

Attachment 1 – Project Description

Overview of Project

This application is filed in connection with the second phase of a voluntary project to enhance streamflows in San Gregorio Creek for the benefit of native steelhead and coho salmon. Applicant Repetto Nursery, Inc. seeks authorization to appropriate an additional 14.1 acre feet of water to be diverted to storage annually between December 15 and March 31. The stored water will be used to allow the applicants to forbear their existing diversions during the dry season months of August, September, and October. As part of the project, the applicants will expand the capacity of their existing off-stream reservoir from 5.3 acre-feet to a nominal design capacity of 18.5 acre-feet.*

This project is being undertaken in partnership with Trout Unlimited, American Rivers, and the San Mateo Resource Conservation District, with funding from the State Coastal Conservancy, the National Oceanic and Atmospheric Administration, and an Integrated Regional Water Management Plan grant from the Department of Water Resources.

Background

Phase I of the project consisted of upgrades to the irrigation infrastructure of Repetto Farms to increase water use efficiency and reduce the rate of diversion from San Gregorio Creek. The efficiencies came about by upgrading the irrigation system to a direct irrigation line design to improve pressure distribution throughout the system, and replacing irrigation heads so that fields are evenly watered. This eliminated overwatering in some areas of the site, and remedied the problem of leakage from the former irrigation infrastructure. Irrigation is now run directly from an existing pond which is licensed to store 5.3 acre-feet of water, and which also functions as a regulating reservoir. As a result of these Phase I upgrades, Repetto Farms has been able to reduce its instantaneous rate of diversion from San Gregorio Creek during summer months from approximately 250 gallons per minute (gpm) down to approximately 70gpm.

Phase II of the project consists of enlarging the capacity of the existing storage pond from 5.3 acre-feet to 19.4 acre-feet, in order to allow the applicant to forbear diversion from San Gregorio Creek entirely during the annual period from August 1 to October 31. As an additional benefit, the enlarged reservoir will allow increased management flexibility during the period from April 1 to July 31, which may be used to obtain further streamflow benefits in coordination with the watermaster and other diverters.

Existing Water Rights

The applicant currently operates the existing storage reservoir pursuant to A25877 (License 12191), which allows diversion of 5.3 af from Dec. 1 – May 1, at a rate of diversion of 1 cfs (see

* The maximum operational capacity at full spillway height will be 19.4 acre-feet, and accordingly the amount of this application is based on that amount.

Application to Appropriate Water – Repetto Nursery

Attachment 5). In addition, the applicant has adjudicated rights of up to 104,400 gallons per day between April 1 and November 1 under the San Gregorio Stream System Adjudication entered by the San Mateo County Superior Court (Decree No. 355792) (see Attachment 6).

Proposed Season of Diversion, Rate of Diversion, and Bypass Flows

The applicant proposes the following terms for the new appropriative right sought pursuant to this Application:

Season of diversion: Dec. 15 – March 31

Rate of diversion/ bypass:

Streamflow	Max. rate of diversion
> 10 cfs	.5 cfs (220 gpm)
3 cfs – 10 cfs †	.15 cfs (70 gpm)
< 3 cfs	0 (no diversion)

The rationale for these proposed terms is set forth in Attachment 3.

Proposed Water Management Under the New Appropriative Right

With the changes proposed in this Application, annual water management will be as follows. The pond will be filled during the wet season pursuant to both existing License 12191 and this Application. The overall season of diversion will be from Dec. 1 – May 1, the allowable season under License 12191; however, the applicant will ensure that no more than 5.3 af of diversion occurs outside the December 15 - March 31 season of diversion proposed for this new right. Once the irrigation season starts on April 1, the pond will function as a regulating reservoir for irrigation water pumped pursuant to the farm’s adjudicated riparian rights. All water applied to crops will be pumped from the reservoir, and additional water will be pumped from the creek to replace the water used and keep the reservoir topped off. This will leave the bulk of the water collected and stored during the wet season in the reservoir, while smaller amounts representing daily irrigation demand are cycled through the reservoir. Beginning on August 1, diversion from the creek will cease, and irrigation from that point on will draw down the reservoir until the end of the irrigation season on November 1.

In addition to these measures, water management will also be subject to measures as ordered by the watermaster pursuant to the court decree governing the San Gregorio adjudication. These include “no pumping days” during low water years.

† The 3 cfs bypass flow will require approval of the San Mateo County Superior Court pursuant to paragraph 24 of the Decree, which provides that winter bypass flows of less than 10 cfs may be included in new appropriative rights if a showing is made that such diversions will not adversely affect public trust uses. Such a showing is set forth in Attachment 3 to this Application.

