ford located on Class III watercourse	A.2.	N/A	Leave as is and monitor	N/A	N/A	
No Unique Map Point Given	Both western greenhouses associated with CS #1 encroach within Class III riparian buffer	A.3.a.	Cease cultivation activities within the riparian buffer	Remove all cultivation from within the riparian buffer	2	10/15/2018	
MP #5	Perched fill located 2' away from Class III watercourse	A.3.b. A.3.c. A.4.a.	Apply fiber roll to base of fill to prevent any potential discharge	Remove threatening fill material and contour existing material to native conditions	1	10/15/2018	
MP #7	Developed flat littered with cultivation-related waste, domestic waste, and cultivation spoils	A.4.a. A.10. A.11.b.	N/A	Remove all cultivation-related waste, domestic waste, and cultivation spoils. Dispose of at proper solid waste disposal site	1	10/15/2018	
No Unique Map Point Given	Water Use	A.5. A.6.	N/A	Meter water use	1	Annually	
No Unique Map Point Given	Fertilizer/Amendment Use	A.7.	N/A	Record any and all fertilizers, amendments and nutrient use	1	Annually	

**Mitigation Report (Continued)**

\*Time schedule for treatment accounts for appropriate permit approvals and allowed seasons of operation.

No Unique Map Point Given	Pesticide/Herbicide /Fungicide Use	A.8.	N/A	Record any and all pesticide, fungicide, and herbicide use	1	Annually	
MP #8	Melted plastic running parallel along greenhouse	A.10.	N/A	Excavate and dispose	2	10/15/2018	
MP #9	Perlite from old spoils pile spread across the ground	A.10.	N/A	Excavate and remove cultivation-related waste	2	10/15/2018	
MP #10	Perlite from old spoils pile spread across the ground	A.10.	N/A	Excavate and remove cultivation-related waste	2	10/15/2018	

Treat Priority: Treatment Priority (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 (Oct. 15), (3) indicates a moderate priority with treatment being planned to occur within one year, or prior to the winter period (Oct. 15) of the 2<sup>nd</sup> season of operations, and (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).

WDID: 1B161523CHUM

WRPP Site Map

- |   |  |
|---|--|
|  Property Boundary     |  Stream Crossing (SC) |
|  Class II Watercourse  |  Well                 |
|  Class III Watercourse |  Map Point (MP)       |
|  Seasonal Road         |  Greenhouse           |
|  Developed Area        |  |

2016 NAIP DOQ  
Dinsmore, CA 7.5" Quad  
SE 1/4 of Section 32, T2N, R5E, HB&M



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WRPP Site Map

- |   |  |
|---|--|
|  Property Boundary     |  Stream Crossing (SC) |
|  Class II Watercourse  |  Well                 |
|  Class III Watercourse |  Map Point (MP)       |
|  Seasonal Road         |  Greenhouse           |
|  Developed Area        |  |

40' Contour Intervals  
Dinsmore, CA 7.5" Quad  
SE 1/4 of Section 32, T2N, R5E, HB&M



## A. Standard Conditions, Applicable to All Dischargers

### 1. Site maintenance, erosion control and drainage features (Compliance: Y / N )

- 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.

**Roads are drained in a fashion that prevents any road surface erosion from delivering sediment to nearby surface waters. There is however one location, Map Point (MP) #1, where a relic road surface has discharged sediment to a watercourse and poses a risk to surface waters. The Discharger shall excavate a cross drain perpendicular to the road surface at least 50' uphill from the Class III stream as well as seed and mulch the remaining section of road leading to the stream crossing.**

- 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.

**There is one location where road run-off is concentrating along the road surface to result in erosion. This erosion is not delivering to any surface waters. The Discharger shall crown the road segment located between MP #2 - #3.**

- 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.

**Physical reconnaissance of the property revealed no unstable areas per 14CCR 895.1.**

- 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 hydrologically connected<sup>1</sup>, as feasible, from surface waters, including wetlands, ephemeral, intermittent and perennial streams.

**There are three locations where hydrologic connections between a developed surface and watercourse are apparent.**

- **The road segment west of Stream Crossing (SC) #2 is directly connected to a Class III watercourse. Mitigations addressed in Standard Condition A.1.a. shall remedy this.**
- **MP #4 is where a developed landing is hydrologically connected with the head of an unnamed Class III watercourse. The landing has been surfaced with pea gravel and shows minimal signs of rill erosion discharging to the watercourse. The Discharger shall construct an earthen berm around the outboard edge of this landing approximately 100' long, 50' on either side of the Class III. This way, hydrologically connected surface flows will pass through a minimum 50' riparian buffer.**
- **The western edge of CS #1 is located within the 50' Class III riparian buffer and as a result is hydrologically connected with the watercourse. Mitigative action for this site is addressed in Standard Condition A.3.**

<sup>1</sup> 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](http://www.forestsandfish.com/documents/Road_Mgmt_Survey.pdf))

- 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.

**The road network is a gentle enough grade that it does not require any drainage features.**

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

**Construction materials are not stored on the property.**

**2. Stream Crossing Maintenance (Compliance: Y  / N )**

- a. Culverts and stream crossings shall be sized to pass the expected 100-year peak streamflow.
- b. Culverts and stream crossings shall be designed and maintained to address debris associated with the expected 100-year peak streamflow.
- c. 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.
- d. 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.
- e. Culverts shall align with the stream grade and natural stream channel at the inlet and outlet where feasible.<sup>2</sup>
- f. 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.<sup>3</sup>

**There are two stream crossings on the property.**

- **SC #1 consists of an existing 12" diameter corrugated plastic pipe (CPP) located on a Class III watercourse. This crossing is undersized for the predicted 100-year peak streamflow event. The Discharger shall upgrade this crossing to a minimum 18" diameter metal culvert per attached specifications.**
- **SC #2 consists of a heavily vegetated dirt ford located on a Class III watercourse. This crossing is located on a road that is no longer in use. Given the existing vegetation, lack of fill, and lack of crossing structure this crossing will be left as is. The road segment that drains to this crossing shall be hydrologically disconnected as addressed in Standard Condition A.1.a.**

**All stream crossing locations have been sized and designed to accommodate the 100-year peak flow event, allow passage of organisms, and to prevent or minimize erosion within the watercourse. The project is located in a "high" fire severity zone detailed in Cal Fire's Hazard Severity Zone Maps, all proposed culvert installations shall be**

<sup>2</sup> 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.

