ENDANGERED SPECIES ACT
BIOLOGICAL ASSESSMENT
LOS PINOS APARTMENTS PROJECT
SANTA ROSA, CALIFORNIA

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BIOLOGICAL ASSESSMENT

1.0 INTRODUCTION

The Los Pinos Apartments Project (Project) is a 50-unit apartment complex at 3496 Santa Rosa Avenue in an unincorporated area of Sonoma County, California. The Project includes a 2.49 acre Sonoma County Assessor's Parcel Number (APN) 134-132-015 owned by the Applicant and a 0.06 acre sidewalk within the public right-of-way for a Project Site totaling 2.55 acres. The Project will include 7 distinct buildings situated along the northern boundary. The building fronting Santa Rosa Avenue will house a community room, kitchen and rental office. The remaining buildings will support 36 two bedroom and 12 one bedroom apartments. A total of 113 parking spaces is proposed, with 5 of the spaces designated as "Accessible". Fifty of the 113 parking spaces will be covered with 13 carports. A children's playground will be located between the two buildings closest to Santa Rosa Avenue. Implementation of the Project requires the placement of fill material within 0.30 acres of wetlands that will require U.S. Army Corps of Engineers (Corps or USACE) Clean Water Act authorization under a Nationwide Permit 29 *Residential Developments*.

This Biological Assessment has been prepared by the Huffman Broadway Group (HBG) to assess the effects of the issuance of a Nationwide 29 USACE Section 404 permit and interrelated and interdependent actions on (i) species listed as threatened or endangered under the Endangered Species Act (ESA) and (ii) species that are proposed to be listed as threatened or endangered under the ESA. Under Section 7 of the ESA, consultation by the USACE with the U.S. Fish and Wildlife Service (USFWS) and NOAA Fisheries (or National Marine Fisheries Service, NMFS) is required if the proposed action may affect listed species or result in the destruction or adverse medication of designated critical habitat. The purpose of this Biological Assessment is to determine whether any listed species or designated critical habitats are likely to be adversely affected by the action and whether formal consultation is necessary. This Biological Assessment has been prepared to meet the requirements of 16 USC §1536(a)(2) and 50 CFR §402.12 for the issuance of the §404 permit.

The Project Site is located within the Santa Rosa Plain, which encompasses much of central Sonoma County, and is characterized by vernal pools, seasonal wetlands, and associated grasslands. These habitats support a unique population of the federally-listed endangered California tiger salamander (CTS) (*Ambystoma californiense*), and three federally-listed endangered plant species that have a large proportion of their population on the Plain. All vacant and undeveloped locations within the project area would be considered aestivation, foraging and dispersal habitat for the CTS. The three plant species are Sonoma sunshine (*Blennosperma bakeri*), Burke's goldfields (*Lasthenia burkei*), and Sebastopol meadowfoam (*Limnanthes vinculans*) and all are federally- and state-listed as endangered. All three species have potential to occur within suitable habitats in the vicinity of the project site. The Project Site is located within the area designated as critical habitat for the Sonoma County Distinct Population Segment of the CTS.

The USFWS and California Department of Fish and Wildlife (CDFW) issued guidelines for compensation for effects to listed species in the Santa Rosa Plain in the December 1, 2005 Final *Santa Rosa Plain Conservation Strategy*, the May 16, 2006 *Interim Mitigation Guidelines* and the November 9, 2007, *Programmatic Biological Opinion for Corps Permitted Projects that May Affect California Tiger Salamander and Three Endangered Plant Species on the Santa Rosa Plain, California* (Service File Number 81420-2008-F-0261 and Corps File Number 223420N) (2007 Programmatic). The USFWS also published the *Recovery Plan for the Santa Rosa Plain: Blennosperma bakeri (Sonoma sunshine); Lasthenia burkei (Burke's goldfields); Limnanthes vinculans (Sebastopol meadowfoam); California Tiger Salamander Sonoma County Distinct Population Segment (Ambystoma californiense)* in 2016. Some information presented in this Biological Assessment is based on these documents. Information was also obtained from a separate Biological Assessment report prepared by Weimeyer Ecological Sciences dated August 2, 2019 to support review of the project by Sonoma County pursuant to the California Environmental Quality Act (CEQA). This CEQA Biological Assessment is included herein as Attachment No. 1.

As discussed herein, the this Biological Assessment determines to what extent the Proposed Action may affect any of the endangered and threatened species that may occur in the Action Area. The Biological Assessment concludes that the Proposed Action "*is not likely to adversely affect*" the Sonoma County Distinct Population Segment of California tiger salamander and "*is not likely to adversely affect*" the three endangered plants species known to occur in the Santa Rosa Plain. The project will have "*no effect"* on critical habitat for the Sonoma County Distinct Population Segment of California tiger salamander.

2.0 DESCRIPTION OF PROJECT AND FEDERAL ACTION

2.1 Project Location

The 2.55-acre Project Site is located at 3496 Santa Rosa Avenue in the southwestern portion of the City of Santa Rosa, in Sonoma County, California. The Site is accessed from Santa Rosa Avenue. Surrounding lands consist of undeveloped vacant lots to the north, Todd Creek and a mix of vacant undeveloped lots and commercial and rural residential development to the east, a self-storage facility to the south and Santa Rosa Avenue and commercial properties to the west. Figure 1 is a location map of the Action Area; Figure 2 is a USGS 7.5-minute quadrangle map; and Figure 3 is an aerial imagery of the Action Area showing current conditions and adjacent areas.

2.2 Project Purpose

The basic purpose of the Project is to construct residential housing. The overall Project purpose is to develop an economically feasible 50-unit apartment complex in close proximity to major transportation networks, and to fill a critical residential housing shortage created by the Sonoma County fires resulting in a federal Major Disaster Declaration for Sonoma County.

2.3 Project Description

The Project is a 50-unit apartment complex encompassing 2.55 acres. The Project includes 7 distinct buildings situated along the northern boundary. The first building fronting Santa Rosa Avenue will house a community room, kitchen and rental office. The remaining buildings will support 36 two bedroom and 12 one bedroom apartments. A total of 113 parking spaces is proposed, with 5 of the spaces designated as “Accessible”. Fifty of the 113 parking spaces will be covered with 13 carports. A children’s playground will be located between the two buildings closest to Santa Rosa Avenue. The site plan is shown in Figure 4. The Project will require the demolition of an unoccupied residential home and several small sheds and the removal of approximately 9 of the 20 existing trees. Two underground storm drains are proposed to connect to existing Sonoma County Water Agency storm drain systems at the southwest and southeast corners of the site. The project will require importation of approximately 4,630 cubic yards of soil to raise the elevation of the site above the projected 100 year floodplain elevation. Grading activities would result in the permanent placement of fill material (soil) into 0.30 acres of seasonal wetlands and may affect federally-listed California tiger salamander.

Equipment to be used in grading the 2.55-acre footprint for the site will include front-end loaders, dump trucks, and an excavator or back-hoe that may be needed for installation of building foundations and infrastructure. Measures to minimize project impacts on CTS (see section 4.6) are included in the project description and include exclusion fencing around the perimeter of the development footprint, use of qualified biological monitors, preconstruction surveys, development of erosion control plans, and other measures. Construction of the project is anticipated to last approximately one year.

2.4 The Federal Action

Implementation of the Project will require the discharge of clean fill in 0.30 acre of wetlands subject to the Clean Water Act Section 404 jurisdiction of the USACE. The applicant is applying for authorization to place fill in wetlands under a Nationwide Permit-29 *Residential Developments* Department of the Army Permit.

3.0 DESCRIPTION OF THE ACTION AREA

The Action Area is defined in 50 CFR § 402.02, as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action." The Action Area for the proposed project includes the 2.55-acre Project Site for the proposed project and the immediately surrounding area. The purpose of the project is to provide residential housing to serve the needs of Sonoma County.

3.1 General Description of the Project Area

The 2.55-acre Los Pinos Apartments Project Site is located at 3496 Santa Rosa Avenue in Santa Rosa, California. Structures on the property include an existing single-family home that is not inhabitable. There is a small well and well house and a small agricultural shed. The site has a history of mowing and the majority of the front portion of the site has been degraded from past land use activities. The front portion of the site consists of a paved entrance driveway and a mix of old pavement and compacted gravel, which would be considered hardscape. Past land uses has resulted in site disturbance and a resulting dominance of non-native plant species. Surrounding lands consist of undeveloped agricultural land to the north, Todd Creek and undeveloped agricultural land to the east, a self-storage facility to the south and Santa Rosa Avenue and several commercial properties to the west.

The project area is generally level terrain with at an elevation of about 103 to 104 feet msl. The site has been subject to various disturbances in the past including disking, some filling and grazing. Surface water runoff from the site appears to generally flow south into a seasonal wetland swale located along the southern site boundary. The self-storage facility to the south has blocked the natural flow of surface water runoff so surface water ponds in the seasonal wetland. During the rainy season water flows west along the southern site boundary into an existing storm drain located at the southwest corner of the site. Vegetation communities at the site are primarily non-native annual grasslands and seasonal wetlands. Based on review of the U.S. Department of Agriculture Natural Resources Conservation Service Web Soil Survey, two soil types occur on the property: Wright loam, shallow, wet, 0 to 2% slopes (WoA) and Clear Lake clay, sandy substratum, drained, 0 to 2 percent slopes (CeA). A soil map of the site is shown in Figure 5.

HBG conducted a site investigation at the property on August 20, 2019. One objective of the site investigation was to independently verify conditions reported in previous biological studies prepared for the site by Wiemeyer Ecological Sciences in 2019. The Wiemeyer Ecological Sciences Biological Assessment is included herein as Attachment No. 1. HBG field surveys consisted of walking the parcel on foot noting: (1) plant communities present; (2) if the site provided conditions potentially suitable for special status species; or (3) if sensitive habitats were potentially present, and (4) the potential for biological impacts resulting from development of the site.

3.2 Plant Communities and Animal Populations

Vegetation communities are assemblages of plant species growing in an area of similar biological and environmental factors. Vegetation communities and habitats at the project site were identified based on the currently accepted List of Vegetation Alliances and Associations (or Natural Communities List) (CDFW 2010). The list is based on A Manual of California Vegetation, Second Edition (Sawyer and Keeler-Wolf 2009), which is the National Vegetation Classification applied to California. Wetland habitats on-site were further classified using the U.S. Fish and Wildlife's Service's "Classification System for Wetland and Deepwater Habitats" (Cowardian et al. 1979). The Project Site contains two habitat types according to the Natural Communities List: Non-native Grassland and Coastal Freshwater Marsh.

The non-native grassland is the most extensive community found at the site. The non-native grassland is dominated by primarily non-native herbaceous plants and grasses as documented by the investigators who have studied the site. Dominant plant species in the non-native annual grassland include Italian ryegrass (*Festuca perennis*), wild oat (*Avena fatua*), rip-gut brome (*Bromus diandrus*), spring vetch (*Vicia sativa*), hairy cat's ear (*Hypochaeris radicata*), red-stemmed filaree (*Erodium cicutarium*) and chicory (*Cichorium intybus*). Other species found in the ruderal and non-native grasslands include Harding grass (*Phalaris aquatica),* English plantain (*Plantago lanceolata*), bristly ox-tongue (*Helminthotheca echioides*), common yarrow (*Achillea millefolium*), field bindweed (*Convolvulus arvensis*), prickly lettuce (*Lactuca serriola),* black mustard (*Brassica nigra),* wild carrot (*Daucus carota*), fringed willowherb (*Epilobium ciliatum*), and horseweed *(Conyza canadensis*). Some coyote brush (*Baccharis pilularis*), arroyo willow (*Salix lasiolepis*), and Himalaya berry (*Rubus armeniacus*) were present along the southern fence line. Some areas exhibited California oatgrass (*Danthonia californica*), which is a native grass, but it was not dominant at the site. Several trees occur on the site including silver wattle (*Acacia dealbata*), valley oak (Quer*cus lobata*), coast live oak (*Quercus agrifolia*) and Fremont cottonwood (*Populus fremontii*).

Portions of the site consist of a Coastal Freshwater Marsh community made up of plant species that are adapted for life in ponded or saturated soil conditions. The Coastal Freshwater Marsh community consists of seasonal wetlands that are ponded or saturated during the winter wet season. A wetland delineation conducted for the site by Wiemeyer Ecological Sciences found that seasonal wetlands cover an area of approximately 0.30 acres within the 2.55-acre site (see Section 3.3). Two small wetlands located on the western portion of the site consist of non-native species and have been degraded from past land uses. The large wetland along the southern site boundary and the small wetland to its north contain several native wetland and vernal pool species and appear to be relatively undisturbed. All of the seasonal wetlands are shallow with short hydro-periods. The deepest portion of the largest wetland along the southern site boundary was observed to be ponded to a depth of 10 inches[1].

[1] Weimeyer Ecological Services 2019

Dominant plant species in the seasonal wetlands found along the southern boundary of the site include Italian ryegrass, Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*), semaphore grass (*Pleuropogon californicus*), curly dock (*Rumex crispus*), pennyroyal (*Mentha pulegium*) and button celery (*Eryngium aristulatum*). Additional native vernal pool and seasonal wetland species include brown-headed rush (*Juncus phaeocephalus*), hyssop loosestrife (*Lythrum hyssopifolium*), rabbitsfoot grass (*Polypogon monspeliensis),* rough cocklebur (*Xanthium strumarium),* green dock (*Rumex conglomeratus),* smooth goldfields (*Lasthenia glaberrima*) and annual hairgrass (*Deschampsia danthonioides)*. Lobb's aquatic buttercup (*Ranunculus lobbii*), a CNPS List 4.2 plant, was also observed.

The non-native Grassland and Coastal Freshwater Marsh habitats onsite support a variety of wildlife species that would be expected in a ruderal field or grassland habitat with interspersed marsh in an otherwise disturbed area on the Santa Rosa plain. The habitat includes trees, shrubs and groundcover vegetation which provide nesting, roosting and foraging sites for birds, in addition to foraging areas for species of mammals, reptiles, and amphibians, and the wetlands provide a seasonal source of water as well as cover and shelter for various animal species.

Animal species noted during field surveys conducted by an HBG wildlife biologist on August 20, 2019 included bird species such as California scrub-jay (*Aphelocoma californica*), American crow (*Corvus brachyrhynchos*), Northern mockingbird (*Mimus polyglottos*), California towhee *(Melozone crissalis)*, song sparrow (*Melospiza melodia),* and house finch (*Haemorhous mexicanus)*. Red-tailed hawk (*Buteo jamaicensis*) and turkey vulture (*Cathartes aura*) were foraging over the site. Dens of Botta's pocket gopher (*Thomomys bottae*) were prominent at the site. Other mammal species adapted to urban environments would be expected such as Virginia opossum (*Didelphis virginiana*), deer mouse (*Peromyscus maniculatus*), house mouse (*Mus musculus*), Norway rat (*Rattus norvegicus*), black-tailed jackrabbit (*Lepus californicus*), striped skunk (*Mephitis mephitis*) and raccoon (*Procyon lotor*). Reptiles such as western fence lizard (*Sceloporus occidentalis*) and Pacific gopher snake (*Pituophis catenifer)* are also likely present.

3.3 Wetland Delineation

A jurisdictional determination of wetlands was conducted by Weimeyer Ecological Services in June and July of 2019. Wetland status and boundaries were determined using methods for routine on-site determinations consistent with those specified in the *Regional Supplement to the Corps of Engineers Delineation Manual: Arid West Region Version 2.0*. The project site contains 0.30 acres of seasonal wetland**.** The location of the wetlands present on the property is shown in Figure 6.

3.4 Federally-listed Species

The Project Site is located within the Santa Rosa Plain, which encompasses much of central Sonoma County, and is characterized by vernal pools, seasonal wetlands, and associated grasslands. These habitats support a unique population of the federally-listed endangered

California tiger salamander (*Ambystoma californiense*), and three federally-listed endangered plant species that have a large proportion of their population on the Plain. All vacant and undeveloped locations within the Project Site would be considered aestivation, foraging and dispersal habitat for the CTS. The three plant species are Sonoma sunshine (*Blennosperma bakeri*), Burke's goldfields (*Lasthenia burkei*), and Sebastopol meadowfoam (*Limnanthes vinculans*), all three federally- and state-listed as endangered. All three species have potential to occur on the Project Site and all three are known to occur in the project vicinity. Suitable habitat for the federally-listed threatened California red-legged frog (*Rana draytonii*) does not occur on the Project Site or in the vicinity.

The location of the Los Pinos Apartments site in relation to the critical habitat designation for the CTS in Sonoma County issued on August 31, 2011 (76 Federal Register 54371 (Aug. 31, 2011)) is shown in Figure 7. The Project Site is within the area designated as critical habitat for the Sonoma County Distinct Population Segment of the CTS.

Under the Programmatic Biological Opinion, seasonal wetlands such as those present on the Project Site and that are within the range of the three listed plant species are considered suitable habitat for the listed plants even if intensive surveys fail to locate their presence. This provision is necessary because seed banks are often persistent; some plant species may not produce seedlings for many years until conditions are appropriate.

Wiemeyer Ecological Services conducted special status plant surveys during the spring flowering period of the listed plants in 2019 (Wiemeyer Ecological Services 2019). Special-status plant species surveys and plant inventories were performed by Darren Wiemeyer of Weimeyer Ecological Services on April 4, May 14, June 7 and June 27, 2019. Special-status plant species surveys were also performed in accordance with state and federal plant survey protocols and during a site visit conducted by HBG on August 20, 2019. No plants of the three listed endangered species were found on the property during any of these surveys. The only special status plant species that has been observed at the site during previous protocol surveys is the Lobb's aquatic buttercup (*Ranunculus lobbii*, CNPS List 4) which was encountered on the property during surveys conducted in 2019. During the spring of 2020, HBG will either conduct a second year of protocol rare plant surveys or will assume presence and mitigate accordingly.

The *Santa Rosa Plain Conservation Strategy* and the *2007 Programmatic Biological Opinion* (*Programmatic Biological Opinion for U.S. Army Corps of Engineers Permitted Projects that May Affect California Tiger Salamander and Three Endangered Plant Species on the Santa Rosa Plain, California*) were crafted during the period from 2005-2007 by the USFWS, CDFW, and interested stakeholders to allow some development to continue, and to specifically preserve habitat for the three listed plant and animal species.

4.0 THREATENED AND ENDANGERED SPECIES AND DESIGNATED CRITICAL HABITAT

Rare, endangered, or threatened species are protected by the Federal Endangered Species Act of 1973 (16, USC §§ 1531 et seq.), the California Native Plant Protection Act of 1977 (Fish and Game Code §§1900-1913), and the California Endangered Species Act of 1970 (Fish and Game Code, §§2050 et seq.). The California Environmental Quality Act (CEQA) (Public Resources Code §§21000 et seq.) provides additional protection for unlisted species that meet the rare or endangered criteria defined in Title 14, California Code of Regulations, § 15380.

CDFW maintains records for the distribution and known occurrences of "sensitive" species and habitats in the California Natural Diversity Database (CNDDB). Sensitive species include those species listed by the federal and state governments as endangered, threatened, or established by the USFWS, NMFS or CDFW as rare or candidate species. The CNDDB is organized into map areas based on 7.5-minute topographic maps produced by the U.S. Geological Survey. All known occurrences of sensitive species and important natural communities are mapped onto the quadrangle map. The database gives further detailed information on each occurrence, including the specific location of the individual, population, or habitat (if possible) and the presumed current state of the population or habitat.

4.1 Species Evaluated

The Project Site is located within the Santa Rosa Plain, which encompasses much of central Sonoma County, and is characterized by vernal pools, seasonal wetlands, and associated grasslands. These habitats support a unique population of the federally-listed endangered California tiger salamander (*Ambystoma californiense*), and three federally-listed endangered plant species that have a large proportion of their population on the Plain. All vacant and undeveloped locations within the Project Site would be considered aestivation, foraging and dispersal habitat for the CTS, which is also listed as a threatened species under the California Endangered Species Act. The three plant species are Sonoma sunshine (*Blennosperma bakeri*), Burke's goldfields (*Lasthenia burkei*), and Sebastopol meadowfoam (*Limnanthes vinculans*), all three federally- and state-listed as endangered. All three species have potential to occur within suitable habitats in the vicinity of the project site, and two, Sonoma sunshine and Sebastopol meadowfoam, are known to occur in the project vicinity. Under the Programmatic Biological Opinion (USFW 2007), seasonal wetlands such as those present on the Project Site and that are within the range of the three listed plants species are considered suitable habitat for the listed plants even if intensive surveys fail to locate their presence. The Project Site is located within the area designated as critical habitat for the Sonoma County Distinct Population Segment of the CTS.

Suitable habitat may also be present in the vicinity of the Project Site for a federally-listed plant species that is not included among those species covered by the *Santa Rosa Plain Conservation*

Strategy. Contra Costa goldfields (*Lastenia conjugens*) are an annual member of the sunflower family (*Asteraceae*) that occur in mesic valley and foothill grasslands, vernal pools, and playas in many Bay Area counties. Contra Costa goldfields is a federally-listed endangered species with designated critical habitat and a recovery plan. None of the nine critical habitat units for this species are in Sonoma County. The closest units are in southern Mendocino County and southern Napa County. There are no records of Contra Costa goldfields anywhere within ten miles of the Project Site. Most of the records are from deltaic areas of the Sacramento Valley within Napa, Solano and Contra Costa Counties, where the critical habitat units are located. Contra Costa goldfields is unlikely to occur within the Project Site or within the action area.

4.2 Santa Rosa Plain Conservation Strategy

4.2.1 Nature of the Program

The *Santa Rosa Plain Conservation Strategy* (Conservation Strategy) was developed by a team of representatives (Conservation Strategy Team) from the USFWS, USACE, US EPA, CDFW, Sonoma County, local cities, NCRWQCB, local governmental agencies, the Laguna de Santa Rosa Foundation, the environmental community, and the private landowner community. The Conservation Strategy is limited to the Santa Rosa Plain which is located in central Sonoma County, bordered on the south and west by the Laguna de Santa Rosa, on the east by the foothills, and on the north by the Russian River.

The purpose of the Conservation Strategy is threefold: (1) to establish a long-term conservation program sufficient to compensate potential adverse effects of future development on the Santa Rosa Plain, and to conserve and contribute to the recovery of the California tiger salamander and a select group of listed plants (Sonoma sunshine, Burke's goldfields, Sebastopol meadowfoam, and many-flowered navarretia [*Navarretia leucocephala* ssp. *Plieantha*]) and the conservation of their sensitive habitat; (2) to accomplish the preceding in a fashion that protects stakeholders' (both public and private) land use interests, and (3) to support issuance of an authorization for incidental take of California tiger salamanders and listed plants that may occur in the course of carrying out a broad range of activities on the Santa Rosa Plain.

The Conservation Strategy provides the biological basis for a permitting process for projects that are in the potential range of listed species on the Santa Rosa Plain. This is intended to provide consistency, timeliness and certainty for permitted activities. The Conservation Strategy study area is comprised of the potential California tiger salamander range and the listed plant range within the Santa Rosa Plain. The Conservation Strategy establishes interim and long-term mitigation requirements and designates conservation areas where compensation will occur. It describes how preserves will be established and managed. It also includes guidelines for translocation, management plans, adaptive management and funding.

The USFWS and CDFW have issued guidelines for compensation for effects to listed species in the Santa Rosa Plain in the December 1, 2005 Final *Santa Rosa Plain Conservation Strategy* (USFWS 2005) and the November 9, 2007, *Programmatic Biological Opinion for Corps Permitted Projects that May Affect California Tiger Salamander and Three Endangered Plant*

Species on the Santa Rosa Plain, California (Service File Number 81420-2008-F-0261 and Corps File Number 223420N) (2007 Programmatic) which was based on the Conservation Strategy. In 2016, the USFWS also prepared a recovery plan for the Sonoma County Distinct Population of CTS as well as for the three federally-listed endangered plant species on the Santa Rosa Plain: Burke's goldfields, Sonoma sunshine and Sebastopol meadowfoam (USFWS 2016).

The *Santa Rosa Plain Conservation Strategy* has not officially been approved by the agencies as of the date of this Biological Assessment.

4.2.2 Conservation Strategy Designations in the Project Site Vicinity

Figure 8 shows the Conservation Strategy designations the Project Site is located within. As shown on Figure 8 the Project Site is noted in the Santa Rosa Plain Conservation Strategy with the following designation "*may adversely affect listed plants and/or CTS.*"

4.2.3 Mitigation Requirements for Listed Species

The Conservation Strategy identifies the mitigation requirements for CTS, listed plants, and seasonal wetlands. The mitigation requirements included in the Conservation Strategy will contribute to conservation and recovery of the listed species and their sensitive habitat when implemented.

Mitigation requirements for development projects that impact CTS were developed under the Conservation Strategy and are detailed in the 2007 USFWS Programmatic Biological Opinion, which specifies mitigation requirements for effects to CTS in the Santa Rosa Plain. The Programmatic Biological Opinion requires mitigation at a ratio of 3:1 for projects that are within 500 feet of a breeding site; 2:1 for projects that are greater than 500 feet and within 2200 feet of a known breeding site, and projects beyond 2200 feet from a known breeding site but within 500 feet of an adult occurrence; and 1:1 for projects that are greater than 2200 feet and within 1.3 miles of a known breeding site. Mitigation of 0.2:1 is required for projects in areas more than 1.3 miles from a breeding site shown on Figure 3 of the Conservation Strategy as "Potential for Presence of CTS" or "Potential for presence of CTS and Listed Plants." In this case, mitigation may be provided by a monetary contribution to a species fund overseen by USFWS and/or CDFW. This monetary contribution will be equivalent to the value of the 0.2:1 mitigation ratio. A project proponent may choose to survey to determine CTS presence rather than mitigate. In the event CTS is found, CTS mitigation shall be as outlined above. If no CTS is found, no CTS mitigation will be required.

The Conservation Strategy also includes a provision for how CTS mitigation will be treated in the absence of Conservation Strategy approval. Prior to implementation of the Conservation Strategy, USFWS and CDFW will continue to apply the interim mitigation guidelines as described in the letter dated June 29, 2005 from USFWS and CDFW to the local agencies. Such interim mitigation shall apply to all projects, including linear projects, and mitigation for CTS will be required for all projects within 1.3 miles of known breeding sites. The existing programmatic biological opinion for listed plants will also be applied. During this interim period, the following

mitigation ratios will be applied: (1) mitigation of 3:1 for projects that are within 500 feet of a known breeding site: (2) mitigation of 2:1 for projects that are greater than 500 feet, and within 2,200 feet of a known breeding site, and for projects beyond 2200 feet from a known breeding site, but within 500 feet of an adult occurrence; and (3) mitigation of 1:1 for projects that are greater than 2200 feet, and within 1.3 miles of a known breeding site.

The Programmatic Biological Opinion mitigation ratios for listed plants species on the Santa Rosa Plain are based on the presence of suitable versus occupied habitat, and the potential for presence of Burke's goldfields and Sonoma sunshine; or Sebastopol meadowfoam (USFWS 2007). The site is considered to be occupied if surveys conducted using the USFWS protocol determined presence of the plants, or if the site had listed plants in the past. Protocol botanical inventories for federal listed plants on the Santa Rosa Plain consist of a minimum of three site visits per year and a minimum of two years of negative survey data within three years of project proposal submission to substantiate a negative finding. Under the Programmatic Biological Opinion, seasonal wetlands such as those present on the study site and that are within the range of the three listed plants species are considered suitable habitat for the listed plants even if intensive surveys fail to locate their presence. This provision is necessary because seed banks are often persistent; some plant species may not produce seedlings for many years until conditions are appropriate.

Mitigation requirements of the *Santa Rosa Plain Conservation Strategy* and the Programmatic Biological Opinion (USFWS 2007) are summarized in the Table below:

Table 1. Mitigation Requirements as Per the Santa Rosa Plain Conservation Strategy and Programmatic Biological Opinion

Impact to:	Occupied Habitat Compensation:	Suitable Habitat Compensation:
Burke's goldfields OR Sonoma sunshine	3:1 occupied or established habitat (any combination) with success criteria met prior to ground-breaking at project site	1:1 occupied or established habitat (any combination) with success criteria met prior to groundbreaking at project site AND 0.5:1 established habitat with success criteria met prior to groundbreaking at project site
Sebastopol meadowfoam	2:1 occupied or established habitat (any combination) with success criteria met prior to ground-breaking at project site	1:1 occupied or established habitat (any combination) with success criteria met prior to groundbreaking at project site AND 0.5:1 established habitat with success criteria met prior to groundbreaking at project site

According to the Programmatic Biological Opinion (USFWS 2007), mitigation for impacts to occupied and suitable habitat will consist of preserving occupied sites or established sites with the same impacted species. Sites with suitable habitat are sites that have not been observed to flower during botanical surveys but may have viable seeds in the soil and have additional biological, hydrological and topographic attributes necessary to support the species. Impacts to suitable habitat north of Santa Rosa Creek will mitigate with occupied or established Burke's goldfields or Sonoma sunshine. Impacts to suitable habitat south of Santa Rosa Creek will mitigate with Burke's goldfields, Sonoma sunshine or Sebastopol meadowfoam. Mitigation of occupied and suitable habitat will minimize the effects to the listed plants by ensuring sites will support the species. Adaptive management plans and endowment funding will also increase the probability of the plant populations to be viable in the long term and will be protected in perpetuity through a conservation easement or similar instrument.

Other required mitigation components include management plans, long-term endowments, and other necessary requirements, all of which must be complete and approved by the USFWS and CDFW. Preserve enhancement or management associated with permits and enforcement actions that are appended to the Programmatic Biological Opinion will be provided individual take authorization. It is anticipated that ground work associated with enhancing a Preserve will generally have a net benefit to the California tiger salamander and/or listed plants and would not need to adhere to the mitigation ratios. This Biological Assessment incorporates all applicable requirements of the *Santa Rosa Plain Conservation Strategy* and the 2007 Programmatic Biological Opinion as mitigation for Project effects on covered species.

4.3 Status of the Species

Information on the status of the species discussed below is primarily taken from Status Reviews of the various species published by the USFWS every five years, including a recent Status Reviews for the three plant species last updated and published in 2008.

4.3.1 California Tiger Salamander

Listing Status: The Sonoma County Distinct Population Segment of the California tiger salamander was emergency listed as endangered on July 22, 2002 (USFWS 2002). The salamander was listed as endangered on March 19, 2003 (USFWS 2003). The California tiger salamander was listed as threatened on August 4, 2004 (USFWS 2004). This latter listing changed the status of the Santa Barbara and Sonoma County populations from endangered to threatened. On August 10, 2004, the USFWS proposed 47 critical habitat units in 20 counties. No critical habitat was proposed for Sonoma County. On October 13, 2004, a complaint was filed in the U.S. District Court for the Northern District of California (Center for Biological Diversity and Environmental Defense Council v. U.S. Fish and Wildlife Service *et al*.). On February 3, 2005, the District Court required the USFWS to submit for publication in the *Federal Register*, a final determination on the proposed critical habitat designation on or before December 1, 2005. On August 2, 2005, the USFWS noticed in the *Federal Register* a proposed critical habitat designation (USFWS 2005a). On August 19, 2005, a court order was filed on the above complaint, which upheld the Section 4(d) rule exempting grazing from Section 9

prohibitions but vacated the downlisting of the Santa Barbara and Sonoma populations and reinstated their endangered distinct population segment status. On December 14, 2005, (USFWS 2005b), the USFWS made a final determination to designate and exclude approximately 17,418 acres of critical habitat for the Sonoma population. All critical habitat was excluded based on interim conservation strategies and measures being implemented by those local governing agencies with land use authority over the area and also as a result of economic exclusions authorized under section 4(b)(2) of the Act. Therefore, no critical habitat was designated for the Sonoma County Distinct Population Segment of the California tiger salamander in Sonoma County, California.

On October 2, 2008, a complaint was filed in the U.S. District Court for the Northern District of California (Center for Biological Diversity and Environmental Defense Council v. U.S. Fish and Wildlife Service *et al*.). The complaint claimed, in part, that the determination to exclude critical habitat was based on the local jurisdictions on fully implementing the Santa Rosa Plain Conservation Strategy and that the local jurisdictions have abandoned their efforts to do so. On May 5, 2009, the Court approved a stipulated settlement agreement in which the USFWS agreed to publish a revised proposed rule within 90 days that encompassed the same geographic area as the August 2005 proposal. The proposed rule that was published in the *Federal Register* on August 18, 2009 (74 FR 41662), complies with the May 5, 2009, stipulated agreement. The USFWS also agreed in the May 5, 2009, stipulated settlement agreement to submit a final rule to the *Federal Register* on or before July 1, 2011. On June 9, 2011, the Court approved an extension to submit a final rule to the *Federal Register* on or before September 1, 2011. On August 31, 2011, the USFWS published a final rule in the *Federal Register* (76 FR 169) to designate revised critical habitat for the Sonoma County distinct population segment of the California tiger salamander. In total, approximately 47,383 acres (19,175 hectares) of land were designated as revised critical habitat within the Santa Rosa Plain Unit for the Sonoma County Distinct Population Segment of the California tiger salamander.

Description: The California tiger salamander is a large, stocky, terrestrial salamander with a broad, rounded snout. Adults may reach a total length of 8.2 inches (Petranka 1998). Tiger salamanders exhibit sexual dimorphism with males typically larger than females. The coloration of the California tiger salamander is white or yellowish markings against black. Adult California tiger salamanders usually have creamy yellow to white spotting on the sides and reduced spotting on the dorsal surface of the animal, whereas other tiger salamander species have brighter yellow spotting that is heaviest on the dorsal surface. California tiger salamander larvae have yellowish gray bodies, broad fat heads, large feathery external gills, and broad dorsal fins extending well up their back and range in length from approximately 0.45 to 0.56 inches (Petranka 1998).

