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

MAR 20 2017

CDFW - EUREKA



**STREAMBED ALTERATION AGREEMENT**

NOTIFICATION NO. 1600-2016-0195-R1

Unnamed Tributary to Bear Creek, Tributary to the Mattole River and  
the Pacific Ocean

Mr. Georgi Aleksandrov  
Aleksandrov Water Diversion and Stream Crossing Project  
2 Encroachments



This Streambed Alteration Agreement (Agreement) is entered into between the California Department of Fish and Wildlife (CDFW) and Mr. Georgi Aleksandrov (Permittee).

**RECITALS**

WHEREAS, pursuant to Fish and Game Code (FGC) section 1602, the Permittee initially notified CDFW on May 9, 2016, 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 Little Bear Creek watershed, approximately 1.7 miles west/southwest of the town of Ettersburg, County of Humboldt, State of California. The project is located in Section 11, T4S, R1E, Humboldt Base and Meridian; in the Honeydew U.S. Geological Survey 7.5-minute quadrangle; Assessor's Parcel Number 108-065-13; latitude 40.1256 N and longitude 124.0283 W at the Point of Diversion (POD).

**PROJECT DESCRIPTION**

The project is limited to two encroachments. One encroachment is for water diversion from a Class II spring that provides water for domestic use. Work for the water diversion

will include use and maintenance of the water diversion infrastructure. The other encroachments include installation of a rocked ford. Work for this project will include excavation, placement of rock armoring, and relocation of the fill material.

## **PROJECT IMPACTS**

Existing fish or wildlife resources the project could substantially adversely affect include: Chinook salmon (*Oncorhynchus tshawytscha*), coho salmon (*O. kisutch*), steelhead trout (*O. mykiss*), amphibians, reptiles, aquatic invertebrates, mammals, birds, and other aquatic and riparian species.

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

### **Impacts to water quality:**

- increased water temperature;
- reduced instream flow;
- 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:**

- cumulative effect when other diversions on the same stream are considered;
- diversion of flow from activity site;
- 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 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.
- 1.4 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 that the bypass flows and diversion rates 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.
- 1.5 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.
- 1.6 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.

## **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 the Permittee Notification received on May 9, 2016, together with all maps, BMP's, photographs, drawings, and other supporting documents submitted with the Notification.
- 2.2 Maximum Diversion Rate. The maximum instantaneous diversion rate from the water intake shall not exceed 20% of the total flow at any time.
- 2.3 Bypass Flow. The Permittee shall pass sufficient flow at all times to keep all aquatic species including fish and other aquatic life in good condition below the point of diversion.

- 2.4 Seasonal Diversion Minimization. Water diverted during the low flow season from May 15 to October 15 of any year shall not exceed more than **200 gallons per day** beginning May 15, 2017. Water shall be diverted only if the Permittee can adhere to conditions 2.2 and 2.3 of this Agreement.
- 2.5 Measurement of Diverted Flow. The Permittee shall install a device acceptable to CDFW for measuring the quantity of water diverted to and from the spring and well. This measurement shall begin as soon as this Agreement is signed by the Permittee. The Permittee shall record the quantity of water pumped to and from the system on a weekly basis. Alternatively, the Permittee can record the frequency of pumping and the time to fill storage.
- 2.6 Intake Structure. No polluting materials (e.g., particle board, plastic sheeting, bentonite) shall be used to construct or screen, or cover the diversion intake structure.
- 2.7 Intake Screening. Screens shall be installed on intakes wherever water is diverted, and shall be in place whenever water is diverted. Openings in intakes shall not exceed 1/8 inch diameter (horizontal for slotted or square openings) or 3/32 inch for round openings. The Permittee shall regularly inspect, clean, and maintain screens in good condition.
- 2.8 Intake Shall Not Impede Aquatic Species Passage. The water diversion structures shall be designed, constructed, and maintained such that they do not constitute a barrier to upstream or downstream movement of aquatic life.
- 2.9 Water Conservation. The Permittee shall make best efforts to minimize water use, and to follow best practices for water conservation and management.
- 2.10 Water Storage Maintenance. Storage tanks shall have a float valve to shut off the diversion when tanks are full to prevent overflow from being diverted when not needed. The Permittee shall install any other measures necessary to prevent overflow of tanks resulting in more water being diverted than is used.
- 2.11 State Water Code. This Agreement does not constitute a valid water right. The Permittee shall comply with State Water Code sections 5100 and 1200 et seq. as appropriate for the water diversion and water storage. The application for this registration is found at:  
[http://www.swrcb.ca.gov/waterrights/publications\\_forms/forms/docs/sdu\\_registration.pdf](http://www.swrcb.ca.gov/waterrights/publications_forms/forms/docs/sdu_registration.pdf).

#### **Rocked Ford**

- 2.12 Work Period. All work, not including water diversion, shall be confined to the period June 1 through October 15 of each year. Work within the active channel of a stream shall be restricted to periods of **no stream flow and 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.

- 2.13 Excavated Fill. Excavated fill material shall be placed in 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.
- 2.14 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.
- 2.15 Rock Armor Placement.
- 2.15.1 No heavy equipment shall enter the wetted stream channel.
- 2.15.2 No fill material, other than clean rock, shall be placed in the stream channel.
- 2.15.3 Rock shall be sized to withstand washout from high stream flows, and extend above the ordinary high water level.
- 2.15.4 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.
- 2.16 Stream Protection. No debris, soil, silt, sand, bark, slash, sawdust, rubbish, cement or concrete washings, oil or petroleum products, or other deleterious material from project activities shall be allowed to enter into or be placed where it may be washed by rainfall or runoff into the stream. All project materials and debris shall be removed from the project site and properly disposed of off-site upon project completion.
- 2.17 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.
- 2.18 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.

### **3. Reporting Measures**

- 3.1 Measurement of Diverted Flow. Copies of the **water diversion records (condition 2.5)** shall be submitted to CDFW at 619 Second Street, Eureka, CA 95501 **no later than December 31 of each year beginning in 2017.**

### **CONTACT INFORMATION**

Written communication that the Permittee or CDFW submits to the other shall be delivered to the address below unless the Permittee or CDFW specifies otherwise.

To Permittee:

Mr. Georgi Aleksandrov  
1310 Harrow Road  
Garberville, California 95542

To CDFW:

Department of Fish and Wildlife  
Northern Region  
619 Second Street  
Eureka, California 95501  
Attn: Lake and Streambed Alteration Program  
Notification #1600-2016-0195-R1

### **LIABILITY**

The 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 the Permittee or any person acting on behalf of the Permittee, including its officers, employees, representatives, agents, or contractors and subcontractors, from 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.