<sup>3</sup> If infeasible to install a critical dip, an alternative solution may be chosen.

**Corrugated Metal Pipes (CMP). All crossings will be monitored and maintained to assure culverts function. Sizing rational has been attached with this document.**

**3. Riparian and Wetland Protection and Management (Compliance: Y  / N )**

- a. 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 or its or its Executive Officer may apply additional or alternative<sup>4</sup> conditions on enrollment, including site-specific riparian buffers and other BMPs beyond those identified in water resource protection plans to ensure water quality protection.

**CS #2 and #3 are located outside the minimum riparian buffer relative to nearby surface waters. CS #1 however does encroach within a Class III riparian buffer. The south west greenhouse located at CS #1 is 24' away from the adjacent Class III watercourse. During the site visit on 02/09/2018, the 50' riparian buffer was delineated and flagged by Wildlife Biologists, Jack Henry. The Discharger shall remove all cultivation materials from the riparian buffer.**

- b. Buffers shall be maintained at natural slope with native vegetation.

**Except for MP #5, all riparian buffers are maintained at natural slope and native vegetation. MP #5 is located on the western edge of CS #1 where the greenhouses encroach within the Class III riparian buffer. There is a mass of leftover fill from when the terraces were cut into the hillside. This fill is located within a Class III riparian buffer less than 2' from a Class III watercourse. This fill has yet to discharge any sediment. The Discharger shall remove all threatening fill material and contour the site to natural conditions. Fill material may be disposed of at MP #6, a gentle grass meadow outside of the minimum setback from any surface waters.**

- c. 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.

**All riparian buffers, except the acute area around MP #5, have been maintained at minimum distances which retain the essential functions and values that they offer. Removal of fill, contouring of the site, and applying seed and mulch at MP #5 will restore these riparian buffers' essential functions and value.**

**4. Spoils Management (Compliance: Y  / N )**

- a. Spoils<sup>5</sup> shall not be stored or placed in or where they can enter any surface water.

**At the time of the assessment, spoils were stored on the large flat at the top of the property located at MP #7. There had been a structure here that had contained these materials but it burnt down in 2017. These spoils were within 50' of a Class III**

<sup>4</sup> 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.

<sup>5</sup> 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.

**watercourse although no spoils had yet to discharge. The Discharger shall excavate and end-haul these spoils to a proper solid waste disposal site.**

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

**Not Applicable. Except for the aforementioned spoils located at MP #7, spoils are not piled and stored on the property.**

- c. 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.

**There is one location where fill material generated through construction poses a risk to water quality. The fill pile located at MP #5 and addressed in Standard Condition A.3.b. was generated through the creation of the terraces that contain CS #1. The Discharger shall remove approximately 3-5 cubic yards of fill material, and then contour the remaining earth to native contours. Seed and mulch shall be applied annually until vegetation is established.**

5. Water Storage and Use (Compliance: Y  / N )

- a. 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<sup>6</sup> watershed or at a smaller hydrologic watershed as determined necessary by the Regional Water Board Executive Officer.

**The Discharger is working to minimize and mitigate their impacts across the watershed that they operate in. This includes increasing water conservation strategies and using a well as the water source. These strategies will reduce this project's potential threats to water quality and beneficial uses. The Discharger shall meter water use and participate in winter monitoring.**

- b. 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.

**The Discharger currently implements responsible hose use when irrigating their cultivation site as well as irrigating at cooler periods of the day to minimize evapotranspiration.**

- c. For Tier 2 Dischargers, if possible, develop off-stream storage facilities to minimize surface water diversion during low flow periods.

**The project contains no water storage features. This project does not utilize any surface water for irrigation or domestic use.**

- d. Water is applied using no more than agronomic rates.<sup>7</sup>

<sup>6</sup> See definition and link to maps at: <http://water.usgs.gov/GIS/huc.html>

<sup>7</sup> "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.

**There is no evidence to conclude that the Discharger irrigates at a greater rate than the growth medium can facilitate. There are no signs of over watering present on-site. It is recommended that the Discharger meter their water use.**

- e. 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.

**Irrigation water is sourced from a non-jurisdictional groundwater well that does not require water reporting per Water Code § 5101.**

- f. 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.

**There are no water storage features located on the property.**

6. Irrigation Runoff (Compliance: Y  / N )

- a. 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.

**There are no signs of irrigation run-off within the cultivation site. The Discharger irrigates at an agronomic rate to minimize waste and the risk of entrained constituents leaving the site.**

7. Fertilizers and Soil Amendments (Compliance: Y  / N )

- a. 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.

**There are currently no fertilizers or soil amendments stored on the property. The Discharger plans to haul a metal storage container to the property for storage of these materials in the future. This structure will prevent all stored materials from being transported to surface and/or groundwater.**

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

**All fertilizers and soil amendments are applied by the Discharger at agronomic rates per specifications included in the labeling. There are no visible signs of nutrient loading in the surrounding soils such as algal growths and/or vegetation blooms.**

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

Cultivation sites are well maintained with no improperly stored nutrients or fertilizers found throughout the property. The Discharger halts nutrient use during the final weeks of cultivation, promoting plant biomass to uptake remaining nutrient loads within the soil.

8. Pesticides/Herbicides (Compliance: Y☒ / N☐)

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.