Distribution: Historically, the California tiger salamander inhabited low elevation grassland and oak savanna plant communities of the Central Valley, and adjacent foothills, and the inner Coast Ranges in California (Jennings and Hayes 1994; Storer 1925; Shaffer *et al*. 1993). The species has been recorded from near sea level to approximately 3,900 feet in the Coast Ranges and to approximately 1,600 feet in the Sierra Nevada foothills (Shaffer *et al*. 2004). Along the

Coast Ranges, the species occurred from the Santa Rosa area of Sonoma County, south to the vicinity of Buellton in Santa Barbara County. The historic distribution in the Central Valley and surrounding foothills included northern Yolo County southward to northwestern Kern County and northern Tulare County.

The Sonoma County Distinct Population Segment of the California tiger salamander is discrete in relation to the remainder of the species and encompasses all of Sonoma County. The population is geographically isolated and separate from other California tiger salamanders. The Sonoma County population is widely separated geographically from the closest populations, which are located in Contra Costa, Yolo, and Solano counties. These populations are separated from the Sonoma County population by the Coast Range, Napa River, and the Carquinez Straits, at a minimum distance of approximately 45 miles. Documented occurrences of the Sonoma California tiger salamander are primarily concentrated in the Santa Rosa Plain. There are no known records of the California tiger salamander in the intervening areas (D. Warenycia, California Department of Fish and Game, personal communication with the Service, 2002). The USFWS has no evidence of natural interchange of individuals between the Sonoma County population and other California tiger salamander populations.

The Sonoma County Distinct Population Segment of the California tiger salamander inhabits low-elevation (below 500 feet) vernal pools and seasonal ponds, associated grassland, and oak savannah plant communities. The historic range of the Sonoma County population also may have included the Petaluma River watershed, as there is one historic record of a specimen from the vicinity of Petaluma from the mid-1800s (Borland 1856, as cited in Storer 1925).

Natural History: The California tiger salamander has an obligate biphasic life cycle (Shaffer *et al*. 2004). Although larvae salamanders develop in vernal pools and ponds in which they were born, they are otherwise terrestrial salamanders and spend most of their postmetamorphic lives in widely dispersed underground retreats (Shaffer *et al*. 2004; Trenham *et al*. 2001). Subadult and adult California tiger salamanders spend the dry summer and fall months of the year in the burrows of small mammals, such as California ground squirrels (*Spermophilus beecheyi*) and Botta's pocket gopher (*Thomomys bottae*) (Storer 1925; Loredo and Van Vuren 1996; Petranka 1998; Trenham 1998a). Because they live underground in small mammal burrows, California tiger salamanders are rarely encountered in the uplands by humans even where they are abundant.

California tiger salamanders may also use landscape features such as leaf litter or desiccation cracks in the soil for upland refugia. Burrows often harbor camel crickets (*Ceuthophilus* spp. and *Pristoceuthophilus* spp.) and other invertebrates that provide likely prey for California tiger salamanders. Underground refugia also provide protection from the sun and wind associated with the dry California climate that can cause excessive drying of amphibian skin. Although tiger salamanders are members of the Family *Ambystomatidae* (mole salamanders), also known as "burrowing salamanders," California tiger salamanders are not known to create their own burrows in the wild, which may be due to the hardness of soils in the California ecosystems in which they are found. Tiger salamanders typically use the burrows of ground squirrels and

gophers (Loredo et al. 1996; Trenham 1998a). However, pocket gophers are most often used by Sonoma California tiger salamanders in Sonoma County (D. Cook, pers. comm., 2001). California tiger salamanders depend on persistent small mammal activity to create, maintain, and sustain sufficient underground refugia. Burrows are short lived without continued small mammal activity and typically collapse within approximately 18 months (Loredo et al 1996).

The upland burrows inhabited by California tiger salamanders have often been referred to as "aestivation'' sites. However, "aestivation" implies a state of inactivity; while most evidence suggests that California tiger salamanders remain active in their underground dwellings. A recent study has found that California tiger salamanders move, feed, and remain active in their underground burrows (Van Hattem 2004). Because California tiger salamanders arrive at breeding ponds in good condition and are heavier when entering a pond than when leaving, researchers have long inferred that they are feeding while underground. Thus, "upland habitat" is a more accurate description of the terrestrial areas used by California tiger salamanders.

Once fall or winter rains begin, the salamanders emerge from the upland sites on rainy nights to feed and to migrate to the breeding ponds (Stebbins 1985 and Shaffer *et al*. 1993). Adult salamanders' mate in the breeding ponds, after which the females lay their eggs in the water (Twitty 1941; Shaffer *et al*. 1993; Petranka 1998). Historically, California tiger salamanders utilized vernal pools, but the animals also currently breed in livestock stock ponds. Females attach their eggs singly, or in rare circumstances, in groups of two to four, to twigs, grass stems, vegetation, or debris (Storer 1925; Twitty 1941). In ponds with no or limited vegetation, they may be attached to objects, such as rocks and boards on the bottom (Jennings and Hayes 1994). After breeding, adults leave the pool and return to the small mammal burrows (Loredo *et al*. 1996; Trenham 1998a), although they may continue to come out nightly for approximately the next two weeks to feed (Shaffer *et al*. 1993). In drought years, the seasonal pools may not form, and the adults cannot breed (Barry and Shaffer 1994).

California tiger salamander larvae typically hatch within 10 to 24 days after eggs are laid (Storer 1925). The peak emergence of these metamorphs is typically between mid-June to mid-July (Loredo and Van Vuren 1996; Trenham et al 2000) but in some areas as early as late February or early March. The larvae are totally aquatic. The larvae feed on zooplankton, small crustaceans, and aquatic insects for about six weeks after hatching, after which they switch to larger prey (J. Anderson 1968). Larger larvae have been known to consume the tadpoles of Pacific treefrogs (*Pseudacris regilla*), western spadefoot toads (*Spea hammondii*) and California red-legged frogs (*Rana aurora*) (J. Anderson 1968; P. Anderson 1968). California tiger salamander larvae are among the top aquatic predators in seasonal pool ecosystems. When not feeding, larvae often rest on the bottom in shallow water, but are also found throughout the water column in deeper water. Young salamanders are wary and typically escape into vegetation at the bottom of the pool when approached by potential predators (Storer 1925).

The larval stage of the California tiger salamander usually last three to six months, as most seasonal ponds and pools dry up during the summer (Petranka 1998). Amphibian larvae must

grow to a critical minimum body size before they can metamorphose (change into a different physical form) to the terrestrial stage (Wilbur and Collins 1973). Individuals collected near Stockton in the Central Valley during April varied from 1.88 to 2.32 inches in length (Storer 1925). Feaver (1971) found that larvae metamorphosed and left the breeding pools 60 to 94 days after the eggs had been laid, with larvae developing faster in smaller, more rapidly drying pools. The longer the ponding duration, the larger the larvae and metamorphosed juveniles are able to grow, and the more likely they are to survive and reproduce (Pechmann *et al*. 1989; Semlitsch *et al*. 1988; Morey 1998; Trenham 1998b). The larvae will perish if a site dries before metamorphosis is complete (P. Anderson 1968; Feaver 1971). Pechmann *et al*. (1989) found a strong positive correlation with ponding duration and total number of metamorphosing juveniles in five salamander species. In Madera County, California, Feaver (1971) found that only 11 of 30 pools sampled supported larval California tiger salamanders, and five of these dried before metamorphosis could occur. Therefore, out of the original 30 pools, only six (20 percent) provided suitable conditions for successful reproduction that year.

Size at metamorphosis is positively correlated with stored body fat and survival of juvenile amphibians, and negatively correlated with age at first reproduction (Semlitsch *et al*. 1988; Scott 1994; Morey 1998). In the late spring or early summer, before the ponds dry completely, metamorphosed juveniles leave them and enter upland habitat. This emigration occurs in both wet and dry conditions (Loredo and Van Vuren 1996; Loredo *et al*. 1996). Unlike during their winter migration, the wet conditions that adult California tiger salamanders typically prefer, generally does not occur during the months when their breeding ponds begin to dry. As a result, juveniles may be forced to leave their ponds on rainless nights. Under these conditions, they may move only short distances to find temporary upland sites for the dry summer months, waiting until the next winter's rains to move further into suitable upland refugia. Once juvenile California tiger salamanders leave their birth ponds for upland refugia, they typically do not return to ponds to breed for an average of 4 to 5 years (Trenham *et al.* 2000). However, they remain active in the uplands, coming to the surface during rainfall events to disperse or forage (Trenham and Shaffer 2005).

Lifetime reproductive success for California and other tiger salamanders is low. Trenham *et al*. (2000) found the average female bred 1.4 times and produced 8.5 young that survived to metamorphosis per reproductive effort. This resulted in roughly 11 metamorphic offspring over the lifetime of a female. Two reasons for the low reproductive success are the preliminary data suggests that most individuals of the California tiger salamanders require two years to become sexually mature, but some individuals may be slower to mature (Shaffer *et al*. 1993); and some animals do not breed until they are four to six years old. While individuals may survive for more than ten years, many breed only once, and in some populations, less than 5 percent of marked juveniles survive to become breeding adults (Trenham 1998b). With such low recruitment, isolated populations are susceptible to unusual, randomly occurring natural events as well as from human caused factors that reduce breeding success and individual survival. Factors that repeatedly lower breeding success in isolated pools can quickly extirpate a population.

Dispersal and migration movements made by California tiger salamanders can be grouped into two main categories: (1) breeding migration; and (2) interpond dispersal. Breeding migration is the movement of salamanders to and from a pond from the surrounding upland habitat. After metamorphosis, juveniles move away from breeding ponds into the surrounding uplands, where they live continuously for several years. At a study in Monterey County, it was found that upon reaching sexual maturity, most individuals returned to their natal/ birth pond to breed, while 20 percent dispersed to other ponds (Trenham *et al*. 2001). Following breeding, adult California tiger salamanders return to upland habitats, where they may live for one or more years before breeding again (Trenham *et al*. 2000).

California tiger salamanders are known to travel large distances from breeding sites into upland habitats. Maximum distances moved are generally difficult to establish for any species, but California tiger salamanders in Santa Barbara County have been recorded to disperse 1.3 miles from breeding ponds (Sweet 1998). California tiger salamanders are known to travel between breeding ponds; one study found that 20 to 25 percent of the individuals captured at one pond were recaptured later at ponds approximately 1,900 and 2,200 feet away (Trenham *et al*. 2001). In addition to traveling long distances during migration to or dispersal from ponds, California tiger salamanders may reside in burrows that are far from ponds.

Although the observations above show that California tiger salamanders can travel far, typically they stay closer to breeding ponds. Evidence suggests that juvenile California tiger salamanders disperse further into upland habitats than adults. A trapping study conducted in Solano County during winter of 2002/2003 found that juveniles used upland habitats further from breeding ponds than adults (Trenham and Shaffer 2005). More juvenile salamanders were captured at distances of 328, 656, and 1,312 feet from breeding ponds than at 164 feet. Large numbers, approximately 20 percent of total captures, were found 1,312 feet from a breeding pond. Fitting a distribution curve to the data revealed that 95 percent of juvenile salamanders could be found within 2,099 feet of the pond, with the remaining 5 percent being found at even greater distances. Results from the 2003/2004 trapping efforts detected juvenile California tiger salamanders at even further distances, with a large proportion of the total salamanders caught at 2,297 feet from the breeding pond (Trenham and Shaffer, 2005). During post-breeding emigration, radio-equipped adult California tiger salamanders were tracked to burrows 62 to 813 feet from their breeding ponds (Trenham 2001). These reduced movements may be due to adult California tiger salamanders having depleted physical reserves post-breeding, or also due to the drier weather conditions that can occur during the period when adults leave the ponds.

In addition, rather than staying in a single burrow, most individuals used several successive burrows at increasing distances from the pond. Although the studies discussed above provide an approximation of the distances that California tiger salamanders regularly move from their breeding ponds, upland habitat features will drive the details of movements in a particular landscape. Trenham (2001) found that radio-tracked adults favored grasslands with scattered large oaks, over more densely wooded areas. Based on radio-tracked adults, there is no indication that certain habitat types are favored as corridors for terrestrial movements. In

addition, at two ponds completely encircled by drift fences and pitfall traps, captures of arriving adults and dispersing new metamorphs were distributed roughly evenly around the ponds. Thus, it appears that dispersal into the terrestrial habitat occurs randomly with respect to direction and habitat types.

Several species have either been documented to prey or likely prey upon the California tiger salamanders including coyotes (*Canis latrans*), raccoons (*Procyon lotor*), opossums (*Didelphis virginiana*), egrets (Egretta species), great blue herons (*Ardea herodias*), crows (*Corvus brachyrhynchos*), ravens (*Corvus corax*), garter snakes (*Thamnophis* spp), bullfrogs (*Rana catesbeiana*), mosquito fish (*Gambusia affinis*), and crayfish (*Procrambus* spp.). In addition, predacious aquatic hexapods (arthropods) have also been shown to have a significant negative association with California tiger salamanders (Bobzien and DiDonato 2007). Domestic dogs (*Canis familiaris*) have been observed eating California tiger salamanders at Lake Lagunitas at Stanford University (Barry, pers. comm. 2004).

Threats: The California tiger salamander is imperiled throughout its range by a variety of human activities (USFWS 2004). Current factors associated with declining populations of the salamander include continued degradation and loss of habitat due to agriculture and urbanization, hybridization with non-native eastern tiger salamanders (*Ambystoma tigrinum*) (Fitzpatrick and Shaffer 2004; Riley *et al*. 2003) and introduced predators. Hybridization with non-native eastern tiger salamanders has not yet been identified within the Sonoma County population. Fragmentation of existing habitat and agricultural activities that degrade and/or eliminate breeding pools may represent the most significant current threats to the Sonoma County Distinct Population Segment of the California tiger salamander, although populations are likely threatened by more than one factor. Isolation and fragmentation of habitats within many watersheds have precluded dispersal between sub-populations and jeopardized the viability of metapopulations (broadly defined as multiple subpopulations that occasionally exchange individuals through dispersal and are capable of colonizing or "rescuing" extinct habitat patches). Other threats are predation and competition from introduced exotic species, various chemical contaminants, road-crossing mortality, and certain unrestrictive mosquito and rodent control operations.

Diseases may also pose a significant threat though the specific effects of disease on the California tiger salamander are not known. Pathogens, fungi, water mold, bacteria, and viruses are known to adversely affect other tiger salamander species and/or other amphibians. Pathogens are suspected of causing global amphibian declines (Davidson *et al.* 2003). Pathogen outbreaks have not been documented in the California tiger salamander, but chytrid fungus infections (chytridiomycosis) have been detected in California tiger salamander (Padgett-Flohr and Longcore 2005). Chytridiomycosis and ranaviruses are a potential threat to the California tiger salamander because these diseases have been found to adversely affect other amphibians, including tiger salamanders (Davidson *et al*. 2003; Lips *et al*. 2003). A deformity-causing infection, possibly caused by a parasite in the presence of other factors, has affected pond-breeding amphibians at known tiger salamander breeding sites. This same infection has become widespread among amphibian populations in Minnesota and poses the threat of

becoming widespread in California. Nonnative species, such as bullfrogs and nonnative tiger salamanders, are located within the range of the California tiger salamander and have been identified as potential carriers of these diseases. Human activities can facilitate the spread of disease by encouraging the further introduction of non-native carriers and by acting as carriers themselves (i.e. contaminated boots or fishing equipment). Human activities can also introduce stress by other means, such as habitat fragmentation, that results in tiger salamanders being more susceptible to the effects of disease. Disease will likely become a growing threat because of the relatively small and fragmented remaining California tiger salamander breeding sites, the many stresses on these sites due to habitat losses and alterations, and the many other potential disease-enhancing anthropogenic changes that have occurred both inside and outside the species' range.

Critical Habitat: A final rule regarding designation of critical habitat for the Sonoma County Distinct Population Segment of the California tiger salamander in Sonoma County was issued on August 31, 2011 (USFWS 2011). The critical habitat designation included lands that were determined by USFWS to be occupied at the time of listing and contained sufficient physical and biological features to support life history processes essential for the conservation of the Sonoma California tiger salamander. A single unit was designated (the Santa Rosa Plains Unit) that contains approximately 47,383 acres, including 745 acres of State lands, 744 acres of city lands, 498 acres of county lands, 9 acres of individually owned tribal trust land, and 45,387 acres of private lands. No Federal lands were included. The unit is bordered on the west by the Laguna de Santa Rosa floodplain, on the southwest by Hensley Road, on the south by Pepper Road northwest of Petaluma, on the east generally by Petaluma Hill Road and the urban centers of Santa Rosa and Rohnert Park, and on the north by the Town of Windsor.

The unit is characterized by vernal pools, seasonal wetlands and associated grassland habitat. The critical habitat unit supports vernal pool complexes and manmade ponds that contain the primary constituent elements essential to conservation of California tiger salamander and is therefore currently known to support breeding Sonoma California tiger salamanders, upland habitat with underground refugia, and upland dispersal habitat allowing movement between occupied sites. A segment of the 100-year floodplain that is located between the Stony Point Conservation Area near Wilfred Avenue and the Northwest Cotati Conservation Area near Nahmens Road is included within the final designation to prevent fragmentation of the northern and southern breeding concentrations within the unit, by allowing for potential dispersal and genetic exchange.

4.3.2 Federally-listed Endangered Plant Species

4.3.2.1 Species Overview

Burke's Goldfields

Burke's goldfields was federally listed as endangered on December 2, 1991 (USFWS 1991). No critical habitat has been designated for this species.

Lasthenia burkei is a small, slender annual herb in the aster family (Asteraceae). It has narrow, opposite leaves. Flowers bloom from April until June. Both the ray and disk flowers are yellow, while the pappus (seed appendage that aids dispersal by acting like a little parachute) usually consists of one long bristle and several short bristles. The flowers of *L. burkei* are self-incompatible (Ornduff 1966; Crawford and Ornduff 1989) and insect-pollinated. *Lasthenia burkei* grow in vernal pools and swales below 500 meters (1,640 feet) (Ornduff 1993b). In Sonoma County, California, the vernal pools containing *L. burkei* are on nearly level to slightly sloping loams, clay loams, and clays. *Lasthenia burkei* sometimes occurs along with *Blennosperma bakeri* and *Limnanthes vinculans*.

Lasthenia burkei is known only from southern portions of Lake and Mendocino Counties and from the Cotati Valley (locally known as the Santa Rosa Plain) in Sonoma County. Historically, 39 sites were known from the Santa Rosa Plain in Sonoma County, 2 sites in Lake County, and one site in Mendocino County. The type locality of *L. burkei* is the only known occurrence from Mendocino County and is possibly extirpated. Both Lake County occurrences are presumed extant. Within Sonoma County, one occurrence is known from north of Healdsburg (Patterson et al. 1994) and the core of the current range of *L. burkei* is in the Santa Rosa Plain from the community of Windsor to east of the City of Sebastopol.

Sonoma Sunshine

Sonoma sunshine was federally listed as endangered on December 2, 1991 (USFWS 1991). No critical habitat has been designated for this species.

Blennosperma bakeri is a small (up to 30.5 centimeters (12.0 inches) in height), annual herb in the aster family (Asteraceae). The plant has alternate, narrow, hairless leaves 5.1 centimeters (2.0 inches) to 15.2 centimeters (6.0 inches) long. The upper ones have 1 to 3 lobes, the lower ones none. From March through April, the species produces yellow daisy-like flowers. The yellow disk flowers have white pollen and stigmas. Sterile ray flowers, which are yellow or sometimes white, have red stigmas. The lobe pattern of the leaves and the color of ray stigmas separate this species from others in the genus. *Blennosperma bakeri* grows in vernal pools and wet grasslands below 100 meters (330 feet) (Ornduff 1993a). *Blennosperma bakeri* occurs in vernal pools on nearly level to slightly sloping loams, clay loams, and clays. The flowers of *B. bakeri* are self-incompatible, meaning that they can set seed only when fertilized by pollen from a different plant.

Blennosperma bakeri occurs only in Sonoma County, California, and ranges in the Santa Rosa Plain from near the community of Fulton in the north to Scenic Avenue between Santa Rosa and Cotati in the south. Additionally, the species extends from near Glen Ellen to near the junction of State Routes 116 and 121 in the Sonoma Valley. In addition, *B. bakeri* has been introduced to at least one site on Alton Lane during mitigation activities.

Sebastopol Meadowfoam

Sebastopol meadowfoam was federally listed as endangered on December 2, 1991 (USFWS

1991). No critical habitat has been designated for this species.

Limnanthes vinculans is a small (up to 30.48-centimeter (12.00-inch tall)), multi-stemmed herb of the false meadowfoam family (Limnanthaceae). Although the first leaves are narrow and undivided, leaves on the mature plant have three to five undivided leaflets along each side of a long stalk (petiole). The shape of the leaves distinguishes *L. vinculans* from other members of the *Limnanthes* genus. Small, bowl-shaped, white flowers appear April through May. The white flowers are born singly at the end of stems. The seeds of *L. vinculans* germinate after the first significant rains in fall. Repeated drying and filling of pools in the spring favors development of large plants with many branches and long stems. This species grows in Northern Basalt Flow and Northern Hardpan vernal pools (Sawyer and Keeler-Wolf 1995), wet swales and meadows, on the banks of streams, and in artificial habitats such as ditches (Wainwright 1984; CNDDB 2002).

Historically, *Limnanthes vinculans* was known from 40 occurrences (as defined in CNDDB) in Sonoma County and one occurrence (occurrence #39) in Napa County, at the Napa River Ecological Reserve. In Sonoma County, all but two occurrences were found in the central and southern portions of the Santa Rosa Plain. Occurrence #20 occurred at Atascadero Creek Marsh west of Sebastopol, and the second (#40) occurred in the vicinity of Knights Valley northeast of Windsor (CNDDB 2001). In the Santa Rosa Plain, the southern cluster of occurrences extends 5 kilometers (3 miles) from Stoney Point Road to the Laguna de Santa Rosa, and is bounded by Occidental Road to the north and Cotati to the south. The central cluster stretches 1.5 miles (2.4 kilometers) on either side of Fulton Road extending northwards from Occidental Road to River Road. Patterson et al. (1994) estimated that the Santa Rosa Plain occurrences represent only 10 hydrologically separate populations of *L. vinculans*.

4.3.2.2 Species Biology and Habitat

Blennosperma bakeri, *Lasthenia burkei*, and *Limnanthes vinculans* are species that are endemic to California vernal pool ecosystems.

Populations of *Blennosperma bakeri, Lasthenia burkei*, and *Limnanthes vinculans* can vary greatly in size from year to year. Seed banks are of particular importance to annual plant species which are subject to uncertain or variable environmental conditions (Cohen 1966, 1967; Templeton and Levin 1979; Parker et al. 1989). These three listed plants fit this criterion (Hickman 1993); they are annual species living in California's highly variable Mediterranean climate (Holland and Jain 1977). These plants are adapted to a variable Mediterranean climate, where precipitation varies a great deal from one year to another, and there is a pronounced dry season – they are annuals with a high degree of variation in the numbers and extent of above-ground plants from one year to the next and they form long-lived seedbanks in the soil. To date, there is no known scientifically reliable method to sample the seed bank.

Burke's Goldfields

Since the time *L. burkei* was listed in 1991, the species has continued to experience dramatic loss. Patterson et al. (1994) evaluated known *L. burkei* sites on the Santa Rosa Plain. Their data

indicate that 33 percent of the acreage of known Santa Rosa Plain *L. burkei* sites has been severely degraded or extirpated.

The USFWS used data from Patterson et al. (1994) to examine how numbers of *L. burkei* plants changed at particular sites between the time of listing and the most recent surveys that had been conducted after listing. A site, as defined by Patterson et al. (1994), may be all or part of a CNDDB occurrence. After listing, the number of sites with many individuals decreased, and the number with very few individuals increased. Fifteen of the 28 sites for which they had both pre- and post-listing surveys decreased in size after the species was listed. The percentage of sites with fewer than 10 individuals increased by 30 percent, and the percentage of sites with 10,000 to 100,000 individuals decreased by 7 percent. As of 1994, no sites were recorded with more than 100,000 plants. Data from Patterson et al. (1994) also indicate that between the time of listing and 1994, 12 different sites were extirpated or largely destroyed. The data indicate large populations of *L. burkei* are diminishing and nearly half of the sites may have populations either extirpated or are highly vulnerable to extirpation due to small population numbers (less than 10 individuals) (calculated from Patterson et al. 1994; CH2M Hill 1995).

Sonoma Sunshine

Patterson et al. (1994) estimated less than 12 biologically separate populations remain. Of the sites they examined, 17 percent had been extirpated, and 17 percent had not been confirmed recently. An additional 17 percent were believed to be extant but threatened by development as of 1994 (Patterson et al. 1994). A site, as defined by Patterson et al. (1994), may be all or part of a CNDDB occurrence. At one CNDDB occurrence, 12 *B. bakeri* colonies were observed in 1989. By 1993, only six remained (CNDDB 1998). The CNDDB defines occurrence as a location separated from other locations of the species by at least one-fourth mile that may contain populations, individuals, or colonies.

The USFWS used data from 1994 (Patterson et al. 1994) to examine how numbers of *B. bakeri* plants at particular sites changed between the time of listing and the most current surveys that had been performed after listing. After listing, the number of sites with many individuals decreased, and the number with less than 10 individuals increased. The percentage of sites with fewer than 10 individuals increased by 15 percent between the time of listing and 1994.

Sebastopol Meadowfoam

Patterson et al. (1994) estimated only 10 hydrologically separate populations of *L. vinculans* exist. A site, as defined by Patterson et al. (1994), may be all or part of a CNDDB occurrence. Of the sites they examined, nearly 10 percent were considered erroneous, 18 percent were extirpated, 18 percent were extant but threatened by development, and 36 percent were extant but may not be large enough to qualify as high-quality preserve lands (Patterson et al. 1994).

At the time of listing of these three species in 1991 and as described in the USFWS's Federal Register notice (56 FR 61173), *Blennosperma bakeri* was documented from no more than 35 sites in the Cotati Valley and 7 sites from the Sonoma Valley. *Lasthenia burkei* was recorded from no more than 39 sites in the Cotati Valley, 2 sites in Lake County, and 1 site in Mendocino County. *Limnanthes vinculans* documented from 29 locations. The CNDDB (2008) reports there to be 26 occurrences of *B. bakeri* (3 extirpated, 1 potentially extirpated and 22 presumed extant), 32 occurrences of *L. burkei* (4 extirpated, 3 potentially extirpated, and 25 presumed extant), and 39 occurrences of *L. vinculans* (3 extirpated, 4 potentially extirpated, and 32 presumed extant). The trend for most of the occurrences for all three species are identified as either unknown or decreasing (CNDDB 2008).

4.3.2.3 Main Threats to the Species

The reduction and fragmentation of habitat due to urban development, agriculture-land conversion, and habitat degradation from overgrazing, agriculture, and other human-related changes to vernal pool hydrology are listed as the primary threats to these species in the 1991 listing rule (56 FR 61173). Additional threats identified in the 1991 rule include off-road vehicles and erosion. Consistent with the 1991 rule, the largest continuing threat to these species are urban development and land conversion to viticulture or other intense agriculture activities.

Urban and Rural Development and Conversion to Agriculture: The most severely impacted portion of the range of *Lasthenia burkei* has been the northwestern portion of the Santa Rosa Plain. The majority of the known sites severely degraded or extirpated are in the Windsor area (Patterson et al. 1994, CH2M Hill 1995). Two of the largest known populations in Sonoma County occurred in this area and were considered extirpated by Patterson et al. (1994). The extirpations were thought to have resulted from urban and commercial development or agricultural land use changes. For example, one CNDDB occurrence in the area contained 11 colonies in 1984; by 1993, only two were extant (CNDDB 1998). A second occurrence had more than 20 vernal pools in 1985, but by 1994, only one colony of *L. burkei* was present (CNDDB 1998). This property once contained 50,000 plants, but after repeated disking only about 100 plants remain (B. Guggolz, California Native Plant Society, pers. comm., 1998). Only a few stable *L. burkei* sites still exist in the Windsor area, and these are threatened by development (Patterson et al. 1994). The City of Windsor has already developed, or designated development, on every *L. burkei* site within their general planning area (B. Guggolz, pers. comm., 1998). Only a few stable *L. burkei* sites still exist in the Windsor area, and these are threatened by development (Patterson et al. 1994). Development in the Windsor area continues to impact the

limited amount of remaining *L. burkei* habitat in this area (P. Chamberlin, Town of Windsor, pers. comm., 2008b). Similar to *Lasthenia burkei*, *Blennosperma bakeri* and *Limnanthes vinculans* are experiencing similar threats throughout their ranges as a result of activities related to urban and rural development and conversion to agriculture. CNDDB (2008) identifies at least 19 of the 26 occurrences for *Blennosperma bakeri* and 26 of the 39 occurrences for *Limnanthes vinculans* are being threatened, partially extirpated, or extirpated as a result.

The population of California is expected to increase to 58 million, almost double the 1990 State population, by 2040 (Field et al. 1999). Between 1994 and 2005, the Sacramento Fish and Wildlife Office engaged in Endangered Species Act section 7 consultations for projects with impacts to approximately 20,250 hectares (50,000 acres) of vernal pool habitat, including the loss of 10,125 hectares (25,000 acres) to residential, commercial, and industrial development (USFWS 2005c). The Cities of Santa Rosa, Cotati, and Rohnert Park assisted in the preparation of the Santa Rosa Plain Conservation Strategy (Conservation Strategy Team 2005) and identified the areas expected to be proposed for development by the year 2015. The threat of urban development to these species in the Santa Rosa Plain is expected to continue (Conservation Strategy Team 2005).

Alteration of Hydrology: More subtle threats have the ability to change habitat suitability in natural lands remaining within the developed landscape. For example, loss of vernal pool habitat to residential, commercial, and industrial development can also lead to changing or removing the hydrological connections that sustain the remnant vernal pools. Vernal pool plants such as these three species are sensitive to variations in the period of vernal pool inundations (Bauder 2000).

Alteration of the hydrological regime as a result of breaking the clay hard pan (e.g., disking or deep ripping) and draining the pools can change the composition of plant species by facilitating the invasion of non-native upland species. Conversely, if water from urban or agricultural run-off continues to fill pools during spring and summer months, invasion by plant species adapted to permanent inundation can be expected. Disking appears to be a common activity for fire prevention. Some sites are disked in entirety and others only the perimeter (V. Griego, USFWS, personal observations, 2003-2007). Regular disking has resulted in “smearing” (flattening the landscape) and has changed the natural hydrology of the area. Some landowners purposefully changed the hydrology to “get rid” of the listed plants (P. Chamberlin, Town of Windsor, pers. comm., 2008a). In addition, the hydrology of the seasonal wetland habitat of these three listed plants in many areas throughout the Santa Rosa Plain has been altered by human activity. This resulted in the loss of hydrologic connectivity to neighboring wetlands, to an extent that conditions may not be suitable for germination and flowering in many years. However, the plants can still persist in the seedbank and have been known to “reappear” once more appropriate hydrologic conditions are reestablished (Rosburg, 2001; Kivilaan et al. 1981; Zedler and Black 2004).

Changes to vernal pool habitat associated with residential development include facilitation of the introduction of non-native plants to vernal pool habitats (Zedler and Black 2004). Non-

native grasses occur commonly in vernal pool complexes and have become a threat to native vernal pool plants through their capacity to change pool hydrology and competition with native plants. Non-native grasses maintain dominance at pool edges, sequestering light and soil moisture, promoting thatch build-up, and shortening inundation periods. Although the mechanism responsible for the change in inundation is not documented, reduction in inundation period is thought to be due to increased evapo-transpiration associated with dense cover of nonnative plants at the vernal pools (Marty 2005).

Wastewater Irrigation: Wastewater irrigation is a recently established factor affecting vernal pools on the Santa Rosa Plain. This practice began in the 1970s and has continued, which has resulted in changing seasonal wetland plant composition. While the native seasonal wetland species are adapted to a summer-dry Mediterranean climate, summer irrigation results in perennial wetland conditions that are intolerable by native seasonal wetland species (Patterson et al. 1994). Patterson et al. (1994) stated that the ongoing need to expand effluent irrigation acreage to keep pace with population growth would continue to jeopardize the existence of oak woodlands and vernal pools on the Santa Rosa Plain unless other, fewer sensitive lands are found for irrigation or other means of disposal are found.

The City of Santa Rosa has recently developed a draft Environmental Impact Report (Winzler & Kelly, 2008) to look at additional wastewater storage and irrigation in the Santa Rosa Plain. The City of Santa Rosa is pursuing agreements with other wastewater facilities (Sonoma County Water Agency and Town of Windsor) to share irrigation and storage. The City of Santa Rosa is permitted to apply wastewater biosolids to lands within the Santa Rosa Plain. The California Regional Water Quality Control Board recently issued a renewed permit to Santa Rosa for wastewater discharges (J. Short, pers. comm., 2007). The permit requires the City of Santa Rosa to study wastewater land application rates to ensure users are not over-irrigating. The permit recognizes the presence of specific pollutants (including toxic pollutants) in the treated wastewater. The permit sets time schedules for these pollutants to be addressed prior to discharge to surface waters. Technically, the California Regional Water Quality Control Board regulations (Water Quality Control Plan for the North Coast Region) prohibit wastewater discharge to surface waters during the summer. The regulations, however, did not contemplate that wastewater would be used to irrigate vernal pools and other types of seasonal wetlands (J. Short, pers. comm., 2007). Based on these observations, we believe that unchecked wastewater irrigation may alter the normal hydrology of vernal pools in the Santa Rosa Plain and adversely affect *B. bakeri*, *L. burkei*, and *L. vinculans*.

