

# **NORTH FORK RANCH FROST PONDS PROJECT SANTA BARBARA COUNTY, CALIFORNIA**

## **BIOLOGICAL RESOURCES ASSESSMENT**



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## TABLE OF CONTENTS

	Page
1.0 INTRODUCTION .....	1
1.1 Background.....	1
1.2 Project Description .....	1
1.3 Regulatory Overview .....	4
2.0 METHODS .....	7
2.1 Prior Field Surveys .....	7
2.2 2019 Field Surveys .....	8
2.3 Soils.....	8
2.4 Special Status Species.....	8
3.0 RESULTS.....	9
3.1 Existing Conditions.....	9
3.2 Special Status Biological Resources .....	16
4.0 IMPACT ANALYSIS AND RECOMMENDED MITIGATION.....	22
4.1 Santa Barbara County Thresholds of Significance.....	22
4.2 Impact Analysis .....	24
5.0 CONCLUSIONS.....	28
6.0 REFERENCES .....	28

### LIST OF FIGURES

Figure 1 – Site Location Map.....	2
Figure 2 – Aerial Overview Map.....	3
Figure 3A – Reservoir 1 Habitat Map .....	11
Figure 3B – Reservoir 2 Habitat Map.....	12
Figure 3C – Reservoir 3 Habitat Map.....	14
Figure 4 – Soils Map.....	17
Figure 5 – CNDDDB Plant Occurrences Map.....	18

### LIST OF TABLES

Table 1 – Grading amounts and dimensions.....	4
Table 2 – Summary of Natural Habitat Types .....	15

### APPENDICES

Appendix A – Biological Reports (KMA, 2016) and Regulatory Agency Communications	
Appendix B - List of Plants and Animals Observed Onsite During the Site Visit	
Appendix C – Special-status Biological Resources Summary	
Appendix D – Photo Plate	
Appendix E – USFWS Protection Measures for SJKF	
Appendix F – Site Plans (Howell, 2017)	

## **1.0 INTRODUCTION**

This report presents the methods and results of biological surveys conducted by Kevin Merk Associates, LLC (KMA) in 2019 to provide an updated characterization of the biological resources present at three proposed reservoir sites on the North Fork Ranch in Santa Barbara County, California. The North Fork Ranch is located approximately 10 miles west of New Cuyama, along the Highway 166 corridor. While the entire North Fork Ranch is roughly 9,000 acres, and is situated in both San Luis Obispo and Santa Barbara Counties, the three reservoir sites included in this assessment are located on the gentle to flat slopes adjacent to vineyards on the south side of Highway 166 in Santa Barbara County. Please refer to Figures 1 and 2 for site location information. The surveys were conducted in the spring of 2019 to assess the potential occurrence of special status plants and wildlife in the reservoir project areas during an above average rainfall season.

### **1.1 Background**

In 2015 and 2016, KMA conducted botanical and wildlife surveys on the subject property prior to and during vineyard preparation and planting activities. KMA prepared a report dated February 24, 2016 summarizing the findings of these surveys. Included in that report were several figures, a table of potential special status species, photographs, and avoidance measures for the San Joaquin kit fox in support of an application to Santa Barbara County to construct three reservoirs on the Ranch (refer to Appendix A). In March 2016, Santa Barbara County requested additional information following a peer review that was completed by Dudek of the initial KMA biological report. In response to the March 21, 2016 Peer Review Memorandum prepared by Dudek, KMA prepared a supplemental biological letter report dated June 24, 2016 (also included in Appendix A). The June 2016 KMA report addressed the peer review comments, provided additional figures to illustrate project details and habitats, discussed regulatory issues associated with irrigation pipelines crossing drainage features, and summarized surveys conducted for the blunt-nosed leopard lizard and other plant and wildlife species. A summary of regulatory agency consultation by the applicant and state and federal agencies was also provided.

On May 26, 2017, Santa Barbara County released a Draft Mitigated Negative Declaration for the North Fork Ranch Frost Ponds project, and the Zoning Administrator approved the project in September 2017. Shortly after this, the operations yard was constructed, and the pipelines contemplated as part of the project were installed. The operations yard is now in use, and the pipelines are in place, along with the vineyard, irrigation system, and other related infrastructure.

The project was subsequently appealed to the Planning Commission. The applicant appealed to the Board of Supervisors, which determined that the preparation of a focused Environmental Impact Report was required. Because the 2015 – 2016 rainfall season was below average, and the 2019 winter proved to be a wetter year, additional surveys were conducted at the frost protection pond sites in spring of 2019 to assess the potential for special status plants and wildlife to occur onsite. This report presents the results of the 2019 spring surveys and an updated characterization of the areas proposed for the three frost ponds.

### **1.2 Project Description**

Based on the review of site plans provided by the project engineer, Mr. Thomas Howell (2017), the project evaluated in this report consists of constructing three agricultural reservoirs for frost







Study Area Boundary

Property Boundary

Source(s) : ESRI and it's data providers ; Tom A. Howell, PE



Source: Esri 2019



protection covering approximately five acres each. The biological investigation examined existing conditions at and adjacent to the three proposed reservoir sites and evaluated the potential for rare or special status species and habitats to be present or affected by reservoir construction. As such, the project study area covered by this report consists of three distinct areas totaling over 15 acres of land that could be disturbed during construction. Access to the sites would use existing ranch roads that originate from Highway 166. Please refer to attached Figures 1 and 2 for site location and an aerial overview of the study areas.

As shown on project plans and Figure 2, Reservoir 1 is located in the eastern portion of the ranch, immediately adjacent to Schoolhouse Canyon Road. Reservoir 2 is located in the middle portion, and Reservoir 3 is located in the western portion, approximately 0.75 mile east of Cottonwood Canyon Road. The reservoirs would be lined and would have a maximum depth of 27-28 feet. Erosion and sediment controls in the form of hydroseeding and placement of straw wattles/bales and silt fencing are planned for each reservoir. Temporary soil stockpiles will occur in agriculturally disturbed areas at each reservoir location.

**Table 1. Grading amounts and dimensions of the reservoirs for the Proposed Project.**  
 (Source: County of Santa Barbara 2017 Negative Declaration)

Reservoir	Proposed Grading			Reservoir Area		Reservoir Depth		
	Cut (cu. yds.)	Fill (cu. yds.)	Total (cu. yds.)	Approximate Dimensions (feet)	Acres	Top of Reservoir Elevation	Bottom of Pond Elevation	Depth (feet)
<b>No. 1</b>	44,062	44,589	88,651	590 x 370	5.0	1,955	1,927	28
<b>No. 2</b>	44,064	42,205	86,269	580 X 410	5.7	1,788	1,761	27
<b>No. 3</b>	42,771	40,254	83,025	590 x 360	4.9	1,744	1,717	27
<b>TOTAL</b>	<b>130,897</b>	<b>127,048 (1)</b>	<b>257,945</b>	--	<b>15.6</b>	--	--	--

### 1.3 Regulatory Overview

For the purpose of this report, special-status species are those plants and animals listed, or Candidates for listing, as Threatened or Endangered by the U.S. Fish and Wildlife Service (USFWS) under the federal Endangered Species Act (FESA); those listed as Threatened or Endangered under the California Endangered Species Act (CESA); and, animals designated as “Species of Special Concern,” “Fully Protected,” or “Watch List” by the California Department of Fish and Wildlife (CDFW; 2018a).

FESA provisions protect federally listed species and their habitats from unlawful take, which is defined as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any of the specifically enumerated conduct.” Under these regulations, “harm” may include significant habitat modification or degradation that kills or injures wildlife. Candidate species are not afforded legal protection under FESA; however, Candidate species typically receive special attention during the CEQA environmental review process. CESA provides for the protection and preservation of native species of plants and animals that are experiencing a significant decline which if not halted would lead to a threatened or endangered designation. Habitat degradation or modification is not expressly included in the definition of take under CESA.



CDFW maintains a list of Species of Special Concern for those species in which declining population levels, limited ranges, and/or continuing threats have made them vulnerable to extinction. The goal of designating species as special concern is to halt or reverse their decline early enough to secure their long-term viability. Species of Special Concern may receive special attention during environmental review, but do not have statutory protection. FESA and CESA emphasize early consultation to avoid impacts on Threatened and Endangered species.

Critical habitat is designated for species listed under FESA, and are areas that contain the physical or biological features which are essential to the conservation of those species and may need special management or protection. Critical habitat designations affect only federal agency actions or federally funded or permitted activities. Activities by private landowners are not affected if there is no federal nexus.

Rare, or special status, plants are those defined as occurring on California Rare Plant Rank (CRPR) 1, 2, 3 and 4 developed by the CDFW working in concert with the California Native Plant Society (CDFW 2019b). Rank 4 species are a watch list, and typically do not meet CEQA's rarity definition (Section 15380), but are included here because they may be of local concern. The CRPR definitions are as follows:

- *Rank 1A = Presumed extirpated in California and either rare or extinct elsewhere;*
- *Rank 1B.1 = Rare or endangered in California and elsewhere; seriously threatened in California (over 80% of occurrences threatened/high degree and immediacy of threat);*
- *Rank 1B.2 = Rare or endangered in California and elsewhere; moderately threatened in California (20-80% occurrences threatened);*
- *Rank 1B.3 = Rare or endangered in California and elsewhere, not very threatened in California (<20% of occurrences threatened or no current threats known);*
- *Rank 2A = Presumed extirpated in California, but more common elsewhere;*
- *Rank 2B = Rare or endangered in California, but more common elsewhere;*
- *Rank 3 = Plants needing more information (most are species that are taxonomically unresolved; some species on this list meet the definitions of rarity under CNPS and CESA); and*
- *Rank 4.2 = Plants of limited distribution (watch list), fairly threatened in California (20-80% occurrences threatened).*
- *Rank 4.3 = Plants of limited distribution (watch list), not very threatened in California.*

Raptors (e.g., eagles, hawks, and owls) and their nests are protected under both federal and state regulations. Birds of prey are protected in California under the California Fish and Game Code Section 3503.5. Disturbance that causes nest abandonment or loss of reproductive effort is considered take by CDFW. Eagles are protected under the Bald and Golden Eagle Protection Act. The federal Migratory Bird Treaty Act (MBTA) applies to many bird species, including common species, and prohibits killing, possessing, or trading in migratory birds, including whole birds, parts of birds, bird nests, and eggs. The act restricts construction disturbance during the nesting season that could result in the incidental loss of fertile eggs or nestlings or otherwise lead to nest abandonment.

Sensitive natural communities are those native plant communities listed in the California Natural Diversity Database (CNDDB; CDFW 2019a) as rare or of limited distribution. They are evaluated

using NatureServe's Heritage Methodology to assign global and state ranks based on rarity and threat, and these ranks are reviewed and adopted by CDFW's (2019b) Vegetation Classification and Mapping Program (VegCAMP). Evaluation with the state (S) level results in ranks ranging from 1 (very rare or threatened) to 5 (demonstrably secure). Those with ranks of S1 to S3 are to be addressed in the environmental review process under CEQA (CDFW 2019b).

CEQA defines a *significant effect on the environment* as “a substantial, or potentially substantial, adverse change in the environment.” Projects that may have significant effects are required to be analyzed in an Environmental Impact Report (EIR). Under CEQA, a project's effects on biotic resources are deemed significant where the project would do any of the following:

- Potentially substantially degrade the quality of the environment
- Substantially reduce the habitat of a fish or wildlife species
- Cause a fish or wildlife population to drop below self-sustaining levels
- Threaten to eliminate a plant or animal community
- Substantially reduce the number or restrict the range of an endangered, threatened, or rare species
- Have possible environmental effects that are individually limited but cumulatively considerable

In addition to the criteria above that trigger mandatory findings of significance, Appendix G of the CEQA Guidelines includes six additional impacts to consider when analyzing the significance of project effects, which may or may not be significant, depending on the level of impact. A project's effects on biological resources could be deemed significant if the project would do the following:

- a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or USFWS.
- b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by CDFW or USFWS.
- c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.
- d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.
- e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
- f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

If the project proponent agrees to mitigation measures or project modifications that would avoid all significant effects or would mitigate the significant effect(s) to a point below the level of significance, an EIR would not be required. The project proponent would be bound to implement the mitigation measures to reduce the project effects to below a level of significance. Mitigation is not required for effects that are less than significant. Since the project was appealed, the Board of Supervisors determined that a focused EIR would be the appropriate environmental document.



## **2.0 METHODS**

Prior to conducting field work, KMA biologists reviewed pertinent background information from the general area, including historic aerial photographs from Google Earth, the U.S. Geological Survey (USGS) topographic maps, the Environmental Site Assessment prepared by the RCC Group (2014), and field notes and reports from earlier KMA studies on the site. Other environmental documents obtained from the County of Santa Barbara (i.e.: August 2009 E&B Natural Resources Management Production Plan and September 2014 Cuyama Solar Facility Final EIR) were also reviewed to help identify special status resources in the region.

The California Natural Diversity Database (reviewed April through December 2019; CNDDB) maintained by the California Department of Fish and Wildlife was searched for special status biological resources documented within the following nine USGS 7.5-minute topographic quadrangles: Taylor Canyon, Bates Canyon, Caliente Mountain, Peak Mountain, Wells Ranch, Cuyama, Panorama Hills, Elkhorn Hills, and New Cuyama. A search of this size was conducted to ensure that any new information regarding special-status species and plant community occurrences was included in the assessment. The Central Coast Center for Plant Conservation's Rare Plants of Santa Barbara County List (V2, November 1, 2012) was also reviewed to ensure full coverage of local plant species. The U.S. Fish and Wildlife Service's online Critical Habitat Mapper (<http://criticalhabitat.fws.gov/crithab/>) was reviewed to evaluate the extent of designated critical habitat in the region. The National Wetland Inventory was also queried to identify drainage features and potential wetlands documented onsite and in the region.

### **2.1 Prior Field Surveys**

The 2019 spring surveys are in addition to numerous field surveys conducted by KMA biologists on the North Fork Ranch. In the spring and summer of 2015 and 2016, botanical and stream delineation surveys were conducted, in addition to CDFW protocol level surveys for the blunt nose leopard lizard (*Gambelia sila*), in association with agricultural development of the site including construction of onsite reservoirs. Data summarizing these surveys is included in the following reports provided in Appendix A:

- KMA's Biological Resources Assessment for the Reservoir and Operations Yard Project, North Fork Ranch, Santa Barbara County, California. February 2016; and
- KMA's Supplemental Biological Information for the Reservoir and Operations Yard Project (Case No. 16CUP-00000-00005), North Fork Ranch, Santa Barbara County, California, June, 2016.

Blunt-Nosed Leopard Lizard (BNLL) Protocol surveys covered approximately 390 acres of potentially suitable BNLL habitat on the lower terraces and wash habitat in the portion of Schoolhouse Canyon on the property extending north into the Cuyama River. An additional roughly 130-acre area along the lower Cuyama River terraces north of Highway 166 near the Cottonwood Canyon confluence was also surveyed after 1400 hours or when the temperature was too hot to meet protocol requirements. Additional walking surveys and spot checks were conducted within onsite drainages and other areas of the ranch outside the agricultural footprint containing what was identified as low potential BNLL habitat based on steep slopes, dense grassland vegetation cover and lack of burrows. These surveys covered additional parts of the ranch outside the agricultural footprint and proposed reservoir disturbance areas.

## **2.2 2019 Field Surveys**

The 2019 spring surveys focused on the three proposed reservoir sites, but also included other nearby areas on the property. Field surveys were conducted on March 28 and April 26, 2019 to search for special status plants and wildlife, as well as characterize the onsite habitat types for the three proposed frost protection ponds. Each site was accessed using existing ranch roads, and the construction footprint and an approximate 100 foot buffer was walked using meandering transects to search for special status plants and signs of wildlife. KMA principal biologist, Kevin Merk, and senior biologist, Melissa Mooney, conducted the surveys. No disking of the reservoir sites occurred prior to the 2019 surveys to facilitate plant identification and assess wildlife activities in the area to support the EIR analysis. The rainfall total for this area was almost 10 inches for the 2018-2019 season in an area that averages approximately eight (8) inches of rain annually (County of Santa Barbara Flood Control District, 2019).

The surveys were floristic in nature, covered suitable habitat areas within the study area and were conducted by qualified biologists, consistent with the CNPS, CDFW and USFWS botanical survey guidelines. The current survey effort covered the blooming periods of the special status species potentially present in the project area and in adjacent areas. In addition, a survey of historic occurrences (or reference sites) of species such as San Joaquin woolly threads (*Monolopia congdonii*) occurred along the old Highway 166 right of way at the northwest corner of the Ranch near the confluence of Cottonwood Canyon Creek and the Cuyama River. The species was relocated on April 26, 2019 to confirm it was in identifiable condition at the time the surveys were conducted. Additional reference sites along Cottonwood Canyon Creek and Schoolhouse Canyon Creek were visited since these areas represented high quality native habitats with a diverse range of species. A list of vascular plants observed on the Ranch during all surveys is included as Appendix B. While the list includes all species observed on the property from Schoolhouse Canyon in the east to Cottonwood Canyon in the west, those identified in the frost pond study areas are shown with a + or DOM for dominant.

Existing plant communities and other observations were noted on an aerial photograph obtained from Google Earth dated 2019. Vegetation classification generally followed A Manual of California Vegetation, Second Edition (Sawyer et al., 2009), as updated online (CDFW 2018), and Holland's Preliminary Descriptions of the Terrestrial Natural Communities of California (1986) was cross-referenced for consistency. Plant taxonomy followed the Jepson Manual, Second Edition (Baldwin et al., 2012). A Trimble Geo XH 6000 GPS unit capable of decimeter accuracy was used to delineate areas of sensitive vegetation such as native bunchgrass grassland observed at Reservoir or Frost Pond 3 in the western part of the site.

## **2.3 Soils**

The Web Soil Survey ([websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx](http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx)) was reviewed to determine the soil mapping units present within the sites (U.S. Department of Agriculture 2019). Field observations were also made to evaluate the soil composition and texture.

## **2.4 Special Status Species**

The evaluation of special status plant and animal species and identification of habitat that could support these species was based on field observations to aid in the development of a habitat suitability analysis. KMA staff spent many hours surveying the lower elevation portions of the



ranch along the Highway 166 corridor over the past several years, and became very familiar with site conditions and species present. Definitive surveys for the presence or absence of the species such as the San Joaquin kit fox (*Vulpes macrotis mutica*) that may be present in the greater region were not conducted on the sites. Definitive or protocol-level surveys for special status wildlife species generally require specific survey methods with extensive field survey time to be conducted at specific times of the year. Therefore, we relied on existing information and known occurrence records in the region coupled with site-specific observations to make presence/absence determinations for special status species potentially occurring within the project areas.

### **3.0 RESULTS**

The North Fork Ranch is a large property with varied topography and habitats located west of New Cuyama along the northern flank of the Sierra Madre Mountains. The northern property is bisected in an east to west direction by Highway 166, and also includes the Cuyama River and its associated flat terraces. The southern portion of the property includes a series of north/south trending ridges, hills, and valleys, with ephemeral streams emptying into the Cuyama River. The ranch was used to graze cattle for many years. Review of aerial imagery dating back to 1950's showed little change in the distribution/location of drainage features and vegetation formations (i.e.: herbaceous, shrub, tree habitats) onsite. Please refer to the attached Figures 1 and 2 for site location and aerial overview maps.

The three proposed reservoir sites are located in the gentle slopes and flat areas of the North Fork Ranch, on the south side of Highway 166 (See Figure 2) adjacent to existing vineyards. All three sites are similar in size and shape, and were accessed by existing ranch roads. Elevations in the project areas range from approximately 1,700 to 1,900 feet above mean sea level, and average annual precipitation in the New Cuyama area is approximately eight inches.

Numerous drainage features that are tributaries to the Cuyama River bisect the property in a primarily south to north direction. The largest features, Cottonwood Canyon Creek in the west and Schoolhouse Canyon Creek in the east are large washes that are dry for most of the year. They contain periodic ("flashy") flow during the summer monsoon season as well as the winter rain season. No areas of in channel ponds were observed in the study area. Construction of the proposed reservoir sites will not occur in the drainage features, and all work is proposed to occur outside a minimum 50-foot setback established from the top of bank of drainages in the vineyard area. Consultation with the CDFW and U.S. Army Corps of Engineers occurred during irrigation system design and prior to installation of the pipelines crossing these ephemeral drainages.

#### **3.1 Existing Conditions**

Existing conditions and habitat types observed within the three proposed reservoir or frost pond sites are discussed further below. The attached Figures 3A, 3B, and 3C provide close-up views of existing conditions at each reservoir site. Figure 4 is a soils map illustrating soil mapping units in the study area and on the larger ranch. Analysis of onsite soils is useful in evaluating the potential presence of rare plants and certain species of wildlife. Figure 5 is a CNDDDB Map that shows the recorded special status species occurrences within a five-mile radius of the study areas. Included as appendices are previous KMA biological reports (Appendix A), a list of plants observed on the ranch and in the three study areas during the 2019 updated surveys (Appendix B), and a table providing a list of all special status biological resources identified in the CNDDDB search area and a determination of whether or not they are expected to occur in or adjacent to the three reservoir sites (Appendix C). Additional appendices include a photo plate to document field conditions at the

three project sites (Appendix D), protection measures for the San Joaquin Kit Fox (Appendix E), and site plans prepared by Mr. Tom Howell dated June 13, 017 (Appendix F).

### 3.1.1 Vegetation

#### **Reservoir/Frost Pond #1**

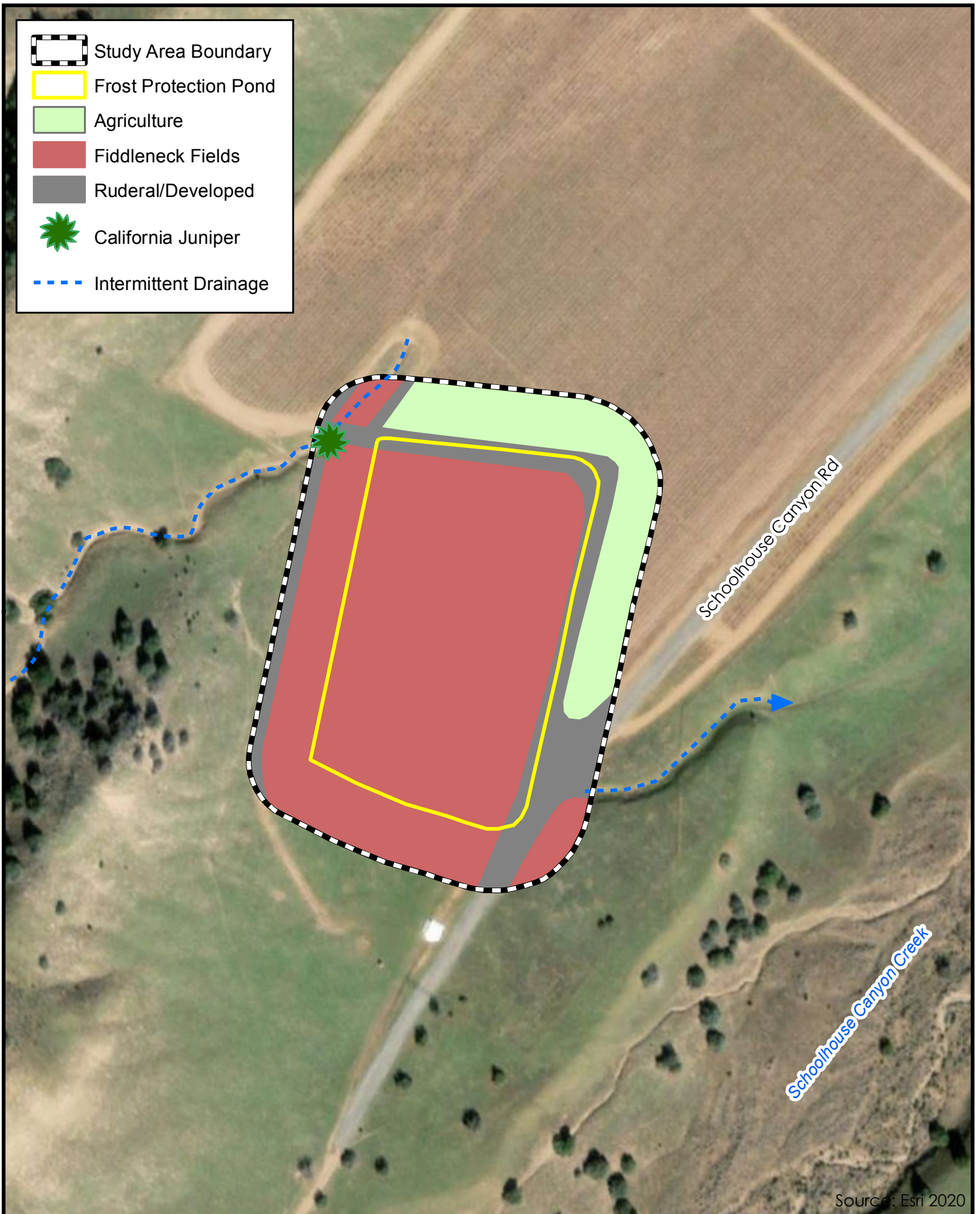
Reservoir/Frost Pond #1 is located in the eastern portion of the ranch, immediately adjacent to Schoolhouse Canyon Road, west of Schoolhouse Canyon Creek. The site slopes gently to the northeast. A small drainage feature is present to the north of the proposed reservoir site that contained no riparian or wetland vegetation. The bed and banks disappeared just outside the study area and any surface water present seasonally appears to sheet flow through the vineyard. Schoolhouse Canyon Creek is present to the southeast, and a small drainage feature, likely formed from road runoff, was also present. The reservoir construction footprint has been set back from these drainage features to ensure they will not be disturbed during construction. Surrounding vegetation on steeper hills (offsite) includes occurrences of California juniper (*Juniperus californicus*) and other scrub species. Figure 3A depicts the plant community distribution on Reservoir #1.

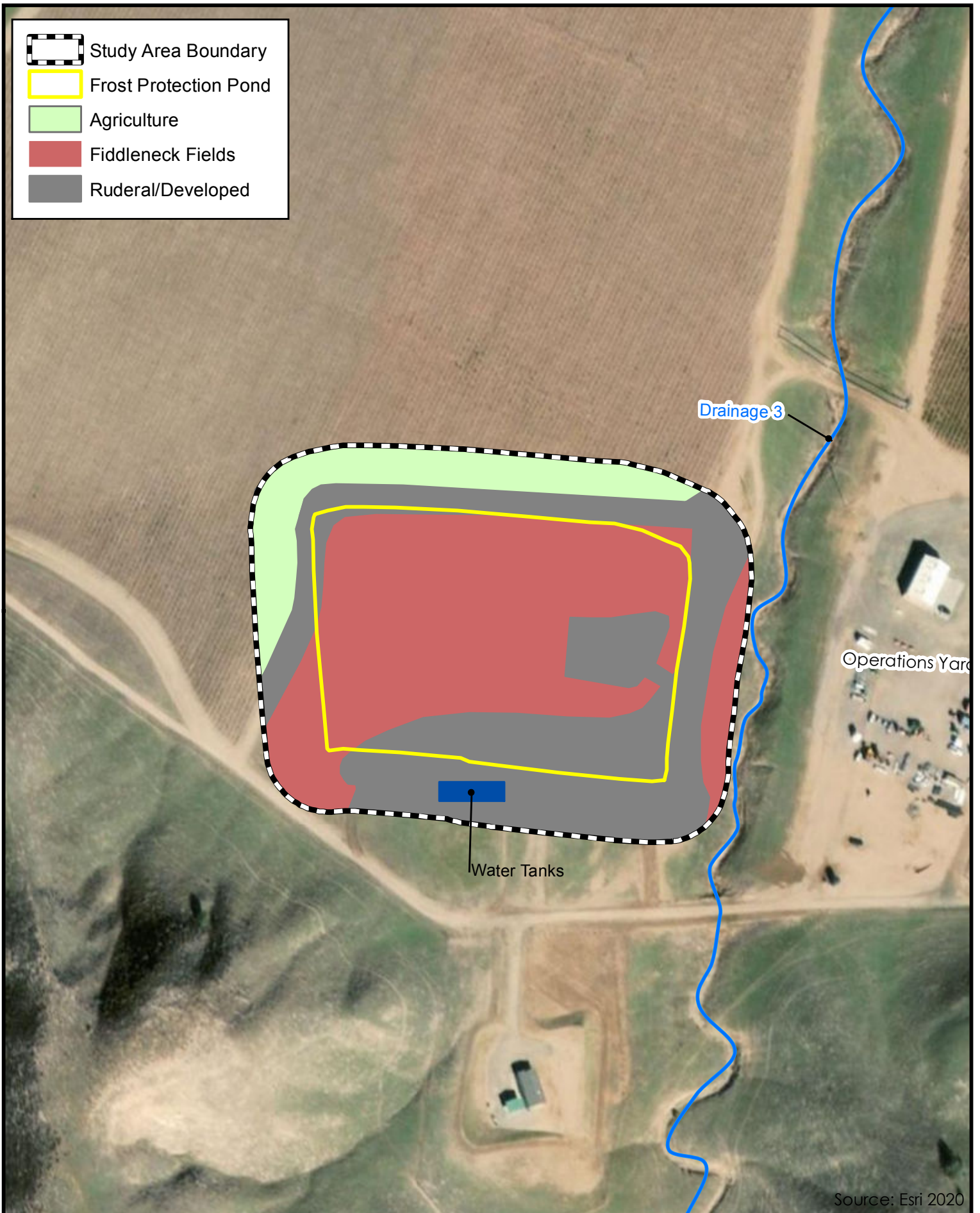
In 2015, the site supported a mix of non-native plants growing on sandy loam soils. Plants observed during the spring and summer of 2015 included red-stemmed filaree (*Erodium cicutarium*) and Russian thistle (*Salsola tragus*). The 2016 survey occurred when site preparation activities such as disking and deep ripping were taking place, and the site was nearly devoid of vegetation when the field work was conducted. Nearby areas outside the disking footprint were dominated by red-stemmed filaree with sparse occurrences of annual grasses beginning to sprout in response to winter rains, which was consistent with observations made in the spring and summer 2015.

In March, 2019, the site had not been disked and was dominated by the non-native hare barley (*Hordeum murinum* ssp. *leporinum*) and native fiddleneck (*Amsinckia intermedia*). Patches of native forbs such as miniature lupine (*Lupinus bicolor*), goldfields (*Lasthenia gracilis*), dove clover (*Trifolium albopurpureum*), tidy tips (*Layia platyglossa*), and purple owl's clover (*Castilleja exserta*) were also present scattered through the hare barley. By April 2019, non-native red brome (*Bromus madritensis* ssp. *rubens*) had become more dominant.

The plant community predominant on Reservoir #1 was determined to be the *Amsinckia (intermedia, menziesii)* Herbaceous Association of the Fiddleneck-Phacelia Fields Alliance, also called fiddleneck fields (CDFW 42.110.03), based on the predominance of fiddleneck. This plant community has a rarity ranking of G4 and S4, which is not a sensitive natural community. The Holland terminology is Non-native grassland and includes patches of Wildflower Field where native forbs occur. There are, however, subtypes of this alliance that occur in the region that do meet the rarity threshold, notably those dominated by Valley Phacelia (*P. ciliata*) and tansy-leaved Phacelia (*P. tanacetifolia*). Neither of those species occurred at the density of abundance levels necessary for those types to be considered present. The roadway surrounding the reservoir is considered Ruderal, and the buffer on the north is composed of Agriculture (vineyards).









## Reservoir/Frost Pond #2

Reservoir Site #2 is located in the middle portion of the ranch adjacent to Drainage 3, and was sited in an upland area to avoid impacts to the bed or banks of the drainage feature. The site slopes gently to the northeast. Figure 3B depicts the vegetation on Reservoir Site 2.

In 2015, the site consisted of a predominance of non-native species growing on sandy soils, which was nearly identical to the conditions observed at Reservoir #1. Spring and summer 2015 surveys identified red-stemmed filaree growing as a monoculture with patches of bare soils at this site. The 2016 survey occurred during preparation for vineyard planting, and the site was disked with little to no vegetation present. In 2019, the site was not disked and contained a more diverse plant assemblage, including an abundance of fiddleneck. Other associate species observed in this study area included common monolopia (*Monolopia lanceolata*), common phacelia (*Phacelia distans*), blue dicks (*Dichelostemma capitatum*), arroyo lupine (*Lupinus succulentus*), pinpoint clover (*Trifolium gracilentum*), two-seeded milkvetch (*Astragalus didymocarpus* var. *didymocarpus*), and miniature lupine. No perennial grasses were noted on the site. Non-native grasses were present in abundance and included red brome, hare barley, filaree, and wild oats (*Avena barbata*).

The community on the Reservoir #2 site was determined to be the *Amsinckia (intermedia, menziesii)* Herbaceous Association of the Fiddleneck-Phacelia Fields Alliance, also called fiddleneck fields (CDFW 42.110.03), which has a rarity ranking of G4, S4. This is not a sensitive natural community. The Holland terminology is Non-native grassland and includes patches of Wildflower Field where native forbs occurred, but were not in large enough areas to map separately.

## Reservoir/Frost Pond #3

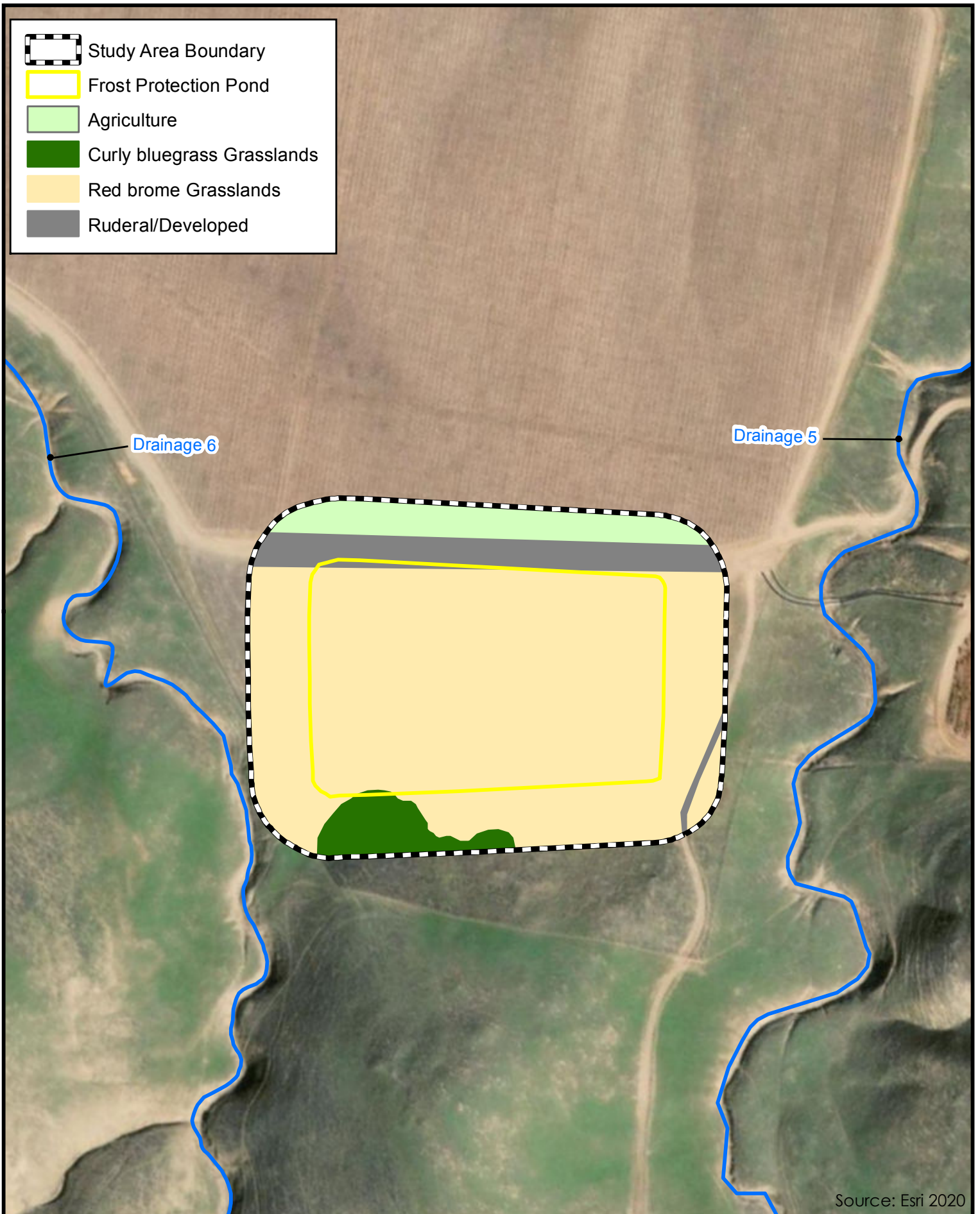
Reservoir #3 is located in the western portion of the study area, approximately 0.75 mile east of Cottonwood Canyon Road. The proposed reservoir is located between two ephemeral drainage features (Drainages 5 and 6), and is sited in upland areas with a minimum 50 foot setback from the drainages top of banks. There is an old fenceline running east/west in the northern third of the site. Figure 3C depicts the plant community distribution on Reservoir #3.

During the spring and summer 2015, the proposed disturbance area was dominated by red-stemmed filaree with patches of Russian thistle. During the 2016 survey, the area was being disked, and the southwestern half consisted of a dense cover of red-stemmed filaree. Numerous Russian thistle seedlings were also observed, and a barbed wire fence present in the area had trapped numerous dry tumbleweeds (Russian thistle plants) from last year's crop.

In 2019, the northern (and flatter) portion of the site was dominated by red brome and also included other non-native grasses such as soft chess (*Bromus hordeaceus*) and hare barley (or foxtail). Herbaceous forbs consisted of red-stemmed filaree and miniature lupine. This portion of the site was determined to be the *Bromus rubens* Semi-Natural Alliance, also called red brome grasslands (CDFW 42.024.01). Holland characterizes this plant assemblage as Non-native grassland. Red brome grasslands are not considered sensitive since they are dominated by non-native species.

In 2019, the southwestern portion of the study area, primarily south of the reservoir construction footprint, that extends up a steeper slope was noted to contain a predominance of the perennial curly bluegrass (*Poa secunda*). Co-occurring with the native bunchgrass was common monolopia and stinging lupine (*Lupinus hirsutissimus*). This area was separated from the red brome grassland and characterized as a native bunchgrass grassland since bluegrass was present at a cover greater than 10 percent. The *Poa secunda* area south of the reservoir site extends outside the study area





Source: Esri 2020

and covers much of the steeper hillside. This plant community meets the criteria for a *Poa secunda* Herbaceous Alliance, also called curly bluegrass grassland (CDFW 41.180.02). The bluegrass grassland has a Global and State rarity ranking of G4 and S3?. The S3? has some uncertainty with the characterization as rare from a statewide perspective, and the taxon on the site is *Poa secunda* ssp. *secunda*, which qualifies it as an Association which is a subtype of the Alliance. The Association has a “Y” sensitive rarity ranking per the online VegCAMP list, thus qualifying it as Sensitive Natural Community. Holland calls this Pine bluegrass grassland, and contained numerous native associates.

The northern buffer area is characterized as Ruderal (the roadway north of the reservoir), and north of that is Agriculture. Table 2. below summarizes the habitat types present on all three of the Reservoir sites, based on all surveys conducted to date, and includes a rarity determination to support the EIR analysis.

**Table 2. Summary of Natural Habitat Types Observed at Three Proposed Reservoir Sites.**

Feature	Name per Holland	Name per CDFW VegCAMP	Rarity Ranking
Reservoir 1	Wildflower Field and Non-native Grassland	<i>Fiddleneck Fields Amsinckia (intermedia, menziesii)</i> Herbaceous Association	G4, S4 – Not Sensitive
Reservoir 2	Wildflower Field and Non-native grassland	<i>Fiddleneck Fields Amsinckia (intermedia, menziesii)</i> Herbaceous Association	G4, S4 – Not Sensitive
Reservoir 3	Non-native grassland	<i>Red brome grasslands Bromus rubens</i> Semi-Natural Herbaceous Stands	Not Sensitive
	Pine bluegrass grassland	<i>Curly bluegrass grasslands Poa secunda</i> Herbaceous Alliance	NR; Yes, Sensitive

### 3.1.2 Wildlife

The entire vineyard is now fenced with six-foot high deer fencing, which limits wildlife movement through the agricultural areas of the site. All reservoirs are located within this fencing. At Reservoir #1, evidence of coyote (*Canis latrans*) (i.e., tracks and scat) in the disked area was observed, showing that coyotes and possibly other mammals may be digging under the fence. No other evidence of larger mammals such as deer were observed in the study areas, and disking has reduced the number of small mammal activity within the vineyards, which would reduce the likelihood of larger predators accessing the vineyard areas. The reservoir sites were not disked prior to the March and April 2019 surveys, and only the occasional gopher and Heerman’s kangaroo rat burrows were noted. A large flock of American crows (*Corvus brachyrhynchos*) were also present in a disked areas south of Reservoir #1.

Reservoir #2 is in close proximity to the operations yard and a ranch residence. Pumps, water tanks and other infrastructure is nearby, and regular human activity appears to limit the wildlife use of this area. As stated above, the entire vineyard is surrounded by deer fence, and this and regular human presence reduces wildlife use of the sites. Reservoir #3 is situated adjacent to two drainage features, and abuts a steep hillside that could potentially increase the wildlife value of this area. However, it is within the deer fencing surrounding the vineyards and did not show signs of use by larger species such as deer or coyote. It was interesting to note that very little bird activity

was observed during the surveys with only several red-tailed hawks (*Buteo jamaicensis*) and turkey vultures (*Cathartes aura*) observed soaring high overhead.

### 3.1.3 Soils

Soils on the ranch in the study area are generally sandy in nature. Figure 4 shows the soils as mapped by NRCS over the entirety of the North Fork Ranch. The Soil Survey identified the project areas as composed of primarily sandy loam soils. Reservoir sites 1 and 3 are located on Pleasanton sandy loam (2-9 % slopes), while Reservoir 2 site is located on Panoche sandy loam (2-9 % slopes).

## 3.2 **Special Status Biological Resources**

As part of the updated investigation, a search of the CNDDDB was performed within a five-mile radius of the North Fork Ranch property limits (refer to Figure 5). A larger search was also conducted, as described in the methods section, to overcome the limitation of the CNDDDB and identify all special status species that could occur onsite. The CNDDDB records coupled with our knowledge of the area identified fourteen (14) special status plant species and sixteen (16) special status animal species known to occur within the general region that were evaluated herein. No special status plant communities were identified in the CNDDDB within the five-mile radius. However, our field work identified one type, *Poa secunda* ssp. *secunda* Herbaceous Alliance, (curly bluegrass grasslands) as noted above, adjacent to proposed Reservoir/Frost Pond #3.

Most of the special status species have highly specific habitat requirements that are not present onsite, and therefore are not expected to occur within the proposed reservoir sites. Please refer to the below discussion and Appendix C for more information on these species. As shown on Figure 5, the CNDDDB contains special status species observations from the subject property, many of which are over 25 years old. The identified occurrence locations were revisited during field work to attempt to locate the particular species. While most were not present, several plants including an occurrence of San Joaquin wooly threads and Blakely's spineflower were relocated on the larger ranch property outside of the reservoir sites. No special status plants or animals were identified on the three reservoir site.

### 3.2.1 Special Status Plants

The CNDDDB records include sightings of special status plants from the general project area, including within the greater ranch property boundaries. Other species identified are known to occur in higher elevations in the Caliente and Sierra Madre Mountains to the north and south of the project areas. As noted above, habitat requirements and potential to occur in the area are presented in Appendix C.

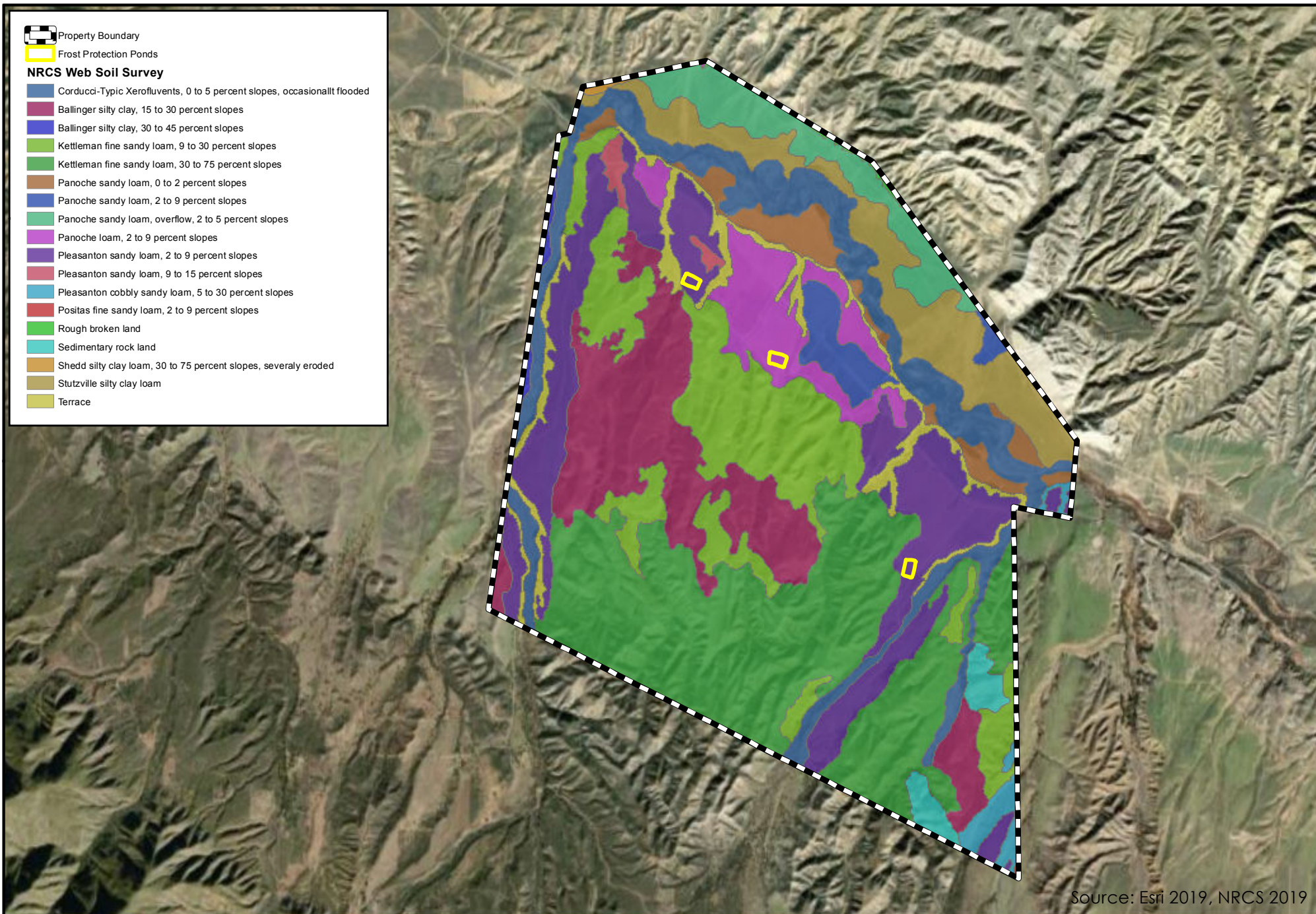
No suitable habitat was observed in the project footprints for rare plants, and seasonally timed surveys conducted in 2019 did not locate these species in the proposed disturbance footprints for any of the reservoirs. Three species are worth noting, as the CNDDDB shows historic occurrences within one mile of the reservoir sites. These species include Blakely's spineflower, Kern mallow and pale-yellow layia, and are described further below:



- Property Boundary
- Frost Protection Ponds

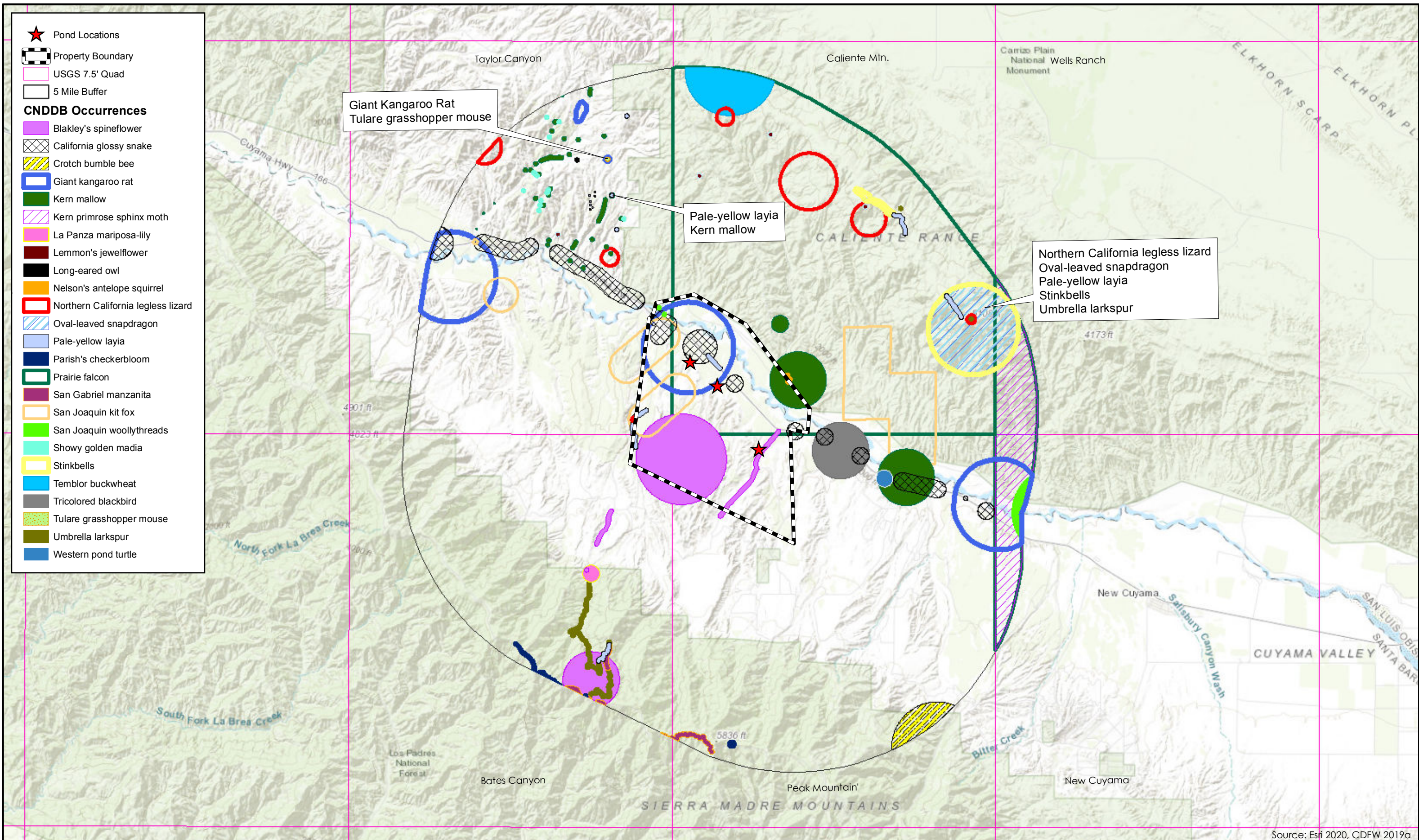
#### NRCS Web Soil Survey

- Corducci-Typic Xerofluvents, 0 to 5 percent slopes, occasionallt flooded
- Ballinger silty clay, 15 to 30 percent slopes
- Ballinger silty clay, 30 to 45 percent slopes
- Kettleman fine sandy loam, 9 to 30 percent slopes
- Kettleman fine sandy loam, 30 to 75 percent slopes
- Panoche sandy loam, 0 to 2 percent slopes
- Panoche sandy loam, 2 to 9 percent slopes
- Panoche sandy loam, overflow, 2 to 5 percent slopes
- Panoche loam, 2 to 9 percent slopes
- Pleasanton sandy loam, 2 to 9 percent slopes
- Pleasanton sandy loam, 9 to 15 percent slopes
- Pleasanton cobbly sandy loam, 5 to 30 percent slopes
- Positas fine sandy loam, 2 to 9 percent slopes
- Rough broken land
- Sedimentary rock land
- Shedd silty clay loam, 30 to 75 percent slopes, severely eroded
- Stutzville silty clay loam
- Terrace



Source: Esri 2019, NRCS 2019





Source: Esri 2020, CDFW 2019a



Blakely's spineflower (*Chorizanthe blakelyi*; California Rare Plant Rank 1B.3) is an annual herb in the buckwheat family (Polygonaceae). It occurs in sandy and gravelly soils, typically in chaparral habitat. Known elevations range from 600 to 1,600 meters, and depending on seasonal variations, the species flowers from May to July. No suitable gravelly soils are present in the reservoirs, and the plant composition was too dense with non-native grasses and forbs to provide suitable habitat for this species. Nearby documented occurrences from the mid-1960's were from the Schoolhouse Canyon Creek corridor and in Bates Canyon. Surveys of the reservoir footprints over multiple years did not locate this species in the study areas, and it is not expected to occur at the three reservoir sites.