Application to Appropriate Water – Repetto Nursery

Table illustrating water management calendar

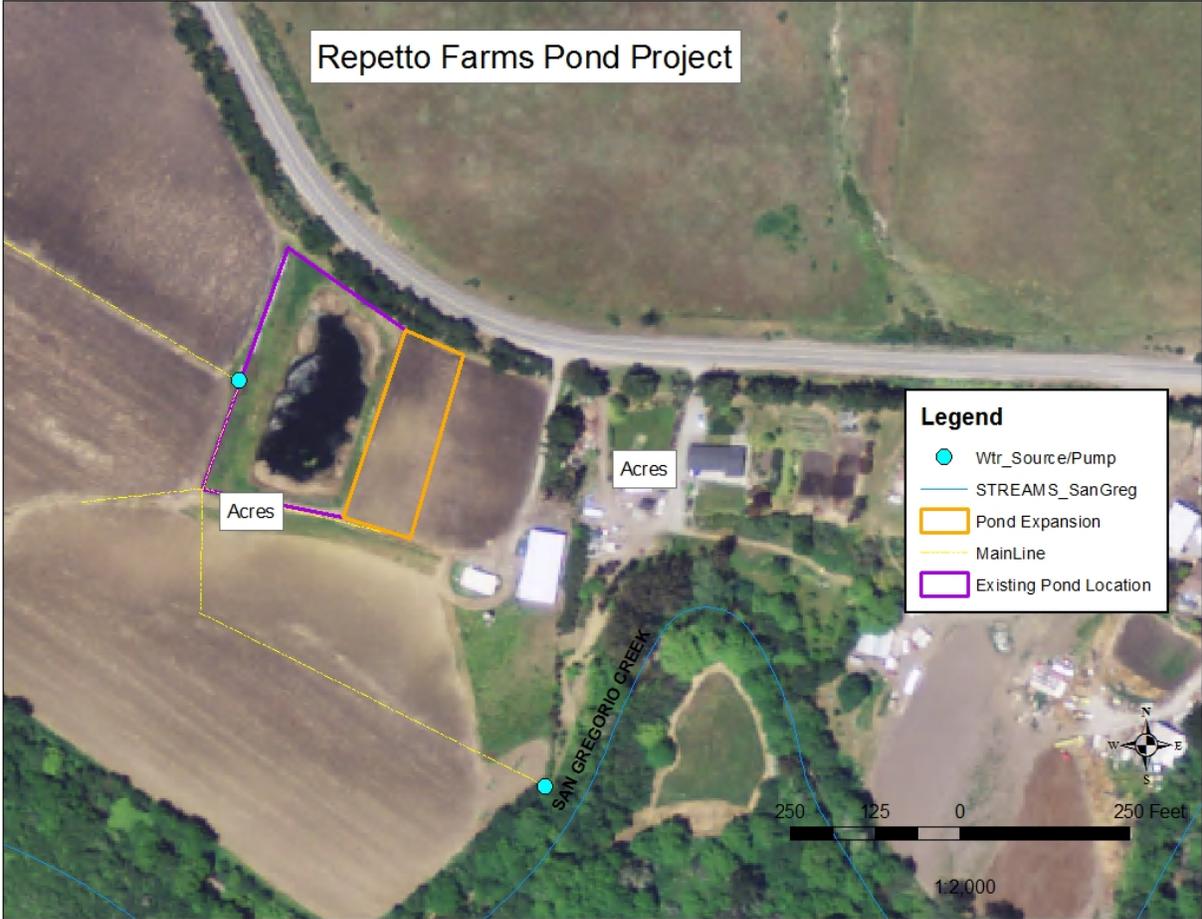
	Dec.	Jan.	Feb.	Mar.	Apr	May	June	July	Aug.	Sept.	Oct.	Nov.
Fill Pond	[Redacted]											
Use Pond for Regulation					[Redacted]							
Rely on stored water									[Redacted]			

To formalize this water management schedule, the applicant will, prior to construction of the project enter a long-term forbearance agreement with the San Mateo Resource Conservation District and Trout Unlimited, which will be recorded and attached to the property deed so it is binding on any and all successors in ownership. The applicants will also enter a Lake/Streambed Alteration agreement with the state Department of Fish and Wildlife pursuant to Fish and Game Code §1600, covering both water diversion and the maintenance/ management of the reservoir.