Off-Highway Vehicles: The use of off-highway vehicles continues to degrade some vernal pool habitat in the Santa Rosa Plain. For example, there is one location where motocross tracks were created for recreation (CNDDB 2008). There was one incidence where a vehicle entered private property and drove through a population of *Blennosperma bakeri* and got stuck. At another location, a locked gate was broken into at a California Department of Fish and Game Preserve that is protected for these species (T. Love, pers. comm., 2008). It is reasonable to expect activities of this sort to increase as urban development and rural development continue to increase. The level of this threat is likely to be variable and is difficult to predict or monitor.

4.4 Environmental Baseline

4.4.1 California Tiger Salamander

HBG has consulted the CDFW California Natural Diversity Data Base (CNDDB) to ascertain the potential for special status animal species occurring within a nine 7.5-minute quadrangle map area. Based on review of the CNDDB, there is the potential for only one special status animal species, California tiger salamander. California tiger salamanders have been found in suitable habitats in the project vicinity, and the Santa Rosa Plain Conservation Strategy designates the site as one with a potential for presence of the species. The project site is also within the boundaries of the Santa Rosa Plains Unit of designated critical habitat for the CTS. Further details regarding the potential presence of CTS at the property can be found below.

Because of historical site disturbances, some areas of the Project Site have not been conducive to use by CTS. For instance, urban areas of hardscape and compacted soils were excluded from critical habitat in the Endangered Species Act final rule and would not be considered suitable dispersal or aestivation habitat areas for the CTS. Some locations within the project site such as the 0.36 acres of hardscape and 0.06 acre sidewalk that have long been paved would not provide suitable CTS habitat. Out of the 2.55 acres forming the Project Site, 2.13 acres constitutes habitat suitable to support California tiger salamander. This 2.13 acres of suitable habitat includes 1.83 acres of CTS upland habitat in the ruderal, non-native grassland and 0.30 acres of seasonal wetlands. Refer to Figure 9 for the location of suitable CTS habitat on the Project Site.

Although the property is at the edge of an urbanized area, it is designated as having the potential to support CTS in the Santa Rosa Plain Conservation Strategy map, and the property is included in the area of designated critical habitat for the species. The wetlands at the site do not provide suitable breeding habitat for CTS as the wetlands are too shallow and lacking sufficient food and cover for CTS larvae, and are unlikely to remain inundated long enough to allow CTS metamorphosis. The numerous pocket gopher dens in many portions of the onsite uplands provides potentially suitable estivation or refugial sites for CTS during seasons of non-breeding.

The nearest CNDDB occurrence of this species is approximately 0.7-miles to the southeast of the site at the Horn Mitigation Bank, which is a known CTS breeding site. Although no potential breeding habitats have occurred on the site, the property offers potentially suitable upland and wetland dispersal habitat for CTS. The Santa Rosa Plain Conservation Strategy places the site within an area that is between and 2,200 feet and 1.3 miles from an extant or extirpated breeding site. A project developed at this distance from a known breeding site would require a mitigation ratio of 1:1 for site development (1 acre of mitigation would be necessary for every acre of the site disturbed by development).

A final rule regarding designation of critical habitat for the Sonoma County Distinct Population Segment of the CTS in Sonoma County was issued on August 31, 2011 (USFWS 2011). The critical habitat designation included lands that were determined by USFWS to be occupied at

the time of listing and contained sufficient physical and biological features to support life history processes essential for the conservation of the Sonoma CTS. A single unit was designated (the Santa Rosa Plains Unit) that contains approximately 47,383 acres, including 745 acre of State lands, 744 acre of city lands, 498 acres of county lands, 9 acres of individually owned tribal trust land, and 45,387 acres of private lands. No Federal lands were included. The unit is bordered on the west by the Laguna de Santa Rosa floodplain, on the southwest by Hensley Road, on the south by Pepper Road northwest of Petaluma, on the east generally by Petaluma Hill Road and the urban centers of Santa Rosa and Rohnert Park, and on the north by the Town of Windsor. The unit is characterized by vernal pools, seasonal wetlands and associated grassland habitat. The critical habitat unit supports vernal pool complexes and manmade ponds that contain the primary constituent elements essential to conservation of CTS, and is therefore currently known to support breeding Sonoma CTS, upland habitat with underground refugia, and upland dispersal habitat allowing movement between occupied sites.

The project site is located within the designated critical habitat area.

4.4.2 Burke's Goldfields, Sonoma Sunshine and Sebastopol Meadowfoam

The Santa Rosa Plain Conservation Strategy defines areas potentially suitable to support any of the three federally-listed plant species covered by the Conservation Strategy document: Sonoma sunshine, Burke's goldfields, and Sebastopol meadowfoam. The Santa Rosa Plain Conservation Strategy designates the site as one with a potential for presence of any of the three listed species. The mostly non-native vegetation on the property generally does not represent optimal suitable habitat for special status plants. However, the Action Area supports 0.30 acres of seasonal wetlands potentially suitable to support any of the three species (Burke's goldfields, Sonoma sunshine or Sebastopol meadowfoam).

No locations for any of the three listed species has been documented for the Action Area within the CNDDB (CDFW 2018). The nearest location for any of the three species reported in the CNDDB is for Sebastopol meadowfoam which occurs at the Horn Mitigation Bank about 0.7 miles southeast of the Action Area.

Wiemeyer Ecological Services conducted special status plant surveys during the spring flowering period of the listed plants in 2019 (Wiemeyer Ecological Services 2019). No plants of the three listed endangered species were found on the property during any of these surveys. The only special status plant species that has been observed at the site during previous protocol surveys is the Lobb's aquatic buttercup (*Ranunculus lobbii*, CNPS List 4) which was encountered on the property during surveys conducted in 2019. During the spring of 2020, HBG will either conduct a second year of protocol rare plant surveys or will assume presence and mitigate accordingly.

4.5 Effects of the Proposed Action

4.5.1 California Tiger Salamander

4.5.1.1 California Tiger Salamander- Effects

The applicant proposes to construct a 50-unit apartment complex on the property. Out of the 2.55 acres forming the Project Site, 2.13 acres would be considered suitable habitat for CTS; the remaining area consist of 0.36 acres of hardscape (house, driveway) and 0.06 acre sidewalk that would not be considered suitable habitat for CTS. As there are no aquatic habitats providing suitable CTS breeding habitat on the site, there would be no impacts to breeding habitat, but construction of the project could result in elimination of upland habitat for the species. HBG estimates that approximately 2.13 total acres of suitable upland and seasonal wetland habitat for CTS within the designated critical habitat for the species would be impacted by the conversion of the site to the apartment use.

If California tiger salamander individuals were present at the time the site is prepared for construction, there is the possibility such individuals could be injured, killed, harmed, or harassed by grading or other equipment. Individuals present could be crushed by use of equipment that could also collapse underground burrows. Individual tiger salamanders disturbed by activities onsite could attempt overland movements in an attempt to find alternative upland habitat. These individuals could be harassed, injured and killed by workers or vehicles during overland movements at the Project Site, and could be subject to increased levels of predation, desiccation or competition for food and shelter. In areas where CTS are present, soil redistribution activities can cause disruption of surface movement, disruption or complete loss of reproduction, harassment from increased human activity, and/or permanent and temporary loss of shelter.

Mitigation of CTS effects will be provided consistent with requirements of the 2007 Programmatic Biological Opinion and the Santa Rosa Plain Conservation Strategy and will be developed as part of a federal Endangered Species Act Section 7 consultation with the USFWS and the process for obtaining a CESA Incidental Take Permit (ITP) with the CDFW. The purpose of this Biological Assessment is to determine whether any listed species or designated critical habitats are likely to be adversely affected by the action and whether formal consultation is necessary. Under Section 7 of the ESA, consultation by the action agency (the USACE) with the USFWS (or NOAA Fisheries) is required if the proposed action may affect listed species or designated critical habitat.

Construction within 2.13 acres of suitable CTS habitat is not likely to result in the destruction or adverse modification of designated critical habitat for the CTS. This conclusion is based on a comparison of the extent of project effects on suitable CTS habitat within the 47,383 acres of designated critical habitat within the Santa Rosa Plain Unit. Alteration of approximately 2.13 acres of suitable CTS habitat represents less than 0.001 percent of the critical habitat designated within the Unit. The implementation of the project would not result in a cumulative direct or indirect alteration to or destruction of critical habitat that appreciably diminishes the

value of critical habitat for both the survival and recovery of the listed species, and the critical habitat would continue to serve its intended conservation role for CTS.

4.5.1.2 California Tiger Salamander- Proposed Mitigation

Mitigation of CTS effects will be provided consistent with requirements of the 2007 Programmatic Biological Opinion and the *Santa Rosa Plain Conservation Strategy* and are being developed as part of a federal Endangered Species Act Section 7 consultation with the USFWS and the process for obtaining a CESA Incidental Take Permit (ITP) with the CDFW. Mitigation for approximately 2.13 acres of impacts to CTS habitat will be provided consistent with requirements of the Santa Rosa Plain Conservation Strategy and the 2007 Programmatic Biological Opinion. CTS conservation includes mitigation at a 1:1 mitigation ratio as the 2.13 acres of impact would occur within CTS upland habitat that is between 2,200 feet and 1.3 miles from extant or extirpated breeding pools. The total CTS mitigation will be 2.13 acres (i.e. 2.13 acres of mitigation at a 1:1 mitigation ratio) and will be provided as discussed below.

CTS populations in the project area will benefit with implementation of the anticipated project mitigation and the conservation into perpetuity of a total of 2.13 acres of CTS habitat at a conservation bank or mitigation preserve including a USFWS-approved resources management plan, performance monitoring, maintenance monitoring and compliance reporting, an adaptive management plan, and a funding mechanism to assure long-term management and monitoring. The CTS mitigation described above must be implemented prior to initiation of site preparation for the project.

Proposed conservation measures are consistent with the mitigation guidelines described in the Santa Rosa Plain Conservation Strategy which is also to adopted by local jurisdictions including Sonoma County and the City of Santa Rosa and provide the best available guidance that will contribute to minimizing adverse effects to CTS and to the recovery of the species by conserving large contiguous blocks of occupied habitat. The conservation measures are also consistent with the conservation measures in the 2007 Programmatic consultation.

Biological monitors will be present during initial grading activities associated with the project to remove any CTS encountered from the work area within the project site and relocate them to suitable habitat approved by the USFWS, if appropriate. This will reduce the direct or indirect injury or mortality if any individual CTS are encountered during construction of the project. Wildlife exclusion fence placed around the perimeter of the development footprint will prevent CTS from entering onto the project work area. Other protective measures are included in the conservation measures including preconstruction surveys, contractor worker training, a CTS relocation plan, work windows, etc., that will reduce adverse effects to CTS and habitat from ground disturbance and increased human activity during construction.

4.5.2 Federally-listed Plant Species

4.5.2.1 Federally-listed Plant Species- Effects

Project construction necessary for implementation of proposed development of the site

requires fill in wetlands and waters of the U.S. that will require USACE CWA authorization under a Nationwide Permit 29. Development of the project proposed will permanently impact the 0.30 acres of seasonal wetlands that are present on the site. The 0.30 acres of seasonal wetlands constitutes suitable habitat for the three federally-listed endangered plant species that are known to be extant in the vicinity of the project site (Sonoma sunshine, Burke's goldfields and Sebastopol meadowfoam). The proposed site plan results in fill (permanent effects) to 0.30 acres of the seasonal wetlands constituting suitable habitat for listed plants on the property. Protocol surveys conducted at the site during the spring and early summer of 2019 failed to locate any individuals of the three listed plant species. During the spring of 2020, HBG will either conduct a second year of protocol rare plant surveys or will assume presence and mitigate accordingly.

If any of the plants have occurred in the suitable habitat at the site in the past, the seedbank for these species would continue to be present in the soil. Direct effects to suitable habitat for the three listed plant species resulting from the project would be limited to the 0.30 acres of seasonal wetland that occurs within the project site. Direct effects resulting from implementation of the applicant's site plan total 0.30 acres of seasonal wetland providing habitat for listed plant species.

4.5.2.1 Federally-listed Plant Species- Proposed Mitigation

Effects on suitable habitat for listed plant species resulting from implementation of the applicant's site plan would consist of 0.30 acres of direct effects. Depending on the timing of CEQA project approvals, a second year of protocol plant surveys is planned for 2020.

If the second year of protocol rare plant surveys in 2020 are negative the applicant will compensate for the impacts to suitable habitat for Sonoma sunshine, Burke's goldfields and Sebastopol meadowfoam with conservation of 0.45 acres of Sebastopol meadowfoam habitat (0.30 acres of occupied or established habitat and conservation of an additional 0.15 acres of established habitat), as described in Table 1. If the second year of protocol surveys are not conducted, the applicant will assume presence and compensate for impacts with conservation of 0.60 acres of occupied or established habitat (any combination) prior to ground-breaking at project site (mitigation at a 2:1 ratio rather than 1.5:1). If the second year of protocol surveys determine the presence of a listed plant/s the applicant will provide compensation in accordance with the Mitigation requirements of the *Santa Rosa Plain Conservation Strategy* and the Programmatic Biological Opinion summarized in Table 1.

Mitigation for loss of 0.30 acres of suitable habitat for listed plant species will be provided through purchase of mitigation credits at an agency-approved conservation bank which has credits for Sebastopol meadowfoam.

4.6 Conservation Measures

The following conservation measures are proposed and will be incorporated into the project description for the Proposed Project. These conservation measures will be USFWS-approved and accomplished prior to groundbreaking for the Project. The mitigation requirements to

compensate for project effects to CTS and three federally-listed plant species are summarized in Table 2.

Table 2. Potential Mitigation Requirements for the Proposed Project

Species/Habitat Impacted	Total Suitable Habitat (acs)	Total Permanent Impacts (acs)	Total Temporary Impacts (acs)	Mitigation Ratio Required by Conservation Strategy and Programmatic BO (acs) [1]	Total Mitigation Requirement per Conservation Strategy (acs) [2]
California Tiger Salamander	2.13	2.13	0	1:1	2.13
Sebastopol Meadowfoam	0.30	0.30	0	1:1 Preservation	0.30
				0.5:1 Establishment	0.15
Sonoma Sunshine	0	0	0	1:1 Preservation	0
				0.5:1 Establishment	0
Burke's Goldfields [4]	0	0	0	1:1 Preservation	0
				0.5:1 Establishment	0
Wetlands	0.30	0.30	0	1:1 Creation	0.30

[1] The CTS mitigation ratio ranges from 0.2:1 to 3:1 acre depending on distance from breeding site. Based on current best available technical information it is assumed this ratio will be 1:1. The rare plant mitigation ratios in this table assume mitigation as suitable rather than occupied habitat.[2] Mitigation banks only sell credits in 1/10th acre increments. [3] Currently credits are available which can be purchased to satisfy multispecies mitigation requirements so CTS and plants mitigation can be satisfied as part of one credit purchase for either CTS, Burke's goldfields or Sonoma Sunshine. [4] North of Santa Rosa Creek, the requirement is to mitigate with occupied or established Burke's goldfield, Sonoma sunshine or Sebastopol meadowfoam. [5]This cost maybe reduced or eliminated if the Corps agrees that the establishment of wetlands habitat for Burke's goldfields, Sonoma Sunshine or Sebastopol meadowfoam satisfies the wetland mitigation requirement.

A. Mitigation for approximately 2.13 acres of impacts to CTS habitat will be provided consistent with requirements of the Santa Rosa Plain Conservation Strategy and the 2007 Programmatic Biological Opinion. The CTS mitigation will total 2.13 acres. CTS mitigation will be provided at an off-site location and will consist of purchase of mitigation credits

from an approved mitigation bank consistent with requirements of the 2007 Programmatic Biological Opinion and the Santa Rosa Plain Conservation Strategy. The CTS mitigation will be implemented prior to initiation of site preparation for the project.

B. The applicant will implement the following CTS avoidance and minimization measures:

1. Training Program. A biological monitor will conduct a training session for all construction workers before work is started on the Project. The training program is for all construction personnel including contractors and subcontractors. The training will include, at a minimum, a description of the Sonoma County California tiger salamander and habitat within the action area; an explanation of the species status and protection under state and federal laws; the avoidance and minimization measures to be implemented to reduce loss of this species; and communication and work stoppage procedures in case this species is observed within the action area. A fact sheet conveying this information will be prepared and distributed to all construction personnel. The applicant shall provide interpretation for non-English speaking workers.

2. Environmentally Sensitive Areas. Access routes, number and size of staging areas, and work areas, will be limited to the minimum necessary to achieve the project goals. Boundaries of the construction work area will be clearly marked prior to initiating construction/grading. Environmentally Sensitive Areas (ESAs) containing sensitive habitats adjacent to or within construction work areas for which physical disturbance is not allowed will be clearly delineated using silt fence or high visibility orange fencing. The ESA fencing will remain in place throughout the duration of the proposed action, while construction activities are ongoing, and will be regularly inspected and fully maintained at all times. The bid solicitation package special provisions will clearly describe acceptable fencing material and prohibited construction-related activities including vehicle operation, material and equipment storage, access roads and other surface-disturbing activities within ESAs.

3. Equipment. All equipment will be maintained such that there will be no leaks of automotive fluids such as gasoline, oils, or solvents.

4. Hazardous Materials. Hazardous materials such as fuels, oils, solvents, etc., will be stored in sealable containers in a designated location that is at least 200 feet from aquatic habitats. All fueling and maintenance of vehicles and other equipment and staging areas will occur at least 200 feet from any aquatic habitat.

5. Implementation of Biological Opinion. The applicant shall ensure the Onsite Project Manager, or their designee shall have full authority to implement and enforce all onsite Conservation Measures and Terms and Conditions of this Biological Opinion. The Onsite Foreman/Manager shall maintain a copy of this Biological Opinion onsite whenever construction is in progress.

6. Biological Monitors. Biological monitor(s) will be on site each day during initial grading and trenching. The biological monitor(s) shall conduct clearance surveys at the beginning of each day and regularly throughout the workday when construction activities are occurring that may result in take of Sonoma County California tiger salamanders. All suitable aquatic and upland habitat including refugia habitat such as small woody debris, refuse, burrow entries, etc., shall be duly inspected. The Service will consider the implementation of specific Project activities without the oversight of an on-site biological monitor on a case-by-case basis.

   Before the start of work each day during initial grading, the biological monitor will check for animals under any equipment such as vehicles and stored pipes. The biological monitor will check all excavated steep-walled holes or trenches greater than one foot deep for any Sonoma County California tiger salamander. Sonoma County California tiger salamanders will be removed by the biological monitor and relocated according to the Relocation Plan (see number 11 below). To prevent inadvertent entrapment of animals during construction, all excavated, steep-walled holes or trenches more than 24 inches deep will be covered with plywood (or similar materials) that leave no entry gaps at the close of each working day or provided with one or more escape ramps constructed of earth fill or wooden planks. The Service-approved biologist shall inspect all holes and trenches at the beginning of each workday and before such holes or trenches are filled. All replacement pipes, culverts, or similar structures stored in the action area overnight will be inspected before they are subsequently moved, capped, and/or buried.

7. Biological Monitor Approval and Stop Work Authority. Biological monitor(s) will possess a working wireless/mobile phone whose number will be provided to the Service prior to the start of construction and ground disturbance. The biological monitor(s) shall keep a copy of this Biological Opinion in his/her possession when onsite. Through the Onsite Project Manager or his/her designee, the biological monitor(s) shall be given the authority to communicate verbally, by telephone, email, or hardcopy with the applicant, Project personnel, and any other person(s) at the Project Site or otherwise associated with the Project to ensure that the Terms and Conditions of this biological opinion and appendage are met. The biological monitor(s) shall have oversight over implementation of the Terms and Conditions in this Biological Opinion and shall have the authority to stop Project activities if they determine any of the associated requirements are not being fulfilled. If the biological monitor exercises this authority, the Service shall be notified by telephone and email within 24 hours. The Service contact is the Coast Bay Division Chief of the Endangered Species Program, Sacramento Fish and Wildlife Office (SFWO) at telephone number (916) 414-6623.

8. Biological Monitoring Records. The biological monitor(s) shall maintain monitoring records that include: (1) the beginning and ending time of each day's monitoring

effort; (2) a statement identifying the listed species encountered, including the time and location of the observation; (3) the time the specimen was identified and by whom and its condition; (4) the capture and release locations of each individual; (5) photographs and measurements (snout to vent and total length) of each individual; and (6) a description of any actions taken. The biological monitor(s) shall maintain complete records in their possession while conducting monitoring activities and shall immediately provide records to the Service upon request. All monitoring records shall be provided to the Service within 30 days of the completion of monitoring work.

9. Vegetation Removal. A Service-approved biologist will be present during all vegetation clearing and grubbing activities. Grasses and weedy vegetation should be mowed to a height no greater than 6 inches prior to ground-disturbing activities. All cleared vegetation will be removed from the project footprint to prevent attracting animals to the Project Site. Prior to vegetation removal, the biological monitor shall thoroughly survey the area for Sonoma County California tiger salamanders. Once the biological monitor has thoroughly surveyed the area, clearing and grubbing may continue without further restrictions on equipment; however, the qualified biologist shall remain onsite to monitor for Sonoma County California tiger salamanders until all clearing and grubbing activities are complete.

10. Wildlife Exclusion Fencing (WEF). Prior to the start of construction, WEF will be installed at the edge of the Project footprint in all areas where Sonoma County California tiger salamanders could enter the construction area. WEF with exit ramps may be required to allow any Sonoma County California tiger salamander onsite to move into an adjacent habitat offsite. The location of the fencing shall be determined by the onsite Project manager and the Service-approved biologist in cooperation with the Service prior to the start of staging or surface disturbing activities. A conceptual fencing plan shall be submitted to the Service for review and approval prior to WEF installation. The location, fencing materials, installation specifications, and monitoring and repair criteria shall be approved by the Service prior to start of construction. The applicant shall include the WEF specifications on the final Project plans. The applicant shall include the WEF specifications including installation and maintenance criteria in the bid solicitation package special provisions. The WEF shall remain in place throughout the duration of the Project and shall be regularly inspected and fully maintained. Repairs to the WEF shall be made within 24 hours of discovery. Upon Project completion, the WEF shall be completely removed, the area cleaned of debris and trash, and returned to natural conditions.

11. Relocation Plan. The USACE through its applicant shall prepare and submit a Relocation Plan for the Service's written approval. The Relocation Plan shall contain the name(s) of the biological monitor(s) to relocate Sonoma County California tiger salamanders, method of relocation (if different than number 12 below), a map, and description of the proposed release site(s) and burrow(s), and written permission

from the landowner to use their land as a relocation site. At various times, a mitigation or conservation bank may be a desired location to relocate Sonoma County California tiger salamanders from a salvage site, however no mitigation or conservation bank may receive relocated Sonoma County California tiger salamanders until all the bank's credits have been sold to prevent interfering with their performance criteria and credit release schedule.

12. Protocol for Species Observation, Handling, and Relocation. Only Service-approved biologists shall participate in activities associated with the capture, handling, relocation, and monitoring of Sonoma County California tiger salamanders. If a Sonoma County California tiger salamander is encountered, work activities within 50 feet of the individual shall cease immediately and the Onsite Project Manager and Service-approved biologist shall be notified. Based on the professional judgment of the Service-approved biologist, if project activities can be conducted without harming or injuring the individual(s), it may be left at the location of discovery and monitored by the Service-approved biologist. All project personnel shall be notified of the finding and at no time shall work occur within 50 feet of the Sonoma County California tiger salamander without a Service-approved biologist present. If relocation of the species to another site has been approved by the Service and CDFW prior to the start of the Project, the following steps shall be followed:

    a) Prior to handling and relocation, the Service-approved biologist will take precautions to prevent introduction of amphibian diseases in accordance with the Interim Guidance on Site Assessment and Field Surveys for Determining Presence or a Negative Finding of the California Tiger Salamander (Service 2003). Disinfecting equipment and clothing is especially important when biologists are coming to the action area to handle amphibians after working in other aquatic habitats. Sonoma County California tiger salamanders shall also be handled and assessed according to the Restraint and Handling of Live Amphibians (USGS National Wildlife Health Center 2001).

    b) Sonoma County California tiger salamanders shall be captured by hand, dipnet, or other Service-approved methodology, transported, relocated and released as soon as practicable the same day of capture. Individuals should be relocated to areas with one or more potential breeding pools and an active burrow system (unless otherwise with written approved by the Service). The Service shall be notified within 24 hours of all capture, handling, and relocation efforts.

    c) If an injured Sonoma County California tiger salamander is encountered and the Service-approved biologist determines the injury is minor or healing and the salamander is likely to survive, the salamander shall be released as soon as possible, in accordance with the Service-approved Relocation Plan. The

relocated Sonoma County California tiger salamander shall be monitored until it is determined that it is not imperiled by predators or other dangers.

d) If the Service-approved biologist determines that the Sonoma County California tiger salamander has major or serious injuries as a result of project-related activities the Service-approved biologist shall immediately take it to a licensed veterinarian, the Sonoma County Wildlife Rescue, or another Service-approved facility. If taken into captivity the individual shall remain in captivity and not be released into the wild unless it has been kept in quarantine and the release is authorized by the Service. The applicant shall bear any costs associated with the care or treatment of such injured individuals. The circumstances of the injury, the procedure followed, and the final disposition of the injured animal shall be documented in a written incident report.

e) Notification to the Service of an injured or dead Sonoma County California tiger salamander in the action area will be made within 2 calendar days of the finding. Written notification to the Service shall include the following information: the species, number of animals taken or injured, sex (if known), date, time, location of the incident or of the finding of a dead or injured animal, how the individual was taken, photographs of the specific animal, the names of the persons who observe the take and/or found the animal, and any other pertinent information. Dead specimens will be preserved, as appropriate, and held in a secure location until instructions are received from the Service regarding the disposition of the specimen.

13. Stormwater Pollution Prevention Plan (SWPPP). An erosion and sediment control plan will be implemented to prevent impacts of wetland restoration and construction on habitat outside the work areas. An SWPPP prepared in full accordance with the State Water Resources Control Board, National Pollutant Discharge Elimination System Construction General Permit. The SWPPP would include Best Management Practices (BMPs) for controlling sediment, turbidity and the release of other pollutants into water courses during construction. The SWPPP would also include a rainy season erosion prevention and monitoring plan to ensure that surface runoff from the construction site meets Regional Water Quality Control Board (RWQCB) water quality standards and objectives for the Hydrologic Unit and Hydrologic Subunit in which the Project is located. The SWPPP would be subject to the approval of the RWQCB prior to the start of work.

14. Work Windows. Ground disturbance will commence between April 15 and October 15, of any given year, depending on the level of rainfall and/or site conditions. However, grading and other disturbance in pools and ponds, if unavoidable, shall be conducted only when dry, typically between July 15 and October 15. Work within a pool or wetland may begin prior to July 15 if the pool or wetland has been dry for a

minimum of 30 days prior to initiating work. Work would be limited to periods of low rainfall (less than 0.08 inches per 24-hour period and less than 40 percent chance of rain). Construction activities shall cease 24 hours prior to a 40 percent or greater forecast of rain from the National Weather Service (NWS). Construction may continue 24 hours after the rain ceases if no precipitation is in the 24-hour forecast. Any work in pools and wetlands that are holding water shall be subject to approval of the Service. If work must continue when rain is forecast (greater than 40 percent chance of rain), a Service-approved biologist(s) shall survey the Project Site before construction begins each day rain is forecast. If rain exceeds 0.5 inches during a 24-hour period, work shall cease until NWS forecasts no further rain. This restriction is not applicable for areas within 1.3 miles of potential or known Sonoma County California tiger salamander breeding sites once the applicant encircles the site with WEF.

15. Agency Access. If verbally requested before, during, or upon completion of ground disturbance and construction activities, the applicant will ensure the Service can immediately and without delay, access and inspect the Project Site for compliance with the Project description, Conservation Measures, and reasonable and prudent measures of this programmatic biological opinion and appendage, and to evaluate Project effects to the Sonoma County California tiger salamander and its habitat.

16. Proper Use of Erosion Control Devices. To prevent Sonoma County California tiger salamanders from becoming entangled, trapped, or injured, erosion control materials that use plastic or synthetic monofilament netting will not be used within the action area. This includes products that use photodegradable or biodegradable synthetic netting, which can take several months to decompose. Acceptable materials include natural fibers such as jute, coconut, twine or other similar fibers. Following site restoration, any materials left behind as part of the restoration, such as straw wattles, should not impede movement of this species.

17. Pest Control. No rodenticides will be used at the Project Site during construction or long-term operational maintenance in areas that support suitable upland habitat for the Sonoma County California tiger salamander. Larval mosquito abatement efforts should be avoided in occupied breeding habitat for the species.

18. Nighttime Activities. Construction and ground disturbance will occur only during daytime hours and will cease no less than 30 minutes before sunset and will not begin again prior to no less than 30 minutes after sunrise. Night lighting of ESAs should be avoided.

19. Reduce Spread of Invasive Species. A qualified biologist shall ensure that the spread or introduction of invasive non-native plant species, via introduction by arriving vehicles, equipment, and other materials, by thoroughly cleaning equipment and vehicles prior to start of use. Any new piece of equipment brought in, or any piece of

equipment taken off site and then returned to the site, will also be washed. When practicable, invasive non-native plants in the project area shall be removed and properly disposed of in a manner that will not promote their spread. Areas subject to invasive non-native weed removal or disturbance will be replanted with appropriate mix of fast-growing native species. Invasive non-native plant species include those identified in the California Invasive Plant Council's (Cal-IPC) Inventory Database, accessible at: www.cal-ipc.org/ip/inventory/index.php.

20. Trash. All foods and food-related trash items will be enclosed in sealed trash containers at the end of each day and removed from the site every three days.

21. Pets. No pets will be allowed on the Project Site.

22. Speed Limit. No more than a maximum speed limit of 15 mph will be permitted.

C. Effects on suitable habitat for listed plant species resulting from implementation of the applicant's site plan would consist of 0.30 acres of direct effects. The applicant will compensate for the impacts to suitable habitat for Sonoma sunshine, Burke's goldfields and Sebastopol meadowfoam with conservation of an additional 0.45 acres (0.30 acres of occupied or established habitat and conservation of an additional 0.15 acres of established habitat). Overall compensation to mitigate for direct effects to suitable habitat for the three federally-listed species resulting from implementation of the applicant's site plan will be accomplished through the purchase of 0.45 mitigation credits at an agency-approved conservation bank.

5.0 Cumulative Effects

Cumulative effects include the effects of future State, Tribal, local or private actions that are reasonably certain to occur in the action area. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act. Several projects that will require separate federal action (Section 404 permit from USACE and Section 7 consultation with USFWS) are anticipated in the vicinity of the Project Site. Site specific mitigation impacts to CTS and listed plant species will be identified for each project. One of the largest projects was in nearby Rohnert Park, where the Graton Rancheria Project is currently operational, and a Biological Opinion requiring full mitigation for impacts to CTS and listed plant species was issued as part of the federal action to approve that project.

Cumulative effects to the California tiger salamander include continuing and future conversion of suitable California tiger salamander breeding, foraging, sheltering, and dispersal habitat resulting from urban development as addressed in the *Santa Rosa Plain Conservation Strategy*. Additional urbanization can result in road widening and increased traffic on roads that bisect breeding and upland sites, thereby increasing road-kill while reducing in size and further fragmenting remaining habitats. In addition, California tiger salamanders probably are exposed to a variety of pesticides and other chemicals throughout their range. California tiger

salamanders also could die from starvation by the loss of their prey base. Hydrocarbon and other contamination from oil production and road runoff; the application of numerous chemicals for roadside maintenance; urban/suburban landscape maintenance; and rodent and vector control programs may all have negative effects on California tiger salamander populations. In addition, California tiger salamanders may be harmed through collection by local residents.

A common method to control mosquitoes used in Sonoma County (Marin/Sonoma Mosquito and Vector Control District, internet website 2002) is the application of methoprene, which increases the level of juvenile hormone in insect larvae and disrupts the molting process. Lawrenz (1984) found that methoprene (Altosid SR 10) retarded the development of selected crustacea that had the same molting hormones (i.e., juvenile hormone) as insects, and anticipated that the same hormone may control metamorphosis in other arthropods. Because the success of many aquatic vertebrates relies on an abundance of invertebrates in temporary wetlands, any delay in insect growth could reduce the numbers and density of prey available (Lawrenz 1984).

Threats to Burke's goldfields, Sonoma sunshine, and Sebastopol meadowfoam such as unauthorized fill of wetlands, urbanization, increases in non-native species, and expanded irrigation of pastures with recycled wastewater discharge, are likely to continue with concomitant adverse effects on these species resulting in additional habitat loss and degradation; increasingly isolated populations (exacerbating the disruption of gene flow patterns); and further reductions in the reproduction, numbers, and distribution of these species which will decrease their ability to respond to stochastic events.

Some activities that do not require a 404 permit could occur that may negatively impact the listed plant species. Such activities include excessive grazing and wastewater irrigation. On-going grazing on the Santa Rosa Plain appears to occur on an infrequent basis such that it may actually benefit the species by controlling competitive, non-native plant species, but increased grazing nonetheless could cause detrimental effects in the future. The cessation of grazing might also have a negative effect on the species, since non-native competitors have invaded the species' habitat and grazing may currently play an essential role in controlling these competitors.

