

BIOLOGICAL ASSESSMENT

CUA INVESTMENTS, INC.
25252 & 25372 JERUSALEM GRADE
MIDDLETOWN, CA

APN: 013-017-35, -036, -092 & -074

Prepared For:

Justin Hammer
10 Creekledge Court
Danville, CA 94506

Prepared By:

Darren Wiemeyer
Wiemeyer Ecological Sciences
4000 Montgomery Drive, Suite L-5
Santa Rosa, California, 95405

March 6, 2020

WIEMEYER ECOLOGICAL SCIENCES

4000 MONTGOMERY DRIVE, SUITE L-5, SANTA ROSA, CA 95405

TABLE OF CONTENTS

1	Summary	4
2	Site Description.....	5
2.1	Topography	5
2.2	Hydrology	5
2.3	Soil Types	6
2.4	Habitats	6
2.5	Surrounding Lands.....	6
3	Project Description.....	6
4	Regulatory Context.....	7
4.1	United States Fish and Wildlife Service	7
4.2	United States Army Corps of Engineers.....	7
4.3	California Department of Fish and Wildlife	8
4.4	State Water Resources Control Board	8
4.5	California Native Plant Society	8
4.6	County of Lake: Commercial Cannabis Cultivation.....	10
5	Literature Review.....	10
6	Study Methods	17
6.1	Special-Status Plant Species Surveys	17
6.2	Special-Status Animal Species Habitat Assessment and Wildlife Inventory	18
6.2.1	Birds.....	18
6.2.2	Mammals.....	19
6.2.2.1	Bats	19
6.2.3	Amphibians and Reptiles	19
6.2.4	Fishes	19
7	Results and Discussion	20
7.1	Plant Communities & Habitats	20
7.1.1	Oak Woodland	20
7.1.2	Non-native Annual Grassland.....	20

BIOLOGICAL ASSESSMENT - CUA, JERUSALEM GRADE, MIDDLETOWN, CA

7.1.3	Native Grassland.....	20
7.1.4	Chaparral.....	21
7.1.5	Seasonal Wetland.....	21
7.1.6	Seasonal Drainage.....	21
7.1.7	Ephemeral Drainage.....	21
7.2	Special-Status Plants.....	22
7.3	Wildlife	22
7.4	Special-Status Animal Species	23
7.4.1	Birds.....	23
7.4.1.1	Purple Martin	23
7.4.1.2	American Peregrine Falcon.....	23
7.4.1.3	Prairie Falcon	23
7.4.1.4	Burrowing Owl	24
7.4.1.5	Golden Eagle.....	24
7.4.2	Mammals.....	24
7.4.2.1	Special-Status Bat Species.....	24
7.4.2.2	American Badger	26
7.4.3	Amphibians and Reptiles	27
7.4.3.1	Foothill Yellow-Legged Frog	27
7.4.3.2	California Giant Salamander.....	27
7.4.3.3	Red-bellied Newt	28
7.4.3.4	Western Pond Turtle	28
7.4.4	Fishes	28
7.4.4.1	Clear Lake Hitch	29
7	Discussion of Potential Impacts.....	29
8.1	Significance Criteria	29
8.2	Potential Impacts.....	30
8.3	Recommended Mitigation Measures	30
8.3.1	Nesting Birds	30
8.3.2	Roosting Bats	31
8.3.3	Foothill Yellow-legged Frog.....	31

BIOLOGICAL ASSESSMENT - CUA, JERUSALEM GRADE, MIDDLETOWN, CA

8.3.4	Loss of Blue Oak and Foothill Pine Trees	31
8.3.5	Chaparral	31
8.4	Recommended Additional Studies.....	32
8.3.1	Early Season Special-Status Plant Species Survey.....	32
9	References.....	1

FIGURES

PROVIDED AT REAR OF REPORT

FIGURE 1. SITE VICINITY MAP

FIGURE 2. USGS MAP

FIGURE 3. SOILS MAP

FIGURE 4. HABITAT MAP

FIGURE 5. CNDDDB MAP

FIGURE 6. WATERSHED MAP

SITE PLAN

PHOTO PLATE A

APPENDICES

APPENDIX A: SPECIAL-STATUS PLANT SPECIES

APPENDIX B: SPECIAL-STATUS ANIMAL SPECIES

APPENDIX C: PLANT INVENTORY LIST

1 SUMMARY

This Biological Assessment presents the findings of surveys and habitat assessments for special-status species and sensitive natural communities completed for the project site, located at 25252 & 25372 Jerusalem Grade in Middletown, CA (hereafter referred to as the “site”) (Figure 1). This Biological Assessment is required for a complete review of “Fish and Wildlife Protection” with the intent “to minimize adverse impacts on fish and wildlife” as required by the County of Lake Commercial Cannabis Cultivation Application.

Darren Wiemeyer, a qualified biologist, performed site visits on July 21, 2019 and Julie Wittmann, a qualified biologist, performed site visits on May 24 and July 21, 2019. These site visits were performed to map habitat communities and assess habitat suitability for special-status animal species and perform wildlife inventories. Zoya Akulova-Barlow, a qualified botanist, performed site visits on May 24 and July 21, 2019 to map habitat communities, perform special-status plant species surveys and assess habitat suitability for special-status plant species. Due to the large acreage of the site, the entire site was not viewed or surveyed. Proposed development areas and surrounding areas were surveyed and assessed.

Habitat types at the site consist of oak woodland, non-native annual grassland, native grassland, chaparral, seasonal wetland, ephemeral drainage and seasonal drainage (Figure 4). The site has suitable habitat for several special-status animal species. Sensitive natural communities were observed at the site.

CUA Investments, Inc. is seeking a Major Use Permit and an Early Activation of Use Permit from the County of Lake for a proposed commercial cannabis cultivation operation. CUA Investments is also applying for a Use Permit and an Early Activation of Use Permit for Type 13 Cannabis Distributor Transport Only, Self-Distribution. CUA Investments’ proposed cultivation operation will be composed of a 43,400 ft² A-Type 3 “Medium Outdoor” cultivation/canopy area, two 40,000 ft² A-Type 3 “Medium Outdoor” cultivation/canopy areas, two 160 ft² Harvest Storage Areas (metal shipping containers), a 120 ft² wooden Security Shed and a 120 ft² Pesticides & Agricultural Chemicals Storage Area (wooden shed). All water for the proposed cultivation operation will come from an existing onsite groundwater well.

The proposed project will result in impacts to, and the loss of non-native annual grassland, chaparral and several blue oak and foothill pine trees within oak woodland and chaparral habitat at the site (Figure 4). Site developments will be located at a distance of 100 feet or greater from the top of bank of all drainages and seasonal wetlands. The proposed project has the potential to impact foothill yellow-legged frog as a result of site developments and native nesting birds and special-status bat species as a result of tree removal and site developments.

Because an early season botanical survey was not performed at the site, a protocol-level botanical survey will need to be performed in the early spring of 2020 to ensure that all special-status plant species with the potential to occur at the site were surveyed during the appropriate bloom time.

Recommended avoidance and mitigation measures are detailed in Section 8.3 of this report to reduce potential significant adverse impacts to foothill yellow-legged frog, native nesting birds and special-status bat species to a less than significant level.

2 SITE DESCRIPTION

The site is located at 25252 & 25372 Jerusalem Grade, Middletown, Lake County, CA (Figure 1). The site consists of four contiguous parcels, totaling 76-acres of land, identified as Lake County Assessor's Parcel Number (APN) 013-017-035, -036, -092 & -074. The site is zoned Rural Land (RL) and contains undeveloped land. There is a residence at the southeast portion of the site.

Photographs of the site are included as Photo Plate A.

2.1 TOPOGRAPHY

The topography of the site is moderately-rolling terrain, generally sloping overall from the west to east, with elevations ranging from approximately 1,600 to 2,000 feet above mean sea level (msl) (Figure 2). Topography of the site is mixed, some areas are 20% to +30% slope in the southwestern and northeastern portions of the parcels.

2.2 HYDROLOGY

The site is situated within the Hunting Creek watershed and within the Upper Putah Creek Watershed. Putah Creek enters Napa County at the confluence with Hunting Creek approximately 11 miles east of Middletown. Jericho Creek is a 7-mile long tributary of Hunting Creek. Rising on Bishop Mountain, the stream flows northeast through Jericho Valley, then flows southeast and southwest through Paradise Valley to its confluence with Hunting Creek.

Putah Creek is 70 miles long and has its headwaters in the Mayacamas Mountains, a part of the Coast Range. Upper Putah Creek Watershed encompasses the 576-square mile area upstream of Monticello Dam. Monticello Dam creates Lake Berryessa and is the only major storage dam on Putah Creek. Lake Berryessa has a capacity of 1,602.00 acre-feet of water and is one of the largest reservoirs in California.

Putah Diversion Dam is located on Putah Creek, approximately 6 miles south of Monticello Dam. The principal function of the diversion dam is to divert water into Putah South Canal. The dam creates Lake Solano, which is about 1.5-miles long with a capacity of 750 acre-feet. Putah South Canal starts at Putah Diversion Dam and runs easterly for about 3 miles, then turns southward to follow the edge of the foothills for about 30 miles, ending near the town of Cordelia, California. The Solano Project, which is located northeast of San Francisco Bay on Putah Creek, collects runoff from the eastern Coast Range. The project is comprised of Lake Berryessa, behind Monticello Dam. It also includes Putah Diversion Dam, Putah South Canal, Green Valley Conduit and Terminal Dam and Reservoir.

The seasonal wetland swales, ephemeral drainage and seasonal drainage all connect, east of the proposed cultivation area and flows east off the site (Figure 4). The seasonal drainage continues to flow east into a tributary to Jericho Creek, which connects to Jericho Creek (Figure 2). Jericho Creek flows southeast into Hunting Creek. Hunting Creek flows south into Putah Creek and eventually empties into Lake Berryessa.

Surface water runoff on the site flows in an easterly or northeasterly direction, depending on location at the site but eventually flows offsite into Jericho Creek before flowing into Hunting Creek. Hunting Creek flows into Putah Creek before entering Lake Berryessa and then ultimately flows into the Pacific Ocean (Figure 2).

2.3 SOIL TYPES

The soil types mapped at the site consist of Maxwell clay loam, 0 to 2 percent slopes; Maymen-Millsholm-Bressa complex, 30 to 50 percent slopes; Okiota-Henneke complex, 5 to 30 percent slopes; and Skyhigh-Asbill complex, 8 to 15 percent slopes (Figure 3).

2.4 HABITATS

Habitat types at the site consist of oak woodland, non-native annual grassland, native grassland, chaparral, seasonal wetland, ephemeral drainage and seasonal drainage (Figure 4). The site has suitable habitat for several special-status animal species. Sensitive natural communities, including seasonal wetland, ephemeral and seasonal drainages and chaparral were observed at the site.

2.5 SURROUNDING LANDS

The site is situated Jericho Valley which is just east of the northern Central Valley of California. Clear Lake is to the northwest and Berryessa Lake is to the south/southeast. Bishop Mountain is just west of Jericho Valley. Jericho Valley is in Lake County, approximately 7.5 miles northeast of Middletown, and approximately 4 miles to the east of Highway 29.

3 PROJECT DESCRIPTION

CUA Investments, Inc. is seeking a Major Use Permit and an Early Activation of Use Permit from the County of Lake for a proposed commercial cannabis cultivation operation at 25252 and 25372 Jerusalem Grade near Middletown, California, on Lake County APNs 013-017-35, -36, -74, & -92. CUA Investments is also applying for a Use Permit and an Early Activation of Use Permit for Type 13 Cannabis Distributor Transport Only, Self-Distribution. CUA Investments' proposed cultivation operation will be composed of a 43,400 ft² A-Type 3 "Medium Outdoor" cultivation/canopy area, two 40,000 ft² A-Type 3 "Medium Outdoor" cultivation/canopy areas, two 160 ft² Harvest Storage Areas (metal shipping containers), a 120 ft² wooden Security Shed and a 120 ft² Pesticides & Agricultural Chemicals Storage Area (wooden shed). All water for the proposed cultivation operation will come from an existing onsite groundwater well. The Project Property has been enrolled for coverage under the State Water Resources Control Board's Cannabis General Order as a Tier 2 Low Risk Discharger since November 30, 2018 (WDID: 5S17CC406359 and 5S17CC406509).

The 76-acre, four-parcel, Rural Lands-zone Project Property is located at the base of Bishop Mountain in eastern Lake County, and within the Upper Putah Creek watershed (HUC10) and the Hunting Creek sub-watershed (HUC12). All disturbance associated with development of CUA Investments' proposed cultivation operation will occur more than 100 feet from all surface water bodies.

The Project Property is accessed via a shared private gravel access road off of Jerusalem Grade. The area of the proposed cultivation operation is accessed via a private gravel access road/driveway off of the previously mentioned shared private gravel access road. A proposed

locking metal gate will control access to the private gravel access road/driveway and the area of the proposed cultivation operation, from the shared private gravel access road (main entrance).

The cultivation season for CUA Investments' proposed outdoor cannabis cultivation operation will begin on April 1 and end on November 15 of each year. CUA Investments' proposed cultivation areas will be enclosed with 6-foot tall galvanized woven wire fences, covered with privacy mesh where necessary to screen the cultivation areas from public view. The growing medium of CUA Investments' proposed outdoor cultivation/canopy areas will be an amended native soil mixture, with drip irrigation systems to conserve water resources. All cannabis waste generated from the proposed cultivation operation will be composted on-site. Composted cannabis waste will be stored in the designated composting area until it is incorporated into the soils of the cultivation area(s) as a soil amendment. Chemicals stored and used at/by CUA Investments' proposed cultivation operation include fertilizers/nutrients, pesticides, and petroleum products (Agricultural Chemicals) and chemical sanitation products necessary to maintain a sterile work environment. All chemicals and tools will be securely stored inside the proposed Pesticides and Agricultural Chemicals Storage Area.

The proposed project will result in impacts to, and the loss of non-native annual grassland, chaparral and several blue oak and foothill pine trees within oak woodland and chaparral habitat at the site (Figure 4). Site developments will be located at a distance of 100 feet or greater from the top of bank of all drainages and seasonal wetlands.

The Site Plan is included in the figures section of this report.

4 REGULATORY CONTEXT

4.1 UNITED STATES FISH AND WILDLIFE SERVICE

The United States Fish and Wildlife Service (USFWS) administers the federal Endangered Species Act (ESA). Listed threatened and endangered species are protected from take, defined as direct or indirect harm, unless a Section 10 permit is granted to an entity other than a federal agency or a Biological Opinion with incidental take provisions is rendered to a federal lead agency via ESA Section 7 consultation. Pursuant to the requirements of ESA, an agency reviewing a proposed project within its jurisdiction must determine whether any federally listed species may be present in the study area and determine whether the proposed federal action will jeopardize the continued existence of the species.

Under ESA, habitat loss is considered to be an adverse effect to a species. In addition, the action agency is required to determine whether its action is likely to jeopardize the continued existence of any species that is proposed for listing under ESA or to result in the destruction or adverse modification of critical habitat proposed to be designated for such species. The USFWS also administers the federal Migratory Bird Treaty Act of 1918. Under this legislation, it is unlawful to destroy active nests, eggs, and young.

4.2 UNITED STATES ARMY CORPS OF ENGINEERS

The United States Army Corps of Engineers (USACE) administers the federal Clean Water Act (CWA). Section 404 of the CWA requires approval prior to discharging dredged or fill material into the waters of the United States. Waters of the United States includes essentially all surface waters such as all navigable waters and their tributaries, all interstate waters and their tributaries, all wetlands adjacent to these waters, and all impoundments of these waters.

"Wetlands" are areas characterized by growth of wetland vegetation where the soil is saturated during a portion of the growing season or the surface is flooded during some part of most years. Wetlands generally include seasonally inundated wetlands, swamps, marshes, bogs and similar areas.

4.3 CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

The California Department of Fish and Wildlife (CDFW) administers the California Endangered Species Act (CESA). It is state policy to conserve, protect, restore and enhance any endangered or threatened species and its habitat. The CDFW has jurisdiction over species that are formally listed as threatened or endangered under the CESA. The CESA provides broad protection for species of fish, wildlife and plants that are listed as threatened or endangered in the state. In addition to CESA, the California Native Plant Protection Act (NPPA) provides protection to endangered and rare plant species. The CDFW also maintains a list of species of special concern to be considered during CEQA review.

Pursuant to the requirements of CESA, a state or local agency reviewing a proposed project within its jurisdiction must determine whether any state-listed species may be present in the project area and determine whether the proposed project will have a potentially significant impact upon such species. If significant impacts to state listed species are identified, the state lead agency must adopt reasonable and prudent alternatives as specified by CDFW to prevent or mitigate for impacts. CDFW can authorize take of a state-listed species if an incidental take permit is issued by the Secretary of the Interior or Commerce in compliance with the federal ESA, or if the director of CDFW issues a permit under Section 2080 in those cases where it is demonstrated that the impacts are minimized and mitigated.

CDFW also administers the California Fish and Game Code. California Fish and Game Code Section 3503.5 makes it unlawful to take, possess or destroy birds in the Falconiformes (birds of prey, vultures, eagles, falcons) and Strigiformes (owls) families, which can include nest disturbance from construction and other activities.

4.4 STATE WATER RESOURCES CONTROL BOARD

The State Water Resources Control Board (SWRCB) administers the state CWA. Under Section 401 of the CWA, projects that apply for a USACE permit for discharge of dredge or fill material, and projects that qualify for a Nationwide Permit, must obtain water quality certification from the Regional Water Quality Control Board (RWQCB) that the project will uphold state water quality standards. The SWRCB also administers the National Pollutant Discharge Elimination System (NPDES) which includes the General Permit for Storm Water Discharges from Construction Activities.

4.5 CALIFORNIA NATIVE PLANT SOCIETY

The California Native Plant Society (CNPS) is a non-profit group dedicated to preserving the state's native flora. It has developed lists of plants of special concern in California (Skinner and Pavlik 1994). In the spring of 2011, CNPS officially changed the name "CNPS List" to "California Rare Plant Rank" (CRPR). The definitions of the ranks and the ranking system have not changed, and the ranks are still used to categorize the same degrees of concern, which are described as follows:

CRPR 1A: The plants with a California Rare Plant Rank of 1A are presumed extinct because they have not been seen or collected in the wild in California for many years. This rank includes plants that are both presumed extinct as well as those plants which are presumed extirpated in California. A plant is extinct if it no longer occurs anywhere. A plant that is extirpated from California has been eliminated from California, but may still occur elsewhere in its range. All of the plants constituting California Rare Plant Rank 1A meet the definitions of Sec. 1901, Chapter 10 (Native Plant Protection Act) or Secs. 2062 and 2067 (California Endangered Species Act) of the California Department of Fish and Game Code, and are eligible for state listing. Should these taxa be rediscovered, it is mandatory that they be fully considered during preparation of environmental documents relating to the California Environmental Quality Act (CEQA).

CRPR 1B: Plants with a California Rare Plant Rank of 1B are rare throughout their range with the majority of them endemic to California. Most of the plants that are ranked 1B have declined significantly over the last century. California Rare Plant Rank 1B plants constitute the majority of taxa in the CNPS *Inventory*, with more than 1,000 plants assigned to this category of rarity. All of the plants constituting California Rare Plant Rank 1B meet the definitions of Sec. 1901, Chapter 10 (Native Plant Protection Act) or Secs. 2062 and 2067 (California Endangered Species Act) of the California Department of Fish and Game Code, and are eligible for state listing. It is mandatory that they be fully considered during preparation of environmental documents relating to CEQA.

CRPR 2: Except for being common beyond the boundaries of California, plants with a California Rare Plant Rank of 2 would have been ranked 1B. From the federal perspective, plants common in other states or countries are not eligible for consideration under the provisions of the Endangered Species Act. Until 1979, a similar policy was followed in California. However, after the passage of the Native Plant Protection Act in 1979, plants were considered for protection without regard to their distribution outside the state. California Rare Plant Rank 2, recognizes the importance of protecting the geographic range of widespread species. In this way, diversity protection helps maintain evolutionary processes and genetic diversity within species. All of the plants constituting California Rare Plant Rank 2 meet the definitions of Sec. 1901, Chapter 10 (Native Plant Protection Act) or Secs. 2062 and 2067 (California Endangered Species Act) of the California Department of Fish and Game Code, and are eligible for state listing. It is mandatory that they be fully considered during preparation of environmental documents relating to CEQA.

CRPR 3: The plants that comprise California Rare Plant Rank 3 are united by one common theme which is they lack the necessary information to assign them to one of the other ranks or to reject them. Nearly all of the plants constituting California Rare Plant Rank 3 are taxonomically problematic. For each California Rare Plant Rank 3 plant, the known information is indicated in the "Notes" section of the CNPS *Inventory* record where assistance is needed. Data regarding distribution, endangerment, ecology, and taxonomic validity are welcomed and can be submitted by calling the Rare Plant Botanist at (916) 324-3816. Some of the plants constituting California Rare Plant Rank 3 meet the definitions of Sec. 1901, Chapter 10 (Native Plant Protection Act) or Secs. 2062 and 2067 (California Endangered Species Act) of the California Department of Fish and Game Code, and are eligible for state listing. It is strongly recommended that California Rare Plant Rank 3 plants be evaluated for consideration during preparation of environmental documents relating to CEQA.

CRPR 4: The plants in this category are of limited distribution or infrequent throughout a broader area in California. While these plants can not be considered "rare" from a statewide perspective, they are uncommon enough that their status should be monitored regularly. Should the degree of endangerment or rarity of a California Rare Plant Rank 4 plant change, it is transferred to a more appropriate rank. Very few of the plants constituting California Rare Plant Rank 4 meet the definitions of Sec. 1901, Chapter 10 (Native Plant Protection Act) or Secs. 2062 and 2067 (California Endangered Species Act) of the California Department of Fish and Game Code, and few, if any, are eligible for state listing. Nevertheless, many of them are significant locally, and we strongly recommend that California Rare Plant Rank 4 plants be evaluated for consideration during preparation of environmental documents relating to CEQA.

4.6 COUNTY OF LAKE: COMMERCIAL CANNABIS CULTIVATION

Lake County's Commercial Cannabis Cultivation Ordinance includes the following language regarding the need to assess biological resources and potential impacts to biological resources as part of a proposed commercial cannabis cultivation project with the intent to minimize adverse impacts on fish and wildlife.

A Biological Assessment shall include:

- a. A description of the fish and wildlife that are located on or utilize on a seasonal basis the lot of record where the permitted activity is located;
- b. A description of the habitats found on the lot of record. These habitats shall be located on a map;
- c. A description of the watershed in which the permitted activity is located. A map shall be provided showing the full watershed;
- d. Describe how the permittee will minimize adverse impacts on the fish and wildlife; and
- e. A map showing the location of any conservation easements or wildlife corridors proposed.

5 LITERATURE REVIEW

The CDFW California Natural Diversity Data Base (CNDDDB, May 2019) was queried for a list of all plant and animal species reported from the *Jericho Valley, Lower Lake, Wilson Valley, Glascock Mtn., Middletown, Knoxville, Detert Reservoir, Aetna Springs, Walter Springs* USGS 7.5-minute quadrangles. The Electronic Inventory of Rare and Endangered Vascular Plants of California (CNPS, May 2019) was queried for a list of all plant species reported from the *Jericho Valley, Lower Lake, Wilson Valley, Glascock Mtn., Middletown, Knoxville, Detert Reservoir, Aetna Springs, Walter Springs* USGS 7.5-minute quadrangles.

The following table (Table 1) is a list of special-status plant species that have the potential to occur within the study area solely based on the general habitat type(s) that each species is known to occur in and not based on species known proximity to the site or an evaluation of habitat quality. A full list of special-status plant species compiled is provided in Appendix A.

Table 1: Special-Status Plant Species with the Potential to Occur in the Study Area.