This Agreement does not relieve the Permittee or any person acting on behalf of the Permittee, including its officers, employees, representatives, agents, or contractors and subcontractors, from complying with other applicable statutes in the FGC including, but not limited to, FGC sections 2050 *et seq.* (threatened and endangered species), 3503 (bird nests and eggs), 3503.5 (birds of prey), 5650 (water pollution), 5652 (refuse disposal into water), 5901 (fish passage), 5937 (sufficient water for fish), and 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 FGC section 1605(b), the 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, the 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 FGC 1605(b) through (e).

If the Permittee fails to submit a request to extend the Agreement prior to its expiration, the Permittee must submit a new notification and notification fee before beginning or continuing the project the Agreement covers (FGC section 1605(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](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 FGC section 1605(a)(2) requires.

## **AUTHORITY**

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

## **AUTHORIZATION**

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

**CONCURRENCE**

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

**FOR Mr. Georgi Aleksandrov**



Georgi Aleksandrov

4.9.17

Date

**FOR DEPARTMENT OF FISH AND WILDLIFE**



Gordon Leppig

Senior Environmental Scientist Supervisor

3/21/17

Date

Prepared by: David Manthorne, Environmental Scientist, July 13, 2016



## NOTIFICATION OF LAKE OR STREAMBED ALTERATION

Applicant Name: Georgi Aleksandrov

Project Name: Aleksandrov 1600

### ATTACHMENT C

#### Water Diversion Questionnaire

##### I. DIVERSION OR OBSTRUCTION

Please provide the additional information below **if** the project is directly related to any diversion, obstruction, extraction, or impoundment of the natural flow of a river, stream, or lake. If you have a current or expired Lake or Streambed Alteration Agreement (Agreement) for some activity related to your project, provide the Agreement number in your project description below.

- A. Attach plans of any diversion or water storage structure or facility that will be constructed or if no structures or facilities will be constructed, photographs of the project site, including any existing facilities or structures.
- B. Please complete the water use table below. For diversion rate, use gallons per day (gpd) if rate is less than 0.025 cubic foot per second (cfs) (approximately 16,000 gallons per day).

SEASON OF DIVERSION		PURPOSE OF USE	DIVERSION RATE (cfs or gpm)	AMOUNT USED (acre feet)	
BEGINNING DATE (Mo. & Day)	ENDING DATE (Mo. & Day)			FROM STORAGE	BY DIVERSION
January 1	December 31		1.5 gpm		73k/yr

- C. Attach a topographic map that is labeled to show the following:

1. Source of the water
2. Points of diversion
3. Areas of use
4. Storage areas

- D. Specify the maximum instantaneous rate of withdrawal (using proposed equipment) in cubic feet per second (cfs) or gallons per minute (gpm): 1.5.

NOTIFICATION OF LAKE OR STREAMBED ALTERATION  
ATTACHMENT C

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E. Check each box below that applies to the project water rights and attach supporting documents.

☒ Riparian. *Attach the most recent statement of riparian rights filed with the State Water Resources Control Board (SWRCB).*

☐ Diversion for immediate use

☐ Diversion to storage (for less than 30 days)

☐ Appropriative

☐ Pre-1914

☐ Post-1914. *Attach a copy of the applicant's water right application, permit, or license filed with or issued by the SWRCB.*

☐ Diversion for immediate use. *Attach a copy of the applicant's water right application, permit, or license filed with or issued by the SWRCB.*

☐ Diversion to storage. *Attach a copy of the applicant's water right application, permit, or license filed with or issued by the SWRCB.*

☒ Small domestic or livestock stockpond use. *Attach a copy of the applicant's registration of water use form filed with the SWRCB. (See Water Code section 1228 et seq.)*

☐ Purchased or contracted water. *Attach a copy of the applicant's contract or letter from the applicant's water provider.*

☐ Other. *Describe below or attach separate page.*

Division Of Water Rights Initial Statement of Water Diversion and Use for 2015  
is attached

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F. Approximate lowest level of flow in the river, stream, or lake at the point of diversion during the proposed season of diversion in gpm or cfs: Unknown.

G. Other information. After the Department reviews the project description, and based on the project's location and potential impacts to fish and wildlife resources, the Department will determine if additional information is needed to complete the notification. Such information could include more site-specific information to ensure that the terms and conditions in the Lake or Streambed Alteration Agreement issued to the applicant will be adequate to protect the fish and wildlife resources the diversion or obstruction could adversely affect. Site-specific information could include specific studies based on the season of diversion, the location of the diversion relative to other diversions in the watershed, the method of diversion, and the quantity of water to be diverted, such as the following:

NOTIFICATION OF LAKE OR STREAMBED ALTERATION  
ATTACHMENT C

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1. *Water Availability Analysis* to determine if the water can be diverted without causing substantial adverse effects on downstream fish and wildlife resources. Water availability analyses are based on a comparison of flows without any diversions (unimpaired flows) and flows available when all known diversions are "subtracted" (impaired flows). The protocol for water availability analyses is available on request.
2. *Instream Flow Study* to determine the minimum bypass flows needed and maximum rates of withdrawal possible to provide adequate depths and velocities to protect habitat for all life stages of aquatic resources. The study plan, which must be prepared by a qualified fisheries biologist and approved by the Department, will determine the effects of the proposed diversion on flow depth and velocity.
3. *Water Quality Study* to assess the effects of the proposed water diversion or impoundment on water temperature and water quality at and downstream from the point of diversion.

## II. PERMANENT OR TEMPORARY RESERVOIR

Please provide the information below *if* the project includes the construction of a reservoir, whether permanent or temporary, and/or the filling of a reservoir by diverting or obstructing the flow of a river, stream, or lake.

- A. Proposed use of the stored water: \_\_\_\_\_.
- B. Construction plans for the reservoir and dam. (*Attach plans*)
- C. A complete description of the reservoir and dam, including the methods and materials that will be used to construct the reservoir and dam and the following dimensions certified by a licensed professional: the width, length, depth, and total surface area of the reservoir pool; the volume of water in acre-feet that will be stored in the reservoir; and the height and length of the dam.
- D. The amount of riparian land that will be inundated (i.e., upstream from the dam): \_\_\_\_\_.
- E. Where vehicles will enter and exit the project site during construction and for maintenance purposes after construction. (*Attach map*)
- F. The maximum distance of the disturbance that will occur upstream and downstream during construction: \_\_\_\_\_.
- G. The methods that will be employed to ensure that the flow is maintained below the dam at all times when water is being diverted into the reservoir. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_.
- H. Specify the time period when the area below the dam becomes dry, if at all. \_\_\_\_\_.