As described in the Conservation Strategy, urban and rural growth on the Santa Rosa Plain has occurred during the past one hundred years, and for the past twenty years, urban growth has encroached into areas inhabited by the California tiger salamander and the listed plants. The loss of seasonal wetlands caused by development on the Santa Rosa Plain has led to declines in the populations of California tiger salamander and the listed plants. Voters in the cities of Cotati, Rohnert Park, Santa Rosa, and Sebastopol, and the Town of Windsor have established urban growth boundaries for their communities. This is intended to accomplish the goal of city-centered growth, resulting in rural and agricultural land uses being maintained between the urbanized areas. Therefore, it can be reasonably expected that rural land uses will continue into the foreseeable future. While areas of publicly owned property and preserves located in the

Santa Rosa Plain will further protect against development in perpetuity, some of the areas within these urban growth boundaries include lands inhabited by California tiger salamanders and the listed plant species. In addition to urban development, agricultural practices have also disturbed seasonal wetlands, California tiger salamanders and listed plant habitat on the Santa Rosa Plain. Nonetheless, some agricultural practices, such as irrigated or grazed pasture, have protected wetlands and CTS habitat from intensive development.

The Conservation Strategy took into consideration future cumulative effects from federal and non-federal actions to the California tiger salamander and listed plant habitat within the Santa Rosa Plain. The Conservation Strategy and the interim guidelines are intended to benefit the California tiger salamander and the listed plants by providing a consistent approach for mitigation vital to habitat preservation and the long-term conservation of the species. They are also intended to provide more certainty and efficiency in the project review process. The Conservation Strategy and the interim guidelines provide guidance to focus mitigation efforts on preventing further habitat fragmentation and to establish, to the maximum extent possible, a viable preserve system that will contribute to the long-term conservation and recovery of these listed species. Implementation of the interim mitigation guidelines by the local cities and Sonoma County is expected to reduce potential increases of these cumulative effects.

In terms of cumulative effects on global climate change, the global average temperature has risen by approximately 0.6 degrees centigrade during the 20th Century (International Panel on Climate Change 2001, 2007; Adger *et al* 2007). There is an international scientific consensus that most of the warming observed has been caused by human activities (International Panel on Climate Change 2001, 2007; Adger *et al.* 2007), and that it is "very likely" that it is largely due to increasing concentrations of greenhouse gases (carbon dioxide, methane, nitrous oxide, and others) in the global atmosphere from burning fossil fuels and other human activities (Cayan *et al.* 2005, EPA Global Warming webpage http://yosemite. epa.gov; Adger *et al*. 2007). Eleven of the twelve years between 1995 and 2006 rank among the twelve warmest years since global temperatures began in 1850 (Adger *et al*. 2007). The warming trend over the last fifty years is nearly twice that for the last 100 years (Adger *et al*. 2007). Looking forward, under a high emissions scenario, the International Panel on Climate Change estimates that global temperatures will rise another four degrees centigrade by the end of this Century; even under a low emissions growth scenario, the International Panel on Climate Change estimates that the global temperature will go up another 1.8 degrees centigrade (International Panel on Climate Change 2001). The increase in global average temperatures affects certain areas more than others. The western United States, in general, is experiencing more warming than the rest of the Nation, with the 11 western states averaging 1.7 degrees Fahrenheit warmer temperatures than this region's average over the 20th Century (Saunders *et al*. 2008). California, in particular, will suffer significant consequences as a result of global warming (California Climate Action Team 2006). In California, reduced snowpack will cause more winter flooding and summer drought, as well as higher temperatures in lakes and coastal areas. The incidence of wildfires in California will also increase and the amount of increase is highly dependent upon the extent of global warming.

No less certain than the fact of global warming itself is the fact that global warming, unchecked, will harm biodiversity generally and cause the extinction of large numbers of species. If the global mean temperatures exceed a warming of two to three degrees centigrade above pre-industrial levels, twenty to thirty percent of plant and animal species will face an increasingly high risk of extinction (International Panel on Climate Change 2001, 2007). The mechanisms by which global warming may push already imperiled species closer or over the edge of extinction are multiple. Global warming increases the frequency of extreme weather events, such as heat waves, droughts, and storms (International Panel on Climate Change 2001, 2007; California Climate Action Team 2006; Lenihan *et al.* 2003). Extreme events, in turn may cause mass mortality of individuals and significantly contribute to determining which species will remain or occur in natural habitats. As the global climate warms, terrestrial habitats are moving northward and upward, but in the future, range contractions are more likely than simple northward or upslope shifts. Ongoing global climate change (Anonymous 2007; Inkley *et al*. 2004; Adger *et al*. 2007; Kanter 2007) likely imperils the California red-legged frog and the resources necessary for its survival. Since climate change threatens to disrupt annual weather patterns, it may result in a loss of their habitats and/or prey, and/or increased numbers of their predators, parasites, and diseases. Where populations are isolated, a changing climate may result in local extinction, with range shifts precluded by lack of habitat.

6.0 CONCLUSIONS

After reviewing the current status of the California tiger salamander, Burke's goldfields, Sebastopol meadowfoam and Sonoma sunshine, the environmental baseline for the action area, the effects of the proposed Project and cumulative effects, the proposed project may affect but is not likely to adversely affect the California tiger salamander, Burke's goldfields, Sebastopol meadowfoam and Sonoma sunshine. The proposed project is not likely to jeopardize the continued existence of the California tiger salamander, Burke's goldfields, Sebastopol meadowfoam and Sonoma sunshine. This determination is based on the fact that the proposed action includes conservation measures to offset the adverse effects of the Project on these species consistent with the conservation measures in the 2007 Programmatic Consultation and *Santa Rosa Plain Conservation Strategy*.

The loss of CTS dispersal habitat and seasonal wetland habitat of endangered plants at the project site resulting from implementation of the applicant's site plan will be minimized by the conservation and management of 2.13 acres of California tiger salamander habitat and 0.45 acres of Sonoma sunshine, Sebastopol meadowfoam and Burke's goldfields habitat at a USFWS-approved conservation bank or other location which would follow the recommendations of the 2007 Programmatic and as described in conservation measures of the proposed action. The project is also not located within the designated critical habitat for the California tiger salamander, therefore the project will not result in the destruction or adverse modification of designated critical habitat for the species.

The project is also not likely to result in the destruction or adverse modification of designated critical habitat for the California tiger salamander. This determination is based on a comparison of the extent of project effects on suitable CTS habitat within the 47,383 acres of designated critical habitat within the Santa Rosa Plain Unit. The eventual alteration of a total of 2.13 acres of suitable CTS habitat (both temporary and permanent impacts) represents less than 0.01 percent of the critical habitat designated within the Unit. The implementation of the project would not result in a direct or indirect alteration to or destruction of critical habitat that appreciably diminishes the value of critical habitat for both the survival and recovery of a listed species, and the critical habitat would continue to serve its intended conservation role for CTS.

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Figures

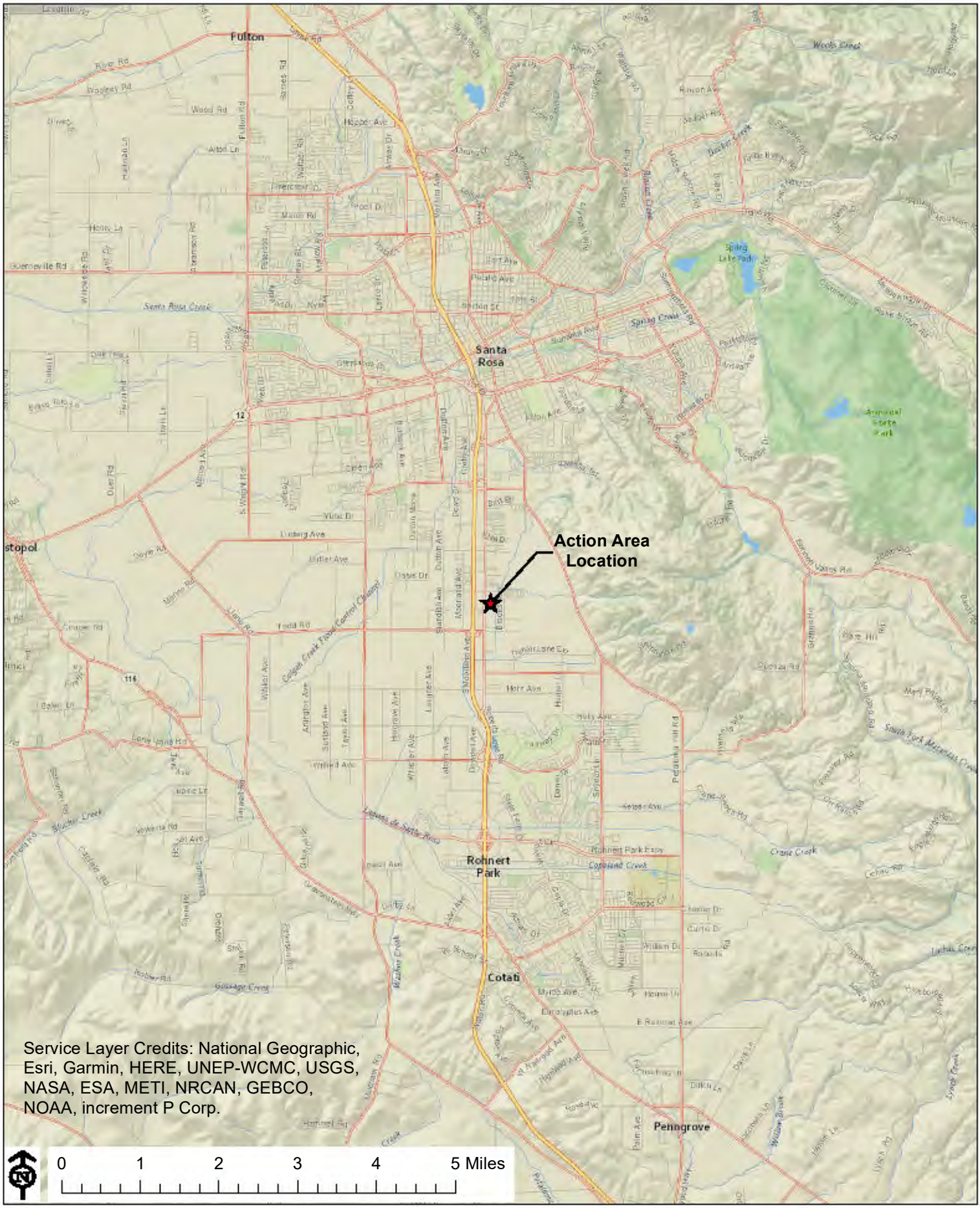

Figure 1. Location Map of Action Area

Los Pinos Apartments Project
Sonoma County, California

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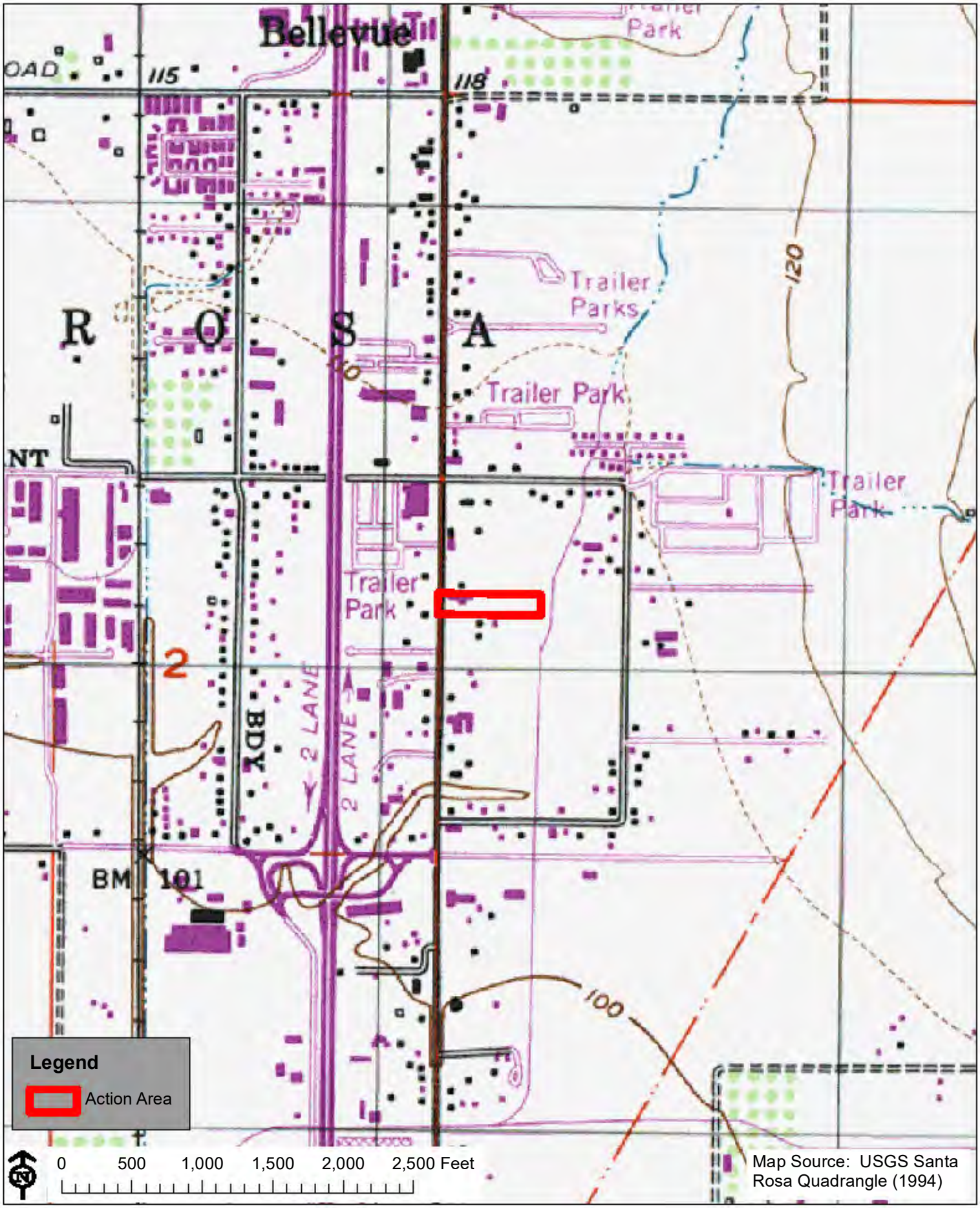

Figure 2. USGS Topographic Map Location of the Action Area

Los Pinos Apartments Project
Sonoma County, California

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Figure 3. Recent Aerial Photograph of the Action Area

Los Pinos Apartments Project
Sonoma County, California

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Figure 4. Project Site Development Plan

Los Pinos Apartments Project
Sonoma County, California

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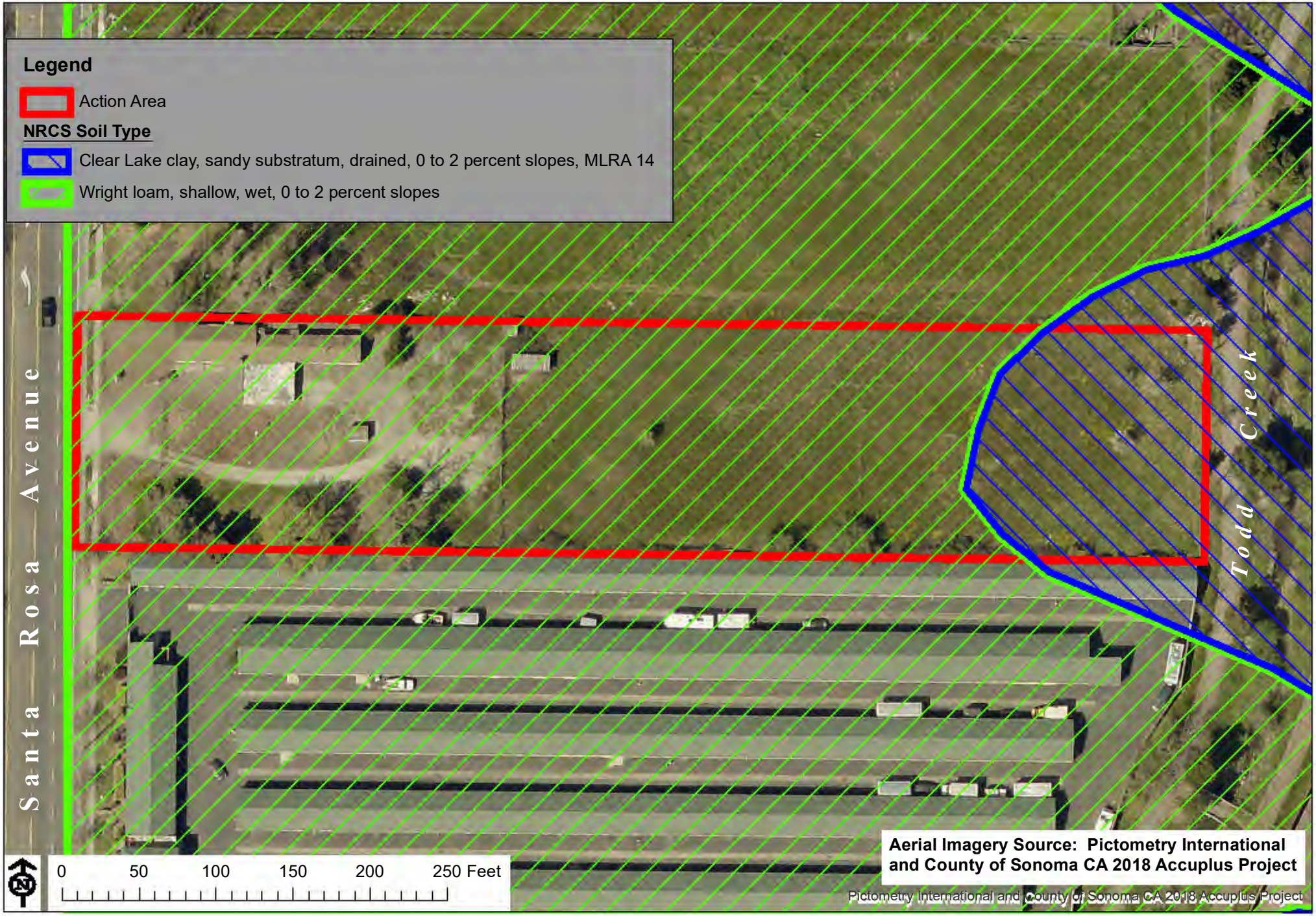

Figure 5. Soil Map for the Action Area

Los Pinos Apartments Project
Sonoma County, California

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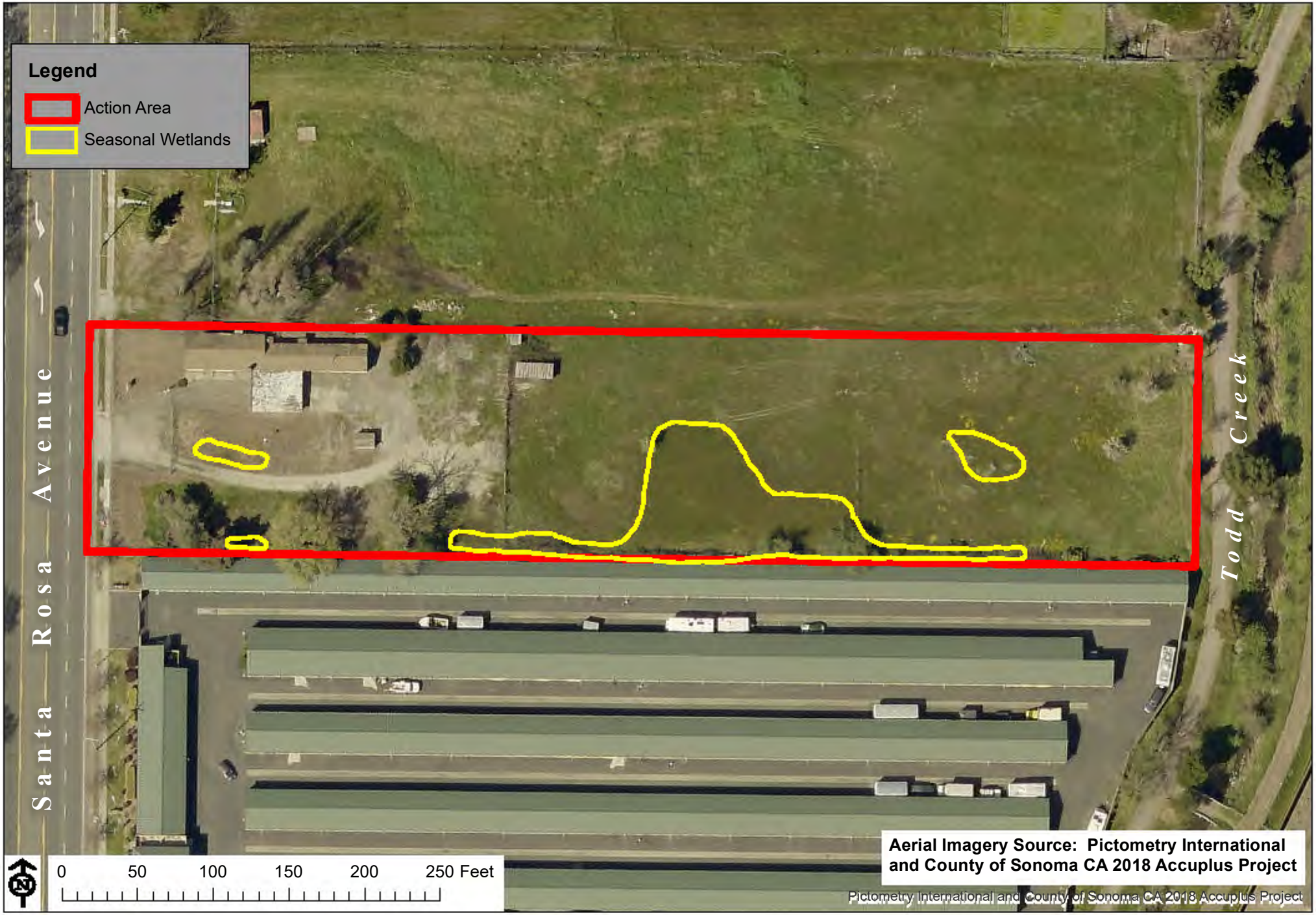

Figure 6. Location of Wetlands Potentially Subject to USACE Jurisdiction

Los Pinos Apartments Project
Sonoma County, California

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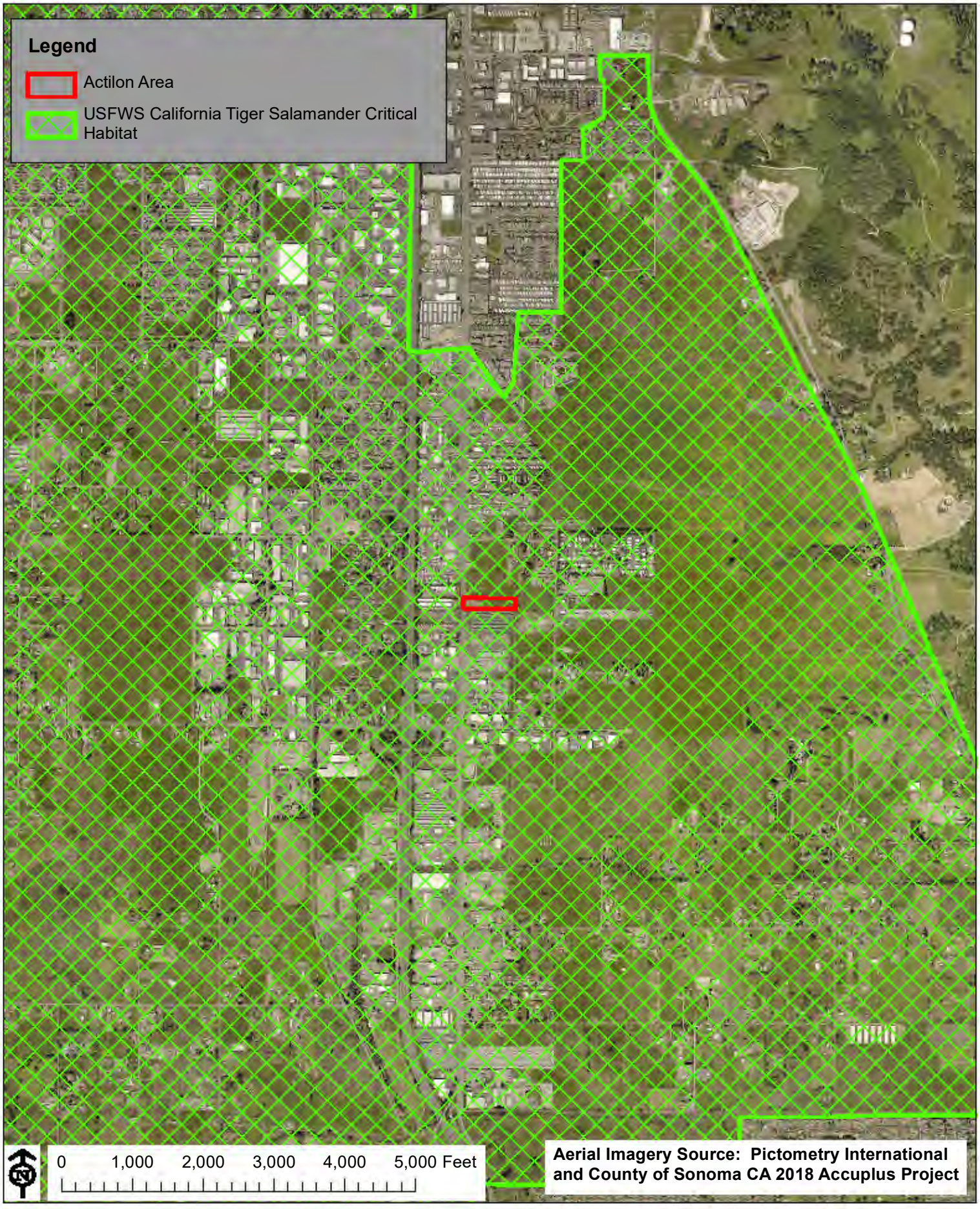

Figure 7. Location of the Project Site in Relation to Designated Critical Habitat for the CTS

Los Pinos Apartments Project
Sonoma County, California

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Figure 8. Santa Rosa Plain Conservation Strategy Designations in the Project Area

Los Pinos Apartments Project
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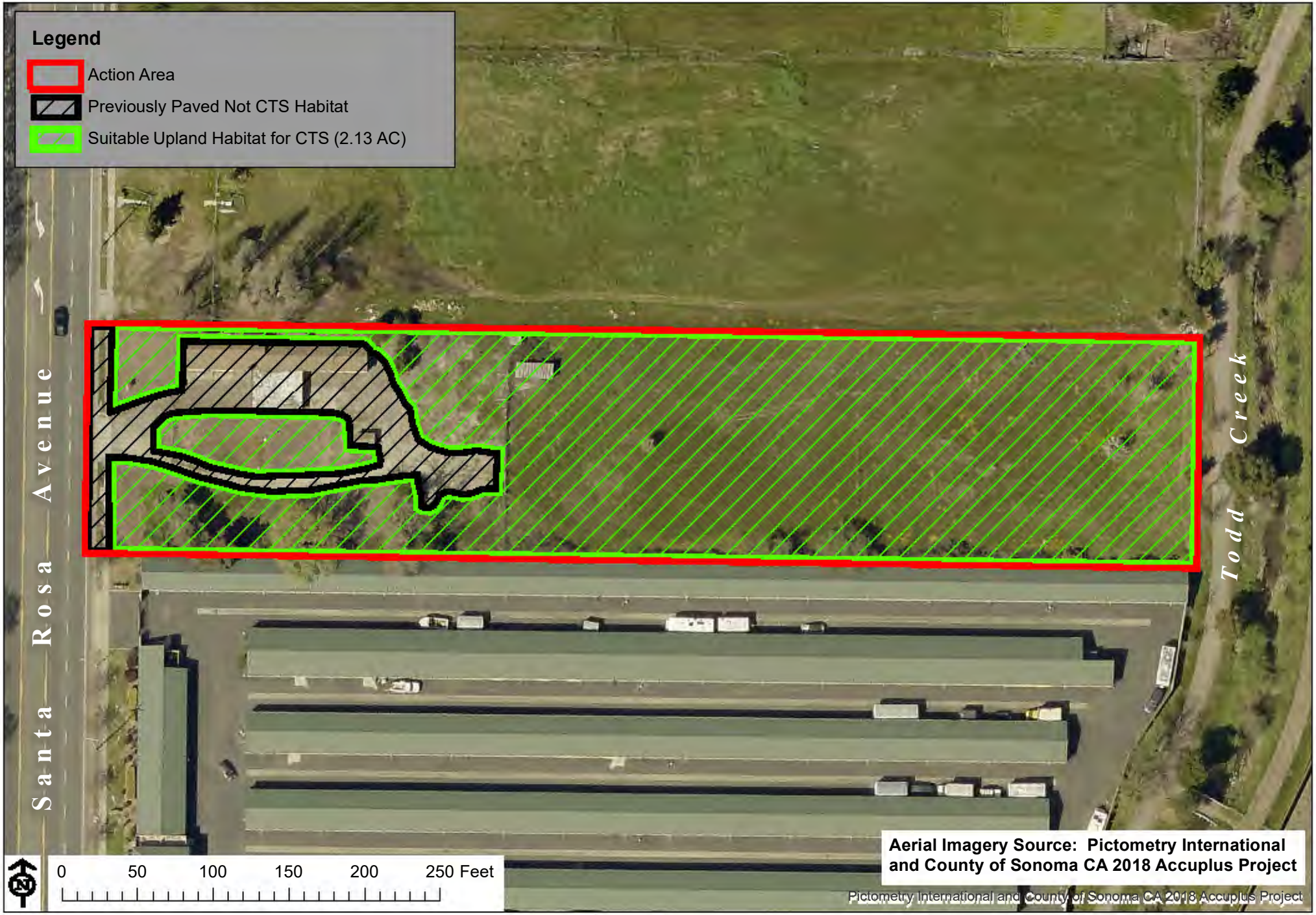

Figure 9. Location of Suitable CTS Habitat on the 2.55-acre Site

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Sonoma County, California

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Date Prepared: August 28, 2019

Prepared by: Huffman-Broadway Group

Attachment No. 1

Wiemeyer Ecological Sciences. 2019. Los Pinos Apartments 3496 Santa Rosa Avenue, Santa Rosa, California. Prepared by Darren Wiemeyer for Eliseo Alexander Diaz Santana. August 2, 2019.

BIOLOGICAL ASSESSMENT

LOS PINOS APARTMENTS
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SANTA ROSA, CA

Prepared For:

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August 2, 2019

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1 SUMMARY

This Biological Assessment presents the findings of surveys and habitat assessments for special status species and sensitive natural communities for the site located at 3496 Santa Rosa Avenue in Santa Rosa, CA (referred to as the "site") (Figure 1). The Assessor Parcel Number is 134-132-015. The site totals 2.49 acres in size.

Habitat types at the site consist of non-native annual grassland and seasonal wetland. The front portion of the site has been disturbed from past land use activities and the back field has a history of mowing. There are some trees on the site but would not be considered a separate habitat type.

Special-status plant species surveys and plant inventories were performed by Darren Wiemeyer on April 4, May 14, June 7 and June 27, 2019. Special-status plant species surveys were performed in accordance with state and federal plant survey protocols (CDFG 2000; USFWS 1996a; USFWS 1996b). The only special-status plant species observed during the four surveys in 2019 was Lobb's aquatic buttercup (*Ranunculus lobbii*), which is a CNPS List 4.2 plant. It is recommended that a second season of special-status plant species be conducted at the site, primarily for the three federally listed vernal pool plant species.

Special-status animal species searches, habitat assessments and wildlife inventories were performed by Darren Wiemeyer on January 14, April 4, May 14, June 7 and June 27, 2019. In addition, the site was assessed for habitat suitability for California tiger salamander in accordance with the Interim Guidance on Conducting Site Assessments and Field Surveys for Determining Presence or A Negative Finding of the California Tiger Salamander (USFWS 2003). No special-status animal species were observed, but the site provides suitable habitat for western pond turtle, native nesting birds and roosting bats. In addition, the site provides suitable aestivation habitat for California tiger salamander.

Darren Wiemeyer performed a wetland delineation at the site on June 27 and July 1, 2019. In addition, a site visit to observe active hydrology was conducted on January 14, 2019. A total of 0.30-acres of seasonal wetlands were delineated at the site. The United States Army Corps of Engineers (USACE) will confirm the extent of seasonal wetlands at the site. The 0.30-acres of seasonal wetland habitat would be considered suitable habitat for three federally endangered plant species that are known to occur in vernal pool habitat on the Santa Rosa Plain (USFWS 2007). The seasonal wetlands are subject to Section 404 of the Clean Water Act and Section 401 of the Clean Water Act and regulated by the North Coast Regional Water Quality Control Board (NCRWQCB).

The site is within the potential range of the California tiger salamander (*Ambystoma californiense*) (CTS) as mapped by the United States Fish and Wildlife Service (USFWS) according to the Santa Rosa Plain Conservation Strategy (SRPCS) (SRPCST, 2005). The site is within listed critical habitat for California tiger salamander (Federal Register, 2011). The site is designated as "Potential for Presence of CTS and Listed Plants" according to Figure 3 of the SRPCS (SRPCST, 2005).