<u>Scientific Name</u>	<u>Common Name</u>	<u>Rare Plant Rank</u>	<u>State List</u>	<u>Federal List</u>	<u>Blooming Window</u>	<u>Habitat</u>	<u>Potential to Occur Onsite</u>
<i>Allium fimbriatum</i> var. <i>purdyi</i>	Purdy's onion	4.3	None	None	Apr-Jun	Chaparral, Cismontane woodland	Moderate
<i>Amorpha californica</i> var. <i>napensis</i>	Napa false indigo	1B.2	None	None	Apr-Jul	Broadleafed upland forest (openings), Chaparral, Cismontane woodland	Moderate
<i>Amsinckia lunaris</i>	bent-flowered fiddleneck	1B.2	None	None	Mar-Jun	Coastal bluff scrub, Cismontane woodland, Valley and foothill grassland	Moderate
<i>Arctostaphylos manzanita</i> ssp. <i>elegans</i>	Konocti manzanita	1B.3	None	None	(Jan)Mar-May(Jul)	Chaparral, Cismontane woodland, Lower montane coniferous forest	Moderate
<i>Asclepias solanoana</i>	serpentine milkweed	4.2	None	None	May-Jul(Aug)	Chaparral, Cismontane woodland, Lower montane coniferous forest	Moderate
<i>Astragalus breweri</i>	Brewer's milk-vetch	4.2	None	None	Apr-Jun	Chaparral, Cismontane woodland, Meadows and seeps, Valley and foothill grassland (open, often gravelly)	Moderate
<i>Astragalus clevelandii</i>	Cleveland's milk-vetch	4.3	None	None	Jun-Sep	Chaparral, Cismontane woodland, Riparian forest	Moderate
<i>Astragalus rattanii</i> var. <i>jepsonianus</i>	Jepson's milk-vetch	1B.2	None	None	Mar-Jun	Chaparral, Cismontane woodland, Valley and foothill grassland	High
<i>Balsamorhiza macrolepis</i>	big-scale balsamroot	1B.2	None	None	Mar-Jun	Chaparral, Cismontane woodland, Valley and foothill grassland	High
<i>Brodiaea leptandra</i>	narrow-anthered brodiaea	1B.2	None	None	May-Jul	Broadleafed upland forest, Chaparral, Cismontane woodland, Lower montane coniferous forest, Valley and foothill grassland	Moderate
<i>Calamagrostis ophitidis</i>	serpentine reed grass	4.3	None	None	Apr-Jul	Chaparral (open, often north-facing slopes), Lower montane coniferous forest, Meadows and seeps, Valley and foothill grassland	High
<i>Calystegia collina</i> ssp. <i>oxyphylla</i>	Mt. Saint Helena morning-glory	4.2	None	None	Apr-Jun	Chaparral, Lower montane coniferous forest, Valley and foothill grassland	Moderate
<i>Calystegia collina</i> ssp. <i>venusta</i>	South Coast Range morning-glory	4.3	None	None	Apr-Jun	Chaparral, Cismontane woodland, Valley and foothill grassland	Moderate
<i>Castilleja rubicundula</i> var. <i>rubicundula</i>	pink creamsacs	1B.2	None	None	Apr-Jun	Chaparral (openings), Cismontane woodland, Meadows and seeps, Valley and foothill grassland	Moderate
<i>Ceanothus confusus</i>	Rincon Ridge ceanothus	1B.1	None	None	Feb-Jun	Closed-cone coniferous forest, Chaparral, Cismontane woodland	Moderate

BIOLOGICAL ASSESSMENT - CUA, JERUSALEM GRADE, MIDDLETOWN, CA

<u>Scientific Name</u>	<u>Common Name</u>	<u>Rare Plant Rank</u>	<u>State List</u>	<u>Federal List</u>	<u>Blooming Window</u>	<u>Habitat</u>	<u>Potential to Occur Onsite</u>
<i>Ceanothus purpureus</i>	holly-leaved ceanothus	1B.2	None	None	Feb-Jun	Chaparral, Cismontane woodland	Moderate
<i>Centromadia parryi</i> ssp. <i>parryi</i>	pappose tarplant	1B.2	None	None	May-Nov	Chaparral, Coastal prairie, Meadows and seeps, Marshes and swamps (coastal salt), Valley and foothill grassland (vernally mesic)	Moderate
<i>Collomia diversifolia</i>	serpentine collomia	4.3	None	None	May-Jun	Chaparral, Cismontane woodland	Moderate
<i>Cordylanthus tenuis</i> ssp. <i>brunneus</i>	serpentine bird's-beak	4.3	None	None	Jul-Aug	Closed-cone coniferous forest, Chaparral, Cismontane woodland	Moderate
<i>Cryptantha excavata</i>	deep-scarred cryptantha	1B.1	None	None	Apr-May	Cismontane woodland (sandy or gravelly)	Moderate
<i>Cryptantha rostellata</i>	red-stemmed cryptantha	4.2	None	None	Apr-Jun	Cismontane woodland, Valley and foothill grassland	Moderate
<i>Cyripedium montanum</i>	mountain lady's-slipper	4.2	None	None	Mar-Aug	Broadleafed upland forest, Cismontane woodland, Lower montane coniferous forest, North Coast coniferous forest	Moderate
<i>Delphinium uliginosum</i>	swamp larkspur	4.2	None	None	May-Jun	Chaparral, Valley and foothill grassland	Moderate
<i>Erigeron biolettii</i>	streamside daisy	3	None	None	Jun-Oct	Broadleafed upland forest, Cismontane woodland, North Coast coniferous forest	Moderate
<i>Eriogonum umbellatum</i> var. <i>bahiiforme</i>	bay buckwheat	4.2	None	None	Jul-Sep	Cismontane woodland, Lower montane coniferous forest	Moderate
<i>Eryngium jepsonii</i>	Jepson's coyote thistle	1B.2	None	None	Apr-Aug	Valley and foothill grassland, Vernal pools	Moderate
<i>Erythranthe nudata</i>	bare monkeyflower	4.3	None	None	May-Jun	Chaparral, Cismontane woodland	Moderate
<i>Erythronium helenae</i>	St. Helena fawn lily	4.2	None	None	Mar-May	Chaparral, Cismontane woodland, Lower montane coniferous forest, Valley and foothill grassland	Moderate
<i>Extriplex joaquinana</i>	San Joaquin spearscale	1B.2	None	None	Apr-Oct	Chenopod scrub, Meadows and seeps, Playas, Valley and foothill grassland	Low
<i>Fritillaria pluriflora</i>	adobe-lily	1B.2	None	None	Feb-Apr	Chaparral, Cismontane woodland, Valley and foothill grassland	Moderate
<i>Fritillaria purdyi</i>	Purdy's fritillary	4.3	None	None	Mar-Jun	Chaparral, Cismontane woodland, Lower montane coniferous forest	Moderate
<i>Gratiola heterosepala</i>	Boggs Lake hedge-hyssop	1B.2	CE	None	Apr-Aug	Marshes and swamps (lake margins), Vernal pools	None
<i>Grimmia torenii</i>	Toren's grimmia	1B.3	None	None		Chaparral, Cismontane woodland, Lower montane coniferous forest	High
<i>Harmonia nutans</i>	nodding harmonia	4.3	None	None	Mar-May	Chaparral, Cismontane woodland	Moderate

BIOLOGICAL ASSESSMENT - CUA, JERUSALEM GRADE, MIDDLETOWN, CA

<u>Scientific Name</u>	<u>Common Name</u>	<u>Rare Plant Rank</u>	<u>State List</u>	<u>Federal List</u>	<u>Blooming Window</u>	<u>Habitat</u>	<u>Potential to Occur Onsite</u>
<i>Helianthus exilis</i>	serpentine sunflower	4.2	None	None	Jun-Nov	Chaparral, Cismontane woodland	Moderate
<i>Hemizonia congesta</i> ssp. <i>congesta</i>	congested-headed hayfield tarplant	1B.2	None	None	Apr-Nov	Valley and foothill grassland	Moderate
<i>Hesperolinon didymocarpum</i>	Lake County western flax	1B.2	CE	None	May-Jul	Chaparral, Cismontane woodland, Valley and foothill grassland	Moderate
<i>Hesperolinon drymarioides</i>	drymaria-like western flax	1B.2	None	None	May-Aug	Closed-cone coniferous forest, Chaparral, Cismontane woodland, Valley and foothill grassland	Moderate
<i>Juncus luciensis</i>	Santa Lucia dwarf rush	1B.2	None	None	Apr-Jul	Chaparral, Great Basin scrub, Lower montane coniferous forest, Meadows and seeps, Vernal pools	Moderate
<i>Lasthenia burkei</i>	Burke's goldfields	1B.1	CE	FE	Apr-Jun	Meadows and seeps (mesic), Vernal pools	Low
<i>Layia septentrionalis</i>	Colusa layia	1B.2	None	None	Apr-May	Chaparral, Cismontane woodland, Valley and foothill grassland	High
<i>Legenere limosa</i>	legenere	1B.1	None	None	Apr-Jun	Vernal pools	None
<i>Leptosiphon acicularis</i>	bristly leptosiphon	4.2	None	None	Apr-Jul	Chaparral, Cismontane woodland, Coastal prairie, Valley and foothill grassland	Moderate
<i>Leptosiphon jepsonii</i>	Jepson's leptosiphon	1B.2	None	None	Mar-May	Chaparral, Cismontane woodland, Valley and foothill grassland	Moderate
<i>Lessingia hololeuca</i>	woolly-headed lessingia	3	None	None	Jun-Oct	Broadleafed upland forest, Coastal scrub, Lower montane coniferous forest, Valley and foothill grassland	Moderate
<i>Limnanthes floccosa</i> ssp. <i>floccosa</i>	woolly meadowfoam	4.2	None	None	Mar-May(Jun)	Chaparral, Cismontane woodland, Valley and foothill grassland, Vernal pools	Moderate
<i>Lomatium hooveri</i>	Hoover's lomatium	4.3	None	None	Apr-Jul	Chaparral, Cismontane woodland	High
<i>Lomatium repostum</i>	Napa lomatium	4.3	None	None	Mar-Jun	Chaparral, Cismontane woodland	Moderate
<i>Lupinus sericatus</i>	Cobb Mountain lupine	1B.2	None	None	Mar-Jun	Broadleafed upland forest, Chaparral, Cismontane woodland, Lower montane coniferous forest	Moderate
<i>Microseris sylvatica</i>	sylvan microseris	4.2	None	None	Mar-Jun	Chaparral, Cismontane woodland, Great Basin scrub, Pinyon and juniper woodland, Valley and foothill grassland (serpentinite)	Moderate
<i>Monardella viridis</i>	green monardella	4.3	None	None	Jun-Sep	Broadleafed upland forest, Chaparral, Cismontane woodland	Moderate

BIOLOGICAL ASSESSMENT - CUA, JERUSALEM GRADE, MIDDLETOWN, CA

<u>Scientific Name</u>	<u>Common Name</u>	<u>Rare Plant Rank</u>	<u>State List</u>	<u>Federal List</u>	<u>Blooming Window</u>	<u>Habitat</u>	<u>Potential to Occur Onsite</u>
<i>Navarretia cotulifolia</i>	cotula navarretia	4.2	None	None	May-Jun	Chaparral, Cismontane woodland, Valley and foothill grassland	Moderate
<i>Navarretia jepsonii</i>	Jepson's navarretia	4.3	None	None	Apr-Jun	Chaparral, Cismontane woodland, Valley and foothill grassland	Moderate
<i>Navarretia leucocephala</i> ssp. <i>bakeri</i>	Baker's navarretia	1B.1	None	None	Apr-Jul	Cismontane woodland, Lower montane coniferous forest, Meadows and seeps, Valley and foothill grassland, Vernal pools	Moderate
<i>Navarretia leucocephala</i> ssp. <i>pauciflora</i>	few-flowered navarretia	1B.1	CT	FE	May-Jun	Vernal pools (volcanic ash flow)	None
<i>Navarretia leucocephala</i> ssp. <i>plieantha</i>	many-flowered navarretia	1B.2	CE	FE	May-Jun	Vernal pools (volcanic ash flow)	None
<i>Navarretia myersii</i> ssp. <i>deminuta</i>	small pincushion navarretia	1B.1	None	None	Apr-May	Vernal pools (clay loam)	None
<i>Navarretia nigelliformis</i> ssp. <i>nigelliformis</i>	adobe navarretia	4.2	None	None	Apr-Jun	Valley and foothill grassland vernally mesic, Vernal pools sometimes	Moderate
<i>Orcuttia tenuis</i>	slender Orcutt grass	1B.1	CE	FT	May-Sep(Oct)	Vernal pools	None
<i>Plagiobothrys hystriculus</i>	bearded popcornflower	1B.1	None	None	Apr-May	Valley and foothill grassland (mesic), Vernal pools margins	Low
<i>Ranunculus lobbii</i>	Lobb's aquatic buttercup	4.2	None	None	Feb-May	Cismontane woodland, North Coast coniferous forest, Valley and foothill grassland, Vernal pools	Moderate
<i>Sedella leiocarpa</i>	Lake County stonecrop	1B.1	CE	FE	Apr-May	Cismontane woodland, Valley and foothill grassland, Vernal pools	Moderate
<i>Sidalcea keckii</i>	Keck's checkerbloom	1B.1	None	FE	Apr-May(Jun)	Cismontane woodland, Valley and foothill grassland	Moderate
<i>Streptanthus brachiatus</i> ssp. <i>hoffmanii</i>	Freed's jewelflower	1B.2	None	None	May-Jul	Chaparral, Cismontane woodland	Moderate
<i>Streptanthus hesperidis</i>	green jewelflower	1B.2	None	None	May-Jul	Chaparral (openings), Cismontane woodland	Moderate
<i>Streptanthus morrisonii</i> ssp. <i>kruckebergii</i>	Kruckeberg's jewelflower	1B.2	None	None	Apr-Jul	Cismontane woodland (serpentinite)	Moderate
<i>Toxicoscordion fontanum</i>	marsh zigadenus	4.2	None	None	Apr-Jul	Chaparral, Cismontane woodland, Lower montane coniferous forest, Meadows and seeps, Marshes and swamps	Moderate
<i>Trichostema ruygtii</i>	Napa bluecurls	1B.2	None	None	Jun-Oct	Chaparral, Cismontane woodland, Lower montane coniferous forest, Valley and foothill grassland, Vernal pools	Moderate
<i>Trifolium hydrophilum</i>	saline clover	1B.2	None	None	Apr-Jun	Marshes and swamps, Valley and foothill grassland (mesic, alkaline), Vernal pools	Low

BIOLOGICAL ASSESSMENT - CUA, JERUSALEM GRADE, MIDDLETOWN, CA

The following table (Table 2) is a list of special-status animal species that have the potential to occur in habitats within or adjacent to the study area based on the general habitat type(s) that each species is known to occur in and not based on species known proximity to the site or an evaluation of habitat quality. A full list of special-animal species is provided in Appendix B.

High - habitat present and CNDDDB location is close to the site

Moderate - Habitat present, but CNDDDB point is not close to the site

Low - no habitat, or very little of it

None - no habitat, no CNDDDB location close

Table 2: Special-Status Animal Species with the Potential to Occur in or Adjacent to the Study Area.

<u>Scientific Name</u>	<u>Common Name</u>	<u>Federal List</u>	<u>State List</u>	<u>Dept. Fish and Wildlife Rank</u>	<u>Habitat</u>	<u>Site Habitat Suitability; Likelihood of Occurring Onsite</u>
<i>Antrozous pallidus</i>	pallid bat	None	None	Species of Special Concern	Chaparral Coastal scrub Desert wash Great Basin grassland Great Basin scrub Mojavean desert scrub Riparian woodland Sonoran desert scrub Upper montane coniferous forest Valley & foothill grassland	Moderate
<i>Aquila chrysaetos</i>	golden eagle	None	None	Fully Protected Watch List	Broadleaved upland forest Cismontane woodland Coastal prairie Great Basin grassland Great Basin scrub Lower montane coniferous forest Pinon & juniper woodlands Upper montane coniferous forest Valley & foothill grassland	Low for nesting; moderate for foraging
<i>Athene cunicularia</i>	burrowing owl	None	None	Species of Special Concern	Coastal prairie Coastal scrub Great Basin grassland Great Basin scrub Mojavean desert scrub Sonoran desert scrub Valley & foothill grassland	Low for nesting; moderate for foraging

BIOLOGICAL ASSESSMENT - CUA, JERUSALEM GRADE, MIDDLETOWN, CA

<u>Scientific Name</u>	<u>Common Name</u>	<u>Federal List</u>	<u>State List</u>	<u>Dept. Fish and Wildlife Rank</u>	<u>Habitat</u>	<u>Site Habitat Suitability; Likelihood of Occurring Onsite</u>
<i>Corynorhinus townsendii</i>	Townsend's big-eared bat	None	None	Species of Special Concern	Broadleaved upland forest Chaparral Chenopod scrub Great Basin grassland Great Basin scrub Joshua tree woodland Lower montane coniferous forest Meadow & seep Mojavean desert scrub Riparian forest Riparian woodland Sonoran desert scrub Sonoran thorn woodland Upper montane coniferous forest Valley & foothill grassland	Moderate
<i>Dicamptodon ensatus</i>	California giant salamander	None	None	Species of Special Concern	Aquatic Meadow & seep North coast coniferous forest Riparian forest	Low
<i>Emys marmorata</i>	western pond turtle	None	None	Species of Special Concern	Aquatic Artificial flowing waters Klamath/North coast flowing waters Klamath/North coast standing waters Marsh & swamp Sacramento/San Joaquin flowing waters Sacramento/San Joaquin standing waters South coast flowing waters South coast standing waters Wetland	Low
<i>Falco mexicanus</i>	prairie falcon	None	None	Watch List	Great Basin grassland Great Basin scrub Mojavean desert scrub Sonoran desert scrub Valley & foothill grassland	Low
<i>Falco peregrinus anatum</i>	American peregrine falcon	Delisted	Delisted	Fully Protected	* Habitat types not included by CNDDB.	low
<i>Lasionycteris noctivagans</i>	silver-haired bat	None	None	None	Lower montane coniferous forest Oldgrowth Riparian forest	Moderate
<i>Lasiurus cinereus</i>	hoary bat	None	None	None	Broadleaved upland forest Cismontane woodland Lower montane coniferous forest North coast coniferous forest	Moderate

BIOLOGICAL ASSESSMENT - CUA, JERUSALEM GRADE, MIDDLETOWN, CA

<u>Scientific Name</u>	<u>Common Name</u>	<u>Federal List</u>	<u>State List</u>	<u>Dept. Fish and Wildlife Rank</u>	<u>Habitat</u>	<u>Site Habitat Suitability; Likelihood of Occurring Onsite</u>
<i>Progne subis</i>	purple martin	None	None	Species of Special Concern	Broadleaved upland forest Lower montane coniferous forest	Low
<i>Rana boylei</i>	foothill yellow-legged frog	None	Candidate Threatened	Species of Special Concern	Aquatic Chaparral Cismontane woodland Coastal scrub Klamath/North coast flowing waters Lower montane coniferous forest Meadow & seep Riparian forest Riparian woodland Sacramento/San Joaquin flowing waters	Low
<i>Taricha rivularis</i>	red-bellied newt	None	None	Species of Special Concern	Broadleaved upland forest North coast coniferous forest Redwood Riparian forest Riparian woodland	Low
<i>Taxidea taxus</i>	American badger	None	None	Species of Special Concern	Broadleaved upland forest Chaparral Cismontane woodland Closed-cone coniferous forest Freshwater marsh Lower montane coniferous forest Marsh & swamp Meadow & seep North coast coniferous forest Riparian forest Riparian scrub Riparian woodland Ultramafic Upper montane coniferous forest Valley & foothill grassland	Low

6 STUDY METHODS

6.1 SPECIAL-STATUS PLANT SPECIES SURVEYS

Special-status plant species surveys were performed by Zoya Akulova-Barlow, a qualified botanist, on May 24 and July 21, 2019. All areas within the project site were surveyed and assessed, which consisted of evaluating all habitat types for suitability to support special-status plant species. Surveys used systematic field techniques to ensure complete coverage of the site. A meandering pattern was walked through each habitat to ensure that all areas were viewed. All plant species observed in the field were documented.

The study area (Figure 4), which included all areas of proposed site developments including a sufficient buffer, was surveyed on foot until the entire study area was covered. Of the plant species encountered, those that were identifiable, either by bloom or vegetation, were

documented and recorded. Any specimens that were not likely to be special-status and required keying were taken for identification.

A plant inventory list containing species that were observed is included as Appendix C. A protocol-level botanical survey will need to be performed in the early spring in 2020 to ensure that all special-status plant species with the potential to occur at the site are surveyed during the appropriate bloom time. Special-status, early-bloom plant species that have a high likelihood of occurring at the site include, but are not limited to, *Lomatium* and *Fritillaria* spp.

6.2 SPECIAL-STATUS ANIMAL SPECIES HABITAT ASSESSMENT AND WILDLIFE INVENTORY

Darren Wiemeyer, a qualified biologist, performed a site visit on July 21, 2019. Julie Wittmann, a qualified biologist, performed site visits on May 24 and July 21, 2019. The site visits were performed to map habitat communities, assess habitat suitability for special-status animal species, survey for large bird nests and perform a wildlife inventory and assess wildlife corridors. Special-status animal species habitat assessment consisted of evaluating habitats for habitat suitability for special-status animal species that have the potential to utilize habitats including wildlife corridors at the site and in the vicinity of the site. The determination of presence for special-status animal species possibly occurring at the site was based on habitat assessments, literature review and queries through CNDDDB. Protocol-level surveys for potentially occurring special-status animal species were not conducted.

Areas within the study area (Figure 4) including a sufficient buffer, in addition to accessible adjacent lands were surveyed and assessed, which consisted of evaluating all habitat types for suitability to support special-status animal species. A meandering pattern was walked through each habitat to ensure that all areas were viewed. All wildlife species observed in the field were documented.

6.2.1 Birds

Trees were generally surveyed for the presence of rookeries and large nests that could be used by special-status birds, including birds of prey. The surveys focused on areas within and adjacent to the project site. Searches for passerine bird nests were not performed.

Binoculars were used to search in trees and other suitable nesting structures. If a bird was seen, its behavior was observed to determine if it was actively nesting in the area. Common nesting behavior by birds include collecting nesting materials, bringing food items to a nest and vocalizations to attract a mate and to establish or defend a nesting territory.

The site was evaluated for habitat suitability for a variety of bird species. The oak woodland, non-native annual grassland, native grassland, chaparral, seasonal wetland, seasonal drainage and ephemeral drainages were assessed for habitat suitability for purple martin (*Progne subis*), American peregrine falcon (*Falco peregrinus anatum*), prairie falcon (*Falco mexicanus*), burrowing owl (*Athene cunicularia*) and golden eagle (*Aquila chrysaetos*).

6.2.2 Mammals

The oak woodland, non-native annual grassland, native grassland, chaparral, seasonal wetland, seasonal drainage and ephemeral drainages were assessed to determine for habitat suitability for mammal species including bat species and American badger (*Taxidea taxus*).

6.2.2.1 Bats

A bat habitat assessment was performed at the site. The habitats, primarily in the form of trees, were assessed to determine if suitable special-status bat nesting or roosting structures were exhibited in the trees. Suitable roosting and nesting structures are typically tree cavities, fissures and exfoliating bark.

6.2.3 Amphibians and Reptiles

The seasonal wetland, seasonal drainage and ephemeral drainages were surveyed to obtain a general description of habitat features and aquatic habitat characteristics. A general assessment of the riparian and aquatic habitat suitability for special-status amphibians, including foothill yellow-legged frog (*Rana boylei*), California giant salamander (*Dicamptodon ensatus*), red-bellied newt (*Taricha rivularis*) and western pond turtle (*Emys marmorata*) was performed.

6.2.4 Fishes

The fishes of the Putah Creek Watershed, including Lake Berryessa and Hunting Creek and its tributaries, include freshwater native and non-native fish species. Native species found in Putah Creek and tributaries include lamprey species (*Lampetra* sp.), hitch (*Lavinia exilicauda*), California roach (*Hesperoleucus symmetricus*), Sacramento blackfish (*Orthodon microlepidotus*), speckled dace (*Rhinichthys osculus*), Sacramento squawfish (*Ptychocheilus grandis*), threespine stickleback (*Gasterosteus aculeatus*), tule perch (*Hysteroecarpus traski*), riffle sculpin (*Cottus gulosus*), Sacramento sucker (*Catostomus occidentalis*) (Payn 1992).

Chinook salmon (*Oncorhynchus tshawytscha*), Coho salmon (*Oncorhynchus kisutch*), Central Valley Steelhead (*Oncorhynchus mykiss*) and Coastal Rainbow Trout (*Oncorhynchus mykiss irideus*) were also recorded species of the Putah Creek Watershed, including Lake Berryessa and Hunting Creek and its tributaries (Payn 1992, UC ANR 2019). Native rainbow trout still swim in the upper mountain reaches of Putah Creek, and historically, Chinook salmon and steelhead spawned in the lower and middle portions of Putah Creek. Putah Diversion Dam is now the upstream terminus of salmon and steelhead migration (SRWP 2019, McEwan 2001).

Native fish species specifically of Hunting Creek have also included hardhead (*Mylopharodon concephalus*), riffle sculpin (*Cottus gulosus*), Sacramento Pikeminnow (*Ptychocheilus grandis*), Sacramento sucker (*Catostomus occidentalis occidentalis*), and the threatened Clear Lake hitch (*Lavinia exilicauda*) (UC ANR 2019).

Non-native fish species of the Putah Creek Watershed, specifically Hunting Creek include Black Bullhead (*Ameiurus melas*), Brown trout (*Salmo trutta*), Bluegill (*Lepomis macrochirus*), Brown bullhead (*Ameiurus nebulosus*), Green Sunfish (*Lepomis cyanellus*), Golden Shiner (*Notemigonus crysoleucas*), Redear sunfish (*Lepomis microlophus*), Largemouth bass (*Micropterus salmoides*), Redear Sunfish (*Lepomis microlophus*), white crappie (*Pomoxis annularis*), Smallmouth bass (*Micropterus dolomieu*) and Western Mosquitofish (*Gambusia affinis*) (UC Agriculture and Natural Resources 2019).

The seasonal drainage was surveyed to obtain a general description of habitat features and aquatic habitat characteristics. A general assessment of the aquatic habitat suitability for fishes including Clear Lake hitch (*Lavinia exilicauda*) was performed.

7 RESULTS AND DISCUSSION

7.1 PLANT COMMUNITIES & HABITATS

Habitat types at the site consist of oak woodland, non-native annual grassland, native grassland, chaparral, seasonal wetland, ephemeral drainage and seasonal drainage (Figure 4). Natural communities at the site have characteristics of blue oak series (CNPS 1997). Some areas beyond the study area (Figure 4) were mapped, but significant portions of APN 013-017-035 & -74 were not observed or mapped. These parcels are well beyond the project area and any habitat mapping on these parcels were determined through aerial interpretation.

7.1.1 Oak Woodland

Oak woodland occurs as small patches of blue oaks in the northern and eastern portions of the site (Figure 4). Oak woodland habitat is interspersed with native and non-native annual grassland habitat at the site (Figure 4). Dominant species includes blue oak (*Quercus douglasii*). The understory consists primarily of non-native annual grassland habitat.

7.1.2 Non-native Annual Grassland

Non-native annual grassland occurs throughout the northern, central and eastern portions of the site (Figure 4). Dominant species include medusa head (*Elymus caput medusae*). Co-dominant species are ripgut brome (*Bromus diandrus*), slender wild oats (*Avena barbata*), purple clarkia (*Clarkia purpurea* ssp. *quadrivulnera*), yellow mariposa (*Calochortus luteus*), and soft chess (*Bromus hordeaceus*). In the late summer, slender tarweed (*Holocarpha virgata*) and woodrush tarplant (*Hemizonia congesta* ssp. *luzulifolia*) become dominant.

7.1.3 Native Grassland

Native grassland including wildflower fields occur in the north/central and central portions of the site (Figure 4). Dominant species include purple needle grass (*Stipa pulchra*) (30-50% density). Co-dominant species are medusa head, purple clarkia, and narrowleaf mule ears (*Wyethia angustifolia*). Small stands of California melic (*Melica californica*) occur on the site. Wildflower fields are dominated by narrowleaf mule's ears.

7.1.4 Chaparral

Chaparral occurs in the northeastern, southeastern and western portions of the site (Figure 4). Chaparral occurs is dominated by chamise (*Adenostoma fasciculatum*). Co-dominant species are mountain mahogany (*Cercocarpus betuloides*) and toyon (*Heteromeles arbutifolia*). Chaparral is considered a State sensitive habitat.

7.1.5 Seasonal Wetland

Seasonal wetland habitat occurs at the site as swales which are located in the northeastern portion of the site (Figure 4). The seasonal wetland swales flow into an ephemeral and seasonal drainage and merge into a single unnamed seasonal drainage at the site before flowing east offsite. Beyond the study area, there appears to be seasonal wetland habitat at the far northern end of APN 013-017-035 and the eastern end of APN 013-017-074. However, these potential seasonal wetlands were not mapped on Figure 4 as they were not directly observed and are well beyond the project area.

The seasonal wetland swales are dominated by Italian ryegrass (*Festuca perennis*), spike rush (*Eleocharis macrostachya*), bifid sedge (*Carex serratodens*), bird's foot trefoil (*Lotus corniculatus*) and seep monkeyflower (*Mimulus guttatus*). In late summer, yampah (*Perideridia kelloggii*) becomes also dominant.