Proposed Construction Activities and Schedule

Construction of the pond expansion is anticipated to take place during the end of the growing season in the fall of 2016. The project occurs within the range of California red-legged frog habitat and likely San Francisco garter snake. It is believed to be unlikely red-legged frogs are present, because the existing reservoir contains robust populations of both largemouth bass and bullfrogs. However, avoidance measures will be taken to prevent take of both Red Legged Frogs and San Francisco garter snakes. Construction, operation, and maintenance of the pond will conform to conditions required by DFW pursuant to FGC §1600 as memorialized in a Lake/Streambed Alteration Agreement.

Application to Appropriate Water – Repetto Nursery



add explanation of 19.4 vs. 18.5 af

Attachment 2

Proposed terms for season of diversion, rate of diversion, and bypass flow

Project Purpose and Rationale

This project is designed to improve in-stream conditions for salmon and steelhead by reducing the applicant's existing diversions of water in the dry season when streamflows are lowest, and replacing those diversions with water diverted and stored during the rainy season when streamflows are higher. There are two primary reasons for concluding that that winter diversion is preferable for fisheries:

- (1) Loss of rearing habitat due to low streamflow in the late summer and early fall is the primary limiting factor for salmon and steelhead populations. (Stillwater Sciences 2014)
- (2) As a percentage of flow, cumulative diversions for human use have a much greater effect on the natural hydrograph in the summer and early fall than in the winter and spring. (See Cumulative Diversion Analysis, Spreadsheet #2, filed with this application)

In order to secure the summer/fall streamflow improvements and resulting fisheries benefits from the project, it is necessary to develop water right terms – season of diversion, rate of diversion, and minimum bypass flows – that will allow the applicant to reliably fill the storage pond in both wet and dry years. The applicant's proposed terms are discussed below.

Proposed Season of Diversion

We propose the standard season of diversion recommended in the 2002 Draft Guidelines – **December 15 – March 31**.

Proposed Bypass Flow and Rate of Diversion

To protect anadromous fish and other public trust resources, we propose terms of bypass and rate of diversion that will ensure the proposed winter diversion does not exceed 5 percent of the discharge past the proposed point of diversion. In order to meet this protective condition while simultaneously ensuring the landowner will be able to store sufficient water in the wet season to obtain the benefits of forbearing diversion during the dry season, we propose two separate rates of diversion – one that applies during periods of higher instream flow, and a second, lower rate of diversion that applies during times of lower instream flow. Specifically, these are:

High flow conditions (> 10 ft³/s): max rate of diversion = 220 gpm. We propose a maximum rate of diversion of 220 gallons per minute, or 0.5 ft³/s, when flow is at least 10 ft³/s at the Point of Diversion in San Gregorio Creek. This flow will be prorated from flow at the San Gregorio Creek USGS gauge* by the ratio of watershed area and mean annual rainfall (Ratio 1 in the SWRCB North

* All references to USGS gauge measurements refer to data available in real-time, and not as they may later be revised. This is to enable the data to be used to inform real-time water management.

Application to Appropriate Water – Repetto Nursery

Coast Instream Flow Policy). At the proposed POD, Ratio 1 = 0.934; the flow at the USGS gauge would have to exceed 10.7 ft³/s in order for the diversion to operate at 220 gallons per minute.

During its period of record, the median number of days over the winter (December through March) that the bypass flow 10 ft³/s has been exceeded at the San Gregorio Creek USGS gauge is 84 days. However, in some dry years, this bypass flow is seldom exceeded and the landowner would not get the water needed under these terms (Figure 1). For example, in a year like 2014, the San Gregorio Creek flowed at a rate greater than 10 ft³/s on nine days.