In addition, the site is designated as "May adversely affect listed plants and/or CTS", according to Enclosure 1 of the Programmatic Biological Opinion for U.S. Army Corps of Engineers Permitted Projects that May Affect California Tiger Salamander and Three Endangered Plant Species on the Santa Rosa Plain, California, dated November 9, 2007 (USFWS, 2007). According to these two documents, mitigation for potential impacts to suitable California tiger salamander habitat will be required.

The Los Pinos Apartments proposes to develop a 50-unit attached housing project at the site. The project will require the demolition of all structures on the site and several trees are proposed to be removed to allow development of the site. Development plans are included in the Figures section of this report.

A discussion of potential impacts to biological resources is included in Section 8 of this report. A detailed identification and description of recommended mitigation measures to reduce potential impacts to a less than significant level is included in Section 9 of this report.

2 SITE DESCRIPTION

The site is located at 3496 Santa Rosa Avenue in Santa Rosa, CA (referred to as the "site") (Figure 1). The Assessor Parcel Number is 134-132-015. The site totals 2.49 acres in size. The site has an existing single-family home that is not inhabitable. In addition, there is a small well house and a small agricultural shed.

The site has a history of mowing and the majority of the front portion of the site has been degraded from past land use activities. The front portion of the site consists of a paved entrance driveway and a mix of old pavement and compacted gravel, which would be considered hardscape (Figure 4). Past land uses has resulted in a dominance of non-native plant species and disturbed (ruderal) areas. Photographs of the site are included in the Figures section at the end of the report.

2.1 TOPOGRAPHY

The site is flat with elevations ranging from 103 to 104 feet above sea level (Figure 2).

2.2 SURROUNDING LANDS

Surrounding lands consist of undeveloped agricultural land to the north, the Bellevue Flood Control Channel and undeveloped agricultural land to the east, a self storage facility to the south and Santa Rosa Avenue and several commercial properties to the west.

2.3 HYDROLOGY

Surface water runoff from the site appears to generally flow south into a long seasonal wetland swale located along the southern site boundary. It appears that development of the self storage facility to the south has blocked the natural flow of surface water runoff. Surface water ponds in this seasonal wetland swale and during mid-winter it appears to flow west along the southern site boundary into an existing storm drain located at the southwest corner of the site.

2.4 SOIL TYPES

The soil types mapped at the site consist of Wright loam, shallow, wet, 0 to 2% slopes (WoA) and Clear Lake clay, sandy substratum, drained, 0 to 2 percent slopes (CeA). The Wright series consists of deep, somewhat poorly drained soils formed in alluvium from mixed rock sources. The Clear Lake series consists of clays that formed under poorly drained conditions. These soils are underlain by alluvium from basic and sedimentary rock (Miller, 1972) (Figure 3).

2.5 HABITATS

Habitat types at the site consist of non-native annual grassland and seasonal wetland. The front portion of the site has been disturbed from past land use activities and the back field has a history of mowing. There are some trees on the site but would not be considered a separate habitat type.

3 PROJECT DESCRIPTION

The Los Pinos Apartments proposed to develop a 50-unit attached housing project with 113 parking spaces, two trash enclosures and a children's play structure. The project will require the demolition of all structures on the site. Several trees are proposed to be removed to allow development of the site, but several trees will be preserved. Two underground storm drains are proposed to connect to existing Sonoma County Water Agency storm drain systems at the southwest and south east corners of the site. The project proposed to import approximately 4,630 cubic yards of soil to raise the elevation of the site above the projected 100 year floodplain elevation. Development plans are 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 GAME

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 Wildlife Code. California Fish and Wildlife 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 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. With California Rare Plant Rank 2, we recognize the importance of protecting the geographic range of widespread species. In this way we protect the diversity of our own state's flora and help 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 - we 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 we have provided the known information and 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 emailing the Rare Plant Botanist at asims cnps.org or (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. We strongly recommend 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 we cannot call these plants "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, we will transfer it 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.

5 LITERATURE REVIEW

The CDFW California Natural Diversity Data Base (CNDDB, March 2019) was queried for a list of all plant and animal species reported from the *Santa Rosa, Mark West Springs, Calistoga, Sebastopol, Two Rock, Healdsburg, Kenwood, Cotati, and Glen Ellen* USGS 7.5-minute quadrangles (nine quad search). The Electronic Inventory of Rare and Endangered Vascular Plants of California (CNPS, March 2019) was queried for a list of all plant species reported from the *Santa Rosa, Mark West Springs, Calistoga, Sebastopol, Two Rock, Healdsburg, Kenwood, Cotati, and Glen Ellen* USGS 7.5-minute quadrangles. Standard references used for the biology and taxonomy of plants included Hickman, ed., 1993 and Best et al, 1996.

The following table (Table 1) is a list of special-status plant species that have the potential to occur at the site, 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.

Scientific Name	Common Name	Rare Plant Rank	State List	Federal List	Habitat
Allium peninsulare var. franciscanum	Franciscan onion	1B.2	None	None	Cismontane woodland, Valley and foothill grassland
Amsinckia lunaris	bent-flowered fiddleneck	1B.2	None	None	Coastal bluff scrub, Cismontane woodland, Valley and foothill grassland
Astragalus breweri	Brewer's milk-vetch	4.2	None	None	Chaparral, Cismontane woodland, Meadows and seeps, Valley and foothill grassland (open, often gravelly)
Astragalus claranus	Clara Hunt's milk-vetch	1B.1	CT	FE	Chaparral (openings), Cismontane woodland, Valley and foothill grassland
Balsamorhiza macrolepis	big-scale balsamroot	1B.2	None	None	Chaparral, Cismontane woodland, Valley and foothill grassland
Blennosperma bakeri	Sonoma sunshine	1B.1	CE	FE	Valley and foothill grassland (mesic), Vernal pools
Brodiaea leptandra	narrow-anthered brodiaea	1B.2	None	None	Broadleafed upland forest, Chaparral, Cismontane woodland, Lower montane coniferous forest, Valley and foothill grassland
Calamagrostis ophitidis	serpentine reed grass	4.3	None	None	Chaparral (open, often north-facing slopes), Lower montane coniferous forest, Meadows and seeps, Valley and foothill grassland
Calystegia collina ssp. oxyphylla	Mt. Saint Helena morning-glory	4.2	None	None	Chaparral, Lower montane coniferous forest, Valley and foothill grassland
Castilleja ambigua var. ambigua	johnny-nip	4.2	None	None	Coastal bluff scrub, Coastal prairie, Coastal scrub, Marshes and swamps, Valley and foothill grassland, Vernal pools margins
Centromadia parryi ssp. parryi	pappose tarplant	1B.2	None	None	Chaparral, Coastal prairie, Meadows and seeps, Marshes and swamps (coastal salt), Valley and foothill grassland (vernally mesic)
Clarkia imbricata	Vine Hill clarkia	1B.1	CE	FE	Chaparral, Valley and foothill grassland
Downingia pusilla	dwarf downingia	2B.2	None	None	Valley and foothill grassland (mesic), Vernal pools
Fritillaria liliacea	fragrant fritillary	1B.2	None	None	Cismontane woodland, Coastal prairie, Coastal scrub, Valley and foothill grassland
Gilia capitata ssp. tomentosa	woolly-headed gilia	1B.1	None	None	Coastal bluff scrub, Valley and foothill grassland
Hemizonia congesta ssp. congesta	congested-headed hayfield tarplant	1B.2	None	None	Valley and foothill grassland
Hesperevax caulescens	hogwallow starfish	4.2	None	None	Valley and foothill grassland (mesic, clay), Vernal pools (shallow)
Horkelia tenuiloba	thin-lobed horkelia	1B.2	None	None	Broadleafed upland forest, Chaparral, Valley and foothill grassland
Hosackia gracilis	harlequin lotus	4.2	None	None	Broadleafed upland forest, Coastal bluff scrub, Closed-cone coniferous forest, Cismontane woodland, Coastal prairie, Coastal scrub, Meadows and seeps, Marshes and swamps, North Coast coniferous forest, Valley and foothill grassland
Lasthenia conjugens	Contra Costa goldfields	1B.1	None	FE	Cismontane woodland, Playas (alkaline), Valley and foothill grassland, Vernal pools
Layia septentrionalis	Colusa layia	1B.2	None	None	Chaparral, Cismontane woodland, Valley and foothill grassland

Scientific Name	Common Name	Rare Plant Rank	State List	Federal List	Habitat
Leptosiphon acicularis	bristly leptosiphon	4.2	None	None	Chaparral, Cismontane woodland, Coastal prairie, Valley and foothill grassland
Leptosiphon jepsonii	Jepson's leptosiphon	1B.2	None	None	Chaparral, Cismontane woodland, Valley and foothill grassland
Lessingia hololeuca	woolly-headed lessingia	3	None	None	Broadleafed upland forest, Coastal scrub, Lower montane coniferous forest, Valley and foothill grassland
Limnanthes vinculans	Sebastopol meadowfoam	1B.1	CE	FE	Meadows and seeps, Valley and foothill grassland, Vernal pools
Micropus amphibolus	Mt. Diablo cottonweed	3.2	None	None	Broadleafed upland forest, Chaparral, Cismontane woodland, Valley and foothill grassland
Microseris paludosa	marsh microseris	1B.2	None	None	Closed-cone coniferous forest, Cismontane woodland, Coastal scrub, Valley and foothill grassland
Navarretia cotulifolia	cotula navarretia	4.2	None	None	Chaparral, Cismontane woodland, Valley and foothill grassland
Navarretia heterandra	Tehama navarretia	4.3	None	None	Valley and foothill grassland (mesic), Vernal pools
Navarretia leucocephala ssp. bakeri	Baker's navarretia	1B.1	None	None	Cismontane woodland, Lower montane coniferous forest, Meadows and seeps, Valley and foothill grassland, Vernal pools
Perideridia gairdneri ssp. gairdneri	Gairdner's yampah	4.2	None	None	Broadleafed upland forest, Chaparral, Coastal prairie, Valley and foothill grassland, Vernal pools
Plagiobothrys strictus	Calistoga popcornflower	1B.1	CT	FE	Meadows and seeps, Valley and foothill grassland, Vernal pools
Poa napensis	Napa blue grass	1B.1	CE	FE	Meadows and seeps, Valley and foothill grassland
Puccinellia simplex	California alkali grass	1B.2	None	None	Chenopod scrub, Meadows and seeps, Valley and foothill grassland, Vernal pools
Ranunculus lobbii	Lobb's aquatic buttercup	4.2	None	None	Cismontane woodland, North Coast coniferous forest, Valley and foothill grassland, Vernal pools
Trifolium amoenum	two-fork clover	1B.1	None	FE	Coastal bluff scrub, Valley and foothill grassland (sometimes serpentinite)
Trifolium hydrophilum	saline clover	1B.2	None	None	Marshes and swamps, Valley and foothill grassland (mesic, alkaline), Vernal pools

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 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.

Table 2. Special-Status Animal Species With The Potential To Occur In Or Adjacent To The Study Area.

Scientific Name	Common Name	Federal List	State List	Dept. Fish and Wildlife Rank	Habitat
Ambystoma californiense	California tiger salamander	Endangered	Threatened	Watch List	Cismontane woodland | Meadow & seep | Riparian woodland | Valley & foothill grassland | Vernal pool | Wetland
Ammodramus savannarum	grasshopper sparrow	None	None	Special Concern	Valley & foothill grassland
Antrozous pallidus	pallid bat	None	None	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
Aquila chrysaetos	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
Athene cunicularia	burrowing owl	None	None	Special Concern	Coastal prairie | Coastal scrub | Great Basin grassland | Great Basin scrub | Mojavean desert scrub | Sonoran desert scrub | Valley & foothill grassland
Buteo regalis	ferruginous hawk	None	None	Watch List	Great Basin grassland | Great Basin scrub | Pinon & juniper woodlands | Valley & foothill grassland
Corynorhinus townsendii	Townsend's big-eared bat	None	None	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
Elanus leucurus	white-tailed kite	None	None	Fully Protected	Cismontane woodland | Marsh & swamp | Riparian woodland | Valley & foothill grassland | Wetland
Emys marmorata	western pond turtle	None	None	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
Lasiurus blossevillii	western red bat	None	None	Special Concern	Cismontane woodland | Lower montane coniferous forest | Riparian forest | Riparian woodland
Lasiurus cinereus	hoary bat	None	None	None	Broadleaved upland forest | Cismontane woodland | Lower montane coniferous forest | North coast coniferous forest
Myotis thysanodes	fringed myotis	None	None	None	Wide variety of habitats, optimal habitats are pinyon-juniper, valley foothill hardwood & hardwood-conifer.
Myotis volans	long-legged myotis	None	None	None	Upper montane coniferous forest
Myotis yumanensis	Yuma myotis	None	None	None	Lower montane coniferous forest | Riparian forest | Riparian woodland | Upper montane coniferous forest

Scientific Name	Common Name	Federal List	State List	Dept. Fish and Wildlife Rank	Habitat
Rana draytonii	California red-legged frog	Threatened	None	Special Concern	Aquatic | Artificial flowing waters | Artificial standing waters | Freshwater marsh | Marsh & swamp | Riparian forest | Riparian scrub | Riparian woodland | Sacramento/San Joaquin flowing waters | Sacramento/San Joaquin standing waters | South coast flowing waters | South coast standing waters | Wetland
Linderiella occidentalis	California linderiella	None	None	None	Vernal pool
Taxidea taxus	American badger	None	None	Special Concern	Many habitat types listed in CNDDB – only including region habitat types. 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

6 STUDY METHODS

6.1 VEGETATION AND SPECIAL-STATUS PLANT SPECIES SURVEYS

On April 4, May 14, June 7 and June 27, 2019, Darren Wiemeyer conducted site visits to map habitats, to perform special-status species plant surveys, to prepare a plant inventory and to assess habitat suitability for special-status plant species that have the potential to utilize habitats a the site. Special-status plant species surveys were performed in accordance with state and federal plant survey protocols (CDFG 2000; USFWS 1996a; USFWS 1996b).

The surveys were conducted at the time of year when rare or endangered species are both "evident" and identifiable, i.e. they were scheduled (1) to coincide with known flowering periods, and/or (2) during periods of phenological development that are necessary to identify special status plant species. A meandering pattern was walked through each habitat to ensure that all areas were viewed.

Federally listed plant species reference site surveys were performed at several locations in the Santa Rosa Plain in 2019. Table 3 lists the dates, reference sites and phenology.

6.2 WILDLIFE AND SPECIAL-STATUS ANIMAL SPECIES ASSESSMENTS AND SURVEYS

On January 14, April 4, May 14, June 7 and June 27, 2019, Darren Wiemeyer conducted site visits to perform a wildlife inventory and assess habitat suitability for special-status animal species that have the potential to utilize habitats at the site. Searches were conducted to determine if habitats supported special-status animal species. In addition, the site visits and habitat assessments were conducted for a California Tiger Salamander Site Assessment in accordance with the Interim Guidance on Conducting Site Assessments and Field Surveys for Determining Presence or A Negative Finding of the California Tiger Salamander (USFWS 2003).

Protocol level surveys for potentially occurring special-status animal species were not conducted for all species. The determination of presence for animal species possibly occurring at the site was based on habitat assessments, literature review and queries through CNDDB.

The site was searched for the presence of large burrows which could be used by burrowing owl (*Athena cunicularia*) or American badger (*Taxidea taxus*). The trees and shrubs at the site were generally searched for actively nesting birds and the trees and structures at the site were evaluated for habitat suitability for roosting bats.

6.3 WETLAND DELINEATION

Darren Wiemeyer performed a wetland delineation at the site on June 27 and July 1, 2019. In addition, a site visit to observe active hydrology was conducted on January 14, 2019. A total of 0.30-acres of seasonal wetlands were delineated at the site. The United States Army Corps of Engineers (USACE) will confirm the extent of seasonal wetlands at the site.

7 RESULTS

7.1 PLANT COMMUNITIES & HABITATS

Habitat types at the site consist of non-native annual grassland and seasonal wetland. The front portion of the site has been disturbed from past land use activities and the back field has a history of mowing. There are some trees on the site but would not be considered a separate habitat type. The tree species that occur on site include silver wattle (*Acacia dealbata*), valley oak (Quer*cus lobata*), coast live oak (*Quercus agrifolia*) and Fremont cottonwood (*Populus fremontii*).

7.1.1 Non-Native Annual Grassland

Non-native annual grassland is the dominant plant community at the site (Figure 4). This vegetation type is dominated by non-native annual grasses and weedy annual and perennial forbs that have replaced native grasslands as a result of human disturbance, past land uses and agricultural practices.

Dominant plant species in the non-native annual grassland include Italian ryegrass (*Festuca perennis*), wild oat (*Avena fatua*), rip-gut brome (*Bromus diandrus*), spring vetch (*Vicia sativa*), hairy cat's ear (*Hypochoeris radicata*), red-stemmed filaree (*Erodium cicutarium*) and chicory

(*Cichorium intybus*). Some areas exhibited California oatgrass (*Danthonia californica*), which is a native grass, but it was not dominant at the site.

7.1.2 Seasonal Wetland

A total of 0.30-acres of seasonal wetlands were delineated at the site. They occur as four separate seasonal wetlands (Figure 4). In general, the two small wetlands located on the western portion of the site, consist of non-native species and have been degraded from past land uses. The large wetland along the southern site boundary and the small wetland to its north contain several native wetland and vernal pool species and appear to be relatively undisturbed.

Dominant plant species in the seasonal wetlands include Italian ryegrass, Mediterranean barley (*Hordeum marinum* ssp. *gussoneum*), semaphore grass (*Pleuropogon californicus*), curly doc (*Rumex crispus*), pennyroyal (*Mentha pulegium*) and button celery (*Eryngium aristulatum*). Additional native vernal pool species observed in the large wetland along the southern site boundary include brown-headed rush (*Juncus phaeocephalus*), smooth goldfields (*Lasthenia glaberrima*) and Lobb's aquatic buttercup (*Ranunculus lobbii*), which is a CNPS List 4.2 plant.

All of the seasonal wetlands are shallow with short hydro-periods. The deepest portion of the largest wetland along the southern site boundary was observed to be ponded to a depth of 10 inches. The seasonal wetlands at the site would be considered suitable habitat for three federally endangered plant species that are known to occur in vernal pool habitat on the Santa Rosa Plain (USFWS 2007).

7.2 SPECIAL-STATUS PLANTS

No only special-status plant species observed during protocol-level special-status plant species surveys was Lobb's aquatic buttercup (*Ranunculus lobbii*), which is a CNPS List 4.2 plant. CNPS List 4 special-status plant species are typically not considered "rare" and would not require specific mitigation, only identification of impacts to List 4 species. The loss of this species at the site would not be considered a significant loss of this species numbers or habitat on a regional perspective. Habitat mitigation for the loss of the seasonal wetland habitat at the site through the purchase of seasonal wetland habitat credits at an approved wetland mitigation bank would replace the loss of seasonal wetland habitat for this special-status plant species.

Past land uses and agricultural activities has greatly diminished the likelihood that additional special-status plant species would occur at the site. Nevertheless, the seasonal wetlands would be considered suitable habitat for three federally endangered plant species that are known to occur in vernal pool habitat on the Santa Rosa Plain (USFWS 2007). The three federally endangered plant species include Burke's goldfields (*Lasthenia burkei*), Sonoma sunshine (*Blennosperma bakeri*) and Sebastopol meadowfoam (*Limnanthes vinculans*).

Federally listed plant species reference site surveys were performed at several locations in the Santa Rosa Plain in 2019. Table 3 documents the reference site locations, dates and phenological development of federally listed plant species.

Table 3. Federally Listed Plant Species Reference Site Survey Documentation.

SPECIES	SURVEY DATE	REFERENCE SITE	PHENOLOGY – Percent: vegetative (v); blooming (b); seed set (ss)
Blennosperma bakeri	March 14, 2019	Alton Preserve, Santa Rosa	v: 98%; b: 2%; ss: 0%
	April 4, 2019	Alton Preserve, Santa Rosa	v: 50%; b: 40%; ss: 0%
	April 16, 2019	Alton Preserve, Santa Rosa	v: 10%; b: 60%; ss: 30%
	May 13, 2019	Starr Road, Windsor	v: 0%; b: 20%; ss: 80%
	May 14, 2019	Alton Preserve, Santa Rosa	v: 0%; b: 5%; ss: 95%
	June 5, 2019	Alton Preserve, Santa Rosa	v: 0%; b: 0%; ss: 100%
Lasthenia bakeri	March 14, 2019	Alton Preserve, Santa Rosa	v: 0%; b: 0%; ss: 0%
	April 4, 2019	Piner and Bay Meadow, Santa Rosa	v: 100%; b: 0%; ss: 0%
	April 4, 2019	Alton Preserve, Santa Rosa	v: 100%; b: 0%; ss: 0%
	April 16, 2019	Alton Preserve, Santa Rosa	v: 30%; b: 70%; ss: 0%
	May 14, 2019	Alton Preserve, Santa Rosa	v: 10%; b: 80%; ss: 10%
	May 14, 2019	Piner and Bay Meadow, Santa Rosa	v: 0%; b: 80%; ss: 20%
	June 5, 2019	Alton Preserve, Santa Rosa	v: 0%; b: 5%; ss: 95%
Limnanthes vinculans	March 14, 2019	Alton Preserve, Santa Rosa	v: 100%; b: 0%; ss: 0%
	April 4, 2019	Alton Preserve, Santa Rosa	v: 100%; b: 0%; ss: 0%
	April 16, 2019	Alton Preserve, Santa Rosa	v: 10%; b: 60%; ss: 30%
	May 14, 2019	Alton Preserve, Santa Rosa	v: 0%; b: 30%; ss: 70%
	June 5, 2019	Alton Preserve, Santa Rosa	v: 0%; b: 5%; ss: 95%

7.3 WILDLIFE

The site provides suitable, yet limited, habitat for a variety of wildlife species. The grassland habitat provides marginally adequate habitat for foraging, cover and rearing young for small to medium sized mammals and for reptiles. The seasonal wetlands provide a seasonal water source for wading birds and pacific chorus frog larvae was observed in the largest seasonal wetland. No large burrows were observed but there were several areas with small fossorial mammal burrows, primarily pocket gopher burrows.

No active bird nests were observed, but the site provides suitable nesting habitat for ground and tree nesting birds and suitable foraging habitat for several bird species. It is somewhat likely that native birds nest at the site. Tree removal and site development has the potential to disturb active nesting birds.

There was no indication that bats were utilizing any of the structures at the site, but the large Fremont cottonwood trees provide potentially suitable roosting bat habitat. Removal of the Fremont cottonwood trees has the potential to disturb active roosting bat species. The site would not be considered a wildlife corridor, but the Bellevue Flood Control Channel to the east of the site most likely functions as a wildlife corridor to some extent.

Wildlife species noted at the site during field surveys include song sparrow, brown towhee, black phoebe, common raven, American goldfinch, house finch, western fence lizard, pocket gopher, mule deer and pacific chorus frog.

7.4 SPECIAL-STATUS ANIMAL SPECIES

7.4.1 Birds

7.4.1.1 Burrowing Owl

Conservation Status: CDFW - Species of Special Concern

Burrowing owl (*Athene cunicularia*) occurs 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 very limited, but suitable habitat for this species. No medium or large burrows were observed at the site, which significantly limits the suitability of the site for nesting. Surrounding developments also limits the suitability of the site for nesting and foraging habitat.

There is one CNDDB occurrence of this species approximately 3.5-miles to the southeast of the site (Figure 5). This species was not observed at the site. The proposed project will impact potentially suitable habitat for this species, but this would not be considered a significant impact as there is no indication that this species occurs at the site. Based on this evaluation, 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 White-tailed Kite

Conservation Status: CDFW - Fully Protected

White-tailed kite (*Elanus leucurus*) is generally found in rolling foothills and valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodlands. They

typically nest in oak trees with dense tops. The non-native annual grassland provides suitable foraging habitat for this species but the few trees on the site would not be considered suitable nesting habitat as this species prefers larger oak trees for nesting. Also, no large raptor nests were observed at the site.

The nearest CNDDB occurrence of this species is approximately 1.6-miles to the northwest of the site (Figure 5). This species was not observed at the site. It is somewhat likely that this species utilizes the grassland habitat at the site for foraging habitat. Because the proposed project will not result in impacts to suitable nesting habitat, 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 Grasshopper Sparrow

Conservation Status: CDFW - Species of Special Concern

Grasshopper sparrow (*Ammodramu savannarum*) occurs in dense grasslands on rolling hills, lowland plains, in valleys and on hillsides on lower mountain slopes. It favors native grasslands with a mix of grasses, forbs and scattered shrubs.

There are no CNDDB occurrences of this species within 5-miles of the site (Figure 5). The nearest occurrence of this species is to the east on Sonoma Mountain. This species was not observed at the site. It is unlikely that species utilizes habitats at the site. The annual grassland habitat at the site provides limited nesting and foraging habitat suitability for this species, primarily because this species prefer grasslands with shrubs on hills and lower mountain slopes. 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 Golden Eagle

Conservation Status: CDFW - Fully Protected

Golden eagle (*Aquila chyrysaetos*) occurs primarily in rolling foothills, mountain areas, sage-juniper flats and desert environments in California. They prefer cliff-walled canyons and large trees in open areas for nesting habitat. The site provides potentially suitable, yet limited foraging habitat for this species and does not provide suitable nesting habitat for this species.

There are no CNDDB occurrences of this species within 5-miles of the site (Figure 5). This species was not observed at the site. 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 Ferruginous Hawk

Conservation Status: CDFW - Watch List

Ferruginous hawk (*Buteo regalis*) occurs in open grasslands, sagebrush flats, desert scrub, low foothills and fringes of pinyon and juniper habitats and feed primarily on ground squirrels and mice. The site provides potentially suitable, yet limited foraging habitat for this species and does not provide suitable nesting habitat for this species.

There are no CNDDB occurrences of this species within 5-miles of the site (Figure 5). This species was not observed at the site. It is unlikely that species utilizes habitats at the site. The proposed project will result in the loss of potentially suitable foraging habitat for this species, but this would not be considered a significant impact. 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 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 non-native annual grassland 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 nearest CNDDB occurrence of this species is approximately 5.5-miles to the southwest of the site (Figure 5). This species was not observed at the site. The proposed project will impact potentially suitable habitat for this species, but this would not be considered a significant impact as there is no indication that this species occurs 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.

7.4.2.2 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

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

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

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

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

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

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

Bats are known to utilize a vast variety of habitat types for foraging and several types of structures for nesting and roosting including trees, cliffs, rock outcrops, buildings, bridges, caves and mines. The habitats at the site provides very limited foraging habitat for bats. The Fremont cottonwood trees at the site provide potentially suitable habitat for roosting as they exhibit cavities, fissures and exfoliating bark. There was no indication that bats were utilizing any of the structures at the site.

There are no CNDDB occurrences of these bat species within 5-miles of the site (Figure 5). The Fremont cottonwood trees are proposed to removed as a result of the project. Therefore, it has been determined that there is a potential significant impact to this species as a result of the proposed project.

7.4.3 Amphibians and Reptiles

7.4.3.1 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 Bellevue Flood Control Channel to the east of the site provides potentially suitable habitat for this species.

There nearest CNDDB occurrence of this species is approximately 1.8-miles to the south of the site (Figure 5). This species was not observed at the site. There is a moderate likelihood that this species occurs in the Bellevue Flood Control Channel as this channel has suitable habitat. But it is unlikely that this species would utilize the site as upland habitat for egg-laying.

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 Bellevue Flood Control Channel and onto the site. 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 Red-Legged Frog

Conservation Status: Federal – Threatened; CDFW - Species of Special Concern

California red-legged frog occur in low-gradient stream reaches, ponds, reservoirs, vernal pools, and brackish lagoons. Breeding occurs from November through April, and eggs are laid in standing or slow-moving shallow water in floating masses attached to vegetation. The larvae require 3.5 to 7 months to reach metamorphosis, which usually occurs between July and September (Jennings and Hayes 1994). Adults prefer deep (>2ft. depth), standing or slow-moving water with dense, shrubby riparian vegetation, especially Arroyo willow (*Salix lasiolepis*) or dense emergent vegetation such as bulrush (*Scirpus* spp.) and cattail (*Typha sp*.). Both adults and juveniles routinely leave the water to forage in riparian areas, and some are known to move long distances (up to 2 miles) overland during the rainy season, and can be found within streams up to 2 miles from breeding sites (USFWS 2000).

The primary constituent elements for California red-legged frogs are aquatic and upland areas where suitable breeding and non-breeding habitat is interspersed throughout the landscape and is interconnected by un-fragmented dispersal habitat. Specifically, to be considered to have the primary constituent elements an area must include two (or more) suitable breeding locations, a permanent water source, associated uplands surrounding these water bodies up to 91 meters (300 feet) from the water's edge, all within 2 kilometers (1.25 miles) of one another and connected by barrier-free dispersal habitat that is at least 91 meters (300 feet) in width.

The site is located within the potential range, but is not within any listed critical habitat areas for California red-legged frog. The nearest CNDDB occurrence of this species is approximately 1.5-miles to the northeast of the site at Taylor Mountain Regional Park (Figure 5). This species was not observed at the site.

The site does not have any suitable breeding habitat for this species. The Bellevue Flood Control Channel to the east of the site provides potential, yet limited, breeding habitat. However, this species has not been found in this flood control channel or any other aquatic habitats in the vicinity of the site on the Santa Rosa Plain. The non-native annual grassland and seasonal wetland habitat at the site provides potentially suitable upland dispersal habitat but it is highly unlikely that this species utilizes the habitats at the site. Based on this evaluation, it has been determined that there will be no impact to this species as a result of the proposed project.

7.4.3.3 California Tiger Salamander

Conservation Status: Federal – Endangered; CDFW – Threatened

The site is within the potential range of the California tiger salamander (*Ambystoma californiense*) (CTS) as mapped by the United States Fish and Wildlife Service (USFWS) according to the Santa Rosa Plain Conservation Strategy (SRPCS) (SRPCST, 2005). The site is within listed critical habitat for California tiger salamander (Federal Register, 2011). The site is designated as "Potential for Presence of CTS and Listed Plants" according to Figure 3 of the SRPCS (SRPCST, 2005).

In addition, the site is designated as "May adversely affect listed plants and/or CTS", according to Enclosure 1 of the Programmatic Biological Opinion for U.S. Army Corps of Engineers Permitted Projects that May Affect California Tiger Salamander and Three Endangered Plant Species on the Santa Rosa Plain, California, dated November 9, 2007 (USFWS, 2007).

7.4.3.3.1 Biology

The California tiger salamander (*Ambystoma californiense*) is an amphibian in the family Ambystomatidae. It is a large, stocky, terrestrial salamander with a broad, rounded snout. Adult males are about 20 centimeters (8 inches) long, females a little less than 18 centimeters (7 inches). Coloration consists of white or pale yellow spots or bars on a black background on the back and sides. The belly varies from almost uniform white or pale yellow to a variegated pattern of white or pale yellow and black. The salamander's small eyes protrude from their heads. They have black irises. Males can be distinguished from females, especially during the breeding season, by their swollen *cloacae*, a common chamber into which the intestinal, urinary, and reproductive canals discharge. They also have more developed tail fins and, as mentioned above, larger overall size.

The species is restricted to grasslands and low (typically below 2000 feet/610 meters) foothill regions where lowland aquatic sites are available for breeding. They prefer natural ephemeral pools or ponds that mimic them (stock ponds that are allowed to go dry). Larvae require significantly more time to transform into juvenile adults than other amphibians such as the western spadefoot toad (*Scaphiopus hammondii*) and Pacific chorus frog (*Pseudacris regilla*). Compared to the western toad (*Bufo boreas*) or western spadefoot toad, California tiger salamanders are poor burrowers. They require refuges provided by ground squirrels and other burrowing mammals in which to enter a dormant state called *estivation* during the dry months.

This species is restricted to California and does not overlap with any other species of tiger salamander. California tiger salamanders are restricted to vernal pools and seasonal ponds, including many constructed stock ponds, in grassland and oak savannah plant communities, predominantly from sea level to 2,000 feet, in central California. In the Coastal region, populations are scattered from Sonoma County in the northern San Francisco Bay Area to Santa Barbara County (up to elevations of 3,500 feet/1067 meters), and in the Central Valley and Sierra Nevada foothills from Yolo to Kern counties (up to 2,000 feet/610 meters). The Sonoma population appears to have been geographically isolated from the remainder of the California tiger salamander population by distance, mountains and major waterway barriers for more than 700,000 years.

The primary cause of the decline of California tiger salamander populations is the loss and fragmentation of habitat from human activities and the encroachment of nonnative predators. Federal, State and local laws have not prevented past and ongoing losses of habitat. All of the estimated seven genetic populations of this species have been significantly reduced because of urban and agricultural development, land conversion, and other human-caused factors.

A typical salamander breeding population in a pond can drop to less than twenty breeding adults and/or recruiting juveniles in some years, making these local populations prone to extinction. California tiger salamanders therefore require large contiguous areas of vernal pools (vernal pool complexes or comparable aquatic breeding habitat) containing multiple breeding ponds to ensure re-colonization of individual ponds. Louisiana swamp crayfish, mosquito fish, green sunfish and other introduced fishes prey on adult or larval salamanders.

7.4.3.3.2 CTS Occurrences

The nearest CNDDB occurrence of this species is approximately 0.9-miles to the southeast of the site at the Horn Mitigation Bank (Figure 5). The Horn Mitigation Bank site on Hunter Lane Extension is a wetland mitigation bank and a known CTS breeding site. There are many additional CTS occurrences on the west side of Highway 101, but are not identified or described in this report because Highway 101 is considered a significant migration barrier for the movement of CTS. This species was not observed at the site.