**At the time of the assessment no pesticides, fungicides, or herbicides are stored on the property. If the Discharger chooses to use these products in the future they will be stored in the container with fertilizers and amendments. This container adequately prevents these materials from migrating from the site.**

9. Petroleum products and Other Chemicals (Compliance: Y☒ / N☐)

- a. 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.

**There are no fuel products stored within property boundaries. The Discharger plans to store fuel on the property in 5-10 gallon hand canisters within the storage container. These canisters are specifically made for storing petroleum products.**

- b. 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.

**The proposed metal storage container will be adequate for secondary containment. The Discharger may also store canisters within plastic totes for extra spill protection.**

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

**Not Applicable**

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

**Not Applicable**

- e. 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.

**Not Applicable****10. Cultivation-related Wastes (Compliance: Y  / N )**

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<sup>8</sup> 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.

**A small fire occurred in 2017 and has resulted in melted waste and cultivation spoils dispersed throughout the property. Cultivation-related waste located at MP #7 and MP #8 shall be cleaned up and disposed of at a solid waste site. Cultivation-related spoils located at MP #9 and MP #10 shall be excavated and disposed of at a solid waste disposal site.**

**11. Refuse and Human Waste (Compliance: Y  / N )**

- a. 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.

**At the time of the assessment there was no OWTS on the property. The previous OWTS consisted of portable toilet that was destroyed in the fire. The Discharger plans on installing a permitted septic system this year per Humboldt County OWTS policy.**

- b. 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.

**Refuse and garbage had previously been stored in trash cans near the residence that was located on the developed flat that contains MP #7. The Discharger plans to provide new trash cans to the property before cultivation begins in 2018.**

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

**The Discharger properly disposes of their waste at permitted solid waste disposal sites such as the Eel River Transfer Station.**

**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 outcropping and rolling dip installation where safe and suitable, installing ditch relief culverts and overside drains, removing 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

<sup>8</sup> Plant waste may also be composted, subject to the same restrictions cited above for cultivation-related waste storage.

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.

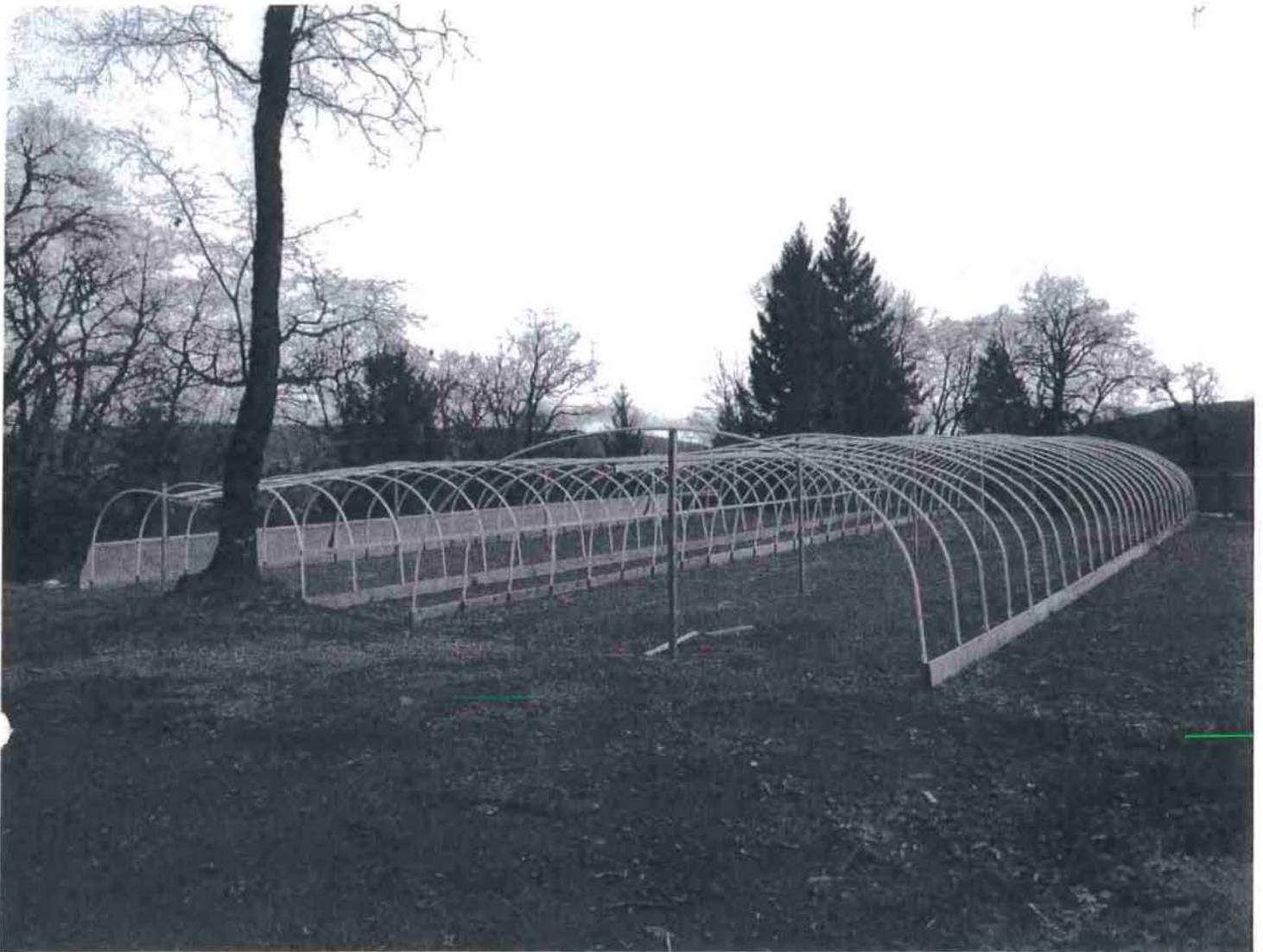
**Mitigation measures are listed in the Mitigation Report and also noted above in the document. All locations listed within the mitigation report will be monitored by the discharger.**