Kern mallow (*Eremalche parryi* ssp. *kernensis*; California Rare Plant Rank 1B.2; Federal Endangered) is an annual plant in the Mallow family that usually occurs in saltbush scrub. The subspecies are difficult to distinguish; the rare subspecies having both pistillate or bisexual flowers, a smaller calyx, and smaller calyx lobe width (Baldwin et al., 2012). Both subspecies are relatively abundant north of the Cuyama River (See Sage Plains Pipeline Bio Assessment 2019), and within the Carrizo Plains Ecological Reserve and Carrizo National Monument. The subspecies was not observed on the reservoir sites during the 2019 field surveys, and therefore, it is not expected to occur.

Pale yellow layia (*Layia heterotricha*; California Rare Plant Rank 1B.1) is a glandular annual in the Aster family occurring on alkaline or clay soils in grasslands and juniper woodlands. CNDDDB records occurrences based on herbarium specimens collected along Cottonwood Canyon Road, in Cottonwood Canyon, about 2.3 miles south of Highway 166. It is also known from Highway 166 in the Russell Ranch oilfield area. It appears to be relatively abundant in the Chimineas Unit of the Carrizo Plains Ecological Reserve. Pale yellow layia was not found during the 2019 field surveys, nor was it observed during previous studies. Only the common tidy tips (*Layia platyglossa*) was observed in select areas on the sites, as well as at a reference site along Cottonwood Canyon Creek to the west.

### 3.2.2 Special Status Wildlife

Special status wildlife identified in the CNDDDB and through our background information review included a range of species, many of which could occur in the region, but are unlikely or not expected to occur in the reservoir construction footprints. Several key species with historic occurrence records in relatively close proximity to the reservoir sites are discussed below and a larger group of special status wildlife evaluated in this analysis are provided in the special status biological resources table included in Appendix C.

Northern California legless lizard (*Anniella pulchra*) is a CDFW Species of Special Concern that has been recorded at several locations in the region (CDFW 2019a). This species is fossorial and buries into loose soils, leaf litter, or is associated with cover objects that provide moisture. They forage just beneath the surface of loose soil or in leaf litter during the morning or evening, and may be active above the surface at dusk or at night (California Herps 2019). Their peak activity near the surface is from February through May (Yasuda 2012). Suitable habitat is present in woodland and scrub areas outside the study area, and given the disking and other agricultural activities on the study area, it was deemed that this species had a low potential to occur. The sand soils in this area are potentially suitable, and they have been observed occurring in grasslands with little to no shrub/tree cover.

California glossy snake (*Arizona elegans occidentalis*) is a medium sized, non-poisonous snake. It is CDFW species of special concern that is known to occur in the region. The species prefers a range of scrub and grassland habitats, and is typically nocturnal. It occurs in areas with loose or sandy soils where it hides during daytime underground in burrows, under rocks or uses its specialized nose to dig its own burrow. It occurs from the San Francisco Bay area south to Baja California. CNDDDB records (2019) show that individuals have been found near Cottonwood Canyon and Wasioja Roads, as recently as 2015. Specimens of this generalist snake have been found dead on Highway 166 in the general area of the Ranch site. Although agricultural activities have altered the small mammal prey base in the three reservoir study areas, their proximity to larger undeveloped open space areas increases the potential that it could occur on site.

Giant kangaroo rat (*Dipodomys ingens*) is listed as Endangered by the USFWS and the CDFW. It historically inhabited annual grasslands on the western side of the San Joaquin Valley, the Carrizo Plain, and the Cuyama Valley. Given extensive agricultural and other development activities in the region, species such as the giant kangaroo rat, however, may no longer be present in the general area (CNDDDB, 2019).

The giant kangaroo rat occurrence documented in the northwest corner of the ranch along the Cuyama River was dated 1979, and is currently listed as “possibly extirpated” in the CNDDDB occurrence report. This general area was visited on several instances in the spring and summer 2015 and no burrow complexes typical of the giant kangaroo rat were evident. Surveys of the irrigation line routes on the north and south sides of Highway 166 conducted in April 2016 did not observe haystack caches or burrow precincts typical of this species. Surveys did observe sign of Heermann’s kangaroo rat (*Dipodomys heermanni*) and common pocket gopher (*Thomomys bottae*) in select areas along the lower river terraces north of Highway 166. Surveys of the three project sites in 2019 did not locate any burrow complexes characteristic of the giant kangaroo rat, and the historic occurrence area was again visited and no signs of giant kangaroo rats were observed. Therefore, this species is not expected to occur in the three project areas.

Blunt-Nosed Leopard Lizard is listed as Endangered by the USFWS and the CDFW. Although not included in the five-mile radius search results, the federal and state endangered blunt-nosed leopard lizard (BNLL) has a known occurrence located just over five miles to the east of the eastern property border. Numerous other occurrences are documented in the Carrizo Plain area and in the Cuyama Valley to the east. The closest known occurrence (#414 in the CNDDDB) was documented by Caltrans biologists conducting surveys for Highway 166 improvements. Two BNLLs were located on the south side of Highway 166 close to New Cuyama in a large wash with sparse annual grassland habitat. Other biological studies conducted in the general region were completed for oil and gas exploration and solar farms further to the east of the site closer to known and historic occurrences of the species. These studies did not locate BNLL in their respective study areas. The reservoir project sites are in the outer limits of the known range for the species.

As noted in reports prepared by KMA in 2016, the species is unlikely to occur on site based on surveys conducted prior to disking and agricultural site preparation. In 2015, KMA conducted a series of 18 protocol-level surveys for BNLL in areas of the highest quality habitat in the eastern part of the ranch. Surveys occurred within the onsite portion of Schoolhouse Canyon and adjacent Cuyama River terraces in the spring, summer and fall 2015. No BNLL were observed in these portions of the site. Additional portions of the ranch, including the reservoir study areas and operations yard were also visited during the surveys, but not under protocol conditions (i.e.: either the temperatures were too hot, the wind too strong, or it was too late in the afternoon to meet

protocol requirements). A reference site in the Carrizo Plain area was also located and visited on separate occasions (on June 24, July 3 and September 7, 2015) during the protocol surveys to confirm BNLLs were above ground, active and in identifiable condition. The area of the recorded occurrence #414 east of the property was also visited on these occasions to characterize habitat in this area for comparison with habitats on the study area, as well as search for BNLL using binoculars from property margins. Therefore, it was determined that BNLL were unlikely to occur on or in the vicinity of the reservoir project sites.

American badger (*Taxidea taxus*) is a CDFW species of special concern. As noted above for the kit fox, highly mobile species such as the SJKF and American badger could dig under the deer fencing surrounding the vineyard and potentially move through the ranch and three project areas in search of food or suitable denning habitat. No recent observations of badger were identified on or adjacent to the proposed project sites, nor were any significant small mammal colonies present that could provide a prey base to draw badgers onto the three reservoir sites. The species is known to occur in the larger Cuyama Valley region, and therefore potential exists for this species to occur on the ranch and the three sites during foraging and movement activities.

San Joaquin kit fox (*Vulpes macrotis mutica*; SJKF) is listed as Endangered by the USFWS and Threatened by the state of California. The project site is within the historic range of the species. The last recorded occurrences of San Joaquin kit fox in the immediate area are from 1975, and ongoing agricultural operations in the greater Cuyama Valley and on the project site would likely have restricted movement opportunities for this species in the project area. While the Cuyama River and other more gently sloped open space areas could be used by the SJKF, no den sites or sign of SJKF were observed in the three study areas. Still, given the extensive open space in the area that is generally connected to the core population on the Carrizo Plain, it is assumed that SJKF could potentially occur in the general project area.

Consistent with findings documented in the 2016 KMA reports, agricultural activities including historic grazing of the ranch have reduced the small mammal prey base on the ranch including in the vineyards and the three project study areas. Nevertheless, highly mobile species such as the SJKF could potentially use holes in or dig under the perimeter fence and move through the vineyard areas in search of food or suitable denning habitat. No recent observations of SJKF were identified on or adjacent to the proposed project sites, and based on background review of other projects in the region, it is uncertain if SJKFs are currently present in the general project area. The CNDDDB-recorded occurrences of this species on the eastern part of the ranch in the Cottonwood Canyon vicinity are from 1975. Suitable SJKF denning and foraging habitat are present on the larger ranch, especially in the Schoolhouse Canyon and Cottonwood Canyon areas. However, the reservoir project sites are located in disturbed areas with regular human presence and little to no small mammal prey base. It is possible that a SJKF, if present in the area, could move through the sites during foraging or migration activities, but the lack of a well-developed prey base and no suitable denning habitat within the four sites indicate a very low potential for this species to occur.

Not identified in the CNDDDB five mile search area was the California Red-Legged Frog (*Rana draytonii* CRLF). This highly aquatic amphibian is listed as Threatened by the USFWS. Designated Critical Habitat for the frog is not located in the five-mile search radius, but several observation records were noted to the west of the project in the Cuyama River. As noted in the KMA 2016 reports, the ephemeral drainages on the site do not provide suitable habitat for aquatic amphibians or reptiles (i.e., pond turtle), and CRLF are not expected to occur onsite or be affected by the proposed reservoir project.



Bird Species. A number of birds including species of special concern are known to occur in the region, and could potentially forage over or around the three reservoir sites. 2019 surveys confirmed no suitable prey base or nesting habitat was present for special status birds including raptors in the reservoir study areas. Of interest, two of the study areas are covered by a CNDDDB overlay indicating presence of the prairie falcon (*Falco mexicanus*) within the USGS Caliente Mountain quadrangle. Suitable nesting habitat for the prairie falcon is located in the mountains to the north and south of the project sites, and as such, this species would not be expected to nest within the project footprints and be adversely affected by the proposed project. Other birds protected under the Migratory Bird Treaty Act and California Fish and Game Code could occur on a seasonal basis onsite, but nesting habitat is limited and the regular cycle of disturbance from agriculture would reduce the potential for ground nesting birds to occur in the three reservoir disturbance footprints.

## 4.0 IMPACT ANALYSIS AND RECOMMENDED MITIGATION

### 4.1 Santa Barbara County Thresholds of Significance

According to the County's *Environmental Thresholds and Guidelines Manual*, disturbance to habitats or species may be significant, based on substantial evidence in the record (not public controversy or speculation), if they impact significant resources in the following ways:

- a. *Substantially reduce or eliminate species diversity or abundance;*
- b. *Substantially reduce or eliminate quantity or quality of nesting areas;*
- c. *Substantially limit reproductive capacity through losses of individuals or habitat;*
- d. *Substantially fragment, eliminate, or otherwise disrupt foraging areas and/or access to food sources;*
- e. *Substantially limit or fragment range and movement (geographic distribution or animals and/or seed dispersal routes); or*
- f. *Substantially interfere with natural processes, such as fire or flooding, upon which the habitat depends.*

Additional County guidelines are provided for specific biological communities (see below). These are used in conjunction with the general impact assessment guidelines described above. Analysis of impacts on habitat also accounts for fuel management measures that are being implemented on existing buildings and that will be implemented on new buildings.

#### 4.1.1 Wetlands

Based on the County guidelines, the following types of project-created impacts on wetlands may be considered significant:

- a. *Projects which result in a net loss of important wetland area or wetland habitat value, either through direct or indirect impacts to wetland vegetation, degradation of water quality, or would threaten the continuity of wetland-dependent animal or plant species are considered to have a potentially significant effect on the environment; or*
- b. *Wildlife access, use, and dispersal in wetland habitats are key components of their ecosystem value. Projects which substantially interrupt wildlife access, use and dispersal in wetland areas, would typically be considered to have potentially significant impacts.*

The hydrology of wetlands systems must be maintained if their function and values are to be preserved. Therefore, maintenance of hydrological conditions, such as the quantity and quality of run-off, etc., must be assessed in project review.

#### 4.1.2 Riparian Habitats

Based on the County guidelines, the following types of project-related impacts on riparian habitats may be considered significant:

- a. Direct removal of riparian vegetation;*
- b. Disruption of riparian wildlife habitat, particularly animal dispersal corridors and or understory vegetation;*
- c. Intrusion within the upland edge of the riparian canopy (generally within 50 feet in urban areas, within 100 feet in rural areas, and within 200 feet of major rivers), leading to potential disruption of animal migration, breeding, etc. through increased noise, light and glare, and human or domestic animal intrusion;*
- d. Disruption of a substantial amount of adjacent upland vegetation where such vegetation plays a critical role in supporting riparian-dependent wildlife species (e.g., amphibians), or where such vegetation aids in stabilizing steep slopes adjacent to the riparian corridor, which reduces erosion and sedimentation potential; or*
- e. Construction activity that disrupts critical time periods (nesting, breeding) for fish and other wildlife species*

#### 4.1.3 Native Grasslands

The County's threshold defines a native grassland as "an area where native grassland species comprise 10 percent or more of the total relative cover." However, because native grasslands that are dominated by perennial bunch grasses tend to be patchy, (i.e., the individual plants and groups of plants tend to be distributed in patches), certain mapping protocols have been developed. The mapping protocols require that "where a high density of small patches occur in an area of one acre, the whole acre should be delineated if native grassland species comprise 10 percent or more of the total relative cover, rather than merely delineating the patches that would sum to less than one acre."

The County's significance threshold indicates that "removal or severe disturbance to a patch or patches of native grasses less than one-quarter acre in size, which is clearly isolated and is not part of a significant native grassland or an integral component of a larger ecosystem, is usually considered insignificant." Conversely, in general, removal of an area that is larger than one-quarter acre in size would be considered significant.

#### 4.1.4 Oak Woodlands and Forests

Based on the County guidelines, project-created impacts on oak woodlands and forests may be considered significant due to changes in habitat value and species composition such as the following:

- a. Habitat fragmentation;*
- b. Removal of understory;*
- c. Alteration to drainage patterns;*



- d. *Disruption of the canopy; or*
- e. *Removal of a significant number of trees that would cause a break in the canopy or disruption in animal movement in and through the woodland.*

#### 4.1.5 Individual Native Trees

Based on the County guidelines, in general, the loss of 10% or more of the trees of biological value on a project site is considered potentially significant.

## 4.2 **Impact Analysis**

The proposed project is the construction of three reservoirs of approximately five acres each, at the sizes and dimensions as noted above in the project description and shown on project plans prepared by Howell (2017). KMA's previous 2016 reports concluded that the project was not expected to adversely affect any special status biological resources with the inclusion of avoidance and protection measures for San Joaquin kit fox, and American Badger, which are mobile species that could occur in the greater region. While the sites are highly disturbed from agricultural activities, additional protection measures were identified by the County of Santa Barbara to ensure no impacts to giant kangaroo rat occur from the project. These measures would also help minimize impacts on other wildlife occurring in the area.

The 2019 surveys updated the vegetation classification used for the non-native, annual grassland observed onsite. Based on species identified the habitat types within the study areas were updated to fiddleneck fields, red brome grasslands, and curly bluegrass grasslands as shown on Figures 3A, 3B, and 3C. Fiddleneck fields and red brome grasslands are common throughout the area and are not identified by CDFW or the County as rare. Curly bluegrass grassland is a native bunchgrass grassland that has a limited distribution and is rare from a CEQA perspective. No special status rare plant species were found to occur on the reservoir sites or within the study areas, and based on the multiple years of surveys, no special status plants are expected to occur in the reservoir study areas.

Construction of the project would result in permanent impacts to approximately 15.6 acres of vegetation that has been historically grazed and recently disked for the last several years. The majority of this vegetation loss would be composed of Fiddleneck Fields, Red brome grasslands, and Ruderal habitats. Fiddleneck fields and Red brome grasslands are semi-natural stands that contain primarily non-native species, and are not sensitive natural communities. Curly bluegrass grassland was observed on a slope above Reservoir #3 and current limits of the constructed frost pond would slightly encroach on this habitat. These herbaceous habitats may provide foraging habitat for raptors, but there was very little potential prey base present, and much larger more expansive grassland areas are present on the ranch adjacent to the vineyards. Impacts to the fiddleneck fields and red brome grassland habitats identified in the three study areas from construction of the reservoirs would be considered not significant from a biological resource perspective, and no mitigation is required to reduce the impact to a less than significant level pursuant to CEQA. Impacts to curly bluegrass grasslands, a sensitive plant community, could be considered significant from a CEQA perspective even though only a small area of a much larger habitat type would be impacted. In addition, several special status species such as the SJKF could occur in the project area, and protection measures can be employed to avoid any project-related impacts.

No healthy native trees would be removed as a result of the project, nor would the project adversely affect a natural drainage feature, wetlands or riparian habitats. Feasible mitigation measures to address these potentially significant impacts are discussed below.

**Impact Bio-1. Construction of Reservoir #3 would result in permanent and temporary impacts to a small amount (less than 0.1 acre) of curly bluegrass grassland. *This is a potentially significant impact that can be reduced to less than significant with the incorporation of mitigation.***

By overlaying project plans onto the habitat map, construction of Reservoir #3 is expected to encroach into curly bluegrass grassland. Construction would only affect a small amount of this habitat, and mitigation of impacted curly bluegrass grassland should be in the form of grassland restoration and enhancement at a 2:1 ratio (i.e., 2 acres of grassland restoration/replacement for every acre impacted). Avoidance of the native grassland habitat during construction would be the first approach, but if complete avoidance is not feasible, then the impact minimized to the maximum extent practicable and mitigated. Mitigation should consist of the following:

- The applicant shall develop and implement a native grassland habitat restoration plan that includes a salvage and replanting program of impacted surface material (i.e., native topsoil and seed bank) and curly blue grass clumps. The plan shall identify the methods and techniques to be used during the restoration and enhancement effort, and the location and size of the mitigation site(s). Salvaged native plant material collected from the site shall be maintained and watered as needed and then replanted onsite to restore areas of temporary disturbance.
- A native seed mix composed of a similar mix of species such as curly bluegrass, common monolopia and annual fescue shall be developed by a qualified biologist for erosion control in all areas of temporary disturbance around the reservoir.
- A monitoring and reporting program shall be developed and detailed in the habitat restoration plan that includes seasonally timed inspections of the mitigation site(s) to assess percent cover of native species and any other pertinent success criteria. Monitoring shall occur in the spring for a minimum three year period or until the success criteria are met. Annual monitoring reports shall be prepared for the applicant and submitted to the County by December 31<sup>st</sup> of each year.

Implementation of the above recommended mitigation measures would be sufficient to reduce project related impacts to onsite native grassland habitat to a less than significant level pursuant to CEQA.

**Impact Bio-2. Project development could directly and indirectly result in the deterioration of existing habitat and potential loss of nesting sites for bird life. *This is a potentially significant impact that can be reduced to less than significant with the incorporation of mitigation.***

As detailed in the existing conditions discussion, no tree or shrub habitat is present in the reservoir sites that could be used by birds protected by the Migratory Bird Treaty Act of California Fish and Game Code. Still, ground nesting birds could be affected if the reservoir sites are not maintained and dense herbaceous vegetation is present at the time of construction during the spring and summer nesting season. Nesting in the larger area outside the disturbance footprint could temporarily decrease or be disrupted due to increased human activity, noise, and construction



activity. The following mitigation is provided to reduce project-related impacts nesting birds to a less than significant level.

*Impacts to nesting birds.* To minimize impacts to nesting bird species protected by the Migratory Bird Treaty Act and California Fish and Game Code, grading of the site should be limited to the time period between September 1 and February 14. If initial site disturbance cannot be conducted during this time period, a pre-construction survey for active bird nests within the limits of the project and a 250 foot buffer should be conducted by a qualified biologist.

- Surveys should be conducted two weeks prior to any construction activities proposed to occur between February 15 and August 31.
- If no active nests are located, ground disturbing activities can proceed.
- If active nests are located, then all construction work should be conducted outside a non-disturbance buffer zone to be developed based on the species (i.e., 50 feet for common species and upwards of 250 feet for raptors and special status species), slope aspect and surrounding vegetation.
- No direct disturbance to nests should occur until the young are no longer reliant on the nest site as determined by a qualified biologist.
- The biologist should conduct monitoring of the nest until all young have fledged to inform construction personnel and the County when work can proceed in the setback area.
- Environmental awareness training should be provided to construction personnel at the start of site disturbance to inform them of the special status biological resources present on the site and in the project area.

Implementation of the above recommended mitigation measures would be sufficient to reduce project related impacts to onsite wildlife resources to a less than significant level pursuant to CEQA.

**Impact Bio-3. Project development could directly and indirectly impact special status wildlife including the legless lizard, California glossy snake, American badger and San Joaquin kit fox. *This is a potentially significant impact that can be reduced to less than significant with the incorporation of mitigation.***

The three reservoir sites were disked during site preparation activities, and all fossorial species were likely removed at that time. Given the locations of the reservoir sites in proximity to unaltered open space, there is still potential, albeit low to moderate, that species such as the northern California legless lizard and California glossy snake could have recolonized the area and now potentially occur within the study area, primarily within grassland or the fiddleneck fields. Other areas of the site, especially actively farmed ground, do not provide suitable cover and moisture regimes for these species.

American badgers could move through the area, and depending upon the condition of the site at the time of construction, dens could be constructed in which they raise their young or utilize for refuge. Natal dens may be occupied in the spring and summer, and adults may be present in dens during the daytime at any time of year. Similarly, SJKF could move through the area and construct a den in areas outside the agricultural disturbance footprint.

Avoidance and minimization measures involving a pre-activity survey by a qualified biologist prior to initial ground disturbance are required to reduce potential impacts to a less than significant

level. The pre-activity or clearance survey shall involve visual and raking searches for reptiles within project impact areas and also include searches for potential dens that could be used by the American badger and SJKF. If any potential dens are found, additional mitigation to ensure the dens are not occupied at the time of construction would be required. To reduce potential project impacts on special-status wildlife species to a level below significance the following measures are provided.

- Conduct a preconstruction survey for special-status wildlife species and avoid occupied areas plus a no-work buffer while individuals are present. Within seven days prior to the start of construction, a qualified wildlife biologist shall survey all project impact areas to determine whether special-status wildlife species use the area for any key life history requirements, such as dens of the American badger. The survey shall include areas on the property within 50 feet of the limits of disturbance. If any potential dens or other sensitive wildlife activity areas are found, the locations of these dens or activity centers shall be marked in the field with flagging and appropriate no-work buffers be established. If these areas cannot be avoided with at least a 50-foot buffer for dens or a 25-foot buffer for other sensitive species, construction shall be delayed until the individuals have left the area. For potential badger dens, the following mitigation measure would also be required.
- If any potential dens are found, employ wildlife trail cameras and/or track/scent stations to determine whether the dens are active, and excavate non-active dens to prevent re-occupation. A qualified biologist shall install wildlife trail cameras and/or tracking medium outside any potential dens that are found during the preconstruction survey, and monitor those sites for at least three days to determine whether the den(s) are currently occupied. Any unoccupied dens shall be excavated to prevent badgers from re-entering. If the work takes place in the late-spring or summer, additional measures shall be employed to determine whether dens are occupied by young. No dens with young shall be disturbed, and no work shall be conducted within 50 feet of natal dens until they have left the den. Any occupied dens that are being used by an adult with no young that cannot be avoided with at least a 25-foot buffer shall be blocked incrementally by placing sticks and debris over the entrance to discourage the badger from using the den. Only after the badger has left the den, as determined by a qualified biologist, can the den be excavated and work proceed.
- Prior to, during and post construction, implement the USFWS 2011 Standardized Recommendations for Protection of Kit Fox to ensure this species is not adversely affected by project construction and long-term agricultural activities on the property

This updated report does not alter the conclusions of the 2016 evaluations that the giant kangaroo rat is not expected to occur in the reservoir sites. The agricultural activities onsite have removed all potential habitat for GKR from the reservoir sites and no GKR burrow precincts have been observed on the reservoir sites or the buffer areas included in the surveys. However, the pre-construction survey required to be conducted by a qualified biologist immediately prior to construction in grassland and fiddleneck fields can also search for sign of GKR to ensure the project avoids impacts to this species. The pre-construction survey will be conducted as described above for other special status wildlife species, and will evaluate the three reservoir sites to determine if the GKR have moved into the area and occupy the disturbance footprint. If GKR are identified in the disturbance footprint then USFWS and CDFW consultation would be required for take authorization prior to construction.

## **5.0 CONCLUSIONS**

This updated biological resources assessment of the three proposed reservoir sites included two site visits over the course of two months during the spring of 2019. The analysis also draws on previous surveys conducted over several years as reported by KMA in 2016. Although drought conditions prevailed during the 2015 and 2016 field surveys, abundant rain fell during winter 2019 to initiate germination and growth of herbaceous vegetation. Previously characterized annual grassland habitats were refined based on the dominant species expressed at each site, and included the inclusion of fiddleneck fields, red brome grassland and a small area of curly bluegrass grassland. Agricultural and ruderal areas are also present. Fiddleneck fields and red brome grasslands are not sensitive as they are common to the area and support numerous non-native species. Curly bluegrass grassland is a form of native bunchgrass grassland that was observed on the hillside adjacent to Reservoir #3. It is a sensitive habitat that should first be avoided, and if avoidance is not feasible, appropriate mitigation is provided herein to reduce the impact to a less than significant level pursuant to CEQA. The spring surveys also concluded that special status plants are not expected to occur in the three project footprints.

The biological investigation included direct observation and evaluation of onsite and adjacent habitat conditions to evaluate the potential presence of special status wildlife from the three study areas. The past disking and agricultural activities onsite have removed suitable habitat for most species, but fossorial species such as legless lizard that may have persisted through the soil disturbance and those more mobile species such as the California glossy snake, American badger and SJKF were determined to have a low to moderate potential to occur onsite. Ground nesting birds and those nesting in trees or shrubs in close proximity to the reservoir sites could also be affected. To minimize the chance for project impacts on special-status wildlife species including nesting birds, a preconstruction survey is recommended to ensure avoidance of any wildlife in the ground disturbance area. Should a potential den site for the American badger or SJKF be identified, additional clearance surveys prior to den destruction and potentially monitoring of initial construction activities conducted by a qualified biologist are recommended. Overall, the reservoir sites are located in areas disturbed by agriculture, and construction of the project would not result in cumulative impacts to herbaceous plant communities or special status botanical or wildlife resources in the region.

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## **APPENDIX A**

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### **KMA 2016 Biological Reports and Regulatory Agency Consultation/Communications**





Kevin Merk Associates, LLC P.O. Box 318, San Luis Obispo, CA 93406 805-748-5837(o)/439-1616(f)

February 24, 2016

Mr. Kevin Merrill  
Mesa Vineyard Management  
P.O. Box 789  
Templeton, California 93465

**Subject: Biological Resources Assessment for the Reservoir and Operations Yard Project, North Fork Ranch, Santa Barbara County, California**

Dear Mr. Merrill:

Kevin Merk Associates, LLC (KMA), at your request, conducted an assessment of the biological resources at three reservoir sites and an operations yard proposed on a portion of the North Fork Ranch in Santa Barbara County, California. The North Fork Ranch is located approximately 10 miles west of New Cuyama, along the Highway 166 corridor. While the entire North Fork Ranch is roughly 8,400 acres, and is situated in both San Luis Obispo and Santa Barbara Counties, the four sites included in this assessment are located on the gentle to flat slopes on the south side of Highway 166 in Santa Barbara County.

Based on the review of site plans provided by your engineer, Mr. Thomas Howell (2015), the project consists of creating three agricultural reservoirs covering approximately five acres each. An operations yard area of approximately five acres is also included. The biological assessment examined existing conditions at and adjacent to the four proposed project areas, and evaluated the potential for rare or special status species and habitats to be present or affected by reservoir and operations yard construction. As such, the project study area covered by this report consists of a total of approximately 20 acres of land disturbance. Access to the sites would use existing ranch roads that originate from Highway 166. Please refer to attached Figures 1 and 2 for site location and an aerial overview of the study area. The following discussion provides the methods and results of our investigation.

## **METHODS**

Prior to conducting field work, KMA biologists reviewed pertinent background information from the general area, including historic aerial photographs from Google Earth, the U.S. Geological Survey (USGS, 2015), and the Environmental Site Assessment prepared by the RCC Group (2014). Other environmental documents obtained online from the County of Santa Barbara (i.e.: August 2009 E&B Natural Resources Management Production Plan and September 2014 Cuyama Solar Facility Final EIR) were also reviewed to identify special status resources in the region.

The California Natural Diversity Database (updated December 2015; CNDDDB) maintained by the California Department of Fish and Wildlife (CDFW), was searched for special status biological resources documented within the following eight USGS 7.5-minute topographic quadrangles: Manzanita Mountain, Miranda Pine Mountain, Taylor Canyon, Bates Canyon, Caliente Mountain,



Peak Mountain, Wells Ranch, and New Cuyama. A search of this size was conducted to ensure that any new information regarding special-status species and plant community occurrences was included in the assessment. The Central Coast Center for Plant Conservation's Rare Plants of Santa Barbara County List (V2, November 1, 2012) was also reviewed to ensure full coverage of local plant species.

KMA Principal Biologist Kevin Merk conducted numerous site investigations on the North Fork Ranch in the spring and summer of 2015 prior to agricultural activities. General botanical and biological surveys were conducted in April, May, June, July, September and October of 2015 in addition to CDFW protocol level surveys for the blunt nose leopard lizard (*Gambelia sila*). KMA Senior Biologist Bob Sloan and Environmental Scientist, Jaryd Block, also assisted with surveys conducted in September and October 2015 to delineate top of bank buffers along onsite drainages to ensure agricultural activities onsite were setback from natural drainage features.

A detailed survey of the reservoir sites and operations was conducted by Bob Sloan on January 4, 2016. Using the project plans prepared by project engineer, Mr. Thomas Howell, the sites and surrounding areas were surveyed on foot to characterize existing conditions, habitats, and species presence. Existing plant communities and other observations were mapped on an aerial photograph obtained from Google Earth dated 2015. Vegetation classification generally followed Holland's *Preliminary Descriptions of the Terrestrial Natural Communities of California* (1986) and was cross-referenced with *A Manual of California Vegetation, Second Edition* (Sawyer et al., 2009) for consistency. Plant taxonomy followed the *Jepson Manual, Second Edition* (Baldwin et al., 2012).

The Web Soil Survey ([websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx](http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx)) was reviewed to determine the soil mapping units present within the sites (U.S. Department of Agriculture 2015). The U. S. Fish and Wildlife Service's online Critical Habitat Mapper (<http://criticalhabitat.fws.gov/crithab/>) was reviewed to evaluate the extent of designated critical habitat defined in the region. The National Wetland Inventory was also queried to identify drainage features and potential wetlands documented onsite and in the region.

For the purpose of this report, special status species are those plants and animals listed, proposed for listing, or candidates for listing as Threatened or Endangered by the U.S. Fish and Wildlife Service (USFWS) under the federal Endangered Species Act (ESA); those listed or proposed for listing as Rare, Threatened, or Endangered by the California Department of Fish and Wildlife (CDFW) under the California Endangered Species Act (CESA); animals designated as "Species of Special Concern," "Fully Protected," or "Watch List" by the CDFW; and plants occurring on California Rare Plant Rank lists 1, 2, 3 and 4 developed by the CDFW working in concert with the California Native Plant Society. The specific Rare Plant Rank code definitions are as follows:

- *List 1A = Plants presumed extinct in California;*
- *List 1B.1 = Rare or endangered in California and elsewhere; seriously endangered in California (over 80% of occurrences threatened/high degree and immediacy of threat);*
- *List 1B.2 = Rare or endangered in California and elsewhere; fairly endangered in California (20-80% occurrences threatened);*

- *List 1B.3 = Rare or endangered in California and elsewhere, not very endangered in California (<20% of occurrences threatened or no current threats known);*
- *List 2 = Rare, threatened or endangered in California, but more common elsewhere;*
- *List 3 = Plants needing more information (most are species that are taxonomically unresolved; some species on this list meet the definitions of rarity under CNPS and CESA);*
- *List 4.2 = Plants of limited distribution (watch list), fairly endangered in California (20-80% occurrences threatened); and*
- *List 4.3= Plants of limited distribution (watch list), not very endangered in California.*

The evaluation of special status plant and animal species and identification of habitat that could support these species was based on field observations to aid in the development of a habitat suitability analysis. KMA staff spent many hours surveying the lower elevation portions of the ranch along the Highway 166 corridor over the last year, and became very familiar with site conditions and species present. Definitive surveys for the presence or absence of the species such as the San Joaquin kit fox (*Vulpes macrotis mutica*) that may be present in the greater region were not conducted on the sites. Definitive or protocol-level surveys for special status wildlife species generally require specific survey methods with extensive field survey time to be conducted at specific times of the year. Therefore, we relied on existing information and known occurrence records in the region coupled with site-specific observations to make presence/absence determinations for special status species potentially occurring within the four project areas.

## **RESULTS**

The North Fork Ranch is a large property with varied topography and habitats located west of New Cuyama along the northern flank of the Sierra Madre Mountains. The northern property is bisected in an east to west direction by Highway 166, and also includes the Cuyama River and its associated flat terraces. Please refer to the attached Figures 1 and 2 for site location and aerial overview maps. The three proposed reservoir sites and operations yard are located in the gentle slopes and flat areas of the North Fork Ranch, on the south side of Highway 166. All four sites are similar in size and shape, and were accessed by existing ranch roads. Elevations in the project areas range from approximately 1,700 to 1,900 feet above mean sea level.

Numerous drainage features that are tributaries to the Cuyama River bisect the property in a primarily south to north direction. The largest features, Cottonwood Canyon Creek in the west and Schoolhouse Canyon Creek in the east are large washes that are dry for most of the year. They contain periodic ("flashy") flow during the summer monsoon season as well as the winter rain season. The ranch was used to graze cattle for many years, and as a result, the gently-sloped terraces and hills were dominated by non-native weeds. Review of aerial imagery dating back to 1950's showed little change in the distribution/location of drainage features and vegetation formations (i.e.: herbaceous, shrub, tree habitats) onsite. Soils on the ranch in the study area are generally sandy in nature.

The attached Figures 3, 4, and 5 provide close-up views of existing conditions at each project site.

Figure 6 is a CNDDDB Map illustrating the recorded special status species occurrences within a five-mile radius of the study area. Also included as an attachment, Table 1 provides a list of all special status species and plant communities identified in the CNDDDB search area, and a determination of whether or not they are expected to occur in or adjacent to the four sites. Additional attachments include a photo plate to help document conditions at the four project sites, and the USFWS's *Standardized Recommendations for San Joaquin Kit Fox* to avoid impacts to this species during development of the reservoirs and operations yard. Existing conditions observed within the four sites are discussed further below.

#### Reservoir Site #1

Reservoir Site #1 is located in the eastern portion of the ranch, immediately adjacent to Schoolhouse Canyon Road, west of Schoolhouse Canyon Creek. The site slopes gently to the northeast, and supported a mix of non-native weeds growing on sandy loam soils. Plants observed during the spring and summer of 2015 included red-stemmed filaree (*Erodium cicutarium*) and Russian thistle (*Salsola tragus*). Further upslope on steeper hills were occurrences of California juniper (*Juniperus californicus*) and other scrub species. A small ephemeral drainage channel was present to the north of the proposed reservoir site, and the reservoir construction footprint has been set back over 100 feet from this feature to ensure it will not be disturbed during construction. The recent 2016 survey occurred when site preparation activities such as disking and deep ripping were taking place. The site was nearly devoid of vegetation when the site visit was conducted. Numerous coyote (*Canis latrans*) tracks were noted in the disked area. A large flock of American crows (*Corvus brachyrhynchos*) were present in disked areas south of the reservoir site. Nearby areas outside the disking footprint were dominated by red-stemmed filaree with sparse occurrences of annual grasses beginning to sprout in response to recent rains, which is consistent with observations made in the spring and summer 2015.

#### Reservoir Site #2

Reservoir Site #2 is located in the middle portion of the study area. The site slopes gently to the northeast, and consisted of non-native weeds growing on sandy soils, which was nearly identical to the conditions observed at Reservoir Site #1. Spring and summer 2015 surveys identified red-stemmed filaree growing as a monoculture with patches of bare soils at this site. The 2016 survey occurred during preparation for vineyard planting, and the site was disked with little to no vegetation present. The reservoir (and nearby operations yard) was sited in the upland area to avoid impacts to the unnamed drainage feature to the east. The proposed operations yard is located further east on the other side of the unnamed drainage feature.

#### Reservoir Site #3

Reservoir Site #3 is located in the western portion of the study area, approximately 0.75 mile east of Cottonwood Canyon Road. The proposed reservoir is located between two ephemeral drainage features, and was sited in upland areas with a minimum 50 foot setback from the drainages top of banks. Similar to observations made during the spring and summer 2015 at the other reservoir sites, the proposed disturbance area was dominated by red-stemmed filaree with patches of Russian thistle. During the 2016 survey, the area was being disked, and the southwestern half



consisted of a dense cover of red-stemmed filaree. Numerous Russian thistle seedlings were also observed, and a barbed wire fence present in the upper southern portion of the site had trapped numerous dry tumbleweeds (Russian thistle plants) from last year's crop.

### Operations Yard

The proposed operations yard is located east of Reservoir Site #2 on the other side of the unnamed drainage feature. The site consists of an area previously used as a staging area for the former cattle grazing operation. During the 2016 survey, it consisted of a large flat area covered with gravel/road base. An existing dirt road connects the operations yard to Highway 166. During the 2015 surveys, the site contained a predominance of bare soils as a result of equipment storage along with patchy occurrences of red-stemmed filaree and Russian thistle. In addition, two small windrows visible in the aerial imagery were no longer present at the time the 2016 survey was conducted.

### **Habitat Types**

During surveys conducted on the property in 2015, the gently sloping areas along the south side of Highway 166 were dominated by non-native weeds characteristic of the non-native grassland habitat described by Holland (1986). Due to the many years of grazing cattle coupled with the ongoing drought, vegetation was patchy and consisted almost entirely of red-stemmed filaree with patches of Russian thistle. Herbaceous alliances dominated by red-stemmed filaree with occurrences of Russian thistle are not described by Sawyer et al (2009). Areas of juniper shrubs were present at higher elevations on slopes outside the proposed disturbance footprints. The sparsely vegetated areas within the four proposed project sites lacked species diversity and did not support any native plants. Patches of native habitat were observed in the unnamed ephemeral drainage features that bisect the ranch in a primarily south to north direction connecting with the Cuyama River to the north of Highway 166. The highest quality native habitat areas were observed in the Schoolhouse Canyon and Cottonwood Canyon corridors and along the Cuyama River, which are outside the proposed project footprints.

### **Soils**

Prior to field investigation, the Web Soil Survey was queried to determine soil composition and the related potential for the site to support special status species. The Soil Survey identified the project areas as composed of primarily sandy loam soils. Reservoir sites 1 and 3 are located on Pleasanton sandy loam (2-9 % slopes), while the operations yard and Reservoir 2 sites are located on Panoche sandy loam (2-9 % slopes).

### **Drainage Features**

A series of ephemeral drainage features that are tributaries to the Cuyama River bisect the ranch in a primarily south to north direction. The largest features, Cottonwood Canyon Creek to the west and Schoolhouse Canyon Creek to the east, are large washes that are dry for most of the year, and contain periodic/flashy flow only during monsoonal rain events and the winter rain season. No areas of in channel ponds were observed in the study area. As we understand, the natural drainage

features will not be impacted or altered by construction at the proposed reservoir and operations yard sites. All work is proposed to occur outside a minimum 50-foot setback established from the top of bank of all drainages on the site.

### **Special Status Biological Resources**

As part of our investigation, a search of the CNDDDB was performed within a five-mile radius of the North Fork Ranch property limits (refer to the attached Figure 6). The CNDDDB records coupled with our knowledge of the area identified thirteen (13) special status plant species and twelve (12) special status animal species known to occur within the general region. No special status plant communities were identified in the CNDDDB within the five-mile radius. Most of these special status species have highly specific habitat requirements that are not present onsite, and therefore are not expected to occur within the proposed project sites. Please refer to Table 1 for more information on these species. The CNDDDB contained special status species observations from the subject property, many of which are over 25 years old. Please refer to the attached Figure 6 and Table 1, Special Status Species Potentially Occurring on the Site, for specific information pertaining to each species listing status, habitat requirements and the potential to occur within the four sites.

The CNDDDB records included sightings of special status plants such as round-leaved filaree (*California macrophylla*), Blakely's spineflower (*Chorizanthe blakelyi*), Kern mallow (*Eremalche kernensis*), pale yellow layia (*Layia heterotricha*), and San Joaquin woolly threads (*Monolopia congdonii*) from the general project area, including within the greater ranch property boundaries. Other species identified are known to occur in higher elevations in the Caliente and Sierra Madre Mountains to the north and south of the project areas. No suitable habitat was observed in the project footprints for rare plants, and seasonally timed surveys conducted in 2015 did not locate these species in the proposed disturbance footprints. As stated above, the proposed reservoirs and operations yard will be constructed in disturbed areas away from the natural drainage features, and therefore, would be unlikely to adversely affect any special status plants.

Special status wildlife identified in the CNDDDB and through our background information review included a range of species, many of which could still occur in the region. Species such as the giant kangaroo rat (*Dipodomys ingens*), however, may no longer be present in the general area (CNDDDB, 2015). The giant kangaroo rat occurrence documented in the northwest corner of the ranch along the Cuyama River was dated 1979, and is currently listed as "possibly extirpated" in the CNDDDB occurrence report. This general area was visited on several instances in the spring and summer 2015 and no burrow complexes typical of the giant kangaroo rat were evident. Surveys of the four project sites did not locate any burrow complexes characteristic of the giant kangaroo rat, and therefore this species is unlikely to occur in the project areas.

Although no potential SJKF den sites or small mammal prey base were observed on the four project sites, highly mobile species such as the SJKF and American badger (*Taxidea taxus*) could potentially move through the ranch and four project areas in search of food or suitable denning habitat. No recent observations of SJKF or badger were identified on or adjacent to the proposed project sites, but both species are known to occur in the larger Cuyama Valley region. It is uncertain if SJKFs are currently present in the general project area. The CNDDDB recorded occurrences of this species on the eastern part of the ranch in the Cottonwood Canyon vicinity are from 1975. Suitable SJKF

denning and foraging habitat are present on the larger ranch, but the four project sites are located in disturbed areas with regular human presence and little to no small mammal prey base. It is possible that a SJKF, if present in the area, could move through the sites during foraging or migration activities, but the lack of a well-developed prey base and no suitable denning habitat within the four sites indicate a very low potential for this species to occur. Moreover, no evidence (i.e.: direct observation of an individual, scat or tracks) of SJKF or American badger presence was observed during surveys conducted by KMA in 2015 and 2016.

Although not included in the five-mile radius search results, the federal and state endangered blunt-nosed leopard lizard (BNLL) has a known occurrence located just over five miles to the east of the eastern property border. Numerous other occurrences are documented in the Carrizo Plain area and in the Cuyama Valley to the east. The closest known occurrence (#414 in the CNDDb) was documented by Caltrans biologists conducting surveys for Highway 166 improvements. Two BNLLs were located on the south side of Highway 166 close to New Cuyama in a large wash with sparse annual grassland habitat. Other biological studies conducted in the general region were completed for oil and gas exploration and solar farms further to the east of the site closer to known and historic occurrences of the species. These studies did not locate BNLL in their respective study areas. The reservoir and operations yard project sites are in the outer limits of the known range for the species.

Prior to disking and agricultural site preparation, KMA conducted a series of 18 protocol-level surveys for BNLL in areas of the highest quality habitat in the eastern part of the ranch. Surveys occurred within the onsite portion of Schoolhouse Canyon and adjacent Cuyama River terraces in the spring, summer and fall 2015. No BNLL were observed in these portions of the site (KMA, 2015). Additional portions of the ranch, including Reservoirs 2 and 3 and the operations yard were also visited during the surveys, but not under protocol conditions (i.e.: either the temperatures were too hot, the wind too strong, or it was too late in the afternoon to meet protocol requirements). A reference site in the Carrizo Plain area was also located and visited on separate occasions (on June 24, July 3 and September 7, 2015) during the protocol surveys to confirm BNLLs were above ground, active and in identifiable condition. The area of the recorded occurrence #414 east of the property was also visited on these occasions to characterize habitat in this area for comparison with habitats on the study area, as well as search for BNLL using binoculars from property margins. Therefore, it was determined that BNLL were unlikely to occur on or in the vicinity of the four project sites. In addition, species of special concern such as the coast horned lizard (*Phrynosoma blainvilli*) is unlikely to occur in the four project sites due to a lack of suitable habitat.

Designated Critical Habitat for the federally threatened California red-legged frog (*Rana draytonii*) is located outside the five-mile radius, to the west of the project, and CRLF have been observed in the Cuyama River further west of the ranch study area. The ephemeral drainages on the site do not provide suitable habitat for this highly aquatic species, and its presence onsite is considered highly unlikely. Similarly, other highly aquatic species such as the western pond turtle (*Emys marmorata*) would not be expected to occur in the project area due to lack of suitable habitat.

A number of birds including species of special concern would be expected to forage over or around the four sites, but no suitable prey base or nesting habitat was present for special status birds



including raptors. Of interest, the four sites are covered by a CNDDDB overlay indicating presence of the prairie falcon (*Falco mexicanus*) within the USGS Caliente Mountain quadrangle. Suitable nesting habitat for the prairie falcon is located in the mountains to the north and south of the project sites, and as such, this species and other birds protected under the Migratory Bird Treaty Act and California Fish and Game Code would not be expected to occur within the project footprints and be adversely affected by the proposed project.

Please note that this evaluation included multiple site visits over the course of numerous months. Although drought conditions prevailed, enough rain fell in the spring to initiate germination and growth of herbaceous vegetation allowing the determination that special status plants are unlikely to occur in the four project footprints. The biological investigation included direct observation and evaluation of onsite and adjacent habitat conditions, and review of CNDDDB records documenting occurrence data from the area. Special status plants would have been observed if they were present within the four project sites. Although the sandy soil types present on-site are suitable for several of the special status plant species known to occur in the area, the disturbed conditions of the four sites dominated by non-native weedy plants would not be suitable to support these species. Higher elevation areas of the North Fork Ranch, and areas not subject to the historic intense grazing pressure would provide more opportunity for these species to be present. For special status wildlife, the habitat suitability analysis was used to determine whether a particular species had potential to be present in the project area. The investigation determined that it is highly unlikely that the four project sites support any special status plant or wildlife.

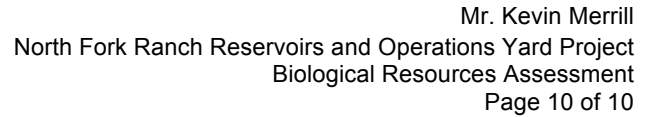
## **CONCLUSION AND RECOMMENDATIONS**

The four project sites are located in areas disturbed by historic ranching operations within or adjacent to proposed vineyard plantings. Field surveys in 2015 and 2016 of the project sites observed disturbed areas dominated by non-native weeds such as red-stemmed filaree and Russian thistle. The sites are currently disked with an annual cover crop as part of agricultural improvements on the property. No special status biological resources (i.e., plant communities, plants, or animals) were observed on the four sites, and given the disturbed site conditions, it is unlikely that any are present.

Based on this evaluation, performance of additional biological investigation such as floristic or focused wildlife surveys on the sites is not recommended. The proposed projects are not expected to adversely affect any special status biological resources since they would occur in disturbed annual grasslands or previously disturbed areas of the ranch. However, due to historic sightings of San Joaquin kit fox in the area and potential that this species along with the American badger could still occur in the greater region and be a rare transient through the site at some point in time, we recommend that the SJKF avoidance measures included as an attachment to this report be implemented prior to and during construction. Implementation of the recommended avoidance measures would be sufficient to ensure the SJKF and American badger, as well as other common wildlife that may be present, are not adversely affected by construction of the three reservoirs and operations yard.