7.4.3.3.3 Site Evaluation

In general, the non-native annual grassland habitat provides potentially suitable upland aestivation and dispersal habitat for California tiger salamander. The site also exhibits a moderate low density of fossorial mammal burrows, primarily pocket gopher burrows. Hardscape at the site, in the form of the home, the well house, the paved entrance driveway and the mix of old pavement and compacted gravel, would not be considered suitable habitat for CTS.

The largest seasonal wetland, located along the southern site boundary, has a relatively short hydro-period and only ponds water to a depth of 10 inches, which most likely makes the seasonal wetland unsuitable as breeding habitat. Suitable CTS breeding habitat typically requires a long hydro-period and a depth of 16 inches or deeper.

The site is located close enough to the Horn Mitigation Bank for CTS to migrate to the site, but the Bellevue Flood Control Channel provides a potential barrier to movement, which makes it unlikely that CTS occur at the site. Nevertheless, the proposed project will result in the loss of approximately 2.13 acres of suitable CTS upland aestivation habitat. Therefore, it has been determined that there would be a significant impact to CTS upland aestivation habitat without appropriate mitigation measures.

7.4.4 Invertebrates

7.4.4.1 California Linderiella

Conservation Status: None

California linderiella (*Linderiella occidentalis*) is known to occur in vernal pools in unplowed grasslands with with old alluvial soils underlain by hardpan or in sandstone depressions. California linderiella require large, high quality vernal pools with clear water.

There nearest CNDDB occurrences of this species is approximately 1.8 miles to the northwest of the site (Figure 5). This species was not observed at the site. The short hydro-period and somewhat degraded nature of the seasonal wetlands at the site reduces the possibility of this species occurring at the site. The proposed project will impact seasonal wetland habitat, but these wetlands would be considered low quality for this species and would provide marginal habitat suitability for this species. Therefore, it has been determined that there will be no impact to this species as a result of the proposed project.

8 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 Los Pinos Apartment project at 3496 Santa Rosa Avenue in Santa Rosa, CA has the potential to significantly impact biological resources at the site. Site developments will result in the loss of 0.30-acres of seasonal wetland habitat and approximately 2.13-acres of suitable upland aestivation habitat for California tiger salamander. Site development has the potential to disturb native nesting birds and the removal of the Fremont cottonwood trees has the potential to disturb roosting bat species. Site development also has the potential to disturb western pond turtle.

9 RECOMMENDED MITIGATION MEASURES

9.1 IMPACTS AND RECOMMENDED MITIGATION

Implementation of the following recommended mitigation measures, in addition to any regulatory agency conditions, will result in a finding of less than significant impacts to biological resources as a result of site development for the Los Pinos Apartment project**.**

IMPACT 1. LOSS OF 0.30-ACRES OF SEASONAL WETLAND HABITAT AND SUITABLE FEDERALLY ENDANGERED PLANT HABITAT

Site developments will results in the loss of 0.30-acres of seasonal wetland habitat. The 0.30-acres of seasonal wetland habitat is considered suitable federally endangered plant habitat.

Mitigation Measures

Mitigation 1.1. *Obtain permit authorization from the USACE under the 404 Nationwide Permit Program for the loss of 0.30-acres of seasonal wetland habitat. Implement all agency permit conditions.*

Mitigation 1.2. *Obtain permit authorization from the SWRCB under the 401 Water Quality Certification Program for the loss of 0.30-acres of seasonal wetland habitat. Implement all agency permit conditions.*

Mitigation 1.3. *Mitigate for the loss of 0.30-acres of seasonal wetland habitat at a 1:1 ratio at an approved wetland mitigation bank.*

Mitigation 1.4. *Append the project to the USFWS Programmatic Biological Opinion (Programmatic) for U.S. Army Corps of Engineers Permitted Projects that May Affect California Tiger Salamander and Three Endangered Plant Species*

on the Santa Rosa Plain, California. Mitigate for the loss of 0.30-acres of suitable federally endangered plant habitat in accordance with the USFWS Programmatic Biological Opinion (Programmatic) for U.S. Army Corps of Engineers Permitted Projects that May Affect California Tiger Salamander and Three Endangered Plant Species on the Santa Rosa Plain, California.

IMPACT 2. LOSS OF 2.13-ACRES OF CALIFORNIA TIGER SALAMANDER UPLAND AESTIVATION HABITAT

Site developments will results in the loss of approximately 2.13-acres of California tiger salamander upland aestivation habitat.

Mitigation Measures

Mitigation 2.1. Append the project to the USFWS Programmatic Biological Opinion (Programmatic) for U.S. Army Corps of Engineers Permitted Projects that May Affect California Tiger Salamander and Three Endangered Plant Species on the Santa Rosa Plain, California. Mitigate for the loss of 2.13-acres of suitable California tiger salamander upland aestivation habitat at a 1:1 mitigation ratio in accordance with the USFWS Programmatic Biological Opinion (Programmatic) for U.S. Army Corps of Engineers Permitted Projects that May Affect California Tiger Salamander and Three Endangered Plant Species on the Santa Rosa Plain, California.

IMPACT 3. CONSTRUCTION ACTIVITIES MAY IMPACT NESTING BIRDS

It is possible that tree and ground nesting birds could initiate nesting at the site. To ensure that nesting birds are not disturbed as a result of construction activities, it is recommended that pre-construction surveys for nesting birds be performed prior to construction activities.

Mitigation Measures

Mitigation 3.1. A qualified biologist shall perform a pre-construction survey for nesting birds within 7 days prior 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 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.

IMPACT 4. TREE REMOVAL MAY IMPACT ROOSTING BATS

To ensure that actively roosting bats are not disturbed as a result of the removal of the Fremont cottonwood trees, it is recommended that specific mitigation measures be implemented to avoid impacts to bat species. These mitigation measures should only be applied to the Fremont cottonwood trees as the other trees on the site do not provide suitable roosting habitat for bat species.

Mitigation Measures

Mitigation 4.1. *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. 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° F or 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/.*

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.

IMPACT 5. CONSTRUCTION ACTIVITIES MAY IMPACT WESTERN POND TURTLE

To ensure that western pond turtles are not disturbed as a result of construction activities, it is recommended that specific mitigation measures be implemented to avoid impact to this species.

Mitigation Measures

Mitigation 5.1 *A qualified biologist shall perform a pre-construction survey for western pond turtles 300 feet from the western edge of the Bellevue Flood Control Channe within 48 hours prior to ground breaking at the site. If western pond turtles are found, the qualified biologist should establish suitable buffers and/or relocation of individuals prior to initiation of construction activities.*

10 REFERENCES

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FIGURES

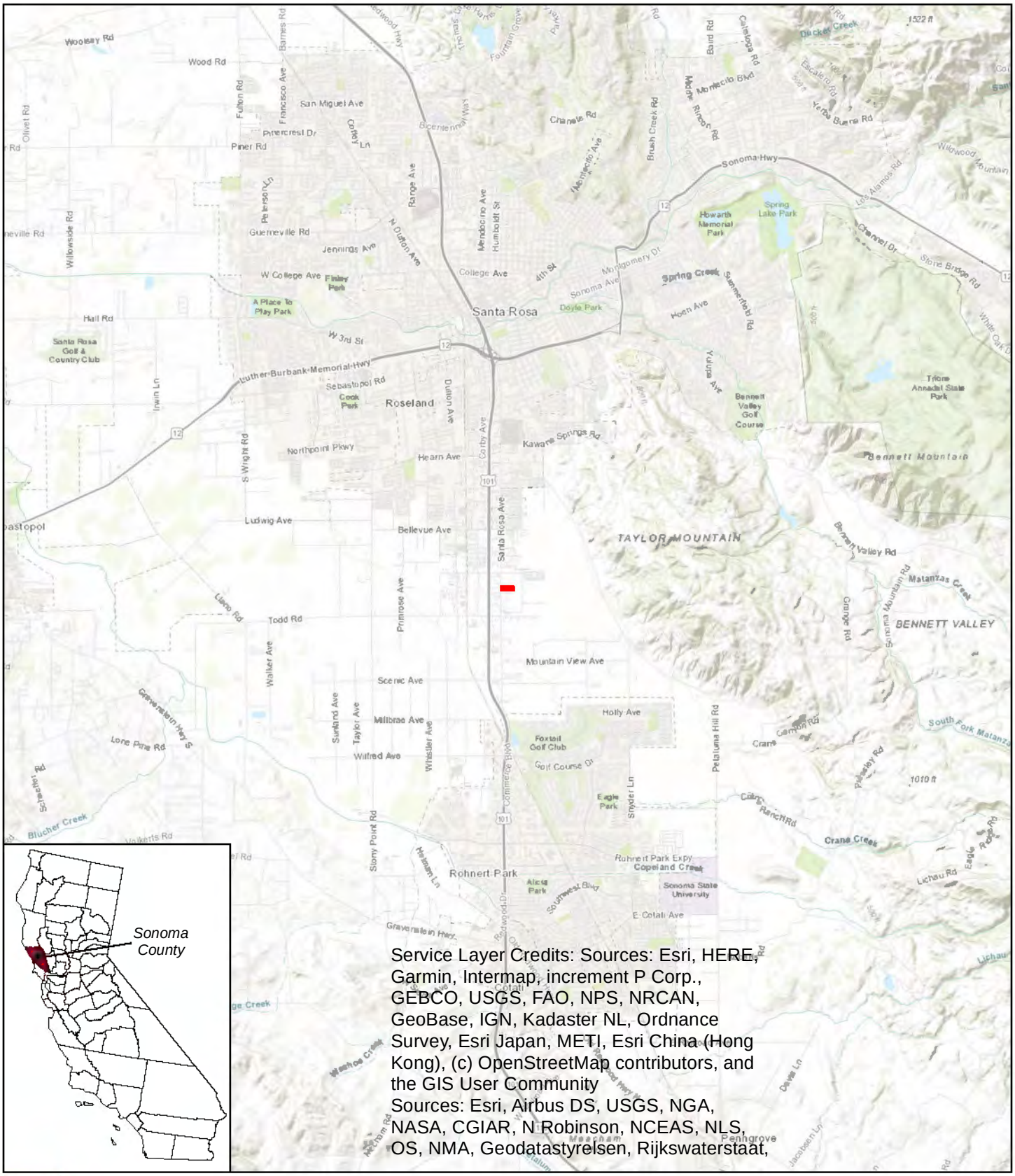


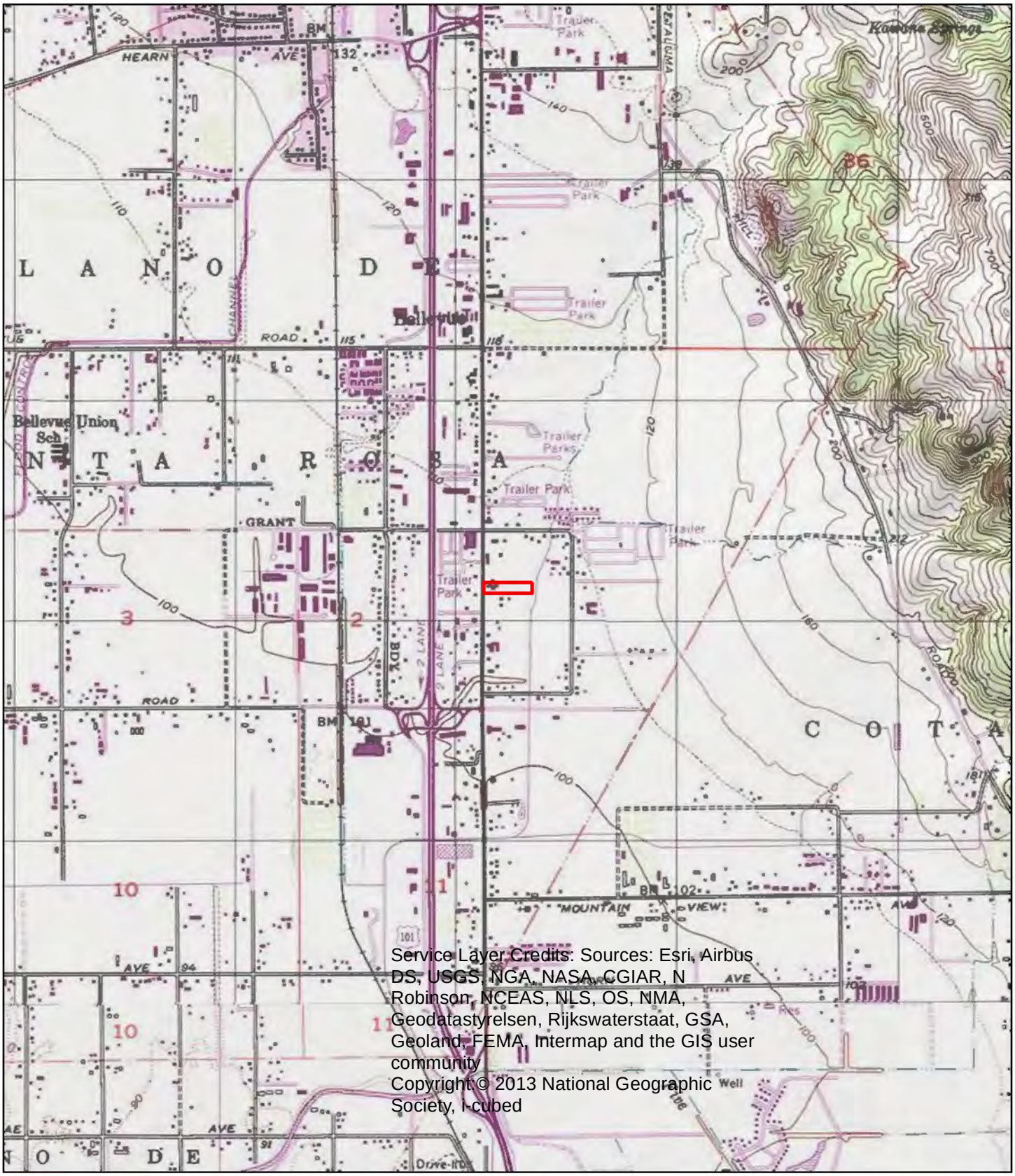
Figure 1 - Site Vicinity Map

Los Pinos Apartments
3496 Santa Rosa Avenue, Santa Rosa, CA
APN: 134-132-015

N

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

Parcel boundary provided by Sonoma County
Map date: 7/2018=9



Site Boundary

0 0.5 1 2 Miles

Figure 2 - USGS Map	
Los Pinos Apartments 3496 Santa Rosa Avenue, Santa Rosa, CA APN: 134-132-015	Wiemeyer Ecological Sciences 4000 Montgomery Drive, Suite L-5 Santa Rosa, CA 95405 Parcel boundary provided by Sonoma County Map date: 7/2019

N

Site Boundary

CeA - Clear Lake clay, sandy substratum, drained, 0 to 2 percent slopes, MLRA 14

WoA - Wright loam, shallow, wet, 0 to 2 percent slopes

Figure 3 - Soils Map

Los Pinos Apartments
3496 Santa Rosa Avenue, Santa Rosa, CA
APN: 134-132-015

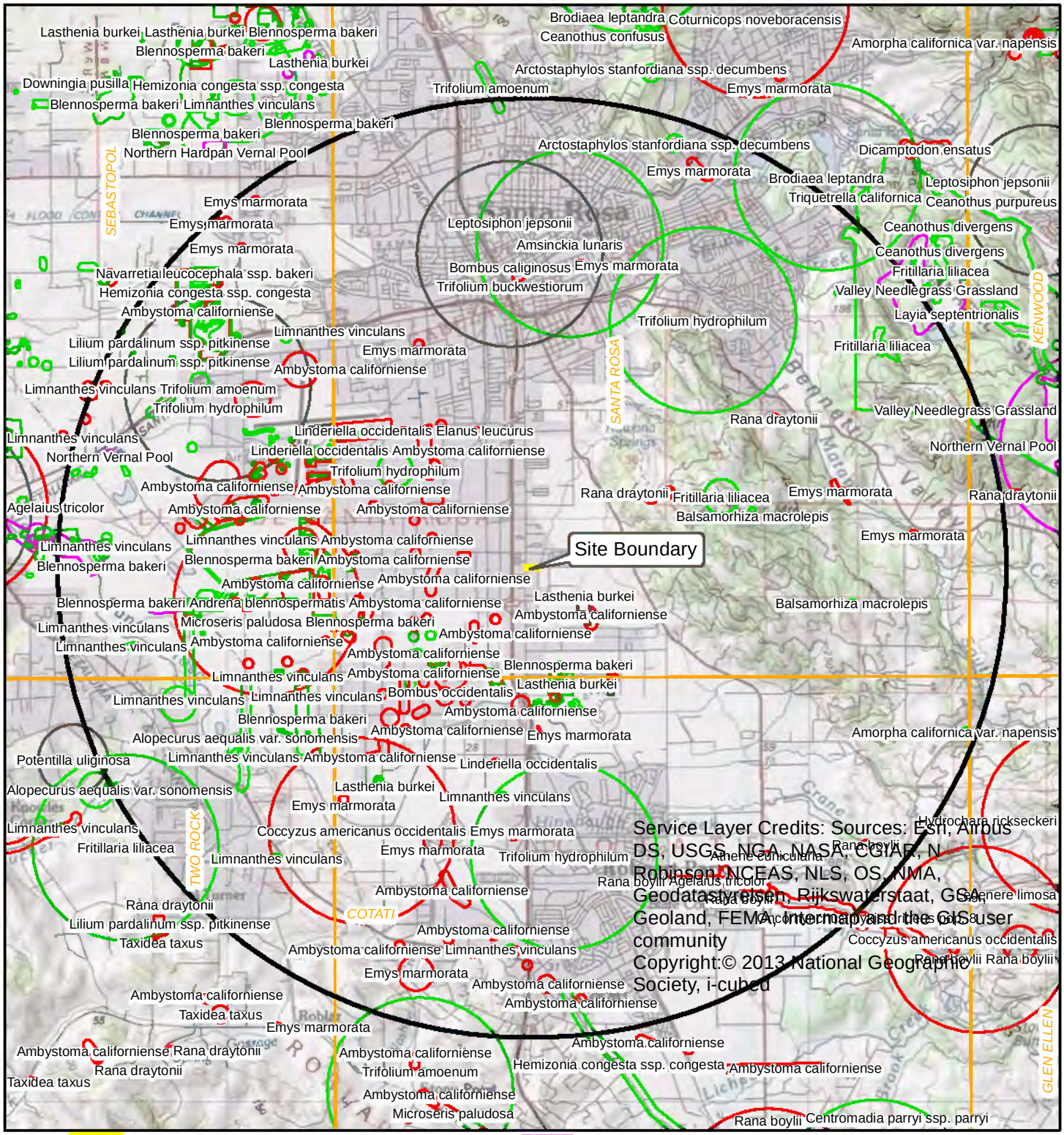
0 25 50 100 150 200 Feet

N

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

Parcel boundary provided by Sonoma County
Soils provided by NRCS
Map date: 7/2019

Figure 4 - Habitat Map Los Pinos Apartments 3496 Santa Rosa Avenue, Santa Rosa, CA APN: 134-132-015	N Wiemeyer Ecological Sciences 4000 Montgomery Drive, Suite L-5 Santa Rosa, CA 95405	Parcel boundary provided by Sonoma County Map date: 7/2019 Aerial: Google	Site Boundary Hardscape (.36 ac.) Wetland Areas (.3 ac.) NAG - Non-native annual grassland 0 50 100 200 Feet



Site Boundary	**CNDDB Occurrences**	Terrestrial Comm.	**Spotted Owl Observations**
5 mile buffer	Plant	Aquatic Comm.	Positive Observation
USGS Quad Index	Animal	Multiple	Activity Center

0 1 2 3 4 5 10 Miles

Figure 5 - CNDDB Occurrences

Los Pinos Apartments
3496 Santa Rosa Avenue, Santa Rosa, CA
APN: 134-132-015

N

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

Parcel boundary provided by Sonoma County
CNDDB provided by CDFW (v. 6/2019)
Map date: 7/2019

3496 SANTA ROSA AVENUE

GRADING PERMIT

APN 134-132-015

GENERAL NOTES

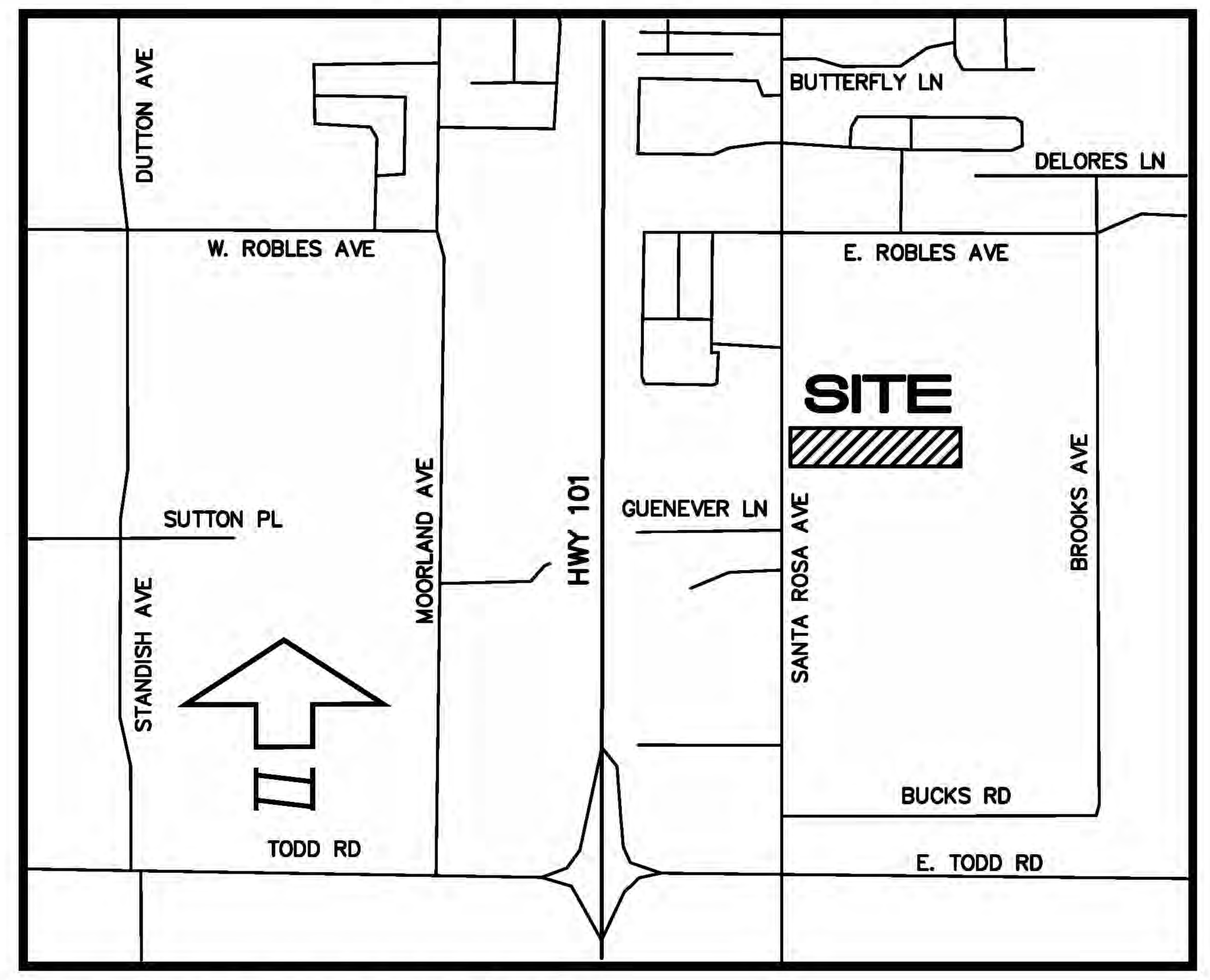
1. ALL MATERIAL, WORKMANSHIP, AND CONSTRUCTION SHALL CONFORM TO THE STATE OF CALIFORNIA STANDARD SPECIFICATIONS AND STANDARD PLANS (2015 EDITION).
2. FOR ANY WORK TO BE PERFORMED ON THE COUNTY RIGHT-OF-WAY, THE CONTRACTOR SHALL OBTAIN AN ENCROACHMENT PERMIT FROM THE COUNTY OF SONOMA PERMIT AND RESOURCE MANAGEMENT DEPARTMENT, 2550 VENTURA AVENUE, SANTA ROSA, BEFORE START OF WORK.
3. THE CONTRACTOR SHALL NOTIFY THE PERMIT AND RESOURCE MANAGEMENT DEPARTMENT'S CONSTRUCTION INSPECTOR BEFORE STARTING WORK. SEE 'INSPECTIONS' BELOW FOR REQUIRED NOTIFICATIONS AND APPROVALS. FINAL INSPECTION MAY NOT BE REQUIRED UNTIL THE GRADING INSPECTOR RECEIVES, REVIEWS, AND APPROVES BOTH THE ENGINEER'S FINAL LETTER AND THE FINAL GEOTECHNICAL REPORT. THIS APPROVAL MUST BE OBTAINED PRIOR TO SCHEDULING A FINAL INSPECTION.
4. RESTORATION OF EXISTING SURFACING DUE TO CONSTRUCTION OF TRENCHES SHALL BE GOVERNED BY THE CONDITIONS IN THE ROAD ENCROACHMENT PERMIT OR AS SHOWN ON THESE PLANS.
5. THE COUNTY MAY REQUIRE ADDITIONAL WORK OR FACILITIES IN THE COURSE OF THE CONSTRUCTION OF PROJECT IN ORDER FOR THE IMPROVEMENTS TO REASONABLY PROVIDE FOR THE INTENDED FUNCTION OR FOR PUBLIC SAFETY.

GRADING AND DRAINAGE NOTES

1. PERFORM GRADING AND DRAINAGE IMPROVEMENTS IN ACCORDANCE WITH CHAPTER 11 AND 11A OF THE SONOMA COUNTY CODE (SSC), APPLICABLE SONOMA COUNTY REGULATIONS AND TO THE RECOMMENDATIONS OF THE SOILS REPORT PREPARED BY PJC & ASSOCIATES, INC. AND DATED MARCH 12, 2018.
2. ALL WORK SHALL BE DONE IN COMPLIANCE WITH THE APPROVED PLANS AND SPECIFICATIONS. THE APPROVED PLANS AND SPECIFICATIONS SHALL NOT BE CHANGED WITHOUT WRITTEN APPROVAL OF THE SONOMA COUNTY PERMIT AND RESOURCE MANAGEMENT DEPARTMENT (PRMD). PROPOSED MODIFICATIONS TO THE APPROVED PLANS AND SPECIFICATIONS SHALL BE SUBMITTED TO PRMD IN WRITING, TOGETHER WITH ALL NECESSARY TECHNICAL INFORMATION AND DESIGN DETAILS. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE PROPERTY OWNER AND ENGINEER OF RECORD, IF APPLICABLE, UPON DISCOVERING DISCREPANCIES, ERRORS, OR OMISSIONS IN THE APPROVED PLANS. PRIOR TO PROCEEDING, THE PROPERTY OWNER SHALL HAVE THE APPROVED PLANS REVISED TO CLARIFY IDENTIFIED DISCREPANCIES, ERRORS, OR OMISSIONS. PRMD MAY REQUIRE UNAUTHORIZED WORK TO BE REDONE OR REMOVED TO VERIFY COMPLIANCE WITH SCC. PRMD MAY INITIATE ENFORCEMENT ACTION AND SEEK THE IMPOSITION OF CIVIL PENALTIES FOR VIOLATIONS OF SCC.
3. THE GRADING OR DRAINAGE PERMIT AND A COPY OF THE APPROVED PLANS SHALL BE MAINTAINED ON THE PROJECT SITE THROUGHOUT THE DURATION OF CONSTRUCTION ACTIVITIES.
4. PRMD MAY ORDER THAT ANY WORK STOP IMMEDIATELY IF IT IS PERFORMED CONTRARY TO CHAPTER 11 AND 11A OF THE SCC, THE APPROVED PLANS AND SPECIFICATIONS, PERMIT CONDITIONS, OR ANY WORK THAT HAS BECOME HAZARDOUS TO PROPERTY OR THE PUBLIC. A GRADING OR DRAINAGE PERMIT MAY BE SUSPENDED, REVOKED, OR MODIFIED BY PRMD IN ACCORDANCE WITH SCC 11.24.080.
5. ISSUANCE OF A GRADING OR DRAINAGE PERMIT BY PRMD DOES NOT ELIMINATE THE RESPONSIBILITY OF THE PROPERTY OWNER TO SECURE PERMITS FROM OTHER AGENCIES WITH REGULATORY RESPONSIBILITIES FOR THE USES AND CONSTRUCTION ACTIVITIES ASSOCIATED WITH THE WORK SHOWN ON THE APPROVED PLANS. FAILURE TO OBTAIN ALL REQUIRED PERMITS MAY RESULT IN FINES FROM OTHER AGENCIES.
6. EXISTING DRAINAGE COURSES RECEIVING WATERS FROM THE PROJECT SITE AND LOCATED THROUGHOUT THE PROJECT SITE SHALL REMAIN OPEN AND CLEAR OF DEBRIS TO PROPERLY CONVEY STORM WATER. IF EXISTING DRAINAGE COURSES RECEIVING WATERS FROM THE PROJECT SITE ARE LOCATED IN THE COUNTY RIGHT-OF-WAY AND NEED MAINTENANCE, CONTACT THE DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS AT (707)565-2231 FOR FURTHER ASSISTANCE. IN ANY EVENT, THE PROPERTY OWNER AND/OR CONTRACTOR SHALL BE HELD LIABLE FOR ANY DAMAGE DUE TO OBSTRUCTING NATURAL DRAINAGE PATTERNS.
7. THE CONTRACTOR SHALL CONTACT THE UNDERGROUND SERVICE ALERT (USA), AT 811, AT LEAST TWO WORKING DAYS, BUT NOT MORE THAN 14 CALENDAR DAYS, PRIOR TO EXCAVATION. THE CONTRACTOR SHALL UNCOVER RELEVANT UTILITIES TO VERIFY THEIR LOCATION AND ELEVATION. IF UNEXPECTED OR CONFLICTING UTILITIES ARE ENCOUNTERED DURING EXCAVATION, NOTIFY USA, THE UTILITY OWNER, AND/OR THE ENGINEER OF RECORD, IF APPLICABLE, IMMEDIATELY. UTILITIES INCLUDE BUT ARE NOT LIMITED TO WATER, SEWER, ELECTRICAL, GAS, TELEPHONE, AND CABLE/TV. THE EXCAVATOR SHALL DELINEATE WITH PAINT OR OTHER SUITABLE MARKINGS THE AREA TO BE EXCAVATED.
8. IN THE EVENT CULTURAL RESOURCES (SUCH AS HISTORICAL, ARCHAEOLOGICAL, AND PALEONTOLOGICAL RESOURCES, AND HUMAN REMAINS) ARE DISCOVERED DURING GRADING OR OTHER CONSTRUCTION ACTIVITIES, WORK SHALL IMMEDIATELY BE HALTED WITHIN THE VICINITY OF THE FIND. THE NORTHWEST INFORMATION CENTER SHALL BE NOTIFIED AT (707) 588-8455. A QUALIFIED ARCHEOLOGIST SHALL BE CONSULTED FOR AN ON-SITE EVALUATION. ADDITIONAL MITIGATION MAY BE REQUIRED BY THE COUNTY PER THE ARCHEOLOGIST'S RECOMMENDATIONS AND SCC 11.16.050. IF HUMAN BURIALS OR HUMAN REMAINS ARE ENCOUNTERED, THE CONTRACTOR SHALL ALSO NOTIFY THE COUNTY CORONER AT (707) 565-5070.
9. SHOULD GRADING OPERATIONS ENCOUNTER HAZARDOUS MATERIALS, OR WHAT APPEAR TO BE HAZARDOUS MATERIALS, STOP WORK IMMEDIATELY IN THE CONTAMINATED AREA AND CONTACT 911 OR THE APPROPRIATE AGENCY FOR FURTHER INSTRUCTION.
10. RETAINING WALLS, UNLESS EXEMPTED PER SCC 7.13(A)(3)4, ARE NOT APPROVED UNDER A GRADING PERMIT. A SEPARATE BUILDING PERMIT IS REQUIRED.
11. EQUIPMENT SHALL NOT CROSS OR DISTURB CHANNELS OF ACTIVELY FLOWING STREAMS WITHOUT A PRMD APPROVED ROILING PERMIT AND BEST MANAGEMENT PRACTICES (SCC 23.1 AND 11.16.060.D).
12. GRADING AND DRAINAGE IMPROVEMENTS SHALL BE SET BACK FROM LAKES, PONDS, STREAMS, AND WETLANDS IN COMPLIANCE WITH THE REQUIREMENTS OF SCC 11.16.100, 11.16.120. AND 11.16.130. EXISTING VEGETATION SHALL BE RETAINED IN STREAM SETBACK AREAS TO FILTER SOIL AND OTHER POLLUTANTS CARRIED IN STORM WATER.
13. EXCESS SOIL SHALL BE REMOVED FROM THE PROJECT SITE UNLESS DEPICTED TO REMAIN ON SITE PER THE APPROVED PLAN. THE SITE RECEIVING SOIL MAY REQUIRE A GRADING PERMIT UNLESS EXEMPTED BY SCC 11.04.010.C.
14. CONTOURS, ELEVATIONS, AND SHAPES OF FINISHED SURFACES SHALL BE BLENDED WITH ADJACENT NATURAL TERRAIN TO ACHIEVE A CONSISTENT GRADE AND NATURAL APPEARANCE. BORDERS OF CUT SLOPES AND FILLS SHALL BE ROUNDED OFF TO A MINIMUM RADIUS OF FIVE FEET TO BLEND WITH THE NATURAL TERRAIN.
15. FILL MATERIALS SHALL NOT INCLUDE ORGANIC, FROZEN, OR OTHER DELETERIOUS MATERIALS. NO ROCK OR SIMILAR IRREDUCIBLE MATERIAL GREATER THAN SIX INCHES IN ANY DIMENSION SHALL BE INCLUDED IN FILL EXCEPT WHERE APPROVED BY THE SOILS ENGINEER. FILLS SHALL BE CONSTRUCTED IN LIFTS NOT EXCEEDING EIGHT INCHES IN DEPTH. COMPLETED FILLS SHALL BE STABLE, WELL-INTEGRATED, AND BONDED TO ADJACENT MATERIALS AND THE MATERIALS ON WHICH THEY REST. FILLS SHALL BE COMPETENT TO SUPPORT ANTICIPATED LOADS AND BE STABLE AT THE DESIGN SLOPES SHOWN ON THE APPROVED PLANS AND SPECIFICATIONS OR AS DIRECTED BY THE SOILS ENGINEER.
16. GROUND SURFACES SHALL BE PREPARED TO RECEIVE FILL BY REMOVING VEGETATION, TOPSOIL, AND OTHER UNSUITABLE MATERIALS, AND SCARIFYING THE GROUND TO PROVIDE A BOND WITH THE FILL MATERIAL.
17. FILL SHALL NOT BE PLACED ON NATURAL SLOPES STEEPER THAN 2H:V1 (50 PERCENT).
18. FILLS INTENDED TO SUPPORT STRUCTURES OR SURCHARGES SHALL BE COMPACTED TO A MINIMUM OF 90 PERCENT OF MAXIMUM DRY DENSITY, AS DETERMINED BY ASTM D 1557, MODIFIED PROCTOR. A HIGHER COMPACTION PERCENTAGE MAY BE REQUIRED BY THE SOILS ENGINEER.
19. FILLS NOT INTENDED TO SUPPORT STRUCTURES OR SURCHARGES SHALL BE COMPACTED AS FOLLOWS:
    A) FILL GREATER THAN THREE FEET IN DEPTH SHALL BE COMPACTED TO THE DENSITY SPECIFIED BY THE SOILS ENGINEER.
    B) FILLS NO GRATER THAN THREE FEET IN DEPTH SHALL BE COMPACTED TO THE DENSITY NECESSARY FOR THE INTENDED USE OR AS DIRECTED BY THE SOILS ENGINEER.