Seasonal wetland is a sensitive habitat and would be considered Waters of the United States and Waters of the State and falls within the jurisdiction of the USACE and SWRCB.

7.1.6 Seasonal Drainage

A seasonal drainage, associated with the seasonal wetland swale and an ephemeral drainage occurs in the northeastern portion at the site (Figure 4). The seasonal wetlands flow into ephemeral and seasonal drainages and merge into a single unnamed seasonal drainage at the site before flowing east offsite. The channel ranges from 2 to 5 feet in width, 1 to 3 feet in depth, with a substrate consisting of gravels and soil and a low gradient.

The seasonal drainage would be considered Waters of the United States and Waters of the State and falls within the jurisdiction of the USACE and the SWRCB.

7.1.7 Ephemeral Drainage

An ephemeral drainage, associated with a seasonal wetland and seasonal drainage occurs in the eastern portion at the site (Figure 4). A seasonal wetland swale flows into an ephemeral drainage, which flows into a seasonal drainage before flowing east offsite. The channel ranges from 1 to 3 feet in width, 1 to 2 feet in depth, with a substrate consisting of small gravels and soil and a low gradient. Beyond the study area, there appears to be an ephemeral drainage that flows to the north on APN 013-017-035. However, this potential ephemeral drainage was not mapped on Figure 4 as it was not directly observed and is well beyond the project area.

The ephemeral drainage would be considered Waters of the United States and Waters of the State and falls within the jurisdiction of the USACE and the SWRCB.

7.2 SPECIAL-STATUS PLANTS

Special-status plant species were not observed during the two special-status plant species surveys at the site. The native grassland habitat provides moderate to high habitat suitability for special-status plant species as it is somewhat intact and undisturbed. Jepson's milk-vetch (*Astragalus rattanii* var. *jepsonianus*), Big-scale balsamroot (*Balsamorhiza macrolepis*), Serpentine reedgrass (*Calamagrostis ophitidis*), adobe-lily (*Fritillaria pluriflora*) and Colusa layia (*Layia septentrionalis*) are the most likely special-status plant species to occur in this habitat type, but these species were not observed.

The oak woodland habitat exhibits moderate to high habitat suitability for special-status plant species. Jepson's milk-vetch (*Astragalus rattanii* var. *jepsonianus*), Big-scale balsamroot (*Balsamorhiza macrolepis*), Toren's grimmia (*Grimmia torenii*), Hoover's lomatium (*Lomatium hooveri*) and Colusa layia (*Layia septentrionalis*) are the most likely special-status plant species to occur in this habitat type, but these species were not observed.

The non-native annual grassland habitat exhibits lower habitat suitability for special-status plant species as these areas include non-native annual grasses and other weedy species. It is somewhat unlikely that any special-status plant species occurs in this habitat type at the site. Jepson's milk-vetch (*Astragalus rattanii* var. *jepsonianus*), Big-scale balsamroot (*Balsamorhiza macrolepis*), Serpentine reedgrass (*Calamagrostis ophitidis*), adobe-lily (*Fritillaria pluriflora*) and Colusa layia (*Layia septentrionalis*) are the most likely special-status plant species to occur in this habitat type, but these species were not observed.

The chaparral habitat exhibits moderate to high habitat suitability for special-status plant species. Jepson's milk-vetch (*Astragalus rattanii* var. *jepsonianus*), Big-scale balsamroot (*Balsamorhiza macrolepis*), Serpentine reedgrass (*Calamagrostis ophitidis*), Colusa layia (*Layia septentrionalis*), Hoover's lomatium (*Lomatium hooveri*) and Toren's grimmia (*Grimmia torenii*) are the most likely special-status plant species to occur in this habitat type, but these species were not observed.

The seasonal wetland, ephemeral drainage and seasonal drainage habitats exhibit moderate to high habitat suitability for special-status plant species. Serpentine reedgrass (*Calamagrostis ophitidis*) is the most likely special-status plant species to occur in these habitat types, but this species was not observed.

A protocol-level botanical survey will need to be performed in the early spring of 2020 to ensure that all special-status plant species with the potential to occur at the site were surveyed during the appropriate bloom time.

7.3 WILDLIFE

The site provides habitat for a diverse variety of wildlife species as the site and surrounding lands has intact oak woodland, non-native annual grassland, native grassland, chaparral, seasonal wetland, ephemeral drainage and seasonal drainage habitats. A variety of birds, amphibians, reptiles and small- to large-sized mammals are expected to utilize these habitats as rearing, foraging and refuge habitat. Bat species are expected to roost in larger trees which contain roosting features, such as exfoliating bark and cavities. In addition, many of the larger trees provide suitable nesting habitat for birds of prey and all the trees on the site provides suitable nesting habitat for native passerine birds.

The unnamed seasonal drainage at the eastern end of the site most likely functions as a wildlife corridor. Wildlife also most likely travel through the site, but no other areas on the

site would be considered a wildlife corridor.

Wildlife species that were observed either through direct observation, heard, tracks observed, scat observed, or other indication during the site surveys on May 24 and July 21, 2019 include wren-tit, mourning dove, mule deer, spotted towhee, western bluebird, gray fox, ash-throated flycatcher and unknown rodent species.

7.4 SPECIAL-STATUS ANIMAL SPECIES

7.4.1 Birds

7.4.1.1 Purple Martin

Conservation Status: State - CDFW- Species of Special Concern

Purple martin (*Progne subis*) occur near large wetlands and other water bodies and at upper slopes and ridges which concentrate aerial insects. This species potential habitat includes mostly forested areas with few European starlings where breeding may be possible now or in the future as a result of habitat creation through intense fire. Purple martin use a wide variety of nest substrates (e.g., tree cavities, bridges, utility poles, and lava tubes) but are very selective of habitat conditions nearby.

There are no CNDDDB occurrences of this species within 5 miles of the site (Figure 5). It is somewhat likely that species utilizes habitats at the site as there were not observed European starling and the area experienced fire. However, there were a limited amount of areas with upper slopes and ridges which concentrate prey items and therefore, there is minimal suitable nesting habitat or structures for this species. This species was not observed at the site. Therefore, it has been determined that there will be no significant impact to this species as a result of the proposed project.

7.4.1.2 American Peregrine Falcon

Conservation Status: State - CDFW- Fully Protected

American peregrine falcon (*Falco peregrinus anatum*) occur near wetlands, lakes, rivers and other water. This species occurs on cliffs, banks, dunes, mounts and human-made structures. Nests consist of a scrape or depression or ledge in an open site.

There are no CNDDDB occurrences of this species within 5 miles of the site (Figure 5). It is highly unlikely that species utilizes habitats at the site as there is not suitable nesting habitat or structures for this species. This species was not observed at the site. Therefore, it has been determined that there will be no significant impact to this species as a result of the proposed project.

7.4.1.3 Prairie Falcon

Conservation Status: CDFW – Watch List

Prairie Falcon (*Falco mexicanus*) occur in wide-open habitats. Prairie falcon nest on ledges on sheer rocky cliffs but ranges out over nearby grasslands and deserts when hunting, feeding primarily on small rodents and birds. The site provides limited, but suitable foraging habitat for this species. No ledges on sheer rocky cliffs were observed in the area, which significantly limits the suitability of the site for nesting and foraging.

There is one CNDDDB occurrence of this species 0.8 miles to the southeast of the site (Figure 5). It is unlikely that species utilizes the grassland habitat at the site as there is not suitable nesting

areas in the area. This species was not observed at the site. Therefore, it has been determined that there will be no significant impact to this species as a result of the proposed project.

7.4.1.4 Burrowing Owl

Conservation Status: CDFW - Species of Special Concern

Burrowing owl (*Athene cunicularia*) occur in open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation. Burrowing owl is a subterranean nester which is dependent upon burrowing mammals, most notably, the California ground squirrel. The site provides limited, but suitable habitat for this species. No medium or large burrows were observed in the grassland habitats at the site, which significantly limits the suitability of the site for nesting.

There are no CNDDDB occurrences of this species within 5 miles of the site (Figure 5). The proposed project will result in the loss of suitable foraging habitat, but it would not be considered a significant impact to this species. Therefore, it has been determined that there will be no significant impact to this species as a result of the proposed project.

7.4.1.5 Golden Eagle

Conservation Status: CDFW - Fully Protected

Golden eagle (*Aquila chrysaetos*) occur primarily in rolling foothills, mountain areas, sage-juniper flats and desert environments in California. This species prefers cliff-walled canyons and large trees in open areas for nesting habitat. The site provides suitable foraging habitat for this species but provides limited suitable nesting habitat for this species.

There is one CNDDDB occurrence of this species 2.8 miles to the southeast of the site (Figure 5). The proposed project will result in the loss of suitable foraging habitat, but it would not be considered a significant impact to this species. The blue oak and foothill pine trees at the site would not be considered large trees in open areas. Therefore, the loss of several blue oak and foothill pine trees as a result of the proposed project would not result in the loss of suitable nesting habitat. Therefore, it has been determined that there will be no significant impact to this species as a result of the proposed project.

7.4.2 Mammals

7.4.2.1 Special-Status Bat Species

All special-status bat species, including several bat species which do not have special status, but have potential to occur in habitats at the site, have been included in this evaluation of habitat suitability and discussion of potential impacts. All bat species have state protection during nesting and roosting seasons. The following bat species are included in this habitat assessment:

Pallid Bat (*Antrozous pallidus*) - Conservation Status: CDFW – Species of Special Concern

Day roost habitat requirements include caves, crevices, mines, tree/snag cavities, buildings and bridges.

Townsend's Big-Eared Bat (*Corynorhinus townsendii*) - Conservation Status: State - Candidate Threatened; CDFW - Species of Special Concern

Day roost habitat requirements include caves, mines, tunnels, buildings, rock crevices and large tree/snag cavities.

Big brown bat (*Eptesicus fuscus*) - Conservation Status: None

Day roost habitat requirements include buildings, bridges, caves, mines, rock crevices and large tree/snag cavities.

Spotted bat (*Euderma maculatum*) - Conservation Status: CDFW – Species of Special Concern

Day roost habitat requirements include cliffs, rocky outcrops, rock crevices, caves and buildings.

Western mastiff bat (*Eumops perotis*) - Conservation Status: CDFW – Species of Special Concern

Day roost habitat requirements include cliffs, rocky outcrops, rock crevices.

Western red bat (*Lasiurus blossevillii*) – Conservation Status: CDFW – Species of Special Concern

Day roost habitat requirements include foliage of trees and large shrubs, commonly in riparian corridors.

Hoary Bat (*Lasiurus cinereus*) – Conservation Status: None

Day roost habitat requirements include foliage of trees and tree/snag cavities.

Silver-haired bat (*Lasionycteris noctivagans*) - Conservation Status: None

Day roost habitat requirements include tree/snag cavities, buildings, rock crevices, caves, exfoliating bark of large diameter trees.

California myotis (*Myotis californicus*) - Conservation Status: None

Day roost habitat requirements include crevices of buildings, caves, mines, and exfoliating bark.

Western small-footed myotis (*Myotis ciliolabrum*) - Conservation Status: None

Day roost habitat requirements include crevices of buildings, caves, mines, and exfoliating bark.

Long-eared myotis (*Myotis evotis*) - Conservation Status: None

Day roost habitat requirements include exfoliating bark, tree/snag cavities, caves, mines, cliffs, and rocky outcrops.

Little brown bat (*Myotis lucifugus*) - Conservation Status: None

Day roost habitat requirements include buildings, trees/snag cavities, caves and rock crevices.

Fringed Myotis (*Myotis thysanodes*) – Conservation Status: None

Day roost habitat requirements include crevices in buildings, caves, mines, cliffs, rocks, bridges, exfoliating bark, and tree/snag cavities.

Long-legged myotis (*Myotis volans*) – Conservation Status: None

Day roost habitat requirements include rock crevices, buildings, caves, exfoliating bark, tree/snag cavities, mines and caves.

Yuma myotis (*Myotis yumanensis*) – Conservation Status: None

Day roost habitat requirements include rock crevices in buildings, caves, mines, cliffs, rocks, bridges, and tree/snag cavities.

Western canyon bat (*Parastrellus hesperus*) - Conservation Status: None

Day roost habitat requirements include rock crevices, rocky outcrops, cliffs, mines and caves.

Mexican free-tailed bat (*Tadaridabrasiliensis*) - Conservation Status: None

Day roost habitat requirements include crevices in buildings, caves, mines and bridges.

Bats are known to utilize a vast variety of habitat types for foraging and several types of structures for nesting and roosting including trees and snags, cliffs, rock outcrops, foliage, buildings, bridges, caves and mines. The oak woodland and riparian scrub habitats at the site provide suitable roosting habitat for bats as some of the trees exhibit cavities, fissures or exfoliating bark, foliage and/or snag cavities suitable to bat species. Those species which have more likelihood of occurring at the site include those species which utilize these microhabitats commonly associated with oak woodland habitat. The bat species most likely to roost at the site include most of those listed above.

However, the spotted bat, Western mastiff bat, Western canyon bat and Mexican free-tailed bat tend to be more associated with rocky outcrops, buildings, caves, mines, cliffs, and/or bridges and are therefore less likely to occur in the oak woodland habitat at the site but may use native grassland and non-native annual grassland habitats for foraging.

There are several CNDDDB occurrences of bat species within 5 miles of the site with the nearest occurrence 4 miles to the north from the site (Figure 5). Townsend's big-eared bats are known to occur with the nearest occurrence 4 miles to the north of the site. A pallid bat occurrence is known to occur approximately 4.1 miles north from the site. Bat species were not observed at the site. The proposed project will result in the loss of several mature blue oak and foothill pine trees, which provide potentially suitable roosting habitat for bat species. Therefore, it has been determined that there may be a significant impact to this species as a result of the proposed project without appropriate avoidance and mitigation measures.

7.4.2.2 American Badger

Conservation Status: CDFW - Species of Special Concern

American badger (*Taxidea taxus*) generally occur in open pasture and grassland habitats and are most abundant in drier open stages of most shrub, forest and herbaceous habitats with friable soils on uncultivated ground. They dig their own burrows and prey primarily on burrowing rodents. The grassland habitats at the site provides very limited, but potentially suitable habitat for this species. However, there were no large burrows observed at the site which would greatly limit the likelihood that this species occurs at the site.

There are no CNDDDB occurrences of this species within 5 miles of the site (Figure 5). This species was not observed at the site. The lack of large burrows at the site greatly limits the likelihood that this species utilizes habitats at the site. Therefore, it has been determined that there will be no significant impact to this species as a result of the proposed project.

7.4.3 Amphibians and Reptiles

7.4.3.1 Foothill Yellow-Legged Frog

Conservation Status: State – Candidate Threatened; CDFW – Species of Special Concern

Foothill yellow-legged frog (*Rana boylei*) occur in shallow streams with a rocky substrate. They need at least some cobble-sized substrate for egg-laying. This species typically stays within the confines of a stream channel and its riparian corridor. The seasonal drainage provides limited, yet suitable habitat for this species. The seasonal drainage at the site contains few pools and riffles, undercut banks and exposed roots.

There are several CNDDDB occurrences of this species within 5 miles of the site with the nearest occurrence in 2.1 miles to the northwest of the site (Figure 5). It is somewhat likely that this species occurs in the seasonal drainage at the site.

The proposed project will avoid impacts to the seasonal drainage at the site. Site developments (parking areas, accessory structures and cultivation areas) will be located at a distance of 100 feet or greater from the top of bank of the unnamed seasonal drainage. Implementation of adequate erosion and sediment control measures and proper material handling and storage during construction activities will avoid sedimentation and other potential pollutants from entering drainages and downstream aquatic habitats.

Although this species is known to stay within stream channels and its riparian corridor, there is some possibility that it can travel outside of the riparian corridor and into proposed site development areas. Therefore, it has been determined that there may be a significant impact to this species as a result of the proposed project without appropriate avoidance and mitigation measures.

7.4.3.2 California Giant Salamander

Conservation Status: CDFW - Species of Special Concern

California giant salamander (*Dicamptodon ensatus*) occur in wet coastal forests near streams and seeps and larvae are found in cold, clear streams and occasionally in lakes and ponds. Adults are found in wet forests under rocks and logs near streams and lakes. The seasonal drainage provides limited, yet potentially suitable habitat for this species. However, this species is typically found in wetter environments surrounded by forest habitats.

There are no CNDDDB occurrences of this species within 5 miles of the site (Figure 5). This species was not observed at the site. It is unlikely that this species utilizes the seasonal drainage habitat at the site.

The proposed project will avoid impacts to the seasonal drainage at the site. Site developments (parking areas, accessory structures and cultivation areas) will be located at a distance of 100 feet or greater from the top of bank of the unnamed seasonal drainage. Implementation of adequate erosion and sediment control measures and proper material handling and storage during construction activities will avoid sedimentation and other potential pollutants from entering drainages and downstream aquatic habitats. Therefore, it has been determined that there will be no significant impact to this species as a result of the proposed project.

7.4.3.3 Red-bellied Newt

Conservation Status: CDFW - Species of Special Concern

Red-bellied newt (*Taricha rivularis*) occur in coastal woodlands and especially redwood forests in northern California. They are terrestrial for most of their life but during their aquatic stage, they are found in fast flowing streams and rocky rivers. The seasonal drainage does not provide the habitat requirements that this species prefers.

There are no CNDDDB occurrences of this species within 5 miles of the site (Figure 5). This species was not observed at the site. It is highly unlikely that this species occurs at the site as this species prefers fast flowing streams in coastal environments.

The proposed project will avoid impacts to the seasonal drainage at the site. Site developments (parking areas, accessory structures and cultivation areas) will be located at a distance of 100 feet or greater from the top of bank of the unnamed seasonal drainage. Implementation of adequate erosion and sediment control measures and proper material handling and storage during construction activities will avoid sedimentation and other potential pollutants from entering drainages and downstream aquatic habitats. Therefore, it has been determined that there will be no significant impact to this species as a result of the proposed project.

7.4.3.4 Western Pond Turtle

Conservation Status: CDFW - Species of Special Concern

Western pond turtle (*Emys marmorata*) occur in reservoirs, ponds, vernal pools, brackish estuaries, sloughs, drainage ditches, and perennial streams. This species requires basking sites and suitable upland habitat adjacent to aquatic habitats for egg-laying. Basking sites are typically logs, small islands and docks. The upland areas typically used by this species include sandy banks or grassy open fields. The seasonal drainage provides very limited, yet potentially suitable habitat for this species.

There are several CNDDDB occurrences of this species within 5 miles of the site with the nearest occurrence approximately 2.1 miles to the east of the site (Figure 5). This species was not observed at the site. It is unlikely that this species occurs at the site.

The proposed project will avoid impacts to the seasonal drainage and associated riparian scrub habitat at the site. Site developments (parking areas, accessory structures and cultivation areas) will be located at a distance of 100 feet or greater from the top of bank of the unnamed seasonal drainage. Implementation of adequate erosion and sediment control measures and proper material handling and storage during construction activities will avoid sedimentation and other potential pollutants from entering drainages and downstream aquatic habitats. Therefore, it has been determined that there will be no significant impact to this species as a result of the proposed project.

7.4.4 Fishes

All special-status fish species that currently and/or historically have the potential to occur within the Hunting Creek Watershed which is within the Upper Putah Creek Watershed, have been included in this evaluation of habitat suitability and discussion of potential impacts. Salmon or steelhead may still be present in the Putah Creek Watershed below the Putah Diversion Dam. However, they may no longer be present upstream of dams that lack fish passage (McEwan 2001). The Upper Putah Creek Watershed has its headwaters in the Mayacamas

Mountains, a part of the Coast Range, and the watershed encompasses the area upstream of Monticello Dam. Monticello Dam creates Lake Berryessa. Putah Diversion Dam is located on Putah Creek, approximately 6 miles south of the Monticello Dam. The principal function of the diversion dam is to divert water into Putah South Canal which starts at Putah Diversion Dam and runs easterly.

Native rainbow trout still swim in the upper mountain reaches, and historically, Chinook salmon and steelhead spawned in the lower and middle portions of Putah Creek. Putah Diversion Dam is now the upstream terminus of salmon and steelhead migration (SRWP 2019).

7.4.4.1 Clear Lake Hitch

Conservation Status: State – Threatened

Clear Lake Hitch (*Lavinia exilicauda*) occur in Clear Lake in Lake County and its tributaries. This large minnow species migrates each spring, when adults make their way upstream in tributaries of Clear Lake to spawn before they return to the lake. Spawning occurs in gravel riffles or on vegetation within streams. In streams, this species is generally found in pools or runs among aquatic vegetation, although small individuals will also use riffles. This species prefers shallow (<1 meter deep) stream habitats with smaller gravel to mud substrates. This species is known to have high temperature tolerances.

Although there are no CNDDDB occurrences of this species within 5 miles of the site (Figure 5), it is known that this species is present in Hunting Creek currently and/or historically (UC ANR 2019). Hunting Creek is 2.1 miles from the site. Reaches of Hunting Creek may provide suitable spawning habitat for Clear Lake Hitch.

The proposed project will avoid impacts to the seasonal drainage and associated riparian scrub habitat at the site. Site developments (parking areas, accessory structures and cultivation areas) will be located at a distance of 100 feet or greater from the top of bank of the unnamed seasonal drainage. Implementation of adequate erosion and sediment control measures and proper material handling and storage during construction activities will avoid sedimentation and other potential pollutants from entering drainages and downstream aquatic habitats. Therefore, it has been determined that there will be no significant impact to this species as a result of the proposed project.

7 DISCUSSION OF POTENTIAL IMPACTS

8.1 SIGNIFICANCE CRITERIA

The determination of significance of impacts to biological resources involves an evaluation of the context in which the impact may occur and the intensity and extent of the impact's effect. The significance of potential impacts is assessed at a site-specific scale and in the larger regional context. The project's effect on biological resources would be considered significant if the project results in:

- Alteration of unique characteristics of the area, such as sensitive plant communities and habitats (i.e. serpentine habitats, wetlands, riparian habitats).
- Adverse impacts to special-status species.
- Adverse impacts to important or vulnerable resources as determined by scientific opinion or resource agency concerns (i.e. special status habitats; e.g. wetlands).
- Interference with migratory routes.

8.2 POTENTIAL IMPACTS

The proposed project will result in impacts to, and the loss of, non-native annual grassland and chaparral habitat at the site (Figure 4). An undetermined number of blue oak and foothill pine trees are proposed to be removed as a result of the proposed project.

The proposed project will avoid impacts to seasonal wetland, seasonal drainage and ephemeral drainages at the site. Site developments (parking areas, accessory structures and cultivation areas) will be located at a distance of 100 feet or greater from the top of the bank of the seasonal and ephemeral drainages and from the edge of seasonal wetland habitat.

The proposed project has the potential to impact special-status animal species including foothill yellow-legged frog and special-status bat species. In addition, the proposed project has the potential to disturb native nesting birds, including birds of prey, as a result of site developments in the event native birds initiate nesting activities at the site.

Additionally, because an early season botanical survey was not performed at the site, a protocol-level botanical survey will need to be performed in the early spring of 2020 to ensure that all special-status plant species with the potential to occur at the site were surveyed during the appropriate bloom time.

8.3 RECOMMENDED MITIGATION MEASURES

8.3.1 Nesting Birds

To ensure that nesting birds are not disturbed as a result of tree trimming, tree removal and construction activities, it is recommended that pre-construction surveys for nesting birds be performed prior to the initiation of tree trimming, tree cutting, grubbing and construction activities.

Mitigation Measures

A qualified biologist should perform a pre-construction survey for nesting birds within 48 hours prior to tree removal and/or ground breaking at the site if construction activities will take place between February 1 and August 31. If nesting birds are found, the qualified biologist should establish suitable buffers prior to tree removal and/or ground breaking activities. To prevent encroachment, the established buffer(s) should be clearly marked by highly visibility material. The established buffer(s) should remain in effect until the young have fledged or the nest has been abandoned as confirmed by the qualified biologist. To more effectively identify active nests and to facilitate project scheduling, it is recommended that initial nesting surveys begin as early as February when the foliage on the trees are at a minimum and the nest building activity is high.

8.3.2 Roosting Bats

To ensure that actively roosting bats are not disturbed as a result of tree trimming and tree removal, it is recommended that specific mitigation measures be implemented to avoid impacts to bat species.

Mitigation Measures

- 1. The pruning or removal of living trees or snags must not occur during the maternity season between April 1 and September 1 to minimize the disturbance of young that may be present and unable to fly.*
- 2. The pruning or removal of living trees or snags must occur between the hours of 12 pm and sunset on days after nights when low temperatures were 50° For warmer to minimize impacting bats that may be present in deep torpor. Sunset times shall be obtained from http://aa.usno.navy.mil/data/docs/RS_OneDay.php and temperatures for prior-work nights shall be obtained from <http://www.wunderground.com/history/>*
- 3. When it is necessary to perform crown reduction on trees over 12 inches in diameter breast height or remove entire trees or branches over six inches in diameter there shall be preliminary pruning of small branches less than 2 inches in diameter performed the day before. The purpose of this is to minimize the probability that bats would choose to roost in those trees the night before the work is performed.*

8.3.3 Foothill Yellow-legged Frog

Although unlikely, foothill yellow-legged frogs are known to travel outside of stream channels and riparian corridors. To ensure that foothill yellow-legged frogs are not disturbed as a result of construction activities, it is recommended that pre-construction surveys for foothill yellow-legged frogs be performed 300 feet from the edge of the seasonal drainage prior to the initiation of construction activities.

Mitigation Measure

A qualified biologist should perform a pre-construction survey for foothill yellow-legged frogs 300 feet from the edge of the seasonal drainage within 48 hours prior to ground breaking at the site. If foothill yellow-legged frogs are found, the qualified biologist should establish suitable buffers and/or relocation of individuals prior to initiation of construction activities.

8.3.4 Loss of Blue Oak and Foothill Pine Trees

Several blue oak and foothill pine trees are proposed to be removed as a result of site developments.

Mitigation Measure

The planting of blue oak and foothill pine trees at a 3:1 mitigation ratio shall be performed at the site to mitigate for the loss of blue oak trees over 6 inch diameter breast height at the site.

8.3.5 Chaparral

The project will result in the loss of chaparral habitat at the site as a result of the development of the cultivation area. Chaparral is a state listed sensitive habitat and would be considered a significant impact without habitat mitigation and/or conservation.

Mitigation Measure

Habitat mitigation and or/conservation for the loss of chaparral habitat as a result of the proposed project shall be performed at the site. This shall either consist of the restoration of chaparral habitat at the site or the conservation of chaparral habitat at the site in the form of a conservation easement or deed restriction.