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Kennzeichen

Robert Sloan

*Attachments*

- Figure 1 - Site Location Map*
- Figure 2 – Aerial Overview Map*
- Figure 3 – Reservoir Site 1*
- Figure 4 - Reservoir Site 2 and Operations Yard*
- Figure 5 – Reservoir Site 3*
- Figure 6 – CNDDB Occurrence Map*
- Table 1 – Special Status Species Potentially Occurring on the Site*
- Photo Plate*
- SJKF Avoidance Measures*





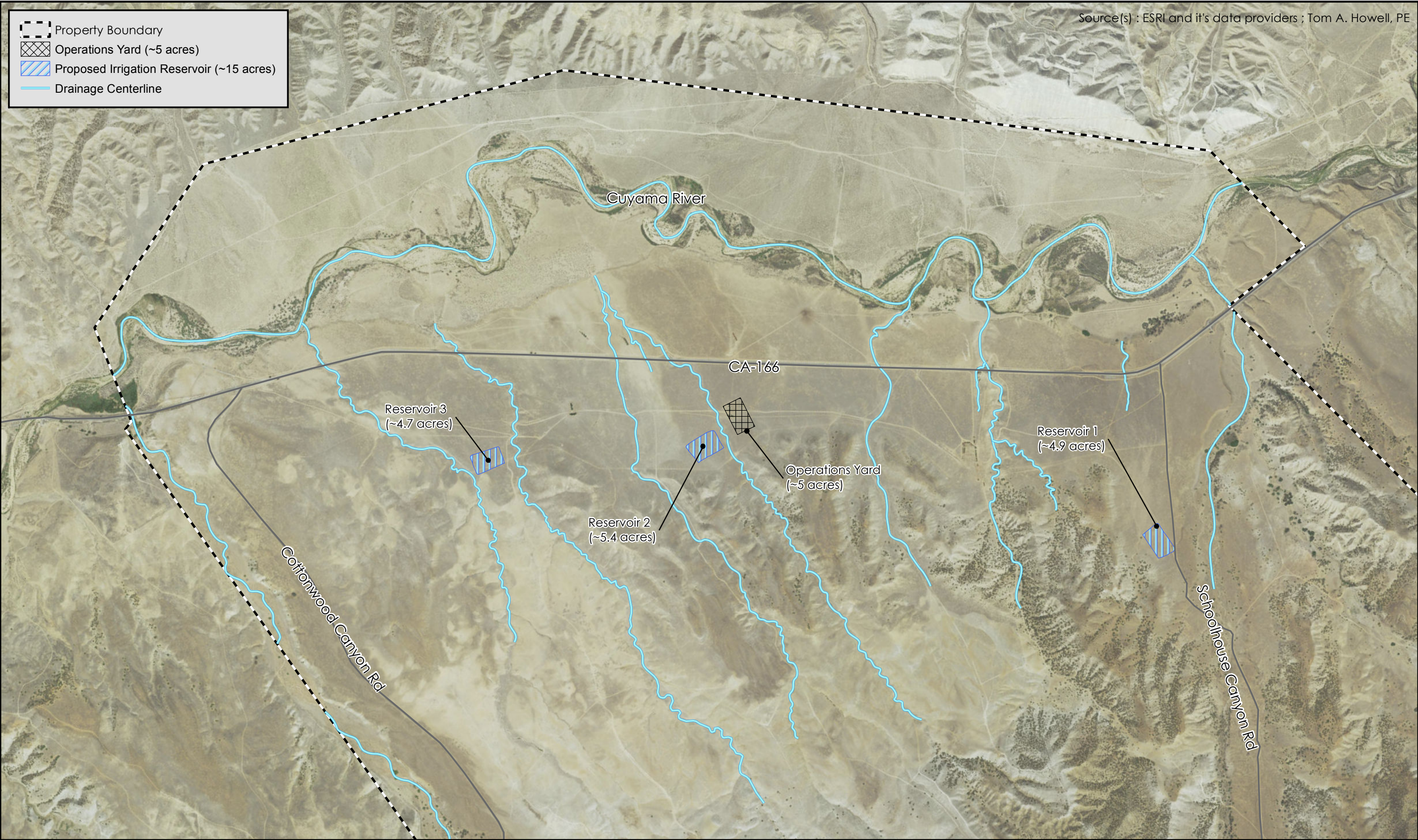


Property Boundary

Operations Yard (~5 acres)

Proposed Irrigation Reservoir (~15 acres)

Drainage Centerline



KEVIN MERK ASSOCIATES

N

E

S

W

1 in = 2,000 ft

0

0.25

0.5

1

Miles


North Fork Ranch

Mesa Vineyard Management

Figure 2

Aerial Overview



 Proposed Irrigation Reservoir 1 (4.87 acres)

Unnamed Drainage Feature

Schoolhouse Canyon Road

Unnamed Drainage Feature

Source(s) : Tom A. Howell, PE



1 in = 400 ft

**North Fork Ranch**

Mesa Vineyard Management

**Figure 3**

Reservoir 1



- Operations Yard (~5 acres)
- Proposed Irrigation Reservoir 2 (5.42 acres)


Unnamed Drainage Feature

CA-166

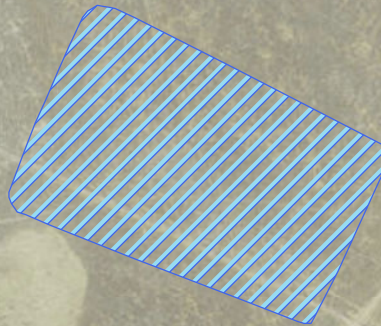
Source(s) : ESRI and its data providers ; Tom A. Howell, PE





 Proposed Irrigation Reservoir 3 (4.73 acres)

Unnamed Drainage Feature



Unnamed Drainage Feature

Source(s) : ESRI and its data providers ; Tom A. Howell, PE



1 in = 400 ft

**North Fork Ranch**

Mesa Vineyard Management

**Figure 5**

Reservoir 3







**Table 1. Special Status Species Potentially Occurring On-Site**

Scientific Name	Common Name	Listing Status*			Habitat Requirements	Probability of Occurrence / Site Suitability / Observations
		Fed	CA	DFW		
PLANTS						
1) <i>Antirrhinum ovatum</i>	oval-leaved snapdragon	--	--	4.2	Annual herb; chaparral, cismontane woodland, pinyon & juniper woodlands, valley & foothill grassland; 200-1000 meters; blooms May to November.	<b>Unlikely.</b> Suitable chaparral, woodland or grassland habitats are not present in the project areas. Not observed during surveys conducted in spring and summer 2015.
2) <i>Arctostaphylos glandulosa</i> ssp. <i>gabrielensis</i>	San Gabriel manzanita	--	--	1B.2	Perennial shrub found in chaparral on granitic soils, 950-2000 meters in elevation. Blooms January through April.	<b>Not expected.</b> Suitable chaparral habitat on granitic soils is not present in the project areas. Perennial shrub would have been identifiable during surveys.
3) <i>California macrophylla</i>	round-leaved filaree	--	--	1B.1	Annual herb commonly found on clay soils in cismontane woodland and valley and foothill grassland at elevations ranging from 15 to 1200 meters. Blooms March to May.	<b>Unlikely.</b> Suitable clay soils and woodland or grassland habitats are not present in the project areas. Species is known to occur in the region and was documented in the Cottonwood Canyon corridor. It was not observed during surveys conducted of the project sites in spring 2015. The four sites were dominated by the non-native red-stemmed filaree.
4) <i>Calochortus simulans</i>	La Panza mariposa-lily	--	--	1.B.3	Perennial bulbiferous herb; chaparral, cismontane woodland, and grasslands in decomposed granite; 395-1100 meters in elevation; blooms April to June.	<b>Unlikely.</b> Suitable chaparral, woodland or grassland habitats with granitic soils are not present in the project areas. Not observed during surveys conducted in spring 2015. Known occurrences in the area are in steeper terrain.
5) <i>Caulanthus lemmonii</i>	Lemmon's jewel-flower	--	--	1B.2	Annual herb; pinyon and juniper woodland, valley and foothill grassland; 80 to 1,220 meters elevation; blooms March to May.	<b>Unlikely.</b> Suitable woodland or grassland habitats are not present in the project areas. Grasslands onsite are impacted from overgrazing and were dominated by weeds. Not observed during surveys conducted in spring 2015. Known occurrences are located in the hills to the north.

Scientific Name	Common Name	Listing Status*			Habitat Requirements	Probability of Occurrence / Site Suitability / Observations
		Fed	CA	DFW		
6) <i>Chorizanthe blakleyi</i>	Blakley's spineflower	--	--	1.B.3	Annual spineflower known to occur in pinyon and juniper woodland areas with a typical elevation of 600 to 1,600 meters. Blooms April to June.	<b>Unlikely.</b> Suitable woodland habitats are not present in the project areas. Not observed during surveys conducted in spring 2015. Known to occur in upper elevation areas south of the property.
7) <i>Delphinium umbraculorum</i>	umbrella larkspur	--	--	1B.3	Perennial herb; found in granite of cismontane woodlands, chaparral, and coastal scrub; 85-1,035 meters in elevation; blooms May to July.	<b>Unlikely.</b> Suitable granite soils and woodland, chaparral, or coastal scrub habitats are not present in the project areas. Not observed during surveys conducted in spring 2015.
8) <i>Eremalche kernensis</i>	Kern mallow	E	--	1.B1	Chenopod scrub, valley and foothill grassland. On dry, open sandy to clayey soils; usually within valley saltbush scrub; often at edge of balds. 70-1290 meters.	<b>Unlikely.</b> Suitable sandy soils are present on the property, but valley saltbush scrub habitats are not present in the specific project areas. Not observed during surveys conducted in spring 2015. Common <i>E. parryi</i> ssp. <i>parryi</i> observed in Schoolhouse Canyon outside disturbance footprints.
9) <i>Fritillaria agrestis</i>	stinkbells	--	--	4.2	Chaparral, valley grassland, foothill woodland, and wetland riparian areas with an elevation of 10 to 1,555 meters. Blooms March to June.	<b>Unlikely.</b> Suitable wetland, riparian, woodland, or grassland habitats are not present in the project areas. Not observed during surveys conducted in spring and summer 2015.
10) <i>Layia heterotricha</i>	pale-yellow layia	--	--	1B.1	Annual herb; alkaline, clay and sandy soils in scrub, cismontane woodland, pinyon-juniper woodland, and valley and foothill grassland; 270-1,365 meters; blooms March to June.	<b>Unlikely.</b> Suitable chaparral, woodland or grassland habitats are not present in the project sites. Project areas impacted from overgrazing and were dominated by weeds. Not observed during surveys conducted in spring 2015.
11) <i>Madia radiata</i>	showy golden madia	--	--	1B.1	Chenopod scrub, valley and foothill grassland, and cismontane woodland areas. Found mostly on adobe clay in grassland or among shrubs with an elevation of 25-1125 meters. Blooms March to May.	<b>Unlikely.</b> Suitable clay soils and woodland or grassland habitats are not present in the project areas. Not observed during surveys conducted in spring 2015.

Scientific Name	Common Name	Listing Status*			Habitat Requirements	Probability of Occurrence / Site Suitability / Observations
		Fed	CA	DFW		
12) <i>Monolopia condonii</i>	San Joaquin woolly-threads	E	--	1B.2	Chenopod scrub, valley and foothill grassland. Alkaline or loamy plains; sandy soils, often with grasses and within chenopod scrub. 60-800 meters.	<b>Unlikely.</b> Disturbed grassland habitat and sandy soils are present, but chenopod scrub habitat is not present in the project areas. Only common <i>Monolopia lanceolata</i> observed on the larger study area outside project disturbance footprints.
13) <i>Sidalcea hickmanii</i> ssp. <i>parishii</i>	Parish's checker-bloom	--	R	1B.2	Chaparral, cismontane woodland, lower montane coniferous forest. Disturbed burned or cleared areas on dry, rocky slopes, in fuel breaks & fire roads along the mtn. summits. 1000-2500 meters.	<b>Unlikely.</b> Chaparral, cismontane woodland, and coniferous forest habitats are not present, and the sites are located on deep alluvial soils, not dry rocky slopes. Not observed during surveys conducted in spring and summer 2015.
<b>ANIMALS</b>						
1) <i>Asio otus</i>	Long-eared owl	--	--	SSC	Winters throughout the Central Valley and southeastern California. Nests in abandoned nests (crow, hawk, or magpie), usually in dense stands of willows, cottonwoods, live oaks, or conifers.	<b>Unlikely.</b> Disturbed grassland habitat suitable for foraging is present, but no nesting habitat is present in the project areas.
2) <i>Bombus crotchii</i>	<i>Crotch</i> bumble bee	--	--	--	Open grassland and scrub habitats from central California to Baja California del Norte, Mexico, including the western edges of the deserts and the Central Valley. Not found in the mountains or cool north coastal areas of California	<b>Unlikely.</b> Sites appear to lack sufficient pollen sources and the general vegetative diversity to attract or support the species.
3) <i>Dipodomys ingens</i>	giant kangaroo rat	E	E	--	Annual grasslands on the western side of the San Joaquin Valley, extending into Carizzo Plain and Cuyama Valley areas. Typically occurs in grasslands but can use alkali scrub. Needs level terrain & sandy loam soils for burrowing.	<b>Not expected.</b> Disturbed grassland habitat on sandy soils is present in the general area, but no typical burrow complexes observed in the project areas. CNDDDB record from Cuyama River is from surveys conducted in 1979 and 1982 and states "possibly extirpated" from this site. General location with alkali scrub/grassland mix visited in the spring and summer 2015 and no burrow complexes typical of this species were observed.



Scientific Name	Common Name	Listing Status*			Habitat Requirements	Probability of Occurrence / Site Suitability / Observations
		Fed	CA	DFW		
4) <i>Emys marmorata</i>	western pond turtle	--	--	SSC	Permanent or nearly permanent water bodies in many habitats.	<b>Not expected.</b> Project sites consist of disturbed upland areas. Ephemeral drainages on the site lack perennial water sources needed for this species to occur in the general area.
5) <i>Euproserpinus euterpe</i>	Kern primrose sphinx moth	T	--	--	Highly localized species found in the Walker Basin, Kern County, and several other scattered locations (Carrizo Plain, Pinnacles National Monument). Host plant is <i>Camissonia contorta epilobioides</i> (evening primrose) that typically grows in washes with loose alluvial soils.	<b>Unlikely.</b> Project sites are located in upland areas away from onsite drainage features. Host plant not observed on the study area during surveys conducted in spring and summer 2015. Prior to farming activities, non-native filaree was the dominant plant growing throughout the project sites, which is known to adversely affect this species.
6) <i>Falco mexicanus</i>	prairie falcon	--	--	WL	Catches prey in air and in open ground in grasslands, Nests in cliffs overlooking large areas; resident, breeding migrant.	<b>Unlikely.</b> Disturbed grassland habitat suitable for foraging is present in the vicinity, but no nesting habitat is present in or near the project areas. CNDDDB records cover the entire USGS quadrangle map and are not specific to this site.
7) <i>Gambelia sila</i>	blunt-nosed leopard lizard	E	E	--	Resident of sparsely vegetated alkali and desert scrub habitats, in areas of low topographic relief. Seeks cover in mammal burrows, under shrubs or structures such as fence posts; they do not excavate their own burrows.	<b>Unlikely.</b> Disturbed grassland habitat does not provide sufficient cover and food resources in the project areas to support the species. Very few small mammal burrows (mostly gopher) observed prior to farming activities. Protocol BNLL surveys conducted in 2015 in higher quality habitat areas along Schoolhouse Canyon and Cuyama River did not find the species.
8) <i>Masticophis flagellum ruddocki</i>	San Joaquin whipsnake	--	--	SSC	Occurs in open, dry valley grasslands and saltbush scrub habitats with little or no tree cover. While known from the San Joaquin Valley, species also occurs in western Kern County and eastern San Luis Obispo County. Requires mammal burrows for refuge and egg laying.	<b>Unlikely.</b> Very few small mammal burrows were observed during surveys of the reservoir and operation yard sites. Suitable habitat present in the larger drainage corridors such as Cottonwood Canyon and Schoolhouse Canyon and along the Cuyama River terraces, but no suitable habitat present in the project sites.

Scientific Name	Common Name	Listing Status*			Habitat Requirements	Probability of Occurrence / Site Suitability / Observations
		Fed	CA	DFW		
9) <i>Onychomys torridus tularensis</i>	Tulare grasshopper mouse	--	--	SSC	Inhabits shrubland communities in hot, arid grassland and shrubland associations, including blue oak woodlands, upper Sonoran subshrub scrub, alkali sink and mesquite associations, and grasslands on the sloping margins of the San Joaquin Valley and Carrizo Plain regions.	<b>Unlikely.</b> Disturbed grassland habitat composed of red-stemmed filaree and bare soils is present, but vegetative density and diversity in the project areas is not sufficient to support populations of this species.
10) <i>Phrynosoma blainvilli</i>	Coast horned lizard	--	--	SSC	Frequents a wide variety of habitat including sandy washes with scattered shrubs and open areas for sunning. Loose soils for burial.	<b>Unlikely.</b> Larger property contains drainages including Cuyama River and associated terraces that could support this species. While soils onsite are predominantly sandy, species is unlikely to occur in project footprints due to lack of shrub cover and a prey base.
11) <i>Taxidea taxus</i>	American badger			SSC	Open grasslands and the edge of scrub and woodland habitats; requires dry loose soils for burrowing and shelter and feeds on a variety of small mammals such as California ground squirrel and pocket gopher.	<b>Potential.</b> Suitable habitat present throughout the ranch. Known to occur in the general area. No potential den sites observed during surveys, and no sufficient small mammal prey base in project footprints. Could occur as a transient moving through the area, especially along the larger drainage corridors. Sites are now disked with no suitable habitat present.
12) <i>Vulpes macrotis mutica</i>	San Joaquin kit fox	E	T	--	Annual grasslands or grassy open stages with scattered shrubby vegetation. Need loose-textured sandy soils for burrowing, and suitable prey base.	<b>Potential.</b> Suitable foraging habitat and migration corridors are present throughout the site, especially along drainage corridors. No dens or sign (scat tracks, etc.) were observed in project footprint. CNDDDB records are from 1970's. Could occur as a rare transient moving through the area.

\*FE – listed as Endangered under federal Endangered Species Act; SE – listed as Endangered under California Endangered Species Act; SR – listed as Rare under California Endangered Species Act; ST – listed as Threatened under California Endangered Species Act; SSC – DFW Species of Special Concern; WL – List of Birds of Conservation Concern; 1A = Plants presumed extinct in California; 1B.1 = Rare or endangered in California and elsewhere; seriously endangered in California (over 80% of occurrences threatened/high degree and immediacy of threat); 1B.2 = Rare or endangered in California and elsewhere; fairly endangered in California (20-80% occurrences threatened); 1B.3 = Rare or endangered in California and elsewhere, not very endangered in California (<20% of occurrences threatened or no current threats known); 2 = Rare, threatened or endangered in California, but more common elsewhere; 3 = Plants needing more information (most are species that are taxonomically unresolved; some species on this list meet the definitions of rarity under CNPS and CESA); 4.2 = Plants of limited distribution (watch list), fairly endangered in California (20-80% occurrences threatened); and 4.3= Plants of limited distribution (watch list), not very endangered in California.



**Photo Plate**

**Photo 1.** View of Reservoir 1 site looking northwest. Stake marks southeast corner of the reservoir. Surveys occurred prior to and after disking and site preparation activities.



**Photo 2.** Overview of Reservoir 1 site, looking north toward Highway 166. Schoolhouse Canyon Road is located to the right of the picture. Area was composed of non-native weeds and bare soil that was being disked.



**Photo 3.** View of Operations Yard site looking northeast toward Highway 166.



**Photo 4.** Easterly view of Operations Yard.





**Photo 5.** View of Reservoir #2 looking east. Stake marks western corner of the grading limits.



**Photo 6.** View of Reservoir #2 looking north. Stake marks eastern corner of the grading limits.





**Photo 7.** View of Reservoir #3 looking east. The site consisted of non-native weeds and bare soils prior to disking and site preparation. Russian thistle was also present and tumbleweeds can be seen along fenceline.



**Photo 8.** Closeup view of Reservoir #3 looking east. Photo taken prior to disking and site preparation activities showing dominant cover of non-native plants (primarily red-stemmed filaree) and bare soils.

**San Joaquin Kit Fox Avoidance Measures**

1. Prior to issuance of grading and/or construction permits, the applicant should have a qualified biologist perform the following monitoring activities:
  - a. Prior to issuance of grading and/or construction permits and within 30 days prior to initiation of site disturbance and/or construction, the biologist shall conduct a pre-activity (i.e. pre-construction) survey for known or potential kit fox dens and document in a report the date the survey was conducted, the survey protocol, survey results, and what measures were necessary (and completed), as applicable, to address any kit fox activity within the project limits.
  - b. The qualified biologist shall conduct weekly site visits during site-disturbance activities (i.e. grading, excavation, stock piling of dirt, etc.) that proceed longer than 14 days, for the purpose of monitoring compliance with the below avoidance measures. Site disturbance activities lasting up to 14 days do not require weekly monitoring by the biologist unless observations of kit fox or their dens are made on-site or the qualified biologist recommends monitoring for some other reason (see BR-1-d3). When weekly monitoring is required, the biologist shall document the methods and results of site visits in weekly monitoring reports.
  - c. Prior to or during project activities, if any observations are made of San Joaquin Kit fox, or any known or potential San Joaquin kit fox dens are discovered within the project limits, the qualified biologist shall re-assess the probability of incidental take (e.g. harm or death) to kit fox. If an active den is discovered within 150 feet of construction activities, the qualified biologist shall contact the USFWS and the CDFW for guidance on possible additional kit fox avoidance measures to implement and whether or not a federal and/or state incidental take permit is needed. If a potential den is encountered within 150 feet during construction, work shall stop in that specific area until such time the USFWS and/or CDFW determines it is appropriate to resume work.

If incidental take of kit fox during project activities is possible, before project activities commence, the applicant must consult with the USFWS and the CDFW. The results of this consultation may require the applicant to obtain a federal and/or state permit for incidental take during project activities.

  - d. In addition, the qualified biologist shall implement the following measures:
    1. Within 30 days prior to initiation of site disturbance and/or construction, fenced exclusion zones shall be established around all known and potential kit fox dens. Exclusion zone fencing shall consist of either large flagged stakes connected by rope or cord, or survey laths or wooden stakes prominently flagged with survey ribbon. Each exclusion zone shall be roughly circular in configuration with a radius of the following distance measured outward from the den or burrow entrances:
      - a) Potential kit fox den: 50 feet
      - b) Known or active kit fox den: 100 feet
      - c) Kit fox pupping den: 150 feet
    2. All foot and vehicle traffic, as well as all construction activities, including storage of supplies and equipment, shall remain outside of exclusion zones. Exclusion zones shall



- be maintained until all project-related disturbances have been terminated, and then shall be removed.
3. If kit foxes or known or potential kit fox dens are found on site, daily monitoring during ground disturbing activities shall be required by a qualified biologist.
  2. Prior to issuance of grading and/or construction permits, the applicant shall clearly delineate in the field and note on the project plans, that: "Speed limit of 25 mph (or lower) shall be required for all construction traffic to minimize the probability of road mortality of the San Joaquin kit fox". Speed limit signs shall be installed on the project site within 30 days prior to initiation of site disturbance and/or construction. In addition, prior to initiation of any ground disturbing activities, conditions BR-3 through BR-9 shall be reviewed with all construction personnel and delineated on project plans.
  3. During the site disturbance phase, grading and construction activities after dusk shall be prohibited unless coordinated through the County, during which additional kit fox mitigation measures may be required.
  4. Prior to issuance of grading and/or construction permit and within 30 days prior to initiation of site disturbance and/or construction, all personnel associated with the project shall attend a worker education training program, conducted by a qualified biologist, to avoid impacts on sensitive biological resources such as the San Joaquin kit fox. At a minimum, as the program relates to the kit fox, the training shall include the kit fox's life history, all avoidance measures contained herein, as well as any related biological information prepared for the project. A kit fox fact sheet shall also be prepared prior to the training program, and distributed at the training program to all contractors, employers and other personnel involved with the construction of the project.
  5. During the site-disturbance and/or construction phase, to prevent entrapment of the San Joaquin kit fox and other wildlife, all excavation, steep-walled holes or trenches in excess of two feet in depth shall be covered at the close of each working day by plywood or similar materials, or provided with one or more escape ramps constructed of earth fill or wooden planks. Trenches shall also be inspected for entrapped kit fox and wildlife each morning prior to onset of field activities and immediately prior to covering with plywood at the end of each working day. Before such holes or trenches are filled, they shall be thoroughly inspected for entrapped animals. Any kit fox discovered shall be allowed to escape before field activities resume, or removed from the trench or hole by a qualified biologist and allowed to escape unimpeded.
  6. During the site disturbance and/or construction phase, any pipes, culverts, or similar structures with a diameter of four (4) inches or greater, stored overnight at the project site shall be thoroughly inspected for trapped San Joaquin kit foxes before the subject pipe is subsequently buried, capped, or otherwise used or moved in any way. If during the construction phase a kit fox is discovered inside a pipe, that section of pipe will not be moved, or if necessary, be moved only once to remove it from the path of activity, until the kit fox has escaped.
  7. During the site-disturbance and/or construction phase, all food-related trash items such as wrappers, cans, bottles, and food scraps generated shall be disposed of in closed containers only and regularly removed from the site. Food items may attract San Joaquin kit foxes and

other wildlife onto the project site, consequently exposing such animals to increased risk of injury or mortality. No deliberate feeding of wildlife shall be allowed.

8. Prior to, during and after the site-disturbance and/or construction phase, use of pesticides or herbicides shall be in compliance with all local, State and Federal regulations. This is necessary to minimize the probability of primary or secondary poisoning of wildlife utilizing adjacent habitats, and the depletion of prey upon which San Joaquin kit foxes depend.

9. During the site-disturbance and/or construction phase, any contractor or employee that inadvertently kills or injures a San Joaquin kit fox or who finds any such animal either dead, injured, or entrapped shall be required to report the incident immediately to the applicant. In the event that any observations are made of injured or dead kit fox, the applicant shall immediately notify the USFWS and CDFW by telephone. In addition, formal notification shall be provided in writing within three working days of the finding of any such animal(s). Notification shall include the date, time, location and circumstances of the incident. Any threatened or endangered species found dead or injured shall be turned over immediately to CDFW for care, analysis, or disposition.





Kevin Merk Associates, LLC P.O. Box 318, San Luis Obispo, CA 93406 805-748-5837(o)/439-1616(f)

June 24, 2016

Mr. Kevin Merrill  
Mesa Vineyard Management  
P.O. Box 789  
Templeton, California 93465

**Subject: Supplemental Biological Resources Information for the Reservoir and Operations Yard Project (Case No. 16CUP-00000-00005), North Fork Ranch, Santa Barbara County, California**

Dear Mr. Merrill:

At your request, Kevin Merk Associates, LLC (KMA) prepared a biological resources assessment for three reservoir sites and an operations yard proposed on a portion of the North Fork Ranch in Santa Barbara County, California. Our analysis utilized project plans prepared by Thomas Howell (2015) showing only the extent of the reservoirs. The County of Santa Barbara during their review of the project application materials requested additional biological information such as the locations of water supply pipelines and details as to how they would cross onsite drainage features. Please refer to the Determination of Application Incompleteness (March 16, 2016) from the County of Santa Barbara and the Peer Review Memorandum (March 21, 2016) from Dudek.

The following information addresses each Comment and the associated Action Items outlined in the Peer Review. In order to supply this information, the Vineyard Irrigation Reservoir Fill Lines prepared by Ag-Ideas LLC (April, 2016) was provided to us showing the pipeline routes from onsite wells to the proposed reservoirs. The project team also provided additional project description information to help in the impact analysis. This included additional site plans showing the location of pressure mainlines that will run from the reservoirs to vineyard blocks. Subsequent site visits were conducted by KMA biologists to assess the proposed pipeline routes and the potential impacts to onsite drainage features and areas outside the farming footprint. The pipeline routes originating from wells on the north side of Highway 166 and all proposed drainage crossings were inspected for special status biological resources including species of rare plants and animals.

The plans provided by Ag Ideas LLC identified reservoir fill lines and pressure mainlines crossing onsite drainage features. The proposed installation methodology, as we understand, is to have the underground pipe "daylight" outside the drainage feature's top of bank of bank and a removable flexible pipe would then be attached to the main pipe and laid across the channel connecting to a similar structure on the opposite side. It is our understanding that the flexible pipe would span the active stream channel using a stand or support structure to avoid U.S. Army Corps of Engineers (USACE) Clean Water Act jurisdictional areas. The flexible pipe would be removed from the channel prior to rain events that have the potential to create flows through the site. Since the pipelines are proposed to cross the drainage features, early consultation with the California Department of Fish and Wildlife (CDFW) and USACE occurred to review the extent of each agency's jurisdiction over the proposed project. A site visit was conducted by CDFW representative, Ms.

Sarah Rains, on April 15, 2016 to inspect the proposed crossings, and consultation with USACE Project Manager, Ian Bordenave, occurred to evaluate the extent of Clean Water Act requirements for the project. The following provides the supplemental biological resources information requested from the County of Santa Barbara.

## **Peer Review Comments, Actions, and Responses**

### *Comment 1. Project Description.*

*Action 1.1. Please include in a revised report the complete project description and representation of the proposed project, including all areas of temporary and permanent impacts, including access routes, staging area(s), soil stockpile(s) location(s), and water delivery systems.*

### **Action 1.1 Response: The revised project description is presented below.**

The project consists of constructing three agricultural reservoirs covering approximately five acres each, on existing agricultural lands south of Highway 166. The reservoirs will be connected to agricultural wells on the north side of Highway 166 by water lines. Additional pressure main lines will extend from the reservoirs to feed the vineyard drip irrigation system. An operations yard area of approximately five acres will also be constructed on agricultural land, and will be used for materials and equipment storage, and staging during reservoir and water line construction. Temporary soil stockpiles will occur in agricultural areas at each reservoir location, and along pipeline routes. Access to the reservoirs, well sites, and operations yard will use existing ranch roads that originate from Highway 166. Pipeline routes estimated at approximately 10 feet wide will primarily follow existing dirt ranch roads, and will cross agricultural lands to reach the reservoirs. Where the pipelines cross the onsite drainages, flexible High Density Polyethylene (HDPE) flexible pipes will be laid overland to avoid impacts to non-native annual grassland habitat. Six small ephemeral drainage channels on the south side of Highway 166 will be crossed by water lines suspended above the active channel.

The project will result in approximately 20 acres permanently disturbed by reservoir and operations yard construction, and roughly 11 acres temporarily disturbed by reservoir fill and pressure main waterline installation. Of this total impact area, the majority of the impacted area is within existing agricultural areas and ranch roads. Small areas of annual grassland within the drainage setback areas and along road edges will be temporarily disturbed during pipeline installation. Please refer to the attached Figure 7 illustrating onsite habitat conditions, proposed water pipeline routes and drainage crossing locations, and reservoir/operations yard sites. Figure 7 also shows the drainage corridors and minimum 50-foot setback established from the top of banks where vineyard planting blocks will be sited. For detailed information regarding the extent of regulatory agency jurisdiction and associated vineyard setbacks from the top of banks, please refer to Figures 8, 9 and 10 attached to this report. Photographs of the six drainage crossing locations and proposed pipeline configuration crossing the drainages are also provided as an attachment.

As shown on project maps, Reservoir 1 is located in the eastern portion of the ranch, immediately adjacent to Schoolhouse Canyon Road. Reservoir 2 is located in the middle portion, and Reservoir 3 is located in the western portion, approximately 0.75 mile east of Cottonwood Canyon Road. The

operations yard is located east of Reservoir 2, on a site previously used as a staging area for the former cattle grazing operation. Although Reservoirs 1 and 2 appear to extend into annual grassland habitat, their footprints are within currently disked and dry farmed wheat fields. Please refer to the attached photo plate.

Reservoir fill lines from agricultural wells will cross under Highway 166 in two locations: at Schoolhouse Canyon Road, and directly northeast of Reservoir 2 in the center of the site. The highway crossings will be accomplished by horizontal boring, and installation of casing pipes under the roadway. The reservoir fill lines will primarily follow existing ranch roads and agricultural areas. Where drainage crossings are proposed, the underground waterline will “daylight” and flexible High Density Polyethylene (HDPE) pipe will be attached and run overland to span the active stream channel. Small areas of annual grassland within the drainage corridors may be temporarily affected. The pressure main lines will also be located within existing agricultural lands except where annual grassland habitat is present at drainage crossing locations. The reservoir fill lines will cross three ephemeral drainages on the south side of Highway 166. Pressure main lines will extend from the reservoirs to vineyard blocks, and will cross a total of six drainage features. Three of these pressure line crossings are located in conjunction with the three fill line crossings to minimize impact areas. Of the six proposed waterline drainage crossings, four are located within or immediately adjacent to existing road crossings. Please refer to the attached photo plate for additional information.

The crossing pipelines will consist of flexible temporary HDPE piping laid on the ground from outside the top of banks down into the channel. The lower active channel areas will be spanned by an approximate 20-foot long section of steel pipe (roughly two to five feet wide depending on pipe width), supported at each end by a metal stand keyed into the slope within the top of bank but outside the Ordinary High Water Mark (OHWM). The steel pipe sections will be elevated above the OHWM, with no dredge or fill placement or effect on water flow within Clean Water Act Section 404 jurisdictional areas. Each support stand will consist of a 24x48-inch flat metal foot placed on the ground surface, with a central metal riser extending to cradle each end of the pipe. Please refer to Photo 12 included in the photo plate for additional detail. Minor excavation using hand tools may be required in some locations to create a level surface for the support stands, and all excavated soil will be recontoured around the span supports or removed from the channel. No large mechanized equipment such as a bulldozer or excavator will be required to enter the channel, and no concrete or other materials will be used.

Following the regulatory agency early consultation process, it was determined that a Streambed Alteration Agreement from the CDFW will be required for the six drainages to be crossed by waterlines on the south side of Highway 166. All supports, pipe materials, soil disturbance, and associated impacts proposed within the top of bank of each drainage will be quantified in the Streambed Alteration Agreement currently being prepared for the project. During a meeting between Dave Swenk of Urban Planning Concepts and USACE Project Manager Ian Bordenave on June 2, 2016, Mr. Bordenave stated that a Clean Water Act Section 404 permit would not be required based on the proposed crossing method that avoids placement of dredge or fill material within the OHWM. A formal letter from USACE documenting this decision is pending, and upon receipt will be submitted to the County for placement in the project file.



Comment 2. Survey Documentation.

*Action 2.1. Revise the report to include a table summarizing the dates/times, weather conditions, focus of the surveys, specific location of surveys, and observations.*

**Action 2.1 Response:** As stated in the Biological Resources Assessment prepared in February 2016, general and focused biological surveys occurred during the spring, summer and fall 2015 to help agricultural development of the property avoid impacts to special status resources such as the onsite drainages. In April 2016 following receipt of the Ag-Ideas LLC reservoir pipeline map, additional field work was conducted to search for special status plants and wildlife focused along the pipeline route and reservoir sites. Stream delineation also occurred to make sure pipeline installation avoided impacts to the active channel. A table summarizing biological survey efforts covering the Phase I farming activities including the proposed reservoir and operations yard project is presented below. Included as an attachment is a table summarizing the survey data from the blunt-nosed leopard lizard (*Gambelia sila*) protocol surveys conducted in the spring, summer and fall 2015.

**General Biological Survey Data Summary Table\***

Survey Date, Time, and Location	Survey Focus	Weather Conditions and Species Observations	Survey Personnel
February 29, 2015 8:00AM to 12:00PM Proposed agricultural areas on terraces between Schoolhouse and Cottonwood Canyons.	General Botany and Wildlife	Dense ground fog clearing through the morning; light winds, spring bloom period underway	Merk
April 26, 2016 9:30AM to 1:30PM Carrizo/Elkhorn Plain, agricultural areas and Schoolhouse Canyon Road in the east of the site	General Botany and Wildlife; BNLL reference site visit	Clear, 70-79 degrees F, BNLL on Elkhorn Plain	Merk
April 29, 2015 8:30AM to 4PM Proposed agricultural areas on terraces, Cuyama River, Schoolhouse and Cottonwood Canyons	General Botany and Wildlife, BNLL during suitable conditions	Sunny, 80-95 degrees F (warm), light winds. Horned lizard observed in Schoolhouse Canyon.	Merk, Kirschenstein
May 28, 2015 8:30AM to 4PM Proposed agricultural areas on terraces, Cuyama River, Schoolhouse and Cottonwood Canyons	General Botany and Wildlife, BNLL during suitable conditions	Sunny and warm, light winds. Heerman's K-rat sign observed on river terraces.	Merk, Kirschenstein

<b>Survey Date, Time, and Location</b>	<b>Survey Focus</b>	<b>Weather Conditions and Species Observations</b>	<b>Survey Personnel</b>
June 8, 2015 8:45AM to 4PM Proposed agricultural areas on terraces, Cuyama River, Schoolhouse and Cottonwood Canyons	General Botany and Wildlife, BNLL during suitable conditions	Mostly sunny and warm, light wind.	Merk, Kirschenstein
June 24, 2015 8:45AM to 4PM Proposed agricultural areas on terraces, Cuyama River, Schoolhouse and Cottonwood Canyons	General Botany and Wildlife, BNLL during suitable conditions	Sunny and warm, light wind. Horned lizards and Heerman's K-rat sign observed on Cuyama river terrace	Merk, Kirschenstein
September 29, 2015 9AM to 2:30PM Agricultural areas south of 166	General Botany, Wildlife, Vegetation Mapping, Stream Delineation	Sunny and warm, light wind. No sensitive species observed.	Merk, Sloan
September 30, 2015 8AM-4:30PM Stream corridors south of 166	Stream Delineation and Setback Mapping, General Botany and Wildlife	Sunny and warm, light wind, cloudy, light rain Oct 1. No sensitive species observed.	Sloan, Block
October 1, 2015 8AM-4:30PM Stream corridors south of 166	Stream Delineation and Setback Mapping, General Botany and Wildlife	Sunny and warm, light wind, cloudy, light rain Oct 1. No sensitive species observed.	Sloan, Block
January 4, 2016 8:30AM to 4:30PM Reservoir and Operations Yard Sites	General Botany and Wildlife	Sunny, cool (58 degrees F), no wind. No sensitive species observed.	Sloan
April 6, 2016 8:30AM to 4:30PM Reservoir Pipeline Routes	General Botany and Wildlife, Stream Crossing Locations, CNDDDB Reference Locations	Sunny and warm, light wind. No sensitive species observed.	Merk, Sloan
April 15, 2016 8:30AM to 4:30PM Reservoir Pipeline Routes	General Botany and Wildlife, Stream Crossing Assessment with CDFW	Sunny and warm, light wind. No sensitive species observed.	Merk

Survey Date, Time, and Location	Survey Focus	Weather Conditions and Species Observations	Survey Personnel
June 7, 2016 9AM to 3:30PM Reservoir Pipeline Crossings	General Botany and Wildlife, Stream Crossings	Sunny and hot (95-100 degrees F), winds 10+mph in afternoon. No sensitive species observed.	Sloan

\*refer to attached Table 1 for the blunt nose leopard lizard survey information.

*Action 2.2 Provide data sheets or summarize in a table the 18 blunt-nosed leopard lizard surveys in the revised report, including which areas were surveyed on specific days in protocol conditions, survey observations (lizards and prey observed), and confirm the area(s) of the project study area in which protocol surveys for the blunt-nosed leopard lizard were completed. In addition to the information requested in Action 2.1, please indicate the Level II and Level I surveyors and provide blunt-nosed leopard lizard specific resumes.*

**Action 2.2 Response:** The North Fork Ranch BNLL Phase I Survey Data Summary Table, and resumes for the two surveyors are attached. Protocol surveys were conducted by Mr. Jason Kirschenstein (Level II) and Kevin Merk (Level I), and covered approximately 390 acres of suitable BNLL habitat on the lower terraces and wash habitat in the portion of Schoolhouse Canyon on the property extending north into the Cuyama River. An additional roughly 130-acre area along the lower Cuyama River terraces north of Highway 166 near the Cottonwood Canyon confluence was also surveyed after 1400 hours or when the temperature was too hot to meet protocol requirements. Additional walking surveys and spot checks were conducted within onsite drainages and other areas of the ranch outside the agricultural footprint containing what was identified as low potential BNLL habitat based on steep slopes, dense grassland vegetation cover and lack of burrows. Please note that the surveys covered additional parts of the ranch outside the agricultural footprint and proposed reservoir/operations yard disturbance areas.

*Action 2.3 Confirm that a BNLL reference or voucher survey was conducted at the Elkhorn Plain Ecological Reserve to confirm BNLL activity prior to the onset of surveys for the proposed project.*

**Action 2.3 Response:** As documented in the 2015 Biological Resources Assessment (page 7, 3<sup>rd</sup> paragraph), a BNLL reference site in the Carrizo Plain area was visited on several occasions (June 24 and July 3, 2015) during the spring-summer surveys and again on September 7, 2015 during the fall hatchling surveys during the course of the study to confirm BNLLs were above ground, active and identifiable. Prior to the start of the surveys, the same reference site was visited on the Carrizo Plain on 4/26/16 to confirm BNLL were active and above ground. The area of the recorded BNLL occurrence #414 (from 2007) east of the property was also visited on two occasions to characterize habitat in this area for comparison with habitats on the study area, as well as search for BNLL using binoculars from property margins. A BNLL was observed at the Carrizo Plain reference site during each visit, but was not observed at the occurrence #414 site.



Comment 3. Vegetation Community Mapping.

*Action 3.1. Revise the report to include a vegetation community/habitat map with biological observations of sensitive biological resources, special-status species, or any protected biological resource present on-site, including the top-of-bank of ephemeral streams and their buffers.*

**Action 3.1 Response:** The attached Figure 7 contains vegetation community/habitat information and current project details as shown on the Ag-Ideas 2016 map, including the drainage setbacks in relation to the vineyard blocks shown as Agriculture. Figures 8, 9, and 10, also attached to this report, show the limits of CDFW jurisdiction (i.e.: top of bank to top of bank) and USACE jurisdiction (i.e.: the extent of active stream channel with an observable OHWM) at each crossing location. Please note the pipeline crossing location is identified as a solid blue line that is approximately five (5) feet wide, which represents the width of two 24-inch HDPE pipes and steel structure that will support the pipes to span the stream channel.

Comment 4. Floristic Surveys.

*Action 4.1. Conduct full coverage seasonally-appropriate floristic surveys over the entire project site addressing all proposed project components (refer to Comment 1.). Two to three surveys may be necessary. Please revisit and ensure the floristic surveys conform to CNPS Botanical Survey Guidelines (CNPS 2001); Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened, and Endangered Plants and Natural Communities (CDFG 2000); and Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed, and Candidate Plants (USFWS 1996). Reference populations need to be visited and documented. A list of all plants observed on-site is required for floristic surveys. Include the observed plant list within the revised report or as an attachment.*

**Action 4.1 Response:** As documented in the Biological Resources Assessment Report prepared in February 2016, and summarized in the Survey Table presented in Action 2.1 above, botanical surveys were conducted in April, May, June, August, and September 2015 to search for special status plants and characterize the onsite habitat types. Additional surveys were conducted in the winter and spring 2016, over large areas of the property, including the reservoir and operations yard locations, ranch access roads, drainage setback areas, and agricultural and grassland areas. Subsequent botanical surveys conducted in April and June 2016 along the proposed water line routes and associated roadways on both sides of Highway 166 provided additional field observations confirming special status plants were not present within the agricultural footprint or the proposed pipeline disturbance area.

The surveys were floristic in nature, covered suitable habitat areas within the study area and were conducted by qualified biologists, consistent with the CNPS, CDFW and USFWS botanical survey guidelines. This two-year survey effort covered the blooming periods of the special status species potentially present in the project area and in adjacent areas. The April 6 and 15, 2016 surveys included visits to recorded occurrences of pale yellow layia (*Layia heterotricha*) and round-leaf filaree (*California macrophylla*) along Cottonwood Canyon Road outside the project area, and were unable to relocate these occurrences. Personal communication with Mr. Dave Hacker with CDFW also occurred to discuss past observations of special status species in this area. In addition, surveys

of historic occurrences of San Joaquin woolly threads (*Monolopia congdonii*) along the old Highway 166 right of way at the northwest corner of the Ranch near the confluence of Cottonwood Canyon Creek and the Cuyama River were conducted and the species was not observed. It is important to note that the study area was visited on multiple occasions and no special status plants were observed within the agricultural footprint or areas proposed for waterline, reservoir and operations yard construction. A list of plants observed on site in 2015 and 2016 is included as an attachment.

Comment 5. Stream Delineation.

*Action 5.1 Include the delineated top of bank and buffer for the ephemeral streams on Figures 2, 3, 4, and 5, as appropriate, in the revised report.*

**Action 5.1 Response:** The buffer zones for all drainages on the southern side of the Highway are shown on Figure 7 as Annual Grassland habitat separating the agricultural blocks from the stream channels. As stated in the Biological Resources Assessment Report, KMA delineated top of banks along the onsite drainages, and established a minimum 50-foot buffer or setback along the entire length of each of the drainages. The top of bank line identified by KMA followed the top of bank definition presented in Section 15B -2 of the *Santa Barbara County Public Works Water Course Setback Ordinance*, and was based on field observation of a defined hinge point where the dominant topographic relief changed from generally level to an uninterrupted slope leading to the active portion of the channel. Using a 50-foot tape, stakes were set and numbered at intervals along each drainage to delineate the outer edge of the 50-foot buffer. Stake locations were surveyed by professional land surveyor Steve Fleming, and the survey results were used by the vineyard development team to establish the limits of agricultural uses as shown on project plans.

Subsequent field work was conducted in the spring of 2016 to delineate the jurisdictional boundaries within each proposed drainage crossing location, and the results of those surveys were reviewed in the field with CDFW in April 2016 to confirm the identification of the top of banks was consistent with their Streambed Alteration Agreement notification requirements. KMA biologists used a Trimble Geo XH 6000 GPS unit capable of decimeter accuracy to delineate the top of bank and extent of OHWM associated with the active stream channel. Boundary mapping followed the general methods outlined in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Version 2.0; U.S. Army Corps of Engineers 2008), and the *Corps of Engineers 2008 Field Guide to the Identification of the Ordinary High Water Mark in the Arid West Region of the Western United States*. The top of bank line was identified and mapped as described above. The jurisdictional boundaries at the six crossing points are shown on Figures 8, 9, and 10 attached to this letter. Based on the early consultation process with CDFW and USACE, the proposed drainage crossings using HDPE flexible pipe laid over ground and supported by steel supports to span the active stream channel would not require a Clean Water Act permit, but will require notifying the CDFW through the preparation of a Streambed Alteration Agreement application.

***Action 5.2** If any proposed project component occurs within, above, or adjacent to the ephemeral stream (i.e., potential impacts may occur), an approved jurisdictional determination shall be prepared per U.S. Army Corps of Engineer standards and guidelines, including jurisdictional boundaries of the CDFW and Regional Water Quality Control Board.*

**Action 5.2 Response:** As shown on Figure 7, no jurisdictional impacts are proposed for the reservoir/operations yard portion of the project. The reservoir and operations yard locations are in upland areas outside the banks of the drainages. The top of bank and the OHWM were delineated at each of the six waterline crossing sites per the methodology described in response to Action 5.1 above. Based on a site visit with CDFW representative Sarah Rains in April 2016, CDFW requires notification of the pipe being laid across the channel, and as such, a Streambed Alteration Agreement application will be submitted for the six waterline crossings south of Highway 166. The applicant will use a steel support structure to span or elevate the HDPE flexible pipe over the active stream channel, and therefore, no impacts are proposed within the OHWM of the drainages. A U.S. Army Corps of Engineers formal jurisdictional delineation and permitting pursuant to Section 404 of the Clean Water Act are not required based on the early consultation process with USACE Project Manager Ian Bordenave (personal communication with Mr. Bordenave and David Swenk of UPC). Still, USACE delineation methodologies were used to collect field data and prepare the attached Figures 8, 9 and 10.

***Comment 6. Giant Kangaroo Rat.***

***Action 6.1** Include a mitigation measure in the revised report that states a pre-construction survey for the giant kangaroo rat will occur in late spring to search for sign (appropriate sized horizontal and vertical burrows, haystacks, seed caches, scat, tracks, etc.). If sign is observed, the U.S. Fish and Wildlife Service (USFWS) and CDFW shall be contacted to determine if trapping surveys are required for the giant kangaroo rat.*

**Action 6.1 Response:** Surveys conducted within the project area in 2015-2016 did not find evidence of giant kangaroo rat (GKR). The recent surveys of the irrigation line routes on the north and south sides of Highway 166 conducted in April 2016 did not observe haystack caches or burrow precincts typical of this species. Furthermore, historic occurrence records to the northwest of the study area from 1979 and 1986 were also visited, and no sign of GKR was observed. Surveys did observe sign of Heermann's kangaroo rat (*Dipodomys heermanni*) and common pocket gopher (*Thomomys bottae*) in select areas along the lower river terraces north of Highway 166. The pressure main line routes either follow the reservoir fill line routes, or are within disturbed agricultural lands. The three pressure line drainage crossings not associated with irrigation line crossings were surveyed in June 2016 during jurisdictional delineation efforts. No sign of GKR was observed in these three areas, two of which are immediately adjacent to existing road crossings.

The agricultural activities onsite have removed all potential habitat for GKR from the reservoir sites and operations yard, as well as the majority of the proposed waterline corridor. In addition, laying the HDPE pipes above ground and spanning the drainage features is not expected to adversely impact GKR if they were present since the lines will be installed by farm personnel on foot and no earth disturbance other than keying the span support into the slope with hand tools is proposed.



Still, a condition could be included that requires a preconstruction survey immediately prior to earth disturbing activities in annual grassland habitat associated with the waterlines spanning the drainage features on the south side of Highway 166. As stated above, based on the analysis to date, it appears highly unlikely that GKR are present within the proposed project area, and would not be expected to be impacted by the reservoir and operations yard project since the area is being actively farmed.

Comment 7. San Joaquin Kit Fox.

*Action 7.1 An early evaluation for the San Joaquin kit fox is required per the 1994 USFWS protocol for the fox. Once completed, it is recommended that the USFWS and CDFW be contacted and concur with KMA evaluation findings. Please include the evaluation and any agency coordination in the revised report.*

**Action 7.1 Response:** As discussed in the Biological Resources Assessment Report, repeated surveys did not observe evidence of SJKF presence or potential SJKF den sites in or near the project area. The project site is within the historic range of the species, and it is possible that a SJKF, if present in the region, could move through the project area during foraging or migration activities. The lack of a well-developed prey base and no suitable denning habitat within the project area (i.e.: the agricultural activities have removed all suitable habitat and the disking removes potential small mammal prey base and potential den sites), however, indicate a very low potential for this species to occur. The last recorded occurrences of this species in the immediate area are from 1975, and ongoing agricultural operations would have restricted any recent denning activities to either higher elevations of the property or riverbank/terrace areas outside the proposed disturbance footprint. Therefore, the early evaluation process was determined to not be necessary for implementation of this project. It is assumed that SJKF could potentially occur in the greater area, and implementation of the USFWS recommended avoidance measures is considered sufficient to ensure that SJKF is not adversely affected by project construction and long-term agricultural activities on the property.

*Action 7.2 Please revise the attached avoidance measures to identically reflect the USFWS (2011) standard recommendations or attach the standard recommendations in its entirety to the revised report.*

**Action 7.2 Response:** The USFWS 2011 Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance are included as an attachment to this report.



Thank you for the opportunity to provide environmental consulting services for this project. If you have any questions regarding the above findings, please contact Kevin Merk directly by phone at 805-748-5837 or via email at [kmerk@kevinmerkassociates.com](mailto:kmerk@kevinmerkassociates.com).

Sincerely,

**KEVIN MERK ASSOCIATES, LLC**

A handwritten signature in blue ink, appearing to read "Kevin Merk".

Kevin B. Merk  
Principal Biologist

A handwritten signature in blue ink, appearing to read "Robert Sloan".