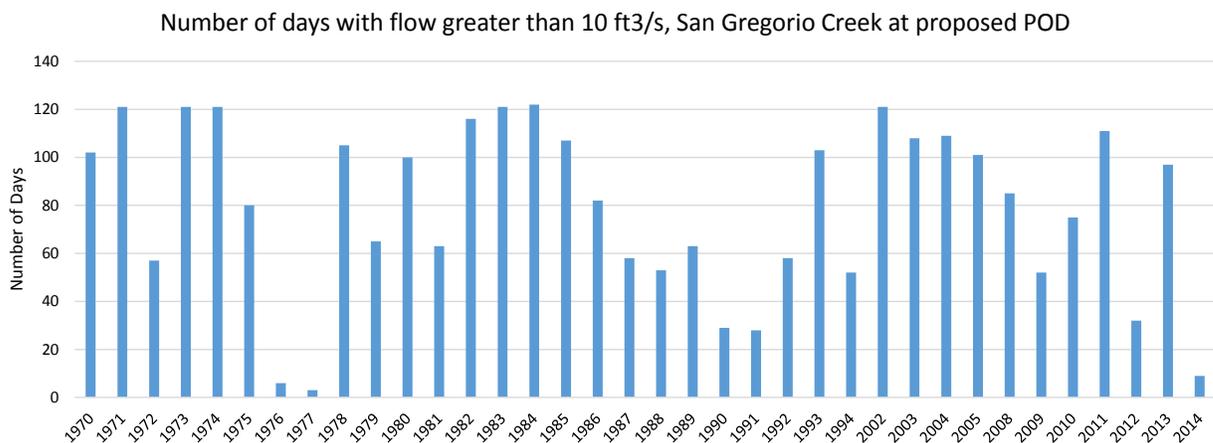


Figure 1. Number of days when streamflow at the proposed POD exceeds 10 ft³/s, based on historical streamflow records at the USGS San Gregorio Creek gauge, scaled by Ratio 1.

Low flow conditions (between 3.0 ft³/s and 10 ft³/s): max rate of diversion = 70 gpm. We propose a maximum rate of diversion of 70 gallons per minute, or 0.15 ft³/s, when flow is between 3.0 and 10 ft³/s at the point of diversion in San Gregorio Creek. As above, this flow will be prorated from flow at the San Gregorio Creek USGS gauge by the ratio of watershed area and mean annual rainfall (Ratio 1 in the SWRCB North Coast Instream Flow Policy). At the proposed POD, Ratio 1 = 0.934; the flow at the USGS gauge would have to exceed 3.2 ft³/s in order for the diversion to operate at 70 gallons per minute.

Based on historical records, a diversion rate of 0.15 ft³/s would allow the landowner divert water on an adequate number of days for all years other than 1977 and 2014, though those years would provide some days for diversion and meet some of the landowner's summer water needs. Given the natural hydrologic variability in this region, these two bypass flows would provide an adequately resilient project for the landowner to meet water needs without having to divert from San Gregorio Creek in the summer dry season.

Application to Appropriate Water – Repetto Nursery

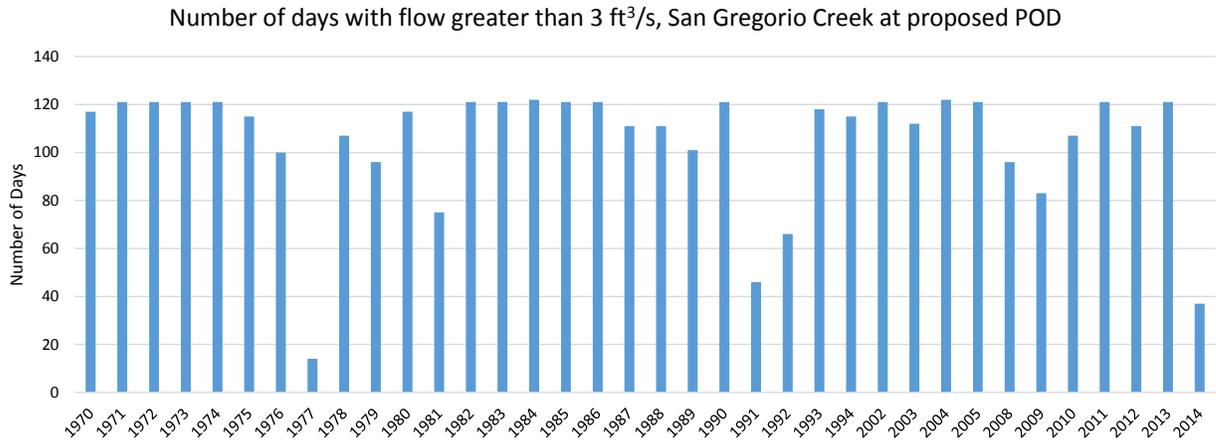


Figure 2. Number of days when streamflow at the proposed POD exceeds 3 ft³/s, based on historical streamflow records at the USGS San Gregorio Creek gauge, scaled by Ratio 1.

REPETTO PROPERTY
 2320 LA HONDA ROAD
 SAN GREGORIO, CA 94019

REPETTO OFF-STREAM RESERVOIR

RESERVOIR PLANS AUGUST 2015



VICINITY MAP

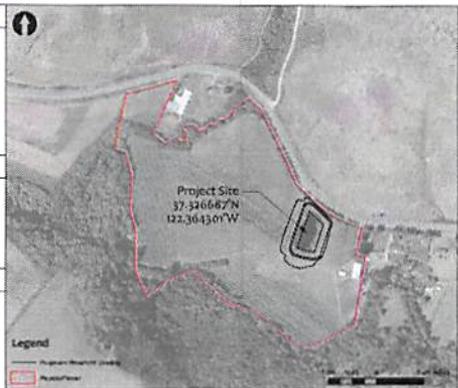
SHEET INDEX	
G-1	TITLE SHEET
C-1	EXISTING CONDITIONS
C-2	DEMOLITION/REMOVAL
C-3	OVER EXCAVATION
C-4	FINISH GRADING
C-5	SECTIONS
C-6	NOTES
C-7	EXISTING INFORMATION