STORM DRAIN NOTES

1. ALL PUBLIC STORM DRAIN SHOWN SHALL BE HDPE UNLESS OTHERWISE NOTED.
2. PRIVATE STORM DRAIN SHALL BE SDR 35 PVC, ADS N-12 PIPE, HDPE OR AS OTHERWISE NOTED.
3. STORM DRAIN PIPE LENGTHS SHOWN ARE MEASURED HORIZONTALLY FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE.
4. STORM DRAIN SYSTEM SHALL BE KEPT FREE OF DIRT AND DEBRIS DURING ALL PHASES OF CONSTRUCTION. NO DIRT OR DEBRIS SHALL BE WASHED DOWNSTREAM IN PIPES.
5. ALL PRIVATE DRAINAGE FACILITIES SHALL BE PRIVATELY OWNED AND MAINTAINED.



LOCATION MAP

NO SCALE

BASIS OF BEARINGS

BEING NORTH 0°46'22" WEST ALONG THE CENTERLINE OF SANTA ROSA AVENUE AS SHOWN ON THAT RECORD OF SURVEY FILED IN BOOK 608 OF MAPS, PAGE 19, SONOMA COUNTY RECORDS.

BENCHMARK

CITY OF SANTA ROSA BENCHMARK C302, BEING A COUNTY DISK IN WELL MONUMENT NEAR THE CENTERLINE INTERSECTION OF SANTA ROSA AVENUE AND EAST ROBLES AVENUE. ELEVATION = 107.354.

OWNER AND DEVELOPER

LOS PINOS APARTMENTS, LLC
ALEX SANTANA, PARTNER
5885 MOUNTAIN HAWK DRIVE
SANTA ROSA, CA 95409
(707) 954-6551

ENGINEER

CIVIL DESIGN CONSULTANTS, INC.
2200 RANGE AVENUE, SUITE 204
SANTA ROSA, CA 95403
(707) 542-4820

SURVEYOR

CINQUINI & PASSARINO, INC.
1360 NORTH DUTTON AVE., STE 150
SANTA ROSA, CA 95401
(707) 542-6268

GRADING AND DRAINAGE INSPECTION NOTES

1. THE PERMITTEE AND THE PROPERTY OWNER SHALL BE RESPONSIBLE FOR THE WORK TO BE PERFORMED IN COMPLIANCE WITH THE APPROVED PLANS AND SPECIFICATIONS, CHAPTER 11 AND 11A OF THE SONOMA COUNTY CODE (SCC), AND ANY PERMIT CONDITIONS. WORK SHALL BE SUBJECT TO INSPECTION AS REQUIRED BY THE SONOMA COUNTY PERMIT AND RESOURCE MANAGEMENT DEPARTMENT (PRMD) TO VERIFY COMPLIANCE. THE CONTRACTOR SHALL CONSULT THE PROJECT JOB CARD FOR COORDINATION OF INSPECTION REQUESTS.
2. PRIOR TO THE START OF ANY GRADING OR DRAINAGE WORK, THE PERMITTEE SHALL HAVE A PRE-CONSTRUCTION CONSULTATION WITH PRMD STAFF TO DISCUSS THE SCOPE OF THE PROJECT, PERMIT CONDITIONS, REQUIRED INSPECTIONS, APPROPRIATE APPLICATION OF BEST MANAGEMENT PRACTICES (BMP'S) AND ANY OTHER CONSTRUCTION ISSUES.
3. INSPECTION REQUESTS SHALL BE MADE THROUGH THE SONOMA COUNTY AUTOMATED INSPECTION REQUEST SYSTEM (SELECTRON), AT PHONE NUMBER (707) 565-3551.
4. PRMD MAY REQUIRE PROFESSIONAL INSECTIONS AND CERTIFICATIONS TO VERIFY PROPER COMPLETION OF THE WORK. WHERE THE USE OF PROFESSIONAL PERSONNEL IS REQUIRED, THESE PERSONNEL SHALL IMMEDIATELY REPORT IN WRITING TO PRMD AND THE PERMITTEE ANY INSTANCE OF WORK NOT IN COMPLIANCE WITH THE APPROVED PLANS, SPECIFICATIONS, OR ANY PERMIT CONDITIONS. IF PROFESSIONAL PERSONNEL IS CHANGED DURING THE COURSE OF THE WORK, THE WORK SHALL BE STOPPED UNTIL THE REPLACEMENT INDIVIDUAL HAS NOTIFIED PRMD IN WRITING OF THEIR AGREEMENT TO ACCEPT RESPONSIBILITY FOR APPROVAL OF THE COMPLETED WORK WITHIN THE AREA OF THEIR TECHNICAL COMPETENCE.
5. PRMD SHALL FINAL A PERMIT WHEN ALL WORK, INCLUDING THE INSTALLATION OF ALL DRAINAGE IMPROVEMENTS AND THEIR PROTECTIVE DEVICES, AND ALL STORM WATER BMP'S, HAVE BEEN COMPLETED IN COMPLIANCE WITH THE APPROVED PLANS AND SPECIFICATIONS, AND ALL FINAL REPORTS REQUIRED BY SCC 11.14.040.A HAVE BEEN SUBMITTED AND ACCEPTED. FINAL REPORTS MAY INCLUDE: AS-BUILT PLANS, TESTING RECORDS, PROFESSIONAL OPINIONS, AND DECLARATIONS ABOUT COMPLETED WORK FROM PROFESSIONAL PERSONNEL. SIMILAR REPORTS MAY BE REQUIRED AT OTHER STAGES OF THE WORK.
6. THE PERMITTEE SHALL PROVIDE ADEQUATE AND SAFE ACCESS TO THE PROJECT SITE FOR INSPECTION DURING THE PERFORMACE OF ALL WORK.
7. DURING CONSTRUCTION ACTIVITIES, THE PROJECT SITE ADRESS SHALL BE POSTED AS FOLLOWS:
    A) THE STREET NUMBERS MUST BE AT LEAST FOUR INCHES TALL, WITH A REFECTIVE SURFACE.
    B) THE ADDRESS MUST BE VISIBLE FORM BOTH DIRECTIONS ALONG THE ROAD.
    C) THE ADDRESS MUST BE POSTED AT ALL FORKS IN ANY ACCESS ROAD AND AT THE PROJECT SITE.

EARTHWORK ESTIMATE NOTE

THE SONOMA COUNTY PERMIT AND RESOURCE MANAGEMENT DEPARTMENT REQUIRES EARTHWORK ESTIMATES TO BE SHOWN ON THE PLANS FOR PERMITTING PURPOSES. ACTUAL EARTHWORK BALANCE WILL DEPEND ON THE TIME OF YEAR, TYPE OF MOISTURE CONDITIONING, GRADING PRACTICES, AND THE UNCERTAINTIES OF THE SHRINK/SWELL AND SUBSIDENCE CHARACTERISTICS OF THE SOIL. ADJUSTMENT TO GRADES ARE TO BE EXPECTED. THE GRADING CONTRACTOR SHALL DETERMINE HIS OWN EARTHWORK QUANTITIES FOR CONSTRUCTION PURPOSES.

ESTIMATED CUT VOLUME: ±10 CY
ESTIMATED FILL VOLUME: ±4630 CY

PURPOSE STATEMENT

THE PURPOSE OF THESE PLANS IS TO SECURE A GRADING PERMIT FROM SONOMA COUNTY PRMD TO IMPORT APPROXIMATELY 4630 CY OF FILL IN ORDER TO RAISE THE SITE ABOVE THE PROJECTED 100 YEAR FLOOD LINE FOR FUTURE DEVELOPMENT.

ABBREVIATIONS

AB	AGGREGATE BASE	L	LENGTH
AC	ASPHALT CONCRETE	LP.	LOW POINT
BC	BEGIN CURVE	MIN.	MINIMUM
CL	CENTERLINE	MAX.	MAXIMUM
CMP	CORRUGATED METAL PIPE	MAY.	NUMBER
DET.	DETAIL	PRMD	PERMIT & RESOURCE MANAGEMENT DEPARTMENT
DOC	DOCUMENT		
EG	EXISTING GRADE	R	RADIUS
EL	ELEVATION	RSP	ROCK SLOPE PROTECTION
ELEV.	ELEVATION	S	SLOPE (FT/FT)
ESMT	EASEMENT	SD	STORM DRAIN
EP	EDGE OF PAVEMENT	SDCB	STORM DRAIN CATCH BASIN
EX	EXISTING	SDDI	STORM DRAIN DROP INLET
FG	FINISH GRADE	SHT.	SHEET
FL	FLOW LINE	SHLDR.	SHOULDER
℄	FLOW LINE	STA	STATION
GB	GRADE BREAK	TB	TOP OF BANK
HP	HIGH POINT	TOE	TOE OF SLOPE
IG	INVERT GRADE	TYP.	TYPICAL

INDEX OF DRAWINGS

AMOUNT OF DISTURBED AREA

2.25 ACRES

WDID # ____________

LEGEND

	EXISTING	NEW
SANITARY SEWER	SSMH, SS	
WATER	WV, 12"W	
STORM DRAIN SYSTEM	SDMH	SDFD, SD
CURB, GUTTER & SW		
FLOWLINE/SWALE		
TREE	(TO BE SAVED)	(TO BE REMOVED)
TOP OF BERM		
DAYLIGHT/TOE OF SLOPE		
GRADE BREAK		
FENCE		
SILT FENCE		SF
CONTOURS (1' INTERVALS)	135, 134	135, 134

REVISIONS

NO.	REVISION	DATE	R.C.E.

REGISTERED PROFESSIONAL ENGINEER ANDREW BORDESSA No. 34368 CIVIL STATE OF CALIFORNIA

ANDREW BORDESSA RCE 34368

DATE

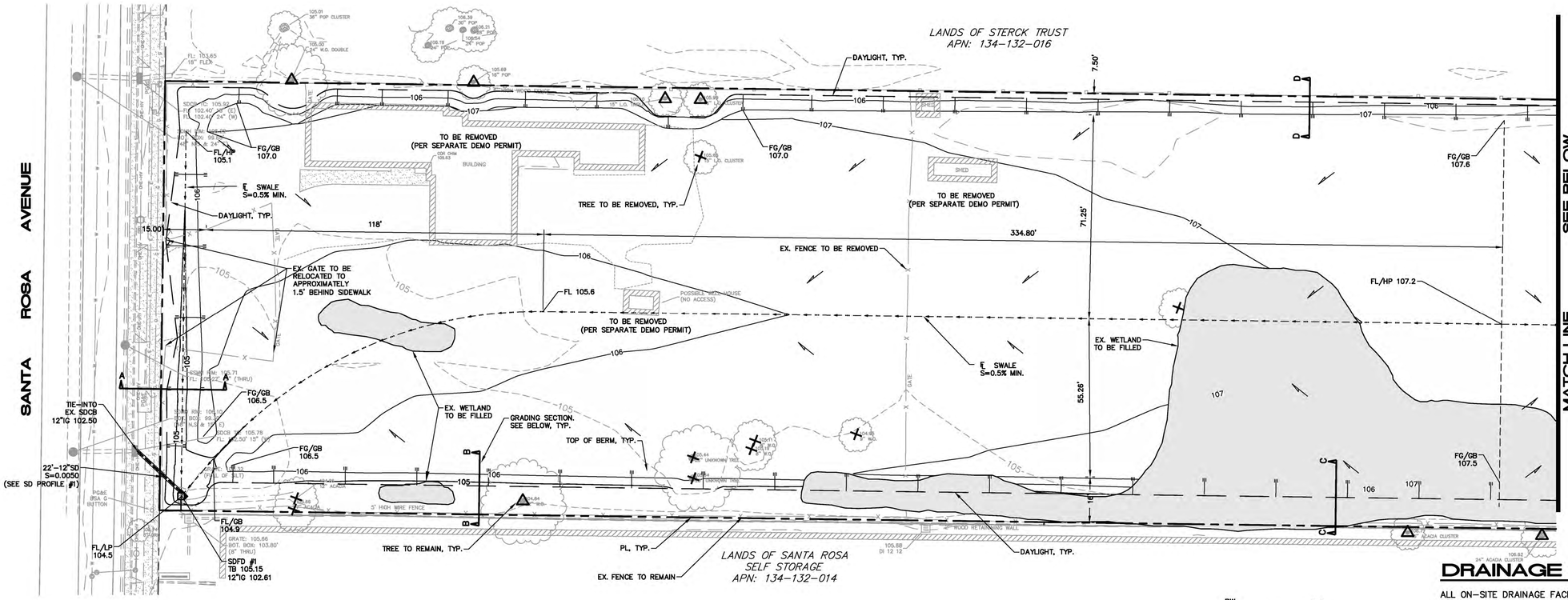
CIVIL DESIGN CONSULTANTS, INC.
2200 Range Avenue, Suite 204
Santa Rosa, CA 95403
(707) 542-4820

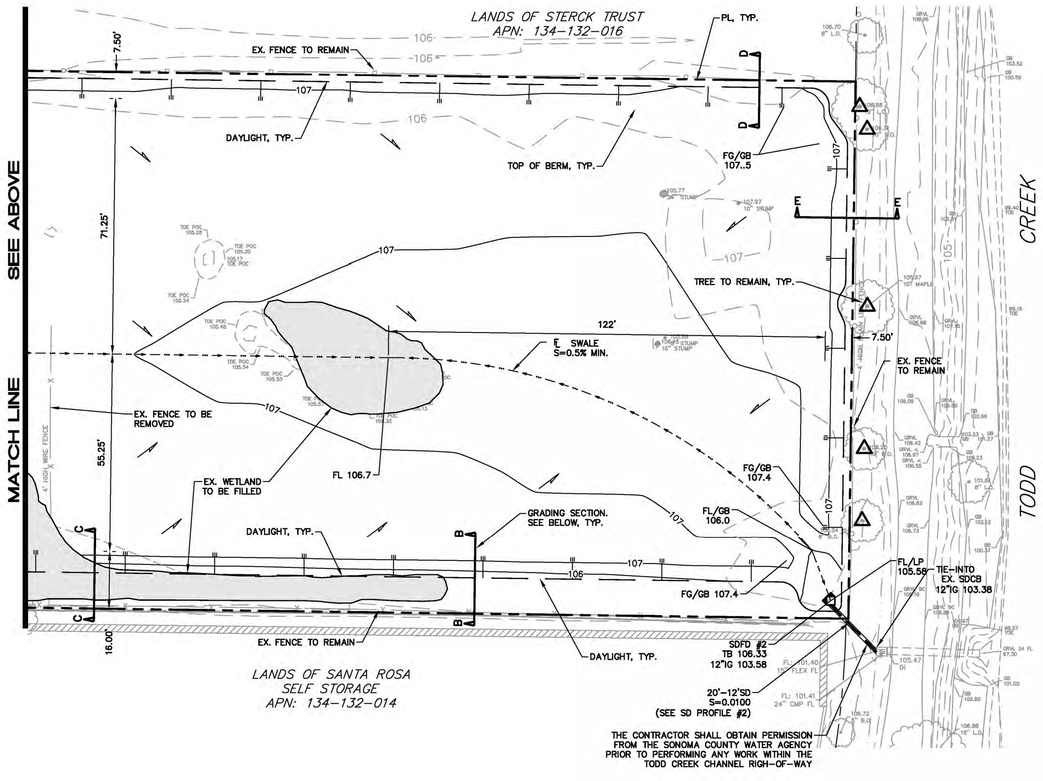
COVER SHEET, NOTES, LEGEND AND ABBREVIATIONS
3496 SANTA ROSA AVENUE
SANTA ROSA, CALIFORNIA
APN: 134-132-015
JUNE 2019

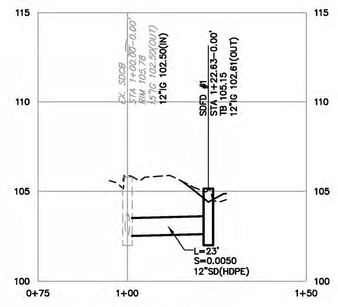
JOB NO. 18-138

SHEET NO. 1 OF 4 SHEETS

S:\SD06\PROJ\18-138\DWG\MASS GRADING\JPA - COV.dwg, 6/19/2019 2:01:33 PM







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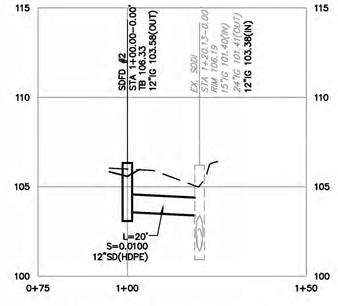
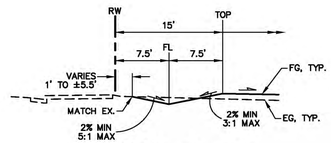
(PROFILE #1)



SDFD #2 TO EX. SDDI
(PROFILE #2)



SECTION A – A
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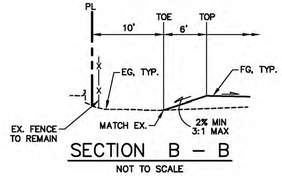

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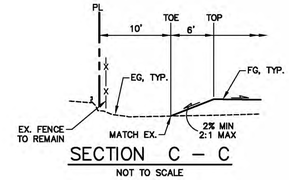

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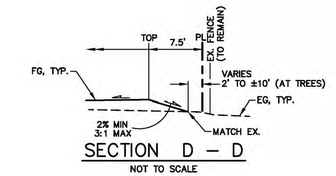

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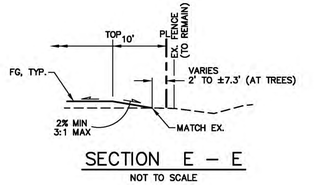


SECTION E – E
NOT TO SCALE

DRAINAGE STRUCTURES

ALL ON-SITE DRAINAGE FACILITIES SHALL BE PRIVATELY OWNED AND MAINTAINED. DRAINAGE STRUCTURES SHALL BE PRECAST CONCRETE AS MANUFACTURED BY OLDCASTLE, CHRISTY CONCRETE PRODUCTS, INC. OR EQUIVALENT AS APPROVED BY THE ENGINEER AND THE COUNTY OF SONOMA. TYPE AND MODEL AS SPECIFIED:

SDFD #1 & #2 — OLDCASTLE PRECAST MODEL DI-1818 WITH 2 SIDE OPENINGS AND 1/4" GALVANIZED CHECKER PLATE COVER. SIDE OPENINGS SHALL BE TRAPEZOIDAL WITH A DEPTH OF 9" MEASURED FROM TOP OF BOX. SET BOTTOM OF SIDE OPENINGS AT FINISH GRADE.

GRADING SECTIONS

REVISIONS

NO.	REVISION	DATE	R.C.E.

PROFESSIONAL ENGINEER * VIRGINIA
ANDREW BORDESSA
No. 34368
REGISTERED * STATE OF CALIFORNIA
CIVIL
DATE

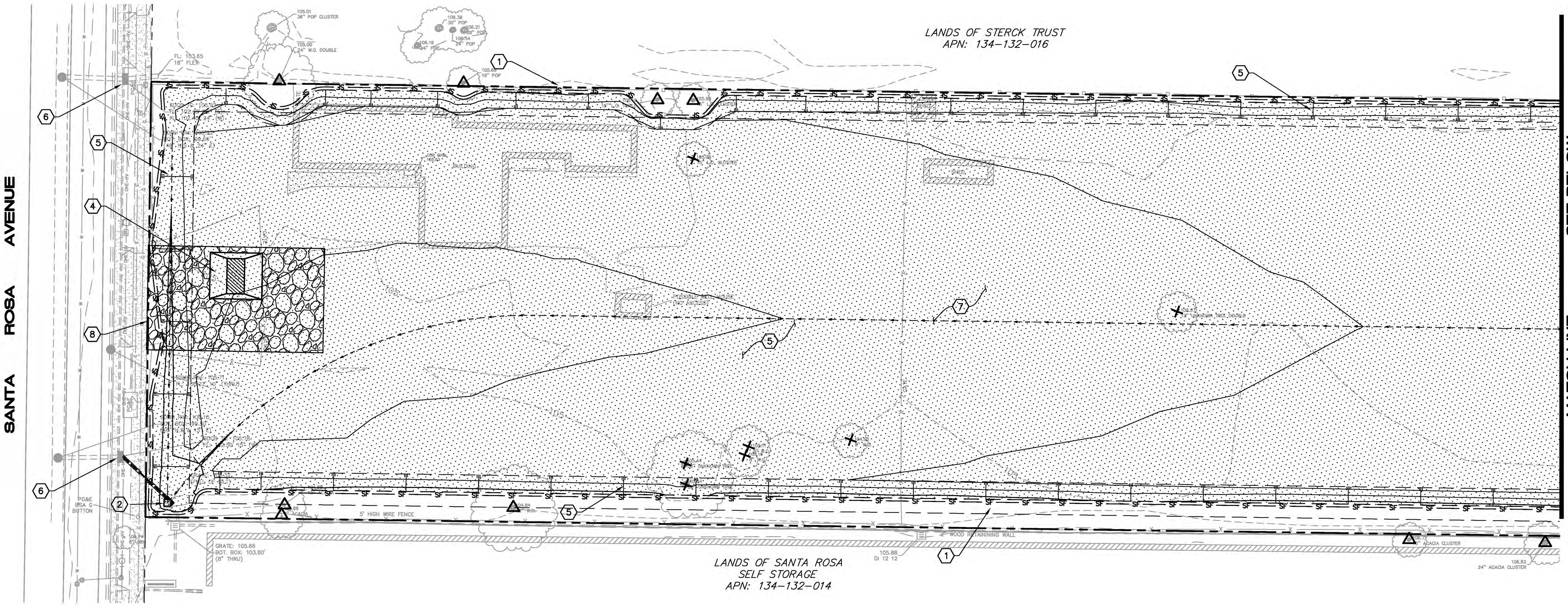
ANDREW BORDESSA
RCE 34368

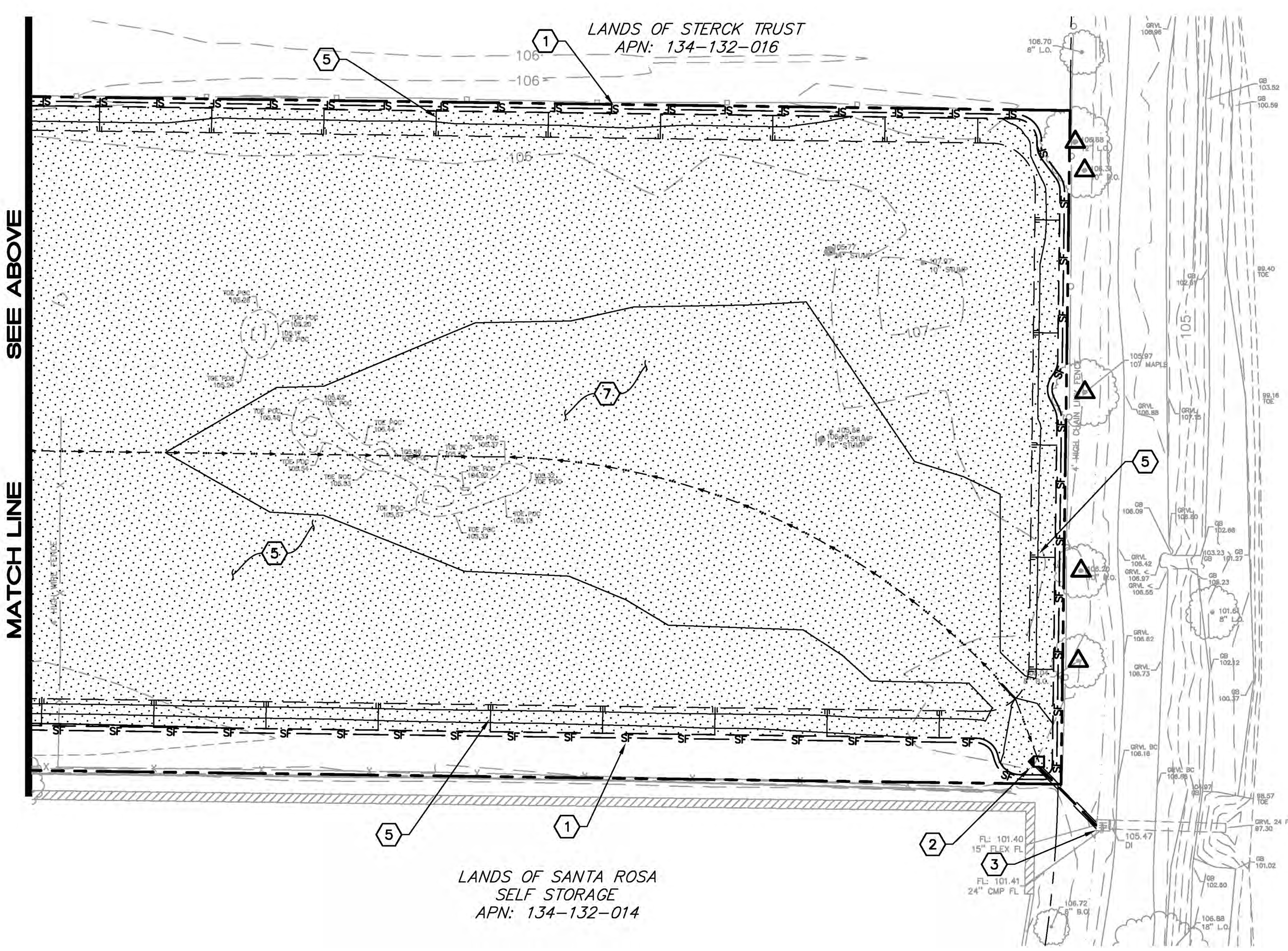
CIVIL DESIGN CONSULTANTS, INC.
2200 Range Avenue, Suite 204
Santa Rosa, CA 95403
(707) 542-4920

GRADING, DRAINAGE AND UTILITY PLAN
3496 SANTA ROSA AVENUE
SANTA ROSA, CALIFORNIA
APN: 134-132-015
JULY 2019

JOB NO.
18-138

SHEET NO.
2
OF 4 SHEETS





KEY NOTES

1. INSTALL SILT FENCE AT TOE OF SLOPE PER DETAIL A, SHEET 4, TYP.
2. INSTALL STRAW WATTLE AT FIELD DRAIN PER DETAIL B, SHEET 4.
3. INSTALL SILT SOCK AT EXISTING DROP INLET PER DETAIL C, SHEET 4.
4. INSTALL TRUCK TIRE WASH PER DETAIL D, SHEET 4.
5. INSTALL STRAW WATTLES PER DETAIL E, SHEET 4, TYP.
6. INSTALL FILTER DAM AT EXISTING CATCH BASIN PER DETAIL F, SHEET 4.
7. HYDROSEED PER EROSION CONTROL NOTE 16, SHEET 4, TYP.
8. STABILIZED CONSTRUCTION ENTRANCE:
   - 24' WIDE (MIN.) X 50' LONG (MIN.)
   - 36' WIDE (MIN.) AT TIRE WASH
   - 6" MIN. DEPTH OF 1 ½" MAX. COARSE AGGREGATE

0 20 50
SCALE: 1" = 20'

REVISIONS

NO.	REVISION	DATE	R.C.E.