Robert Sloan  
Senior Biologist

*Attachments    Figure 7 – Project Details and Habitats  
                     Figures 8, 9, and 10 - Jurisdictional Boundaries at Crossing Locations  
                     Photo Plate of Crossing Sites and Proposed Pipe Crossings  
                     List of Plants Observed During Surveys of the Site  
                     BNLL Survey Summary Table  
                     BNLL Surveyor Resumes  
                     USFWS Standardized Recommendations for San Joaquin Kit Fox*



Property Boundary

Proposed Irrigation Reservoirs

Proposed Reservoir Fill Lines

Proposed Pressure Mains

Drainage Centerline

Well Location

Habitat

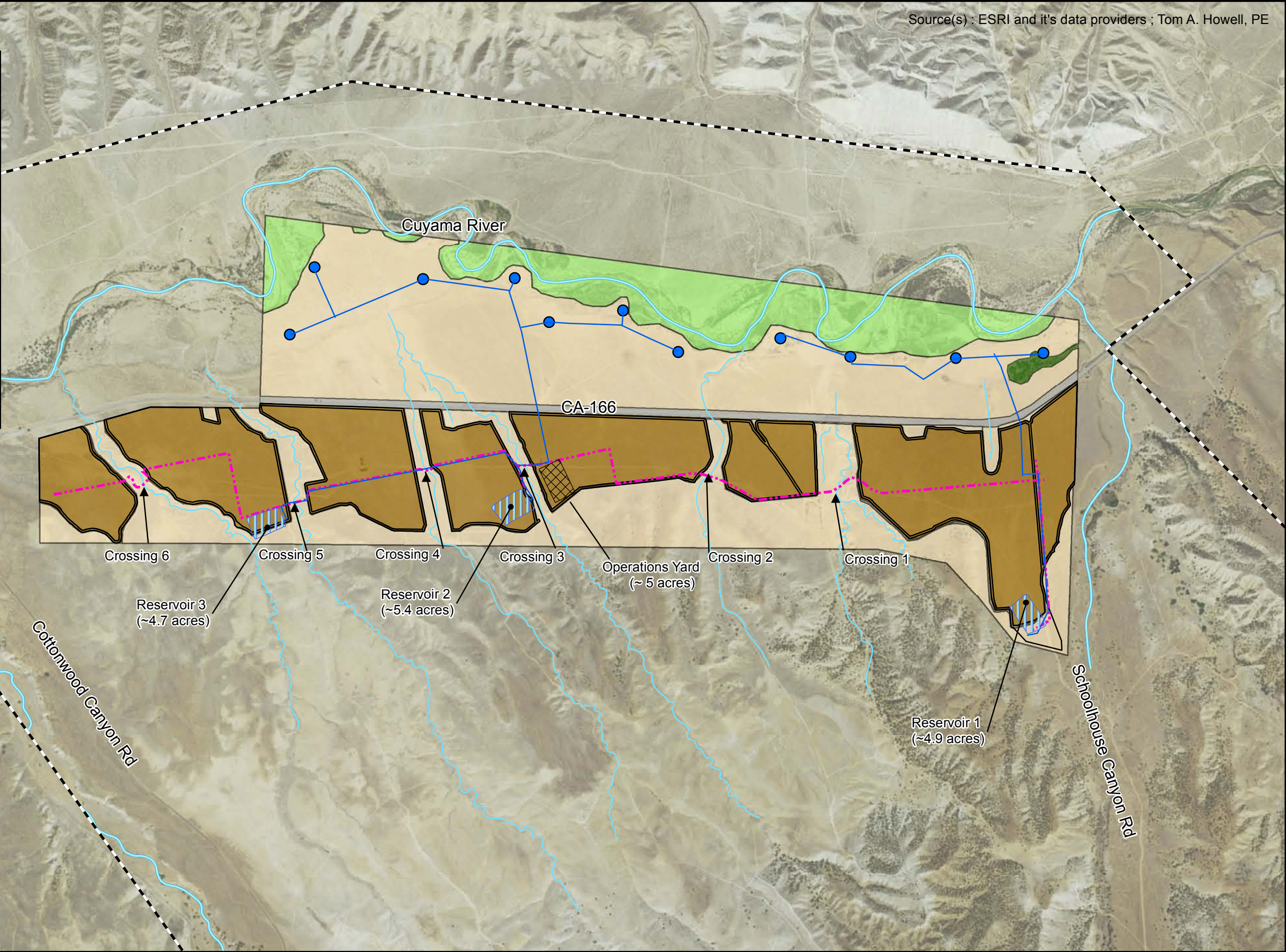
Agriculture

Annual Grassland

Mixed Oak Woodland

Riparian Scrub

Ruderal/Disturbed





USACE Jurisdiction

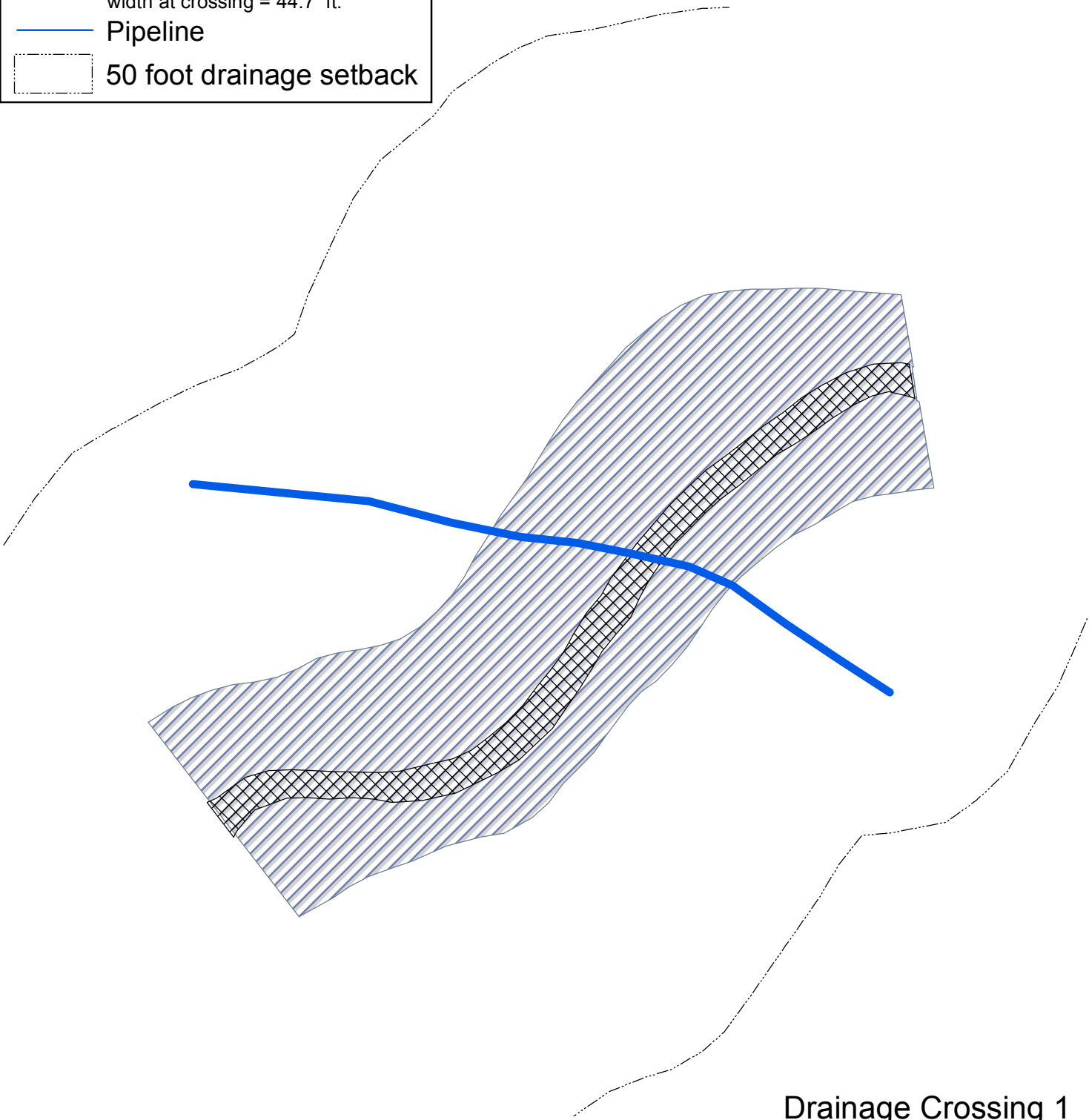
OHWM width at crossing = 7.2 ft.

CDFW Jurisdiction

Top of Bank to Top of Bank  
width at crossing = 44.7 ft.

Pipeline

50 foot drainage setback



Drainage Crossing 1

USACE Jurisdiction

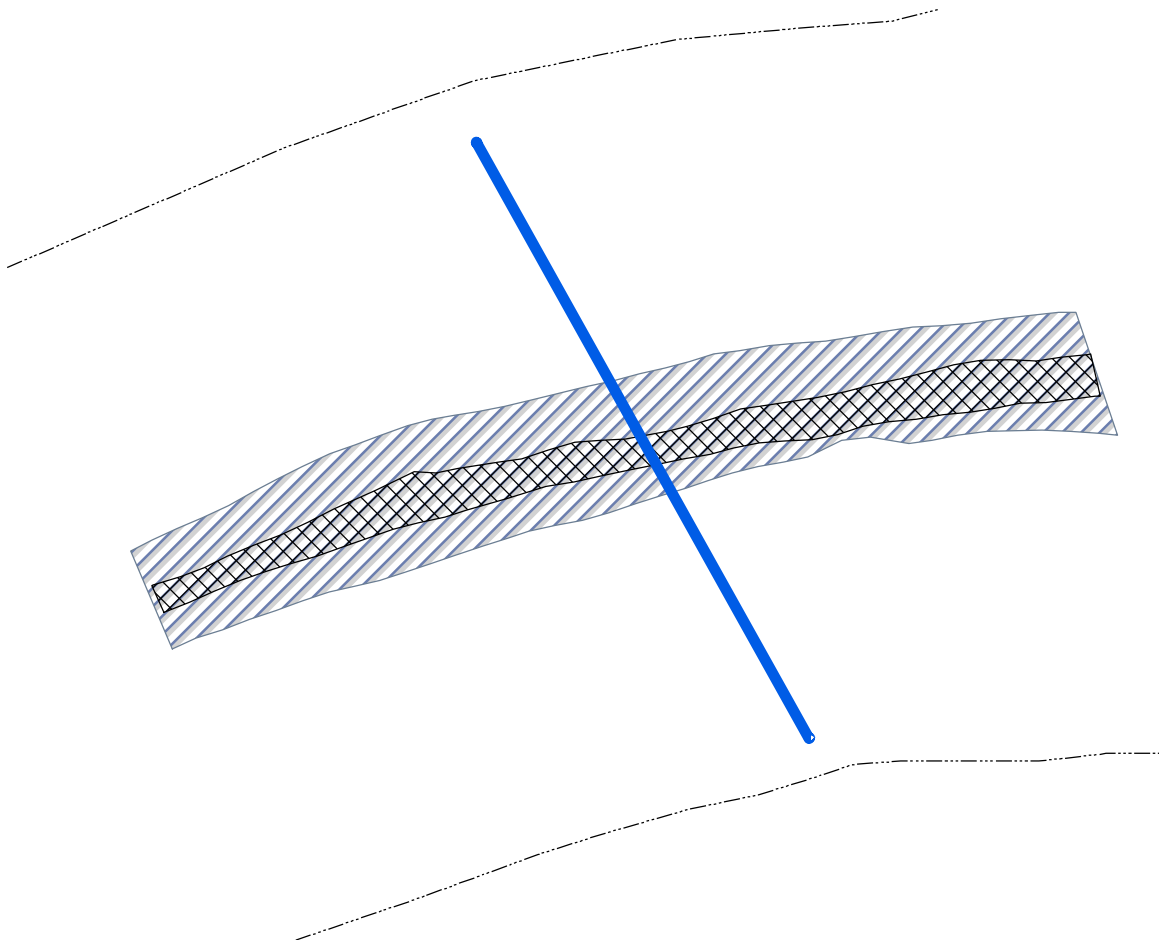
OHWM width at crossing = 4.7 feet

CDFW Jurisdiction

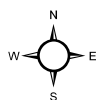
Top of bank to top of bank  
width at crossing = 19.7 ft.

Pipeline

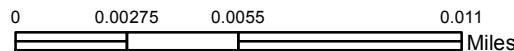
50 foot drainage setback



Drainage Crossing 2

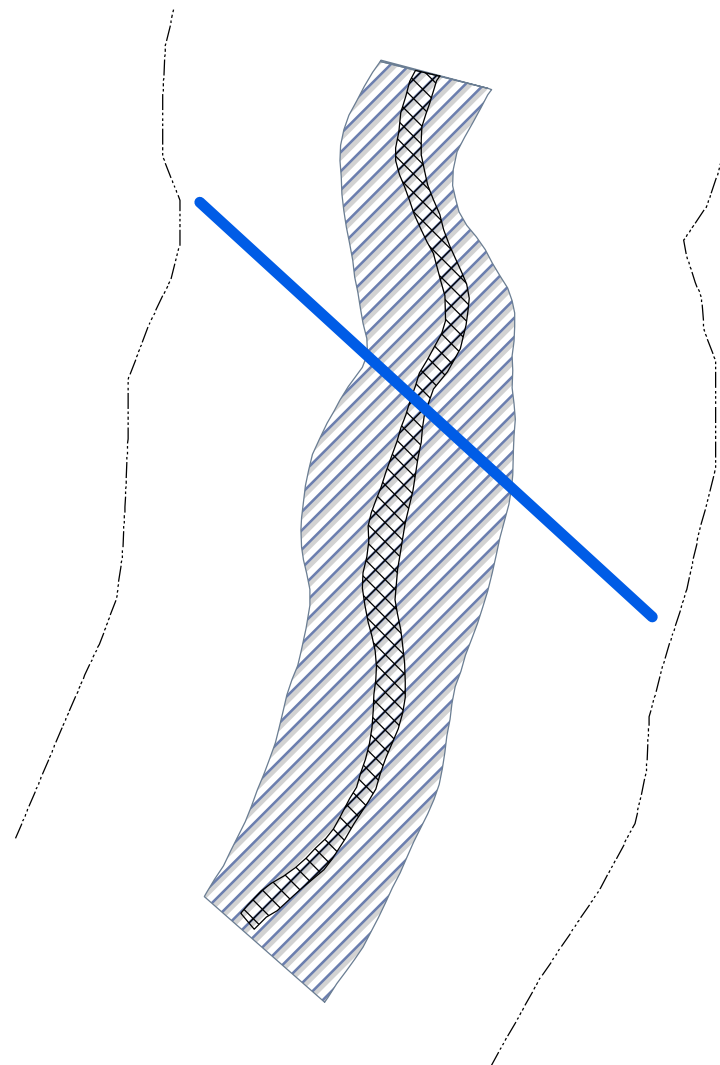
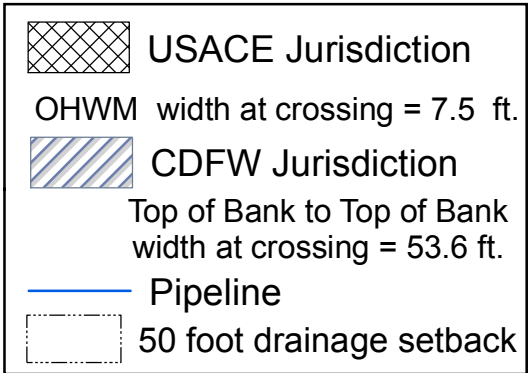


1 in = 25 ft

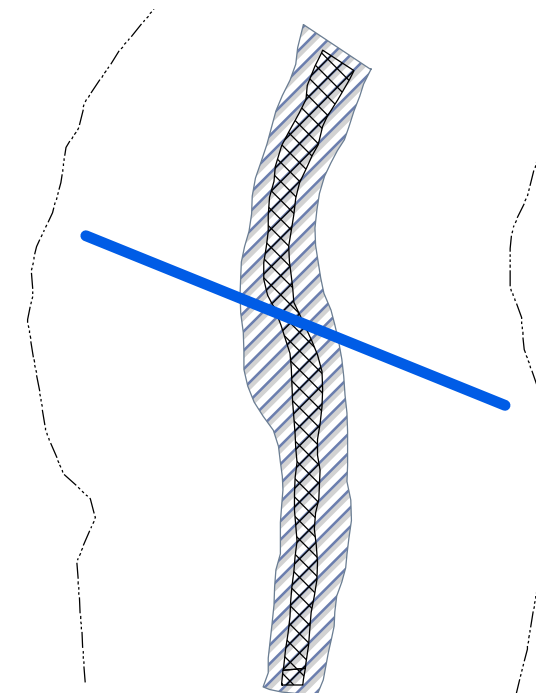
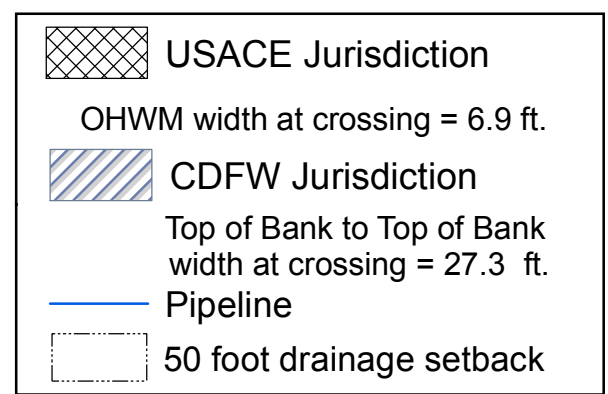


North Fork Ranch  
Mesa Vineyard Management

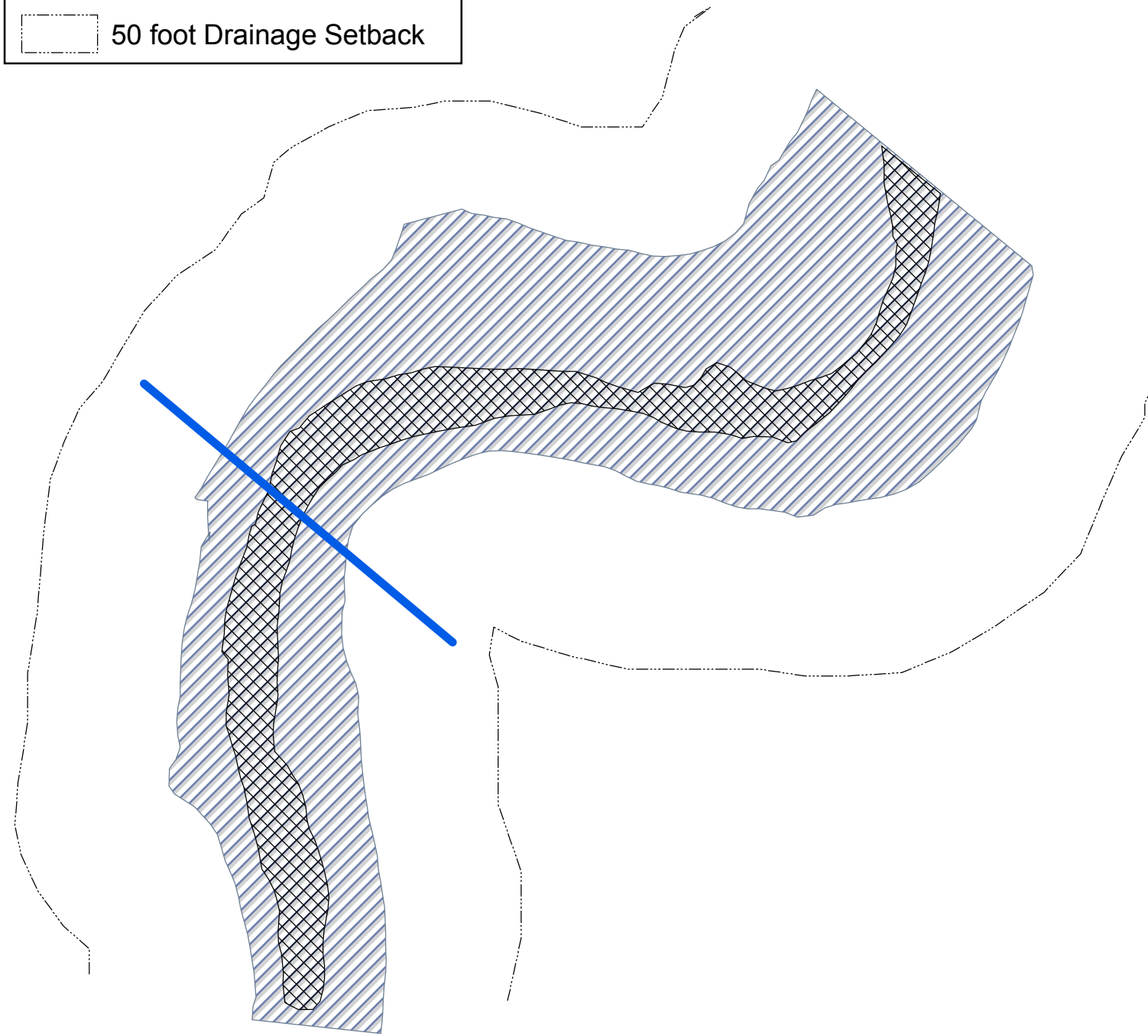
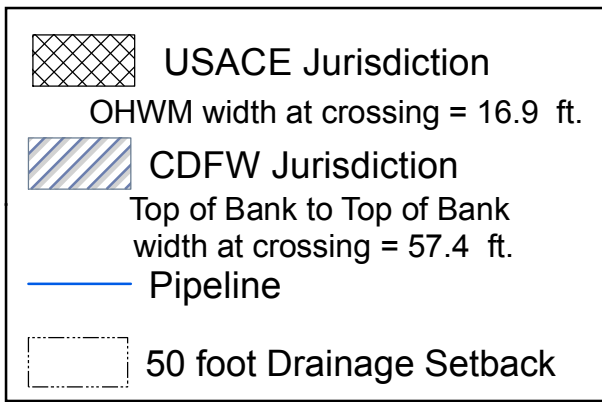
Figure 8  
Drainage Crossings 1 and 2



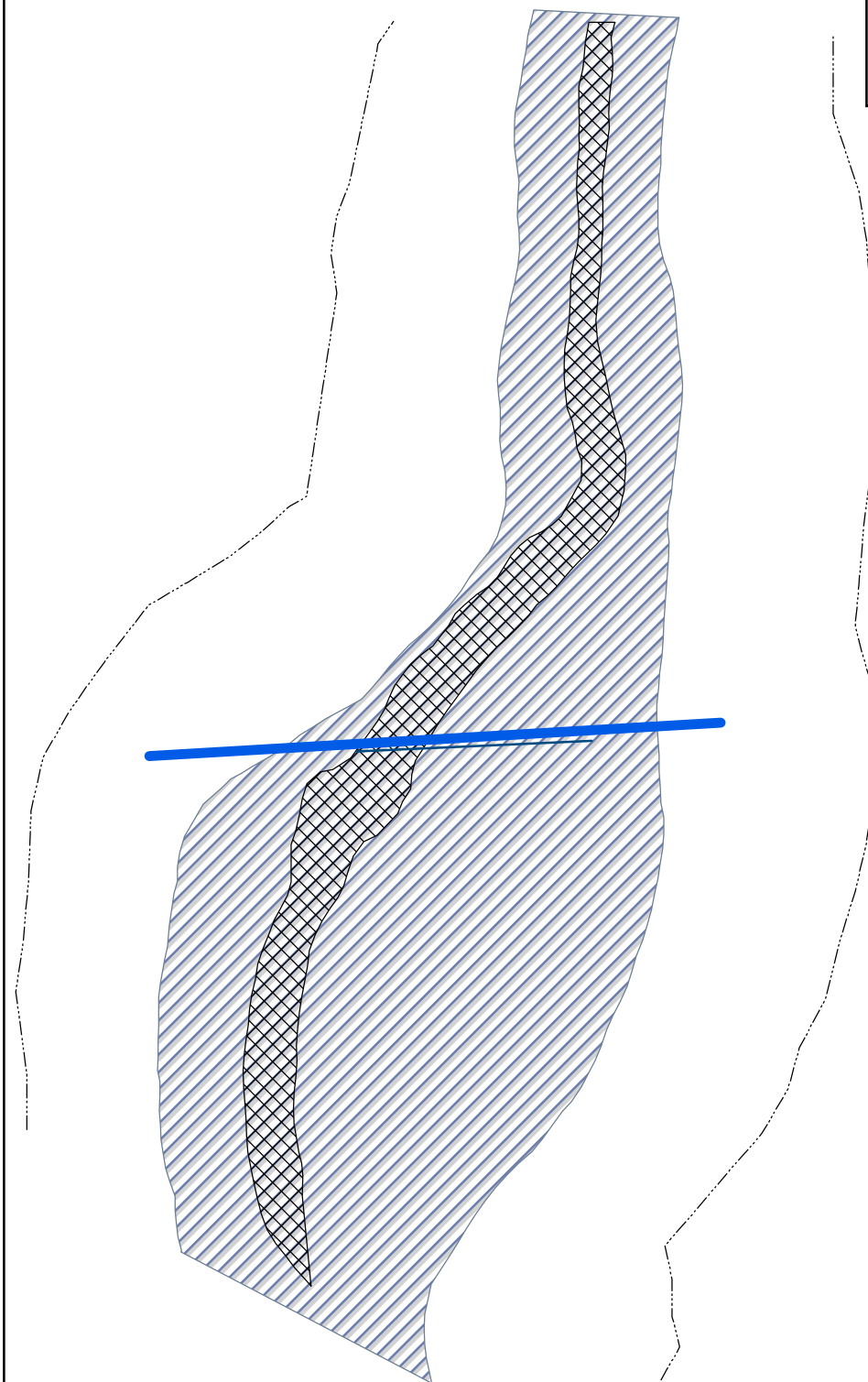
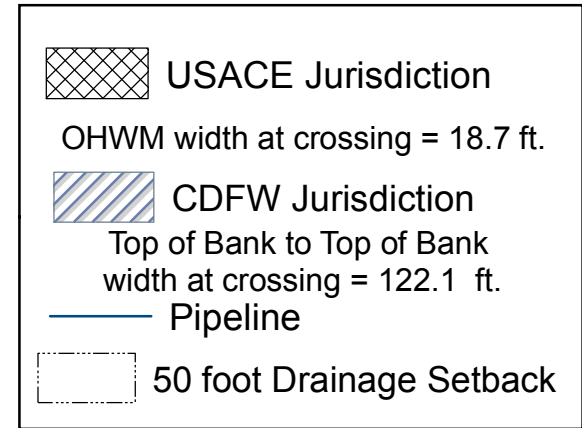
Drainage Crossing 3



Drainage Crossing 4



Drainage Crossing 5



Drainage Crossing 6



**Photo Plate**

**Photo 1.** View of Crossing #1, looking upstream. Note narrow active channel section to be avoided by suspending waterlines above the banks.



**Photo 2.** View of Crossing #2, looking upstream. Crossing alignment will be at downstream edge of road. Note flat, shallow channel configuration at this location.





**Photo 3.** View of Crossing #3, looking upstream. Crossing alignment will be at downstream edge of road.



**Photo 4.** View of Crossing #4, looking upstream. Crossing alignment will be at downstream edge of road.





**Photo 5.** View of Crossing #5, looking upstream. Note flat, shallow active channel area and steep upper bank configuration.



**Photo 6.** View of Crossing #6, looking upstream. Crossing alignment will be at downstream edge of road.





**Photo 7.** Overview of planted cover crop surrounding proposed Reservoir 2 with operations yard in the distance.



**Photo 8.** Overview of proposed Reservoir 3 (visible as bare soil area) with planted cover crop in flats and annual grassland on the slope in the foreground. Schoolhouse Canyon Road is visible in the distance.





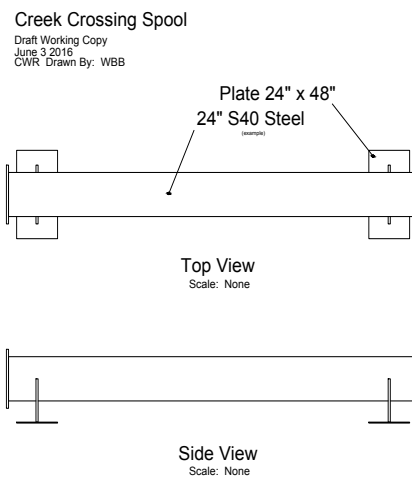
**Photo 9.** Representative photo from another site showing the flexible HDPE pipe to be laid above ground over the drainage features.



**Photo 10.** Representative photo of how waterline with valves will “daylight” outside top of bank of drainages. Flexible HDPE pipe will be attached and then run overland at drainage crossings.



**Photo 11.** Representative photo illustrating connection of HDPE pipe and underground pipe.



**Photo 12.** HDPE pipes will span active stream channels using the 20' long steel supports shown above.



**List of Plants Observed During 2015 and 2016 Field Surveys.**

Scientific Name	Common Name
<i>Amsinckia intermedia</i>	Common fiddleneck
<i>Atriplex lentiformis</i>	Brewer's saltbush
<i>Atriplex spinifera</i>	Spinescale saltbush
<i>Astragalus douglasii</i>	Douglas's milkvetch
<i>Avena barbata</i> *	Slender wild oats
<i>Baccharis pilularis</i>	Coyote brush
<i>Bromus madritensis</i> *	Red brome
<i>Carduus pycnocephalus</i> *	Italian thistle
<i>Castilleja exserta</i>	Owl's clover
<i>Chaenactis glabriuscula</i>	Yellow pincushion
<i>Chenopodium album</i> *	Goosefoot
<i>Cucurbita palmata</i>	Coyote melon
<i>Delphinium parryi</i> ssp. <i>parryi</i>	Parry's larkspur
<i>Dichelostemma capitatum</i>	Blue dicks
<i>Encelia californica</i>	Bush sunflower
<i>Eriodictyon tomentosum</i>	Wooly yerba santa
<i>Eriogonum gracile</i>	Slender buckwheat
<i>Eriophyllum confertiflorum</i>	Golden yarrow
<i>Erodium cicutarium</i> *	Red-stemmed filaree
<i>Hirschfeldia incana</i> *	Summer mustard
<i>Hordeum murinum</i> *	Foxtail
<i>Juniperus californicus</i>	California juniper
<i>Lasthenia gracilis</i>	Needle goldfields
<i>Layia platyglossa</i>	Tidy tips
<i>Lepidium nitidum</i>	Pepper grass
<i>Lepidospartum squamatum</i>	California broomsage
<i>Malva parviflora</i> *	Cheeseweed
<i>Marrubium vulgare</i>	White horehound
<i>Medicago polymorpha</i> *	Bur clover
<i>Monolopia lanceolata</i>	Common monolopia
<i>Phacelia distans</i>	Common phacelia
<i>Plagiobothrys canescens</i>	Valley popcorn flower
<i>Platanus racemosa</i>	Western sycamore (planted as windrow)
<i>Pluchea sericea</i>	Arrow weed
<i>Poa secunda</i>	Bluegrass
<i>Populus fremontii</i>	Fremont cottonwood (Cottonwood Cyn and in windrow)
<i>Quercus douglasii</i>	Blue oak
<i>Quercus john-tuckeri</i>	Tucker oak
<i>Salsola tragus</i> *	Russian thistle
<i>Sambucus nigra</i> ssp. <i>caerulea</i>	Blue elderberry
<i>Schismus arabicus</i> *	Arabian schismus
<i>Silene gallica</i> *	Common catchfly
<i>Sisymbrium altissimum</i> *	Tumble mustard
<i>Sonchus asper</i> *	Prickly sow thistle
<i>Stanleya pinnata</i>	Prince's plume
<i>Tamarix ramosissima</i> *	Saltcedar
<i>Thysanocarpus laciniatus</i>	Narrow-leaved lacepod

\*Asterisk identifies non-native species.

**TABLE 1: North Fork Ranch BNLL Phase I Survey Data Summary Table**

Survey Number and Date	Survey Time Start / End (2400 hrs)	Air Temp Start / End (°F)	Ground Temp Start / End (°F)	Wind Speed Start / End (mph)	Cloud Cover Start / End (%)	BNLL Observed	Other Reptile Observations	BNLL Surveyor / Level
<b>Spring – Summer Surveys</b>								
1) 04/29/15	1000/1320	80.0/95.2	82/101.8	5.0/5.0	0/0	None	6x <i>Uta stansburiana</i> 4x <i>Aspidoscelis tigris</i> 1x <i>Thamnophis sirtalis</i> 1x <i>Phrynosoma blainvillii</i>	K. Merk / I J. Kirschenstein / II
2) 05/28/15	0930/1400	77.0/89.0	74.0/94.6	6.0/3.0	0/0	None	14x <i>Uta stansburiana</i> 3x <i>Aspidoscelis tigris</i>	K. Merk / I J. Kirschenstein / II
3) 06/08/15	0845/1200	87.8/95.5	86.9/101.3	2.8/6.5	5/0	None	8x <i>Uta stansburiana</i>	K. Merk / I J. Kirschenstein / II
4) 06/12/15	0815/1215	79.0/95.0	78.6/99.6	3.0/4.5	0/0	None	7x <i>Uta stansburiana</i> 5x <i>Aspidoscelis tigris</i> 1x <i>Thamnophis sirtalis</i>	K. Merk / I J. Kirschenstein / II
5) 06/24/15	0845/1245	77.9/92.5	80.0/96.0	3.0/2.0	0/0	None	10x <i>Uta stansburiana</i> 1x <i>Phrynosoma blainvillii</i>	K. Merk / I J. Kirschenstein / II
6) 06/26/15	0815/1130	77.4/95.0	72.0/98.0	3.0/5.0	10/5	None	8x <i>Uta stansburiana</i> 7x <i>Aspidoscelis tigris</i>	K. Merk / I J. Kirschenstein / II
7) 07/03/15	0800/1130	77.0/95.5	72.5/99.8	0/3.0	0/0	None	9x <i>Uta stansburiana</i> 3x <i>Aspidoscelis tigris</i>	K. Merk / I J. Kirschenstein / II
8) 07/06/15	0900/1400	78.2/94.0	74.0/98.5	2.0/5.0	<5/0	None	8x <i>Uta stansburiana</i> 8x <i>Aspidoscelis tigris</i>	K. Merk / I J. Kirschenstein / II
9) 07/08/15	0915/1345	77.3/86.0	72.0/90.5	3.0/4.5	<5/5	None	10x <i>Uta stansburiana</i> 5x <i>Aspidoscelis tigris</i>	K. Merk / I J. Kirschenstein / II
10) 07/10/15	1000/1400	77.0/84.0	72.0/87.5	5.0/7.0	20/15	None	9x <i>Uta stansburiana</i> 2x <i>Aspidoscelis tigris</i>	K. Merk / I J. Kirschenstein / II
11) 07/14/15	0900/1330	77.5/89.0	73.5/93.2	3.0/5.0	5/0	None	12x <i>Uta stansburiana</i> 3x <i>Aspidoscelis tigris</i>	K. Merk / I J. Kirschenstein / II
12) 07/15/15	0950/1345	77.0/86.2	73.4/91.5	3.0/7.0	5/5	None	14x <i>Uta stansburiana</i> 1x <i>Aspidoscelis tigris</i>	K. Merk / I J. Kirschenstein / II



Survey Number and Date	Survey Time Start / End (2400 hrs)	Air Temp Start / End (°F)	Ground Temp Start / End (°F)	Wind Speed Start / End (mph)	Cloud Cover Start / End (%)	BNLL Observed	Other Reptile Observations	BNLL Surveyor / Level
Fall Hatchling Surveys								
13) 09/01/15	0950/1330	77.0/86.0	68.0/89.5	3.0/6.5	0/<5	None	36x <i>Uta stansburiana</i> 1x <i>Aspidoscelis tigris</i>	K. Merk / I J. Kirschenstein / II
14) 09/07/15	0900/1215	77.0/95.0	73.0/99.0	5.5/3.0	<5/5	None	32x <i>Uta stansburiana</i> 1x <i>Aspidoscelis tigris</i>	K. Merk / I J. Kirschenstein / II
15) 09/11/15	0900/1230	80.0/95.3	76.0/101.3	3.5/5.0	30/20	None	31x <i>Uta stansburiana</i>	K. Merk / I J. Kirschenstein / II
16) 09/13/15	0845/1350	77.0/93.5	71.5/98.8	3.0/7.0	20/15	None	31x <i>Uta stansburiana</i> 1x <i>Aspidoscelis tigris</i>	K. Merk / I J. Kirschenstein / II
17) 09/14/15	1215/1400	77.0/86.0	75.0/82.5	6.0/7.5	60/70	None	36x <i>Uta stansburiana</i> 2x <i>Aspidoscelis tigris</i>	K. Merk / I J. Kirschenstein / II
18) 09/15/15	1130/1330	77.0/84.2	86.0/87.8	4.0/7.0	20/30	None	35x <i>Uta stansburiana</i>	K. Merk / I J. Kirschenstein / II
General Notes: Black-tailed jackrabbit, elk, coyote, bobcat, American badger, kangaroo rat, California ground squirrel, gopher, raccoon, lark sparrow, mourning dove, California quail, and common raven individuals and/or sign also observed within the survey area.								





Kevin Merk Associates, LLC

## **KEVIN B. MERK**

Principal Biologist

Kevin Merk is the founding principal of Kevin Merk Associates, LLC. With over 20 years of environmental consulting experience, Kevin has directed, managed, and conducted hundreds of natural resource and environmental studies throughout California. Mr. Merk has a diverse background in the biological sciences with expertise in plant taxonomy, quantitative vegetation analysis, habitat classification/evaluation procedures, surveys for special status species, habitat restoration and biotechnical erosion control. His work experience includes general biological and species-specific surveys, U.S. Army Corps of Engineers and California Coastal Commission wetland delineations, as well as permit acquisition and regulatory compliance. He has prepared, implemented and monitored Habitat Conservation Plans and habitat mitigation/restoration projects throughout California. Mr. Merk is a well-versed regulatory specialist that provides a balance between rigorous scientific documentation, environmental regulatory requirements and project development goals and objectives.

## **TECHNICAL CAPABILITIES**

- Mr. Merk has an in-depth knowledge of the California flora and protocols for surveying rare, threatened and endangered plant species.
- He has conducted floristic surveys and mapped vegetation communities for private, state and local government clients including California State Parks, California State University System, Fort Ord Reuse Authority, Cities and Counties of Monterey, San Luis Obispo, and Santa Barbara, and Cities of Arroyo Grande, Lompoc, Sand City, Santa Maria and Scotts Valley.
- Mr. Merk has also conducted rare wildlife surveys throughout California for species such as the California tiger salamander, California red-legged frog, western spadefoot toad, legless lizard, horned lizard, burrowing owl and other raptors and nesting birds.
- Mr. Merk has conducted multi-parameter wetland delineations throughout the state including within the Coastal Zone, and is an expert in environmental regulation compliance (e.g., Endangered Species Act, Clean Water Act, Coastal Development Act, California Department of Fish and Game Code, Porter-Cologne Act).

## **EDUCATION, CERTIFICATIONS, REGISTRATIONS**

B.A. Biology (Plant Sciences), University of California, Santa Cruz

40 Hour OSHA HAZWOPER Training and 8 eight-hour annual refresher courses

Hydrogeomorphic Approach to Functional Assessment of Riverine Waters/Wetlands in the South Coast Region of Santa Barbara County

Biology and Handling Trainings for California red-legged frog, California tiger salamander, and Santa Cruz long-toed salamander

U.S. Army Corps of Engineers Wetland Delineation Training

California Native Plant Society

California Botanical Society

California Invasive Plant Council

Society for Ecological Restoration

American Public Works Association

International Erosion Control Association

Wildlife Society, Western Chapter

**EMPLOYMENT HISTORY**

Kevin Merk Associates, LLC, Founding Principal Biologist (2011 through present)  
Rincon Consultants, Inc., Biological Program Manager (2000-2011)  
Zander Associates, Senior Botanist/Restoration Ecologist (1995 through 2000)  
University of California, Santa Cruz Natural Resource Assessment Group, Botanist (1993-1995)  
Greening Associates, Restoration Ecologist (1991-1992)

**REPRESENTATIVE PROJECT EXPERIENCE***Conservation Planning*

- North of Playa Habitat Conservation Plan for the Smith's blue butterfly, Sand City.
- Mahoney Ranch Habitat Conservation Plan for the California tiger salamander (CTS) and California red-legged frog (CRLF), Santa Maria.
- Highway 46 Corridor Improvement Section 7 and 2081 Authorization for San Joaquin kit fox, San Luis Obispo County.
- Rancho Larios Subdivision Section 7 Consultation for CTS and CRLF, San Benito County.
- Union Valley Parkway Section 7 Consultation for CTS and CRLF on the Union Valley Parkway Project, Santa Maria.
- Salinas Road Interchange Section 7 Consultation for CTS and CRLF, Monterey County.
- Silver Creek Valley Country Club Section 7 Consultation for Bay checkerspot butterfly, San Jose.

*Biological Resources Assessments*

- Froom Ranch, mapped/classified vegetation, conducted rare plant and CRLF surveys, delineated USACE wetlands and CDFW jurisdictional areas, supporting design team during planning and CEQA review process, San Luis Obispo.
- More Mesa, conducted rare plant surveys, mapped vegetation communities and delineated USACE and Coastal Commission wetlands, Santa Barbara County.
- May Family Trust Property, mapped/classified vegetation, conducted rare plant surveys, delineated USACE wetlands, and assisted design team during planning and CEQA review process, San Luis Obispo County.
- Harmony Ranch, mapped/classified vegetation, conducted rare plant and California red-legged frog surveys, delineated USACE and Coastal Commission wetlands, and assisted design team during development planning process, San Luis Obispo County.
- Mormann Property, mapped/classified vegetation and conducted rare plant surveys, San Luis Obispo County.
- Laetitia Winery Improvement Project, rare plant surveys, CRLF surveys, and USACE wetland delineation, San Luis Obispo County.
- Santa Rosa Creek Trail, rare plant surveys and habitat assessments for California red-legged frog, pond turtle, steelhead and tidewater goby, Cambria.
- Pecho Valley Road Property vegetation classification, rare plant surveys and USFWS protocol Morro shoulderband snail surveys, Los Osos, San Luis Obispo County.

*Focused Botanical Surveys*

- Bradley Ranch Botanical Inventory and Wetland Delineation, Santa Maria.
- Entrada de Paso Robles Botanical Inventory, Paso Robles.
- Pismo Lake Ecological Reserve Botanical Inventory, San Luis Obispo County.
- Harmony Headlands Botanical Inventory, California State Parks.
- Sheridan Lane Botanical Inventory, San Luis Obispo County.

- Chevron Estero Marine Terminal Rare Plant Surveys and Wetland Delineation, San Luis Obispo County.
- Biddle Ranch Rare Plant Surveys and Wetland Delineation, San Luis Obispo County.
- Tract 1998 Rare Plant Surveys (Pismo Clarkia), Arroyo Grande.
- James Way Fuel Modification Project Rare Plant Surveys, Arroyo Grande.
- Highland Ranch Rare Plant Surveys, San Luis Obispo County.
- San Miguel Ranch Rare Plant Surveys and Wetland Delineation, San Luis Obispo County.
- Continental Vineyards Rare Plant Surveys and Wetland Delineation, San Luis Obispo County.
- Chandler Ranch Rare Plant Surveys, Paso Robles.
- Focused surveys for the rare Morro Manzanita in Los Osos.

*Focused Animal Surveys*

- SoCalGas Lines 300 and 90 Pipeline Removal Project Protocol Blunt-Nosed Leopard Lizard Surveys, Avenal, Kings County.
- SoCalGas Lincoln Street Pipeline Replacement Project Protocol Blunt-Nosed Leopard Lizard Surveys, Kern County.
- Tulare County Property Protocol Blunt-Nosed Leopard Lizard Surveys, Tulare County.
- North Fork Ranch Protocol Blunt-Nosed Leopard Lizard Surveys, San Luis Obispo and Santa Barbara Counties.
- Salinas Road Interchange Project, Caltrans Designated Biologist conducted California red-legged frog and California tiger salamander aquatic surveys. Captured and relocated over 10,000 life stages of California red-legged frog during construction, Monterey County.
- Santa Maria Integrated Waste Management Facility, USFWS protocol Vernal Pool Branchiopod and CTS Surveys (upland and aquatic) on 1,770-acre site, northern Santa Barbara County.
- Mahoney Ranch USFWS protocol California red-legged frog and California tiger salamander surveys, Santa Maria, Santa Barbara County.
- Biddle Ranch USFWS CRLF surveys and CTS habitat assessment, San Luis Obispo County
- Union Valley Parkway USFWS CRLF and CTS surveys (upland and aquatic), Santa Maria.
- Monarch butterfly annual population censusing surveys in Santa Cruz County, UCSC.
- Birch Street Project, USFWS CRLF surveys and Monarch butterfly habitat assessment, and riparian restoration plan in support of Coastal Development Permit, Cayucos.
- San Joaquin Kit Fox Habitat Evaluations and USFWS protocol surveys for numerous projects (winery expansion, residential subdivisions, linear utilities and transportation, telecommunication), northern San Luis Obispo County and southern Monterey County.

*CEQA and NEPA Compliance Documents (primary author of Biological Resources Sections)*

- Ahmanson Ranch General Plan Amendment and Specific Plan EIR, Ventura County.
- Rancho Maria Estates EIR Biological Resources Section, Santa Barbara County.
- Union Valley Parkway EIR/EA, City of Santa Maria.
- Santa Maria Integrated Waste Management Facility EIR, City of Santa Maria.
- Santa Maria Airport Specific Plan EIR, City of Santa Maria.
- Mahoney Ranch Environmental Assessment (EA), City of Santa Maria.
- Tract 1998 Rancho Grande EIR and supplements, City of Arroyo Grande.
- Biddle Ranch Agricultural Cluster Subdivision EIR, San Luis Obispo County.
- General Plan Land Use and Conservation Element Update EIR, City of San Luis Obispo.
- Chevron Estero Marine Terminal Source Removal Project EIR, San Luis Obispo County.
- Downtown Specific Plan EIR, City of Scotts Valley, Santa Cruz County.



*Restoration Ecology and Regulatory Compliance Monitoring*

- Los Angeles International Airport, prepared and implemented Ecological Landscape Plan for Coastal Development Permit to allow street removal and coastal dune habitat restoration in the northern El Segundo Dunes, Los Angeles World Airports.
- Surfer's Point Shoreline Retreat Project, prepared Coastal Dune Habitat Restoration Plan in support of Coastal Development Permit acquisition, City of Ventura.
- Cross Creek Bridge Replacement, prepared and implemented riparian habitat restoration plan, monitored construction and restoration activities in support of Coastal Development Permit, Malibu, Los Angeles County.
- Cherry Creek Residential Development, conducted USACE wetland delineation, prepared USACE, CDFG, and RWQCB permit applications including riparian and wetland habitat restoration plan, and provided biological monitoring during construction, Arroyo Grande
- California State University, Channel Islands, biological studies and wetland delineation, prepared riparian and wetland habitat mitigation program as part of USACE, CDFG and RWQCB permit applications, monitored construction, implemented habitat mitigation program and provided annual monitoring for five years, Ventura County.
- Damon Garcia Sports Complex Project, conducted focused studies including CRLF surveys and wetland delineation, prepared riparian/wetland habitat mitigation program as part of USACE, CDFG and RWQCB permit applications, monitored construction and implemented habitat mitigation program (i.e.: weed abatement and planting), City of San Luis Obispo.
- Bret Harte Unified High School District Sports Fields Complex, conducted wetland delineation, prepared riparian/wetland habitat mitigation plan as part of USACE, CDFG and RWQCB permit applications, Calaveras County.
- Salinas Regional Sports Authority Soccer Complex Project, conducted wetland delineation and prepared riparian and wetland habitat mitigation plan, City of Salinas.
- Highway 46 East Improvement Project, Senior Biologist overseeing environmental permit compliance during construction, Caltrans , San Luis Obispo County.
- Union Valley Parkway, prepared EIR/EA, BA, facilitated ESA Section 7 Consultation, and then was the Designated Biologist overseeing environmental permit compliance during construction, Caltrans/City of Santa Maria Local Assistance Project.
- Biddle Ranch Agricultural Cluster Subdivision Project, County of San Luis Obispo designated environmental monitor overseeing construction of roads and infrastructure improvements.
- Santa Maria River Mining, CDFW and Department of Conservation permit acquisition, riparian habitat restoration plan preparation and annual monitoring and permit compliance reporting, City of Santa Maria.

*Teaching*

- Workshop Instructor - California Native Plant Society Rare Plants and Habitats of San Luis Obispo County (separated into coastal and inland sections).
- Workshop Instructor/Field Coordinator - Elkhorn Slough Coastal Training Program's Management and Conservation of Coastal Grasslands.
- Guest lecturer – CalPoly San Luis Obispo Natural Resource Management and Landscape Architecture Departments.
- Lab Instructor - Ecology of California Flora, Plant Anatomy, Plant Taxonomy, Plant Physiology, Mycology, and Plants and Human Affairs, University of California, Santa Cruz.
- Presenter - Association of Environmental Professionals state and national conferences; Society of Ecological Restoration annual conferences, and International Erosion Control Association conferences.

## Professional Resume

**Jason Kirschenstein**

Principal Biologist, Vice President

### **EMPLOYMENT HISTORY**

2003 to present

Principal Biologist / Vice President  
Sage Institute, Inc.

1998 to 2003

Biologist / Project Manager  
Rincon Consultants, Inc.

2000 to 2002

Dendrology Instructor  
California Polytechnic State University

1995 to 1998

Research Assistant  
California Polytechnic State University

### **EDUCATION, AFFILIATIONS,**

#### **PERMITS**

B.S., Forestry and Natural Resource Management / Wildlife Biology, California Polytechnic State University, San Luis Obispo

Association of Environmental Professionals, Audubon Society, Wildlife Society

Southwestern Willow Flycatcher Workshop and Certification

CDFW Blunt-Nosed Leopard Lizard Identification Workshop and Certification (Level II surveyor)

Giant Kangaroo Rat Identification/Handling Workshop and Certification

USFWS-approved monitor for various San Joaquin Valley listed species, CA Red-Legged Frog, steelhead, Southwestern Willow Flycatcher, and Least Bell's Vireo

State Rare, Threatened, Endangered plant collection permit

Venomous and non-Venomous snake handling training and certification, 2015

FERC Environmental Review and Compliance Training Certification

Santa Barbara County and San Luis Obispo County pre-approved biological resources consultant.

Morro Shoulderband Snail Protocol Survey Training

Jason Kirschenstein serves as a Principal Biologist and Vice President for Sage Institute, Inc. (SII). Mr. Kirschenstein is highly experienced in general and special-status wildlife and vegetation surveys, mitigation planning, regulatory compliance, Geographic Information System (GIS) applications, and environmental impact analysis. Mr. Kirschenstein is well versed in the planning process, and has successfully performed as an integral member on planning and design teams. He has provided biological and regulatory compliance services for local agencies, utilities, and private development projects.

Mr. Kirschenstein has conducted numerous biological surveys and is experienced in preparing biological assessments related to flora, fauna, endangered species, and sensitive habitats. Mr. Kirschenstein is well versed in construction and mitigation monitoring and habitat restoration design / implementation.

Mr. Kirschenstein has extensive experience in the preparation of permit packages for Clean Water Act Section 404 U.S. Army Corps of Engineers permits, CWA Section 401 Certifications from the Regional Water Quality Control Board, and California Department of Fish and Wildlife Section 1602 Streamed Alteration Agreements. Mr. Kirschenstein has also managed the preparation of U.S. Fish and Wildlife Service Section 7 and Section 10 documentation per the Federal Endangered Species Act and CDFW Section 2081 take authorization documentation per the California Endangered Species Act. Mr. Kirschenstein has worked closely with local agencies on permitting and environmental compliance projects, and is proficient in CEQA and NEPA analysis.

With over sixteen years of experience working with various GIS applications, Mr. Kirschenstein's capabilities range from habitat suitability mapping to performing complex constraints analyses. He has worked closely with various public agencies and private interests to obtain and properly manage GIS data. Mr. Kirschenstein's proficiency with advanced GPS technology, AutoCAD applications, image processing software, database management, and other GIS-related equipment enhances his overall GIS production and management capabilities.

## SELECTED PROJECT EXPERIENCE

- **Sempra Energy (Southern CA Gas Company / San Diego Gas and Electric)** – Clean Water Act, Endangered Species Act, SWPPP, and local agency environmental compliance for operation, maintenance, capital, and Pipeline Integrity projects (2003 – ongoing).
  - Programmatic Compliance Efforts: Programmatic permit compliance efforts in Southern California, San Joaquin Valley, California Desert, and Coastal California. Performed as key team member for regional Biological Opinion and HCP planning and implementation efforts.
  - Transmission, Distribution, PSEP, and PIP Services: Biological impact assessments, permit facilitation, agency negotiations, construction monitoring, site restoration, and compliance assistance for State and Federal Endangered Species Acts, Sections 401 and 404 of the Clean Water Act, and CDFW 1600.
  - Construction Monitoring: Lead construction monitor for various Capital Improvement and maintenance (Transmission, Distribution, and Pipeline Integrity) projects. Duties include permit compliance oversight and construction monitor coordination and reporting.
- **Southern California Gas Company, San Joaquin Valley Programmatic Compliance Efforts and Draft Habitat Conservation Plan (2003-ongoing)**. Assisted SoCalGas for over 12 years in implementing, amending, and reporting for a San Joaquin Valley Biological Opinion covering operations and maintenance (O&M), and new construction activities on its natural gas pipeline system within Kern, Tulare, Fresno, Kings, San Luis Obispo, Santa Barbara, and Ventura counties. Services include project specific Biological Assessments, special-status plant and wildlife surveys, construction monitoring, and general regulatory compliance services. In 2014/2015 assisted in preparation of draft Habitat Conservation Plan for a 30-year FESA take permit covering 21 species in the San Joaquin Valley, including development of a comprehensive predictive species GIS model.
- **SoCalGas, Line 300 and Line 90 Pipeline Removal Project, Avenal and Kings Counties (March 2013 – December 2013)**. Protocol blunt-nosed leopard lizard surveys for 1.5-mile pipeline abandonment and removal project in the Kettleman Hills. Surveys also included presence / absence for San Joaquin kit fox, San Joaquin antelope squirrel, burrowing owl, and special-status plants including California jewelflower and San Joaquin woollythreads. Serviced as lead construction monitor, conducted San Joaquin kit fox den closure along project alignment, and assisted with field effort and coordinated giant kangaroo rat trapping efforts.
- **Southern CA Gas Company, Line 85 Pipeline Replacement Project, Kern and Los Angeles Counties (2003-2004)** Lead biological construction monitor for 20+ mile pipeline replacement project extending from the southern San Joaquin Valley to Frazier Park. Duties included conducting focused surveys for blunt-nosed leopard lizard, San Joaquin kit fox, rare plants, and nesting birds.
- **Southern CA Gas Company, Line 119 PIP Pipeline Replacement Project, Angeles National Forest (June 2012 – October 2014)**. Regulatory compliance and permitting, construction monitoring and post-construction permit compliance reporting. Included field GPS data collection along the 1.5 mile project alignment adjacent to Pyramid Lake.
- **Southern CA Gas Company, Lincoln Street Pipeline Replacement, Kern County (April 2013 – May 2014; SoCalGas Contact Johnny Grady)**. Regulatory compliance and permitting, general biological surveys and protocol blunt-nosed leopard lizard and San Joaquin antelope squirrel surveys.
- **Southern CA Gas Company, Avenal Creek Exposure Repair, Kings County (February 2012 – February 2014; SoCalGas Contact Johnny Grady)**. Regulatory compliance and permitting, protocol blunt-nosed leopard lizard, San Joaquin kit fox, giant kangaroo rat (assisted), rare plant surveys, construction monitoring.
- **Southern CA Gas Company, San Julian Ranch, Santa Barbara County (April 2009 – December 2012; SoCalGas Contact Johnny Grady)**. Regulatory compliance and permitting, USFWS protocol surveys for Least Bell's vireo and southwestern willow flycatcher. Approved California red-legged frog, steelhead, least Bell's vireo, and southwestern willow flycatcher monitor. Lead construction monitor for multiple HDD's within occupied California red-legged frog and steelhead habitat.
- **Southern CA Gas Company, L3003/407 Sullivan Canyon ROW Maintenance, City of Los Angeles (2005 – ongoing; SoCalGas Contact Johnny Grady)**. Regulatory compliance and permitting lead for long-term maintenance Corps 404 Individual Permit, RWQCB 401 Certification, CDFW Streambed Alteration Agreement, City of L.A. Tree Permit. Includes restoration design, implementation, and monitoring along approximately 4-miles of ROW within riparian habitat.