8.4 RECOMMENDED ADDITIONAL STUDIES

8.3.1 Early Season Special-Status Plant Species Survey

Because an early season botanical survey was not performed at the site, a protocol-level botanical survey shall to be performed in the early spring of 2020 to ensure that all special-status plant species with the potential to occur at the site were surveyed during the appropriate bloom time. A separate report of findings shall be prepared or this biological assessment shall be updated to include the results of the early season special-status plant species survey in 2020.

9 REFERENCES

- California Department of Fish and Wildlife (CDFW). 2000. Guidelines for assessing effects of proposed developments on rare and endangered plants and natural communities. CDFW, Sacramento.
- California Natural Diversity Data Base (CNDDDB). Quadrangle reports (May 2019) for *Jericho Valley, Lower Lake, Wilson Valley, Glascock Mtn., Middletown, Knoxville, Detert Reservoir, Aetna Springs, Walter Springs* USGS 7.5-minute quadrangles.
- California Native Plant Society (CNPS). June 2017. Inventory of Rare and Endangered Vascular Plants of California. California Native Plant Society Special Publication No. 1 (Sixth Edition, Electronic Version). Rare Plant Scientific Advisory Committee, David P. Tibor, Convening Editor. California Native Plant Society, Sacramento, CA.
- Commercial Cannabis Cultivation Application Package, March 2018. Lake County Community Development Department. Available online at: <https://www.lakecountyca.gov/Assets/Departments/CDD/Marijuana+Cultivation+Ordinance/Cannabis+Policy/CCC+Application+Packet.pdf>. Accessed July 24, 2019.
- McEwan, D.R., 2001. Central valley steelhead. *Fish Bulletin*, 179(1), pp.1-43.
- Ehrlich, P. R., Dobkin, D. S., Wheye D. 1988. *The Birder's Handbook – A Field Guide to the Natural History of North American Birds*. Simon & Schuster, Inc. New York.
- Harrison, H. H. 1979. *A Field Guide to Western Birds' Nests*. Houghton Mifflin Company, New York.
- Hickman, J. C. (Ed.). 1993. *The Jepson Manual of Higher Plants of California*. University of California Press, Berkeley.
- Holland, R. F. 1986. Preliminary descriptions of the terrestrial natural communities of California. Non-game Heritage Program, California Department of Fish and Game, Sacramento.
- Jennings, M.R. and M.P. Hayes 1994. Amphibian and reptile species of special concern in California. Final report. Prepared for the California Department of Fish and Game, Inland Fisheries Division. 255 p.
- NMFS 1998. Status review of Chinook salmon from Washington, Idaho, Oregon, and California. National Marine Fisheries Service, Northwest Fisheries Science Center. February 1998.
- NMFS 1999. Designated critical habitat; Central California Coast and Southern Oregon/Northern California Coasts coho salmon. Final rule. National Marine Fisheries Service. Federal Register 64(86): 24049-24062. 5 May 1999.
- NMFS 2005a. Final listing determinations for 16 ESUs of West Coast salmon, and final protective regulations for threatened salmonid ESUs. Federal Register 70(123): 37159-37204. 28 June 2005.

BIOLOGICAL ASSESSMENT - CUA, JERUSALEM GRADE, MIDDLETOWN, CA

NMFS 2005b. Designation of critical habitat for seven Evolutionarily Significant Units of Pacific salmon and steelhead in California. National Marine Fisheries Service. Federal Register: 70(170): 52487-52627. 2 September 2005.

NMFS 2006. Final listing determinations for 10 Distinct Population Segments of West Coast steelhead. National Marine Fisheries Service. Federal Register: Volume 71, Number 3: 833-862. January 5, 2006.

Mayer, K. E., Laudenslayer, W. F. 1988. A Guide to Wildlife Habitats of California. State of California Resources Agency, Department of Fish and Game. Sacramento, CA. 166 pp.

Payne and Associates. Geographical Distribution of Fish Species Found in Putah Creek. 1992. <http://www.scwa2.com/home/showdocument?id=4315>. Accessed August 7, 2019.

Reed, P. B. 1988. National List of Plant Species That Occur in Wetlands: California (Region 0).

Sacramento Hitch: *Lavinia exilicauda exilicauda* (Baird and Girard). California Department of Fish and Wildlife Service. Available online at: <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=104368&inline>. Accessed July 25, 2019.

Sacramento River Watershed Program (SRWP). Putah Creek Watershed. Available online at: <http://www.sacriver.org/aboutwatershed/roadmap/watersheds/westside/putah-creek-watershed>

Shuford, W. D., and Gardali, T., editors. 2008. California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento.

U.S. Fish and Wildlife Service. 2017. Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle (*Desmocerus californicus dimorphus*). U.S. Fish and Wildlife Service; Sacramento, California. 28 pp.

United States Fish and Wildlife Service (USFWS). 2017. Threatened and Endangered Species database System (TESS). Species Information – Threatened and Endangered Plants and Animals.

University of California Agriculture and Natural Resources (UC ANR). 2019. Fish Species by Watersheds: Hunting Creek. Available online at: <http://calfish.ucdavis.edu/location/?ds=698&reportnumber=1293&catcol=4712&categorysearch=%27Hunting%20Creek%2D180201620306%27>.

FIGURES

FIGURE 1. SITE VICINITY MAP

FIGURE 2. USGS MAP

FIGURE 3. SOILS MAP

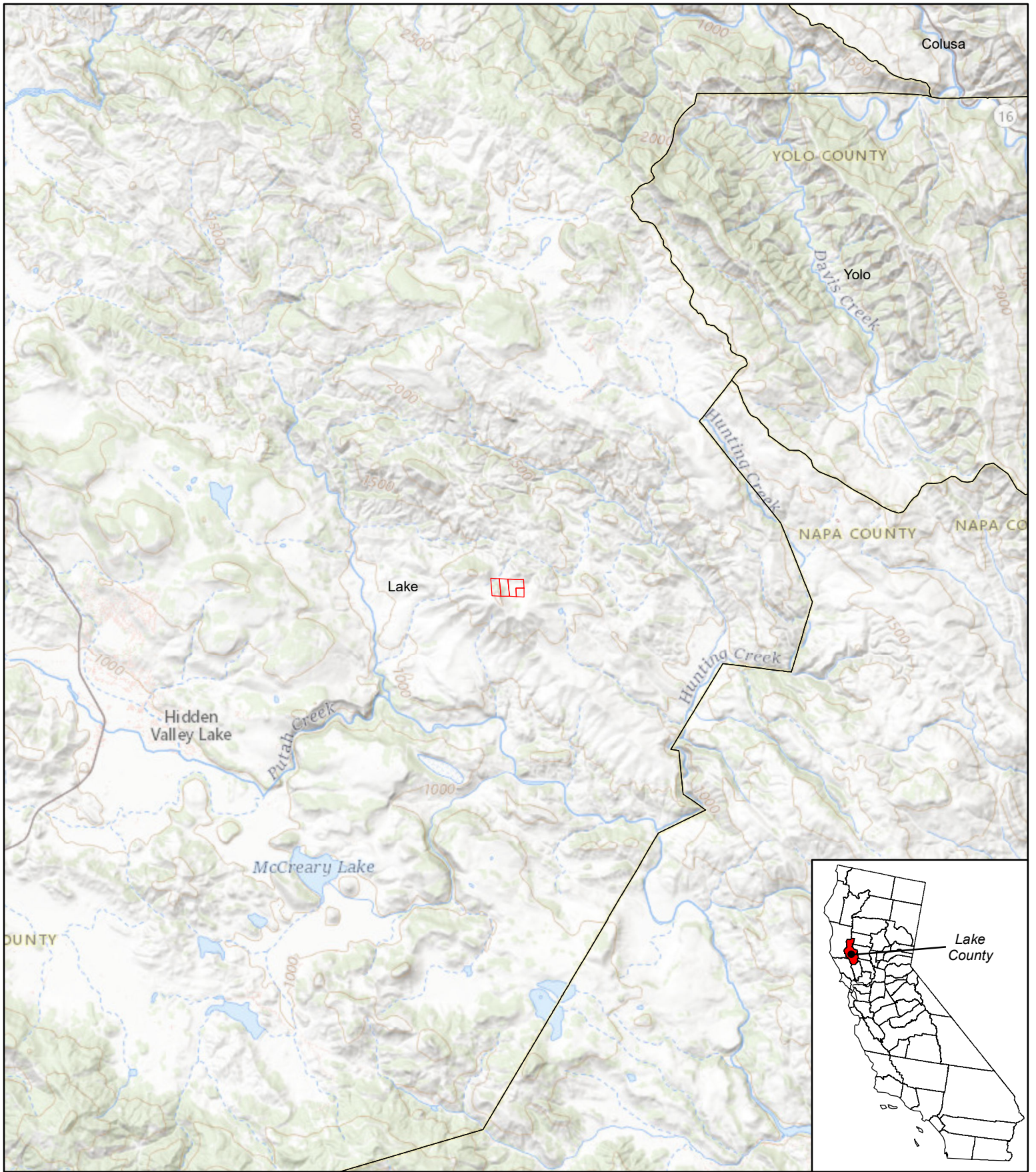
FIGURE 4. HABITAT MAP

FIGURE 5. CNDDDB MAP

FIGURE 6. WATERSHED MAP

SITE PLAN

PHOTO PLATE A



 Site Boundary

Figure 1 - Site Vicinity Map

25392 | 25372 | 25252 | 25322 JERUSALEM GRADE RD.
 MIDDLETOWN, CA 95461 - LAKE COUNTY APN'S:
 013-017-35 | 013-017-36 | 013-017-92 | 013-017-74



0 1 2 4 Miles

Wiemeyer Ecological Sciences
 4000 Montgomery Dr. Ste. L-5
 Santa Rosa, CA 95405

Parcel boundary
 provided by
 Lake County
 Map date: 3/2020



USGS 7.5' Quad: Jericho Valley

 Site Boundary



Figure 2 - USGS Map

25392 | 25372 | 25252 | 25322 JERUSALEM GRADE RD.
 MIDDLETOWN, CA 95461 - LAKE COUNTY APN'S:
 013-017-35 | 013-017-36 | 013-017-92 | 013-017-74



Wiemeyer Ecological Sciences
 4000 Montgomery Dr. Ste. L-5
 Santa Rosa, CA 95405

Parcel boundary
 provided by
 Lake County
 Map date: 3/2020

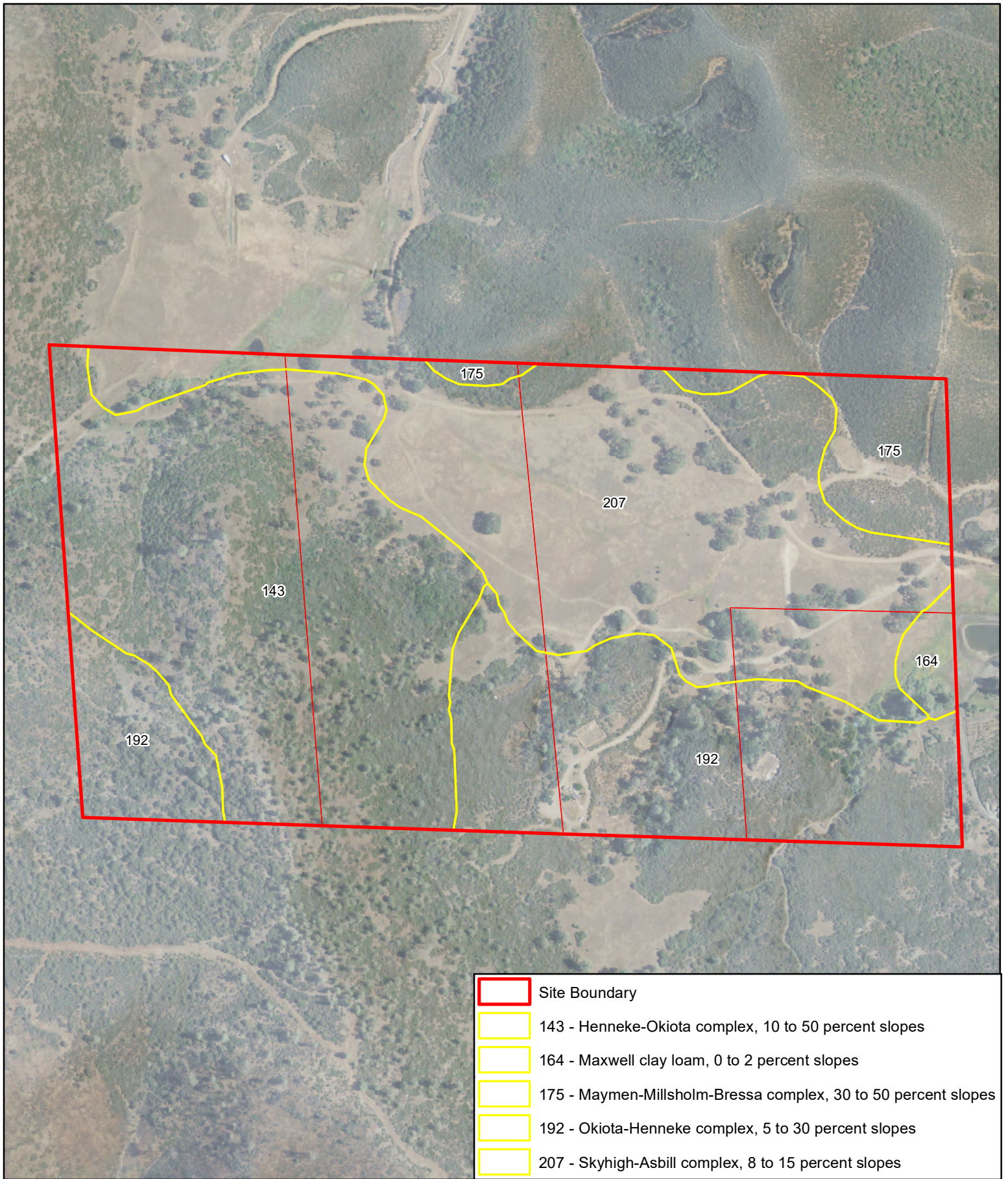


Figure 3 - Soils Map

25392 | 25372 | 25252 | 25322 JERUSALEM GRADE RD.
 MIDDLETOWN, CA 95461 - LAKE COUNTY APN'S:
 013-017-35 | 013-017-36 | 013-017-92 | 013-017-74



0 100 200 400 Feet

Wiemeyer Ecological Sciences
 4000 Montgomery Dr. Ste. L-5
 Santa Rosa, CA 95405

Parcel boundary
 provided by Lake County
 Soils provided by NRCS
 Imagery (NAIP 2016)
 Map date: 3/2020



Figure 4 - Habitat Map

25392 | 25372 | 25252 | 25322 JERUSALEM GRADE RD.
 MIDDLETOWN, CA 95461 - LAKE COUNTY APN'S:
 013-017-35 | 013-017-36 | 013-017-92 | 013-017-74

Site Boundary
 100 ft. setback
 Study Area

Native Grassland
 Seasonal Wetland

Ephemeral Drainage
 Seasonal Drainage

CH - Chaparral
 NAG - Non-native Annual Grassland
 OW - Oak Woodland



0 100 200 400 Feet

Wiemeyer Ecological Sciences
 4000 Montgomery Dr. Ste. L-5
 Santa Rosa, CA 95405

Parcel boundary provided
 by Lake County
 Imagery (NAIP 2016)
 Map date: 3/2020

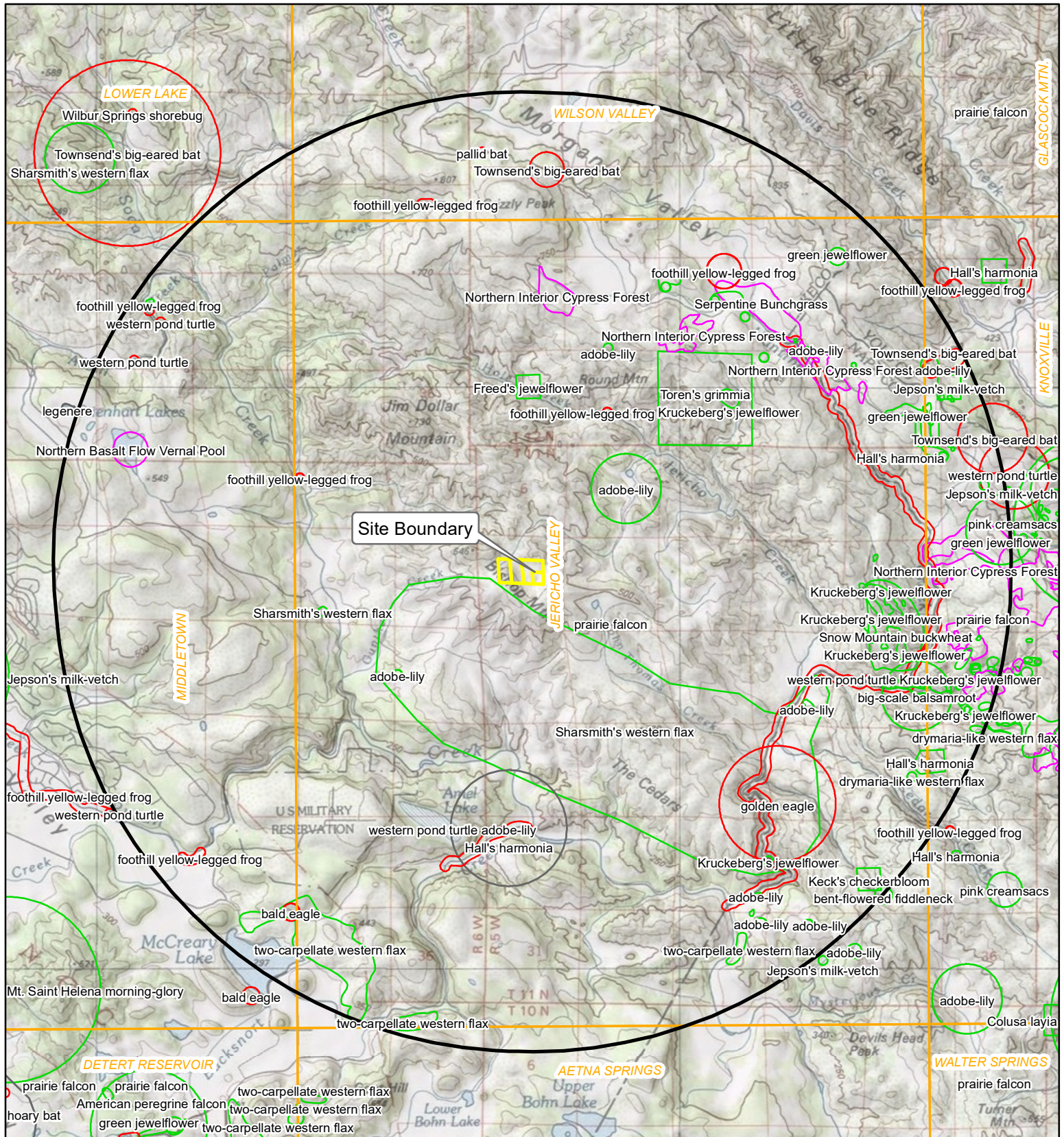


Figure 5 - CNDDB Occurrences

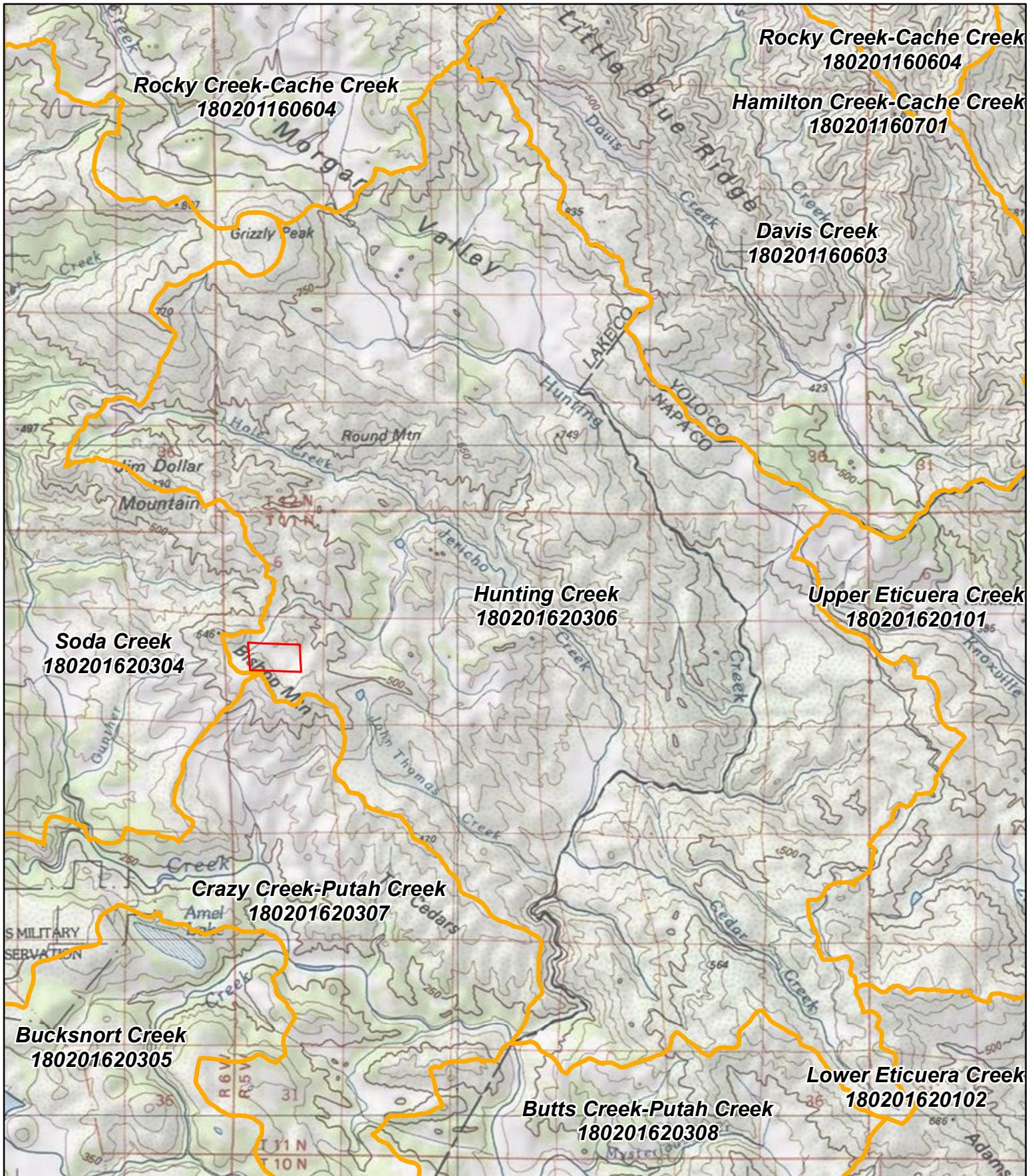
25392 | 25372 | 25252 | 25322 JERUSALEM GRADE RD.
 MIDDLETOWN, CA 95461 - LAKE COUNTY APN'S:
 013-017-35 | 013-017-36 | 013-017-92 | 013-017-74



0 1 2 4 Miles

Wiemeyer Ecological Sciences
 4000 Montgomery Drive, Suite L-5
 Santa Rosa, CA 95405

CNDDB Occurrences
 via CDFW (v. 6/2019)
 Map date: 3/2020



Site Boundary
 Watershed Boundary (HUC 12)

0 0.5 1 2 Miles

Figure 6 - Watershed Map

25392 | 25372 | 25252 | 25322 JERUSALEM GRADE RD.
 MIDDLETOWN, CA 95461 - LAKE COUNTY APN'S:
 013-017-35 | 013-017-36 | 013-017-92 | 013-017-74

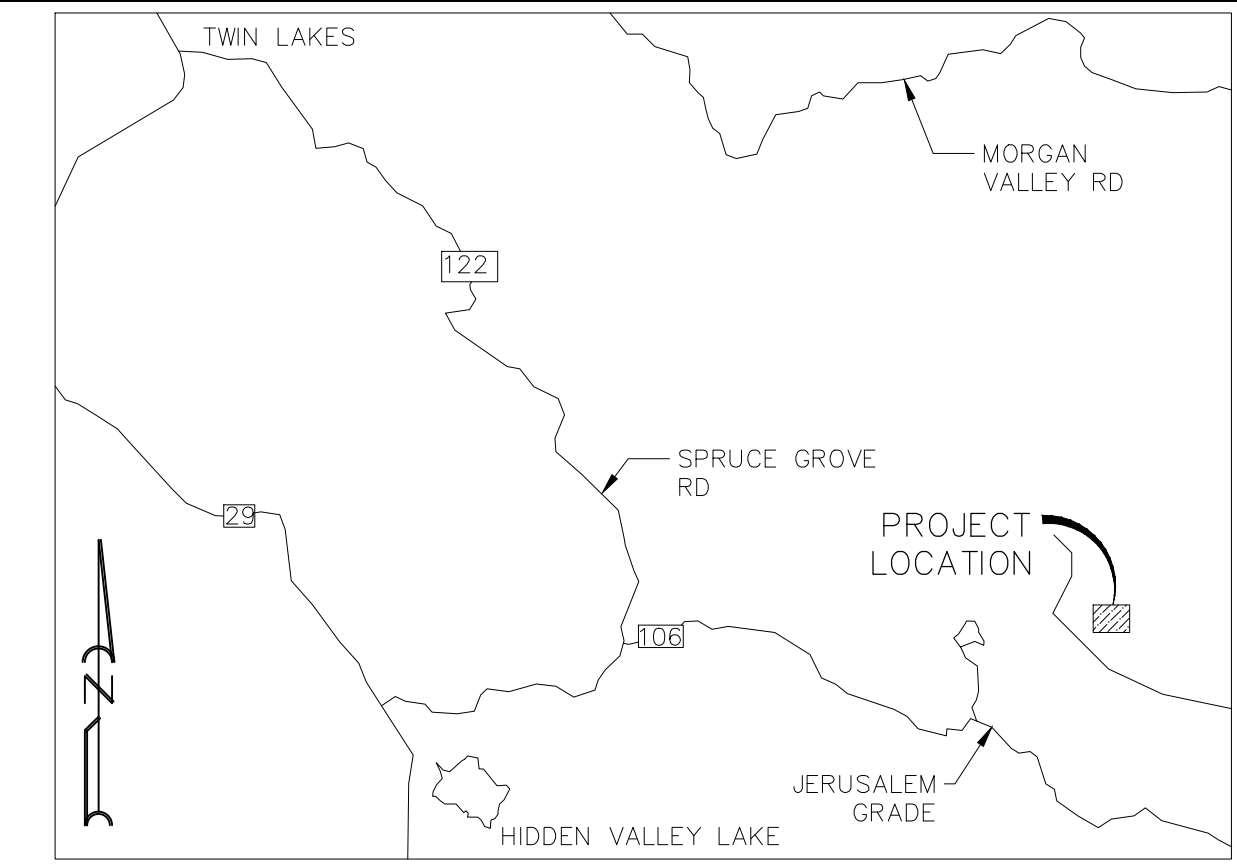


Wiemeyer Ecological Sciences
 4000 Montgomery Dr. Ste. L-5
 Santa Rosa, CA 95405

Parcel boundary
 provided by
 Lake County
 Watershed boundary
 provided by USGS
 Map date: 3/2020