OWNER

MR. DAVID REPETTO
 REPETTO PROPERTY
 12331 SAN MATEO RD
 HALF MOON BAY CA 94019-7113
 APN: 081-290-180

PROJECT COLLABORATORS

<p>CALIFORNIA WATER PROJECT FROST UNLIMITED 2239 6TH STREET BERKELEY, CA 94710 (510) 849-8987</p> 	<p>CENTER FOR ECOSYSTEM MANAGEMENT AND RESTORATION (CEMAR) 4125 REDWOOD AVE. SUITE 105 OAKLAND, CA 94611 (510) 425-4363</p> 	<p>SAN MATEO COUNTY RESOURCE CONSERVATION DISTRICT 825 MIRAMONTE ST. SUITE 103 HALF MOON BAY, CA 94019 (650) 712-7788</p> 
---	--	--



SITE MAP

Project Overview: The purpose of this construct a new off-stream reservoir to maintain the property owner's agricultural water storage needs supplied by existing in-stream water diversions.

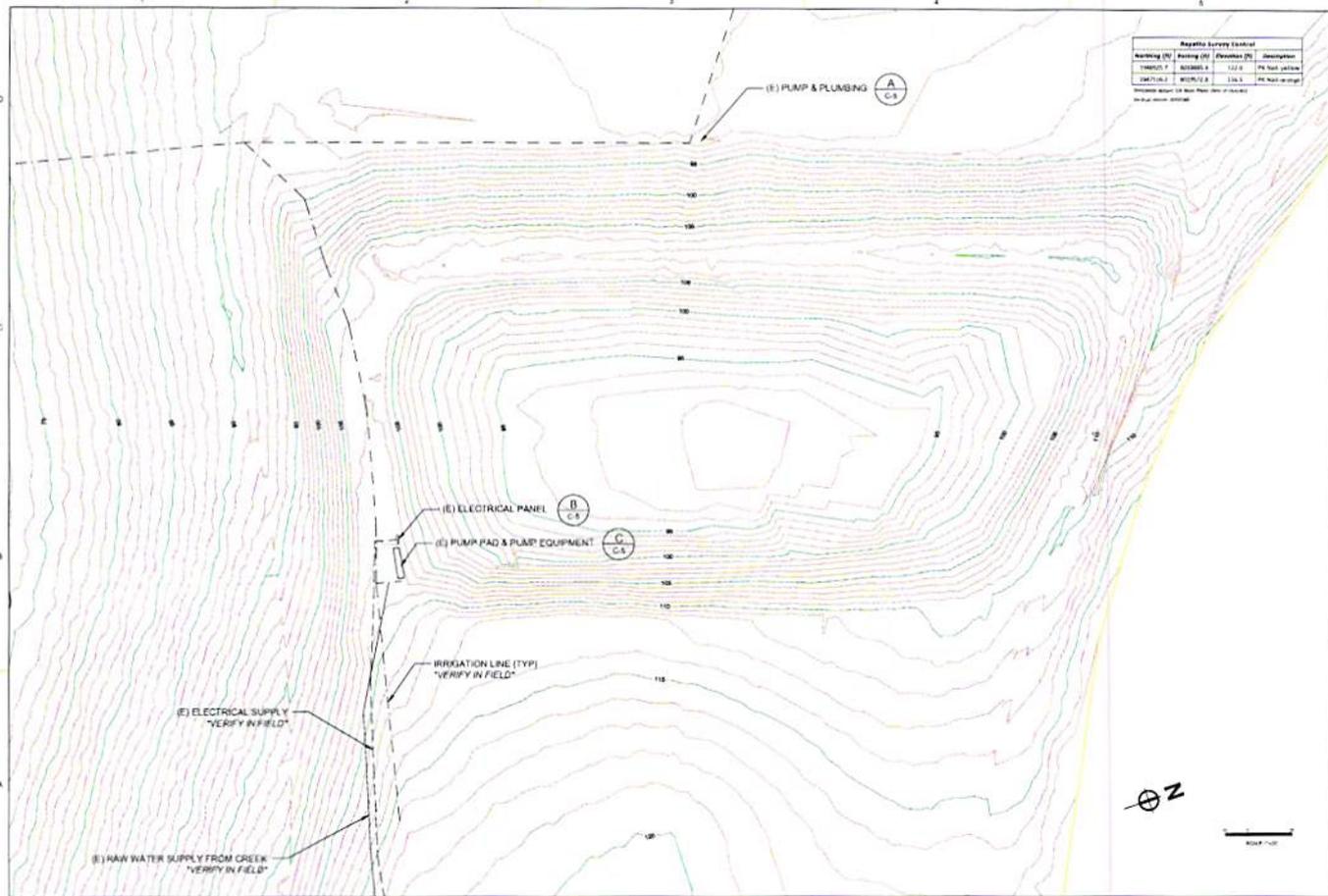
DATE	DESCRIPTION



PROJECT NO.	REPETTO OFF-STREAM RESERVOIR