NOTIFICATION OF LAKE OR STREAMBED ALTERATION  
ATTACHMENT C

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- I. The methods that will be employed to ensure that adult and juvenile fish will be able to pass over or around the dam. \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_.

- J. If a fish ladder is necessary to enable adult and juvenile fish to pass over or around the dam, provide construction plans and an operation plan for the fish ladder. (*Enclose, if applicable*)

- K. The methods that will be employed to monitor and maintain water quality (including temperature) within the reservoir. \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_.

**III. TEMPORARY RESERVOIR**

Please provide the information below *if* the project includes the construction of a temporary reservoir only within the stream zone.

- A. Date of dam installation: \_\_\_\_\_.

- B. Date of dam removal: \_\_\_\_\_.

- C. Amount of time it will take to construct the dam: \_\_\_\_\_.

- D. Amount of time it will take to remove the dam: \_\_\_\_\_.

- E. Methods to ensure that the reservoir pool will be drained in a manner that does not strand or otherwise harm fish: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_.

## Addendum 1

The Applicant's son's (Ivel Aleksandrov) phone number is provided because Georgi Aleksandrov's English is not good.

## Addendum 8M – Coordinates (NAD 83)

**POD:** -124.0282755°; 40.12561820°

**Rock Ford:** -124.0255655°; 40.12692788°

## Addendum 10 – Project Description

**POD:** This notification is for the diversion of surface water from a Class II spring, which is located in the head waters of a small Class III drainage that is tributary to Bear Creek. The Applicant began leasing this property in 2015, and has not modified the diversion and associated infrastructure. This notification proposes direct diversion from the spring to the temporary storage tanks for domestic use only at 200 gallons per day.

**Pond:** The off-stream rain catchment was constructed between 1998 and 2005 based upon review of aerial imagery. In August 2015, I inspected the pond at the request of the landowner, and it was grown over with small trees and shrubs, and holding only approximately 10-15% of its capacity. In hopes of increasing/improving water holding capacity, the applicant cleared the vegetation, deepened and enlarged the pond, and compacted the impoundment structure and embankment faces followed by slope stabilization. The pond's dimensions are approximately 80 feet long by 70 feet wide by 18 feet maximum depth. This conservatively equates to 600,000 gallons. To date, the pond has filled entirely from rain water and just barely overtopped into the spillway during the peak of winter. The pond is slightly leaking and the landowner intends on lining the pond in the fall of 2016 if necessary. The pond is expected to provide all of the landowner's agricultural needs in the future without diversion from the spring. This notification will include the requirement to annually drain down the pond prior to the winter period in order to: (1) disrupt the life cycle of the American bullfrog, which will likely colonize the pond in the future, and (2) to minimize overtopping during the winter period. Despite having a good spillway design that directs water into a vegetated swale feature, overtopping should be controlled to the extent feasible to minimize erosion.

**Rock Ford:** An old logging road is used by the landowner (not the Applicant) to access an on-stream pond located on the adjacent property. The crossing is a dirt ford and is head cutting as shown on the attached photographs. The off-stream pond could increase Class III watercourse surface flows, which could exacerbate this erosion. The Applicant shall construct a rock ford at this location per the specification stated in the attached addendums.

**Water Use and Storage:** The landowner presently has four 34-foot wide by 104-foot long agricultural greenhouses for a total of approximately 12,700 ft<sup>2</sup> of useable agriculture. Water usage for this amount of agriculture will range from 1,300 to 2,290 gallons of water per day for the entire growing season. This would require a maximum 350,000 gallons of water for the entire growing season. The pond will provide adequate water for the Applicant's present agricultural needs without the need to divert water from the spring anytime during the year. The attached Initial Statement of Water Diversion and Use for 2015 was for direct diversion from the spring to the 25,000-gallon storage tank.

## **Addendum 10 – Project Description (Cont.)**

All roads and developed sites were assessed for compliance with CDFW, which includes jurisdictional 1600 sites and potential California Fish and Game Code Section 5650 violations. All of the roads, agricultural sites, and other developed or graded areas are located on a ridge top, with no reasonable potential for discharge into watercourses. The landowner will be enrolling into *California Regional Water Quality Control Board North Coast Region Order No. 2015-0023, Waiver of Waste Discharge Requirements and General Water Quality Certification for Discharges of Waste Resulting from Cannabis Cultivation and Associated Activities or Operations with Similar Environmental Effects In the North Coast Region*, by Timberland Resource Consultants, Inc. Following enrollment, TRC will be conducting a thorough field assessment to evaluate compliance with the Standard Conditions per Provision I.B of Order No. R1-2015-0023. This assessment is not expected to include any sites that are jurisdictional to CDFW per the California Fish and Game Code Section 1600 that should otherwise be included in this notification.



## Addendum 10 – Pictures



Picture 1: This is a photograph of the POD, which is a small wooden spring box plumbed with  $\frac{3}{4}$ -inch poly pipe. This picture is facing upslope. Photo date 4-9-2016.