## Photographs



**Picture 1:** CS #1 consists of two 20' by 60' greenhouses and two 20' by 100' greenhouses. These greenhouses are located on three terraces that traverse a 14% slope. The total developed area equates to approximately 15,000 square feet. The nearest surface water is a Class III watercourse approximately 21' away from the southwest greenhouse. Photo date: 01/17/2018

## Photographs



**Picture 2:** CS #2 is made up of an approximately 17,000 square foot landing that contains two 20' by 100' greenhouses and 26 one hundred gallon smart pots. The nearest surface water is a Class III watercourse approximately 330' away. Photo date: 01/17/2018

Photographs



**Picture 3:** These are the 26 hundred gallon smart pot containers that are a part of CS #2.  
Photo date: 01/17/2018

## Photographs



**Picture 4:** CS #3 consists of two 20' by 100' greenhouses on two terraces. The terraces are cut into an 18% slope. The nearest surface water is a Class III watercourse approximately 107' away. Photo date: 02/09/2018

## Photographs



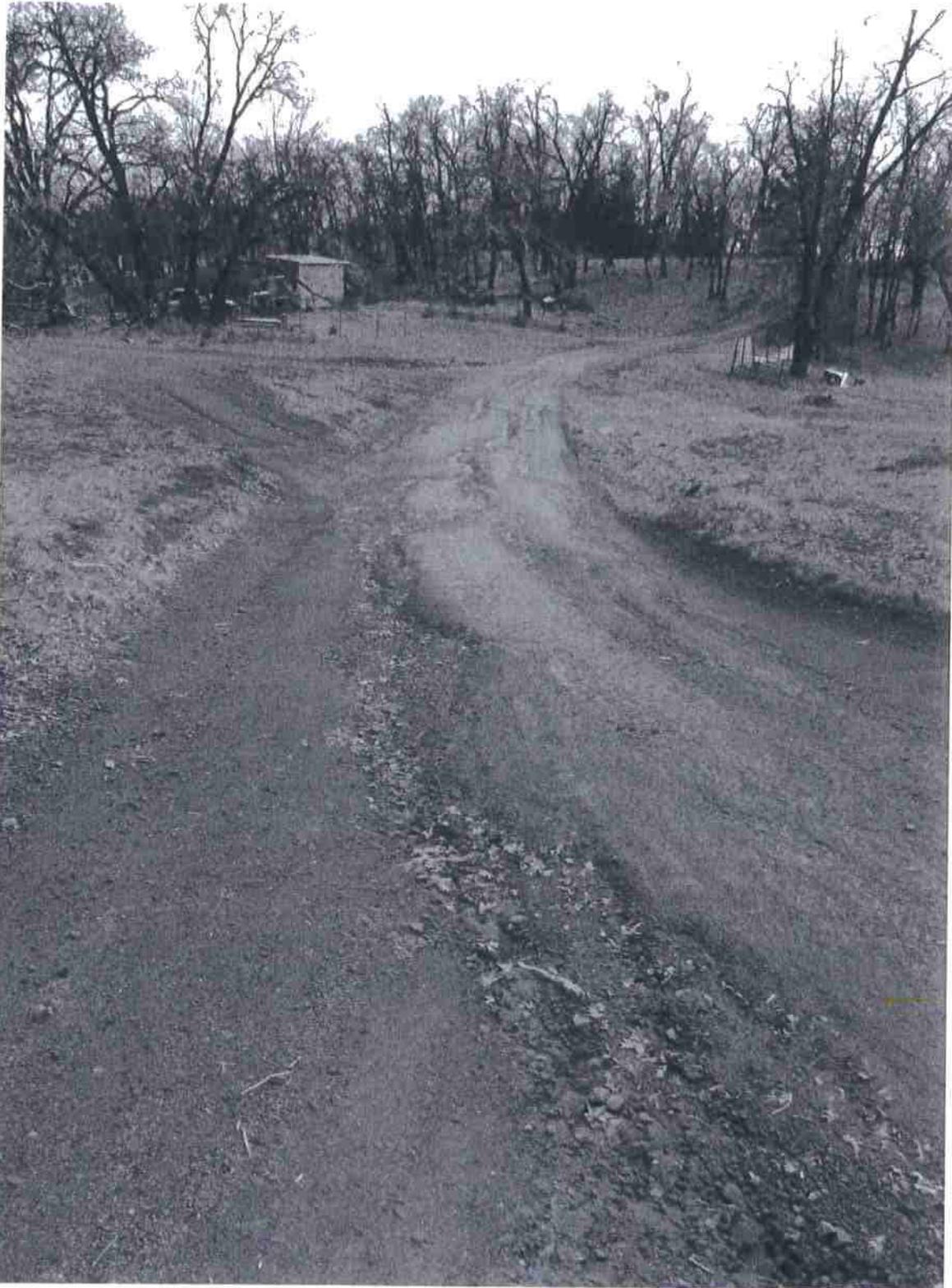
**Picture 5:** Agricultural water for this project is currently sourced from an existing well. This well directly diverts groundwater from an unknown depth. The nearest surface water is a small Class III watercourse approximately 150' to the west. Photo date: 01/17/2018

## Photographs



**Picture 6:** Map Point (MP) #1 is where a relic road surface has discharged sediment to a watercourse and poses a risk to surface waters. The Discharger shall excavate a cross drain perpendicular to the road surface at least 50' uphill from the Class III stream as well as seed and mulch the remaining section of road leading to the stream crossing. Photo date: 02/09/2018

## Photographs



**Picture 7:** Surface erosion on road segment between MP #2 and MP #3. This erosion is not delivering to any surface water. The Discharger shall crown this section of road per attached specifications. Photo date: 01/17/2018

## Photographs



**Picture 8:** MP #4 is where a developed landing is hydrologically connected with the head of an unnamed Class III watercourse. The landing has been surfaced with pea gravel and shows minimal signs of rill erosion discharging to the watercourse. The Discharger shall construct an earthen berm around the outboard edge of this landing approximately 100' long, 50' on either side of the Class III. Photo date: 01/17/2018