25392/25372/25252/25322 JERUSALEM GRADE RD.
MIDDLETOWN, CA 95461 - LAKE COUNTY

APN'S: 013-017-35/013-017-36/013-017-92/013-017-74



VICINITY MAP
NO SCALE



LEGEND:

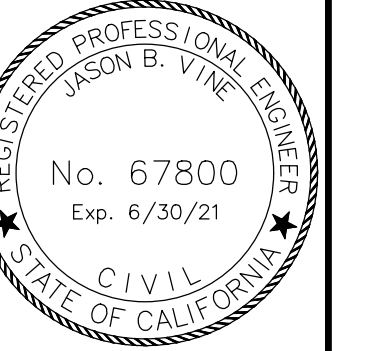
- 1530 CONTOUR ELEVATION
- FENCE
- LIMITS OF DISTURBED AREA
- ASPHALT
- GRAVEL
- EARTH
- FLOOD ZONE
- CREEK / SWALE
- APN ASSESSOR'S PARCEL NUMBER
- APPROX APPROXIMATELY
- DWY DRIVEWAY
- (E) EXISTING
- (P) PROPOSED
- RD ROAD
- SF SQUARE FEET

NOTES:

1. CONTOUR INTERVAL IS 10'
- (A) (E) GROUNDWATER WELL:
LAT: 38.491808°
LONG: -122.272733°
 - (B) EPHEMERAL CLASS III WATERCOURSE
 - (C) 100' SETBACK FROM WATERCOURSE

Revisions:

REALM ENGINEERING
CIVIL ENGINEERING, SURVEYING & PLANNING
1767 MARKET STREET SUITE C
REDDING, CA. 96001
530-526-7493



EXISTING CONDITION SITE PLAN

25392/25372/25252/25322 JERUSALEM GRADE RD.
MIDDLETOWN, CA 95461
LAKE COUNTY - APN'S: 013-017-35/013-017-36/013-017-92/013-017-74

PLOTTED BY:

DATE PLOTTED:

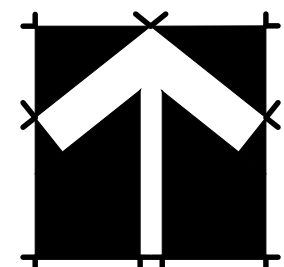
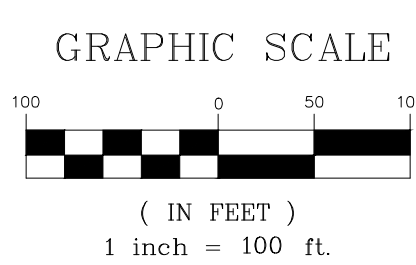
SCALE OF DRAWING:

JOB NUMBER:

CADD FILE:

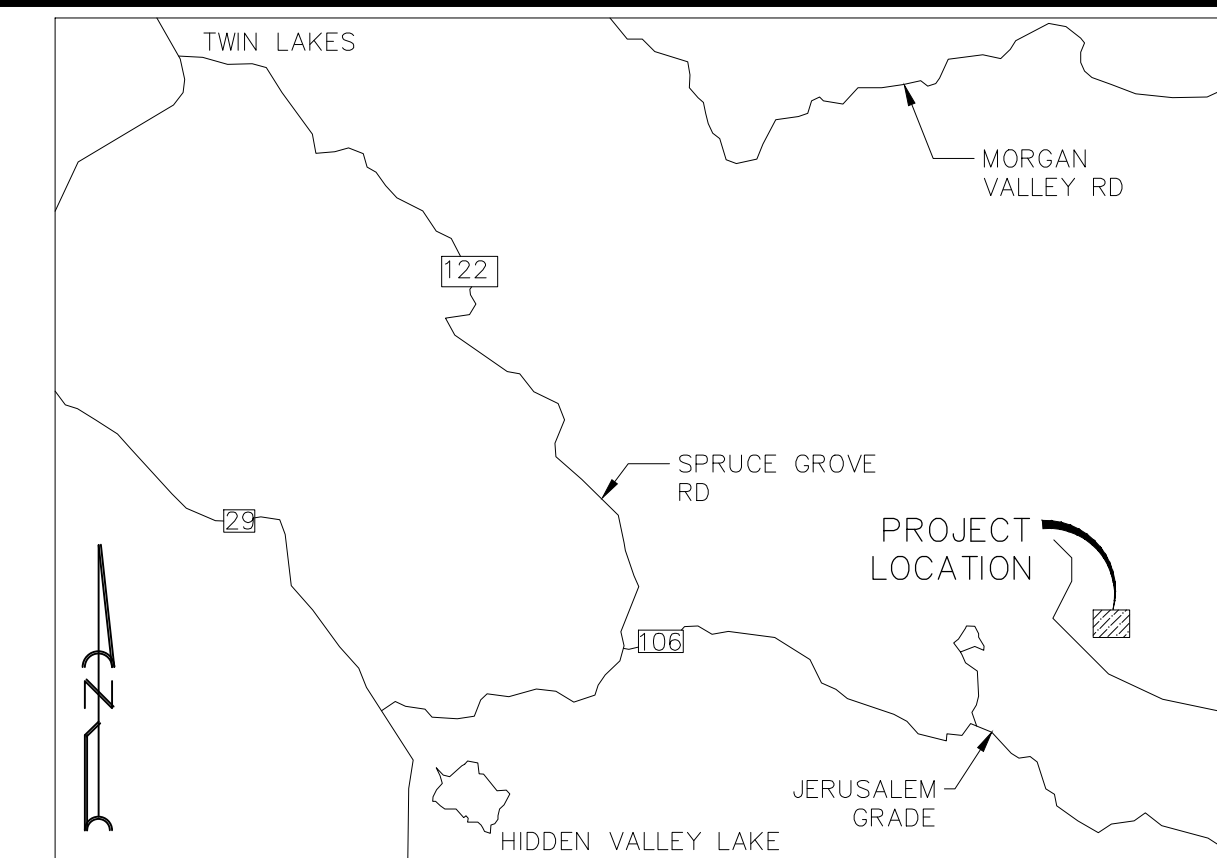
SHEET:

EXISTING CONDITIONS SITE PLAN

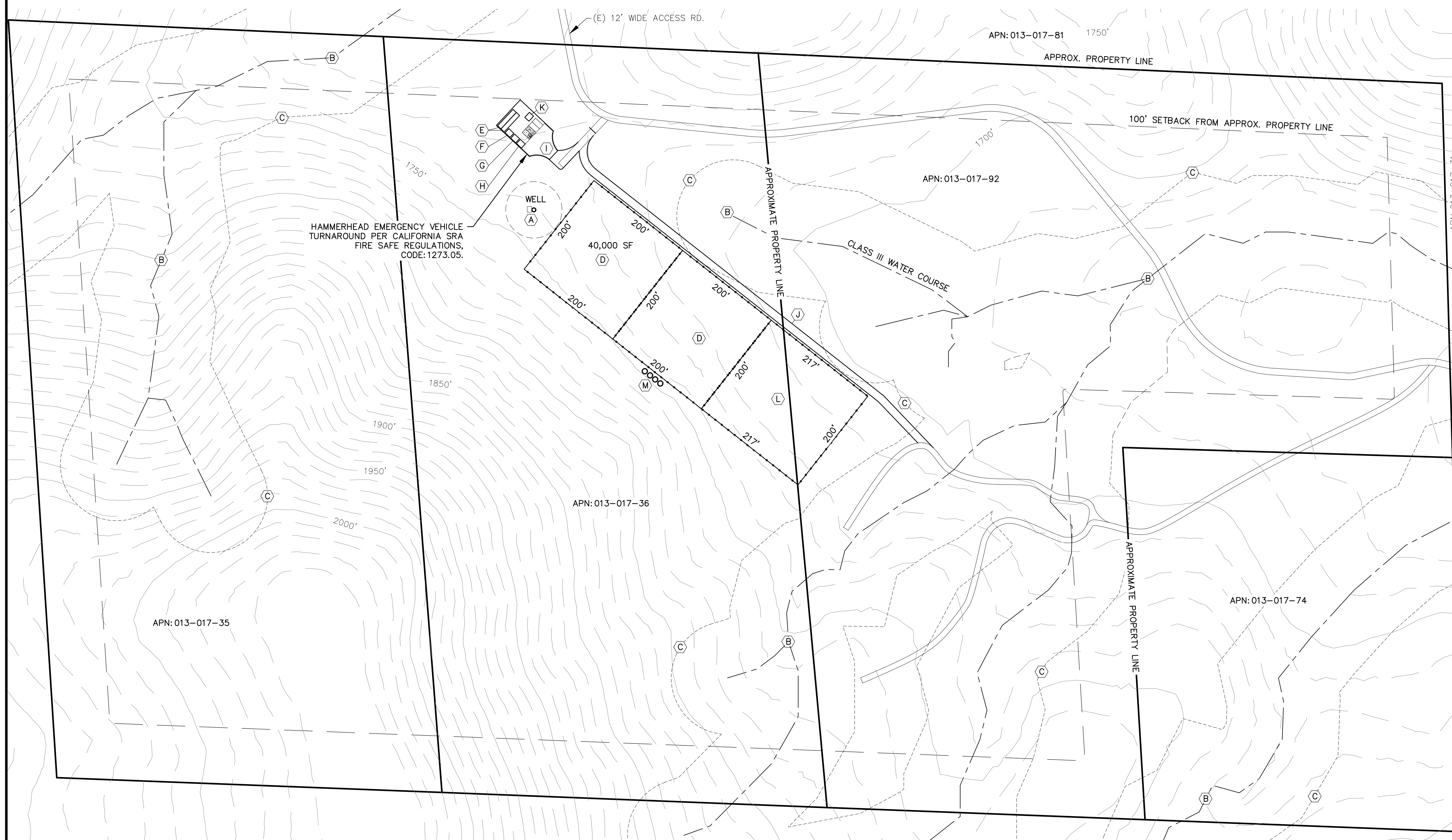


25392/25372/25252/25322 JERUSALEM GRADE RD.
MIDDLETOWN, CA 95461 - LAKE COUNTY

APN'S: 013-017-35/013-017-36/013-017-92/013-017-74



VICINITY MAP
NO SCALE



LEGEND:

- 1530 CONTOUR ELEVATION
- FENCE
- LIMITS OF DISTURBED AREA
- ASPHALT
- GRAVEL
- EARTH
- FLOOD ZONE
- CREEK / SWALE
- APN ASSESSOR'S PARCEL NUMBER
- APPROX APPROXIMATELY
- DWY DRIVEWAY
- (E) EXISTING
- (P) PROPOSED
- RD ROAD
- SF SQUARE FEET

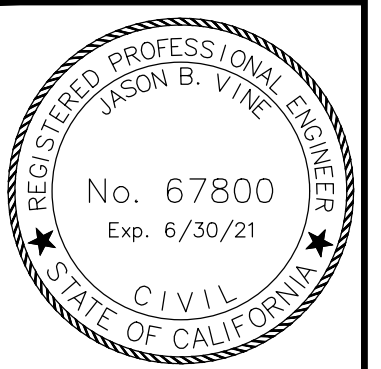
NOTES:

1. CONTOUR INTERVAL IS 10'

- (A) (E) GROUNDWATER WELL:
LAT: 38.491808°
LONG: -122.272733°
- (B) EPHEMERAL CLASS III WATERCOURSE
- (C) 100' SETBACK FROM WATERCOURSE
- (D) (P) 40,000 SF OUTDOOR CULTIVATION/CANOPY AREA
- (E) (P) TWO - 8'x20' HARVEST STORAGE AREAS
- (F) (P) AGRICULTURAL CHEMICAL STORAGE AREA
- (G) (P) COMPOSTING AREA
- (H) (P) DESIGNATED REFUSE AREA
- (I) (P) PARKING / A.D.A
- (J) (P) 14' WIDE ACCESS RD.
- (K) (P) 10'x12' SECURITY SHED
- (L) (P) 43,400 SF OUTDOOR CULTIVATION/CANOPY AREA
- (M) (P) FOUR - 8,000 GALLON WATER STORAGE TANKS=32K GALLON

Revisions:

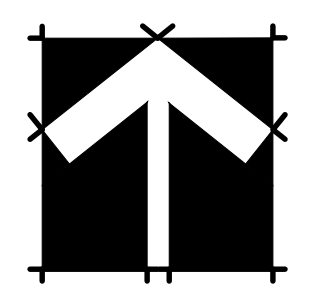
REALM ENGINEERING
CIVIL ENGINEERING, SURVEYING & PLANNING
1767 MARKET STREET SUITE C
REDDING, CA. 96001
530-526-7493



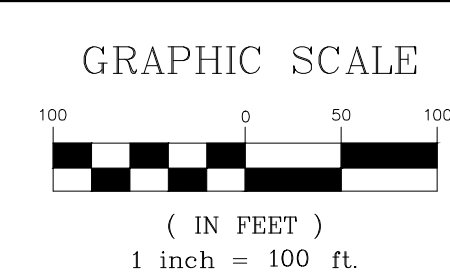
PROPOSED CONDITION SITE PLAN

25392/25372/25252/25322 JERUSALEM GRADE RD.
MIDDLETOWN, CA 95461
LAKE COUNTY - APN'S: 013-017-35/013-017-36/013-017-92/013-017-74

PLOTTED BY:
DATE PLOTTED: 1/10/20
SCALE OF DRAWING: SEE PLAN
JOB NUMBER:
CADD FILE:
SHEET:

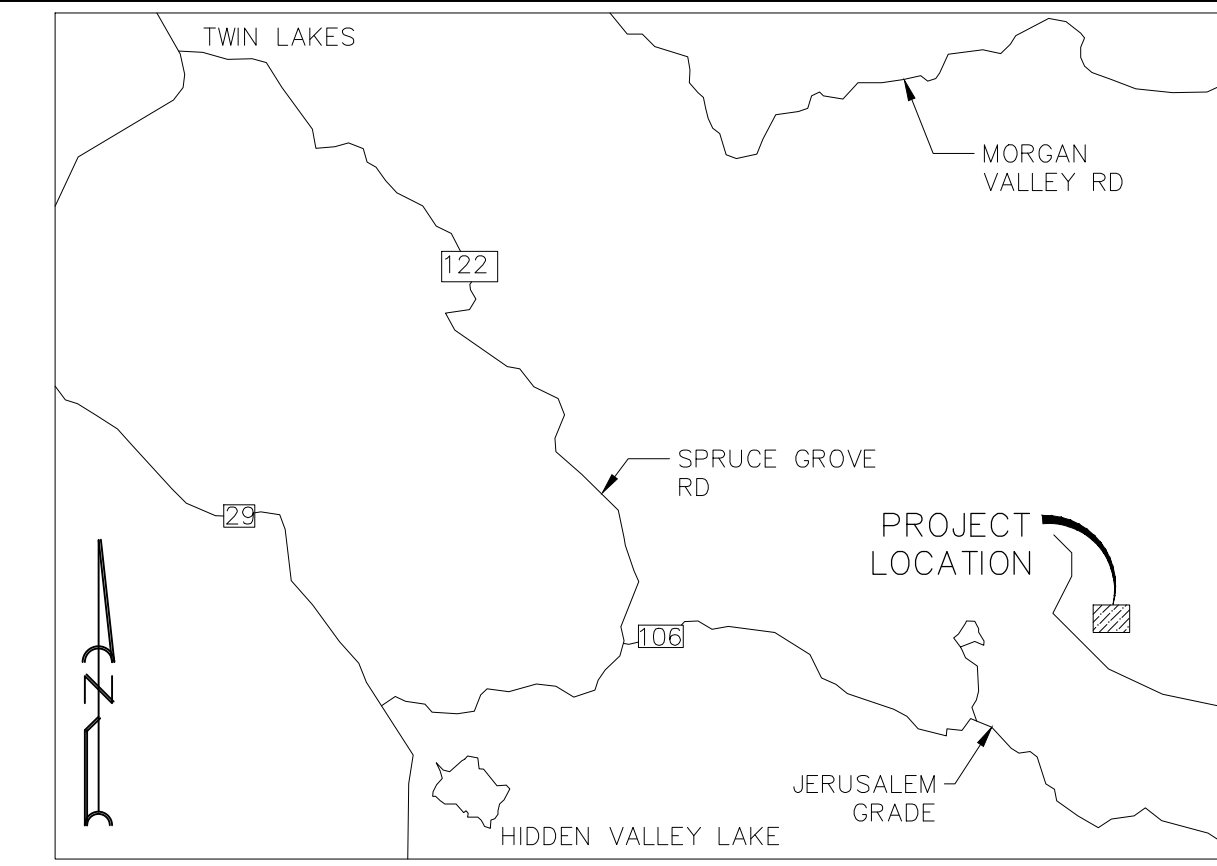


PROPOSED CONDITIONS SITE PLAN



25392/25372/25252/25322 JERUSALEM GRADE RD.
MIDDLETOWN, CA 95461 - LAKE COUNTY

APN'S: 013-017-35/013-017-36/013-017-92/013-017-74



VICINITY MAP
NO SCALE



LEGEND:

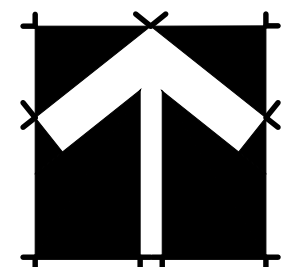
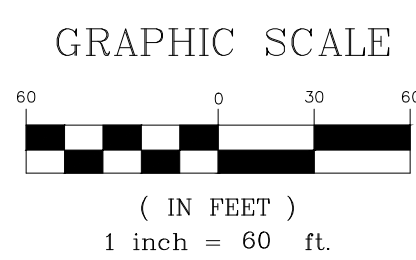
- 1530 CONTOUR ELEVATION
- FENCE
- ASPHALT
- GRAVEL
- EARTH
- EXISTING POWER POLE
- (P) SECURITY LIGHTS
- (P) SECURITY CAMERAS
- APN ASSESSOR'S PARCEL NUMBER
- APPROX APPROXIMATE
- DWY DRIVEWAY
- (E) EXISTING
- (P) PROPOSED
- RD ROAD
- SF SQUARE FEET

NOTES:

1. CONTOUR INTERVAL IS 10'

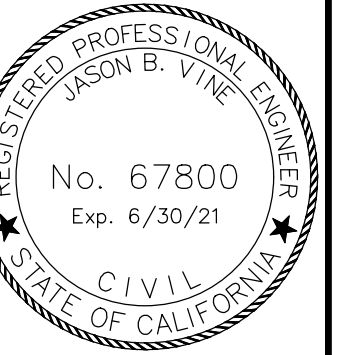
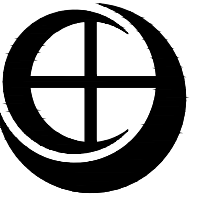
- (A) (E) GROUNDWATER WELL:
LAT: 38.491808°
LONG: -122.272733°
- (B) EPHEMERAL CLASS III WATERCOURSE
- (C) 100' SETBACK FROM WATERCOURSE
- (D) (P) 40,000 SF OUTDOOR CULTIVATION/CANOPY AREA
- (E) (P) TWO - 8'x20' HARVEST STORAGE AREAS
- (F) (P) AGRICULTURAL CHEMICAL STORAGE AREA
- (G) (P) COMPOSTING AREA
- (H) (P) DESIGNATED REFUSE AREA
- (I) (P) PARKING / A.D.A.
- (J) (P) 14' WIDE ACCESS RD.
- (K) (P) 10'x12' SECURITY SHED
- (L) (P) 43,400 SF OUTDOOR CULTIVATION/CANOPY AREA
- (M) (P) FOUR - 8,000 GALLON WATER STORAGE TANKS

PROPOSED CONDITIONS SITE PLAN



Revisions:

REALM ENGINEERING
CIVIL ENGINEERING, SURVEYING & PLANNING
1767 MARKET STREET SUITE C
REDDING, CA. 96001
530-526-7493



SECURITY SITE PLAN

25392/25372/25252/25322 JERUSALEM GRADE RD.
MIDDLETOWN, CA 95461
LAKE COUNTY - APN'S: 013-017-35/013-017-36/013-017-92/013-017-74

PLOTTED BY:

DATE PLOTTED:

SCALE OF DRAWING:

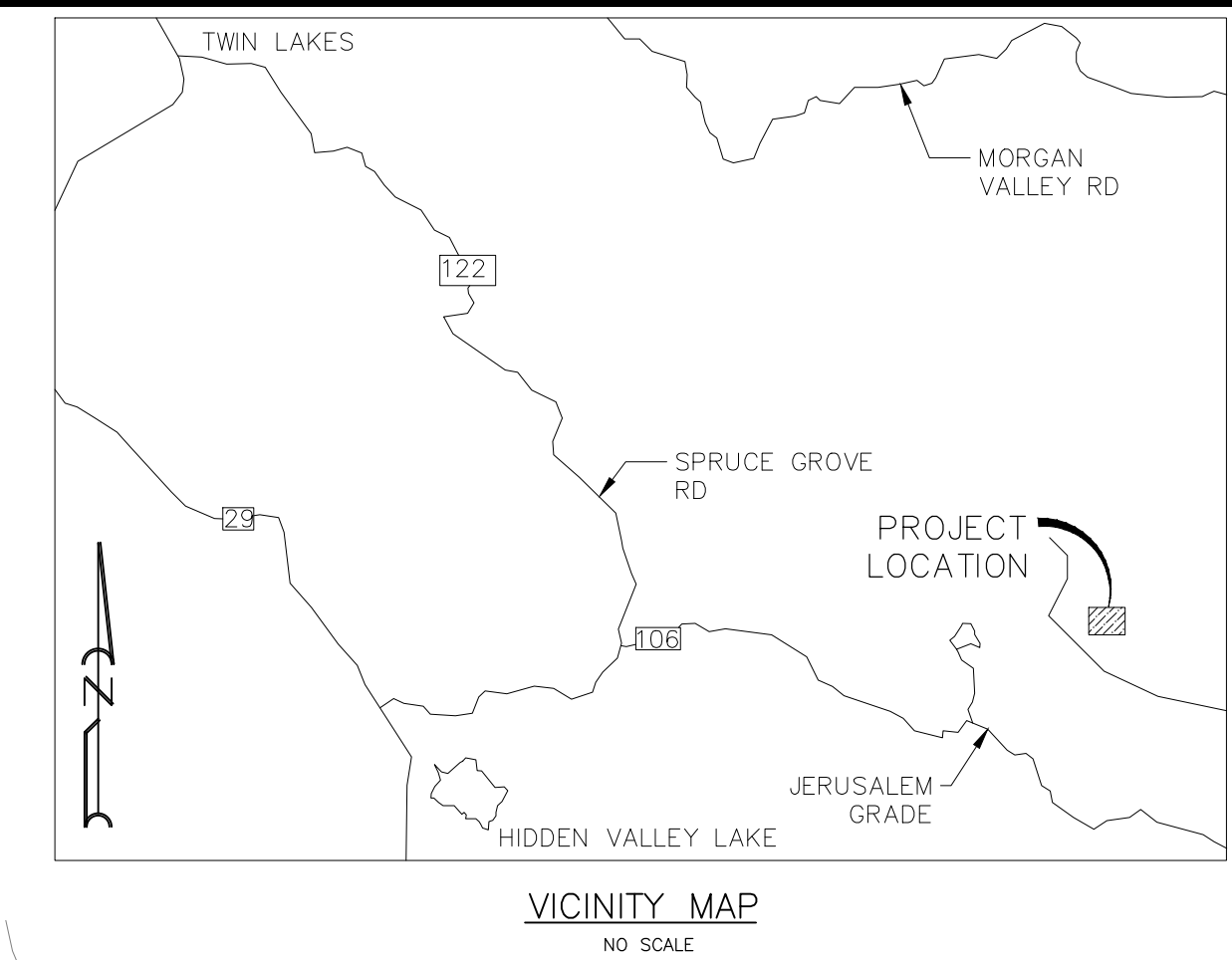
JOB NUMBER:

CADD FILE:

SHEET:

25392/25372/25252/25322 JERUSALEM GRADE RD.
MIDDLETOWN, CA 95461 - LAKE COUNTY

APN'S: 013-017-35/013-017-36/013-017-92/013-017-74



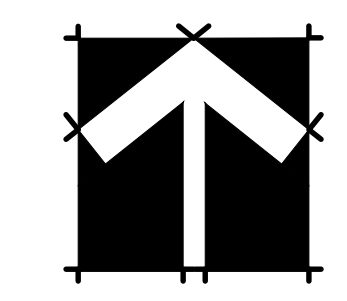
Revisions:

REALM ENGINEERING
CIVIL ENGINEERING, SURVEYING & PLANNING
1767 MARKET STREET SUITE C
REDDING, CA. 96001
530-526-7493

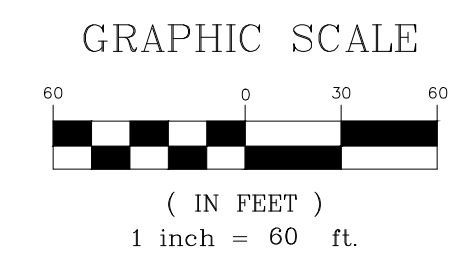


- LEGEND:**
- 1530 CONTOUR ELEVATION
 - FENCE
 - LIMITS OF DISTURBED AREA
 - ASPHALT
 - GRAVEL
 - EARTH
 - FLOOD ZONE
 - CREEK / SWALE
 - APN ASSESSOR'S PARCEL NUMBER
 - APPROX APPROXIMATELY
 - DWY DRIVEWAY
 - (E) EXISTING
 - (P) PROPOSED
 - RD ROAD
 - SF SQUARE FEET