**U.S. FISH AND WILDLIFE SERVICE  
STANDARDIZED RECOMMENDATIONS  
FOR PROTECTION OF THE ENDANGERED SAN JOAQUIN KIT FOX  
PRIOR TO OR DURING GROUND DISTURBANCE**

Prepared by the Sacramento Fish and Wildlife Office  
January 2011

## INTRODUCTION

The following document includes many of the San Joaquin kit fox (*Vulpes macrotis mutica*) protection measures typically recommended by the U. S. Fish and Wildlife Service (Service), prior to and during ground disturbance activities. **However, incorporating relevant sections of these guidelines into the proposed project is not the only action required under the Endangered Species Act of 1973, as amended (Act) and does not preclude the need for section 7 consultation or a section 10 incidental take permit for the proposed project.** Project applicants should contact the Service in Sacramento to determine the full range of requirements that apply to your project; the address and telephone number are given at the end of this document. Implementation of the measures presented in this document may be necessary to avoid violating the provisions of the Act, including the prohibition against "take" (defined as killing, harming, or harassing a listed species, including actions that damage or destroy its habitat). These protection measures may also be required under the terms of a biological opinion pursuant to section 7 of the Act resulting in incidental take authorization (authorization), or an incidental take permit (permit) pursuant to section 10 of the Act. The specific measures implemented to protect kit fox for any given project shall be determined by the Service based upon the applicant's consultation with the Service.

The purpose of this document is to make information on kit fox protection strategies readily available and to help standardize the methods and definitions currently employed to achieve kit fox protection. The measures outlined in this document are subject to modification or revision at the discretion of the Service.

## IS A PERMIT NECESSARY?

**Certain acts need a permit from the Service which includes destruction of any known (occupied or unoccupied) or natal/pupping kit fox dens.** Determination of the presence or absence of kit foxes and /or their dens should be made during the environmental review process.

All surveys and monitoring described in this document must be conducted by a qualified biologist and these activities do not require a permit. A qualified biologist (biologist) means any person who has completed at least four years of university training in wildlife biology or a related science and/or has demonstrated field experience in the identification and life history of the San Joaquin kit fox. In addition, the biologist(s) must be able to identify coyote, red fox,

gray fox, and kit fox tracks, and to have seen a kit fox in the wild, at a zoo, or as a museum mount. Resumes of biologists should be submitted to the Service for review and approval prior to any survey or monitoring work occurring.

### **SMALL PROJECTS**

Small projects are considered to be those projects with small foot prints, of approximately one acre or less, such as an individual in-fill oil well, communication tower, or bridge repairs. These projects must stand alone and not be part of, or in any way connected to larger projects (i.e., bridge repair or improvement to serve a future urban development). The Service recommends that on these small projects, the biologist survey the proposed project boundary and a 200-foot area outside of the project footprint to identify habitat features and utilize this information as guidance to situate the project to minimize or avoid impacts. If habitat features cannot be completely avoided, then surveys should be conducted and the Service should be contacted for technical assistance to determine the extent of possible take.

Preconstruction/preactivity surveys shall be conducted no less than 14 days and no more than 30 days prior to the beginning of ground disturbance and/or construction activities or any project activity likely to impact the San Joaquin kit fox. Kit foxes change dens four or five times during the summer months, and change natal dens one or two times per month (Morrell 1972). Surveys should identify kit fox habitat features on the project site and evaluate use by kit fox and, if possible, assess the potential impacts to the kit fox by the proposed activity. The status of all dens should be determined and mapped (see Survey Protocol). Written results of preconstruction/preactivity surveys must be received by the Service within five days after survey completion and prior to the start of ground disturbance and/or construction activities.

**If a natal/pupping den is discovered within the project area or within 200-feet of the project boundary, the Service shall be immediately notified and under no circumstances should the den be disturbed or destroyed without prior authorization. If the preconstruction/preactivity survey reveals an active natal pupping or new information, the project applicant should contact the Service immediately to obtain the necessary take authorization/permit.**

If the take authorization/permit has already been issued, then the biologist may proceed with den destruction within the project boundary, except natal/pupping den which may not be destroyed while occupied. A take authorization/permit is required to destroy these dens even after they are vacated. Protective exclusion zones can be placed around all known and potential dens which occur outside the project footprint (conversely, the project boundary can be demarcated, see den destruction section).

## OTHER PROJECTS

It is likely that all other projects occurring within kit fox habitat will require a take authorization/permit from the Service. This determination would be made by the Service during the early evaluation process (see Survey Protocol). These other projects would include, but are not limited to: Linear projects; projects with large footprints such as urban development; and projects which in themselves may be small but have far reaching impacts (i.e., water storage or conveyance facilities that promote urban growth or agriculture, etc.).

The take authorization/permit issued by the Service may incorporate some or all of the protection measures presented in this document. The take authorization/permit may include measures specific to the needs of the project and those requirements supersede any requirements found in this document.

## EXCLUSION ZONES

In order to avoid impacts, construction activities must avoid their dens. The configuration of exclusion zones around the kit fox dens should have a radius measured outward from the entrance or cluster of entrances due to the length of dens underground. The following distances are **minimums**, and if they cannot be followed the Service must be contacted. Adult and pup kit foxes are known to sometimes rest and play near the den entrance in the afternoon, but most above-ground activities begin near sunset and continue sporadically throughout the night. Den definitions are attached as Exhibit A.

Potential den**	50 feet
Atypical den**	50 feet
Known den*	100 feet
Natal/pupping den (occupied <u>and</u> unoccupied)	Service must be contacted

**\*Known den:** To ensure protection, the exclusion zone should be demarcated by fencing that encircles each den at the appropriate distance and does not prevent access to the den by kit foxes. Acceptable fencing includes untreated wood particle-board, silt fencing, orange construction fencing or other fencing as approved by the Service as long as it has openings for kit fox ingress/egress and keeps humans and equipment out. Exclusion zone fencing should be maintained until all construction related or operational disturbances have been terminated. At that time, all fencing shall be removed to avoid attracting subsequent attention to the dens.



**\*\*Potential and Atypical dens:** Placement of 4-5 flagged stakes 50 feet from the den entrance(s) will suffice to identify the den location; fencing will not be required, but the exclusion zone must be observed.

Only essential vehicle operation on existing roads and foot traffic should be permitted. Otherwise, all construction, vehicle operation, material storage, or any other type of surface-disturbing activity should be prohibited or greatly restricted within the exclusion zones.

## **DESTRUCTION OF DENS**

Limited destruction of kit fox dens may be allowed, if avoidance is not a reasonable alternative, provided the following procedures are observed. The value to kit foxes of potential, known, and natal/pupping dens differ and therefore, each den type needs a different level of protection.

**Destruction of any known or natal/pupping kit fox den requires take authorization/permit from the Service.**

Destruction of the den should be accomplished by careful excavation until it is certain that no kit foxes are inside. The den should be fully excavated, filled with dirt and compacted to ensure that kit foxes cannot reenter or use the den during the construction period. If at any point during excavation, a kit fox is discovered inside the den, the excavation activity shall cease immediately and monitoring of the den as described above should be resumed. Destruction of the den may be completed when in the judgment of the biologist, the animal has escaped, without further disturbance, from the partially destroyed den.

**Natal/pupping dens:** Natal or pupping dens which are occupied will not be destroyed until the pups and adults have vacated and then only after consultation with the Service. Therefore, project activities at some den sites may have to be postponed.

**Known Dens:** Known dens occurring within the footprint of the activity must be monitored for three days with tracking medium or an infra-red beam camera to determine the current use. If no kit fox activity is observed during this period, the den should be destroyed immediately to preclude subsequent use.

If kit fox activity is observed at the den during this period, the den should be monitored for at least five consecutive days from the time of the observation to allow any resident animal to move to another den during its normal activity. Use of the den can be discouraged during this period by partially plugging its entrances(s) with soil in such a manner that any resident animal can escape easily. Only when the den is determined to be unoccupied may the den be excavated under the direction of the biologist. If the animal is still present after five or more consecutive days of plugging and monitoring, the den may have to be excavated when, in the judgment of a biologist, it is temporarily vacant, for example during the animal's normal foraging activities.

**The Service encourages hand excavation, but realizes that soil conditions may necessitate the use of excavating equipment. However, extreme caution must be exercised.**

Potential Dens: If a take authorization/permit has been obtained from the Service, den destruction may proceed without monitoring, unless other restrictions were issued with the take authorization/permit. If no take authorization/permit has been issued, then potential dens should be monitored as if they were known dens. If any den was considered to be a potential den, but is later determined during monitoring or destruction to be currently, or previously used by kit fox (e.g., if kit fox sign is found inside), then all construction activities shall cease and the Service shall be notified immediately.

## **CONSTRUCTION AND ON-GOING OPERATIONAL REQUIREMENTS**

Habitat subject to permanent and temporary construction disturbances and other types of ongoing project-related disturbance activities should be minimized by adhering to the following activities. Project designs should limit or cluster permanent project features to the smallest area possible while still permitting achievement of project goals. To minimize temporary disturbances, all project-related vehicle traffic should be restricted to established roads, construction areas, and other designated areas. These areas should also be included in preconstruction surveys and, to the extent possible, should be established in locations disturbed by previous activities to prevent further impacts.

1. Project-related vehicles should observe a daytime speed limit of 20-mph throughout the site in all project areas, except on county roads and State and Federal highways; this is particularly important at night when kit foxes are most active. Night-time construction should be minimized to the extent possible. However if it does occur, then the speed limit should be reduced to 10-mph. Off-road traffic outside of designated project areas should be prohibited.
2. To prevent inadvertent entrapment of kit foxes or other animals during the construction phase of a project, all excavated, steep-walled holes or trenches more than 2-feet deep should be covered at the close of each working day by plywood or similar materials. If the trenches cannot be closed, one or more escape ramps constructed of earthen-fill or wooden planks shall be installed. Before such holes or trenches are filled, they should be thoroughly inspected for trapped animals. If at any time a trapped or injured kit fox is discovered, the Service and the California Department of Fish and Game (CDFG) shall be contacted as noted under measure 13 referenced below.
3. Kit foxes are attracted to den-like structures such as pipes and may enter stored pipes and become trapped or injured. All construction pipes, culverts, or similar structures with a diameter of 4-inches or greater that are stored at a construction site for one or more overnight periods should be thoroughly inspected for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a kit fox is

discovered inside a pipe, that section of pipe should not be moved until the Service has been consulted. If necessary, and under the direct supervision of the biologist, the pipe may be moved only once to remove it from the path of construction activity, until the fox has escaped.

4. All food-related trash items such as wrappers, cans, bottles, and food scraps should be disposed of in securely closed containers and removed at least once a week from a construction or project site.
5. No firearms shall be allowed on the project site.
6. No pets, such as dogs or cats, should be permitted on the project site to prevent harassment, mortality of kit foxes, or destruction of dens.
7. Use of rodenticides and herbicides in project areas should be restricted. This is necessary to prevent primary or secondary poisoning of kit foxes and the depletion of prey populations on which they depend. All uses of such compounds should observe label and other restrictions mandated by the U.S. Environmental Protection Agency, California Department of Food and Agriculture, and other State and Federal legislation, as well as additional project-related restrictions deemed necessary by the Service. If rodent control must be conducted, zinc phosphide should be used because of a proven lower risk to kit fox.
8. A representative shall be appointed by the project proponent who will be the contact source for any employee or contractor who might inadvertently kill or injure a kit fox or who finds a dead, injured or entrapped kit fox. The representative will be identified during the employee education program and their name and telephone number shall be provided to the Service.
9. An employee education program should be conducted for any project that has anticipated impacts to kit fox or other endangered species. The program should consist of a brief presentation by persons knowledgeable in kit fox biology and legislative protection to explain endangered species concerns to contractors, their employees, and military and/or agency personnel involved in the project. The program should include the following: A description of the San Joaquin kit fox and its habitat needs; a report of the occurrence of kit fox in the project area; an explanation of the status of the species and its protection under the Endangered Species Act; and a list of measures being taken to reduce impacts to the species during project construction and implementation. A fact sheet conveying this information should be prepared for distribution to the previously referenced people and anyone else who may enter the project site.
10. Upon completion of the project, all areas subject to temporary ground disturbances, including storage and staging areas, temporary roads, pipeline corridors, etc. should be



re-contoured if necessary, and revegetated to promote restoration of the area to pre-project conditions. An area subject to "temporary" disturbance means any area that is disturbed during the project, but after project completion will not be subject to further disturbance and has the potential to be revegetated. Appropriate methods and plant species used to revegetate such areas should be determined on a site-specific basis in consultation with the Service, California Department of Fish and Game (CDFG), and revegetation experts.

11. In the case of trapped animals, escape ramps or structures should be installed immediately to allow the animal(s) to escape, or the Service should be contacted for guidance.
12. Any contractor, employee, or military or agency personnel who are responsible for inadvertently killing or injuring a San Joaquin kit fox shall immediately report the incident to their representative. This representative shall contact the CDFG immediately in the case of a dead, injured or entrapped kit fox. The CDFG contact for immediate assistance is State Dispatch at (916)445-0045. They will contact the local warden or Mr. Paul Hoffman, the wildlife biologist, at (530)934-9309. The Service should be contacted at the numbers below.
13. The Sacramento Fish and Wildlife Office and CDFG shall be notified in writing within three working days of the accidental death or injury to a San Joaquin kit fox during project related activities. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal and any other pertinent information. The Service contact is the Chief of the Division of Endangered Species, at the addresses and telephone numbers below. The CDFG contact is Mr. Paul Hoffman at 1701 Nimbus Road, Suite A, Rancho Cordova, California 95670, (530) 934-9309.
14. New sightings of kit fox shall be reported to the California Natural Diversity Database (CNDDDB). A copy of the reporting form and a topographic map clearly marked with the location of where the kit fox was observed should also be provided to the Service at the address below.

Any project-related information required by the Service or questions concerning the above conditions or their implementation may be directed in writing to the U.S. Fish and Wildlife Service at:

Endangered Species Division  
2800 Cottage Way, Suite W2605  
Sacramento, California 95825-1846  
(916) 414-6620 or (916) 414-6600

**EXHIBIT “A” - DEFINITIONS**

"Take" - Section 9 of the Endangered Species Act of 1973, as amended (Act) prohibits the "take" of any federally listed endangered species by any person (an individual, corporation, partnership, trust, association, etc.) subject to the jurisdiction of the United States. As defined in the Act, take means " . . . to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct". Thus, not only is a listed animal protected from activities such as hunting, but also from actions that damage or destroy its habitat.

"Dens" - San Joaquin kit fox dens may be located in areas of low, moderate, or steep topography. Den characteristics are listed below, however, the specific characteristics of individual dens may vary and occupied dens may lack some or all of these features. Therefore, caution must be exercised in determining the status of any den. Typical dens may include the following: (1) one or more entrances that are approximately 5 to 8 inches in diameter; (2) dirt berms adjacent to the entrances; (3) kit fox tracks, scat, or prey remains in the vicinity of the den; (4) matted vegetation adjacent to the den entrances; and (5) manmade features such as culverts, pipes, and canal banks.

"Known den" - Any existing natural den or manmade structure that is used or has been used at any time in the past by a San Joaquin kit fox. Evidence of use may include historical records, past or current radiotelemetry or spotlighting data, kit fox sign such as tracks, scat, and/or prey remains, or other reasonable proof that a given den is being or has been used by a kit fox. The Service discourages use of the terms "active" and "inactive" when referring to any kit fox den because a great percentage of occupied dens show no evidence of use, and because kit foxes change dens often, with the result that the status of a given den may change frequently and abruptly.

"Potential Den" - Any subterranean hole within the species' range that has entrances of appropriate dimensions for which available evidence is insufficient to conclude that it is being used or has been used by a kit fox. Potential dens shall include the following: (1) any suitable subterranean hole; or (2) any den or burrow of another species (e.g., coyote, badger, red fox, or ground squirrel) that otherwise has appropriate characteristics for kit fox use.

"Natal or Pupping Den" - Any den used by kit foxes to whelp and/or rear their pups. Natal/pupping dens may be larger with more numerous entrances than dens occupied exclusively by adults. These dens typically have more kit fox tracks, scat, and prey remains in the vicinity of the den, and may have a broader apron of matted dirt and/or vegetation at one or more entrances. A natal den, defined as a den in which kit fox pups are actually whelped but not necessarily reared, is a more restrictive version of the pupping den. In practice, however, it is difficult to distinguish between the two, therefore, for purposes of this definition either term applies.

"Atypical Den" - Any manmade structure which has been or is being occupied by a San Joaquin kit fox. Atypical dens may include pipes, culverts, and diggings beneath concrete slabs and buildings.





DEPARTMENT OF THE ARMY  
LOS ANGELES DISTRICT, U.S. ARMY CORPS OF ENGINEERS  
VENTURA FIELD OFFICE  
2151 ALESSANDRO DRIVE, SUITE 110  
VENTURA, CALIFORNIA 93001

July 26, 2016

David Swenk  
Principal Planner  
Urban Planning Concepts, Inc.  
2624 Airpark Drive  
Santa Maria, California 93455

**DETERMINATION OF NEED FOR A DEPARTMENT OF THE ARMY PERMIT**

Dear Mr. Swenk:

I am responding to your request (File No. SPL-2016-00466) dated June 13, 2016, for clarification whether a Department of the Army Permit is required for the North Fork Ranch Irrigation Project (35.02146 °N, 119.85986 °W) located within unincorporated Santa Barbara County, California.

The Corps' evaluation process for determining if you need a permit is based on whether or not the proposed project is located within or contains a water of the United States, and whether or not the proposed project includes an activity potentially regulated under Section 10 of the River and Harbor Act or Section 404 of the Clean Water Act. If both conditions are met, a permit would be required.

However, I have determined the proposed work would not involve a discharge of dredged or fill material and therefore, would not be regulated under Section 404 of the Clean Water Act if the activity is performed in the manner described in your application. Notwithstanding this determination, your proposed project may be regulated under other Federal, State, and local laws.

If you have any questions, please contact me at 805-585-2151 or via e-mail at [Ian.T.Bordenave@usace.army.mil](mailto:Ian.T.Bordenave@usace.army.mil). Thank you for participating in the Regulatory Program. Please help me to evaluate and improve the regulatory experience for others by completing the customer survey form at [http://corpsmapu.usace.army.mil/cm\\_apex/f?p=regulatory\\_survey](http://corpsmapu.usace.army.mil/cm_apex/f?p=regulatory_survey).

Sincerely,

A handwritten signature in black ink, reading "Ian Bordenave", followed by a long horizontal flourish.

Ian Bordenave  
Project Manager  
North Coast Branch  
Regulatory Division



State of California – Natural Resources Agency  
DEPARTMENT OF FISH AND WILDLIFE  
South Coast Region 5 Habitat Conservation  
LSA Program  
3883 Ruffin Rd.  
San Diego, CA 92123  
[www.wildlife.ca.gov](http://www.wildlife.ca.gov)

EDMUND G. BROWN, Jr., Governor  
CHARLTON H. BONHAM, Director



November 30, 2016

Kevin Merrill  
Mesa Vineyard Management  
P.O. Box 789  
Templeton, CA 93456  
(805) 434-4100

Subject: Notification of Lake or Streambed Alteration No. 1600-2016-0228-R5  
North Fork Ranch Vineyard impacting unnamed ephemeral streambeds  
Tributary to Cuyama River

Dear Mr. Merrill:

As the California Department of Fish and Wildlife (Department) explained in a previous letter to you dated November 1<sup>st</sup>, 2016, the Department had until November 28<sup>th</sup>, 2016, to submit a draft Lake or Streambed Alteration Agreement (Agreement) to you or inform you that an Agreement is not required. The Department did not meet that date. As a result, by law, you may now complete the project described in your notification without an Agreement.

Please note that pursuant to Fish and Game Code section 1602(a)(4)(D), if you proceed with this project, it must be the same as described and conducted in the same manner as specified in the notification and any modifications to that notification received by the Department in writing prior to November 21<sup>st</sup>, 2016. This includes completing the project within the proposed term and seasonal work period and implementing all avoidance and mitigation measures to protect fish and wildlife resources specified in the notification. If the term proposed in your notification has expired, you will need to re-notify the Department before you may begin your project. Beginning or completing a project that differs in any way from the one described in the notification may constitute a violation of Fish and Game Code section 1602.

Your notification includes, but is not limited to, the following information:

Project-related activities shall begin no earlier than receipt of this letter, and be completed no later than December 15<sup>th</sup>, 2018.

Also note that while you are entitled to complete the project without an Agreement, you are still responsible for complying with other applicable local, state, and federal laws. These include, but are not limited to, the state and federal Endangered Species Acts and Fish and Game Code sections 5650 (water pollution) and 5901 (fish passage).

Kevin Merrill  
November 30, 2016  
Page 2 of 2

Finally, if you decide to proceed with your project without an Agreement, you must have a copy of this letter and your notification with all attachments available at all times at the work site. If you have any questions regarding this matter, please contact Sarah Rains, Environmental Scientist, at (805) 498-2385 or [sarah.rains@wildlife.ca.gov](mailto:sarah.rains@wildlife.ca.gov).

Sincerely,

A handwritten signature in blue ink, appearing to read "Christine Found-Jackson".

Christine Found-Jackson  
Senior Environmental Scientist (Supervisory)

ec: Sarah Rains [sarah.rains@wildlife.ca.gov](mailto:sarah.rains@wildlife.ca.gov)

Brian A. Tetley [btetley@urbanplanningconcepts.com](mailto:btetley@urbanplanningconcepts.com)



## **APPENDIX B**

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### **Plants Observed During 2019 Surveys**



**Appendix B. List of Vascular Plants Observed During 2019 Spring Surveys.**

Scientific Name	Common Name	Reservoir 1 (Schoolhouse)	Reservoir 2 (Middle)	Reservoir 3 (West)
<i>Amsinckia intermedia</i>	Common fiddleneck	DOM	+	+
<i>Atriplex lentiformis</i>	Brewer's saltbush			
<i>Atriplex spinifera</i>	Spinescale saltbush			
<i>Astragalus didymocarpus</i> var. <i>didymocarpus</i>	Two-seeded milkvetch	+	+	
<i>Astragalus douglasii</i>	Douglas's milkvetch			+
<i>Avena barbata</i> *	Slender wild oats		+	
<i>Baccharis pilularis</i>	Coyote brush			
<i>Bromus madritensis</i> *	Red brome	+	+	DOM
<i>Calandrinia ciliata</i>	Red maids		+	+
<i>Capsella bursa-pastoris</i> *	Shepherd's purse		+	
<i>Carduus pycnocephalus</i> *	Italian thistle			
<i>Castilleja exserta</i>	Purple owl's clover	+		+
<i>Castilleja densiflora</i> ssp. <i>densiflora</i>	Dense flower owl's clover			+
<i>Caulanthus lasiophyllus</i>	California mustard		+	
<i>Chaenactis glabriuscula</i>	Yellow pincushion			
<i>Chenopodium album</i> *	Goosefoot			
<i>Crassula connata</i>	Pygmy-weed	+		
<i>Cucurbita palmata</i>	Coyote melon			
<i>Delphinium parryi</i> ssp. <i>parryi</i>	Parry's larkspur			
<i>Dichelostemma capitatum</i>	Blue dicks	+	+	+
<i>Encelia californica</i>	Bush sunflower			
<i>Eriodictyon tomentosum</i>	Wooly yerba santa			
<i>Eriogonum gracile</i>	Slender buckwheat			
<i>Eriophyllum confertiflorum</i>	Golden yarrow			
<i>Erodium cicutarium</i> *	Red-stemmed filaree	+	+	DOM
<i>Eschscholzia californica</i>	California poppy	+		
<i>Festuca bromoides</i> *	Brome fescue			+
<i>Festuca microstachys</i>	Annual fescue	+		+
<i>Gilia clivorum</i>	Purplespot gilia		+	+
<i>Hirschfeldia incana</i> *	Summer mustard		+	
<i>Hordeum murinum</i> *	Foxtail	DOM	+	DOM
<i>Juniperus californicus</i>	California juniper			+
<i>Lactuca serriola</i> *	Prickly lettuce			+
<i>Lasthenia gracilis</i>	Needle goldfields	+		
<i>Layia platyglossa</i>	Tidy tips	+		+

Scientific Name	Common Name	Reservoir 1 (Schoolhouse)	Reservoir 2 (Middle)	Reservoir 3 (West)
<i>Lepidium nitidum</i>	Pepper grass		+	+
<i>Lepidospartum squamatum</i>	California broomsage			
<i>Lupinus bicolor</i>	Miniature lupine	DOM	+	+
<i>Lupinus hirsutissimus</i>	Stinging lupine			+
<i>Lupinus succulentus</i>	Arroyo lupine		+	+
<i>Malacothrix coulteri</i>	Snake's head		+	+
<i>Malva parviflora</i> *	Cheeseweed			
<i>Marrubium vulgare</i> *	White horehound			
<i>Medicago polymorpha</i> *	Bur clover			
<i>Monolopia lanceolata</i>	Common monolopia		+	+
<i>Phacelia ciliata</i>	Valley phacelia			
<i>Phacelia distans</i>	Common phacelia		+	+
<i>Plagiobothrys canescens</i>	Valley popcorn flower	+	+	+
<i>Platanus racemosa</i>	Western sycamore (planted as windrow)			
<i>Platystemon californicus</i>	Cream cups			+
<i>Pluchea sericea</i>	Arrow weed (along Cuyama River)			
<i>Poa secunda</i>	Bluegrass			+
<i>Populus fremontii</i>	Fremont cottonwood (Cottonwood Cyn/ windrow)			
<i>Quercus douglasii</i>	Blue oak			
<i>Quercus john-tuckeri</i>	Tucker oak			
<i>Salsola tragus</i> *	Russian thistle			
<i>Sambucus nigra ssp. caerulea</i>	Blue elderberry			
<i>Schismus arabicus</i> *	Arabian schismus			
<i>Silene gallica</i> *	Common catchfly			
<i>Sisymbrium altissimum</i> *	Tumble mustard			
<i>Sonchus asper</i> *	Prickly sow thistle			
<i>Stanleya pinnata</i>	Prince's plume			
<i>Tamarix ramosissima</i> *	Saltcedar			
<i>Thysanocarpus laciniatus</i>	Narrow-leaved lacepod			
<i>Trifolium albopurpureum</i>	Dove clover	+		+
<i>Trifolium gracilentum</i>	Pinpoint clover	+	+	+
<i>Tropidocarpum gracile</i>	Dobie pod	+	+	+

\*Asterisk identifies non-native species.

+indicates species was present in reservoir study areas and blank means it was observed on the larger ranch but not within the three reservoir study areas.

DOM indicates species was present and predominant in the specific study area.



## **APPENDIX C**

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### **Special Status Species Potentially Occurring Onsite**



### Appendix C. Special Status Species Potentially Occurring Within Three Reservoir Study Areas

Scientific Name	Common Name	Listing Status*			Habitat Requirements	Probability of Occurrence / Site Suitability / Observations
		Fed	CA	DFW		
PLANTS						
1) <i>Antirrhinum ovatum</i>	oval-leaved snapdragon	--	--	4.2	Annual herb; chaparral, cismontane woodland, pinyon & juniper woodlands, valley & foothill grassland; 200-1000 meters; blooms May to November.	<b>Not expected.</b> Suitable chaparral and woodland habitats are not present in the three project study areas. Grassland, ruderal and agricultural areas searched during surveys conducted in 2015, 2016, and 2019, and species was not observed.
2) <i>Arctostaphylos glandulosa</i> ssp. <i>gabrielensis</i>	San Gabriel manzanita	--	--	1B.2	Perennial shrub found in chaparral on granitic soils, 950-2000 meters in elevation. Blooms January through April.	<b>Not expected.</b> Suitable chaparral habitat on granitic soils is not present in the project areas. Perennial shrub would have been identifiable during surveys.
3) <i>California macrophylla</i>	round-leaved filaree	--	--	1B.1	Annual herb commonly found on clay soils in cismontane woodland and valley and foothill grassland at elevations ranging from 15 to 1200 meters. Blooms March to May.	<b>Not expected.</b> Suitable clay soils and woodland habitats are not present in the three project study areas. Grassland, ruderal and agricultural areas were searched during surveys conducted in 2015, 2016, and 2019, and species was not observed.
4) <i>Calochortus simulans</i>	La Panza mariposa-lily	--	--	1.B.3	Perennial bulbiferous herb; chaparral, cismontane woodland, and grasslands in decomposed granite; 395-1100 meters in elevation; blooms April to June.	<b>Not expected.</b> Suitable chaparral, woodland or grassland habitats with granitic soils are not present in the project areas. Not observed during 2015, 2016, or 2019 surveys. Known local occurrences are in steeper terrain.
5) <i>Caulanthus lemmonii</i>	Lemmon's jewel-flower	--	--	1B.2	Annual herb; pinyon and juniper woodland, valley and foothill grassland; 80 to 1,220 meters elevation; blooms March to May.	<b>Not expected.</b> Suitable woodland habitat is not present in the three project study areas. Grassland, ruderal and agricultural areas were searched during 2015, 2016, and 2019 surveys, and species was not observed. Potential habitat and known occurrences are located in the hills to the north, but not expected in study areas.
6) <i>Chorizanthe blakleyi</i>	<i>Blakley's spineflower</i>	--	--	1B.3	Annual spineflower known to occur in pinyon and juniper woodland areas with a typical elevation of 600 to 1,600 meters. Blooms April to June.	<b>Not expected.</b> Suitable woodland habitats are not present in the three project study areas. Not observed during surveys conducted in 2015, 2016, or 2019. Known to occur in upper elevation areas south of the property, but not expected in study areas.
7) <i>Delphinium umbraculorum</i>	umbrella larkspur	--	--	1B.3	Perennial herb; found in granite of cismontane woodlands, chaparral, and coastal scrub; 85-1,035 meters in elevation; blooms May to July.	<b>Not expected.</b> Suitable granite soils and woodland, chaparral, or coastal scrub habitats are not present in the project areas. Not observed during 2015, 2016, or 2019 surveys.

Scientific Name	Common Name	Listing Status*			Habitat Requirements	Probability of Occurrence / Site Suitability / Observations
		Fed	CA	DFW		
8) <i>Eremalche kernensis</i>	Kern mallow	E	--	1.B1	Chenopod scrub, valley and foothill grassland. On dry, open sandy to clayey soils; usually within valley saltbush scrub; often at edge of balds. 70-1290 meters.	<b>Not expected.</b> Suitable sandy soils are present in the study areas, but valley saltbush scrub habitats are not present in the proposed frost pond sites. Not observed during surveys conducted in spring 2015, 2016, or 2019. Common <i>E. parryi</i> ssp. <i>parryi</i> observed in Schoolhouse Canyon outside disturbance footprints, but Kern mallow was not present.
9) <i>Eriogonum temblorense</i>	Temblor buckwheat			1B.2	Barren clay or sandstone substrates in valley and foothill grassland. 300 to 900 meters. Blooms May to September.	<b>Not expected.</b> One location known from the north side of Caliente Mountain, but no suitable soils present onsite. Reservoir sites are on gentle slopes with dense grass and forb vegetation, and the ranch is outside the known range of this species. Not observed during 2015 and 2016 surveys conducted through summer months. No young buckwheat plants observed during 2019 surveys.
10) <i>Fritillaria agrestis</i>	stinkbells	--	--	4.2	Chaparral, valley grassland, foothill woodland, and wetland riparian areas with an elevation of 10 to 1,555 meters. Blooms March to June.	<b>Not expected.</b> Suitable wetland, riparian, woodland, or grassland habitats are not present in the project areas. Not observed during surveys conducted in 2015, 2016, or 2019.
11) <i>Layia heterotricha</i>	pale-yellow layia	--	--	1B.1	Succulent-like annual herb; alkaline, clay and sandy soils in scrub, cismontane woodland, pinyon-juniper woodland, and valley and foothill grassland; 270-1,365 meters; blooms March to June.	<b>Not expected.</b> Known from Cottonwood Canyon to the mouth of Santa Barbara Canyon (Smith, 1998). Suitable chaparral, woodland or grassland habitats are not present in the project sites. Not observed during spring 2015, 2016, or 2019 surveys. Common tidy tips observed in reservoir study areas.
12) <i>Madia radiata</i>	showy golden madia	--	--	1B.1	Chenopod scrub, valley and foothill grassland, and cismontane woodland areas. Found mostly on adobe clay in grassland or shrubs with an elevation of 25-1125 meters. Blooms March to May.	<b>Not expected.</b> Suitable clay soils and woodland or grassland habitats are not present in the project areas. Not observed during surveys conducted in 2015, 2016, or 2019.
13) <i>Monolopia congdonii</i>	San Joaquin woolly-threads	E	--	1B.2	Spreading annual found in Chenopod scrub, valley and foothill grassland. Alkaline or loamy plains; sandy soils, often with grasses and within chenopod scrub. 60-800 meters. Blooms February to May.	<b>Not expected.</b> Closest population at mouth of Cottonwood Canyon was relocated in 2019. Disturbed grassland habitat and sandy soils are present, but chenopod scrub habitat is not. Not observed during 2015, 2016, or 2019 surveys. Only common <i>Monolopia lanceolata</i> observed.



Scientific Name	Common Name	Listing Status*			Habitat Requirements	Probability of Occurrence / Site Suitability / Observations
		Fed	CA	DFW		
14) <i>Sidalcea hickmanii</i> ssp. <i>parishii</i>	Parish's checker-bloom	--	R	1B.2	Chaparral, cismontane woodland, lower montane coniferous forest. Disturbed burned or cleared areas on dry, rocky slopes, in fuel breaks & fire roads along the mtn. summits. 1000-2500 meters.	<b>Not expected.</b> Chaparral, cismontane woodland, and coniferous forest habitats are not present, and the sites are located on deep alluvial soils, not dry rocky slopes. Not observed during surveys conducted in 2015, 2016, or 2019.
<b>ANIMALS</b>						
1) <i>Agelaius tricolor</i>	Tricolored blackbird		T	SSC	Found near freshwater habitats where it nests in emergent freshwater or riparian vegetation. This species prefers nesting in dense thickets of cattails and tules. Due to their highly colonial nature, nesting areas must be large enough to support a colony of about 50 pairs.	<b>Unlikely.</b> Recorded from Green Canyon meadow to the east of the site, but no similar large meadow habitat on the Ranch site. No ponds with emergent vegetation present that would be suitable for nesting colony. Could forage onsite as rare transient but would not be expected to nest.
2) <i>Ammospermophilus nelson</i>	Nelson's antelope squirrel		T		Needs widely scattered shrubs, forbs and grasses in broken terrain with gullies and washes where it digs burrows or uses k-rat burrows. Western San Joaquin Valley, 200-1200 feet.	<b>Not expected.</b> Known from southwest corner of Carrizo Plains Nat'l Mon. and along northern terrace above Cuyama River. No individuals or burrow complexes indicative of this species observed within the project area and proposed reservoir footprints.
3) <i>Anniella pulchra</i>	Northern CA legless lizard			SSC	Sandy or loamy soils with a high moisture content in valley and foothill woodlands, chaparral, coastal scrub and coastal dunes.	<b>Low Potential.</b> Known from southwest corner of Carrizo Plains Nat'l Mon. just north of project site, and along Cottonwood Canyon Road. Disking and agricultural activities reduces potential for species to occur in reservoir construction footprint, but could be present just outside farming disturbance in drainage corridors.
4) <i>Arizona elegans occidentalis</i>	California glossy snake			SSC	Reported from a range of scrub and grassland habitats, often with loose or sandy soils.	<b>Moderate Potential.</b> Specimens of this generalist snake have been found dead on Highway 166 in the ranch vicinity (Cottonwood Canyon and Wasioja Rd.). Disking and farming activities have reduced suitable habitat in reservoir construction zones but could be present just outside of farming disturbance.
5) <i>Asio otus</i>	Long-eared owl	--	--	SSC	Winters throughout the Central Valley and southeastern California. Nests in abandoned nests (crow, hawk, or magpie), usually in dense stands of willows, cottonwoods, live oaks, or conifers.	<b>Unlikely.</b> Species is known to occur in the general area and disturbed grassland habitat suitable for foraging is present onsite, but no significant prey base was observed in the farming area. No nesting habitat is present in the project areas.

Scientific Name	Common Name	Listing Status*			Habitat Requirements	Probability of Occurrence / Site Suitability / Observations
		Fed	CA	DFW		
6) <i>Bombus crotchii</i>	<i>Crotch bumble bee</i>	--	--	--	Open grassland and scrub habitats from central California to Baja California del Norte, Mexico, including the western edges of the deserts and the Central Valley. Not found in the mountains or cool north coastal areas of California	<b>Unlikely.</b> Sites appear to lack sufficient pollen sources and the general vegetative structure and diversity to attract or support the species.
7) <i>Dipodomys ingens</i>	giant kangaroo rat	E	E	--	Annual grasslands on the western side of the San Joaquin Valley, extending into Carrizo Plain and Cuyama Valley areas. Typically occurs in grasslands but can use alkali scrub. Needs level terrain & sandy loam soils for burrowing.	<b>Not expected.</b> Disturbed grassland habitat on sandy soils is present in the general area, but no typical burrow complexes observed in the project areas. CNDDDB record from Cuyama River is from surveys conducted in 1979 and 1982 and states "possibly extirpated" from this site. General location with alkali scrub/grassland mix visited in the spring and summer 2015 and again in 2019 and no burrow complexes typical of this species were observed.
8) <i>Emys marmorata</i>	western pond turtle	--	--	SSC	Permanent or nearly permanent water bodies in many habitats.	<b>Not expected.</b> Project sites consist of disturbed upland areas. Ephemeral drainages on the site lack perennial water sources needed for this species to occur in the general area.
9) <i>Euproserpinus euterpe</i>	Kern primrose sphinx moth	T	--	--	Highly localized species found in the Walker Basin, Kern County, and several other scattered locations (Carrizo Plain, Pinnacles National Monument). Host plant is <i>Camissonia contorta epilobioides</i> (evening primrose) that typically grows in washes with loose alluvial soils.	<b>Unlikely.</b> Project sites are located in upland areas away from onsite drainage features. Host plant not observed on the study area during surveys conducted in 2015, 2016, and 2019. Prior to farming activities, non-native filaree was the dominant plant growing throughout the project sites, which is known to adversely affect this species.
10) <i>Falco mexicanus</i>	prairie falcon	--	--	WL	Catches prey in air and in open ground in grasslands, Nests in cliffs overlooking large areas; resident, breeding migrant.	<b>Unlikely.</b> Disturbed grassland habitat suitable for foraging is present in the vicinity, but no significant prey base observed in the farming area. No nesting habitat is present in or near the project areas. CNDDDB records cover the entire USGS quadrangle map and are not specific to this site. Could occur while foraging or moving through the region, but would not be expected to nest onsite.

Scientific Name	Common Name	Listing Status*			Habitat Requirements	Probability of Occurrence / Site Suitability / Observations
		Fed	CA	DFW		
11) <i>Gambelia sila</i>	blunt-nosed leopard lizard	E	E	--	Resident of sparsely vegetated alkali and desert scrub habitats, in areas of low topographic relief. Seeks cover in mammal burrows, under shrubs or structures such as fence posts; they do not excavate their own burrows.	<b>Not Expected.</b> Disturbed grassland habitat does not provide sufficient cover and food resources in the project areas to support the species. Very few small mammal burrows (mostly gopher) observed prior to farming activities. Protocol BNLL surveys conducted in 2015 in higher quality habitat areas along Schoolhouse Canyon and Cuyama River did not find the species. Nearest occurrence is further east of site over five miles.
12) <i>Masticophis flagellum ruddocki</i>	San Joaquin whipsnake	--	--	SSC	Occurs in open, dry valley grasslands and saltbush scrub habitats with little or no tree cover. While known from the San Joaquin Valley, species also occurs in western Kern County and eastern San Luis Obispo County. Requires mammal burrows for refuge and egg laying.	<b>Unlikely.</b> Very few small mammal burrows were observed during surveys of the reservoir sites. Suitable habitat present in the larger drainage corridors such as Cottonwood Canyon and Schoolhouse Canyon and along the Cuyama River terraces, but no suitable habitat present in the project sites. No records in close proximity to the site.
13) <i>Onychomys torridus tularensis</i>	Tulare grasshopper mouse	--	--	SSC	Inhabits shrubland communities in hot, arid grassland and shrubland associations, including blue oak woodlands, upper Sonoran subshrub scrub, alkali sink and mesquite associations, and grasslands on the sloping margins of the San Joaquin Valley and Carrizo Plain regions.	<b>Unlikely.</b> Disturbed grassland habitat composed of red-stemmed filaree and bare soils is present, but vegetative density and diversity in the project areas is not sufficient to support populations of this species.
14) <i>Phrynosoma blainvilli</i>	Coast horned lizard	--	--	SSC	Frequents a wide variety of habitat including sandy washes with scattered shrubs and open areas for sunning. Loose soils for burial.	<b>Unlikely.</b> Larger property contains drainages including Cuyama River and associated terraces that could support this species. While soils onsite are predominantly sandy loam in nature, species is unlikely to occur in project footprints due to lack of shrub cover and a prey base.
15) <i>Taxidea taxus</i>	American badger			SSC	Open grasslands and the edge of scrub and woodland habitats; requires dry loose soils for burrowing and shelter and feeds on a variety of small mammals such as California ground squirrel and pocket gopher.	<b>Potential.</b> Suitable habitat present throughout the larger ranch. Known to occur in the general area. No potential den sites or sign (tracks, etc.) observed during surveys, and no sufficient small mammal prey base in project footprints. Could occur as a transient moving through the area, especially along the larger drainage corridors.



Scientific Name	Common Name	Listing Status*			Habitat Requirements	Probability of Occurrence / Site Suitability / Observations
		Fed	CA	DFW		
16) <i>Vulpes macrotis mutica</i>	San Joaquin kit fox	E	T	--	Annual grasslands or grassy open stages with scattered shrubby vegetation. Need loose-textured sandy soils for burrowing, and suitable prey base.	<b>Potential.</b> Suitable foraging habitat and migration corridors are present throughout the site, especially along drainages. The vineyard is fenced, but canids could dig under to gain access to reservoir sites. No dens or sign (scat, tracks, etc.) were observed in project footprint. CNDDDB records are from 1970's. Could occur as a rare transient moving through the area.

\*FE – listed as Endangered under federal Endangered Species Act; SE – listed as Endangered under California Endangered Species Act; SR – listed as Rare under California Endangered Species Act; ST – listed as Threatened under California Endangered Species Act; SSC – DFW Species of Special Concern; WL – List of Birds of Conservation Concern; 1A = Plants presumed extinct in California; 1B.1 = Rare or endangered in California and elsewhere; seriously endangered in California (over 80% of occurrences threatened/high degree and immediacy of threat); 1B.2 = Rare or endangered in California and elsewhere; fairly endangered in California (20-80% occurrences threatened); 1B.3 = Rare or endangered in California and elsewhere, not very endangered in California (<20% of occurrences threatened or no current threats known); 2 = Rare, threatened or endangered in California, but more common elsewhere; 3 = Plants needing more information (most are species that are taxonomically unresolved; some species on this list meet the definitions of rarity under CNPS and CESA); 4.2 = Plants of limited distribution (watch list), fairly endangered in California (20-80% occurrences threatened); and 4.3= Plants of limited distribution (watch list), not very endangered in California.

## **APPENDIX D**

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### **Photo Plate**



**Appendix D - Photo Plate**

**Photo 1.** View of Reservoir 1 site looking westerly during surveys in 2016 when initial disking occurred showing filaree as dominant cover. Stake marks southeast corner of the reservoir.



**Photo 2.** View of Reservoir 1 site in March 28, 2019 during an above average rainfall year with filaree and red brome forming dominant cover.



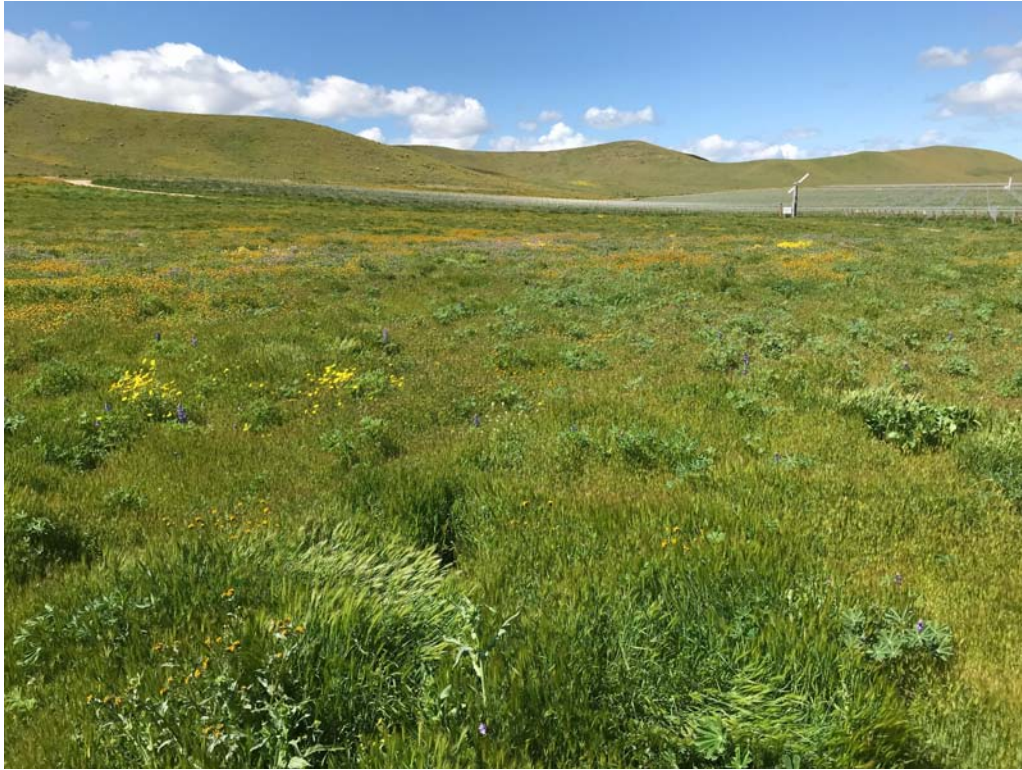


**Photo 3.** View of Reservoir #2 looking northeast in 2016 after initial disking activities. Stake marks western corner of the grading limits.

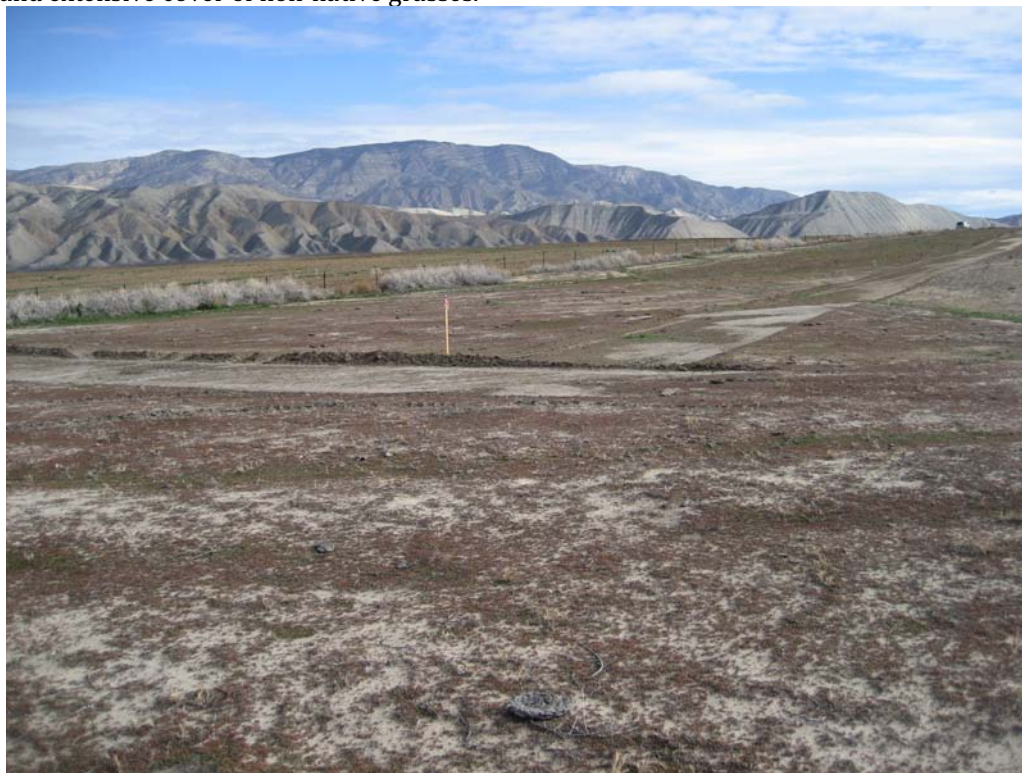


**Photo 4.** View of Reservoir #2 looking northeast in March 2019 showing fiddleneck and annual grasses. Note Operations yard in the distance and water tanks to the right.





**Photo 5.** Westerly view of Reservoir #2 in March 2019 showing a mix of fiddleneck, phacelia, scattered lupine, and extensive cover of non-native grasses.



**Photo 6.** Northeasterly view of Reservoir #3 during initial site preparation activities in 2016. At that time, the site consisted of non-native filaree and bare soils prior to disking. Russian thistle was also present and tumbleweeds can be seen along fenceline.





**Photo 7.** View of Reservoir #3 looking east on March 28, 2019 showing a mix of non-native annual grasses and fiddleneck along with a few patches of *Monolopia*.



**Photo 8.** Photo of southwestern corner of Reservoir #3 study area in March 2019 showing curly bluegrass (native bunchgrass) and *Monolopia* (yellow patch) located just south of construction footprint. Refer to Figure 3C for further detail as the reservoir would be constructed in the flatter area to the right of the yellow wildflower patch.