## Photographs



**Picture 9:** Inlet of existing 12" diameter Stream Crossing #1. The Discharger shall upgrade this crossing with a minimum 18" diameter CMP per attached specifications. Photo date: 01/17/2018

## Photographs



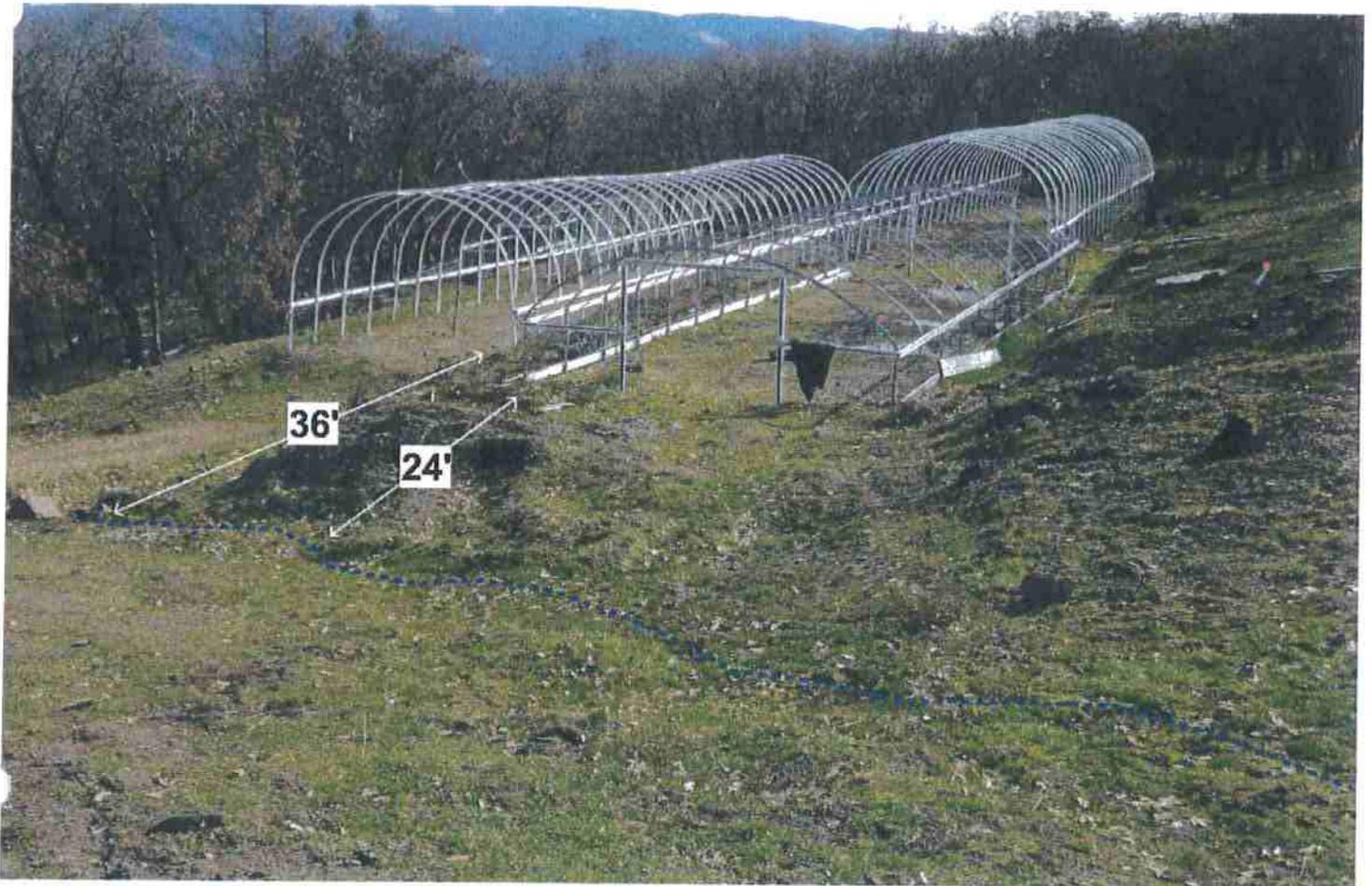
**Picture 10:** Outlet of existing 12" diameter Stream Crossing #1 located on a Class III watercourse. The Discharger shall upgrade this crossing with a minimum 18" diameter CMP per attached specifications. Photo date: 01/17/2018

## Photographs



**Picture 11:** Stream Crossing #2 consists of an existing vegetated dirt ford on a Class III watercourse. The road accessing this crossing is no longer in use. The Discharger shall work to assure the old road surface does not discharge to this crossing. Photo date: 02/09/2018

## Photographs



**Picture 12:** This image illustrates how the two western greenhouses associated with CS #1 are less than 50' from an unnamed Class III watercourse. The Discharger shall cease cultivation activities within these segments of greenhouse until all cultivation-related materials can be removed from the riparian buffer. Photo date: 02/09/2018

## Photographs



**Picture 13:** This fill, MP #5, is located within a Class III riparian buffer less than 2' from a Class III watercourse. This fill has yet to discharge any sediment. The Discharger shall remove all threatening fill material and contour the site to natural conditions. Photo date: 02/09/2018

## Photographs



**Picture 14:** MP #7 consists of a developed landing that once contained multiple structures including a seasonal residence and multiple storage sheds. This location is now littered with cultivation-related and domestic waste. The Discharger shall remove all waste and dispose of it off-site at a proper waste disposal site. Photo date: 01/17/2018

## Photographs



**Picture 15:** MP #8 consists of strips of melted poly plastic along the most northeastern greenhouse located at CS #1. The Discharger shall remove this cultivation-related waste and properly dispose of it off site. Photo date: 01/17/2018