DATE	AUGUST 2015
DRAWN BY	J. DOE
CHECKED BY	E. SMITH
SCALE	AS SHOWN
PROJECT LOCATION	REPETTO PROPERTY, SAN GREGORIO, CA

TITLE SHEET
 REPETTO
 OFF-STREAM RESERVOIR

SHEET IDENTIFICATION
G-1
 SHEET 1 OF 8



As-built Survey Control

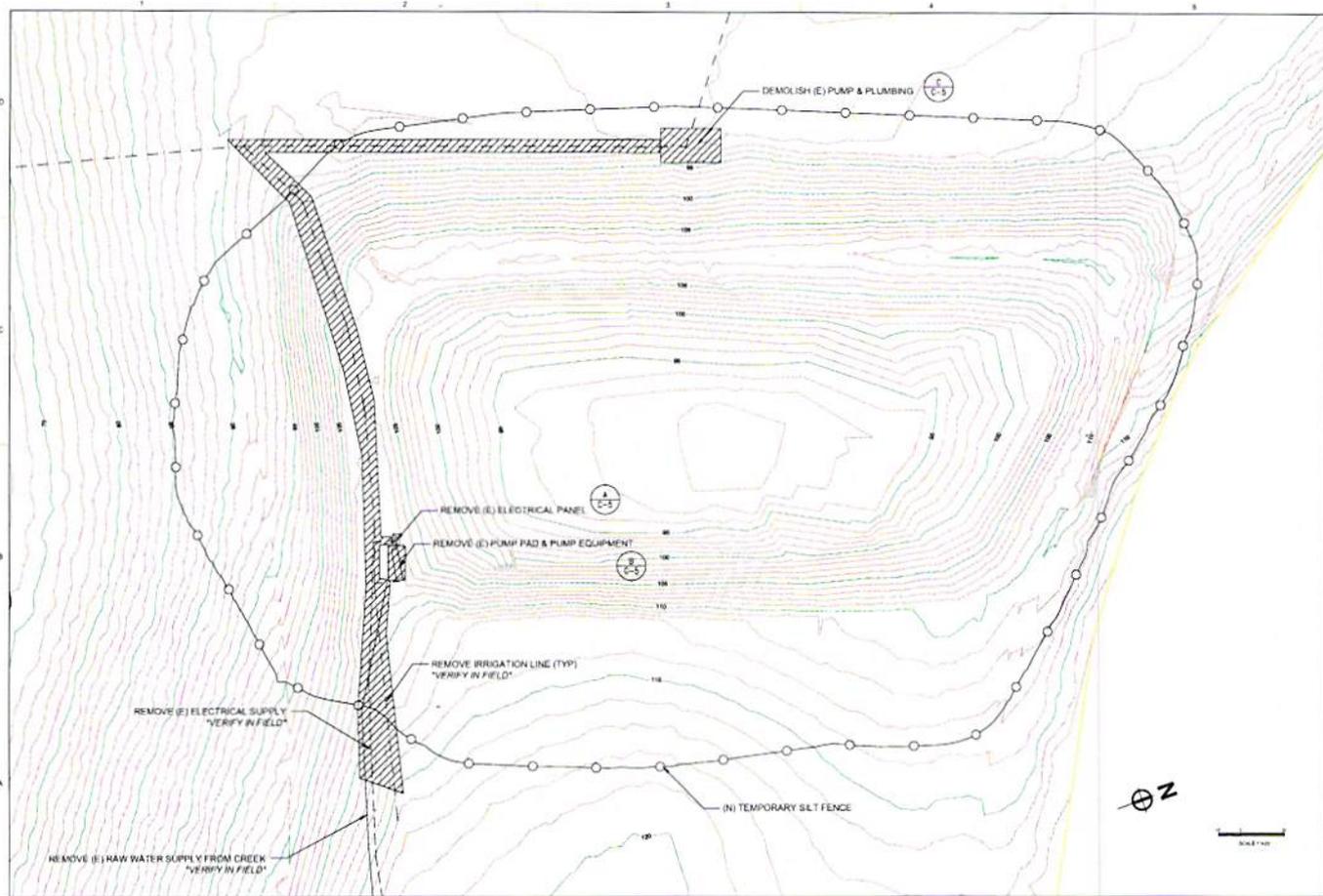
Stationing (N)	Stationing (S)	Stationing (E)	Description
100+0.00	100+0.00	100+0.00	100+0.00
100+10.00	100+10.00	100+10.00	100+10.00
100+20.00	100+20.00	100+20.00	100+20.00
100+30.00	100+30.00	100+30.00	100+30.00
100+40.00	100+40.00	100+40.00	100+40.00
100+50.00	100+50.00	100+50.00	100+50.00
100+60.00	100+60.00	100+60.00	100+60.00
100+70.00	100+70.00	100+70.00	100+70.00
100+80.00	100+80.00	100+80.00	100+80.00
100+90.00	100+90.00	100+90.00	100+90.00
100+100.00	100+100.00	100+100.00	100+100.00