## Addendum 10 – Pictures (Cont.)



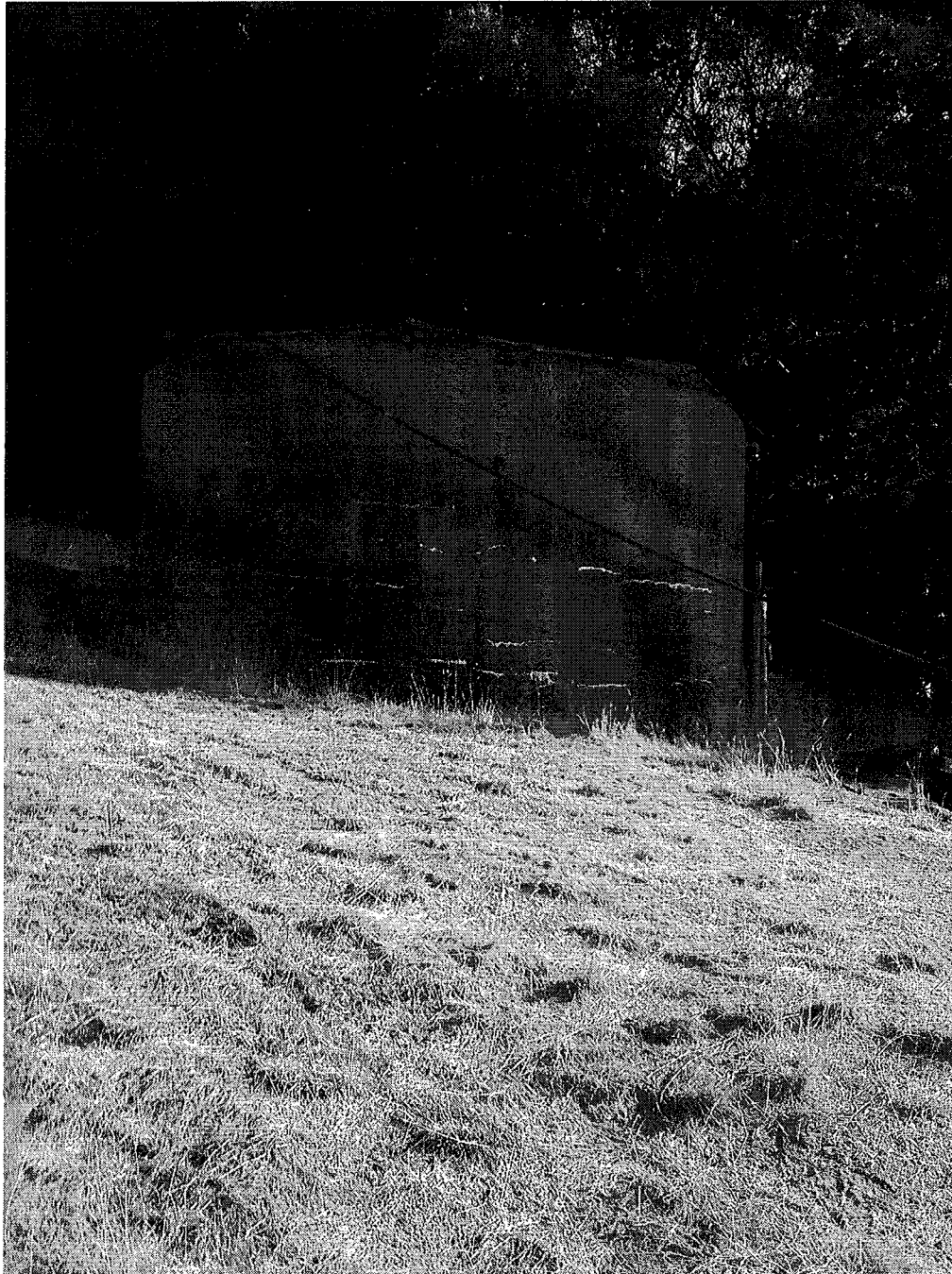
Picture 2: This is a photo looking downstream from the POD. The spring goes subsurface but the convex topography suggests shallow ground water. The Class III watercourse is 150' +/- in the distance. Photo date 4-9-2016.

## Addendum 10 – Pictures (Cont.)



Picture 3: This is a photo of the 2,000-gallon water tank located approximately 200 feet west of the POD. Water diverted from the spring is piped to this storage tank for pumping upslope to the 25,000 gallon holding tank. Photo date 4-9-2016.

## Addendum 10 – Pictures (Cont.)



Picture 4: 25,000 gallon holding tank at the top of the property. Diverted water from spring is gravity fed to the 2,000-gallon tank and then pumped uphill to this tank. Photo Date 4-9-2016.