## Photographs



**Picture 16:** MP #9 consists of leftover perlite from an old cultivation spoils pile. The Discharger shall remove all perlite from this site and dispose of it off-site at a solid waste disposal site. Photo date: 02/09/2018

## Photographs



**Picture 17:** MP #10 consists of leftover perlite from an old cultivation spoils pile. The Discharger shall remove all perlite and dispose of it off-site at a solid waste disposal site. Photo date: 02/09/2018

# STATEMENT OF CONTINGENT AND LIMITING CONDITIONS CONCERNING THE PREPARATION AND USE OF WATER RESOURCE PROTECTION PLAN

## Prepared by Timberland Resource Consultants

1. This Water Resource Protection Plan has been prepared for the property within APN 208-271-011 in Humboldt County, at the request of the Client.
2. Timberland Resource Consultants does not assume any liability for the use or misuse of the information in this Water Resource Protection Plan.
3. The information is based upon conditions apparent to Timberland Resource Consultants at the time the inspection was conducted, and as disclosed to Timberland Resource Consultants by the landowner and/or Discharger. Changes due to land use activities or environmental factors occurring after this inspection, have not been considered in this Water Resource Protection Plan.
4. Maps, photos, and any other graphical information presented in this report are for illustrative purposes. Their scales are approximate, and they are not to be used for locating and establishing boundary lines.
5. The conditions presented in this Water Resource Protection Plan may differ from those made by others or from changes on the property occurring after the inspection was conducted. Timberland Resource Consultants does not guarantee this work against such differences.
6. Timberland Resource Consultants did not conduct an investigation on a legal survey of the property.
7. Persons using this Water Resource Protection Plan are advised to contact Timberland Resource Consultants prior to such use.
8. Timberland Resource Consultants will not discuss this report or reproduce it for anyone other than the Client named in this report without authorization from the Client.

  
Jack A Henry  
Timberland Resource Consultants

# **Attachments**

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**Best Management Practices, Diagrams, Supplemental Information**

## Culvert Sizing Rational

The permanent culvert upgrades have been sized for 100-year flood flow utilizing methods recommended in "Designing Watercourse Crossings for Passage of 100-year Flood Flows, Wood, and Sediment". 2004 Peter Cafferata, Thomas Spittler, Michael Wopat, Greg Bundros, and Sam Flanagan. This report recommends that the rational method be limited to watersheds less than 100 acres.

The 100-year Return-Period precipitation data is from:

[http://hdsc.nws.noaa.gov/hdsc/pfds/pfds\\_map\\_cont.html?bkmrk=ca](http://hdsc.nws.noaa.gov/hdsc/pfds/pfds_map_cont.html?bkmrk=ca).

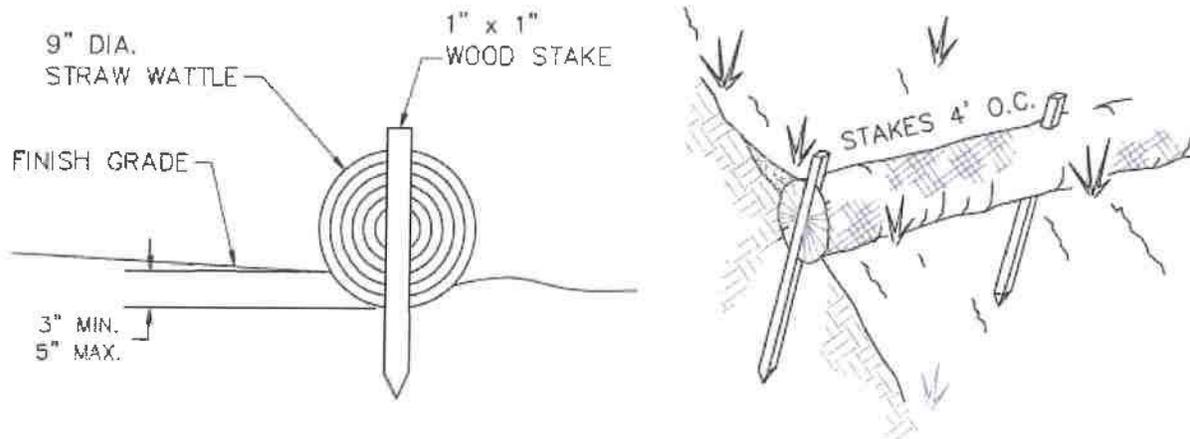
$T_c = 60((11.9 \times L^3)/H)^{0.385}$				$Q_{100} = CIA$			
Crossing	Channel length (to top of basin) (mi) L	Elevation difference (ft) H	Concentration time (min) T <sub>c</sub>	Runoff coefficient C	100-year Return-Period Precipitation (in/hr) I*	Area (acres) A	100-yr flood flow (cfs) Q <sub>100</sub>
1				0.35	3.08	1.75	1.9

HW/D	CU18	CU24	CU30	CU36	CU42	CU48	CU54	CU60	CU72	CU84	CU96
1.0	5.6	11.6	20	32	47	66	89	115	180	265	375
1.1	6.4	13	23	35	53	75	99	128	200	300	425
1.2	7	14.5	25	40	59	83	109	141	230	330	475
1.3	7.9	16.5	28	44	64	90	120	158	250	370	520
1.4	8.2	16.7	30	46	68	96	125	165	260	390	545
1.5	8.9	18	32	50	72	101	135	178	290	420	590
1.6	9.2	19	34	52	77	108	143	189	300	440	620
1.7	9.8	20	35	55	80	111	150	195	310	450	650
1.8	10	21	36	57	84	118	158	203	330	480	675
1.9	10.5	21.9	37	60	88	122	164	212	340	500	700
2.0	11	22.1	39	61	90	128	170	220	350	520	730

The recommended minimum culvert size is based on the premise that the culvert should pass a design flow without allowing the inlet to become submerged. Therefore, the proposed culvert sizes specified in this document are based upon a headwall height to diameter ratio of