- NOTES:**
1. CONTOUR INTERVAL IS 10'
- (A) (E) GROUNDWATER WELL:
LAT: 38.491808°
LONG: -122.272733°
 - (B) EPHEMERAL CLASS III WATERCOURSE
 - (C) 100' SETBACK FROM WATERCOURSE
 - (D) (P) 40,000 SF OUTDOOR CULTIVATION/CANOPY AREA
 - (E) (P) TWO - 8'x20' HARVEST STORAGE AREAS
 - (F) (P) AGRICULTURAL CHEMICAL STORAGE AREA
 - (G) (P) COMPOSTING AREA
 - (H) (P) DESIGNATED REFUSE AREA
 - (I) (P) PARKING / A.D.A.
 - (J) (P) 14' WIDE ACCESS RD.
 - (K) (P) 10'x12' SECURITY SHED
 - (L) (P) 43,400 SF OUTDOOR CULTIVATION/CANOPY AREA
 - (M) (P) FOUR - 8,000 GALLON WATER STORAGE TANKS



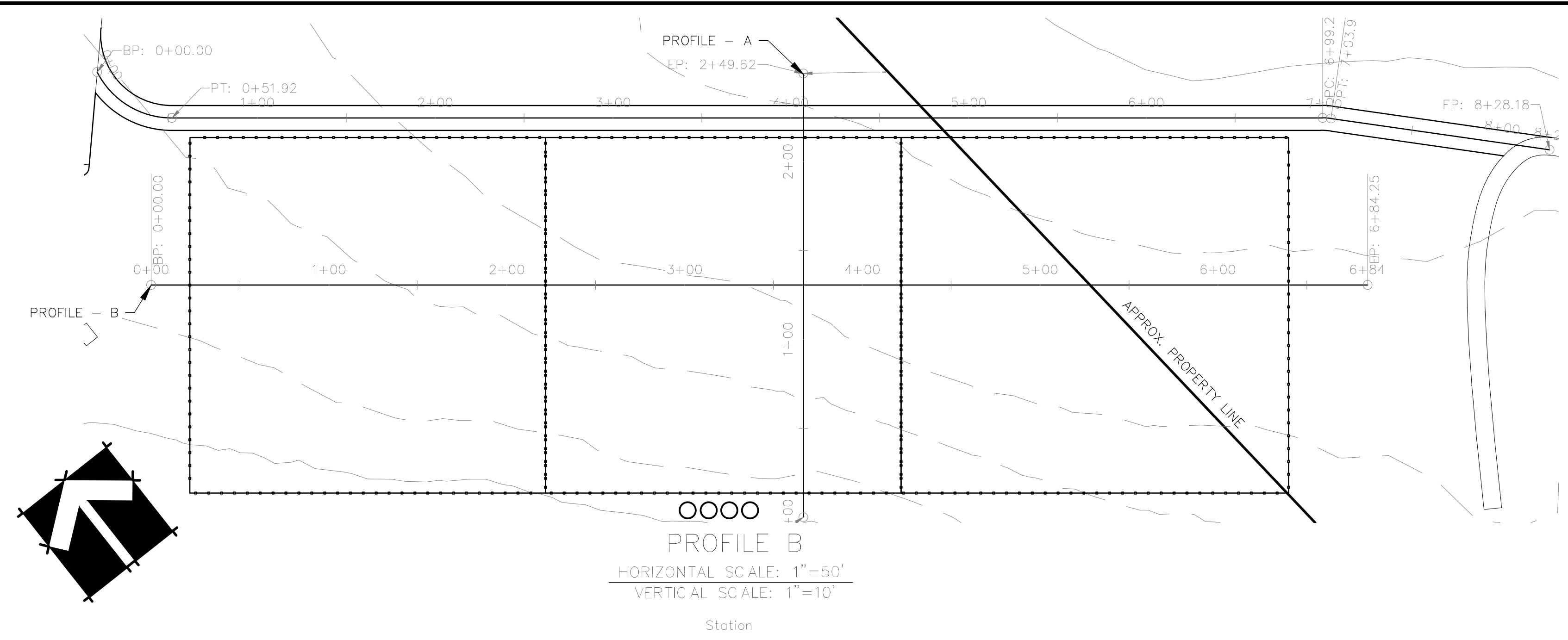
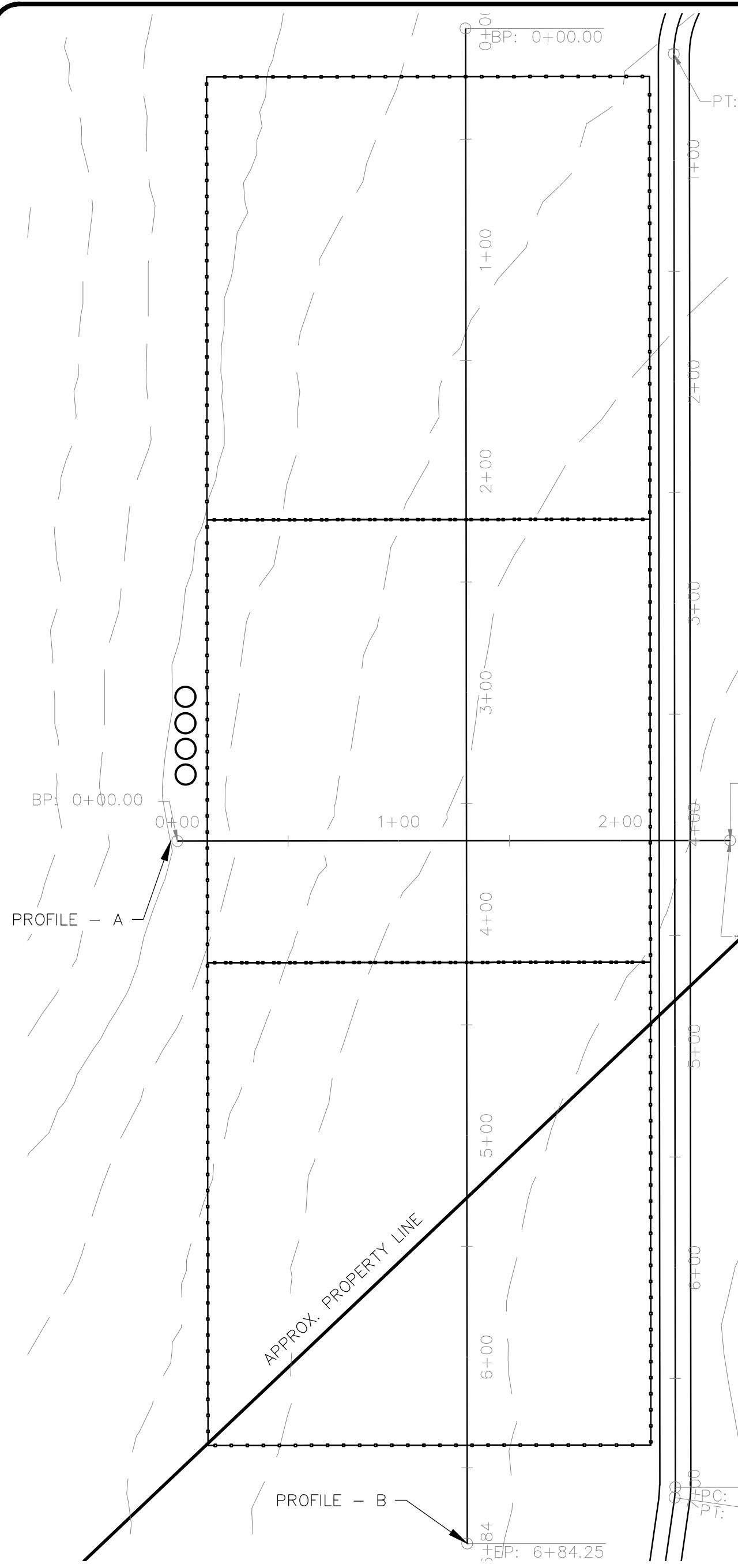
CULTIVATION SITE PLAN WITH CANOPY



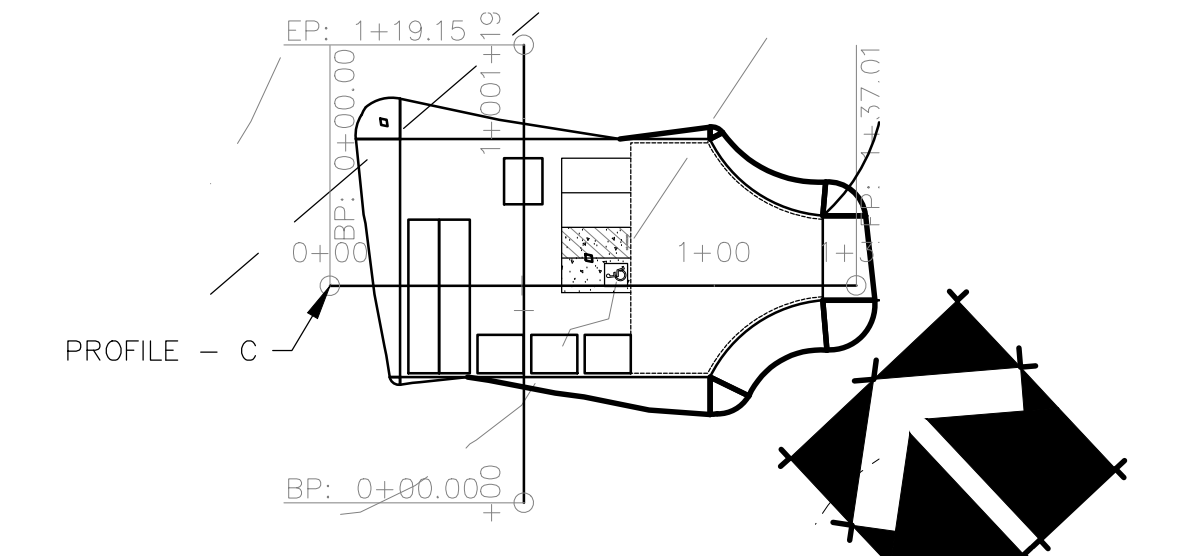
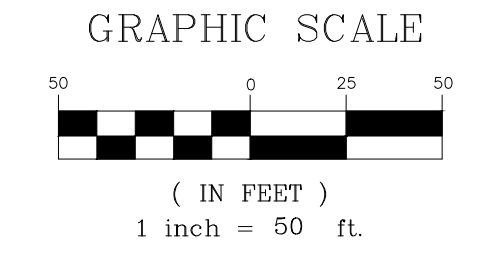
CULTIVATION SITE PLAN WITH CANOPY

25392/25372/25252/25322 JERUSALEM GRADE RD.
MIDDLETOWN, CA 95461
LAKE COUNTY - APN'S: 013-017-35/013-017-36/013-017-92/013-017-74

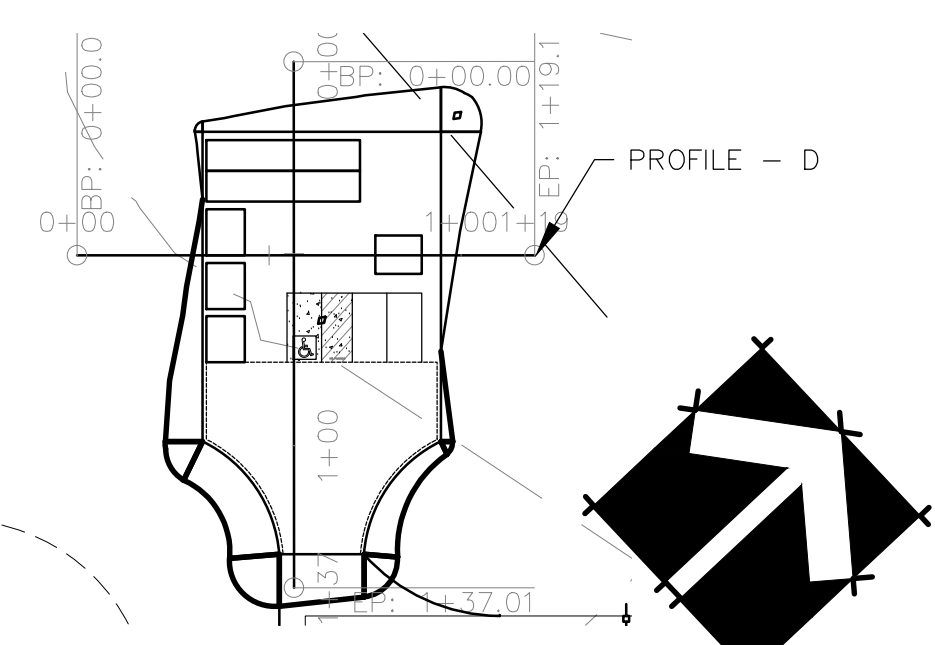
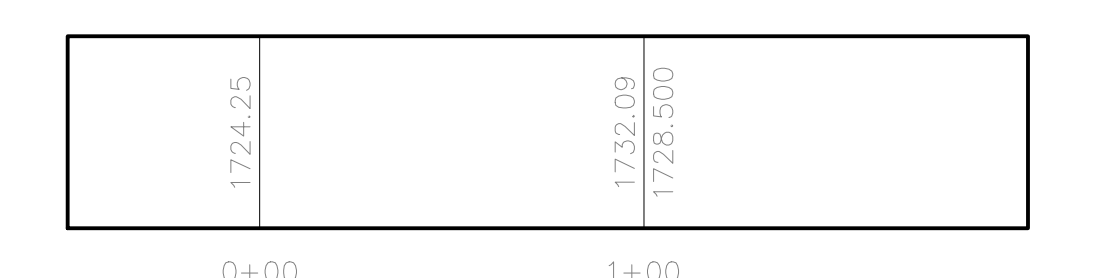
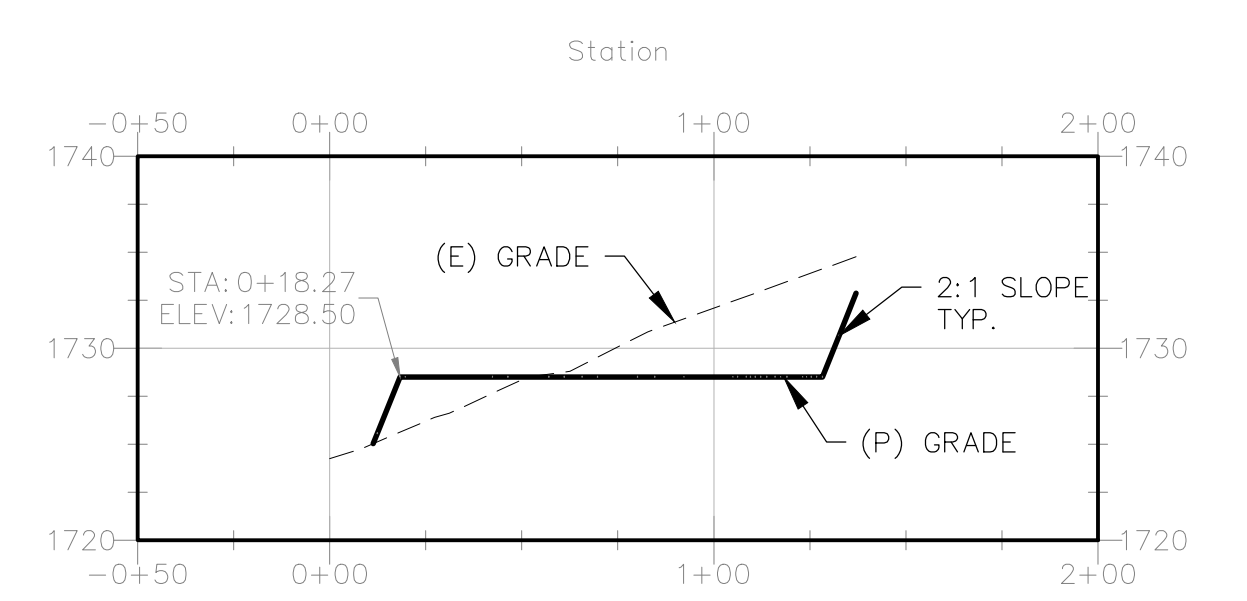
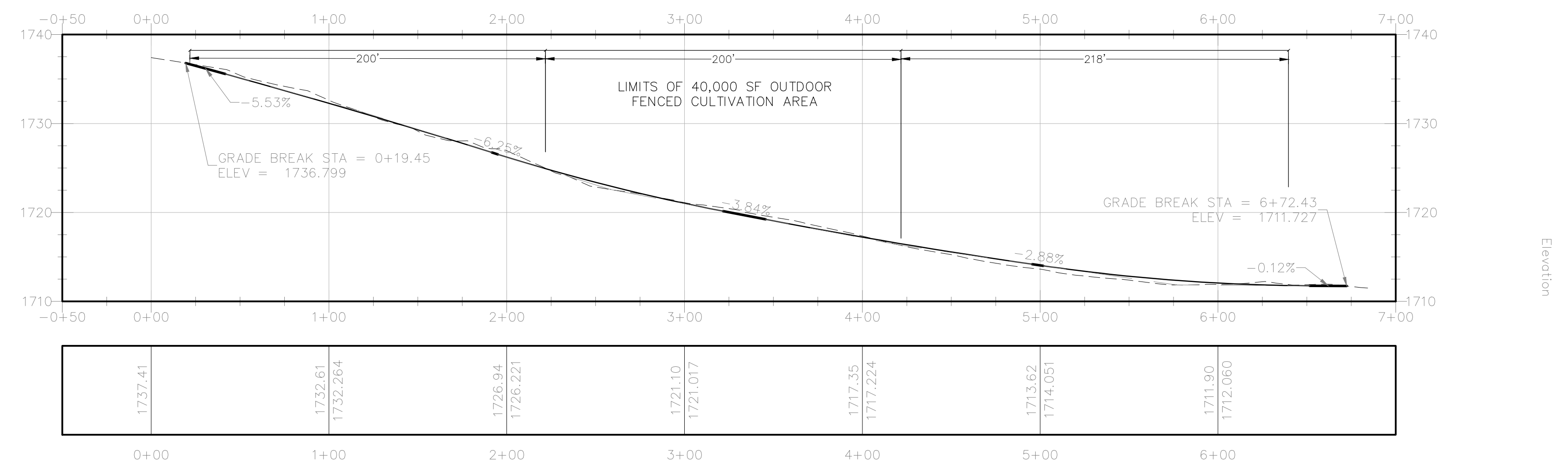
PLOTTED BY: ---
DATE PLOTTED: 1/10/20
SCALE OF DRAWING: SEE PLAN
JOB NUMBER:
CADD FILE:
SHEET:



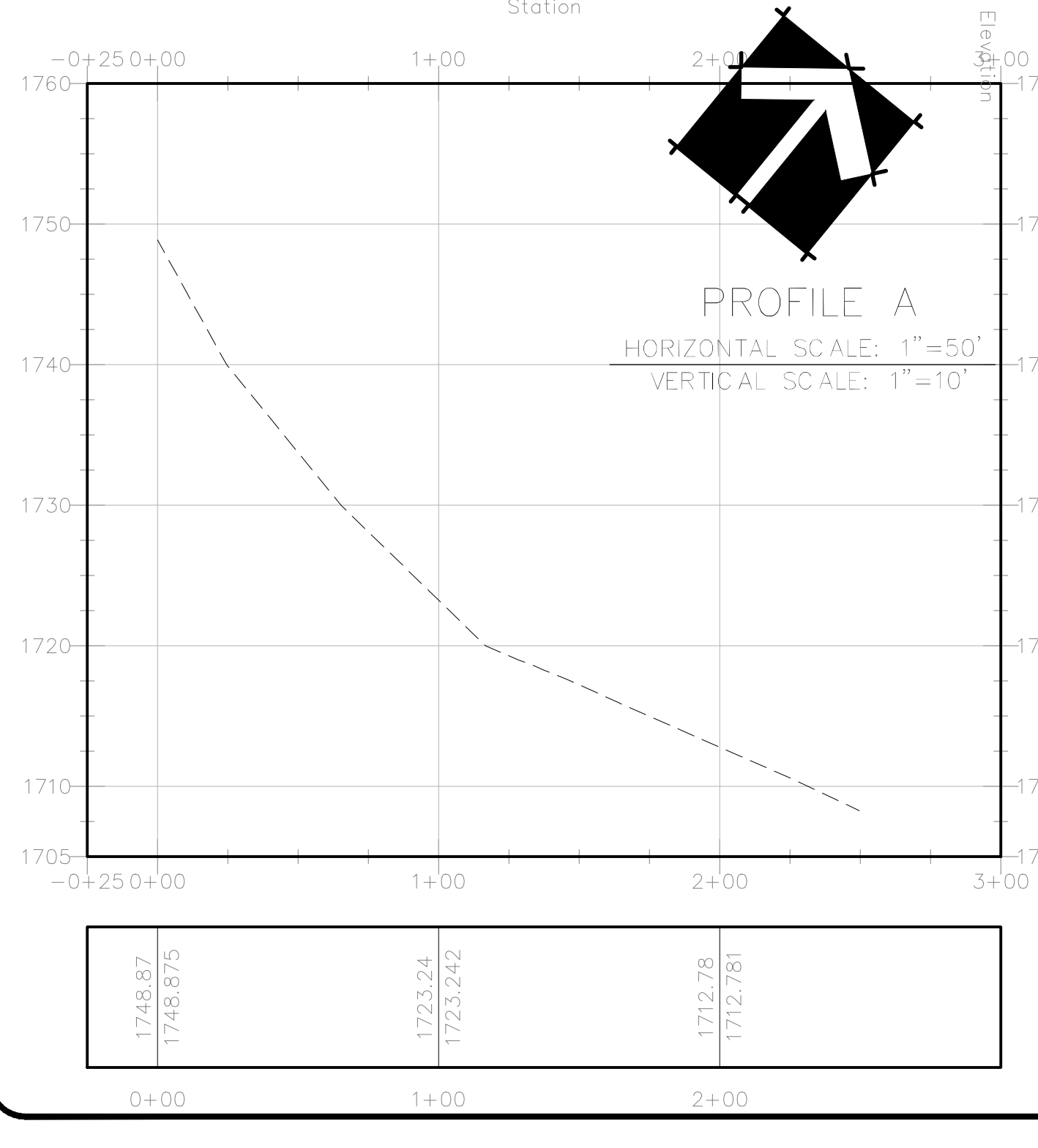
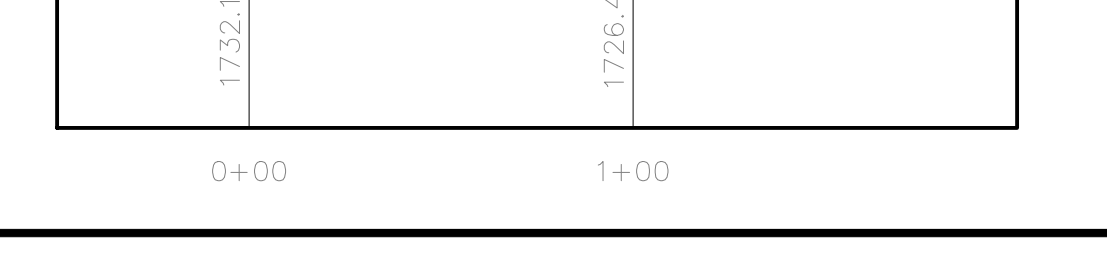
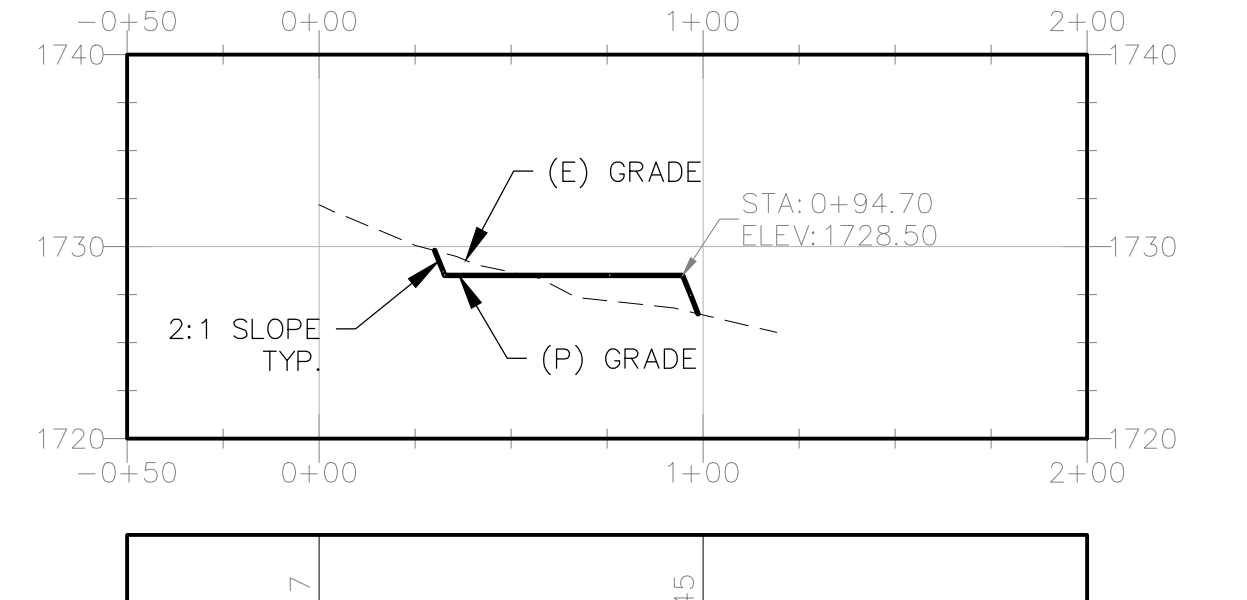
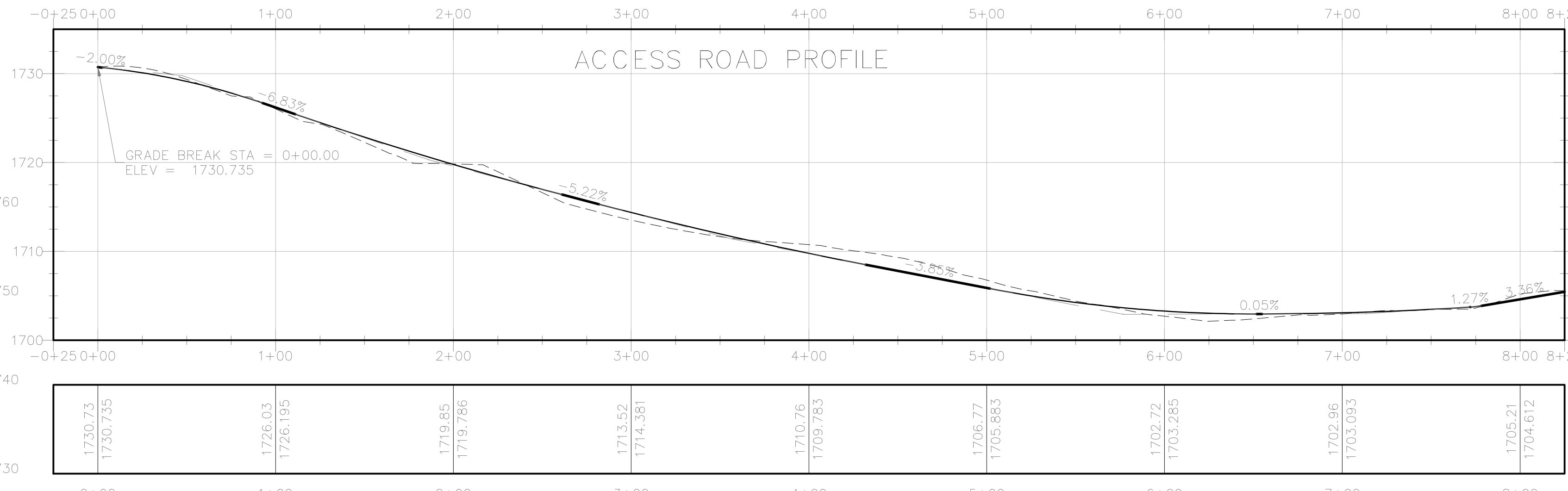
GRADING PLAN