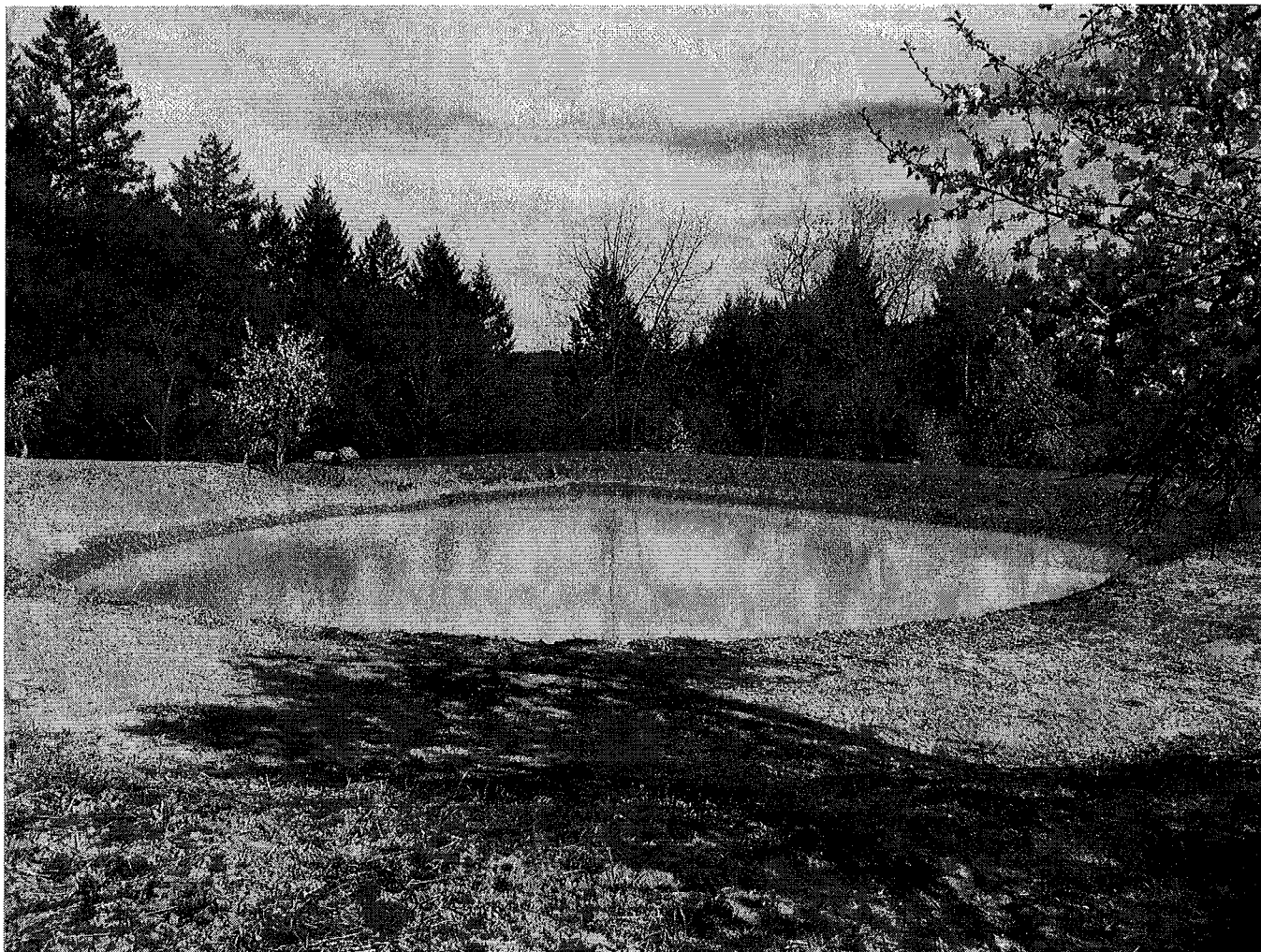


## Addendum 10 – Pictures (Cont.)



Picture 5: Off-stream pond looking southeast. The pond was constructed between 1998 and 2005. In 2014, the pond was grown over with small trees and shrubs and only holding approximately 10-15% of its capacity. In hopes of increasing/improving water holding capacity, the applicant enlarged the pond and compacted the impoundment structure and embankment face followed by slope stabilization. In 2016, the pond filled entirely from rain water and just barely overtopped into the spillway, which is located at left of photo near apple tree. Photo Date 4-9-2016.

## Addendum 10 – Pictures (Cont.)



Picture 6: Off-stream pond looking south. Date 4-9-2016.

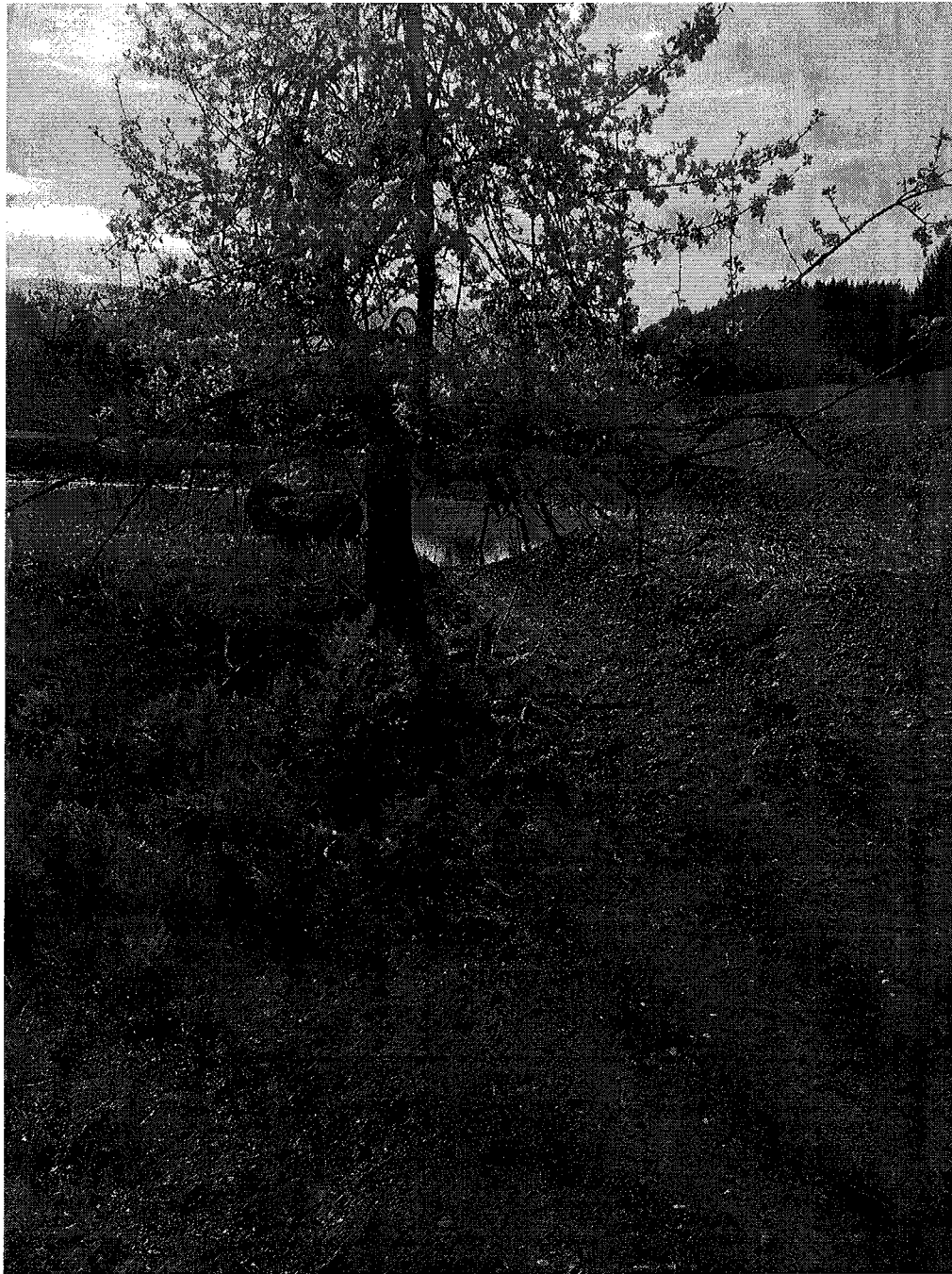


## Addendum 10 – Pictures (Cont.)



Picture 7: Photo of pond's spillway. The spillway was constructed to achieve a freeboard height of approximately 2-3 feet height. Photo date 4-9-2016.

## Addendum 10 – Pictures (Cont.)



Picture 8: Another photo of the pond's spillway. The spillway ditch's gradient is nearly flat before dissipating into a very broad swale feature. This grassy swale slowly transitions into a Class III watercourse approximately 200 feet downslope. There was no sign of surface flow hydrologic connectivity between the pond outlet and head of Class III watercourse. Nonetheless, this notification proposes to annually drain down the pond prior to the winter period. Photo date 4-9-2016.

## Addendum 10 – Pictures (Cont.)



Picture 9: Pond embankment and crest facing west. The width of the crest at freeboard height is approximately 10-12 feet. The Photo date 4-9-2016.