## **APPENDIX E**

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### **USFWS Protection Measures for SJKF**





**U.S. FISH AND WILDLIFE SERVICE  
STANDARDIZED RECOMMENDATIONS  
FOR PROTECTION OF THE ENDANGERED SAN JOAQUIN KIT FOX  
PRIOR TO OR DURING GROUND DISTURBANCE**

Prepared by the Sacramento Fish and Wildlife Office  
January 2011

## INTRODUCTION

The following document includes many of the San Joaquin kit fox (*Vulpes macrotis mutica*) protection measures typically recommended by the U. S. Fish and Wildlife Service (Service), prior to and during ground disturbance activities. **However, incorporating relevant sections of these guidelines into the proposed project is not the only action required under the Endangered Species Act of 1973, as amended (Act) and does not preclude the need for section 7 consultation or a section 10 incidental take permit for the proposed project.** Project applicants should contact the Service in Sacramento to determine the full range of requirements that apply to your project; the address and telephone number are given at the end of this document. Implementation of the measures presented in this document may be necessary to avoid violating the provisions of the Act, including the prohibition against "take" (defined as killing, harming, or harassing a listed species, including actions that damage or destroy its habitat). These protection measures may also be required under the terms of a biological opinion pursuant to section 7 of the Act resulting in incidental take authorization (authorization), or an incidental take permit (permit) pursuant to section 10 of the Act. The specific measures implemented to protect kit fox for any given project shall be determined by the Service based upon the applicant's consultation with the Service.

The purpose of this document is to make information on kit fox protection strategies readily available and to help standardize the methods and definitions currently employed to achieve kit fox protection. The measures outlined in this document are subject to modification or revision at the discretion of the Service.

## IS A PERMIT NECESSARY?

**Certain acts need a permit from the Service which includes destruction of any known (occupied or unoccupied) or natal/pupping kit fox dens.** Determination of the presence or absence of kit foxes and /or their dens should be made during the environmental review process.

All surveys and monitoring described in this document must be conducted by a qualified biologist and these activities do not require a permit. A qualified biologist (biologist) means any person who has completed at least four years of university training in wildlife biology or a related science and/or has demonstrated field experience in the identification and life history of the San Joaquin kit fox. In addition, the biologist(s) must be able to identify coyote, red fox,

gray fox, and kit fox tracks, and to have seen a kit fox in the wild, at a zoo, or as a museum mount. Resumes of biologists should be submitted to the Service for review and approval prior to any survey or monitoring work occurring.

### **SMALL PROJECTS**

Small projects are considered to be those projects with small foot prints, of approximately one acre or less, such as an individual in-fill oil well, communication tower, or bridge repairs. These projects must stand alone and not be part of, or in any way connected to larger projects (i.e., bridge repair or improvement to serve a future urban development). The Service recommends that on these small projects, the biologist survey the proposed project boundary and a 200-foot area outside of the project footprint to identify habitat features and utilize this information as guidance to situate the project to minimize or avoid impacts. If habitat features cannot be completely avoided, then surveys should be conducted and the Service should be contacted for technical assistance to determine the extent of possible take.

Preconstruction/preactivity surveys shall be conducted no less than 14 days and no more than 30 days prior to the beginning of ground disturbance and/or construction activities or any project activity likely to impact the San Joaquin kit fox. Kit foxes change dens four or five times during the summer months, and change natal dens one or two times per month (Morrell 1972). Surveys should identify kit fox habitat features on the project site and evaluate use by kit fox and, if possible, assess the potential impacts to the kit fox by the proposed activity. The status of all dens should be determined and mapped (see Survey Protocol). Written results of preconstruction/preactivity surveys must be received by the Service within five days after survey completion and prior to the start of ground disturbance and/or construction activities.

**If a natal/pupping den is discovered within the project area or within 200-feet of the project boundary, the Service shall be immediately notified and under no circumstances should the den be disturbed or destroyed without prior authorization. If the preconstruction/preactivity survey reveals an active natal pupping or new information, the project applicant should contact the Service immediately to obtain the necessary take authorization/permit.**

If the take authorization/permit has already been issued, then the biologist may proceed with den destruction within the project boundary, except natal/pupping den which may not be destroyed while occupied. A take authorization/permit is required to destroy these dens even after they are vacated. Protective exclusion zones can be placed around all known and potential dens which occur outside the project footprint (conversely, the project boundary can be demarcated, see den destruction section).

## OTHER PROJECTS

It is likely that all other projects occurring within kit fox habitat will require a take authorization/permit from the Service. This determination would be made by the Service during the early evaluation process (see Survey Protocol). These other projects would include, but are not limited to: Linear projects; projects with large footprints such as urban development; and projects which in themselves may be small but have far reaching impacts (i.e., water storage or conveyance facilities that promote urban growth or agriculture, etc.).

The take authorization/permit issued by the Service may incorporate some or all of the protection measures presented in this document. The take authorization/permit may include measures specific to the needs of the project and those requirements supersede any requirements found in this document.

## EXCLUSION ZONES

In order to avoid impacts, construction activities must avoid their dens. The configuration of exclusion zones around the kit fox dens should have a radius measured outward from the entrance or cluster of entrances due to the length of dens underground. The following distances are **minimums**, and if they cannot be followed the Service must be contacted. Adult and pup kit foxes are known to sometimes rest and play near the den entrance in the afternoon, but most above-ground activities begin near sunset and continue sporadically throughout the night. Den definitions are attached as Exhibit A.

Potential den**	50 feet
Atypical den**	50 feet
Known den*	100 feet
Natal/pupping den (occupied <u>and</u> unoccupied)	Service must be contacted

**\*Known den:** To ensure protection, the exclusion zone should be demarcated by fencing that encircles each den at the appropriate distance and does not prevent access to the den by kit foxes. Acceptable fencing includes untreated wood particle-board, silt fencing, orange construction fencing or other fencing as approved by the Service as long as it has openings for kit fox ingress/egress and keeps humans and equipment out. Exclusion zone fencing should be maintained until all construction related or operational disturbances have been terminated. At that time, all fencing shall be removed to avoid attracting subsequent attention to the dens.

**\*\*Potential and Atypical dens:** Placement of 4-5 flagged stakes 50 feet from the den entrance(s) will suffice to identify the den location; fencing will not be required, but the exclusion zone must be observed.

Only essential vehicle operation on existing roads and foot traffic should be permitted. Otherwise, all construction, vehicle operation, material storage, or any other type of surface-disturbing activity should be prohibited or greatly restricted within the exclusion zones.

## **DESTRUCTION OF DENS**

Limited destruction of kit fox dens may be allowed, if avoidance is not a reasonable alternative, provided the following procedures are observed. The value to kit foxes of potential, known, and natal/pupping dens differ and therefore, each den type needs a different level of protection.

**Destruction of any known or natal/pupping kit fox den requires take authorization/permit from the Service.**

Destruction of the den should be accomplished by careful excavation until it is certain that no kit foxes are inside. The den should be fully excavated, filled with dirt and compacted to ensure that kit foxes cannot reenter or use the den during the construction period. If at any point during excavation, a kit fox is discovered inside the den, the excavation activity shall cease immediately and monitoring of the den as described above should be resumed. Destruction of the den may be completed when in the judgment of the biologist, the animal has escaped, without further disturbance, from the partially destroyed den.

**Natal/pupping dens:** Natal or pupping dens which are occupied will not be destroyed until the pups and adults have vacated and then only after consultation with the Service. Therefore, project activities at some den sites may have to be postponed.

**Known Dens:** Known dens occurring within the footprint of the activity must be monitored for three days with tracking medium or an infra-red beam camera to determine the current use. If no kit fox activity is observed during this period, the den should be destroyed immediately to preclude subsequent use.

If kit fox activity is observed at the den during this period, the den should be monitored for at least five consecutive days from the time of the observation to allow any resident animal to move to another den during its normal activity. Use of the den can be discouraged during this period by partially plugging its entrances(s) with soil in such a manner that any resident animal can escape easily. Only when the den is determined to be unoccupied may the den be excavated under the direction of the biologist. If the animal is still present after five or more consecutive days of plugging and monitoring, the den may have to be excavated when, in the judgment of a biologist, it is temporarily vacant, for example during the animal's normal foraging activities.



**The Service encourages hand excavation, but realizes that soil conditions may necessitate the use of excavating equipment. However, extreme caution must be exercised.**

Potential Dens: If a take authorization/permit has been obtained from the Service, den destruction may proceed without monitoring, unless other restrictions were issued with the take authorization/permit. If no take authorization/permit has been issued, then potential dens should be monitored as if they were known dens. If any den was considered to be a potential den, but is later determined during monitoring or destruction to be currently, or previously used by kit fox (e.g., if kit fox sign is found inside), then all construction activities shall cease and the Service shall be notified immediately.

## **CONSTRUCTION AND ON-GOING OPERATIONAL REQUIREMENTS**

Habitat subject to permanent and temporary construction disturbances and other types of ongoing project-related disturbance activities should be minimized by adhering to the following activities. Project designs should limit or cluster permanent project features to the smallest area possible while still permitting achievement of project goals. To minimize temporary disturbances, all project-related vehicle traffic should be restricted to established roads, construction areas, and other designated areas. These areas should also be included in preconstruction surveys and, to the extent possible, should be established in locations disturbed by previous activities to prevent further impacts.

1. Project-related vehicles should observe a daytime speed limit of 20-mph throughout the site in all project areas, except on county roads and State and Federal highways; this is particularly important at night when kit foxes are most active. Night-time construction should be minimized to the extent possible. However if it does occur, then the speed limit should be reduced to 10-mph. Off-road traffic outside of designated project areas should be prohibited.
2. To prevent inadvertent entrapment of kit foxes or other animals during the construction phase of a project, all excavated, steep-walled holes or trenches more than 2-feet deep should be covered at the close of each working day by plywood or similar materials. If the trenches cannot be closed, one or more escape ramps constructed of earthen-fill or wooden planks shall be installed. Before such holes or trenches are filled, they should be thoroughly inspected for trapped animals. If at any time a trapped or injured kit fox is discovered, the Service and the California Department of Fish and Game (CDFG) shall be contacted as noted under measure 13 referenced below.
3. Kit foxes are attracted to den-like structures such as pipes and may enter stored pipes and become trapped or injured. All construction pipes, culverts, or similar structures with a diameter of 4-inches or greater that are stored at a construction site for one or more overnight periods should be thoroughly inspected for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a kit fox is

discovered inside a pipe, that section of pipe should not be moved until the Service has been consulted. If necessary, and under the direct supervision of the biologist, the pipe may be moved only once to remove it from the path of construction activity, until the fox has escaped.

4. All food-related trash items such as wrappers, cans, bottles, and food scraps should be disposed of in securely closed containers and removed at least once a week from a construction or project site.
5. No firearms shall be allowed on the project site.
6. No pets, such as dogs or cats, should be permitted on the project site to prevent harassment, mortality of kit foxes, or destruction of dens.
7. Use of rodenticides and herbicides in project areas should be restricted. This is necessary to prevent primary or secondary poisoning of kit foxes and the depletion of prey populations on which they depend. All uses of such compounds should observe label and other restrictions mandated by the U.S. Environmental Protection Agency, California Department of Food and Agriculture, and other State and Federal legislation, as well as additional project-related restrictions deemed necessary by the Service. If rodent control must be conducted, zinc phosphide should be used because of a proven lower risk to kit fox.
8. A representative shall be appointed by the project proponent who will be the contact source for any employee or contractor who might inadvertently kill or injure a kit fox or who finds a dead, injured or entrapped kit fox. The representative will be identified during the employee education program and their name and telephone number shall be provided to the Service.
9. An employee education program should be conducted for any project that has anticipated impacts to kit fox or other endangered species. The program should consist of a brief presentation by persons knowledgeable in kit fox biology and legislative protection to explain endangered species concerns to contractors, their employees, and military and/or agency personnel involved in the project. The program should include the following: A description of the San Joaquin kit fox and its habitat needs; a report of the occurrence of kit fox in the project area; an explanation of the status of the species and its protection under the Endangered Species Act; and a list of measures being taken to reduce impacts to the species during project construction and implementation. A fact sheet conveying this information should be prepared for distribution to the previously referenced people and anyone else who may enter the project site.
10. Upon completion of the project, all areas subject to temporary ground disturbances, including storage and staging areas, temporary roads, pipeline corridors, etc. should be

re-contoured if necessary, and revegetated to promote restoration of the area to pre-project conditions. An area subject to "temporary" disturbance means any area that is disturbed during the project, but after project completion will not be subject to further disturbance and has the potential to be revegetated. Appropriate methods and plant species used to revegetate such areas should be determined on a site-specific basis in consultation with the Service, California Department of Fish and Game (CDFG), and revegetation experts.

11. In the case of trapped animals, escape ramps or structures should be installed immediately to allow the animal(s) to escape, or the Service should be contacted for guidance.
12. Any contractor, employee, or military or agency personnel who are responsible for inadvertently killing or injuring a San Joaquin kit fox shall immediately report the incident to their representative. This representative shall contact the CDFG immediately in the case of a dead, injured or entrapped kit fox. The CDFG contact for immediate assistance is State Dispatch at (916)445-0045. They will contact the local warden or Mr. Paul Hoffman, the wildlife biologist, at (530)934-9309. The Service should be contacted at the numbers below.
13. The Sacramento Fish and Wildlife Office and CDFG shall be notified in writing within three working days of the accidental death or injury to a San Joaquin kit fox during project related activities. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal and any other pertinent information. The Service contact is the Chief of the Division of Endangered Species, at the addresses and telephone numbers below. The CDFG contact is Mr. Paul Hoffman at 1701 Nimbus Road, Suite A, Rancho Cordova, California 95670, (530) 934-9309.
14. New sightings of kit fox shall be reported to the California Natural Diversity Database (CNDDDB). A copy of the reporting form and a topographic map clearly marked with the location of where the kit fox was observed should also be provided to the Service at the address below.

Any project-related information required by the Service or questions concerning the above conditions or their implementation may be directed in writing to the U.S. Fish and Wildlife Service at:

Endangered Species Division  
2800 Cottage Way, Suite W2605  
Sacramento, California 95825-1846  
(916) 414-6620 or (916) 414-6600

**EXHIBIT “A” - DEFINITIONS**

"Take" - Section 9 of the Endangered Species Act of 1973, as amended (Act) prohibits the "take" of any federally listed endangered species by any person (an individual, corporation, partnership, trust, association, etc.) subject to the jurisdiction of the United States. As defined in the Act, take means " . . . to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct". Thus, not only is a listed animal protected from activities such as hunting, but also from actions that damage or destroy its habitat.

"Dens" - San Joaquin kit fox dens may be located in areas of low, moderate, or steep topography. Den characteristics are listed below, however, the specific characteristics of individual dens may vary and occupied dens may lack some or all of these features. Therefore, caution must be exercised in determining the status of any den. Typical dens may include the following: (1) one or more entrances that are approximately 5 to 8 inches in diameter; (2) dirt berms adjacent to the entrances; (3) kit fox tracks, scat, or prey remains in the vicinity of the den; (4) matted vegetation adjacent to the den entrances; and (5) manmade features such as culverts, pipes, and canal banks.

"Known den" - Any existing natural den or manmade structure that is used or has been used at any time in the past by a San Joaquin kit fox. Evidence of use may include historical records, past or current radiotelemetry or spotlighting data, kit fox sign such as tracks, scat, and/or prey remains, or other reasonable proof that a given den is being or has been used by a kit fox. The Service discourages use of the terms "active" and "inactive" when referring to any kit fox den because a great percentage of occupied dens show no evidence of use, and because kit foxes change dens often, with the result that the status of a given den may change frequently and abruptly.

"Potential Den" - Any subterranean hole within the species' range that has entrances of appropriate dimensions for which available evidence is insufficient to conclude that it is being used or has been used by a kit fox. Potential dens shall include the following: (1) any suitable subterranean hole; or (2) any den or burrow of another species (e.g., coyote, badger, red fox, or ground squirrel) that otherwise has appropriate characteristics for kit fox use.

"Natal or Pupping Den" - Any den used by kit foxes to whelp and/or rear their pups. Natal/pupping dens may be larger with more numerous entrances than dens occupied exclusively by adults. These dens typically have more kit fox tracks, scat, and prey remains in the vicinity of the den, and may have a broader apron of matted dirt and/or vegetation at one or more entrances. A natal den, defined as a den in which kit fox pups are actually whelped but not necessarily reared, is a more restrictive version of the pupping den. In practice, however, it is difficult to distinguish between the two, therefore, for purposes of this definition either term applies.



"Atypical Den" - Any manmade structure which has been or is being occupied by a San Joaquin kit fox. Atypical dens may include pipes, culverts, and diggings beneath concrete slabs and buildings.

## **APPENDIX F**

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### **Site Plans**





- All grading shall conform to Santa Barbara County Code Chapter 14 and standards and requirements pertaining thereto, these construction drawings and the recommendations of the soils engineer and engineering geologist.
- Contractor to notify the county grading inspector and soils laboratory at least 48 hours before start of grad work or any pre-construction meeting.
- Contractor shall employ all labor, equipment and methods required to prevent his operations from producing dust in amounts damaging to adjacent property, cultivated vegetation and domestic animals or causing a nuisance to persons occupying buildings in the vicinity of the job site. Contractor shall be responsible for damage caused by dust from his grading operation.
- Before beginning work requiring exporting or importing of materials, the contractor shall obtain approval from Public Works Road Division for haul routes used and methods provided to minimize the deposit of soils on county roads. Grading/road inspectors shall monitor this requirement with the contractor.
- The Geotechnical Engineer shall provide observation and testing during grading operations in the field and shall submit a final report stating that all earth work was properly completed and is in substantial conformance with the requirements of the grading ordinance.
- Areas to be graded shall be cleared of all vegetation including roots and other unsuitable materials for a structural fill, then scarified to a depth of 6" prior to placing any fill. Call grading inspector for initial inspection.
- A thorough search shall be made for all abandoned man-made facilities such as septic tank systems, fuel or water storage tanks, and pipelines or conduits. Any such facilities encountered shall be removed and the depression properly filled and compacted under observation of the geotechnical engineer.
- Areas with existing slopes which are to receive fill materials shall be keyed and benched. The design and installation of the roadway shall be per the geotechnical engineer's recommendation or per County Standard Detail No. G-13.
- Fill materials shall be spread in lifts not exceeding 6" in compacted thickness, moistened or dried as necessary to near optimum moisture content and compacted by an approved method. Fill materials shall be compacted to a minimum of 90% maximum density as determined by 1957 ASTM D-1557-01 modified proctor (ASHO) test or similar approved methods. Some fill areas may require compaction to a greater density if called for in the construction documents. Soil tests shall be conducted at not less than one test for each 18" of fill and/or for each 500 cubic yards of fill placed.
- Cut slopes shall not exceed a grade of 1 1/2 horizontal to 1 vertical. Fill and combination fill and cut slopes shall not exceed 2 horizontal to 1 vertical. Slopes over three feet in vertical height shall be planted with approved perennial or treated with equally approved erosion control measures prior to final inspection.
- Surface drainage shall be provided a minimum of 2% for 5 feet away from the foundation line of any structure.
- All trees that are to remain on site shall be temporarily fenced and protected around the drip line during grading.
- An erosion and sediment control plan shall be required as part of the grading plan and permit requirements.
- "Best Management Practices for Construction Activities: Eroded sediments and other pollutants must be retained onsite and must not be transported from the site via sheet flow swales, area drains, natural drainage courses, or wind. Stockpiles of earth and other construction related materials must be protected from being transported from the site by forces of wind or water. Fuels, oils, solvents, and other toxic materials must be stored in accordance with their listing and are not to contaminate the soil and surface waters. All approved storage containers are to be protected from the weather. Spills may not be washed into the drainage system. Excess or waste concrete may not be washed into public way or any other drainage system. Provisions must be made to retain concrete wastes on site until they can be disposed as solid waste. Trash and construction related solid waste must be deposited into a covered waste receptacle to prevent contamination of rainwater and dispersal by wind. Sediments and other material may not be tracked from the site by vehicular traffic. The construction entrance roadways must be stabilized so as to inhibit sediments from being deposited into the public way. Accidental deposition must be swept up immediately and may not be washed down by rain or other means. Any slopes with disturbed soils or denuded of vegetation must be stabilized so as to minimize erosion by wind and water."
- If grading occurs during Nov 1 through Apr 15, no grading shall occur unless approved erosion and sediment control measures are in place. Discharges of sediment from the project site may result in a Stop Work Order.
- All earthwork on hillsides, sloping or mountainous terrain shall be stabilized to protect and prevent loss of soils, as necessary, year-round.

Earthwork Estimates

Cut: 132,833 C.Y.    Fill: 127,047 C.Y.    Import: 0 C.Y.    Export: 0 C.Y.    Quantities based on 30% shrinkage

Erosion Control Notes

- Erosion control measures shall be implemented on all projects and shall include source control, including protection of stockpiles, protection of slopes, protection of all disturbed areas, and protection of accesses. In addition, perimeter containment measures shall be placed prior to the commencement of grading and site disturbance activities unless the Public Works Department determines measures to be unnecessary based upon location, site characteristics or time of year. The intent of erosion control measures shall be to keep all sediment from entering a swale, drainage way, watercourse or onto adjacent properties.
- Site inspections and appropriate maintenance of erosion control devices shall be conducted and documented prior to, during, and after rain events.
- The developer shall be responsible for the placement and maintenance of all erosion control devices as specified by the approved plan until such time that the project is accepted as complete by the Public Works Department. Erosion control devices may be relocated, deleted or added as needed depending on the actual soil conditions encountered. Additional erosion control devices shall be placed at the discretion of the Engineer of Work, County Inspector, SWPPP Monitor, or RWQCB Inspector. Guidelines for determining appropriate erosion control devices are included in the appendix of the Public Improvement Standards.
- All erosion control devices shall be the first order of work and shall be in place between Oct 15 and April 15 or anytime when the rain probability exceeds 30%. This work shall be installed or applied after each area is graded and no later than five (5) working days after the completion of each area.
- The Engineer of Work and the Public Works Department shall be notified before October 15 for inspection of installed erosion control devices.
- A standby crew for emergency work shall be available at all times during the rainy season (October 15 through April 15). Necessary materials shall be available and stock piled at convenient locations to facilitate rapid construction or maintenance of temporary devices when rain is imminent.
- Permanent erosion control shall be placed and established with 90% coverage on all disturbed surfaces other than paved or gravel surfaces, prior to final inspection. Permanent erosion control shall be fully established prior to final acceptance. Temporary erosion control measures shall remain in place until permanent measures are established.
- In the event of a failure, the developer and/or his representative shall be responsible for cleanup and all associated costs or damages.
- All projects involving site disturbance of one acre or greater shall comply with the requirements of the National Pollutant Discharge Elimination System (NPDES). The developer shall submit a Notice of Intent (NOI) to comply with the General Permit for Construction Activity with the Regional Water Quality Control Board (RWQCB). The developer shall provide the County with the Waste Discharge Identification Number (WDID #) or with verification that an exemption has been granted by RWQCB.

WDID# \_\_\_\_\_

- Person to contact 24 hours a day in the event there is an erosion control/sedimentation problem (Storm Water Compliance Officer):

Name   Kevin Merrill  
Local Phone Number   310-3989

Project Air Quality Control Notes:

During Construction the contractor shall designate a person or persons to monitor the Dust Control Program and to order increases measures as necessary to prevent the transport of dust off-site. Their duties shall include holiday and weekend periods when work may or may not be in progress. The name and telephone number for such persons shall be provided to the APCD prior to the commencement of construction. The measures for dust control are as follows but not limited to:

Reduce the amount of disturbed area where possible.

- Use of water trucks or sprinkler systems in sufficient quantities to prevent airborne dust from leaving the site. Increased watering frequency would be required whenever wind speeds exceed 15mph. Reclaimed (non-potable) water should be used whenever possible.
- All dirt stockpile areas shall be sprayed daily as needed.
- Exposed ground areas that are planned to be reworked at dates later than one month after initial grading should be seeded with a fast germinating native grass seed and watered until vegetation is established.
- All disturbed soil areas not subject to revegetation should be stabilized using approved chemical soil binders, jute netting, or other methods approved in advance by the APCD.
- All external slopes shall be hydroseeded as soon as possible upon completion.
- Vehicle speed for all construction vehicles shall not exceed 15 mph on any unpaved surface at the construction site.
- All trucks hauling dirt, sand, soil, or other loose material are to be covered or should maintain at least two feet of freeboard (minimum vertical distance between top of load and top of trailer) in accordance with CVC Section 23114.
- Install wheel washers where vehicles enter and exit paved roads and streets, or wash off trucks and equipment leaving the site.
- Prior to final inspection all disturbed areas shall be vegetated with a fast-growing, native seed mix.

General Notes

- No construction shall be started without plans approved by the County Planning Department. The Planning Department shall be notified at least 24 hours prior to the start of construction and the time and location for the preconstruction conference.
- All construction work and installations shall conform to the County Standards and Specifications.
- Soils tests shall be done in accordance with the County Standards. The test results shall clearly indicate the location and source of materials.
- Compaction tests shall be made on all embankment materials, subgrades and ditch backfill.
- There will be no need for special concrete inspection. Concrete for the anchor pad shall be 2000 psi. The rebar shall be inspected prior to the placement of the concrete. All concrete and the two sack slurry for the anti-seep collars and ditch backfill where shown shall be properly vibrated.
- The Design Engineer shall inspect the installation of the HDPE Liner. The liner shall be installed by a contractor specializing in lining ponds.
- The Engineer of Record shall certify that the improvements when completed are in accordance to the plans prior to the request for Final Inspection. As-built plans are to be prepared after construction is completed. The Engineer certifying the improvements shall be present at the Final Inspection.
- Final Reports for grading and earthwork shall be prepared in accordance with the requirements of the UBC, Chapter 33.
- Upon completion of the work, the Geotechnical Engineer shall submit to the Engineer of Record a complete summary of all testing done during the project.
- The Construction Contractor shall maintain a current, complete and accurate record of all changes which deviate from the approved plans. No changes shall be made without the prior approval of the Engineer of Record and the County.

# North Fork Reservoirs/Frost Ponds #1-3

## APN 147-020-045

### Vicinity Map



Best Management Practices for Construction Activities

Eroded sediments and other pollutants must be retained onsite and may not be transported from the site via sheet flow, swales, area drains, natural drainage courses, or wind. Stockpiles of earth and other construction related materials must be protected from being transported from the site by the forces of wind or water. Fuels, oils, solvents, and other toxic materials must be stored in accordance with their listing and are not to contaminate the soil and surface waters. All approved storage containers are to be protected from the weather. Spills may not be washed into the drainage system. Excess or waste concrete may not be washed into public way or any other drainage system. Provisions must be made to retain concrete wastes on site until they can be disposed as a solid waste. Trash and construction related solid waste must be deposited into a covered waste receptacle to prevent contamination of rainwater and dispersal by wind. Sediments and other material may not be tracked from the site by vehicle traffic. The construction entrance roadways must be stabilized so as to inhibit sediments from being deposited into the public way. Accidental deposition must be swept up immediately and may not be washed down by rain or other means. Any slopes with disturbed soils or denuded of vegetation must be stabilized so as to minimize erosion by wind and water.

GSi Soils, Inc shall perform all special inspections for the earthwork for this project.

GSi Geotechnical Investigation dated January 4, 2016 Project 15-7274 shall be a part of these documents.

Call 48 hours prior to inspection to set up an appointment.

Table 1705.6  
Required Verification and Inspection of Soils

Verification and Inspection Task	Continuos During Task Listed	Periodically During Task Listed
1. Verify materials below embankments are adequate to achieve the design capacity	_____	X
2. Verify excavations are extended to proper depth and have reached proper material.	_____	X
3. Perform classification and testing of controlled filled materials.	_____	X
4. Verify use of proper materials, densities and lift thicknesses during placement and compaction of controlled fill.	X	_____
5. Prior to placement of controlled fill, observe subgrade	_____	X

## Scope of Work

The work consists of constructing three new lined reservoirs/frost ponds for frost control purposes. All areas to receive fill shall be excavated a minimum of three feet, the exposed surface scarified and moisture conditioned, then recompacted to 90% relative compaction. The intent is to balance the earthwork with no import or export. The completed interior slopes shall be fine graded and all rocks removed, then rolled with a smooth drum roller. A 40 mil HDPE geomembrane liner will then be installed on the slopes and bottom. The liner will be installed per manufacturer's recommendations by a company specializing in liner installation. A five foot by twenty three foot by eight inch reinforced concrete pad for anchoring the liner shall be constructed around the pump inlet pipes. No special inspection for the concrete work shall be required. A 6 foot non-climb fence will be built around the exterior perimeter. Coast Guard Approved buoys with a minimum of 90 feet of line shall be placed at no more than 200 foot intervals around the top interior slope of the reservoirs. The sources of water are pvc waterlines from existing wells and no surface water shall enter the reservoir. Valving, filters and pumps will be installed after the reservoirs are constructed by the Irrigation Contractor and are not part of this permit. This contract is for stubbing inlet pipes through the exterior slope for future connection to the fill and transfer lines by an Irrigation Contractor. These pipes shall have 2 sack concrete slurry anti-seep collars. A 15" PVC Drop Pipe Outlet Structure will serve as an emergency overflow in the event the high water limit switch fails and is sized to prevent the reservoir from overtopping. Access to the reservoir is by existing dirt farm roads. No driveways will be constructed. The existing farm fields sheet flow gently across the locations and earthen swales will be constructed around the perimeters where necessary to keep any surface flow away from the toe of the fill slopes. No electrical work is included in this permit.

## Benchmark and Basis of Bearing

Benchmark is a 2 1/2" aluminum disc, stamped h-2,  
Cal-Trans Monument sb166 pm-55.01  
elevation = 1824.55 NAVD88

Basis of Bearing is GPS established true north from NAD  
83(92) from Cal-Trans Monuments  
sb166 pm-55.01 and sb166 pm-55.43

## Project Information

Address: 7400 Hwy 166, Cuyama Valley

APN 147-020-045

Zoning AG

Project Description: Construct three 49 ac-ft Reservoirs/Frost Ponds for irrigation and frost protection purposes

### Pre-Construction Meeting

Prior to construction a pre-construction meeting is required with the inspector to go over the special inspection reporting requirements, final and progress reports, & erosion control. E-mail inspection-North@countyofsb.org

### Contacts:

#### Owner:

Grapevine Land Management

Matt Turrentine  
444 Higuera St Suite 202  
San Luis Obispo, CA 93401  
805 312-1828

#### Engineer:

Tom A Howell

1812 N Vine  
Santa Maria, CA 93454  
805 925-5311

#### Geotechnical Engineer: GSI Soils, Inc

Rick Amero  
524 East Chapel  
Santa Maria, CA 93454  
805 349-0140

## Sheet Index

Sheet 1: Front sheet, notes and title

Sheet 2: Overall Layout & Existing Contours

Sheet 3: Overall Site Piping Layout

Sheet 4: Reservoir/Frost Pond #1 Grading Plan

Sheet 5: Reservoir/Frost Pond #1 Details

Sheet 6: Reservoir/Frost Pond #2 Grading Plan

Sheet 7: Reservoir/Frost Pond #2 Details

Sheet 8: Reservoir/Frost Pond #3 Grading Plan

Sheet 9: Reservoir/Frost Pond #3 Details

Sheet 10: Common Details

Sheet 11: Erosion and Sedimentation Control Plan

Sheet 12: BMP Details

The undersigned civil engineer will provide supervision of the civil improvements, including grading and drainage, certifies that this work will be completed in accordance with the Santa Barbara County Grading Ordinance #4477.



### Engineer's Certificate

I, Tom A Howell, RCE 27037, Engineer of Record, hereby certify that these plans are in accordance with the following codes: \_\_\_\_\_ Date: \_\_\_\_\_

2013 California Bldg Code (0112 IBC), Appdx Chp 33, 1997 UBC

2013 California Electric Code (2011 NEC)

2013 California Mechanical Code (2012 IAMPO UMC)

2013 California Plumbing Code (2012 IAMPO UPC)

California Title 24: 2011 California Energy Code and Accesibility Standards

County Ordinance(s) Title 19 (Building), (Inland)

### Geotechnical Engineer's Certificate

I have reviewed the plans and specifications and have found them to be in

substantial conformance with the recommendations as found in my Soil Investigation.

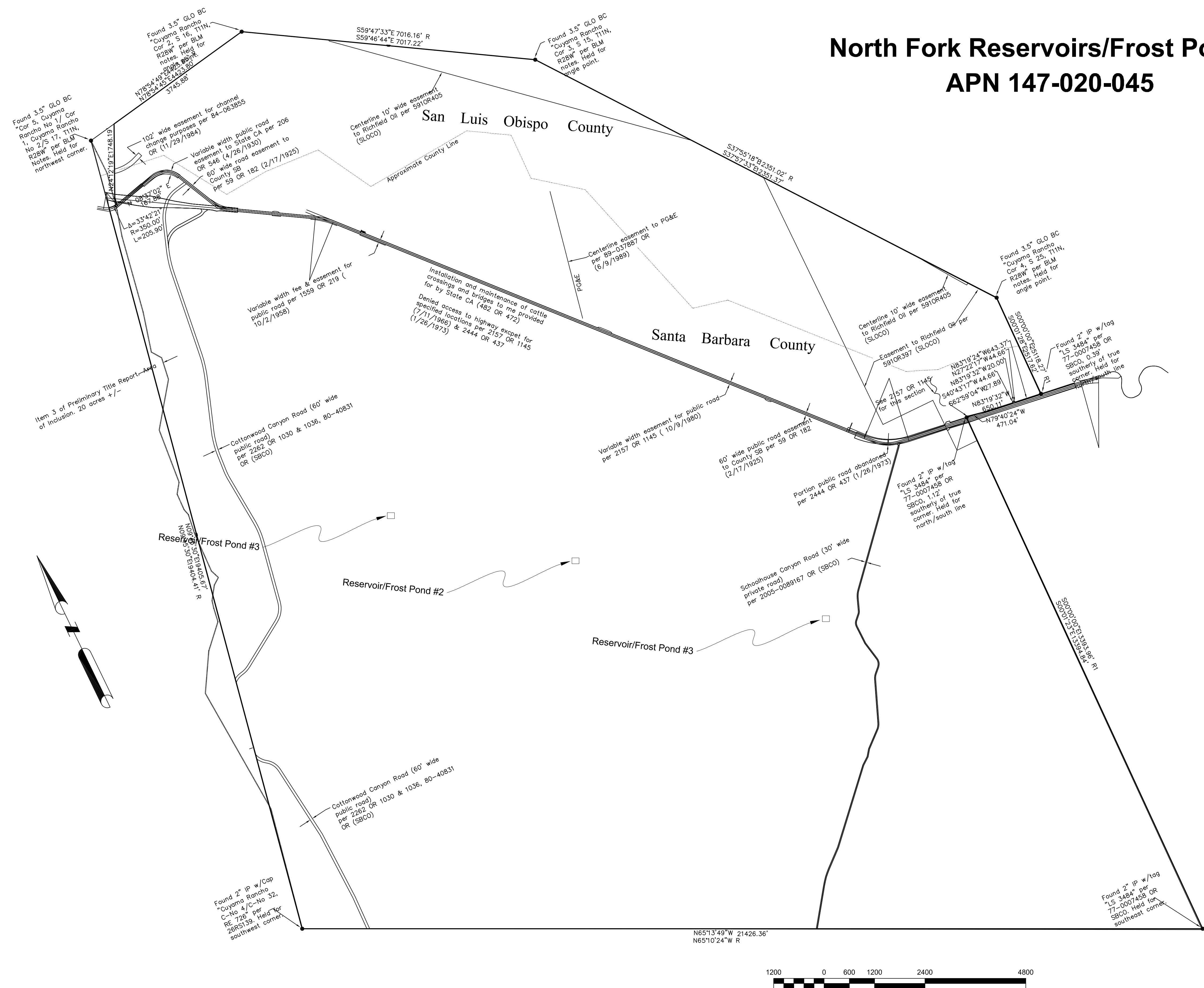
Date: \_\_\_\_\_

North Fork Vineyards

DRAWN TH	DATE 6/13/17	49 Ac-ft Frost Ponds Hwy 166 Cuyama, CA Cover Sheet
APPROVED	DATE	
SCALE Varies	SHEET 1 of 12	PROJECT NO. 101715-6233



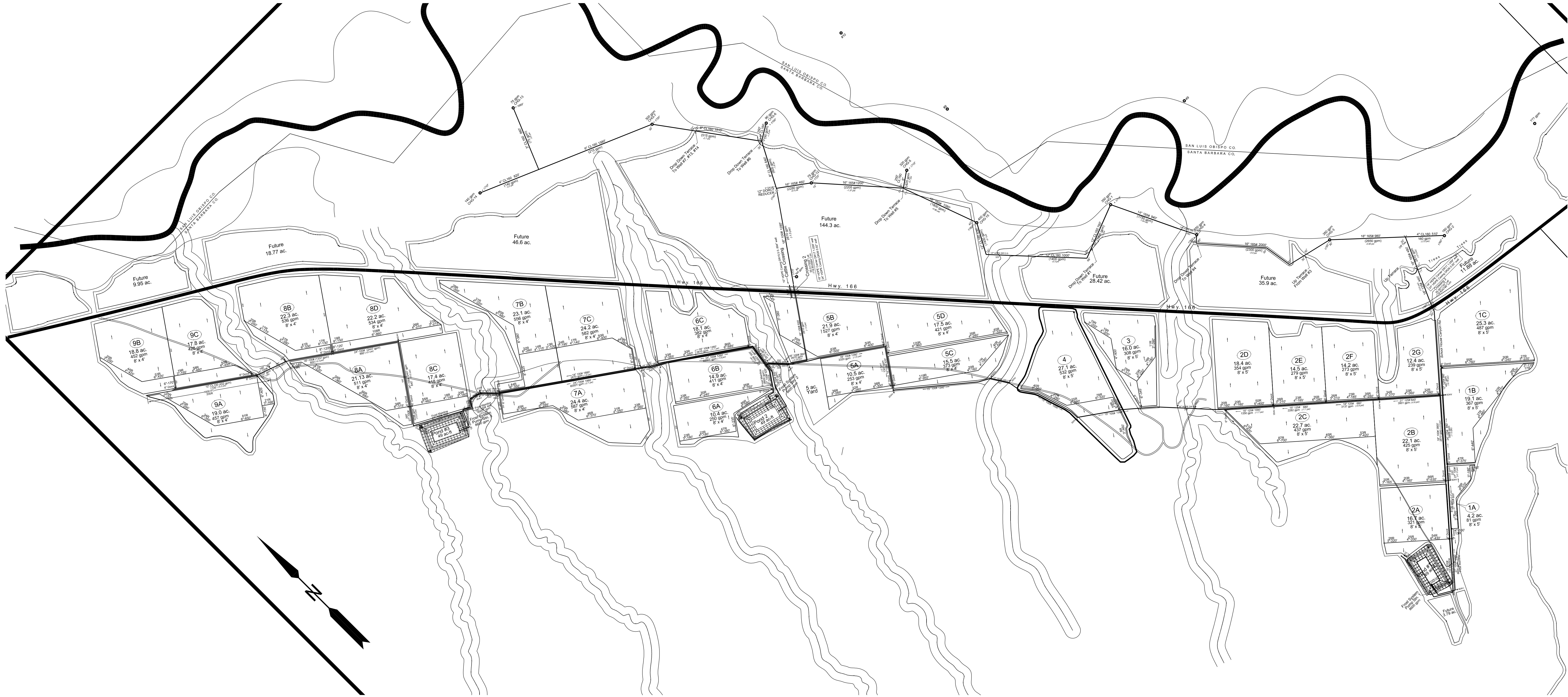
North Fork Reservoirs/Frost Ponds #1-3  
APN 147-020-045



North Fork Vineyards		
DRAWN TH	DATE 6/13/17	49 Ac-ft Frost Ponds Hwy 166
APPROVED	DATE	Cuyama, CA Overall Property
SCALE 1"=1200'	SHEET 2 of 12	PROJECT NO. 101715-6233



North Fork Vineyard Frost Protection Overall Site Plan



North Fork Vineyards		
DRAWN	DATE	Frost Ponds #1-3
TH	6/13/17	Overall Piping Plan
APPROVED	DATE	Existing Piping
SCALE	SHEET	PROJECT NO.
1"=600'	3 of 12	101715-6233



Reservoir/Frost Pond # 1 Grading Plan

Pond #1 Report

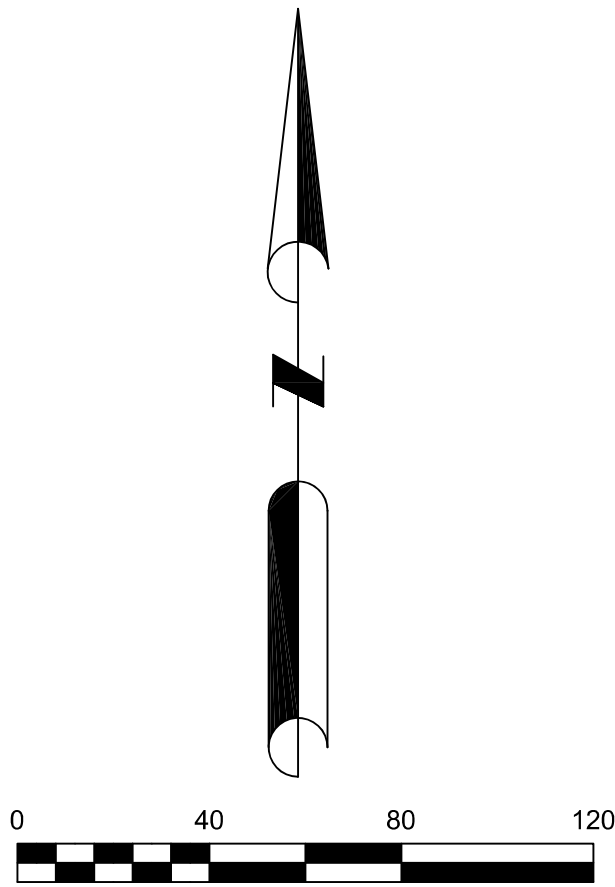
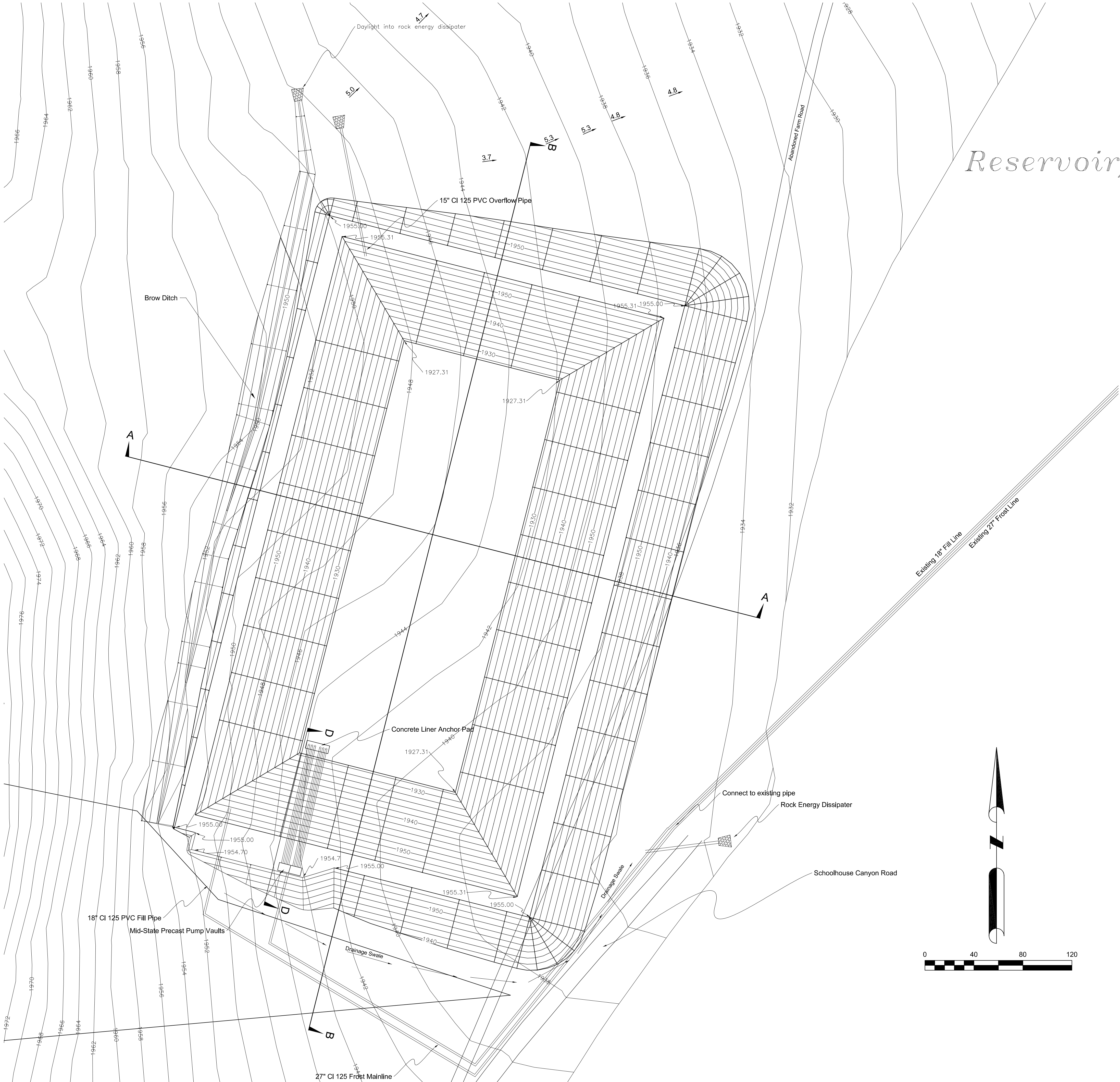
Top of dam elevation: 1955.3  
Bottom of pond elevation: 1927.3  
Top of dam width: 14.0  
Cut Slope: 2.00:1  
Fill Slope: 2.50:1  
Interior Slope: 2.50:1

Pond Earthwork Volumes

Fill Factor: 1.30  
Total cut : 44,062 C.Y.  
Total fill: 44,589 C.Y.  
Total Disturbed Area: 4.85 Acres

Pond Storage Volumes

Water Elev	Storage(AcreFt)	Area(Acre)
1927.31	0.00	1.046
1929.31	2.20	1.158
1931.31	4.63	1.274
1933.31	7.30	1.395
1935.31	10.21	1.520
1937.31	13.38	1.650
1939.31	16.81	1.784
1941.31	20.52	1.923
1943.31	24.51	2.066
1945.31	28.79	2.214
1947.31	33.37	2.366
1949.31	38.26	2.523
1951.31	43.46	2.684
1953.31	49.00	2.850
1955.31	54.87	3.020



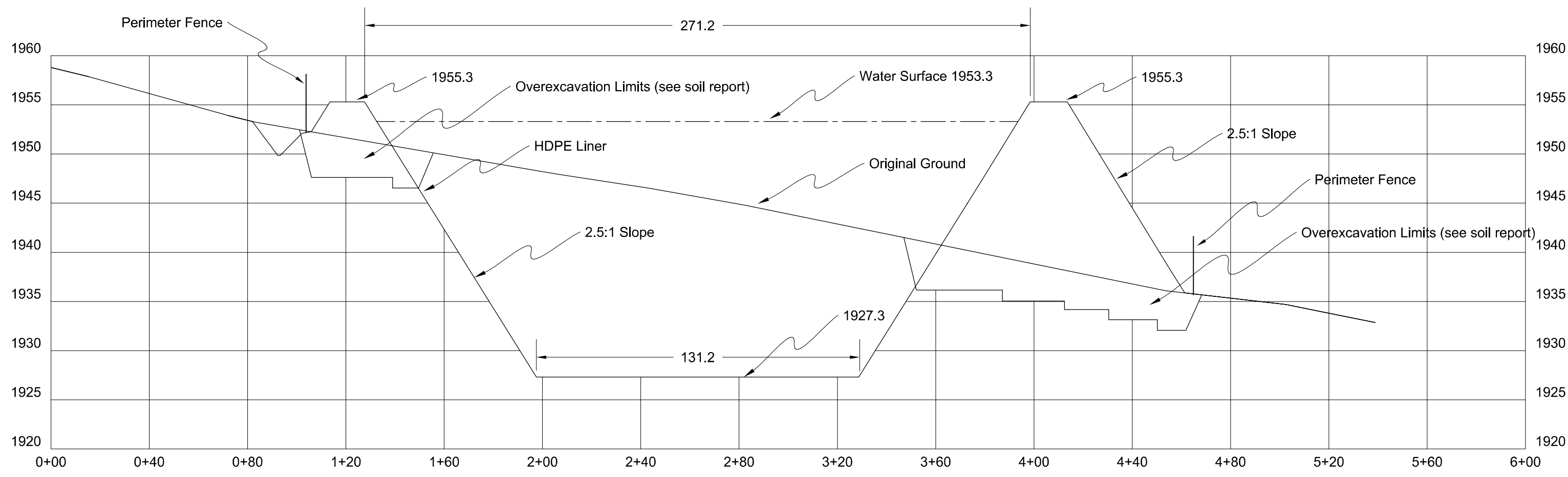
North Fork Vineyards

DRAWN <i>TH</i>	DATE 6/13/17	<i>Frost Pond #1 Grading Plan</i>
APPROVED	DATE	
SCALE 1"=40'	SHEET 4 of 12	PROJECT NO. 101715-6233