Prepared by: [Name] Date: [Date]
 Checked by: [Name] Date: [Date]
 In Charge: [Name]

DATE	10/15/2024
SCALE	AS SHOWN
PROJECT	NEW IRRIGATION SYSTEM
SHEET NO.	C-1
TOTAL SHEETS	4
DESIGNED BY	[Name]
CHECKED BY	[Name]
IN CHARGE	[Name]
DATE	10/15/2024

EXISTING CONDITIONS
 VERIFY IN FIELD
 CONFIRM ALL BEAVERS

SHEET IDENTIFICATION
C-1
 SHEET 2 OF 4



PROJECT NO.	1000000000
DATE	08/11/2010
SCALE	AS SHOWN
DRAWN BY	...
CHECKED BY	...
APPROVED BY	...



PROJECT NO.	1000000000
DATE	08/11/2010
SCALE	AS SHOWN
DRAWN BY	...
CHECKED BY	...
APPROVED BY	...

DEMOLITION/REMOVAL
 RESULTS
 OF STREAM RESTORATION

SHEET IDENTIFICATION
C-2
 SHEET 3 OF 8



PROJECT NO.	DATE
CLIENT	SCALE
DESIGNER	PROJECT LOCATION
CHECKER	DATE PLOTTED
APPROVER	DATE

Professional Engineer Seal: No. 10275, State of Florida, Civil Engineering

Professional Engineer Seal: No. 10275, State of Florida, Civil Engineering

OVER EXCAVATION PERMITS OFFSTREAM ELEVATOR

SHEET IDENTIFICATION
C3
SHEET 4 OF 8



(F) ELECTRICAL PANEL
SCALE: N/A



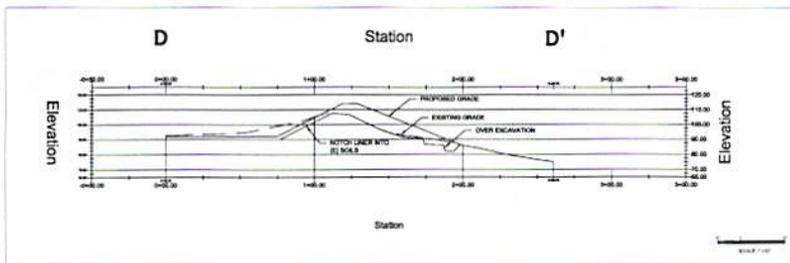
(E) CONCRETE PUMP PAD
SCALE: N/A



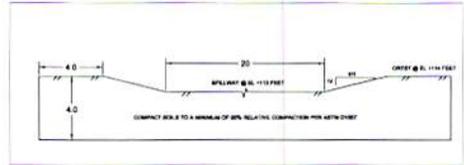
(E) PUMP & PLUMBING
SCALE: N/A

GRADING NOTES:

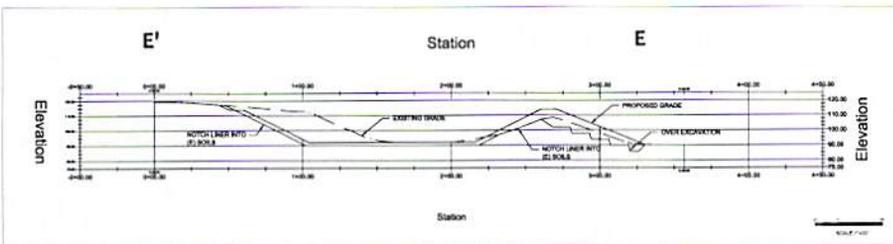
- (1) CREST ELEVATION = +114.0 FT
- (2) MAXIMUM WATER SURFACE ELEVATION = +113.0 FT
- (3) RESERVOIR BOTTOM ELEVATION = +92.0 FT
- (4) INTERIOR SLOPE = 2.5H TO 1V
- (5) EXTERIOR SLOPE = 3H TO 1V
- (6) CREST WIDTH = 10 FT
- (7) RESERVOIR STORAGE (@ MAX WATER SURFACE EL) = 19.4 AF
- (8) TOTAL ESTIMATED GRADING VOLUME = 19,300 CY
- (9) COMPACT EMBANKMENT TO AT LEAST 90% R.C. (ASTM D1557)
- (10) COMPACT SPILLWAY TO AT LEAST 95% R.C. (ASTM D1557)
- (11) ESTIMATED DISTURBED AREA IS 3 ACRES
- (12) RESERVOIR FOOTPRINT (20) IS 2.5 ACRES



SECTION D-D'
SCALE: 1" IN = 30 FT



(N) CREST SPILLWAY
SCALE: AS SHOWN



SECTION E-E'
SCALE: 1" IN = 30 FT

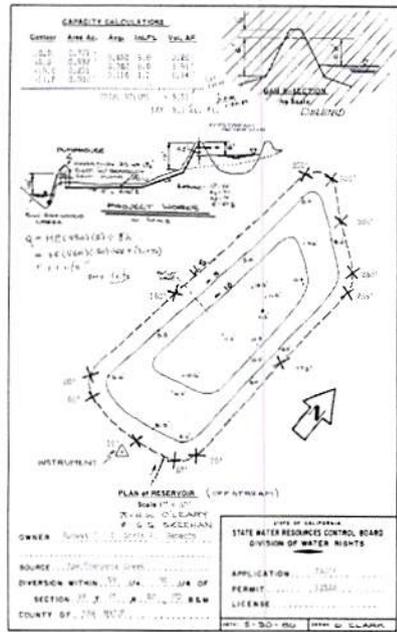
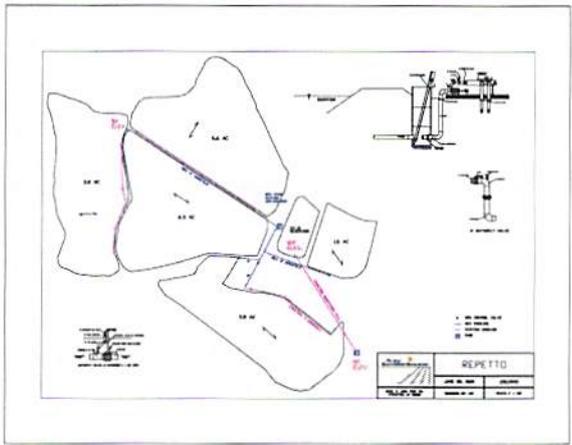
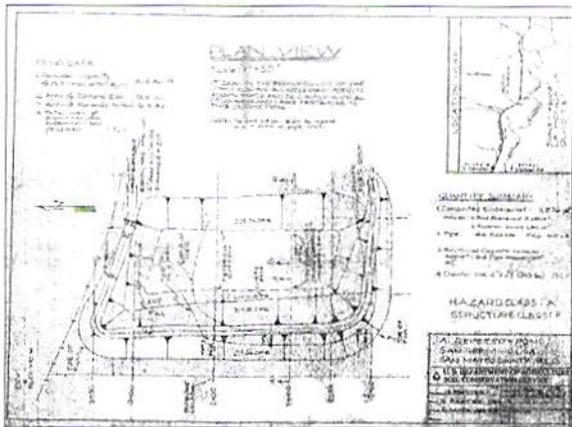
NO.	DATE	DESCRIPTION	BY	CHECKED
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				



NO.	DATE	DESCRIPTION	BY	CHECKED
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				

SECTIONS
REFETTO
DHF-STREAM RESERVOIR

SHEET IDENTIFICATION
C-5
SHEET 6 OF 8



NO.	DATE	DESCRIPTION
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

STATE OF CALIFORNIA
 STATE WATER RESOURCES CONTROL BOARD
 DIVISION OF WATER RIGHTS

EXISTING INFORMATION
 REPELTO
 OFF-STREAM RESERVOIR

SHEET IDENTIFICATION
 C-7
 SHEET 8 OF 8