## Addendum 10 – Pictures (Cont.)



Picture 10: Photo of pond's southern outer embankment face, which is approximately 2.5:1~2:1 slope steepness. Photo facing east. Photo date 4-9-2016.



## Addendum 10 – Pictures (Cont.)



Picture 11: Photo of pond's western outer embankment face. Photo facing north. Photo date 4-9-2016.

## Addendum 10 – Pictures (Cont.)



Picture 12: Photo of outlet of Class III dirt ford crossing on secondary access road. This crossing is presently head cutting. The pond could contribute surface flow to this crossing and therefore the crossing needs to be upgraded to a Rock Ford. Photo date 4-9-2016.

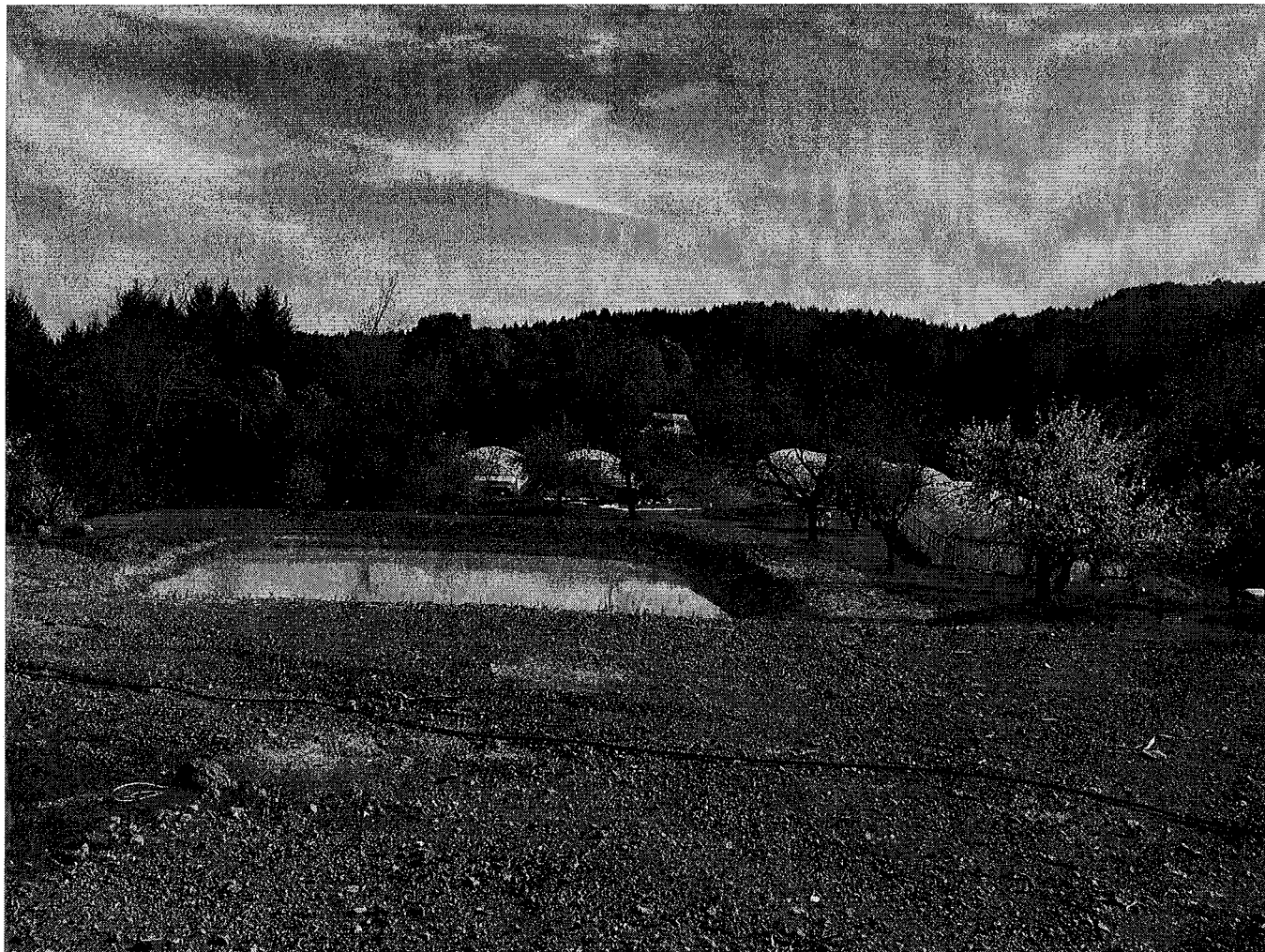


## Addendum 10 – Pictures (Cont.)



Picture 13: Photo of dirt ford Class III crossing looking south. This Class III crosses the road at a 45-degree angle. Photo date 4-9-2016.

## Addendum 10 – Pictures (Cont.)



Picture 14: Photo of four 34' by 104' agricultural greenhouses. Photo facing southeast. Photo date 4-9-2016.

## Addendum 10 – Pictures (Cont.)



Picture 15: Photo of four 34' by 104' agricultural greenhouses. Photo facing south. Photo date 4-9-2016.



Picture 16: Photo of residence facing east. Photo date 4-9-2016.



## Addendum 10 – Pictures (Cont.)



Picture 17: Photo of residence facing north. Photo date 4-9-2016.

## **Addendum 12A – Erosion Control Measures for Rock Ford**

Use a combination of mechanical and vegetative measures to minimize accelerated erosion from rock ford construction. Erosion control measures may include:

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

## Rock Ford Specifications

- Rocked fords are drainage structures designed to carry watercourses across roads.
- In channel constructed fords shall be of appropriate material that shall withstand erosion by expected velocities and placed in a U-shaped channel to create a drivable crossing.
  - The road shall dip into and out of the rocked ford to minimize diversion potential. Construct a broad rolling dip across the roadbed, centered at the crossing, which is large enough to contain the expected 100-yr flood discharge while preventing flood flow from diverting down the road or around the rock armor.
- The road surface at the ford shall be constructed with clean rock. The rock shall be applied to a minimum depth of 6 inches.
  - A range of interlocking rock armor sizes should be selected and sized so that peak flows will not pluck or transport the armor off the roadbed or the sloping fill face of the armored fill.
- The ford's outlet shall be rock armored to resist downcutting and erosion.
  - *Excavate the keyway and armored area* - Excavate a two to three foot deep "bed" into the dipped road surface and adjacent fillslope (to place the rock in) that extends from approximately the middle of the road, across the outer half of the road, and down the outboard road fill to where the base of the fill meets the natural channel. At the base of the fill, excavate a keyway trench extending across the channel bed.
  - *Armor the basal keyway* - Put aside the largest rock armoring to create the buttresses. Use the largest rock armor to fill the basal trench and create a buttress at the base of the fill. This should have a "U" shape to it and it will define the outlet where flow leaves the armored fill and enters the natural channel.
  - *Armor the fill* - Backfill the fill face with the remaining rock armor making sure the final armor is unsorted and well placed, the armor is two coarse-rock layers in thickness, and the armored area on the fill face also has a "U" shape that will accommodate the largest expected flow.
  - *Armor the top of the fill* - Install a second trenched buttress for large rock at the break-in-slope between the outboard road edge and the top of the fill face.
- If water is expected during the time of use, an adequate sized pipe shall be installed to handle the flow if present (min. 6 inch).
  - The pipe shall be laid over the rocked ford surface.
  - The inlet should be at grade with the upstream flow.
  - The outlet shall drain onto the outlet armoring of the rocked ford.
  - A layer of clean rock/gravel shall be installed over the pipe to establish the running surface of the truck road.
  - Following use, the temporary pipe shall be removed and the placed rock/gravel shall be graded out of the ford and used on the approaches.
  - No significant alteration to the bed and bank of the stream shall occur.
- Road approaches to rocked fords shall be rock surfaced out to the first drainage structure (i.e. waterbar) or hydrologic divide to prevent transport of sediment using rock.
- Bank and channel armoring may occur when appropriate to provide channel and bank stabilization.
- Road approach rock and rock ford armoring shall be reapplied following use as needed to maintain a permanent crossing.
- Stabilize the site pursuant to Addendum 12A

## Rock Ford Specifications



*Picture 1 of 4: An excavator or backhoe is used to dig a broad keyway across the base of the fill, where the fill intersects the natural channel, and another broad keyway at the top of the fill, where the top edge of the road surface is planned. The largest rock goes in the lower keyway, and coarse armor is also placed in the upper keyway across the full width of the design spillway where streamflow will flow over the fill and down the armored fill slope. Filter fabric, or a filter layer of small rock, is placed on the underlying soil to prevent erosion or winnowing of soil beneath the armor.*



## Rock Ford Specifications



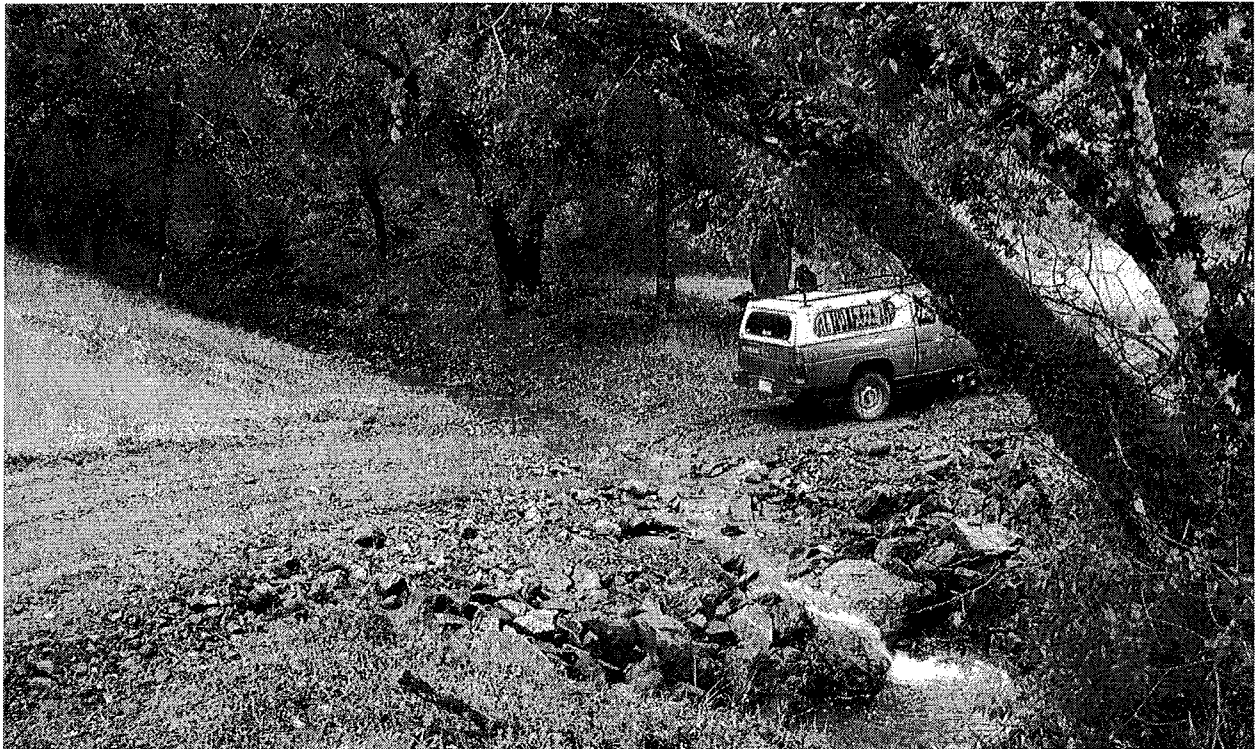
*Picture 2 of 4: Well graded rock armor is then backfilled into the structure and spread across the breadth of the U-shaped stream crossing, and about one-third the way up the roadbed, so that streamflow will only flow over or come in contact with resistant armor material. The armor must be spread and compacted across the design width of the expected flood flow channel width so peak flows will not flank the armored structure.*