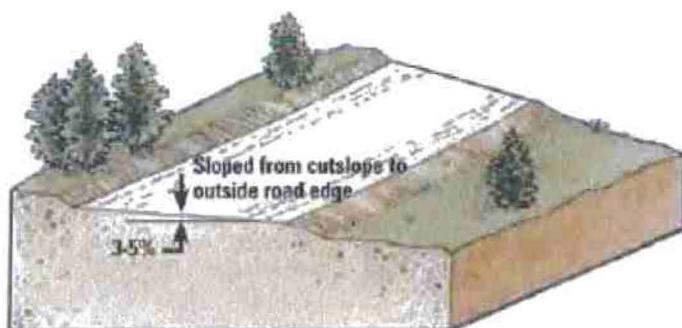
### **BMP: Erosion Control**

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



## BMP: Road Shaping

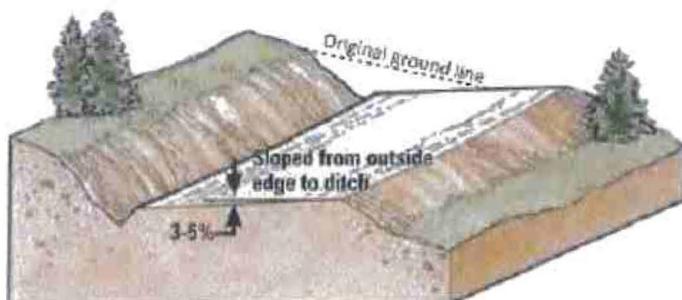
### Outsloped



Outsloped roads are used:

- where road grades are gentle or moderate (58-12%)
- to minimize construction costs
- where cutbanks are dry
- with an inside ditch, where cutbanks are wet
- where road surface drainage is to be dispersed
- always in concert with rolling dips

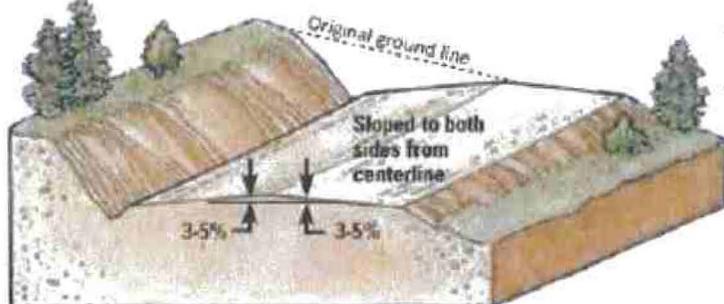
### Insloped



Insloped roads are used:

- where road grades are moderate to steep (28-12%)
- where road grades are moderate or steep and slippery (muddy, snowy or icy)
- where cutbanks are wet and ditches are used
- where ditches can be maintained
- where fillslopes are unstable or highly erodible

### Crowned



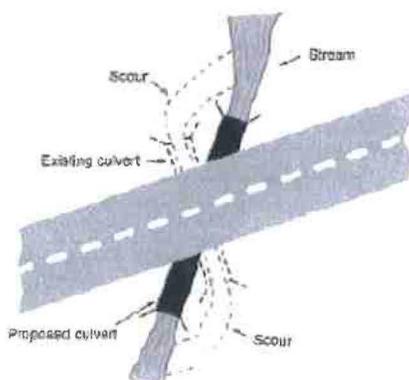
Crowned roads are used:

- where road grades are gentle or moderate (58-12%)
- where ditches are maintained and can be drained frequently
- where roads are wide and two way traffic is common
- where commercial or high traffic use is common
- where slippery or icy conditions are common

**FIGURE 27. Road surface shapes include outsloped, insloped and crowned. The diagram depicts an outsloped road with no ditch (top), an insloped road with the inside ditch (center), and a crowned road with an inside ditch (bottom). Outsloped road shapes are generally preferred because of lower construction and maintenance costs. Where cutbanks are wet with spring flow an outsloped road shape can be combined with an inside ditch. Note that insloped and crowned roads generally require more hillslope cutting and have higher cutbanks than outsloped roads because of the extra width needed for a ditch (Modified from: Adams and Storm, 2011).**

## BMP: Permanent Culvert Crossing

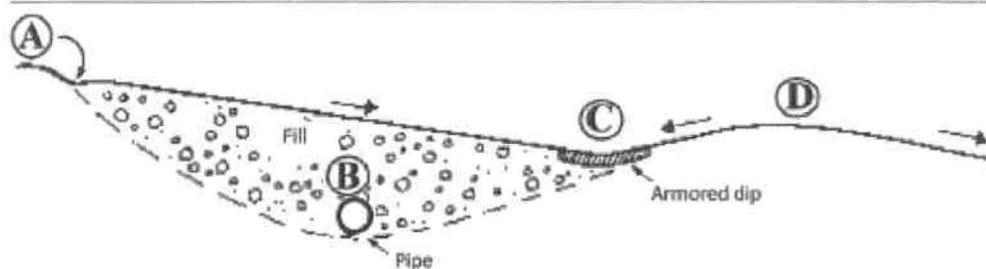
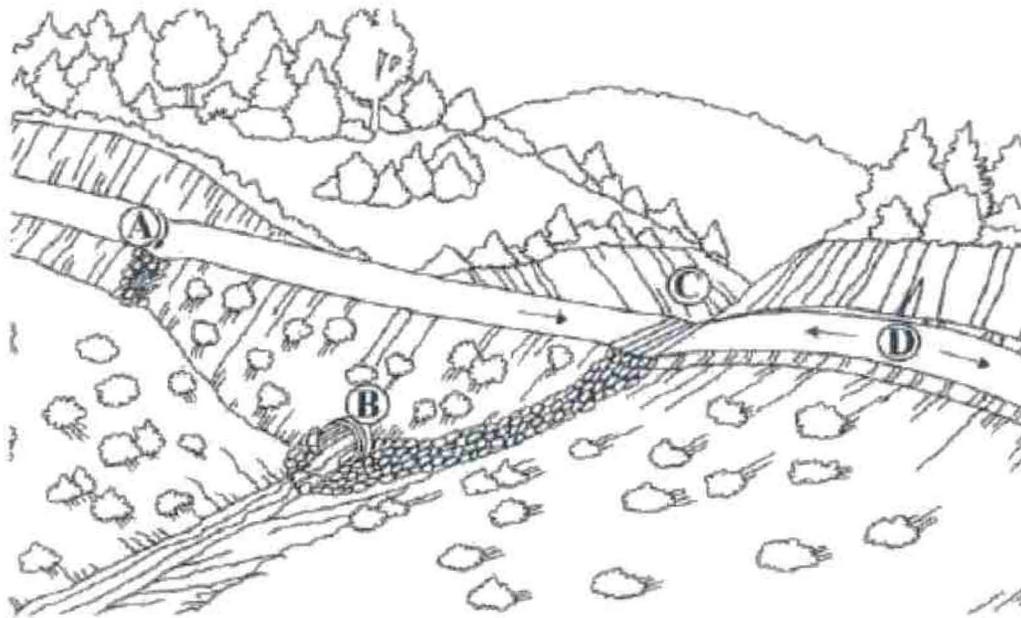
- New culvert installations shall be sized to accommodate flows associated with a 100-year storm event.
- If the new culvert is replacing a poorly installed old culvert, the crossing may need to be abandoned to the following standard:
  - When fills are removed they shall be excavated to form a channel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