PROFILE C
HORIZONTAL SCALE: 1"=50'
VERTICAL SCALE: 1"=10'



PROFILE D
HORIZONTAL SCALE: 1"=50'
VERTICAL SCALE: 1"=10'



GENERAL GRADING NOTES

- CUT SLOPES SHALL BE NO STEEPER THAN 2:1 (HORIZONTAL TO VERTICAL). A GEOTECHNICAL REPORT MUST BE SUBMITTED FOR CUT SLOPES IN EXCESS OF 2:1.
- FILL SLOPES SHALL BE NO STEEPER THAN 2:1 (HORIZONTAL TO VERTICAL). A GEOTECHNICAL REPORT MUST BE SUBMITTED FOR FILL SLOPES IN EXCESS OF 2:1.
- THE SITE SHALL BE CLEARED AND GRUBBED OF ALL VEGETATION INCLUDING ROOTS, LOOSE FILL, TRASH AND OTHER DELETERIOUS MATERIALS. ANY HOLES OR VOIDS LEFT AFTER THE REMOVAL OF TREE ROOTS, SEPTIC TANKS, ABANDONED FOUNDATIONS, PIPE LINES OR THE LIKES SHALL BE FILLED AS SPECIFIED UNDER PLACEMENT OF FILL BELOW.
- FILL MATERIALS SHALL BE COMPACTED TO A RELATIVE COMPACTION OF NOT LESS THAN 95% UNDER PAVED AREAS, AND 90% FOR ALL OTHER FILL AREAS. TEST RESULTS AND A DESCRIPTION OF THE TEST METHOD USED SUBMITTED BY A LICENSED CIVIL ENGINEER ARE REQUIRED AS EVIDENCE OF COMPLIANCE.
- THE FACES OF ALL CUT AND FILL SLOPES SHALL BE PREPARED AND MAINTAINED TO CONTROL AGAINST EROSION. WHERE NECESSARY, BERMS, RIP-RAP OR OTHER DEVICES OR METHODS SHALL BE UTILIZED FOR EROSION CONTROL.
- ALL GRADES SHALL BE STRAIGHT BETWEEN INDICATED POINTS WITH SMOOTH TRANSITIONS AT INDICATED POINTS.
- CONTRACTOR SHALL OBTAIN AN ENCROACHMENT PERMIT FROM THE LAKE COUNTY DEPARTMENT OF PUBLIC WORKS PRIOR TO WORKING WITHIN THE COUNTY RIGHT OF WAY.
- GRADING WORK WILL BE DONE IN A MANNER TO PREVENT STORM DAMAGE TO PUBLIC OR PRIVATE PROPERTY OF OTHERS BY FLOODING, EROSION, DEBRIS OR ANY OTHER DAMAGE RESULTING FROM THE GRADING WORK.
- DUST GENERATION MUST BE MINIMIZED AND A WATER TRUCK MUST BE AVAILABLE ON-SITE FOR ADEQUATE DUST CONTROL.

Revisions:

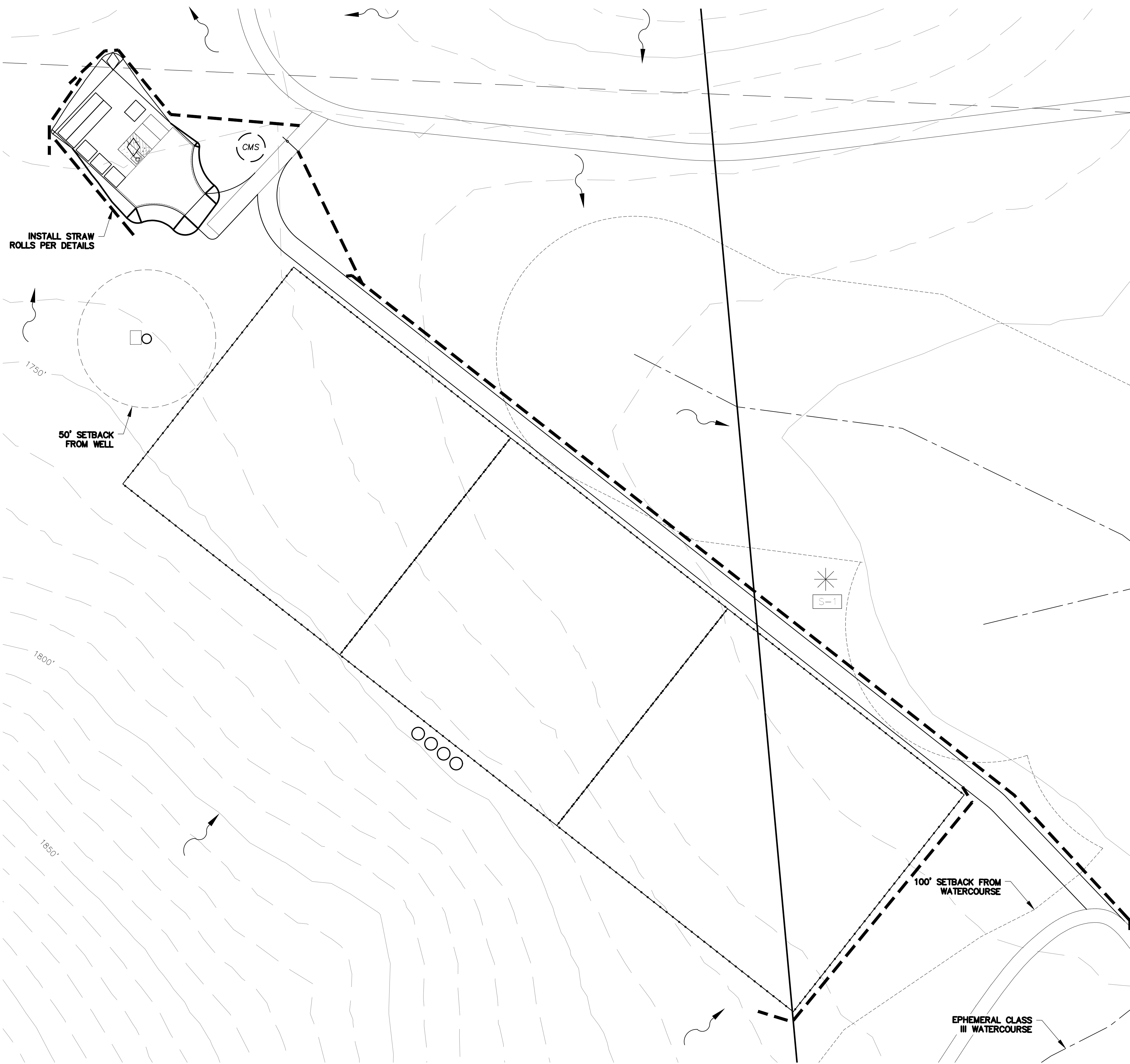
REALM ENGINEERING
CIVIL ENGINEERING, SURVEYING & PLANNING
1767 MARKET STREET SUITE C
REDDING, CA. 96001
530-526-7493

REGISTERED PROFESSIONAL ENGINEER
JASON B. VINE
No. 67800
Exp. 6/30/21
CIVIL
STATE OF CALIFORNIA

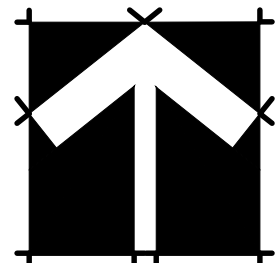
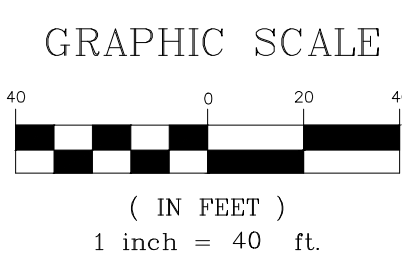
GRADING / PROFILES

25392/25372/25252/25322 JERUSALEM GRADE RD.
MIDDLETON, CA 95661
LAKE COUNTY - APNS: 013-017-35/013-017-36/013-017-42/013-017-74

PLOTTED BY: ---
DATE PLOTTED: 1/10/20
SCALE OF DRAWING: SEE PLAN
JOB NUMBER: ---
CADD FILE: ---
SHEET: 1



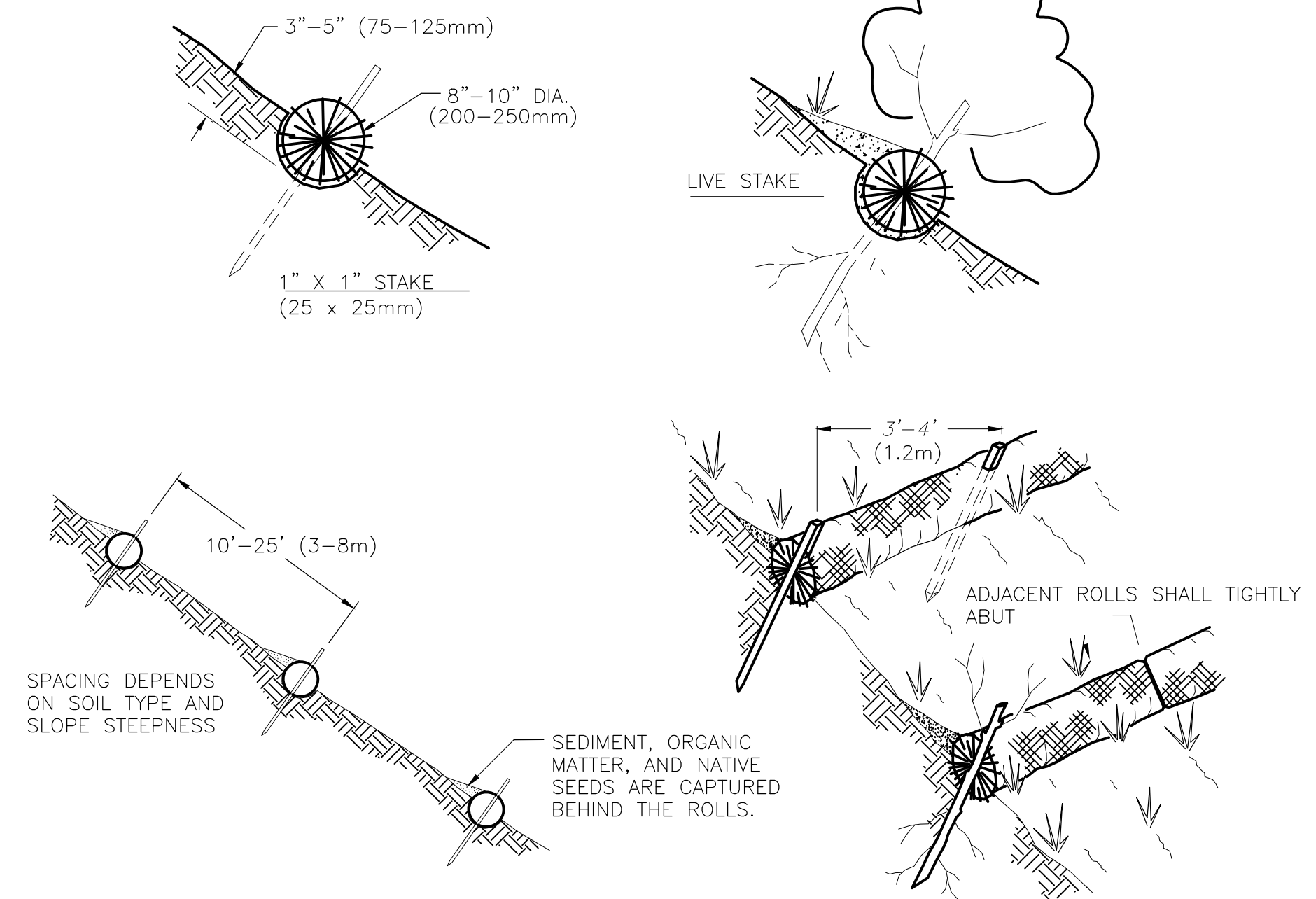
EROSION AND SEDIMENT CONTROL PLAN



NOTES:

1. STRAW ROLL INSTALLATION REQUIRES THE PLACEMENT AND SECURE STAKING OF THE ROLL IN A TRENCH, 3"-5" (75-125mm) DEEP, DUG ON CONTOUR. RUNOFF MUST NOT BE ALLOWED TO RUN UNDER OR AROUND ROLL.
2. STRAW ROLLS MUST BE PLACED ALONG SLOPE CONTOURS

STRAW ROLL DETAILS



EROSION AND SEDIMENT CONTROL GENERAL NOTES:

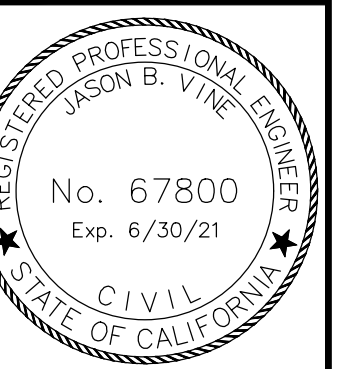
1. CONTRACTOR IS TO IMPLEMENT BEST MANAGEMENT PRACTICES (BMPs) TO CONTROL EROSION CONTROL AND REDUCE THE OFF-SITE DISCHARGE OF SEDIMENT TO THE MAXIMUM EXTENT PRACTICABLE.
2. EROSION CONTROL BMPs SHALL BE IN PLACE AND MAINTAINED ALL YEAR ROUND.
3. HE CONTRACTOR SHALL FOLLOW THE GUIDELINES FROM THE "CALIFORNIA STORMWATER BMP HANDBOOK" FOR THE MEASURES SHOWN OR STATED ON THESE PLANS.
4. CONTRACTOR MUST ENSURE THAT THE CONSTRUCTION SITE IS PREPARED PRIOR TO THE ONSET OF ANY STORM.
5. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED UNTIL DISTURBED AREAS ARE STABILIZED. CHANGES TO THIS EROSION AND SEDIMENT CONTROL PLAN SHALL BE MADE TO MEET FIELD CONDITIONS ONLY WITH THE APPROVAL OF OR AT THE DIRECTION OF THE QUALIFIED SWPPP PRACTITIONER (QSP).
6. THIS PLAN MAY NOT COVER ALL THE SITUATIONS THAT ARISE DURING CONSTRUCTION DUE TO ANTICIPATED FIELD CONDITIONS. VARIATIONS MAY BE MADE TO THE PLAN IN THE FIELD SUBJECT TO THE APPROVAL OF OR AT THE DIRECTION OF A REPRESENTATIVE OF LAKE COUNTY.
7. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CHECKED BEFORE AND AFTER ALL STORMS TO ENSURE MEASURES ARE FUNCTIONING PROPERLY.
8. CONTRACTOR SHALL MAINTAIN A LOG AT THE SITE OF ALL INSPECTIONS OR MAINTENANCE OF BMPs, AS WELL AS, ANY CORRECTIVE CHANGES TO THE BMPs OR EROSION AND SEDIMENT CONTROL PLAN.
9. THE CONTRACTOR SHALL INSTALL THE STABILIZED CONSTRUCTION ENTRANCE PRIOR TO COMMENCEMENT OF GRADING. LOCATION OF THE ENTRANCE MAY BE ADJUSTED BY THE CONTRACTOR TO FACILITATE GRADING OPERATIONS. ALL CONSTRUCTION TRAFFIC ENTERING THE PAVED ROAD MUST CROSS THE STABILIZED CONSTRUCTION ENTRANCE.
10. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE SWEEPED AT THE END OF EACH WORKING DAY OR AS NECESSARY.
11. ANY LOOSE GROUND FROM EXCAVATING GRADING OPERATIONS SHALL BE SECURED PRIOR TO ANY RAIN EVENT. STRAW OR TARP ALL DISTURBED OR EXCAVATED GROUND.
12. CONTRACTOR SHALL PLACE GRAVEL BAGS AROUND ALL NEW DRAINAGE STRUCTURE OPENINGS IMMEDIATELY AFTER THE STRUCTURE OPENING IS CONSTRUCTED. THESE GRAVEL BAGS SHALL BE MAINTAINED AND REMAIN IN PLACE UNTIL CONSTRUCTION IS COMPLETED.
13. AS A MINIMUM, ALL GRADED AREAS AND EXPOSED SOIL WITHIN THE PROJECT SHALL BE SEEDED PER THE REQUIREMENTS OF LAKE COUNTY.
14. DUST GENERATION MUST BE MINIMIZED AND A WATER TRUCK MUST BE AVAILABLE ON-SITE FOR ADEQUATE DUST CONTROL.

LEGEND

- DRAINAGE PATTERNS
- STRAW ROLLS (ADJUST TO SUIT FIELD CONDITIONS)
- DISCHARGE POINT
- SAMPLING LOCATION
- CONSTRUCTION MATERIALS STORAGE AREA

Revisions:

REALM ENGINEERING
 CIVIL ENGINEERING, SURVEYING & PLANNING
 1767 MARKET STREET SUITE C
 REDDING, CA. 96001
 530-526-7493



EROSION AND SEDIMENT CONTROL PLAN

25392/25372/25252/25322 JERUSALEM GRADE RD.
 MIDDLETOWN, CA 95461
 LAKE COUNTY - APNS: 013-017-35/013-017-36/013-017-42/013-017-74

PLOTTED BY:	---
DATE PLOTTED:	1/10/20
SCALE OF DRAWING:	SEE PLAN
JOB NUMBER:	
CADD FILE:	
SHEET:	



A-1: View of seasonal drainage on eastern portion of the site.



A-2: View of seasonal wetland, grassland and chaparral habitats.



A-3: View of seasonal wetland swale and grassland habitats.



A-4: Looking east at western edge of site showing majority of site.



A-5: View of grassland and oak woodland habitats.



A-6: View of well and proposed cultivation area in background.

CUA Investments, Inc.
25252 & 25372 Jerusalem Grade
Middletown, CA
PHOTO PLATE A

WIEMEYER ECOLOGICAL SCIENCES
4000 MONTGOMERY DRIVE, SUITE L-5
SANTA ROSA, CA 95405
(707) 573-1770

APPENDIX A
SPECIAL-STATUS PLANT SPECIES

APPENDIX A: SPECIAL-STATUS PLANT SPECIES LIST

USGS 9-QUADRANGLE MAPS- *Jericho Valley, Lower Lake, Wilson Valley, Glascock Mtn., Middletown, Knoxville, Detert Reservoir, Aetna Springs, Walter Springs*

CNPS - June 2019

<u>Scientific Name</u>	<u>Common Name</u>	<u>Rare Plant Rank</u>	<u>Global Rank</u>	<u>State Rank</u>	<u>State List</u>	<u>Federal List</u>	<u>Habitat</u>
<i>Allium fimbriatum</i> var. <i>purdyi</i>	Purdy's onion	4.3	G4G5T3	S3	None	None	Chaparral, Cismontane woodland
<i>Amorpha californica</i> var. <i>napensis</i>	Napa false indigo	1B.2	G4T2	S2	None	None	Broadleafed upland forest (openings), Chaparral, Cismontane woodland
<i>Amsinckia lunaris</i>	bent-flowered fiddleneck	1B.2	G3	S3	None	None	Coastal bluff scrub, Cismontane woodland, Valley and foothill grassland
<i>Antirrhinum virga</i>	twig-like snapdragon	4.3	G3?	S3?	None	None	Chaparral, Lower montane coniferous forest
<i>Arabis modesta</i>	modest rockcress	4.3	G3	S3	None	None	Chaparral, Lower montane coniferous forest
<i>Arabis oregana</i>	Oregon rockcress	4.3	G3G4Q	S3	None	None	Chaparral, Lower montane coniferous forest
<i>Arctostaphylos manzanita</i> ssp. <i>elegans</i>	Konocti manzanita	1B.3	G5T3	S3	None	None	Chaparral, Cismontane woodland, Lower montane coniferous forest
<i>Asclepias solanoana</i>	serpentine milkweed	4.2	G3	S3	None	None	Chaparral, Cismontane woodland, Lower montane coniferous forest
<i>Astragalus breweri</i>	Brewer's milk-vetch	4.2	G3	S3	None	None	Chaparral, Cismontane woodland, Meadows and seeps, Valley and foothill grassland (open, often gravelly)
<i>Astragalus clevelandii</i>	Cleveland's milk-vetch	4.3	G4	S4	None	None	Chaparral, Cismontane woodland, Riparian forest
<i>Astragalus rattanii</i> var. <i>jepsonianus</i>	Jepson's milk-vetch	1B.2	G4T3	S3	None	None	Chaparral, Cismontane woodland, Valley and foothill grassland
<i>Balsamorhiza macrolepis</i>	big-scale balsamroot	1B.2	G2	S2	None	None	Chaparral, Cismontane woodland, Valley and foothill grassland

APPENDIX A: SPECIAL-STATUS PLANT SPECIES LIST

USGS 9-QUADRANGLE MAPS- *Jericho Valley, Lower Lake, Wilson Valley, Glascock Mtn., Middletown, Knoxville, Detert Reservoir, Aetna Springs, Walter Springs*

CNPS - June 2019

<u>Scientific Name</u>	<u>Common Name</u>	<u>Rare Plant Rank</u>	<u>Global Rank</u>	<u>State Rank</u>	<u>State List</u>	<u>Federal List</u>	<u>Habitat</u>
<i>Brodiaea leptandra</i>	narrow-anthered brodiaea	1B.2	G3?	S3?	None	None	Broadleaved upland forest, Chaparral, Cismontane woodland, Lower montane coniferous forest, Valley and foothill grassland
<i>Calamagrostis ophitidis</i>	serpentine reed grass	4.3	G3	S3	None	None	Chaparral (open, often north-facing slopes), Lower montane coniferous forest, Meadows and seeps, Valley and foothill grassland
<i>Calyptridium quadripetalum</i>	four-petaled pussypaws	4.3	G4	S4	None	None	Chaparral, Lower montane coniferous forest
<i>Calystegia collina ssp. oxyphylla</i>	Mt. Saint Helena morning-glory	4.2	G4T3	S3	None	None	Chaparral, Lower montane coniferous forest, Valley and foothill grassland
<i>Calystegia collina ssp. venusta</i>	South Coast Range morning-glory	4.3	G4T4	S4	None	None	Chaparral, Cismontane woodland, Valley and foothill grassland
<i>Castilleja rubicundula var. rubicundula</i>	pink creamsacs	1B.2	G5T2	S2	None	None	Chaparral (openings), Cismontane woodland, Meadows and seeps, Valley and foothill grassland
<i>Ceanothus confusus</i>	Rincon Ridge ceanothus	1B.1	G1	S1	None	None	Closed-cone coniferous forest, Chaparral, Cismontane woodland
<i>Ceanothus purpureus</i>	holly-leaved ceanothus	1B.2	G2	S2	None	None	Chaparral, Cismontane woodland
<i>Ceanothus sonomensis</i>	Sonoma ceanothus	1B.2	G2	S2	None	None	Chaparral (sandy, serpentinite or volcanic)

APPENDIX A: SPECIAL-STATUS PLANT SPECIES LIST

USGS 9-QUADRANGLE MAPS- *Jericho Valley, Lower Lake, Wilson Valley, Glascock Mtn., Middletown, Knoxville, Detert Reservoir, Aetna Springs, Walter Springs*

CNPS - June 2019

<u>Scientific Name</u>	<u>Common Name</u>	<u>Rare Plant Rank</u>	<u>Global Rank</u>	<u>State Rank</u>	<u>State List</u>	<u>Federal List</u>	<u>Habitat</u>
<i>Centromadia parryi</i> ssp. <i>parryi</i>	pappose tarplant	1B.2	G3T2	S2	None	None	Chaparral, Coastal prairie, Meadows and seeps, Marshes and swamps (coastal salt), Valley and foothill grassland (vernally mesic)
<i>Clarkia gracilis</i> ssp. <i>tracyi</i>	Tracy's clarkia	4.2	G5T3	S3	None	None	Chaparral (openings, usually serpentinite)
<i>Collomia diversifolia</i>	serpentine collomia	4.3	G4	S4	None	None	Chaparral, Cismontane woodland
<i>Cordylanthus tenuis</i> ssp. <i>brunneus</i>	serpentine bird's-beak	4.3	G4G5T3	S3	None	None	Closed-cone coniferous forest, Chaparral, Cismontane woodland
<i>Cryptantha dissita</i>	serpentine cryptantha	1B.2	G2	S2	None	None	Chaparral (serpentinite)
<i>Cryptantha excavata</i>	deep-scarred cryptantha	1B.1	G1	S1	None	None	Cismontane woodland (sandy or gravelly)
<i>Cryptantha rostellata</i>	red-stemmed cryptantha	4.2	G4	S3	None	None	Cismontane woodland, Valley and foothill grassland
<i>Cypripedium montanum</i>	mountain lady's-slipper	4.2	G4	S4	None	None	Broadleafed upland forest, Cismontane woodland, Lower montane coniferous forest, North Coast coniferous forest
<i>Delphinium uliginosum</i>	swamp larkspur	4.2	G3	S3	None	None	Chaparral, Valley and foothill grassland
<i>Equisetum palustre</i>	marsh horsetail	3	G5	S1S3	None	None	Marshes and swamps
<i>Erigeron biolettii</i>	streamside daisy	3	G3?	S3?	None	None	Broadleafed upland forest, Cismontane woodland, North Coast coniferous forest
<i>Erigeron greenei</i>	Greene's narrow-leaved daisy	1B.2	G3	S3	None	None	Chaparral (serpentinite or volcanic)
<i>Eriogonum nervulosum</i>	Snow Mountain buckwheat	1B.2	G2	S2	None	None	Chaparral (serpentinite)