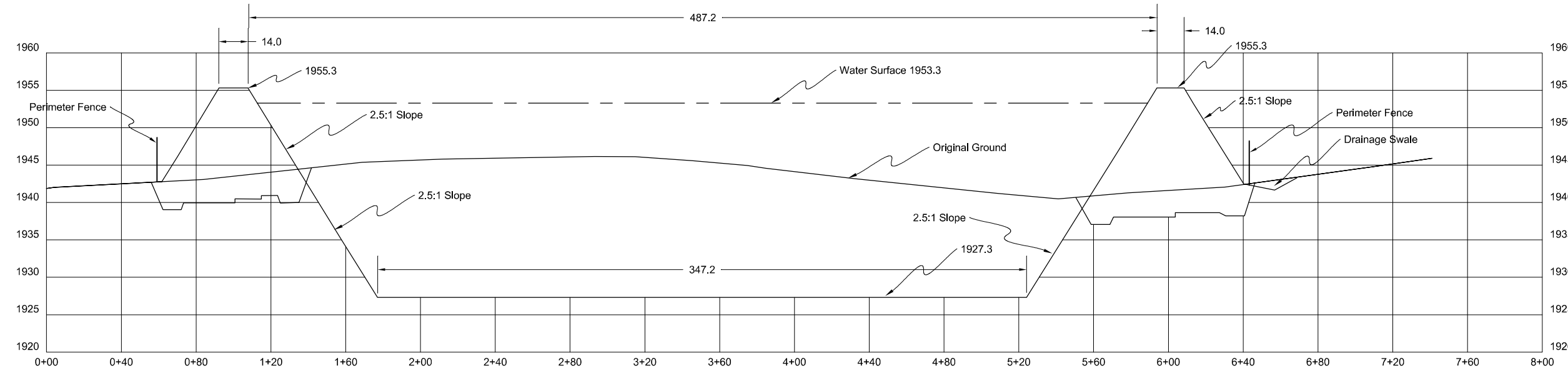


Reservoir/Frost Pond #1 Details

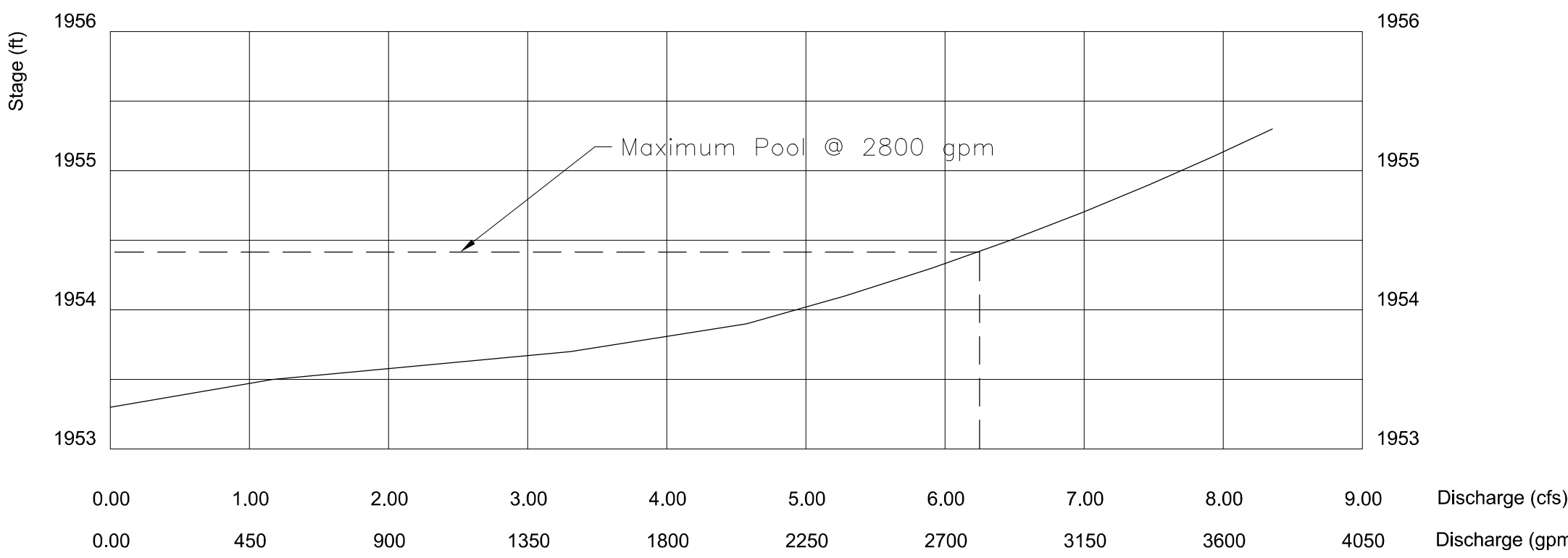
Reservoir/Frost Pond #1 Section A-A



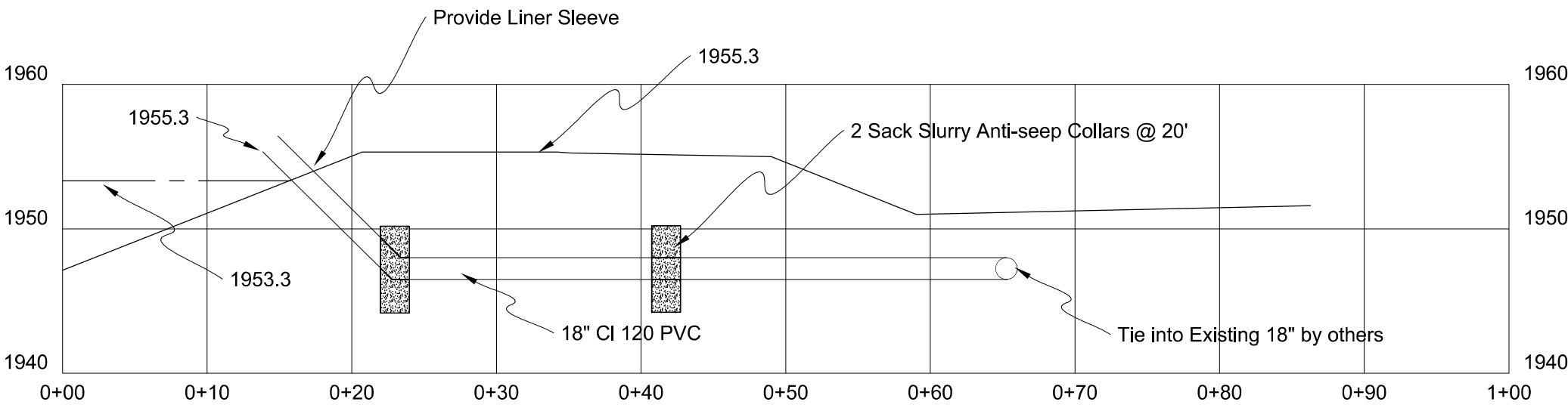
Reservoir/Frost Pond #1 Section B-B



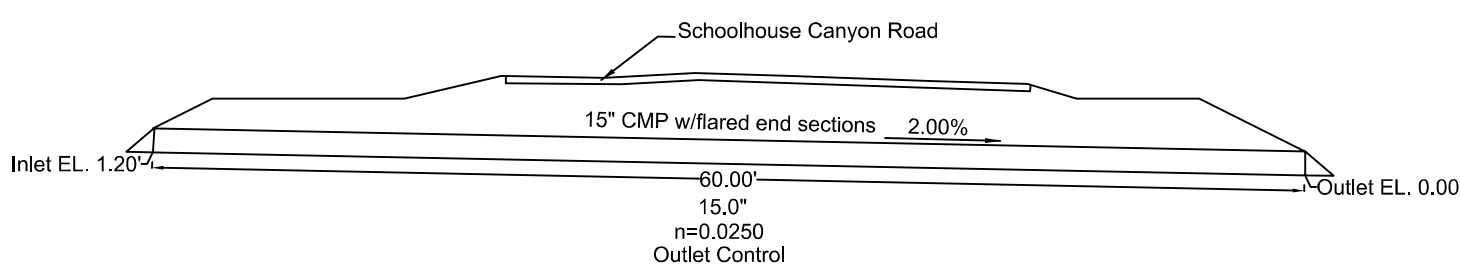
Pond #1 Stage-Storage



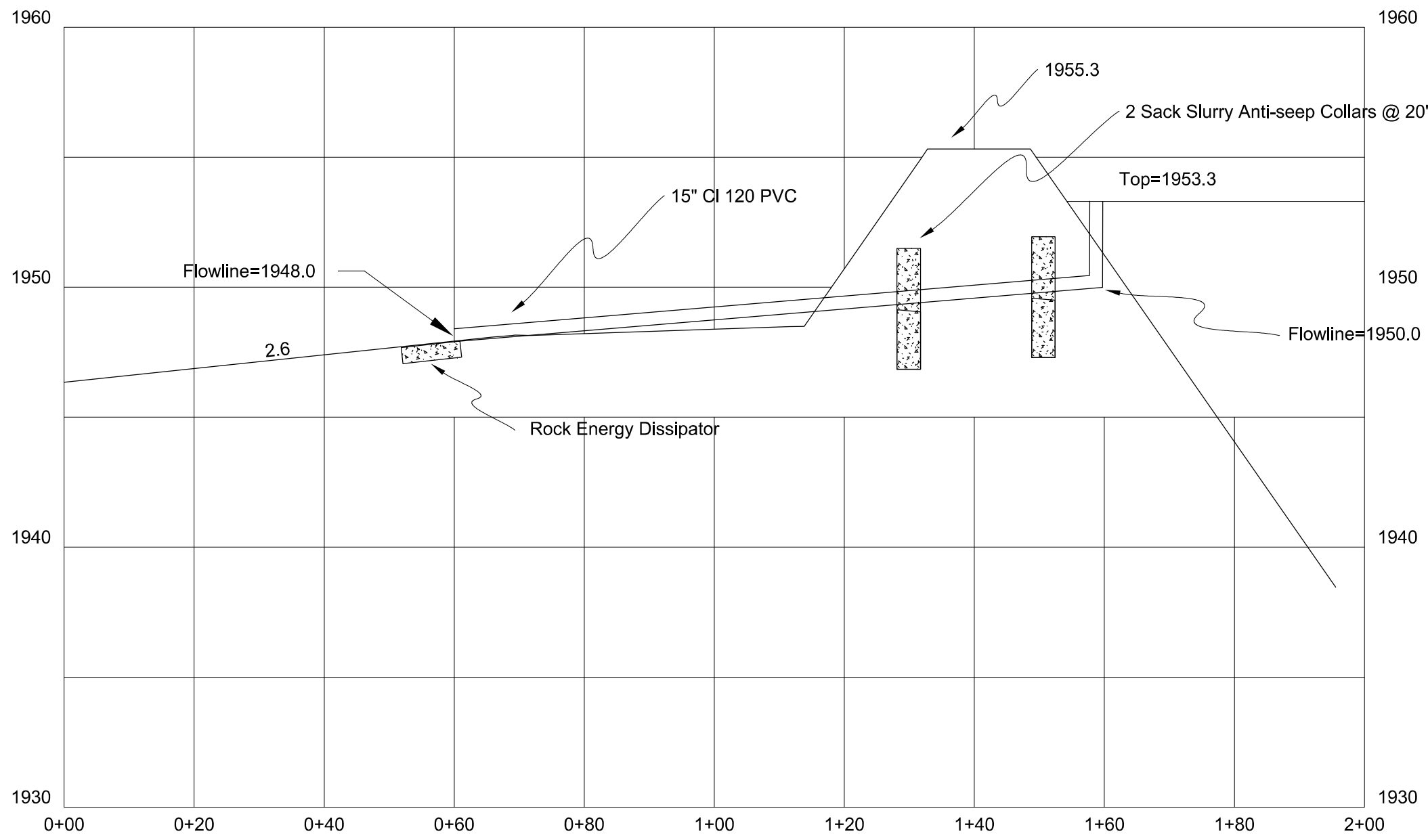
Reservoir/Frost Pond #1 Filler Pipe



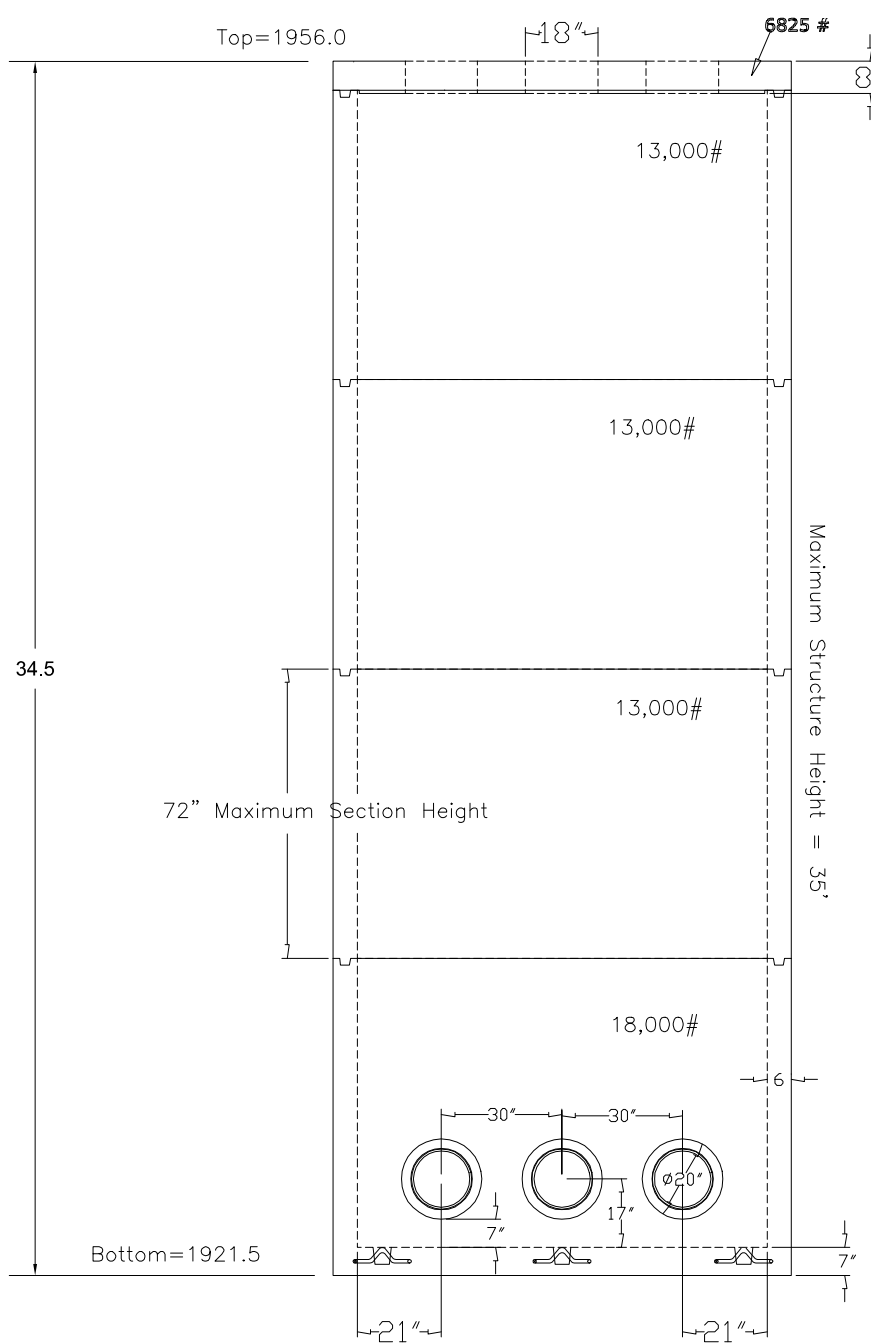
15" CMP Under Schoolhouse Road



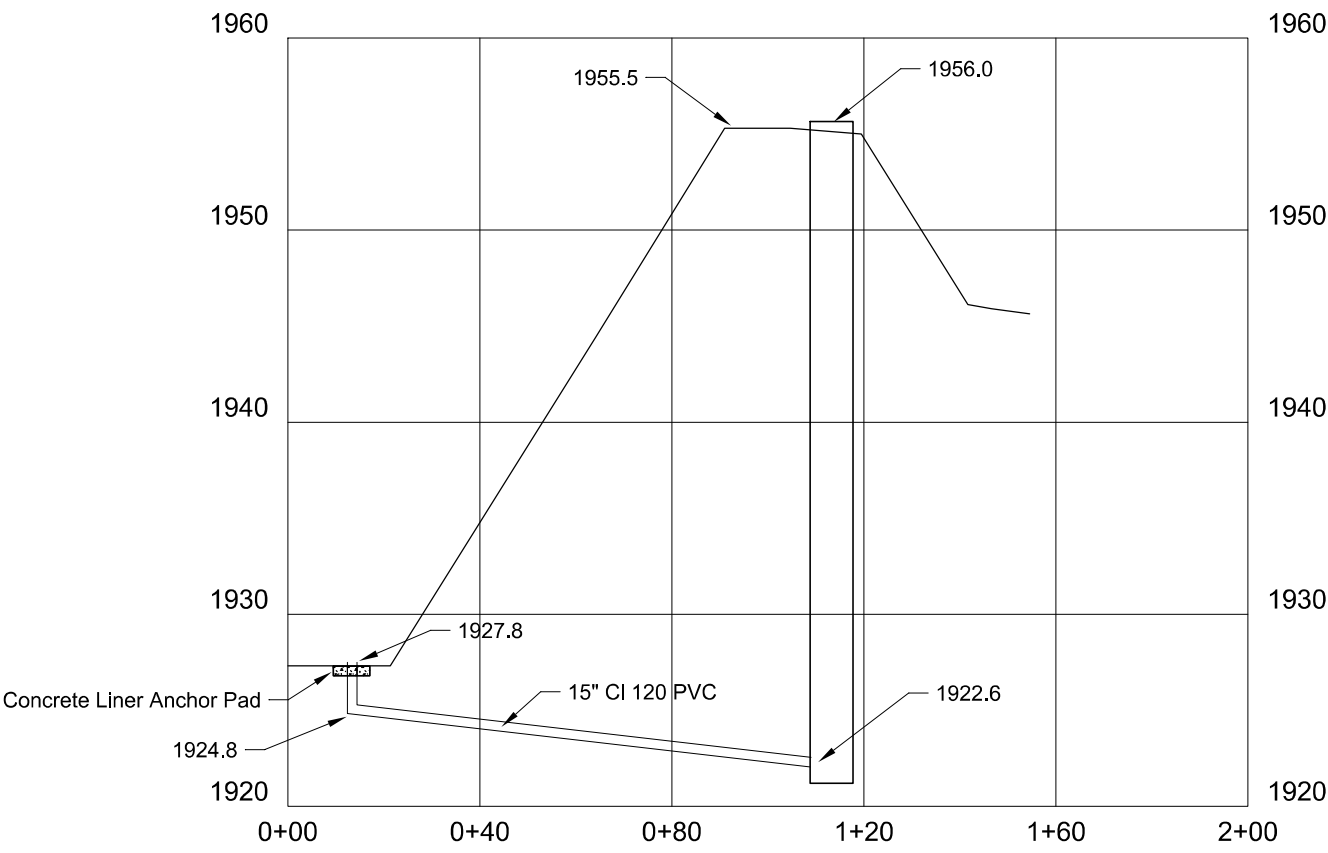
Reservoir/Frost Pond #1 Overflow Detail



Mid-State Concrete Products  
Pump Housing Vault Reservoir/Frost Pond #1



Reservoir/Frost Pond #1 Pump Inlet

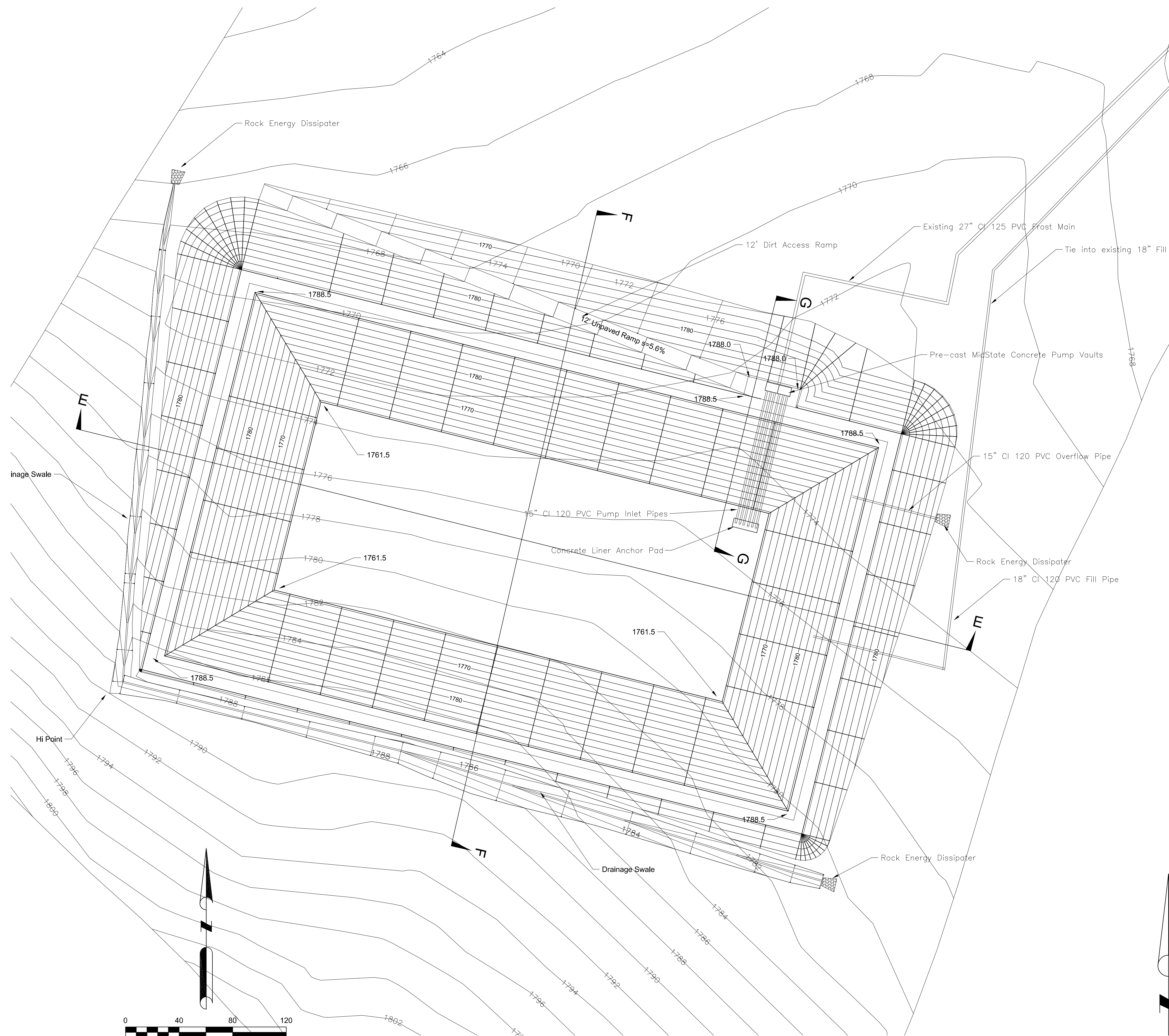


North Fork Vineyards

DRAWN <i>TH</i>	DATE 6/13/17	Frost Pond #1 Details
APPROVED	DATE	
SCALE <i>Varies</i>	SHEET 5 of 12	PROJECT NO. 101715-6233



# Reservoir/Frost Plan #2 Grading Plan



## Pond Report

Tue Oct 20 14:36:54 2015

Top of dam elevation: 1788.50  
Bottom of pond elevation: 1761.50  
Top of dam width: 14.00  
Cut Slope: 2.00:1  
Fill Slope: 2.50:1  
Interior Slope: 2.50:1  
Existing Surface: C:\Carlson Projects\North Fork\Reservoir 2B OG.tin

## Pond Earthwork Volumes

Fill Factor: 1.30  
Total cut : 44,064.35 C.Y.  
Total fill: 1 42,205.16 C.Y.  
Total Disturbed Area: 4.93 ac

## Pond Storage Volumes

Water Elev	Storage(AcreFt)	Area(Acre)
1761.50	0.00	1.146
1763.50	2.40	1.259
1765.50	5.04	1.378
1767.50	7.91	1.502
1769.50	11.05	1.630
1771.50	14.44	1.762
1773.50	18.10	1.899
1775.50	22.03	2.040
1777.50	26.26	2.186
1779.50	30.73	2.336
1781.50	35.60	2.490
1783.50	40.74	2.649
1785.50	46.20	2.813
1787.50	52.00	2.981
1788.50	55.02	3.067

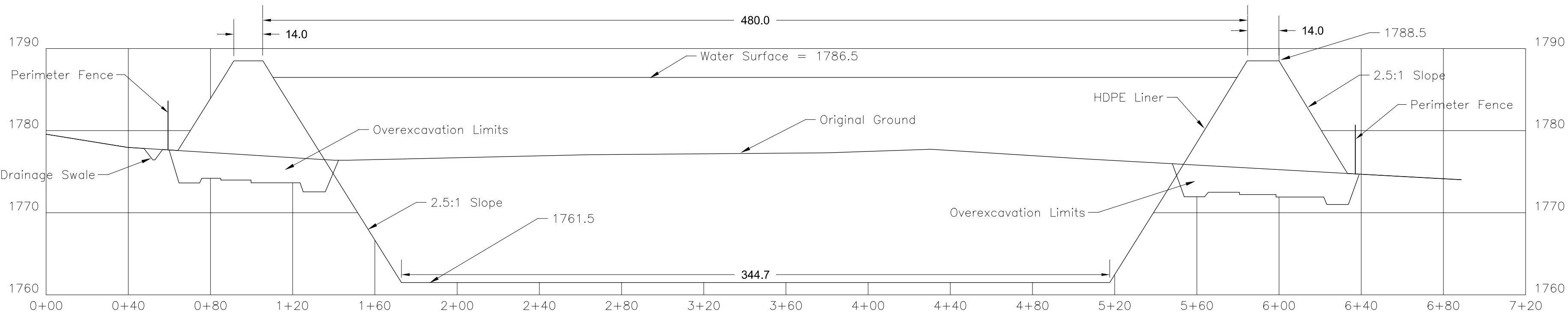


## North Fork Vineyards

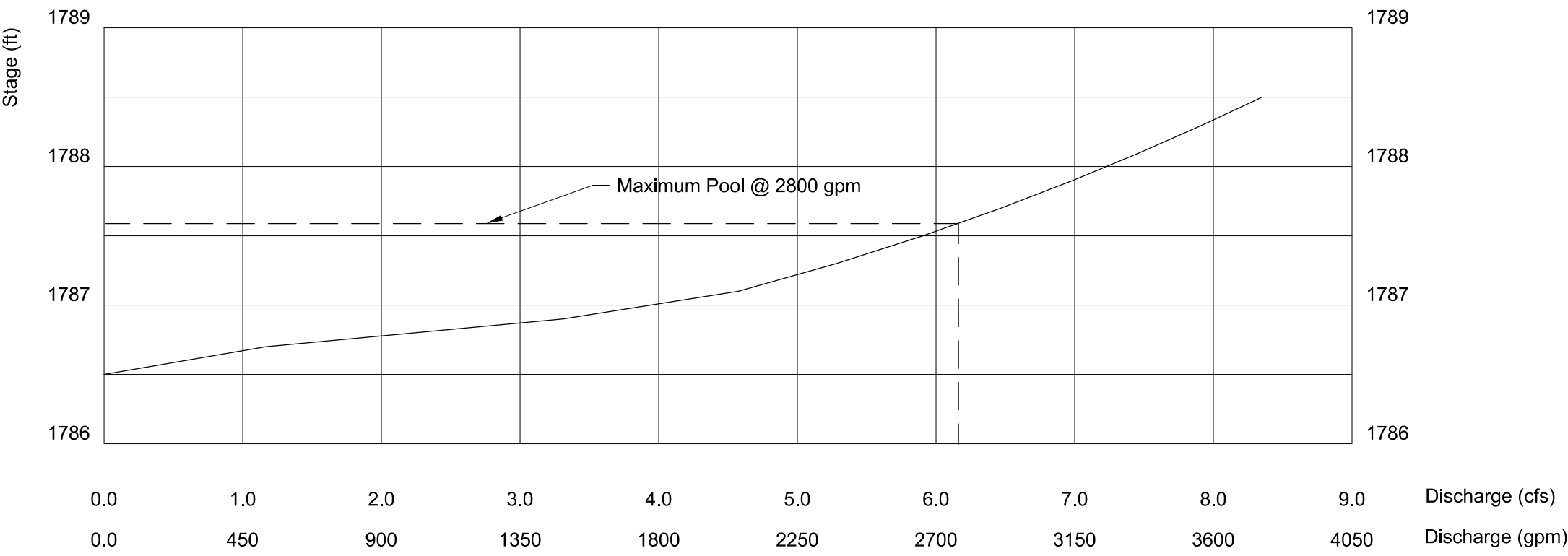
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APPROVED	DATE	
SCALE 1"=40'	SHEET 6 of 12	PROJECT NO. 101715-6233



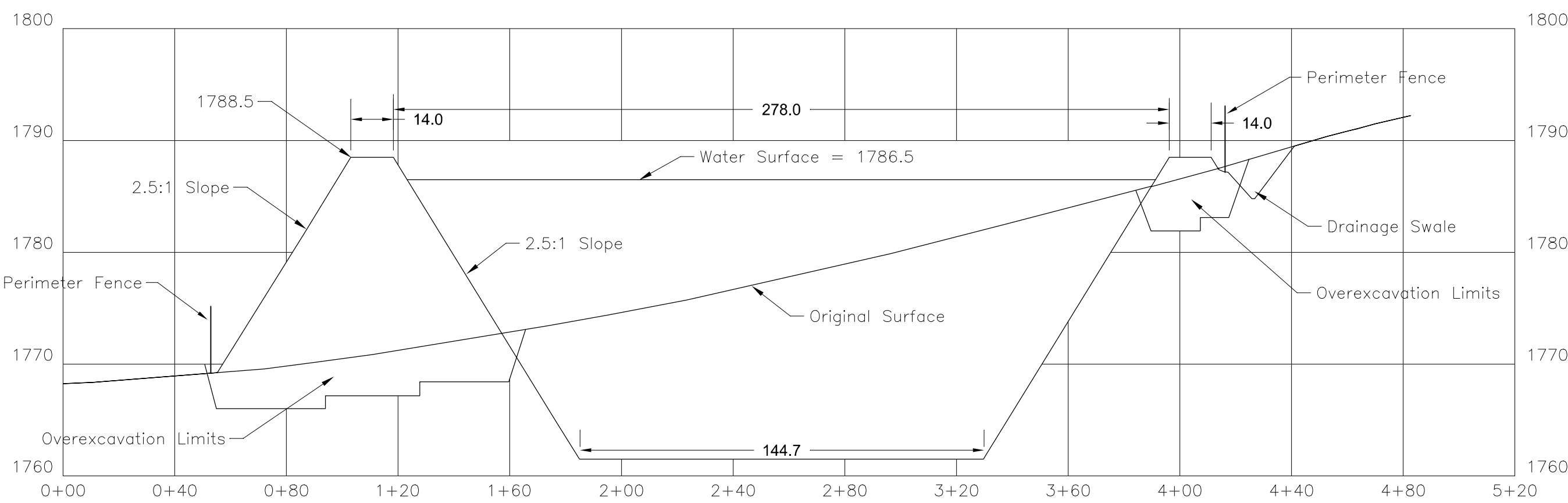
Reservoir/Frost Pond #2 Section E-E



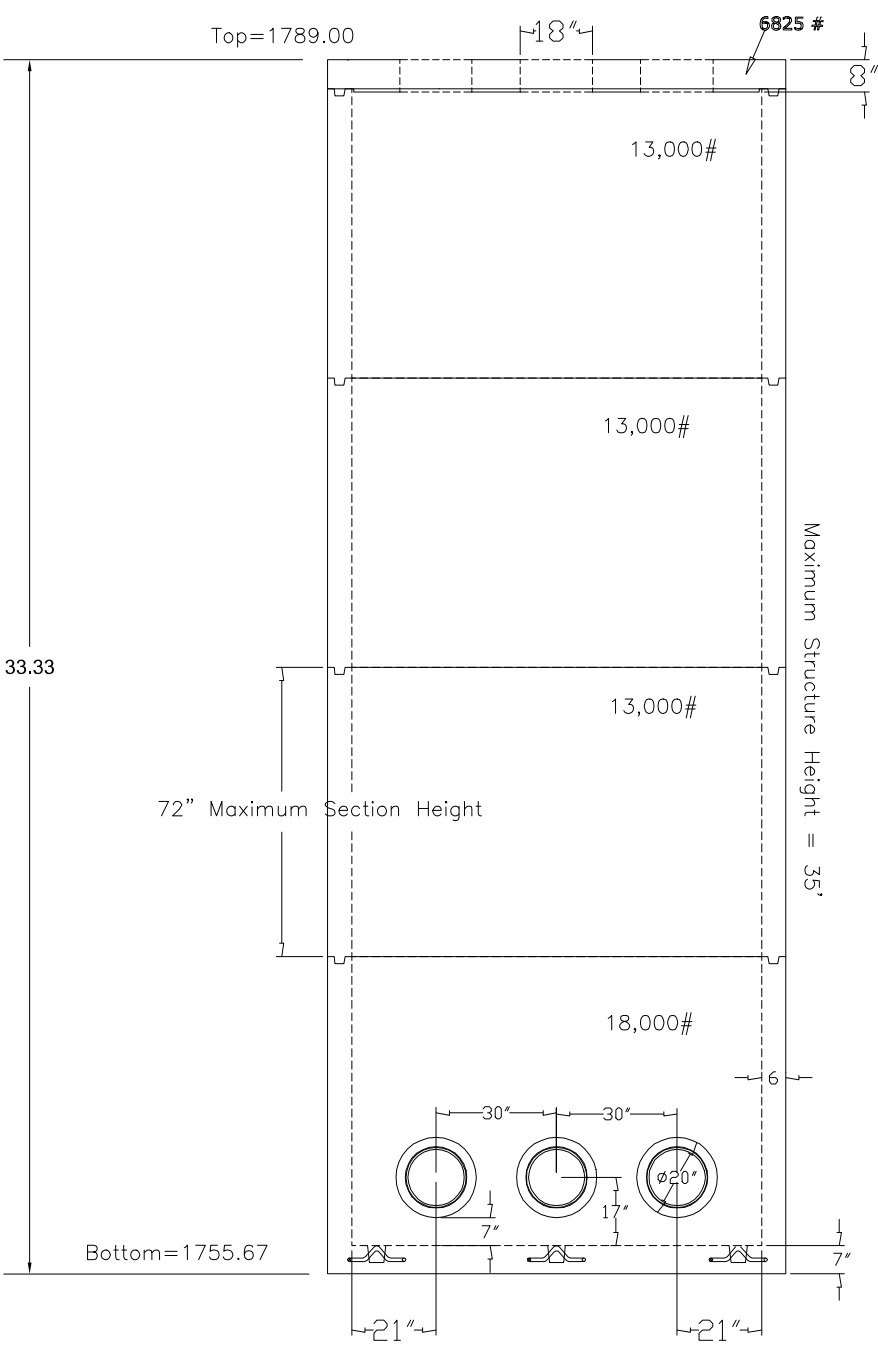
Reservoir #2 Stage Storage



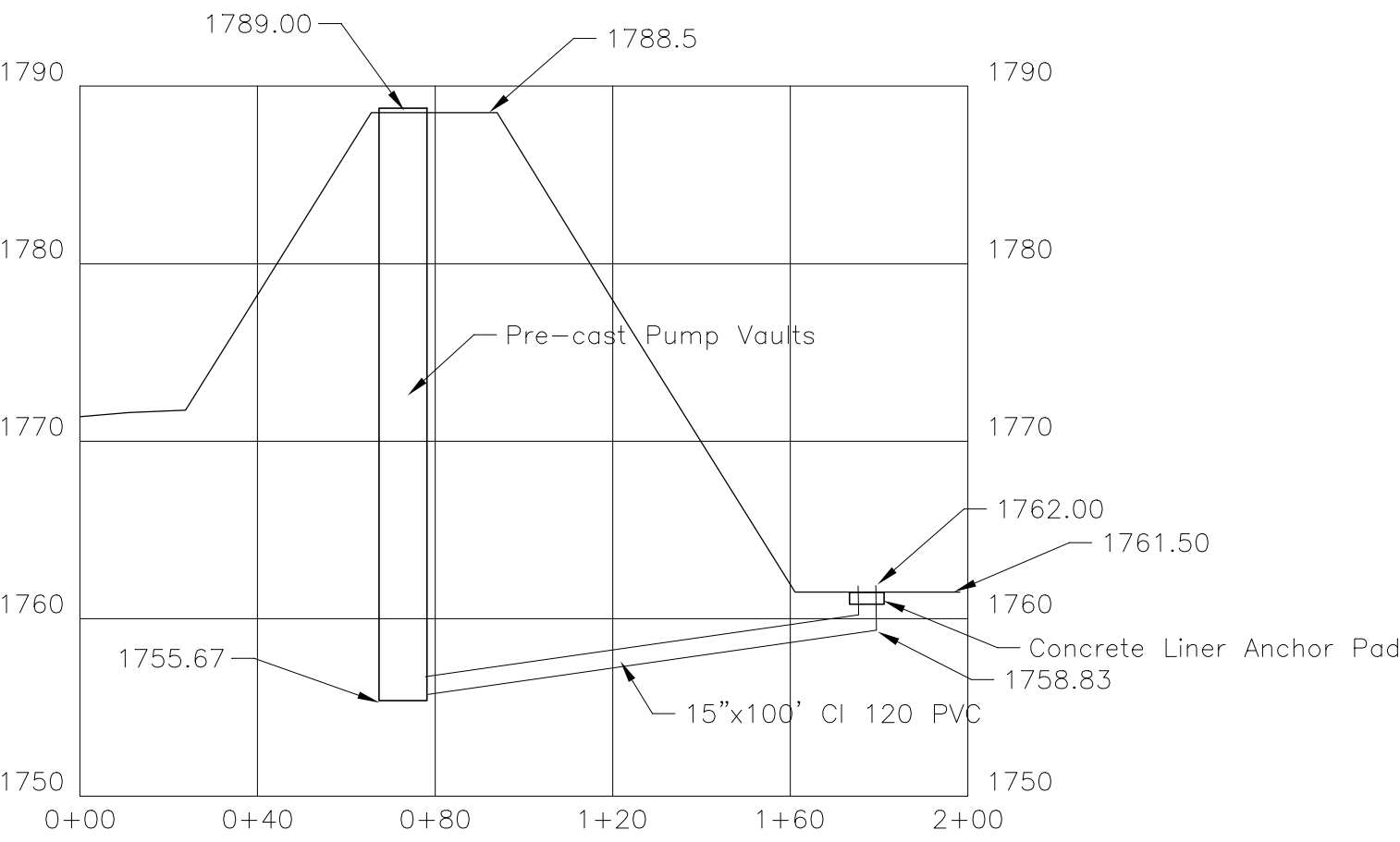
Reservoir/Frost Pond #2 Section F-F



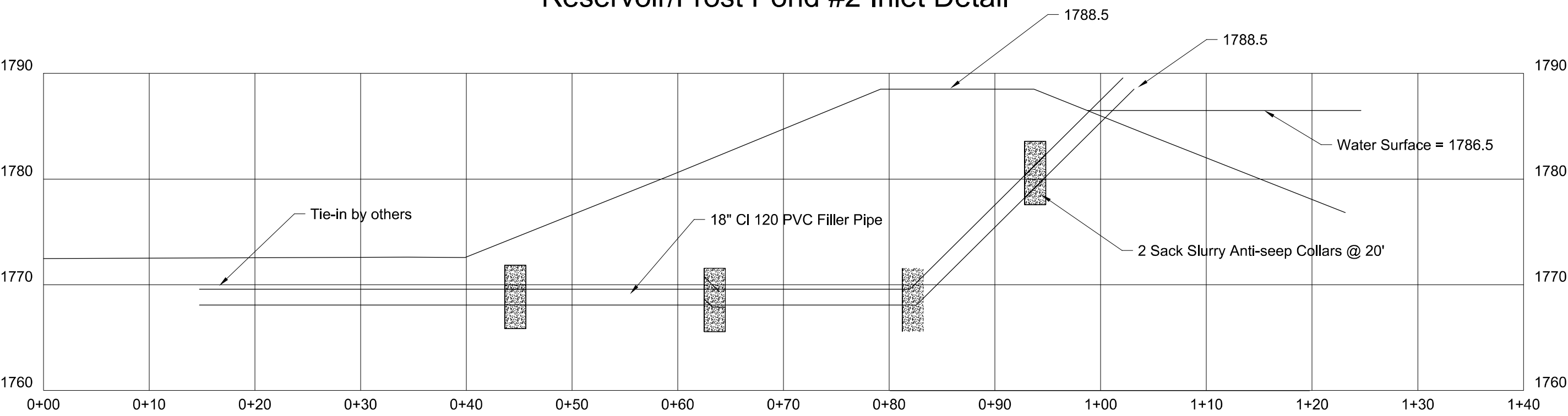
Reservoir/Frost Pond #2 Pump Vaults



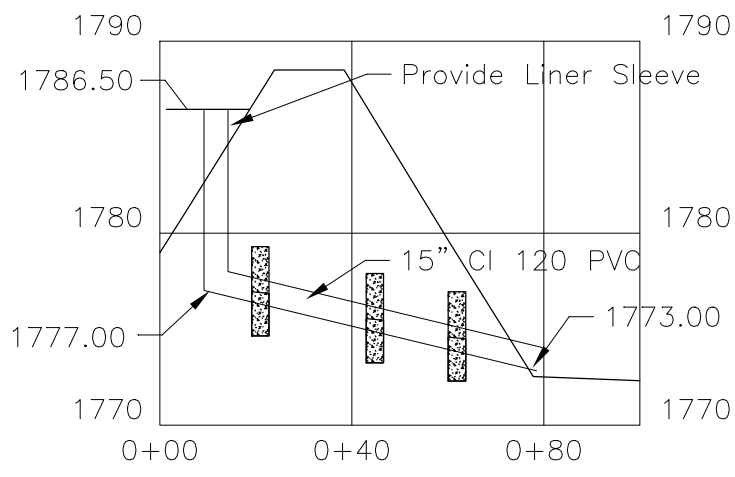
Reservoir/Frost Pond #2 Pump Vaults Section G-G



Reservoir/Frost Pond #2 Inlet Detail



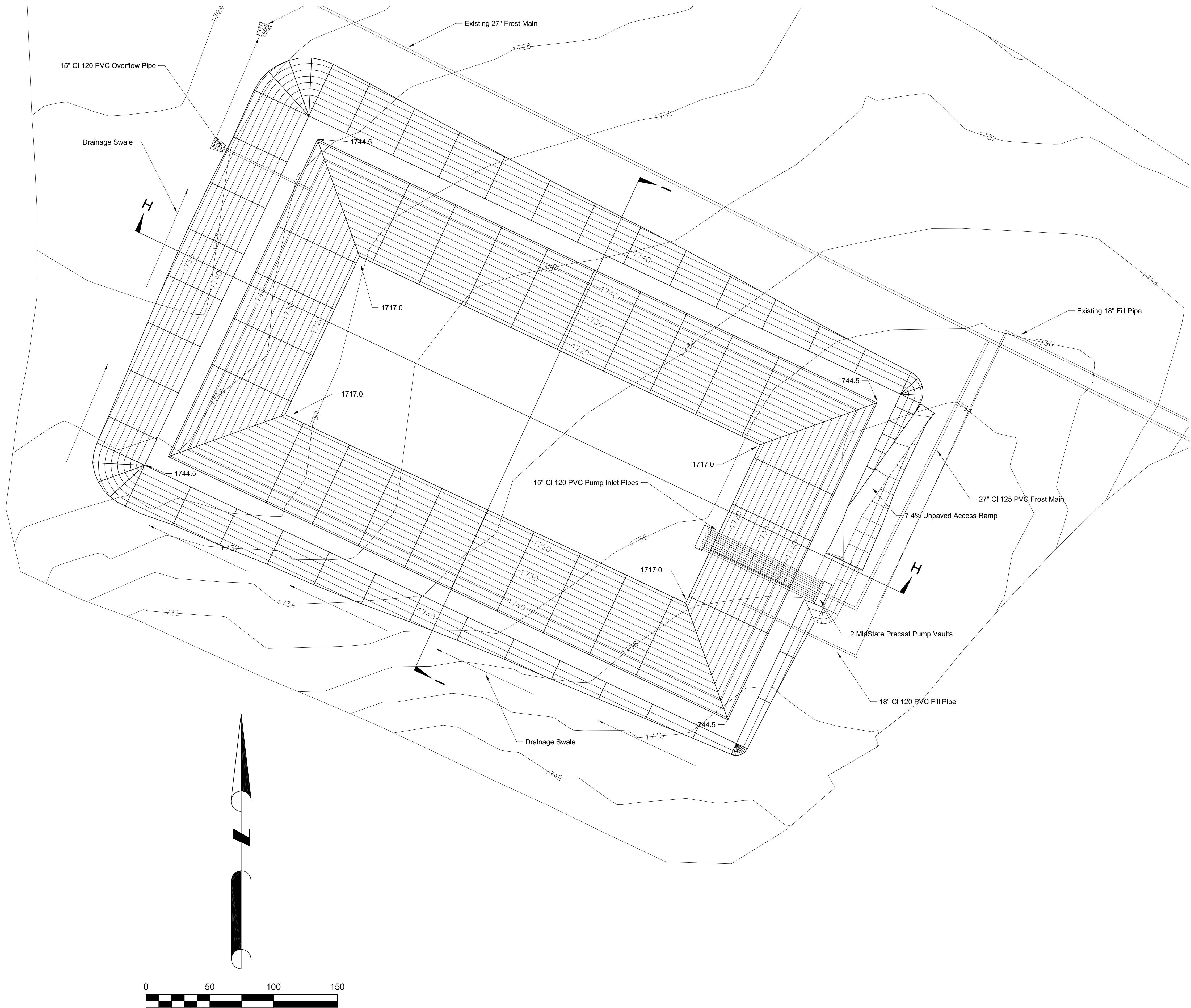
Reservoir/Frost Pond #2 Overflow



North Fork Vineyards		
DRAWN <i>TH</i>	DATE 6/13/17	Frost Pond #2 Details
APPROVED	DATE	
SCALE <i>Varies</i>	SHEET 7 of 12	PROJECT NO. 101715-6233



Reservoir/Frost Pond #3 Grading Plan



Pond Report

Top of dam elevation: 1744.50  
Bottom of pond elevation: 1717.00  
Top of dam width: 14.00  
Cut Slope: 2.00:1  
Fill Slope: 2.50:1  
Interior Slope: 2.50

Pond Earthwork Volumes

Fill Factor: 1.30  
Total cut : 42,770.71 C.Y.  
Total fill: 40,253.87 C.Y.  
Total Disturbed Area: 4.68 ac

Pond Storage Volumes

Water Elev	Storage(AcreFt)	Area(Acre)
1717.00	0.00	1.093
1719.00	2.29	1.206
1721.00	4.82	1.323
1723.00	7.59	1.445
1725.00	10.60	1.571
1727.00	13.87	1.701
1729.00	17.41	1.835
1731.00	21.22	1.973
1733.00	25.30	2.116
1735.00	29.68	2.263
1737.00	34.36	2.414
1739.00	39.34	2.570
1741.00	44.64	2.729
1743.00	50.26	2.893
1744.50	54.70	3.019



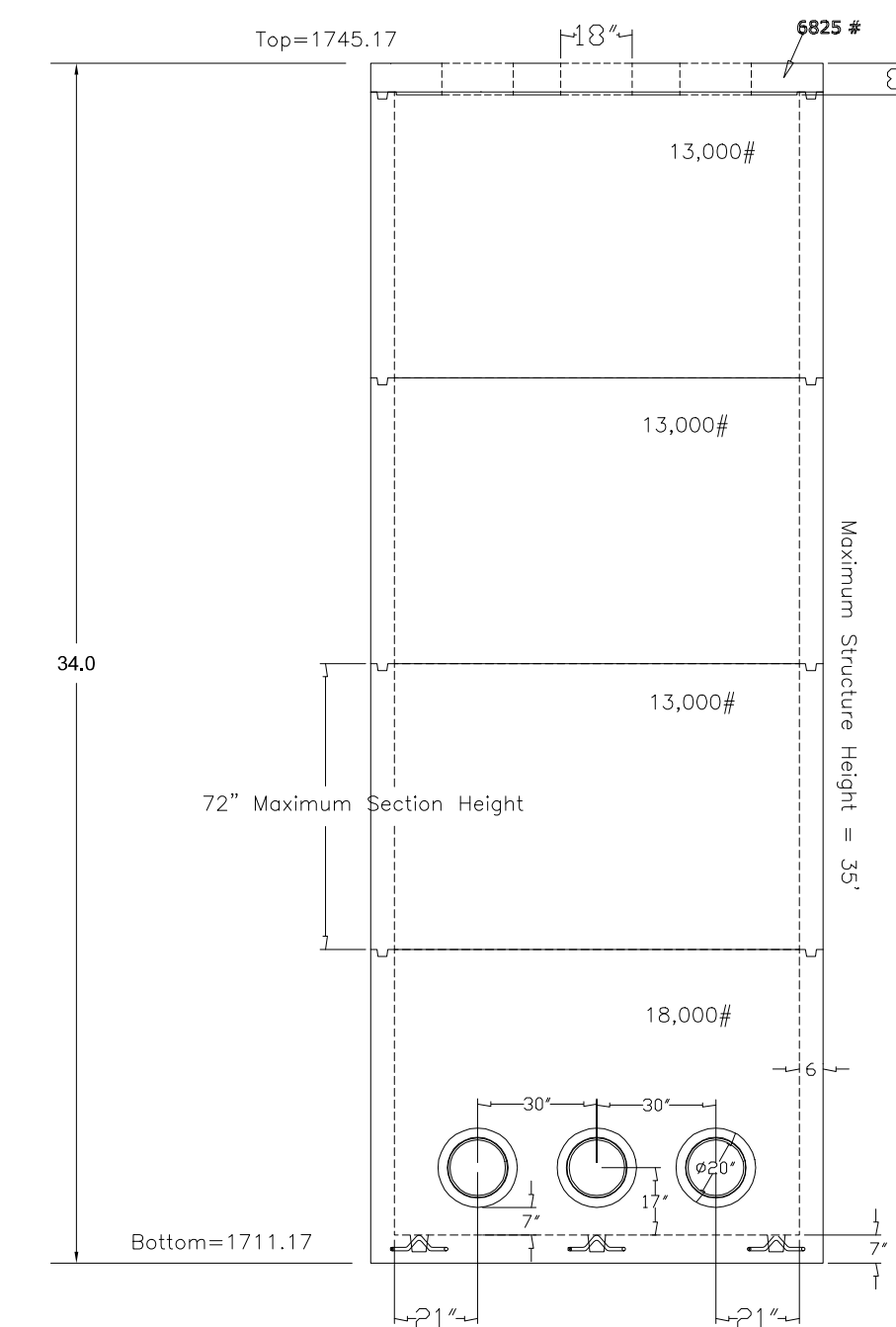
North Fork Vineyards

DRAWN <i>TH</i>	DATE 6/13/17	<i>Frost Pond</i>
APPROVED	DATE	<i>Grading Plan</i>
SCALE <i>1"=40'</i>	SHEET <i>8 of 12</i>	PROJECT NO. <i>101715-6233</i>



Mid-State Concrete Products  
Pump Housing Vault Reservoir/Frost Pond #3

The diagram illustrates a cross-section of a proposed canal. The water surface is at an elevation of 1742.5, with a total width of 485.0. The canal has 2.5:1 slopes on both sides. The original ground is shown as a dashed line. The overexcavation limits are indicated by vertical lines. The diagram also shows the exterior fence and the HDPE liner. The horizontal axis is labeled with stationing from 0+00 to 7+20. The vertical axis shows elevations from 1710 to 1750.



The graph shows the relationship between discharge and stage for a culvert. The y-axis represents stage in feet, ranging from 1742 to 1745. The x-axis represents discharge in cubic feet per second (cfs), ranging from 0 to 4050. A solid curve shows the culvert's performance. A horizontal dashed line at approximately 1743.6 ft is labeled "Maximum Pool @ 2800 gpm". A vertical dashed line at 2700 cfs intersects the curve at this stage.

Discharge (cfs)	Discharge (gpm)	Stage (ft)
0	0	1742.5
1000	450	1742.7
2000	900	1742.8
3000	1350	1743.0
4000	1800	1743.2
5000	2250	1743.4
6000	2700	1743.6
7000	3150	1743.8
8000	3600	1744.0
9000	4050	1744.2

1750

1742.5

1744.5

1745.17

1740

2 MidState Concret Products Pump Vaults

1730

1720

1717.5

1717.0

Concrete Liner Anchor Pad

1712.33 f/l

1711.17

1710

0+00

0+40

0+80

1+20

1+60

2+00

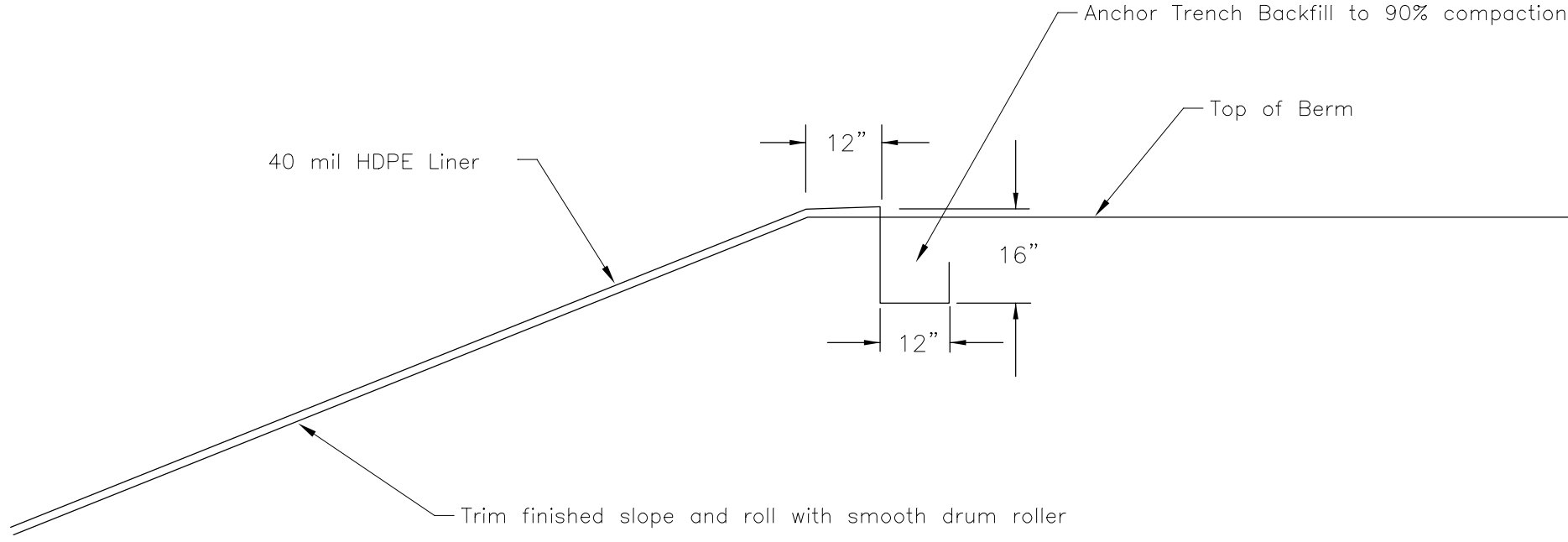
The diagram shows a cross-section of a pipe installation. The vertical axis represents elevation in feet, ranging from 1720 to 1750. The horizontal axis represents distance in feet, ranging from 0+00 to 1+00. A dashed line indicates the 'Water Surface 1742.5'. A solid line represents the 'Provide Liner Sleeve'. A 'Slurry Anti-seep Collar' is shown as a cross-hatched rectangular area. An '18" CI 120 PVC Fill Pipe' is shown as a horizontal line. A 'Tie-In by others' is indicated at the right end of the pipe. Elevation markers of 1744.5 are shown at the top of the diagram.