HANDBOOK FOR FOREST, RANCH AND RURAL ROADS

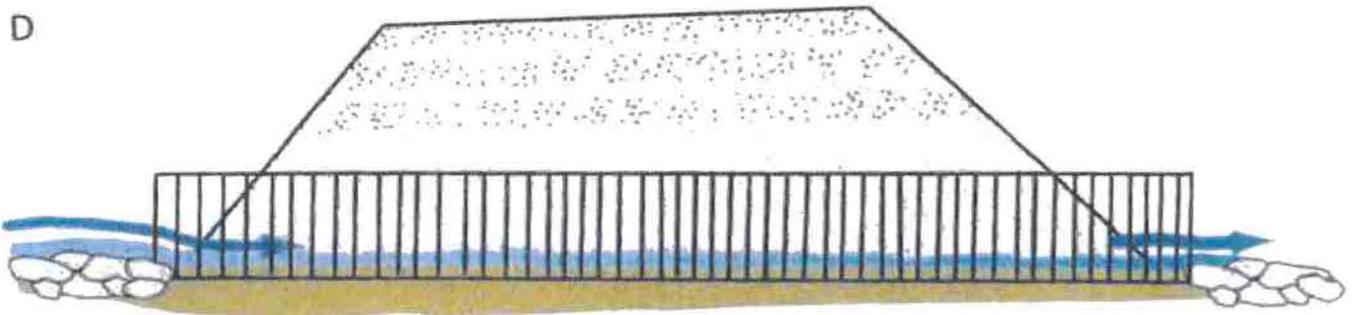
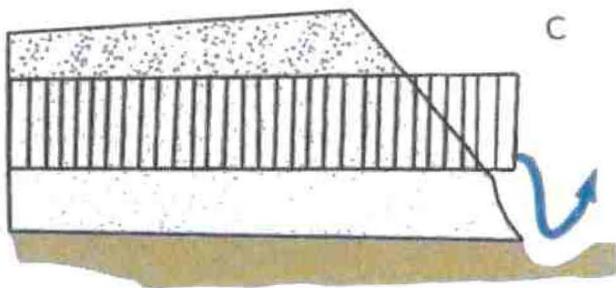
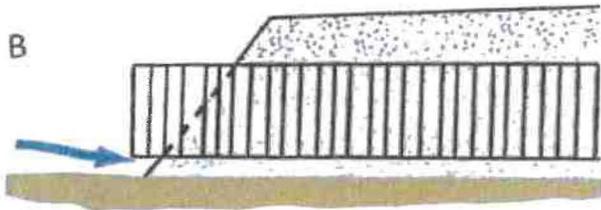
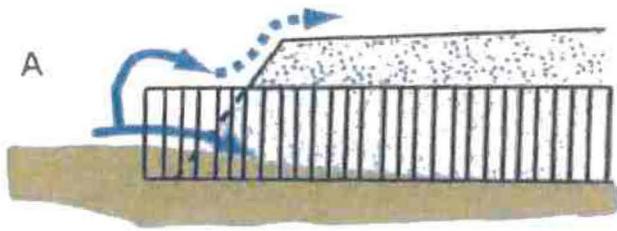
**FIGURE 97.** Culvert alignment should be in relation to the stream and not the road. It is important that the stream enters and leaves the culvert in a relatively straight horizontal alignment so streamflow does not have to turn to enter the inlet or discharge into a bank as it exits. This figure shows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

## BMP: Permanent Culvert Crossing (Cont.)



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

## BMP: Permanent Culvert Crossing (Cont.)



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

## Prescribed Seed Mix

### Native Erosion (Perennial and Annual) Control Mix

1. <i>Bromus carinatus</i> /California Brome	<b>25</b>
2. <i>Hordeum brachyantherum</i> /Meadow Barley	<b>10</b>
3. <i>Vulpia microstachys</i> /Three Weeks Fescue	<b>6</b>
4. <i>Trifolium wildenovii</i> /Tomcat Clover	<b>4</b>
	<b>45 lbs./acre</b>

- Hydroseeded adjacent to riparian corridors.
- Worked well for erosion control on bare slopes
- Successful establishment of seed mix except for the *Trifolium*,
- Not sure of the longevity of seed mix, *Holcus lanatus* (Velvet grass) and *Anthoxanthum odoratum* (Sweet vernal) beginning to occur within seeded area.
- Seed mix obtained from Pacific Coast Seed located in Livermore, California