## Rock Ford Specifications



*Picture 3 of 4: 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*

## Rock Ford Specifications



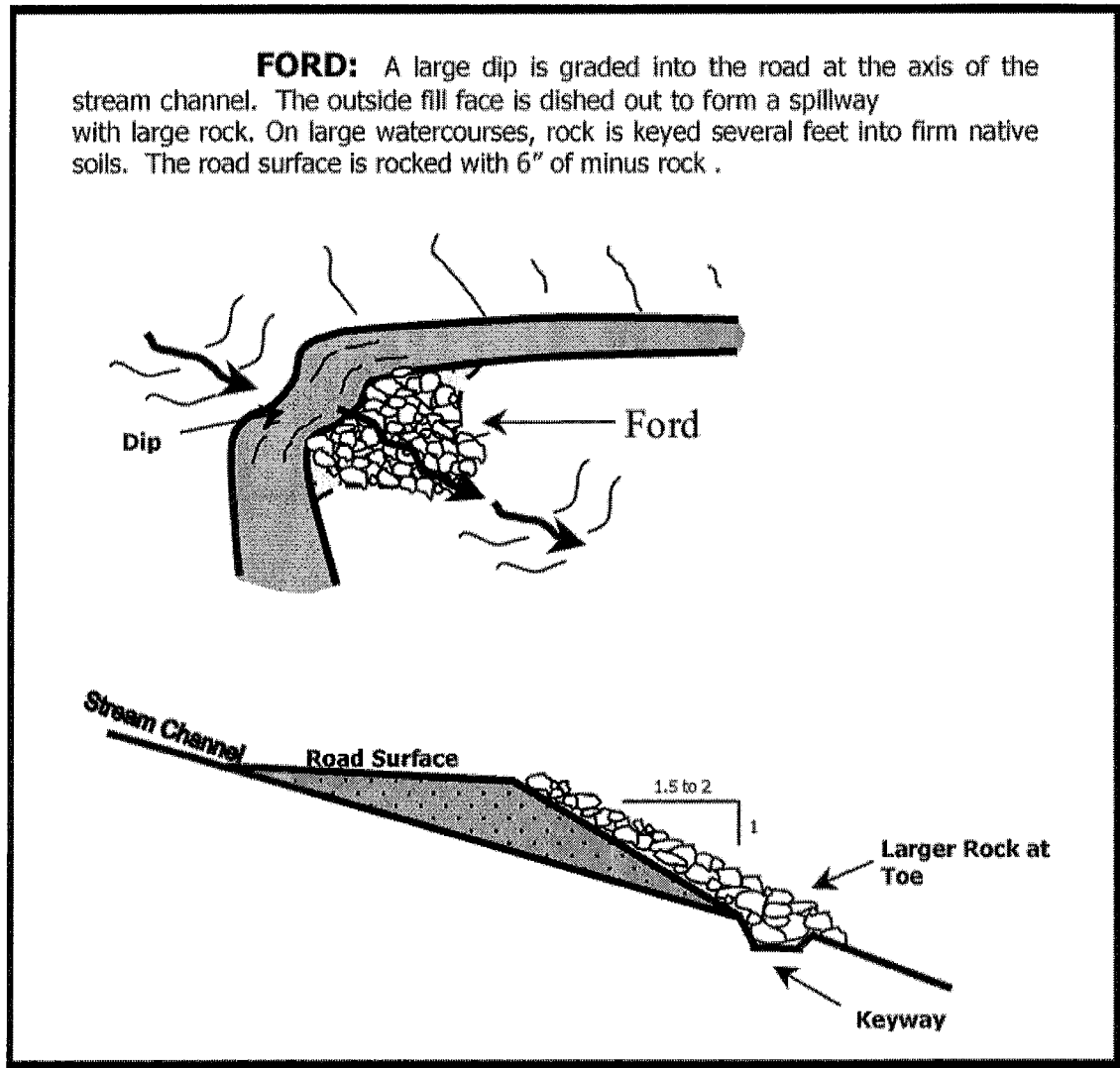
*Picture 4 of 4: The same armored fill as it appeared after the first winter flood flows. No maintenance was required to reopen the road. It is also clear that no stream diversion is possible at this stream crossing site, and the volume of fill within the crossing has been reduced to the minimum amount needed to maintain a relatively smooth driving surface on this low volume road*

## Rock Ford Specifications



*Example of a well-constructed rock ford with armored fill*

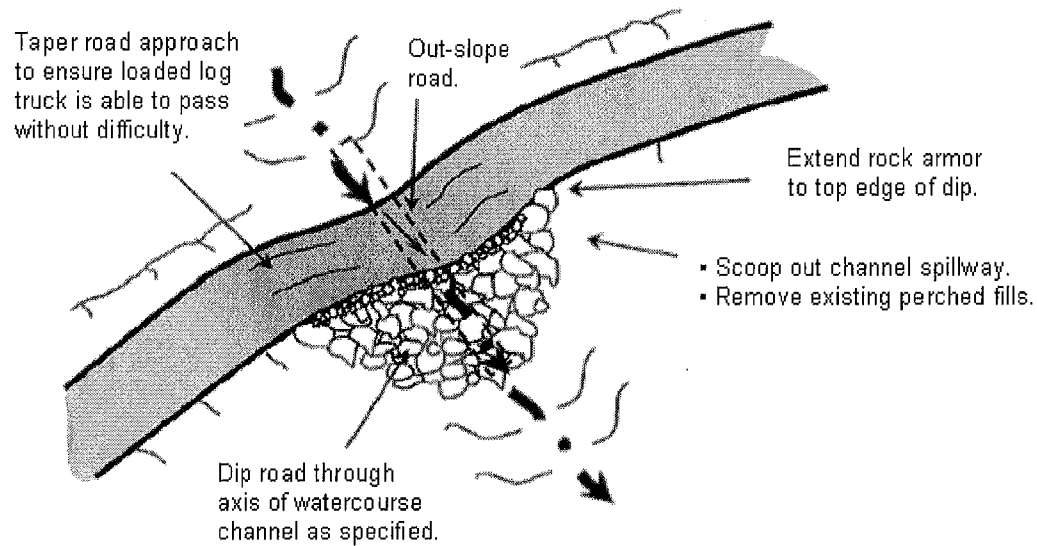
## Rocked Ford Specifications



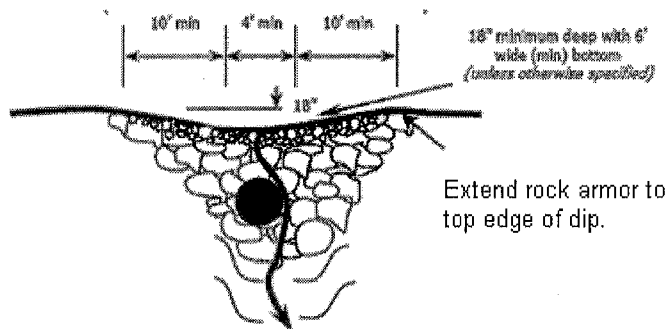
Ford Diagram

## Rocked Ford Specifications

### Vented Ford



Dip area to accommodate a culvert sized for 100-year flow (minimum dimensions given below).



#### LIP

- Use smaller rock at lip of ford.
- Fill voids with smaller rock to prevent piping around the larger rock.