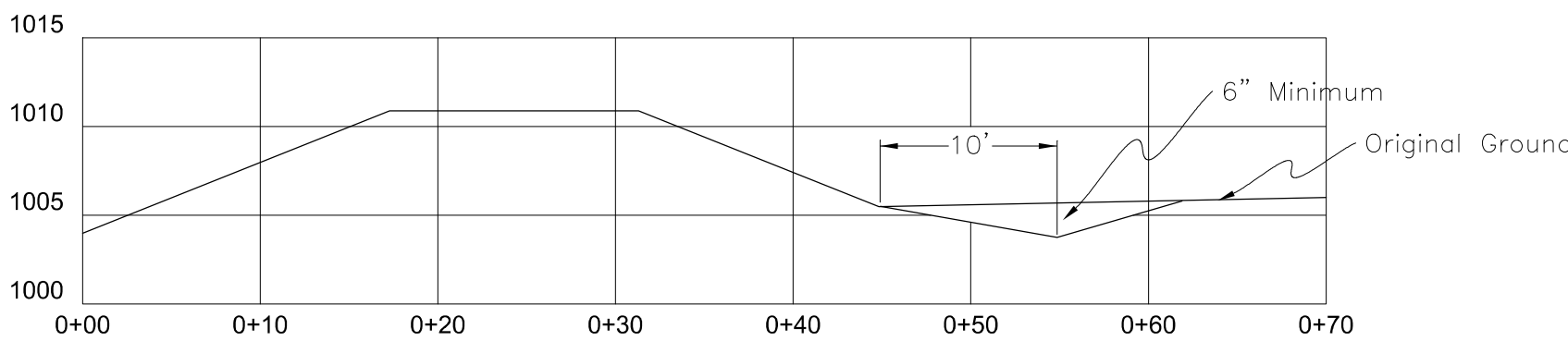
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APPROVED	DATE	
SCALE <i>Varies</i>	SHEET <i>9 of 12</i>	PROJECT NO. <i>101715-6233</i>

Details Common to All Reservoirs/Frost Ponds

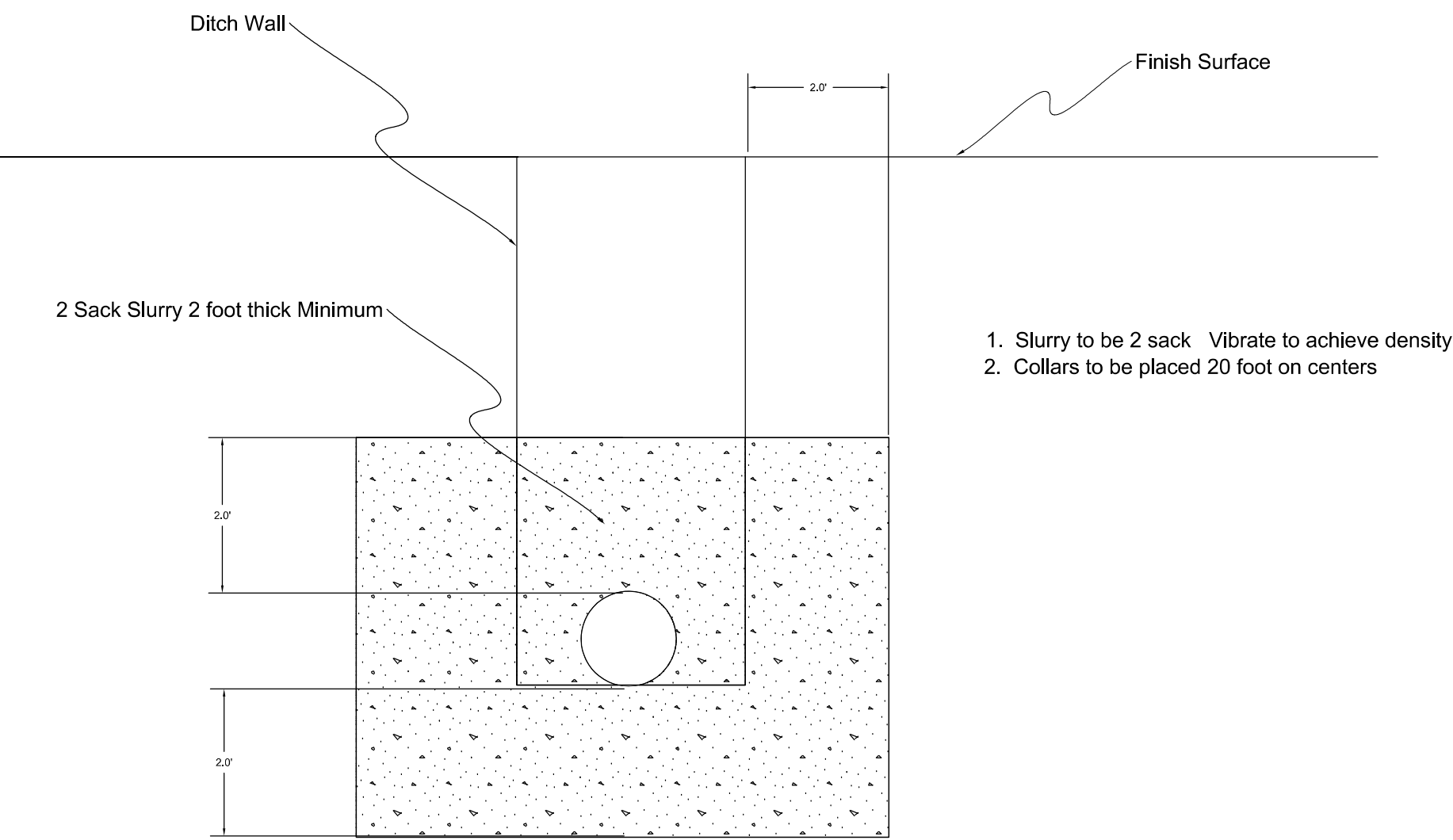
HDPE Liner Anchor Trench



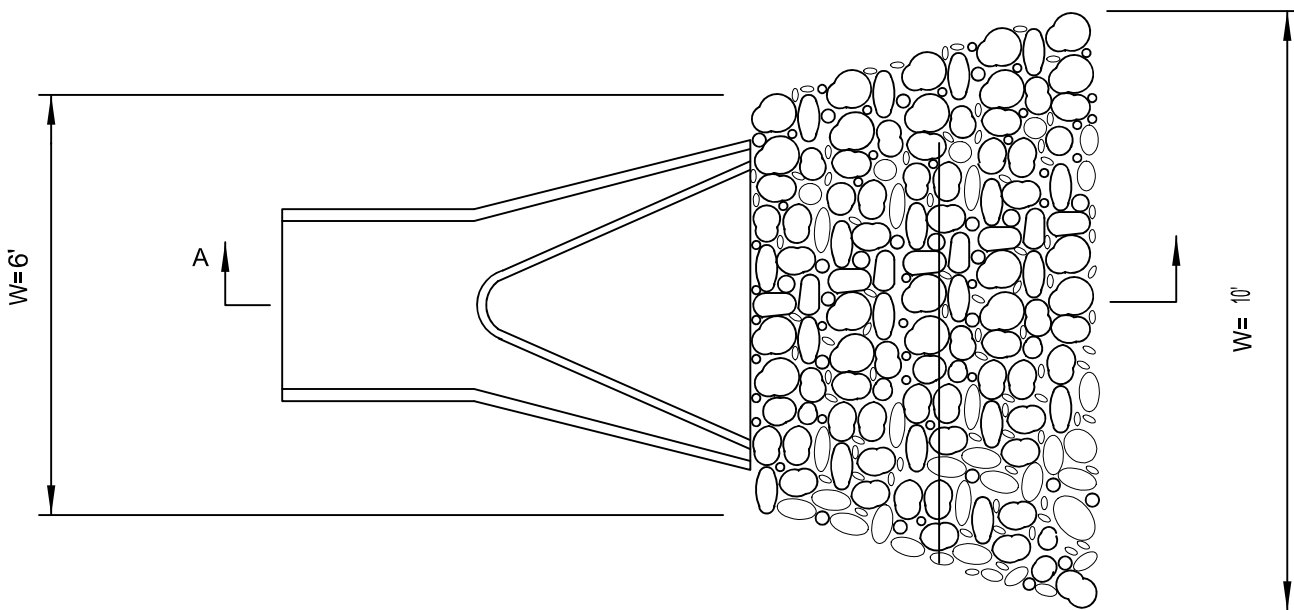
Drainage Swale Detail



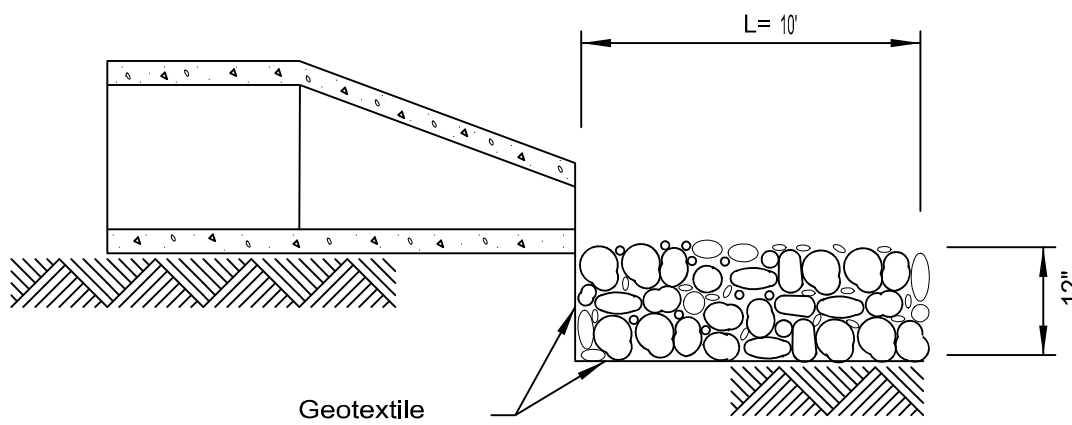
Anti-seep Collar Detail



Rock Energy Dissipater



PLAN

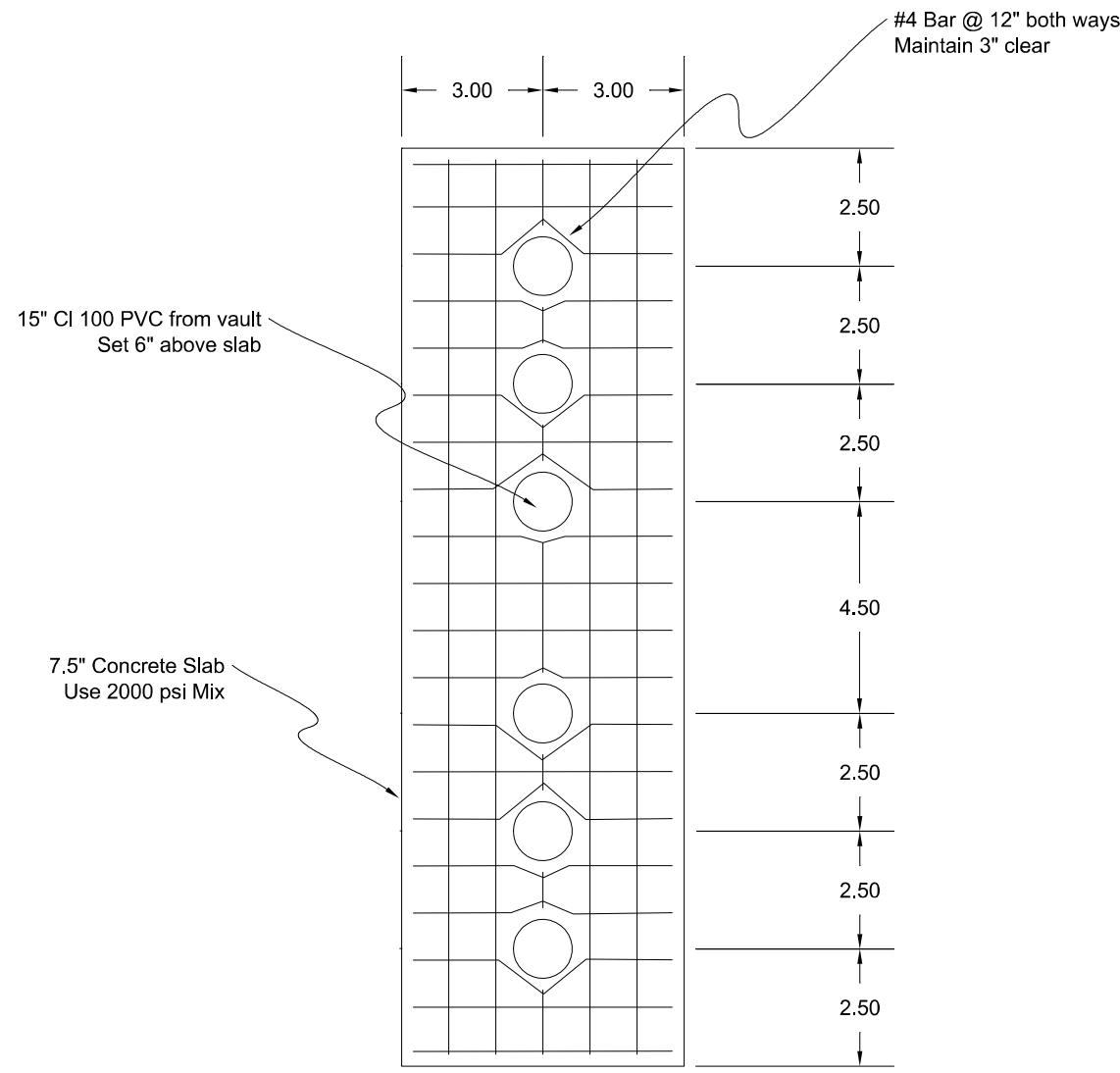
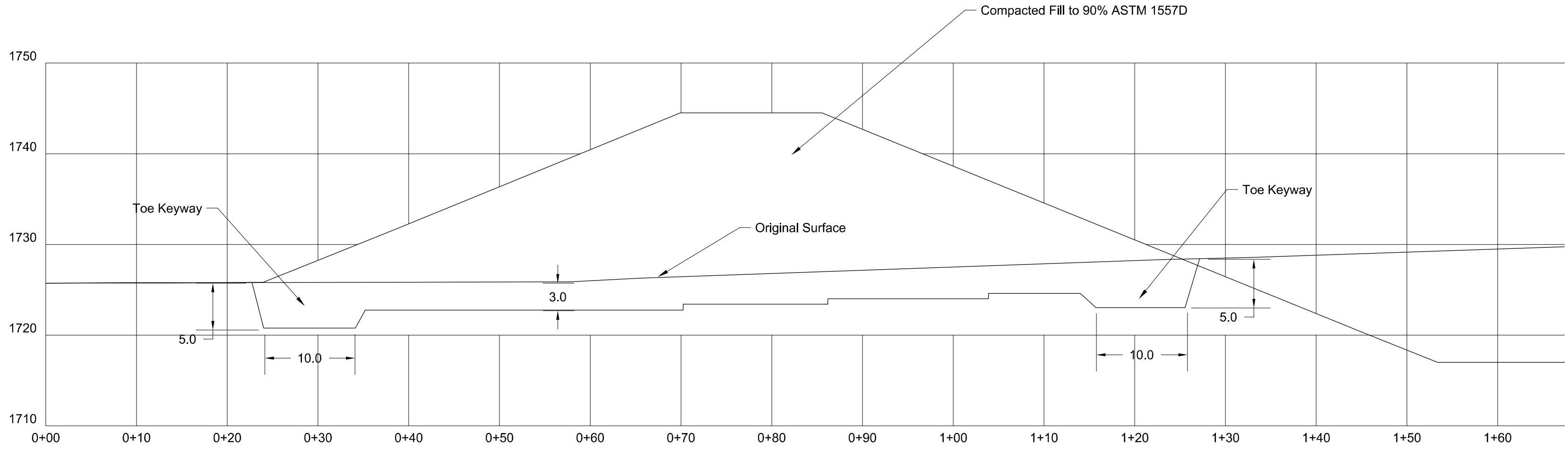


- Notes:
1. Rock shall be 6" to 12" diameter
  2. Minimum diminsion shall be 6' x 10' x 12"

General Notes:

1. All grading shall conform to the Soil Report prepared by GSI Soils for this project dated January 4, 2016.
2. All slopes shall be overfilled than trimmed to finish grade to provide firm surfaces.
3. Finished slopes and the bottom surface shall be rolled with a smooth drum roller prior to placing fabric. The Engineer of Record shall inspect the surfaces to assure they are rock free and to the proper lines and grades before fabric shall be installed.
4. The liner shall be placed by a contractor specializing in pond liners and all pipes extending through the liner shall have sleeves and stainless bands to prevent leakage.
5. A 6 foot high non-climb fence shall be installed around the exterior perimeter of the reservoir. The fabric shall have 10 guage top and bottom wires with 12 1/2 guage 2x4 mesh filler fabric. Tee Posts shall be at 8 feet spacings and shall be heavy weight a minimum of 8 feet long.
6. The finished pond shall be surveyed by the Engineer of Record and the storage volume calculated. The 15" PVC Overflow Pipe shall be adjusted as necessary to ensure that the retained volume below the outflow inlet is no more than 49 acre feet and that there is a minimum of two feet of freeboard to the top of berm at the lowest point.

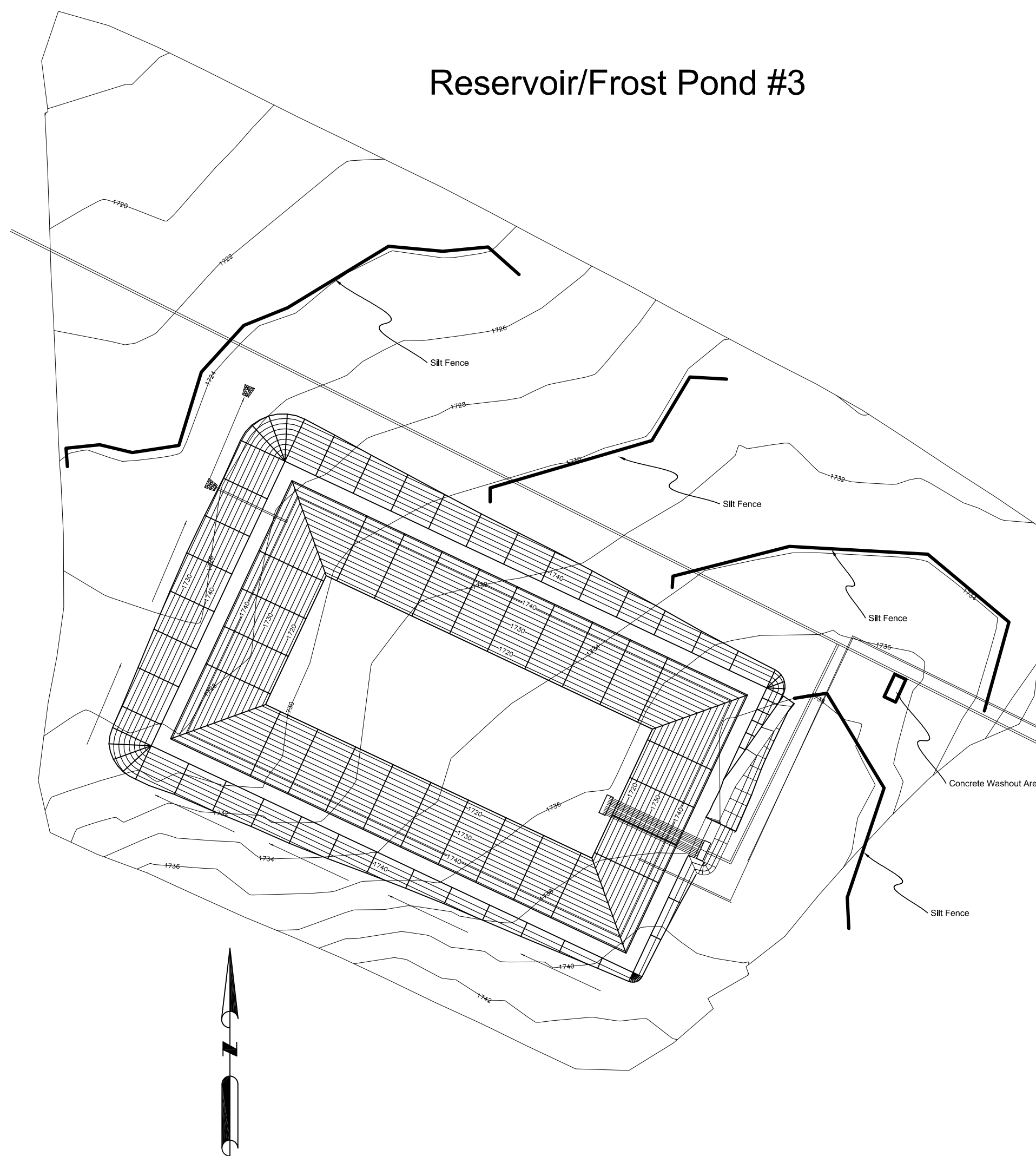
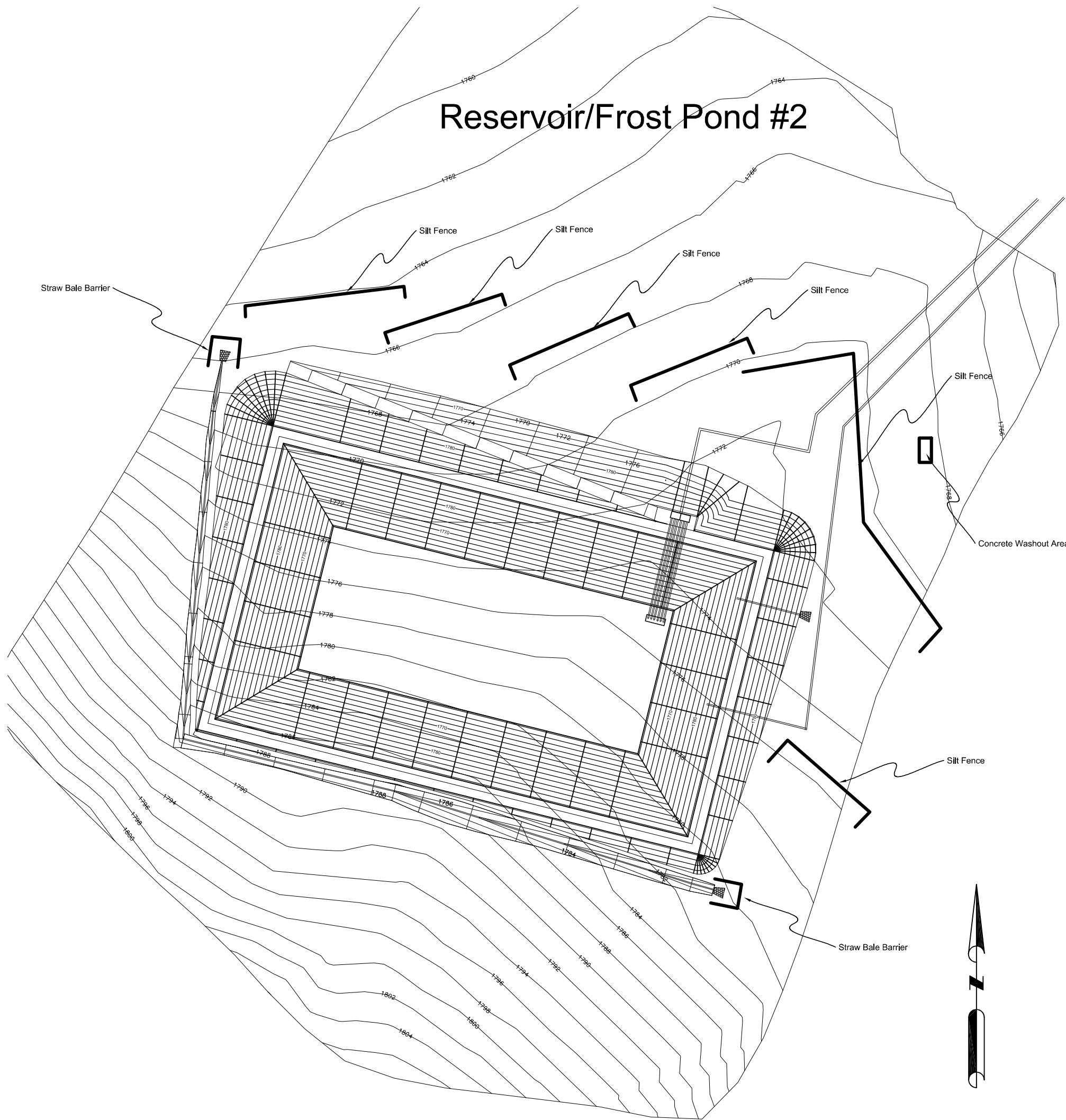
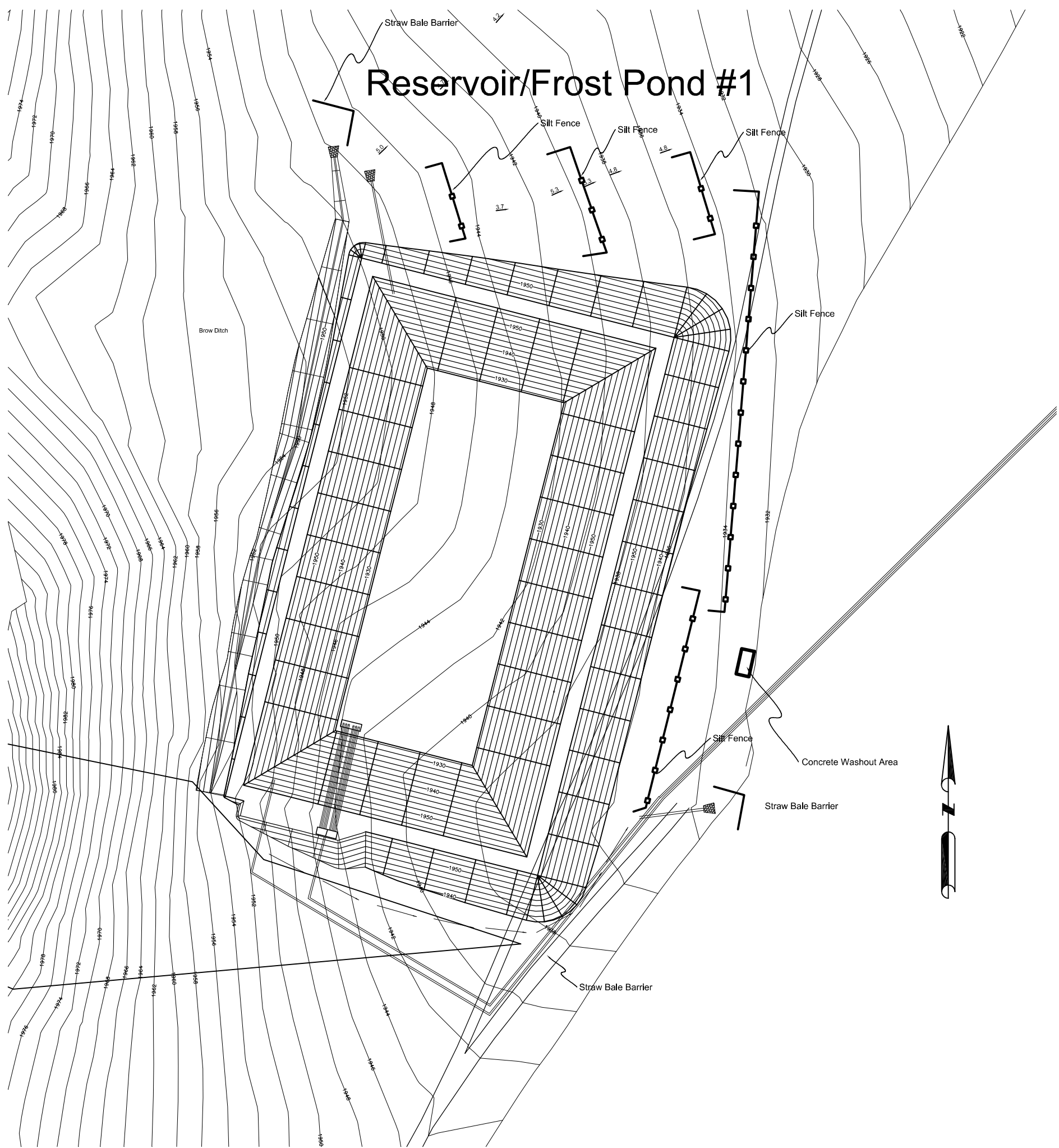
Overexcavation and Keyway Details per Figure 3 of Soil Report



North Fork Vineyards		
DRAWN <i>TH</i>	DATE 6/13/17	Frost Ponds #1-3 Common Details
APPROVED	DATE	
SCALE <i>Varies</i>	SHEET 10 of 12	PROJECT NO. 101715-6233



# Erosion and Sedimentation Control Plan



## Erosion Control Notes:

- Erosion control measures shall be implemented on all projects and shall include source control, including protection of stockpiles, protection of slopes, protection of all disturbed areas, and protection of accesses. In addition, perimeter containment measures shall be placed prior to the commencement of grading and site disturbance activities unless the Engineer determines temporary measures to be unnecessary based upon location, site characteristics or time of year. The intent of the erosion control measures shall be to keep all sediment from entering a swale, drainage way, watercourse or onto adjacent properties. An approved Erosion Control and Sedimentation Control Plan will require County approval.
- Site Inspections and appropriate maintenance of erosion control devices shall be conducted and documented prior to, during, and after rain events.
- The developer shall be responsible for the placement and maintenance of all erosion control devices as specified by the approved plan until such time that the project is accepted as complete by the Engineer. Erosion control devices may be relocated, deleted or additional items may be required depending on the actual soil conditions encountered. Additional erosion control shall be placed at the discretion of the Engineer of Work, Engineer, SWPPP Monitor or RWQCB Inspector. Guidelines for determining appropriate erosion control devices are included in the appendix of the Public Improvement Standards.
- All erosion control devices shall be the first order of work and shall be in place between October 15 and April 15 or anytime when the rain probability exceeds 30%. This work shall be installed or applied after each area is graded and no longer than five (5) working days after the completion of each area.
- The Engineer of Work and the Engineer shall be notified before October 15 for inspection of installed erosion control devices.
- A standby crew for emergency work shall be available at all times during the rainy season (October 15 through April 15). Necessary materials shall be available and stockpiled at convenient locations to facilitate rapid construction or maintenance of temporary devices when rain is imminent.
- Permanent erosion control shall be placed and established with 70% coverage on all disturbed surfaces other than paved or gravel surfaces prior to final inspection. Permanent erosion control shall be fully established prior to final inspection. Temporary erosion control measures shall remain in place until permanent measures are established. A water truck shall be used to water areas hydroseeded until the planting is established.
- In the event of a failure, the developer and/or his representative shall be responsible for cleanup and all associated costs or damages.
- Slurry Mix: The slurry mix shall be composed of the following materials:

Bromus mollis - Blando Brome (95%, 85%)	20 pounds per acre
Festuca megalura - Zorro Fescue (85%, 80%)	8
Trifolium hirtum "Hykon" - Rose Clover (95%, 90%)	30
Inoculated with appropriate bacteria	3
Eschscholzia californica - California Poppy (95%, 75%)	3
Lupinus nanus - Sky Lupine (95%, 75%)	4

(Seed available at S&S Seeds (805) 684-0436)

Other Materials:

100% Wood fiber mulch (green)	1600 pounds per acre
Commercial Fertilizer (16-20-0)	400
"M-Binder" (stabilizing emulsion) or equal	120
Water (as needed for application and as specified by manufacturer)	
- Application: The slurry preparation shall take place at the site and in the presence of the Engineer. Spraying of the slurry shall be done by an experienced hydroseeding company and commence within five minutes after all the materials have been mixed thoroughly.
- The hydroseeded areas shall be watered with a fine mist periodically until the seed begins to germinate then every other day until the roots are established and 70% of the area is covered. Do not use the side spray of a watertruck but instead use a nozzle adjusted to spray a fine mist attached to a hose.
- BMP's to be constructed include but are not limited to:
  - Silt Fence
  - Straw bale barrier
  - Concrete washout area

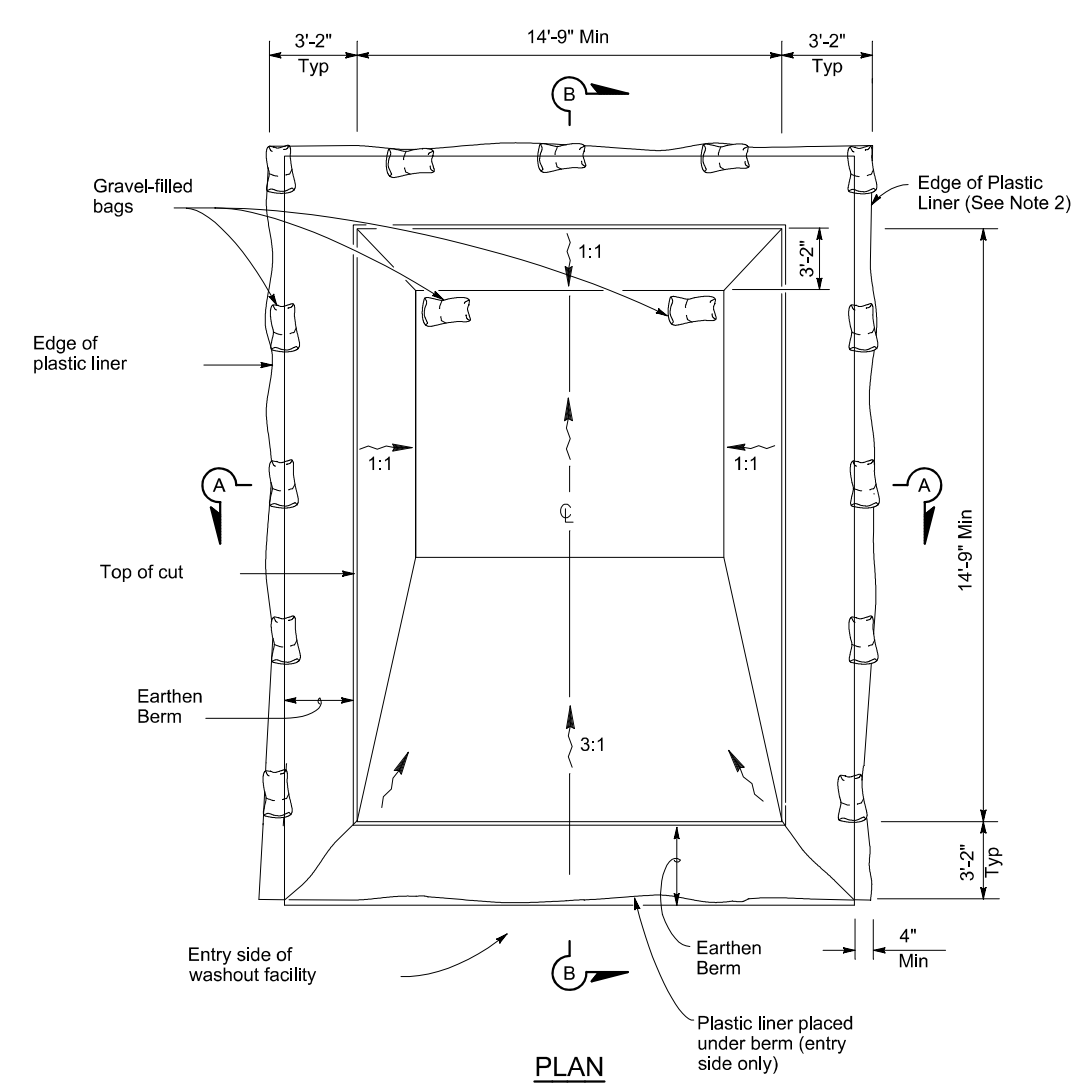
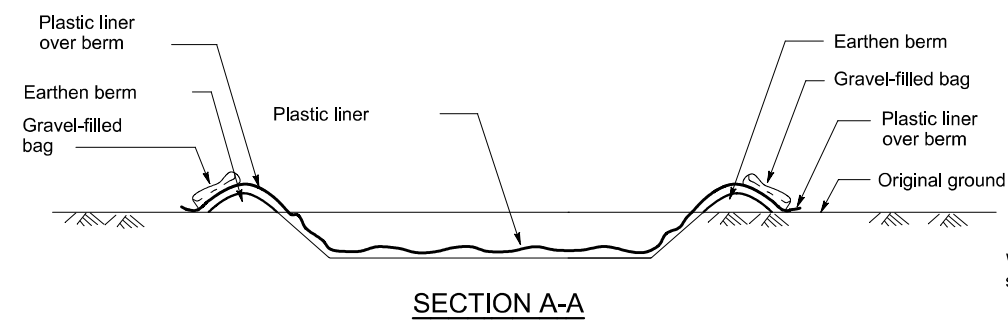
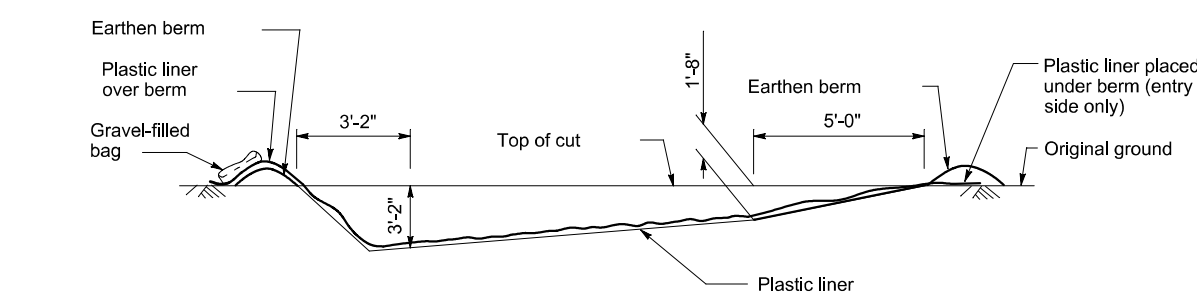


## North Fork Vineyards

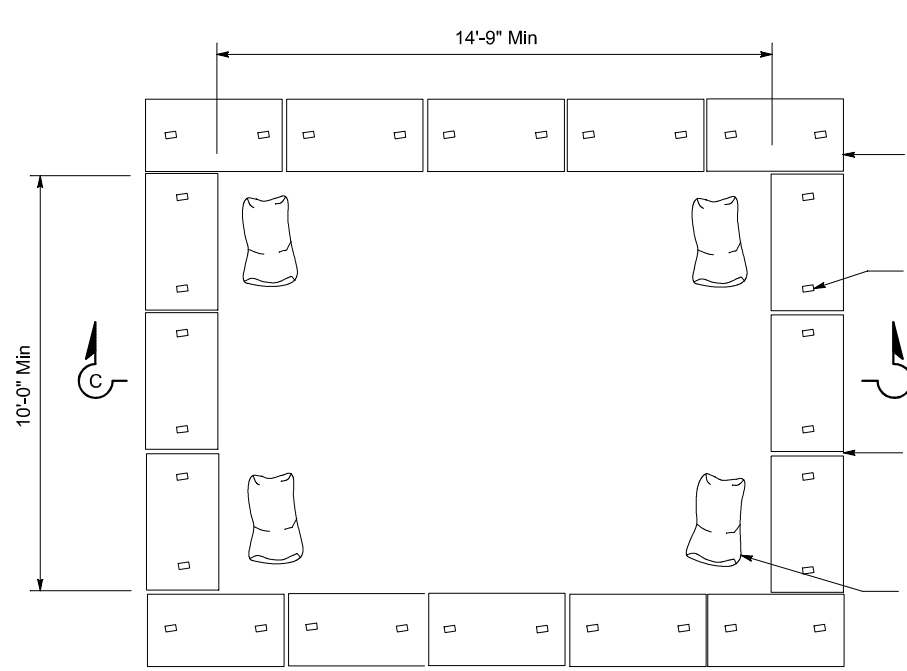
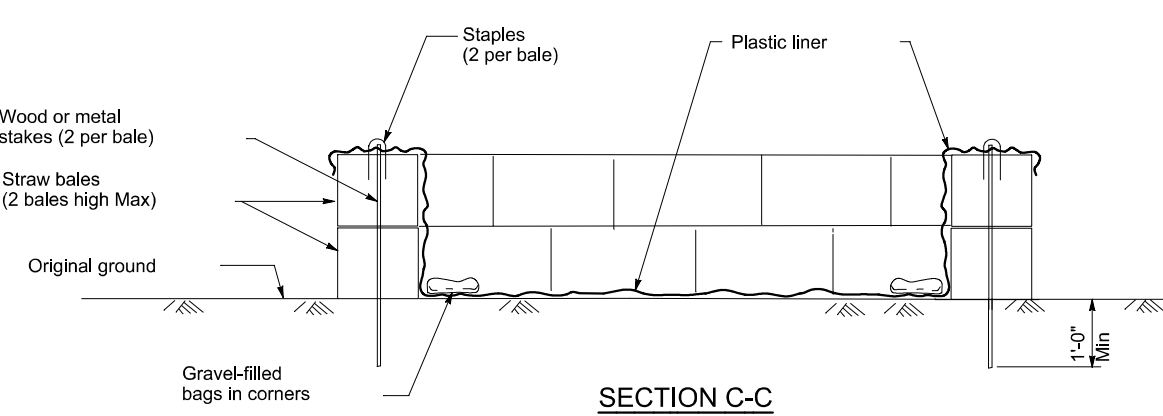
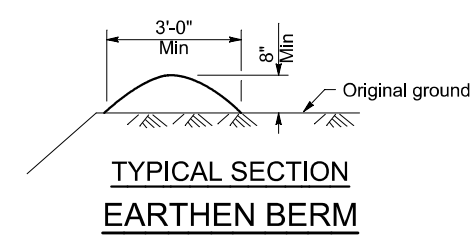
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APPROVED	DATE	<i>Erosion &amp; Sedimentation Control</i>
SCALE 1"=100'	SHEET 11 of 12	PROJECT NO. 101715-6233



# Erosion Control BMP Details



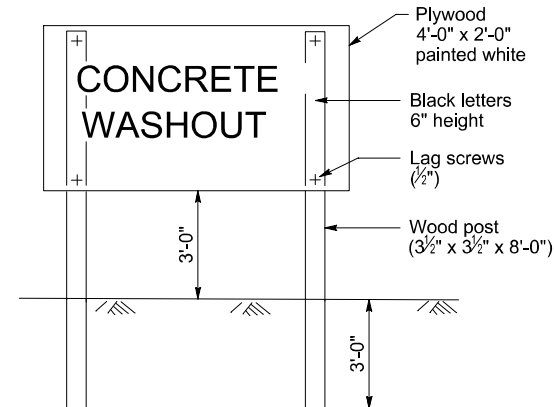
TEMPORARY CONCRETE WASHOUT FACILITY



TEMPORARY CONCRETE WASHOUT FACILITY

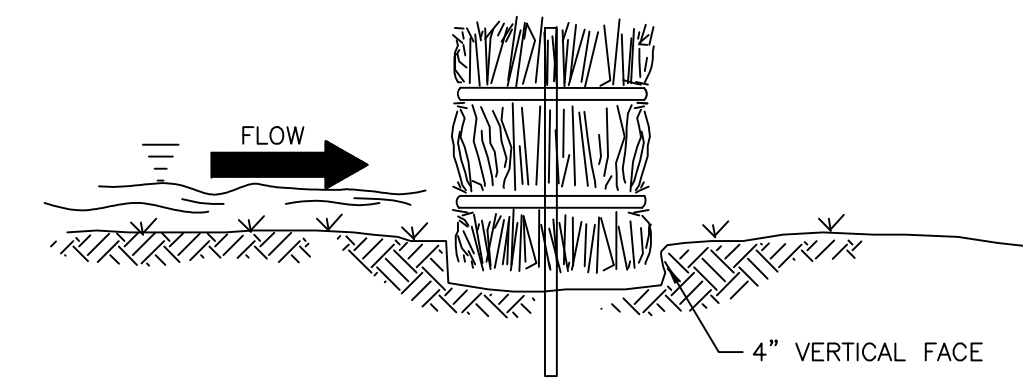
## NOTES:

1. The concrete washout sign shall be installed within 32'-10" of the temporary concrete washout facility.
2. Plastic liner shall be anchored with gravel-filled bags for below grade concrete washout facility.

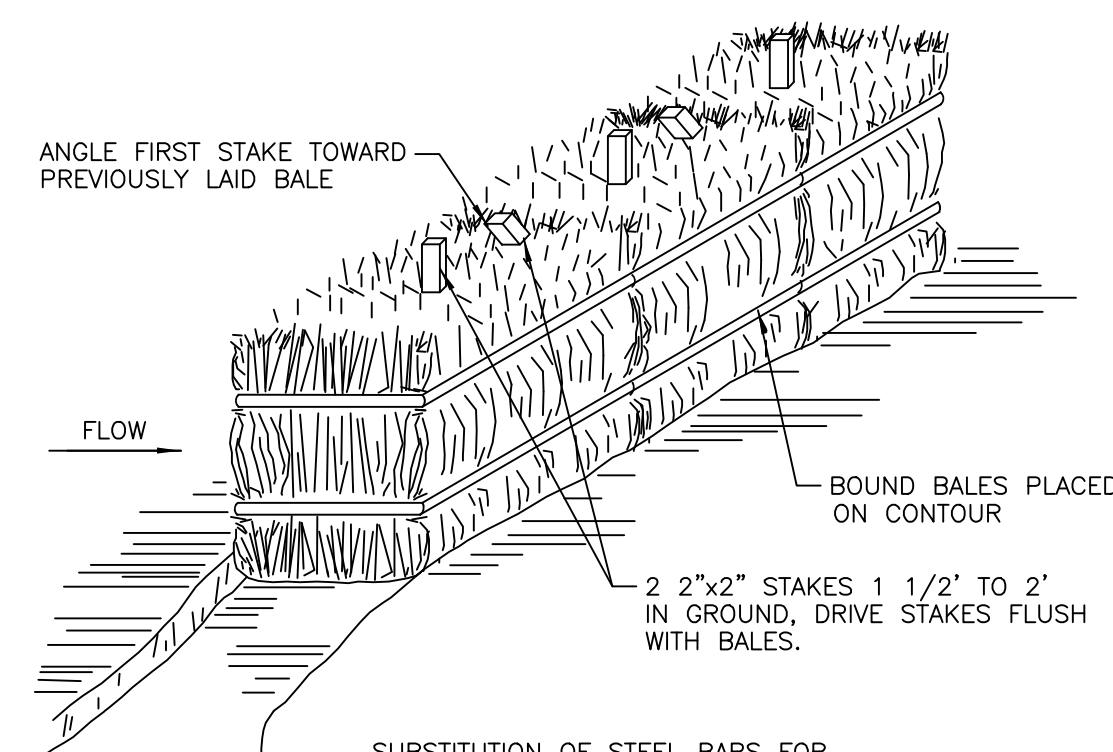


CONCRETE WASHOUT  
SIGN DETAIL

NO SCALE

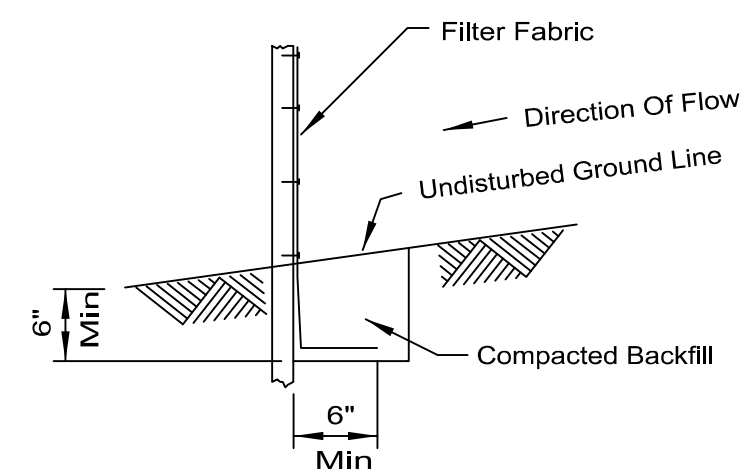
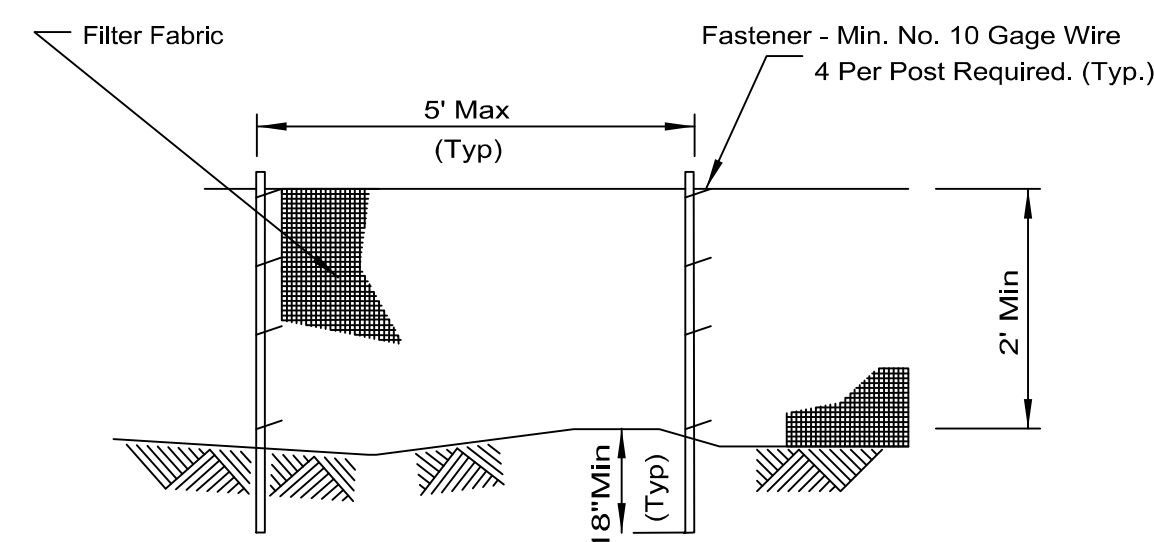


\* PROMOTES ON SITE SEDIMENTATION  
BY CREATING A TEMPORARY POND.



STRAW BALE BARRIERS

## SILT FENCE PLAN



## NOTES:

1. Temporary sediment fence shall be installed prior to any grading work in the area to be protected. They shall be maintained throughout the construction period and removed in conjunction with the final grading and site stabilization.
2. Filter fabric shall meet the requirements of material specification 592 Geotextile Table 1 or 2, Class with equivalent opening size of at least 30 for nonwoven and 50 for woven.
3. Fence posts shall be either standard steel post or wood post with a minimum cross-sectional area of 3.0 sq. in.



## North Fork Vineyards

DRAWN TH	DATE 6/13/17	Frost Ponds #1-3 BMP Details
APPROVED	DATE	
SCALE Varies	SHEET 12 of 12	PROJECT NO. 101715-6233