APPENDIX A: SPECIAL-STATUS PLANT SPECIES LIST

USGS 9-QUADRANGLE MAPS- *Jericho Valley, Lower Lake, Wilson Valley, Glascock Mtn., Middletown, Knoxville, Detert Reservoir, Aetna Springs, Walter Springs*

CNPS - June 2019

<u>Scientific Name</u>	<u>Common Name</u>	<u>Rare Plant Rank</u>	<u>Global Rank</u>	<u>State Rank</u>	<u>State List</u>	<u>Federal List</u>	<u>Habitat</u>
<i>Eriogonum umbellatum var. bahiiforme</i>	bay buckwheat	4.2	G5T3	S3	None	None	Cismontane woodland, Lower montane coniferous forest
<i>Eryngium jepsonii</i>	Jepson's coyote thistle	1B.2	G2?	S2?	None	None	Valley and foothill grassland, Vernal pools
<i>Erythranthe nudata</i>	bare monkeyflower	4.3	G4	S4	None	None	Chaparral, Cismontane woodland
<i>Erythronium helenae</i>	St. Helena fawn lily	4.2	G3	S3	None	None	Chaparral, Cismontane woodland, Lower montane coniferous forest, Valley and foothill grassland
<i>Extriplex joaquinana</i>	San Joaquin spearscale	1B.2	G2	S2	None	None	Chenopod scrub, Meadows and seeps, Playas, Valley and foothill grassland
<i>Fritillaria pluriflora</i>	adobe-lily	1B.2	G2G3	S2S3	None	None	Chaparral, Cismontane woodland, Valley and foothill grassland
<i>Fritillaria purdyi</i>	Purdy's fritillary	4.3	G4	S4	None	None	Chaparral, Cismontane woodland, Lower montane coniferous forest
<i>Gratiola heterosepala</i>	Boggs Lake hedge-hyssop	1B.2	G2	S2	CE	None	Marshes and swamps (lake margins), Vernal pools
<i>Grimmia torenii</i>	Toren's grimmia	1B.3	G2	S2	None	None	Chaparral, Cismontane woodland, Lower montane coniferous forest
<i>Harmonia hallii</i>	Hall's harmonia	1B.2	G2	S2	None	None	Chaparral (serpentinite)
<i>Harmonia nutans</i>	nodding harmonia	4.3	G3	S3	None	None	Chaparral, Cismontane woodland
<i>Helianthus exilis</i>	serpentine sunflower	4.2	G3	S3	None	None	Chaparral, Cismontane woodland
<i>Hemizonia congesta ssp. congesta</i>	congested-headed hayfield tarplant	1B.2	G5T2	S2	None	None	Valley and foothill grassland

APPENDIX A: SPECIAL-STATUS PLANT SPECIES LIST

USGS 9-QUADRANGLE MAPS- Jericho Valley, Lower Lake, Wilson Valley, Glascock Mtn., Middletown, Knoxville, Detert Reservoir, Aetna Springs, Walter Springs

CNPS - June 2019

<u>Scientific Name</u>	<u>Common Name</u>	<u>Rare Plant Rank</u>	<u>Global Rank</u>	<u>State Rank</u>	<u>State List</u>	<u>Federal List</u>	<u>Habitat</u>
<i>Hesperolinon bicarpellatum</i>	two-carpellate western flax	1B.2	G2	S2	None	None	Chaparral (serpentinite)
<i>Hesperolinon didymocarpum</i>	Lake County western flax	1B.2	G1	S1	CE	None	Chaparral, Cismontane woodland, Valley and foothill grassland
<i>Hesperolinon drymarioides</i>	drymaria-like western flax	1B.2	G2	S2	None	None	Closed-cone coniferous forest, Chaparral, Cismontane woodland, Valley and foothill grassland
<i>Hesperolinon sharsmithiae</i>	Sharsmith's western flax	1B.2	G2Q	S2	None	None	Chaparral
<i>Juglans hindsii</i>	Northern California black walnut	1B.1	G1	S1	None	None	Riparian forest, Riparian woodland
<i>Juncus luciensis</i>	Santa Lucia dwarf rush	1B.2	G3	S3	None	None	Chaparral, Great Basin scrub, Lower montane coniferous forest, Meadows and seeps, Vernal pools
<i>Lasthenia burkei</i>	Burke's goldfields	1B.1	G1	S1	CE	FE	Meadows and seeps (mesic), Vernal pools
<i>Layia septentrionalis</i>	Colusa layia	1B.2	G2	S2	None	None	Chaparral, Cismontane woodland, Valley and foothill grassland
<i>Legenere limosa</i>	legenere	1B.1	G2	S2	None	None	Vernal pools
<i>Leptosiphon acicularis</i>	bristly leptosiphon	4.2	G4?	S4?	None	None	Chaparral, Cismontane woodland, Coastal prairie, Valley and foothill grassland
<i>Leptosiphon jepsonii</i>	Jepson's leptosiphon	1B.2	G3	S3	None	None	Chaparral, Cismontane woodland, Valley and foothill grassland

APPENDIX A: SPECIAL-STATUS PLANT SPECIES LIST

USGS 9-QUADRANGLE MAPS- *Jericho Valley, Lower Lake, Wilson Valley, Glascock Mtn., Middletown, Knoxville, Detert Reservoir, Aetna Springs, Walter Springs*

CNPS - June 2019

<u>Scientific Name</u>	<u>Common Name</u>	<u>Rare Plant Rank</u>	<u>Global Rank</u>	<u>State Rank</u>	<u>State List</u>	<u>Federal List</u>	<u>Habitat</u>
<i>Lessingia hololeuca</i>	woolly-headed lessingia	3	G3?	S3?	None	None	Broadleafed upland forest, Coastal scrub, Lower montane coniferous forest, Valley and foothill grassland
<i>Lilium bolanderi</i>	Bolander's lily	4.2	G4	S3S4	None	None	Chaparral, Lower montane coniferous forest
<i>Limnanthes floccosa</i> ssp. <i>floccosa</i>	woolly meadowfoam	4.2	G4T4	S3	None	None	Chaparral, Cismontane woodland, Valley and foothill grassland, Vernal pools
<i>Lomatium hooveri</i>	Hoover's lomatium	4.3	G3	S3	None	None	Chaparral, Cismontane woodland
<i>Lomatium repostum</i>	Napa lomatium	4.3	G3	S3	None	None	Chaparral, Cismontane woodland
<i>Lupinus sericatus</i>	Cobb Mountain lupine	1B.2	G2?	S2?	None	None	Broadleafed upland forest, Chaparral, Cismontane woodland, Lower montane coniferous forest
<i>Malacothamnus helleri</i>	Heller's bush-mallow	3.3	G3Q	S3	None	None	Chaparral (sandstone), Riparian woodland (gravel)
<i>Microseris sylvatica</i>	sylvan microseris	4.2	G4	S4	None	None	Chaparral, Cismontane woodland, Great Basin scrub, Pinyon and juniper woodland, Valley and foothill grassland (serpentinite)
<i>Monardella viridis</i>	green monardella	4.3	G3	S3	None	None	Broadleafed upland forest, Chaparral, Cismontane woodland
<i>Navarretia cotulifolia</i>	cotula navarretia	4.2	G4	S4	None	None	Chaparral, Cismontane woodland, Valley and foothill grassland

APPENDIX A: SPECIAL-STATUS PLANT SPECIES LIST

USGS 9-QUADRANGLE MAPS- Jericho Valley, Lower Lake, Wilson Valley, Glascock Mtn., Middletown, Knoxville, Detert Reservoir, Aetna Springs, Walter Springs

CNPS - June 2019

<u>Scientific Name</u>	<u>Common Name</u>	<u>Rare Plant Rank</u>	<u>Global Rank</u>	<u>State Rank</u>	<u>State List</u>	<u>Federal List</u>	<u>Habitat</u>
<i>Navarretia jepsonii</i>	Jepson's navarretia	4.3	G4	S4	None	None	Chaparral, Cismontane woodland, Valley and foothill grassland
<i>Navarretia leucocephala</i> ssp. <i>bakeri</i>	Baker's navarretia	1B.1	G4T2	S2	None	None	Cismontane woodland, Lower montane coniferous forest, Meadows and seeps, Valley and foothill grassland, Vernal pools
<i>Navarretia leucocephala</i> ssp. <i>pauciflora</i>	few-flowered navarretia	1B.1	G4T1	S1	CT	FE	Vernal pools (volcanic ash flow)
<i>Navarretia leucocephala</i> ssp. <i>plieantha</i>	many-flowered navarretia	1B.2	G4T1	S1	CE	FE	Vernal pools (volcanic ash flow)
<i>Navarretia myersii</i> ssp. <i>deminuta</i>	small pincushion navarretia	1B.1	G2T1	S1	None	None	Vernal pools (clay loam)
<i>Navarretia nigelliformis</i> ssp. <i>nigelliformis</i>	adobe navarretia	4.2	G4T3	S3	None	None	Valley and foothill grassland vernal mesic, Vernal pools sometimes
<i>Navarretia paradoxinota</i>	Porter's navarretia	1B.3	G2	S2	None	None	Meadows and seeps
<i>Navarretia rosulata</i>	Marin County navarretia	1B.2	G2	S2	None	None	Closed-cone coniferous forest, Chaparral
<i>Orcuttia tenuis</i>	slender Orcutt grass	1B.1	G2	S2	CE	FT	Vernal pools
<i>Orobancha valida</i> ssp. <i>howellii</i>	Howell's broomrape	4.3	G4T3	S3	None	None	Chaparral (serpentinite or volcanic)
<i>Penstemon newberryi</i> var. <i>sonomensis</i>	Sonoma beardtongue	1B.3	G4T2	S2	None	None	Chaparral (rocky)
<i>Plagiobothrys hystriculus</i>	bearded popcornflower	1B.1	G2	S2	None	None	Valley and foothill grassland (mesic), Vernal pools margins
<i>Ranunculus lobbii</i>	Lobb's aquatic buttercup	4.2	G4	S3	None	None	Cismontane woodland, North Coast coniferous forest, Valley and foothill grassland, Vernal pools

APPENDIX A: SPECIAL-STATUS PLANT SPECIES LIST

USGS 9-QUADRANGLE MAPS- *Jericho Valley, Lower Lake, Wilson Valley, Glascock Mtn., Middletown, Knoxville, Detert Reservoir, Aetna Springs, Walter Springs*

CNPS - June 2019

<u>Scientific Name</u>	<u>Common Name</u>	<u>Rare Plant Rank</u>	<u>Global Rank</u>	<u>State Rank</u>	<u>State List</u>	<u>Federal List</u>	<u>Habitat</u>
<i>Sedella leiocarpa</i>	Lake County stonecrop	1B.1	G1	S1	CE	FE	Cismontane woodland, Valley and foothill grassland, Vernal pools
<i>Senecio clelandii</i> var. <i>clelandii</i>	Cleveland's ragwort	4.3	G4?T3Q	S3	None	None	Chaparral (serpentinite seeps)
<i>Sidalcea keckii</i>	Keck's checkerbloom	1B.1	G2	S2	None	FE	Cismontane woodland, Valley and foothill grassland
<i>Sidalcea oregana</i> ssp. <i>hydrophila</i>	marsh checkerbloom	1B.2	G5T2	S2	None	None	Meadows and seeps, Riparian forest
<i>Streptanthus batrachopus</i>	Tamalpais jewelflower	1B.3	G2	S2	None	None	Closed-cone coniferous forest, Chaparral
<i>Streptanthus brachiatus</i> ssp. <i>brachiatus</i>	Socrates Mine jewelflower	1B.2	G2T1	S1	None	None	Closed-cone coniferous forest, Chaparral
<i>Streptanthus brachiatus</i> ssp. <i>hoffmanii</i>	Freed's jewelflower	1B.2	G2T2	S2	None	None	Chaparral, Cismontane woodland
<i>Streptanthus hesperidis</i>	green jewelflower	1B.2	G2	S2	None	None	Chaparral (openings), Cismontane woodland
<i>Streptanthus morrisonii</i> ssp. <i>elatus</i>	Three Peaks jewelflower	1B.2	G2T1	S1	None	None	Chaparral (serpentinite)
<i>Streptanthus morrisonii</i> ssp. <i>kruckebergii</i>	Kruckeberg's jewelflower	1B.2	G2T1	S1	None	None	Cismontane woodland (serpentinite)
<i>Streptanthus vernalis</i>	early jewelflower	1B.2	G1	S1	None	None	Closed-cone coniferous forest, Chaparral
<i>Thelypodium brachycarpum</i>	short-podded thelypodium	4.2	G3	S3	None	None	Chaparral, Lower montane coniferous forest, Meadows and seeps
<i>Toxicoscordion fontanum</i>	marsh zigadenus	4.2	G3	S3	None	None	Chaparral, Cismontane woodland, Lower montane coniferous forest, Meadows and seeps, Marshes and swamps

APPENDIX A: SPECIAL-STATUS PLANT SPECIES LIST

USGS 9-QUADRANGLE MAPS- *Jericho Valley, Lower Lake, Wilson Valley, Glascock Mtn., Middletown, Knoxville, Detert Reservoir, Aetna Springs, Walter Springs*

CNPS - June 2019

<u>Scientific Name</u>	<u>Common Name</u>	<u>Rare Plant Rank</u>	<u>Global Rank</u>	<u>State Rank</u>	<u>State List</u>	<u>Federal List</u>	<u>Habitat</u>
<i>Trichostema ruygtii</i>	Napa bluecurls	1B.2	G1G2	S1S2	None	None	Chaparral, Cismontane woodland, Lower montane coniferous forest, Valley and foothill grassland, Vernal pools
<i>Trifolium hydrophilum</i>	saline clover	1B.2	G2	S2	None	None	Marshes and swamps, Valley and foothill grassland (mesic, alkaline), Vernal pools

APPENDIX B
SPECIAL-STATUS ANIMAL SPECIES

APPENDIX B: SPECIAL-STATUS ANIMAL SPECIES LIST

USGS 9-QUADRANGLE MAPS- Jericho Valley, Lower Lake, Wilson Valley, Glascock Mtn., Middletown, Knoxville, Detert Reservoir, Aetna Springs, Walter Springs

CNDDDB - June 2019

<u>Scientific Name</u>	<u>Common Name</u>	<u>Federal List</u>	<u>State List</u>	<u>Global Rank</u>	<u>State Rank</u>	<u>Dept. Fish and Wildlife Rank</u>	<u>Habitat</u>
<i>Agelaius tricolor</i>	tricolored blackbird	None	Threatened	G2G3	S1S2	Species of Special Concern	Freshwater marsh Marsh & swamp Swamp Wetland
<i>Antrozous pallidus</i>	pallid bat	None	None	G5	S3	Species of Special Concern	Chaparral Coastal scrub Desert wash Great Basin grassland Great Basin scrub Mojavean desert scrub Riparian woodland Sonoran desert scrub Upper montane coniferous forest Valley & foothill grassland
<i>Aquila chrysaetos</i>	golden eagle	None	None	G5	S3	Fully Protected; Watch List	Broadleaved upland forest Cismontane woodland Coastal prairie Great Basin grassland Great Basin scrub Lower montane coniferous forest Pinon & juniper woodlands Upper montane coniferous forest Valley & foothill grassland
<i>Athene cunicularia</i>	burrowing owl	None	None	G4	S3	Species of Special Concern	Coastal prairie Coastal scrub Great Basin grassland Great Basin scrub Mojavean desert scrub Sonoran desert scrub Valley & foothill grassland
<i>Bombus caliginosus</i>	obscure bumble bee	None	None	G4?	S1S2	None	* Habitat types not included by CNDDDB.

APPENDIX B: SPECIAL-STATUS ANIMAL SPECIES LIST

USGS 9-QUADRANGLE MAPS- Jericho Valley, Lower Lake, Wilson Valley, Glascock Mtn., Middletown, Knoxville, Detert Reservoir, Aetna Springs, Walter Springs

CNDDDB - June 2019

<u>Scientific Name</u>	<u>Common Name</u>	<u>Federal List</u>	<u>State List</u>	<u>Global Rank</u>	<u>State Rank</u>	<u>Dept. Fish and Wildlife Rank</u>	<u>Habitat</u>
<i>Corynorhinus townsendii</i>	Townsend's big-eared bat	None	None	G3G4	S2	Species of Special Concern	Broadleaved upland forest Chaparral Chenopod scrub Great Basin grassland Great Basin scrub Joshua tree woodland Lower montane coniferous forest Meadow & seep Mojavean desert scrub Riparian forest Riparian woodland Sonoran desert scrub Sonoran thorn woodland Upper montane coniferous forest Valley & foothill grassland
<i>Desmocerus californicus dimorphus</i>	valley elderberry longhorn beetle	Threatened	None	G3T2	S2	None	Riparian scrub
<i>Dicamptodon ensatus</i>	California giant salamander	None	None	G3	S2S3	Species of Special Concern	Aquatic Meadow & seep North coast coniferous forest Riparian forest
<i>Emys marmorata</i>	western pond turtle	None	None	G3G4	S3	Species of Special Concern	coast flowing waters Klamath/North coast standing waters Marsh & swamp Sacramento/San Joaquin flowing waters Sacramento/San Joaquin standing waters South coast flowing waters South coast
<i>Falco mexicanus</i>	prairie falcon	None	None	G5	S4	Watch List	Great Basin grassland Great Basin scrub Mojavean desert scrub Sonoran desert scrub Valley & foothill grassland
<i>Falco peregrinus anatum</i>	American peregrine falcon	Delisted	Delisted	G4T4	S3S4	Fully Protected	* Habitat types not included by CNDDDB.

APPENDIX B: SPECIAL-STATUS ANIMAL SPECIES LIST

USGS 9-QUADRANGLE MAPS- Jericho Valley, Lower Lake, Wilson Valley, Glascock Mtn., Middletown, Knoxville, Detert Reservoir, Aetna Springs, Walter Springs

CNDDDB - June 2019

<u>Scientific Name</u>	<u>Common Name</u>	<u>Federal List</u>	<u>State List</u>	<u>Global Rank</u>	<u>State Rank</u>	<u>Dept. Fish and Wildlife Rank</u>	<u>Habitat</u>
<i>Haliaeetus leucocephalus</i>	bald eagle	Delisted	Endangered	G5	S3	Fully Protected	Lower montane coniferous forest Oldgrowth
<i>Hydrochara rickseckeri</i>	water scavenger beetle	None	None	G2?	S2?		Aquatic Sacramento/San Joaquin flowing waters Sacramento/San Joaquin standing waters
<i>Lasionycteris noctivagans</i>	silver-haired bat	None	None	G5	S3S4	None	Lower montane coniferous forest Oldgrowth Riparian forest
<i>Lasiurus cinereus</i>	hoary bat	None	None	G5	S4	None	Broadleaved upland forest Cismontane woodland Lower montane coniferous forest North coast coniferous forest
<i>Lavinia exilicauda chi</i>	Clear Lake hitch	None	Threatened	G4T1	S1	None	Aquatic Sacramento/San Joaquin flowing waters Sacramento/San Joaquin standing waters
<i>Lytta molesta</i>	molestan blister beetle	None	None	G2	S2	None	Vernal pool Wetland
<i>Progne subis</i>	purple martin	None	None	G5	S3	Species of Special Concern	Broadleaved upland forest Lower montane coniferous forest
<i>Rana boylei</i>	foothill yellow-legged frog	None	Candidate Threatened	G3	S3	Species of Special Concern	Coastal scrub Klamath/North coast flowing waters Lower montane coniferous forest Meadow & seep Riparian forest Riparian woodland Sacramento/San Joaquin flowing waters
<i>Saldula usingeri</i>	Wilbur Springs shorebug	None	None	G1	S1	None	Aquatic Sacramento/San Joaquin flowing waters Sacramento/San Joaquin standing waters

APPENDIX B: SPECIAL-STATUS ANIMAL SPECIES LIST

USGS 9-QUADRANGLE MAPS- Jericho Valley, Lower Lake, Wilson Valley, Glascock Mtn., Middletown, Knoxville, Detert Reservoir, Aetna Springs, Walter Springs

CNDDDB - June 2019

<u>Scientific Name</u>	<u>Common Name</u>	<u>Federal List</u>	<u>State List</u>	<u>Global Rank</u>	<u>State Rank</u>	<u>Dept. Fish and Wildlife Rank</u>	<u>Habitat</u>
<i>Taricha rivularis</i>	red-bellied newt	None	None	G4	S2	Species of Special Concern	Broadleaved upland forest North coast coniferous forest Redwood Riparian forest Riparian woodland
<i>Trachykele hartmani</i>	serpentine cypress wood-boring beetle	None	None	G1	S1	None	* Habitat types not included by CNDDDB.
<i>Vandykea tuberculata</i>	serpentine cypress long-horned beetle	None	None	G1	S1	None	* Habitat types not included by CNDDDB.

APPENDIX C
PLANT INVENTORY LIST

APPENDIX C: PLANT INVENTORY LIST
25252 & 25372 Jerusalem Grade, Middletown, CA

Scientific name	Common name	Native
<i>Achyrachaena mollis</i>	Blow-wives	yes
<i>Acmispon americanus</i>	Spanish clover	yes
<i>Acmispon wrangelianus</i>	Chilean trefoil	yes
<i>Aegilops triuncialis</i>	Goat grass	no
<i>Agoseris heterophylla</i>	Annual agoseris	yes
<i>Aira caryophylla</i>	Silver hairgrass	no
<i>Arctostaphylos manzanita</i> ssp. <i>manzanita</i>	Green leaved manzanita	yes
<i>Arctostaphylos viscida</i>	Whiteleaf manzanita	yes
<i>Avena barbata</i>	Slender wild oats	no
<i>Avena fatua</i>	Wild oats	no
<i>Briza minor</i>	Little quacking grass	no
<i>Brodiaea elegans</i>	Harvest brodiaea	yes
<i>Bromus hordeaceus</i>	Soft chess	no
<i>Bromus madritensis</i>	Madrid brome	no
<i>Calochortus luteus</i>	Yellow mariposa	yes
<i>Calochortus superbus</i>	Mariposa-lily	yes
<i>Carduus pycnocephalus</i>	Italian thistle	no
<i>Carex serratodens</i>	Bifid sedge	yes
<i>Castilleja rubicundula</i> ssp. <i>lithospermoides</i>	Cream sacs	yes
<i>Centaurea solstitialis</i>	Yellow star thistle	no
<i>Chlorogalum pomeridianum</i>	Soap plant	yes
<i>Clarkia purpurea</i> ssp. <i>quadrivulnera</i>	Purple clarkia	yes
<i>Convolvulus arvensis</i>	Field knotweed	no
<i>Croton setigerus</i>	Turkey mullein	yes
<i>Cynosurus echinatus</i>	Annual dogtail	no
<i>Daucus pusillus</i>	American carrot	yes
<i>Eleocharis macrostachya</i>	Spike rush	yes
<i>Elymus caput-medusae</i>	Medusa head	no
<i>Epilobium brachycarpum</i>	Willow herb	yes
<i>Epilobium densiflorum</i>	Dense boisduvalia	yes
<i>Euphorbia oblongata</i>	Eggleaf spurge	no
<i>Festuca microstachys</i>	Small fescue	yes

<i>Festuca perennis</i>	Italian ryegrass	no
<i>Galium parisiense</i>	Wall bedstraw	no
<i>Geranium dissectum</i>	Cutleaf geranium	no
<i>Grindelia camporum</i>	Gum plant	yes
<i>Hemizonia congesta</i> ssp. <i>luzulifolia</i>	Woodrush tarplant	yes
<i>Hesperolinon californicum</i>	California western flax	yes
<i>Heteromeles arbutifolia</i>	Toyon	yes
<i>Holocarpha virgata</i>	Narrow tarplant	yes
<i>Hordeum marinum</i> ssp. <i>gussoneanum</i>	Mediterranean barley	no
<i>Hypochaeris glabra</i>	Smooth cat's ears	no
<i>Juncus xiphioides</i>	Iris leaved rush	yes
<i>Lactuca saligna</i>	Willow lettuce	no
<i>Lasthenia californica</i>	California goldfields	yes
<i>Lathyrus angulatus</i>	Angled pea vine	no
<i>Lomatium</i> sp.	Lomatium	yes
<i>Lysimachia arvensis</i>	Scarlet pimpernel	no
<i>Lythrum hyssopifolia</i>	Hyssop loosestrife	no
<i>Melica californica</i>	California melic	yes
<i>Micropus californicus</i>	Q tips	yes
<i>Microseris douglasii</i>	Douglas' microseris	yes
<i>Mimulus guttatus</i>	Seep monkeyflower	yes
<i>Perideridia kelloggii</i>	Yampah	yes
<i>Pinus sabiniana</i>	Gray pine	yes
<i>Plantago erecta</i>	Hill plantain	yes
<i>Polypogon monspeliensis</i>	Rabbitfoot grass	no
<i>Pseudognaphalium californicum</i>	Ladies' tobacco	yes
<i>Quercus douglasii</i>	Blue oak	yes
<i>Ranunculus occidentalis</i>	Western buttercup	yes
<i>Rumex crispus</i>	Curly dock	no
<i>Sidalcea diploscypha</i>	Fringed sidalcea	yes
<i>Sisyrinchium bellum</i>	Blue eyed grass	yes
<i>Sonchus asper</i> ssp. <i>asper</i>	Spiny sow thistle	no
<i>Stipa pulchra</i>	Purple needlegrass	yes
<i>Torilis arvensis</i>	Field hedge parsley	no
<i>Toxicoscordion fremontii</i>	Fremont's star lily	yes
<i>Trichostema lanceolatum</i>	Winegarweed	yes
<i>Trifolium bifidum</i>	Notched leaf clover	yes
<i>Trifolium dubium</i>	Shamrock	no
<i>Trifolium fucatum</i>	Bull clover	yes

<i>Trifolium hirtum</i>	Rose clover	no
<i>Trifolium microcephalum</i>	Small head clover	yes
<i>Trifolium variegatum</i> var. <i>major</i>	Large variegated clover	yes
<i>Trifolium variegatum</i> var. <i>variegatum</i>	Variegated clover	yes
<i>Triteleia hyacinthina</i>	Wild hyacinth	yes
<i>Vicia sativa</i>	Common vetch	no
<i>Vicia villosa</i>	Hairy vetch	no
<i>Wyethia angustifolia</i>	Narrow leaf mule ears	yes
<i>Zeltnera muehlenbergii</i>	Centaury	yes

Nomenclature according to: on-line Jepson eFlora and Calflora