REGISTERED PROFESSIONAL ENGINEER ANDREW BORDESSA No. 34368 CIVIL STATE OF CALIFORNIA

ANDREW BORDESSA
RCE 34368

DATE

CIVIL DESIGN CONSULTANTS, INC.
2200 Range Avenue, Suite 204
Santa Rosa, CA 95403
(707) 542-4820

EROSION CONTROL PLAN
3496 SANTA ROSA AVENUE
SANTA ROSA, CALIFORNIA
APN: 134-132-015
JUNE 2019

JOB NO. 18-138

SHEET NO. 3 OF 4 SHEETS

EROSION PREVENTION AND SEDIMENT CONTROL NOTES

1. PERFORM EROSION PREVENTION AND SEDIMENT CONTROL IN ACCORDANCE WITH CHAPTER 11 AND 11A OF THE SONOMA COUNTY CODE (SCC).
2. THE APPROVED PLANS SHALL CONFORM TO THE PERMIT AND RESOURCE MANAGEMENT DEPARTMENT'S (PRMD) EROSION PREVENTION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES (BMP'S) GUIDE AS POSTED ON THE PRMD WEBSITE.
3. THE PROPERTY OWNER IS RESPONSIBLE FOR PREVENTING STORM WATER POLLUTION GENERATED FROM THE CONSTRUCTION SITE YEAR ROUND. WORK SITES WITH INADEQUATE EROSION AND SEDIMENT CONTROL MAY BE SUBJECT TO A STOP WORK ORDER AND/OR ADDITIONAL INSPECTION FEES TO VERIFY COMPLIANCE WITH SCC.
4. IF DISCREPANCIES OCCUR BETWEEN THESE NOTES, MATERIAL REFERENCED ON THE APPROVED PLANS OR MANUFACTURER'S RECOMMENDATIONS, THEN THE MOST PROTECTIVE SHALL APPLY.
5. AT ALL TIMES THE OWNER IS RESPONSIBLE FOR OBTAINING AND COMPLYING WITH THE STATE OF CALIFORNIA NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) GENERAL PERMIT FOR STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION AND LAND DISTURBING ACTIVITIES SUCH AS CLEARING, GRADING, EXCAVATION, STOCKPILING, AND RECONSTRUCTION OF EXISTING FACILITIES INVOLVING REMOVAL AND REPLACEMENT.
6. THE PROPERTY OWNER MUST IMPLEMENT AN EFFECTIVE COMBINATION OF EROSION PREVENTION AND SEDIMENT CONTROL ON ALL DISTURBED AREAS DURING THE RAINY SEASON (OCTOBER 1 – APRIL 30). GRADING AND DRAINAGE IMPROVEMENT SHALL BE PERMITTED DURING THE RAINY SEASON ONLY WHEN ON-SITE SOIL CONDITIONS PERMIT THE WORK TO BE PERFORMED IN COMPLIANCE WITH SCC.
7. DURING THE RAINY SEASON, STORM WATER BMP'S REFERENCED OR DETAILED IN PRMD'S BMP GUIDE SHALL BE IMPLEMENTED AND FUNCTIONAL ON THE SITE AT ALL TIMES AND THE AREA OF ERODIBLE LAND EXPOSED AT ANY ONE TIME DURING THE WORK SHALL NOT EXCEED ONE ACRE OR 20 PERCENT OF THE PERMITTED WORK AREA, WHICHEVER IS GREATER, AND THE TIME OF EXPOSURE SHALL BE MINIMIZED TO THE MAXIMUM EXTENT PRACTICABLE.
8. DURING THE NON-RAINY SEASON, ON ANY DAY WHEN THE NATIONAL WEATHER SERVICE FORECAST IS A CHANCE OF RAIN OF 30 PERCENT OR GREATER WITHIN THE NEXT 24 HOURS, STORM WATER BMP'S REFERENCED OR DETAILED IN PRMD'S BMP GUIDE SHALL BE IMPLEMENTED AND FUNCTIONAL ON THE SITE TO PREVENT SOIL AND OTHER POLLUTANT DISCHARGES. AT ALL OTHER TIMES, BMP'S SHOULD BE STORED ON SITE IN PREPARATION FOR INSTALLATION PRIOR TO RAIN EVENTS.
9. EROSION PREVENTION AND SEDIMENT CONTROL BMP'S SHALL BE INSPECTED BY THE PROPERTY OWNER BEFORE FORECASTED STORM EVENTS AND AFTER STORM EVENTS TO ENSURE BMP'S ARE FUNCTIONING PROPERLY. EROSION PREVENTION AND SEDIMENT CONTROL BMP'S THAT HAVE FAILED OR ARE NO LONGER EFFECTIVE SHALL BE PROMPTLY REPLACED. EROSION PREVENTION AND SEDIMENT CONTROL BMP'S SHALL BE MAINTAINED UNTIL DISTURBED AREAS ARE STABILIZED.
10. THE LIMITS OF GRADING SHALL BE DEFINED AND MARKED ON SITE TO PREVENT DAMAGE TO SURROUNDING TREES AND OTHER VEGETATION. PRESERVATION OF EXISTING VEGETATION SHALL OCCUR TO THE MAXIMUM EXTENT PRACTICABLE. ANY EXISTING VEGETATION WITHIN THE LIMITS OF GRADING THAT IS TO REMAIN UNDISTURBED BY THE WORK SHALL BE IDENTIFIED AND PROTECTED FROM DAMAGE BY MARKING, FENCING, OR OTHER MEASURES.
11. CHANGES TO THE EROSION PREVENTION AND SEDIMENT CONTROL PLAN MAY BE MADE TO RESPOND TO FIELD CONDITIONS IF THE ALTERNATIVE BMP'S ARE EQUIVALENT OR MORE PROTECTIVE THAN THE BMP'S SHOWN ON THE APPROVED PLANS. ALTERNATIVE BMP'S ARE SUBJECT TO REVIEW AND APPROVAL BY PRMD STAFF.
12. DISCHARGES OF POTENTIAL POLLUTANTS FROM CONSTRUCTION SITES SHALL BE PREVENTED USING SOURCE CONTROLS TO THE MAXIMUM EXTENT PRACTICABLE. POTENTIAL POLLUTANTS INCLUDE BUT ARE NOT LIMITED TO: SEDIMENT, TRASH, NUTRIENTS, PATHOGENS, PETROLEUM HYDROCARBONS, METALS, CONCRETE, CEMENT, ASPHALT, LIME, PAINT, STAINS, GLUES, WOOD PRODUCTS, PESTICIDES, HERBICIDES, CHEMICALS, HAZARDOUS WASTE, SANITARY WASTE, VEHICLE OR EQUIPMENT WASH WATER, AND CHLORINATED WATER.
13. ENTRANCE(S) TO THE CONSTRUCTION SITE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF POTENTIAL POLLUTANTS OFFSITE. POTENTIAL POLLUTANTS DEPOSITED ON PAVED AREAS WITHIN THE COUNTY RIGHT-OF-WAY, SUCH AS ROADWAYS AND SIDEWALKS, SHALL BE PROPERLY DISPOSED OF AT THE END OF EACH WORKING DAY OR MORE FREQUENTLY AS NECESSARY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING CONSTRUCTION VEHICLES LEAVING THE SITE ON A DAILY BASIS TO PREVENT DUST, SILT, AND DIRT FROM BEING RELEASED OR TRACKED OFFSITE. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AT THE END OF EACH WORKING DAY OR MORE OFTEN AS NECESSARY.
14. ALL DISTURBED AREAS SHALL BE PROTECTED BY USING EROSION PREVENTION BMP'S TO THE MAXIMUM EXTENT PRACTICABLE, SUCH AS ESTABLISHING VEGETATION COVERAGE, HYDROSEEDING, STRAW MULCH, GEOTEXTILES, PLASTIC COVERS, BLANKETS OR MATS. TEMPORARY REVEGETATION SHALL BE INSTALLED AS SOON AS PRACTICAL AFTER VEGETATION REMOVAL BUT IN ALL CASES PRIOR TO OCTOBER 1. PERMANENT REVEGATATION OR LANDSCAPING SHALL BE INSTALLED PRIOR TO FINAL INSPECTION.
15. WHENEVER IT IS NOT POSSIBLE TO USE EROSION PREVENTION BMP'S ON EXPOSED SLOPES, SEDIMENT CONTROL BMP'S SUCH AS FIBER ROLLS AND SILT FENCES SHALL BE INSTALLED TO PREVENT SEDIMENT MIGRATION. FIBER ROLLS AND SILT FENCES SHALL BE TRENCHED AND KEYED INTO THE SOIL AND INSTALLED ON CONTOUR. SILT FENCES SHALL BE INSTALLED APPROXIMATELY 2 TO 5 FEET FROM TOE OF SLOPE.
16. HYDROSEEDING SHALL BE CONDUCTED IN A THREE STEP PROCESS. FIRST, EVENLY APPLY SEED MIX AND FERTILIZER TO THE EXPOSED SLOPE. SECOND, EVENLY APPLY MULCH OVER THE SEED AND FERTILIZER. THIRD, STABILIZE THE MULCH IN PLACE. AN EQUIVALENT SINGLE STEP PROCESS, WITH SEED, FERTILIZER, WATER, AND BONDED FIBERS IS ACCEPTABLE.

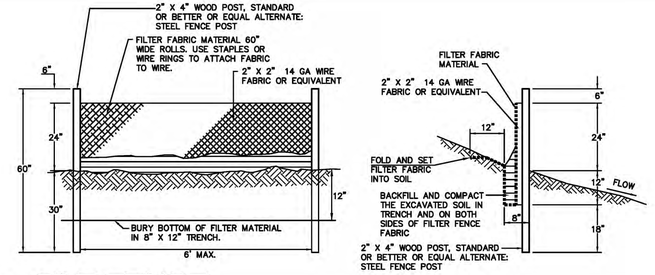
    APPLICATIONS SHALL BE BROADCASTED MECHANICALLY OR MANUALLY AT THE RATES SPECIFIED BELOW. SEED MIX AND FERTILIZER SHALL BE WORKED INTO THE SOIL BY ROLLING OR TAMPING. IF STRAW IS USED AS MULCH, STRAW SHALL BE DERIVED FROM WHEAT, RICE, OR BARLEY AND BE APPROXIMATELY SIX TO EIGHT INCHES IN LENGTH. STABILIZATION OF MULCH SHALL BE DONE HYDRAULICALLY BY APPLYING AN EMULSION OR MECHANICALLY BY CRIMPING OR PUNCHING THE MULCH INTO THE SOIL. EQUIVALENT METHODS AND MATERIALS MAY BE USED ONLY IF THEY ADEQUATELY PROMOTE VEGETATION GROWTH AND PROTECT EXPOSED SLOPES.

MATERIALS	APPLICATION RATE (POUNDS PER ACRE)
SEED MIX	
Bromus mollis (BLANDO BROME)	40
Trifolium hirtum (HYKON ROSE CLOVER)	20
FERTILIZER	
16-20-0 & 15% SULPHUR	500
MULCH	
STRAW	4000
HYDRAULIC STABILIZING*	
M-BINDER OR SENTINEL EQUIVALENT MATERIAL	75-100 PER MANUFACTURER

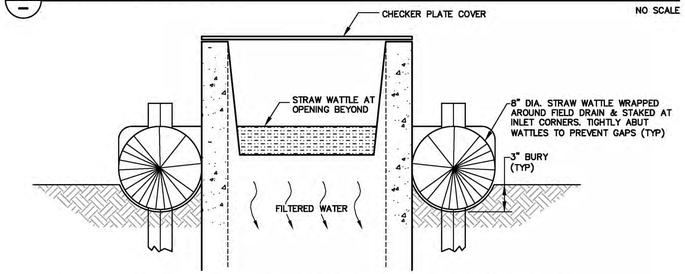
*NON-ASPHALTIC, DERIVED FROM PLANTS

HYDROSEED AREA

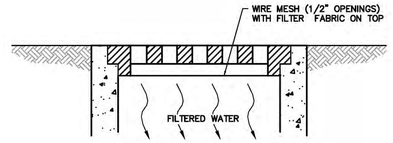
17. DUST CONTROL SHALL BE PROVIDED BY CONTRACTOR DURING ALL PHASES OF CONSTRUCTION.
18. STORM DRAIN INLETS SHALL BE PROTECTED FROM POTENTIAL POLLUTANTS UNTIL DRAINAGE CONVEYANCE SYSTEMS ARE FUNCTIONAL AND CONSTRUCTION HAS BEEN COMPLETED.
19. ENERGY DISSIPATERS SHALL BE INSTALLED AT STORM DRAIN OUTLETS WHICH MAY CONVEY EROSIVE STORM WATER FLOW.
20. SOIL, MATERIAL STOCKPILES, AND FERTILIZING MATERIAL SHALL BE PROPERLY PROTECTED WITH PLASTIC COVERS OR EQUIVALENT BMP'S TO MINIMIZE SEDIMENT AND POLLUTANT TRANSPORT FROM THE CONSTRUCTION SITE.
21. SOLID WASTE, SUCH AS TRASH, DISCARDED BUILDING MATERIALS AND DEBRIS, SHALL BE PLACED IN DESIGNATED COLLECTION AREAS OR CONTAINERS. THE CONSTRUCTION SITE SHALL BE CLEARED OF SOLID WASTE DAILY OR AS NECESSARY. REGULAR REMOVAL AND PROPER DISPOSAL SHALL BE COORDINATED BY THE CONTRACTOR.
22. A CONCRETE WASHOUT AREA SHALL BE DESIGNATED TO CLEAN CONCRETE TRUCKS AND TOOLS. AT NO TIME SHALL CONCRETE PRODUCTS AND WASTE BE ALLOWED TO ENTER COUNTY WATERWAYS SUCH AS CREEKS OR STORM DRAINS. NO WASHOUT OF CONCRETE, MORTAR MIXERS, OR TRUCKS SHALL BE ALLOWED ON SOIL. CONCRETE WASTE SHALL BE PROPERLY DISPOSED.
23. PROPER APPLICATION, CLEANING, AND STORAGE OF POTENTIALLY HAZARDOUS MATERIALS, SUCH AS PAINTS AND CHEMICALS, SHALL BE CONDUCTED TO PREVENT THE DISCHARGE OF POLLUTANTS.
24. TEMPORARY RESTROOMS AND SANITARY FACILITIES SHALL BE LOCATED AND MAINTAINED DURING CONSTRUCTION ACTIVITIES TO PREVENT THE DISCHARGE OF POLLUTANTS.
25. APPROPRIATE VEHICLE STORAGE, FUELING, MAINTENANCE, AND CLEANING AREAS SHALL BE DESIGNATED AND MAINTAINED TO PREVENT DISCHARGE OF POLLUTANTS.



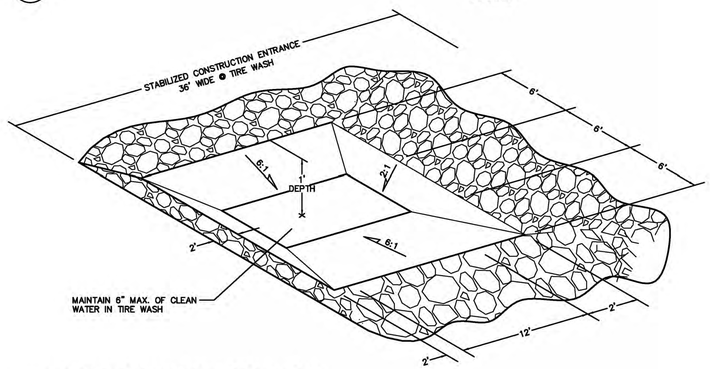
A — SILT FENCE — NO SCALE



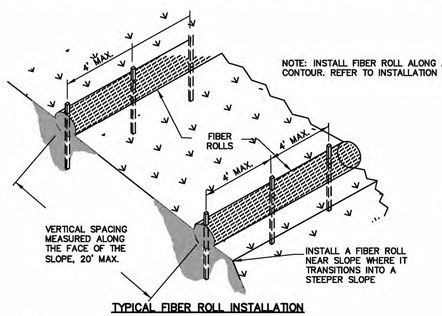
B — STRAW WATTLE FOR FIELD DRAINS — NO SCALE



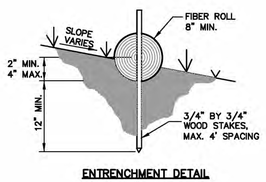
C — SILT SOCK FOR DROP INLETS — NO SCALE



D — TRUCK TIRE WASH — NO SCALE

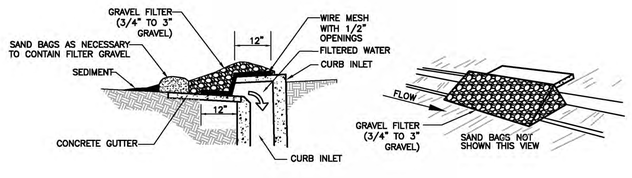


TYPICAL FIBER ROLL INSTALLATION
N.T.S.



ENTRENCHMENT DETAIL
N.T.S.

E — STRAW WATTLES — NO SCALE



F — FILTER DAM FOR CURB INLETS — NO SCALE

REVISIONS

NO.	REVISION	DATE	R.C.E.

ANDREW BORDESSA RCE 34366 — DATE

CIVIL DESIGN CONSULTANTS, INC.
2200 Range Avenue, Suite 204
Santa Rosa, CA 95403
(707) 542-4820

EROSION CONTROL NOTES AND DETAILS
3496 SANTA ROSA AVENUE
SANTA ROSA, CALIFORNIA
APN 134-132-015
JUNE 2019

JOB NO. 18-138

SHEET NO. 4 OF 4 SHEETS

S:\SDS\PROJ\18-138\DWG\MASS GRADING\SA - EC.dwg, 6/19/2019 9:47:31 AM

A-1: View east showing entrance driveway and residence.

A-2: View east showing disturbed areas and hardscape.

A-3: View east showing large seasonal wetland

A-4: View west showing large seasonal wetland.

A-5: View east showing non-native grassland at NE corner of site.

A-6: View south near center of site showing typical habitats.

Los Pinos Apartments
3496 Santa Rosa Avenue
Santa Rosa, CA

Photos from 4.4.19

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- *Santa Rosa, Healdsburg, Mark West Springs, Calistoga, Sebastopol, Kenwood, Two Rock, Cotati, Glen Ellen*

CNPS - March 2019

Scientific Name	Common Name	Rare Plant Rank	Global Rank	State Rank	State List	Federal List	Habitat
Allium peninsulare var. franciscanum	Franciscan onion	1B.2	G5T1	S1	None	None	Cismontane woodland, Valley and foothill grassland
Alopecurus aequalis var. sonomensis	Sonoma alopecurus	1B.1	G5T1	S1	None	FE	Marshes and swamps (freshwater), Riparian scrub
Amorpha californica var. napensis	Napa false indigo	1B.2	G4T2	S2	None	None	Broadleafed upland forest (openings), Chaparral, Cismontane woodland
Amsinckia lunaris	bent-flowered fiddleneck	1B.2	G2G3	S2S3	None	None	Coastal bluff scrub, Cismontane woodland, Valley and foothill grassland
Anomobryum julaceum	slender silver moss	4.2	G5?	S2	None	None	Broadleafed upland forest, Lower montane coniferous forest, North Coast coniferous forest
Arctostaphylos densiflora	Vine Hill manzanita	1B.1	G1	S1	CE	None	Chaparral (acid marine sand)
Arctostaphylos stanfordiana ssp. decumbens	Rincon Ridge manzanita	1B.1	G3T1	S1	None	None	Chaparral (rhyolitic), Cismontane woodland
Astragalus breweri	Brewer's milk-vetch	4.2	G3	S3	None	None	Chaparral, Cismontane woodland, Meadows and seeps, Valley and foothill grassland (open, often gravelly)
Astragalus claranus	Clara Hunt's milk-vetch	1B.1	G1	S1	CT	FE	Chaparral (openings), Cismontane woodland, Valley and foothill grassland
Balsamorhiza macrolepis	big-scale balsamroot	1B.2	G2	S2	None	None	Chaparral, Cismontane woodland, Valley and foothill grassland
Blennosperma bakeri	Sonoma sunshine	1B.1	G1	S1	CE	FE	Valley and foothill grassland (mesic), Vernal pools
Brodiaea leptandra	narrow-anthered brodiaea	1B.2	G3?	S3?	None	None	Broadleafed upland forest, Chaparral, Cismontane woodland, Lower montane coniferous forest, Valley and foothill grassland

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CNPS - March 2019

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Calamagrostis bolanderi	Bolander's reed grass	4.2	G4	S4	None	None	Bogs and fens, Broadleafed upland forest, Closed-cone coniferous forest, Coastal scrub, Meadows and seeps (mesic), Marshes and swamps (freshwater), North Coast coniferous forest
Calamagrostis crassiglumis	Thurber's reed grass	2B.1	G3Q	S2	None	None	Coastal scrub (mesic), Marshes and swamps (freshwater)
Calamagrostis ophitidis	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
Calandrinia breweri	Brewer's calandrinia	4.2	G4	S4	None	None	Chaparral, Coastal scrub
Calochortus uniflorus	pink star-tulip	4.2	G4	S4	None	None	Coastal prairie, Coastal scrub, Meadows and seeps, North Coast coniferous forest
Calystegia collina ssp. oxyphylla	Mt. Saint Helena morning-glory	4.2	G4T3	S3	None	None	Chaparral, Lower montane coniferous forest, Valley and foothill grassland
Campanula californica	swamp harebell	1B.2	G3	S3	None	None	Bogs and fens, Closed-cone coniferous forest, Coastal prairie, Meadows and seeps, Marshes and swamps (freshwater), North Coast coniferous forest
Castilleja ambigua var. ambigua	johnny-nip	4.2	G4T5	S4	None	None	Coastal bluff scrub, Coastal prairie, Coastal scrub, Marshes and swamps, Valley and foothill grassland, Vernal pools margins
Castilleja uliginosa	Pitkin Marsh paintbrush	1A	GXQ	SX	CE	None	Marshes and swamps (freshwater)
Ceanothus confusus	Rincon Ridge ceanothus	1B.1	G1	S1	None	None	Closed-cone coniferous forest, Chaparral, Cismontane woodland
Ceanothus divergens	Calistoga ceanothus	1B.2	G2	S2	None	None	Chaparral (serpentinite or volcanic, rocky)
Ceanothus foliosus var. vineatus	Vine Hill ceanothus	1B.1	G3T1	S1	None	None	Chaparral
Ceanothus gloriosus var. exaltatus	glory brush	4.3	G4T4	S4	None	None	Chaparral

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Ceanothus purpureus	holly-leaved ceanothus	1B.2	G2	S2	None	None	Chaparral, Cismontane woodland
Ceanothus sonomensis	Sonoma ceanothus	1B.2	G2	S2	None	None	Chaparral (sandy, serpentinite or volcanic)
Centromadia parryi ssp. parryi	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)
Chorizanthe valida	Sonoma spineflower	1B.1	G1	S1	CE	FE	Coastal prairie (sandy)
Clarkia breweri	Brewer's clarkia	4.2	G4	S4	None	None	Chaparral, Cismontane woodland, Coastal scrub
Clarkia imbricata	Vine Hill clarkia	1B.1	G1	S1	CE	FE	Chaparral, Valley and foothill grassland
Cordylanthus tenuis ssp. brunneus	serpentine bird's-beak	4.3	G4G5T3	S3	None	None	Closed-cone coniferous forest, Chaparral, Cismontane woodland
Cordylanthus tenuis ssp. capillaris	Pennell's bird's-beak	1B.2	G4G5T1	S1	CR	FE	Closed-cone coniferous forest, Chaparral
Cuscuta obtusiflora var. glandulosa	Peruvian dodder	2B.2	G5T4T5	SH	None	None	Marshes and swamps (freshwater)
Cypripedium montanum	mountain lady's-slipper	4.2	G4	S4	None	None	Broadleafed upland forest, Cismontane woodland, Lower montane coniferous forest, North Coast coniferous forest
Delphinium luteum	golden larkspur	1B.1	G1	S1	CR	FE	Chaparral, Coastal prairie, Coastal scrub
Downingia pusilla	dwarf downingia	2B.2	GU	S2	None	None	Valley and foothill grassland (mesic), Vernal pools
Erigeron biolettii	streamside daisy	3	G3?	S3?	None	None	Broadleafed upland forest, Cismontane woodland, North Coast coniferous forest
Erigeron serpentinus	serpentine daisy	1B.3	G2	S2	None	None	Chaparral (serpentinite, seeps)
Eriophorum gracile	slender cottongrass	4.3	G5	S4	None	None	Bogs and fens, Meadows and seeps, Upper montane coniferous forest
Eryngium constancei	Loch Lomond button-celery	1B.1	G1	S1	CE	FE	Vernal pools

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CNPS - March 2019

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Fritillaria liliacea	fragrant fritillary	1B.2	G2	S2	None	None	Cismontane woodland, Coastal prairie, Coastal scrub, Valley and foothill grassland
Gilia capitata ssp. tomentosa	woolly-headed gilia	1B.1	G5T1	S1	None	None	Coastal bluff scrub, Valley and foothill grassland
Gratiola heterosepala	Boggs Lake hedge-hyssop	1B.2	G2	S2	CE	None	Marshes and swamps (lake margins), Vernal pools
Hemizonia congesta ssp. congesta	congested-headed hayfield tarplant	1B.2	G5T1T2	S1S2	None	None	Valley and foothill grassland
Hesperevax caulescens	hogwallow starfish	4.2	G3	S3	None	None	Valley and foothill grassland (mesic, clay), Vernal pools (shallow)
Horkelia tenuiloba	thin-lobed horkelia	1B.2	G2	S2	None	None	Broadleafed upland forest, Chaparral, Valley and foothill grassland
Hosackia gracilis	harlequin lotus	4.2	G3G4	S3	None	None	Broadleafed upland forest, Coastal bluff scrub, Closed-cone coniferous forest, Cismontane woodland, Coastal prairie, Coastal scrub, Meadows and seeps, Marshes and swamps, North Coast coniferous forest, Valley and foothill grassland
Iris longipetala	coast iris	4.2	G3	S3	None	None	Coastal prairie, Lower montane coniferous forest, Meadows and seeps
Lasthenia burkei	Burke's goldfields	1B.1	G1	S1	CE	FE	Meadows and seeps (mesic), Vernal pools
Lasthenia californica ssp. bakeri	Baker's goldfields	1B.2	G3T1	S1	None	None	Closed-cone coniferous forest (openings), Coastal scrub, Meadows and seeps, Marshes and swamps
Lasthenia conjugens	Contra Costa goldfields	1B.1	G1	S1	None	FE	Cismontane woodland, Playas (alkaline), Valley and foothill grassland, Vernal pools
Layia septentrionalis	Colusa layia	1B.2	G2	S2	None	None	Chaparral, Cismontane woodland, Valley and foothill grassland
Legenere limosa	legenere	1B.1	G2	S2	None	None	Vernal pools

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USGS 9-QUADRANGLE MAPS- *Santa Rosa, Healdsburg, Mark West Springs, Calistoga, Sebastopol, Kenwood, Two Rock, Cotati, Glen Ellen*

CNPS - March 2019

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Leptosiphon acicularis	bristly leptosiphon	4.2	G4?	S4?	None	None	Chaparral, Cismontane woodland, Coastal prairie, Valley and foothill grassland
Leptosiphon jepsonii	Jepson's leptosiphon	1B.2	G3	S3	None	None	Chaparral, Cismontane woodland, Valley and foothill grassland
Lessingia hololeuca	woolly-headed lessingia	3	G3?	S3?	None	None	Broadleafed upland forest, Coastal scrub, Lower montane coniferous forest, Valley and foothill grassland
Lilium pardalinum ssp. pitkinense	Pitkin Marsh lily	1B.1	G5T1	S1	CE	FE	Cismontane woodland, Meadows and seeps, Marshes and swamps (freshwater)
Lilium rubescens	redwood lily	4.2	G3	S3	None	None	Broadleafed upland forest, Chaparral, Lower montane coniferous forest, North Coast coniferous forest, Upper montane coniferous forest
Limnanthes vinculans	Sebastopol meadowfoam	1B.1	G1	S1	CE	FE	Meadows and seeps, Valley and foothill grassland, Vernal pools
Lomatium repostum	Napa lomatium	4.3	G3	S3	None	None	Chaparral, Cismontane woodland
Lupinus sericatus	Cobb Mountain lupine	1B.2	G2?	S2?	None	None	Broadleafed upland forest, Chaparral, Cismontane woodland, Lower montane coniferous forest
Micropus amphibolus	Mt. Diablo cottonweed	3.2	G3G4	S3S4	None	None	Broadleafed upland forest, Chaparral, Cismontane woodland, Valley and foothill grassland
Microseris paludosa	marsh microseris	1B.2	G2	S2	None	None	Closed-cone coniferous forest, Cismontane woodland, Coastal scrub, Valley and foothill grassland
Monardella viridis	green monardella	4.3	G3	S3	None	None	Broadleafed upland forest, Chaparral, Cismontane woodland
Navarretia cotulifolia	cotula navarretia	4.2	G4	S4	None	None	Chaparral, Cismontane woodland, Valley and foothill grassland
Navarretia heterandra	Tehama navarretia	4.3	G4	S4	None	None	Valley and foothill grassland (mesic), Vernal pools

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Navarretia leucocephala ssp. bakeri	Baker's navarretia	1B.1	G4T2	S2	None	None	Cismontane woodland, Lower montane coniferous forest, Meadows and seeps, Valley and foothill grassland, Vernal pools
Navarretia leucocephala ssp. plieantha	many-flowered navarretia	1B.2	G4T1	S1	CE	FE	Vernal pools (volcanic ash flow)
Penstemon newberryi var. sonomensis	Sonoma beardtongue	1B.3	G4T2	S2	None	None	Chaparral (rocky)
Perideridia gairdneri ssp. gairdneri	Gairdner's yampah	4.2	G5T3T4	S3S4	None	None	Broadleafed upland forest, Chaparral, Coastal prairie, Valley and foothill grassland, Vernal pools
Plagiobothrys strictus	Calistoga popcornflower	1B.1	G1	S1	CT	FE	Meadows and seeps, Valley and foothill grassland, Vernal pools
Pleuropogon hooverianus	North Coast semaphore grass	1B.1	G2	S2	CT	None	Broadleafed upland forest, Meadows and seeps, North Coast coniferous forest
Pleuropogon refractus	nodding semaphore grass	4.2	G4	S4	None	None	Lower montane coniferous forest, Meadows and seeps, North Coast coniferous forest, Riparian forest
Poa napensis	Napa blue grass	1B.1	G1	S1	CE	FE	Meadows and seeps, Valley and foothill grassland
Potentilla uliginosa	Cunningham Marsh cinquefoil	1A	GH	SH	None	None	Marshes and swamps
Puccinellia simplex	California alkali grass	1B.2	G3	S2	None	None	Chenopod scrub, Meadows and seeps, Valley and foothill grassland, Vernal pools
Ranunculus lobbii	Lobb's aquatic buttercup	4.2	G4	S3	None	None	Cismontane woodland, North Coast coniferous forest, Valley and foothill grassland, Vernal pools
Rhynchospora alba	white beaked-rush	2B.2	G5	S2	None	None	Bogs and fens, Meadows and seeps, Marshes and swamps (freshwater)
Rhynchospora californica	California beaked-rush	1B.1	G1	S1	None	None	Bogs and fens, Lower montane coniferous forest, Meadows and seeps (seeps), Marshes and swamps (freshwater)

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USGS 9-QUADRANGLE MAPS- *Santa Rosa, Healdsburg, Mark West Springs, Calistoga, Sebastopol, Kenwood, Two Rock, Cotati, Glen Ellen*

CNPS - March 2019

Scientific Name	Common Name	Rare Plant Rank	Global Rank	State Rank	State List	Federal List	Habitat
Rhynchospora capitellata	brownish beaked-rush	2B.2	G5	S1	None	None	Lower montane coniferous forest, Meadows and seeps, Marshes and swamps, Upper montane coniferous forest
Rhynchospora globularis	round-headed beaked-rush	2B.1	G4	S1	None	None	Marshes and swamps (freshwater)
Sidalcea hickmanii ssp. napensis	Napa checkerbloom	1B.1	G3T1	S1	None	None	Chaparral
Sidalcea oregana ssp. valida	Kenwood Marsh checkerbloom	1B.1	G5T1	S1	CE	FE	Marshes and swamps (freshwater)
Trifolium amoenum	two-fork clover	1B.1	G1	S1	None	FE	Coastal bluff scrub, Valley and foothill grassland (sometimes serpentinite)
Trifolium buckwestiorum	Santa Cruz clover	1B.1	G2	S2	None	None	Broadleafed upland forest, Cismontane woodland, Coastal prairie
Trifolium hydrophilum	saline clover	1B.2	G2	S2	None	None	Marshes and swamps, Valley and foothill grassland (mesic, alkaline), Vernal pools
Triquetrella californica	coastal triquetrella	1B.2	G2	S2	None	None	Coastal bluff scrub, Coastal scrub
Viburnum ellipticum	oval-leaved viburnum	2B.3	G4G5	S3?	None	None	Chaparral, Cismontane woodland, Lower montane coniferous forest

APPENDIX B
SPECIAL STATUS ANIMAL SPECIES

APPENDIX B: SPECIAL-STATUS ANIMAL SPECIES LIST

USGS 9-QUADRANGLE MAPS- *Santa Rosa, Healdsburg, Mark West Springs, Calistoga, Sebastopol, Kenwood, Two Rock, Cotati, Glen Ellen*

CNDDB - March 2019

Scientific Name	Common Name	Federal List	State List	Global Rank	State Rank	Dept. Fish and Wildlife Rank	Habitat
Accipiter striatus	sharp-shinned hawk	None	None	G5	S4	Watch List	Cismontane woodland | Lower montane coniferous forest | Riparian forest | Riparian woodland
Agelaius tricolor	tricolored blackbird	None	Candidate Endangered	G2G3	S1S2	Special Concern	Freshwater marsh | Marsh & swamp | Swamp | Wetland
Ambystoma californiense	California tiger salamander	Threatened	Threatened	G2G3	S2S3	Watch List	Cismontane woodland | Meadow & seep | Riparian woodland | Valley & foothill grassland | Vernal pool | Wetland
Ammodramus savannarum	grasshopper sparrow	None	None	G5	S3	Special Concern	Valley & foothill grassland
Andrena blennospermatis	Blennosperma vernal pool andrenid bee	None	None	G2	S2	none	Vernal pool
Antrozous pallidus	pallid bat	None	None	G5	S3	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
Aquila chrysaetos	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
Ardea herodias	great blue heron	None	None	G5	S4	none	Brackish marsh | Estuary | Freshwater marsh | Marsh & swamp | Riparian forest | Wetland
Athene cunicularia	burrowing owl	None	None	G4	S3	Special Concern	Coastal prairie | Coastal scrub | Great Basin grassland | Great Basin scrub | Mojavean desert scrub | Sonoran desert scrub | Valley & foothill grassland

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CNDDB - March 2019

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Bombus caliginosus	obscure bumble bee	None	None	G4?	S1S2	none	
Bombus crotchii	Crotch bumble bee	None	None	G3G4	S1S2	none	
Bombus occidentalis	western bumble bee	None	None	G2G3	S1	none	
Buteo regalis	ferruginous hawk	None	None	G4	S3S4	Watch List	Great Basin grassland | Great Basin scrub | Pinon & juniper woodlands | Valley & foothill grassland
Caecidotea tomalensis	Tomales isopod	None	None	G2	S2S3	none	Aquatic | Sacramento/San Joaquin flowing waters | Sacramento/San Joaquin standing waters
Coccyzus americanus occidentalis	western yellow-billed cuckoo	Threatened	Endangered	G5T2T3	S1	none	Riparian forest
Corynorhinus townsendii	Townsend's big-eared bat	None	None	G3G4	S2	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
Coturnicops noveboracensis	yellow rail	None	None	G4	S1S2	Special Concern	Freshwater marsh | Meadow & seep
Dicamptodon ensatus	California giant salamander	None	None	G3	S2S3	Special Concern	Aquatic | Meadow & seep | North coast coniferous forest | Riparian forest
Elanus leucurus	white-tailed kite	None	None	G5	S3S4	Fully Protected	Cismontane woodland | Marsh & swamp | Riparian woodland | Valley & foothill grassland | Wetland

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CNDDB - March 2019

Scientific Name	Common Name	Federal List	State List	Global Rank	State Rank	Dept. Fish and Wildlife Rank	Habitat
Emys marmorata	western pond turtle	None	None	G3G4	S3	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
Eremophila alpestris actia	California horned lark	None	None	G5T4Q	S4	Watch List	Marine intertidal & splash zone communities | Meadow & seep
Erethizon dorsatum	North American porcupine	None	None	G5	S3	none	Broadleaved upland forest | Cismontane woodland | Closed-cone coniferous forest | Lower montane coniferous forest | North coast coniferous forest | Upper montane coniferous forest
Falco peregrinus anatum	American peregrine falcon	Delisted	Delisted	G4T4	S3S4	Fully Protected	
Hydrochara rickseckeri	Ricksecker's water scavenger beetle	None	None	G2?	S2?	none	Aquatic | Sacramento/San Joaquin flowing waters | Sacramento/San Joaquin standing waters
Hydroporus leechi	Leech's skyline diving beetle	None	None	G1?	S1?	none	Aquatic
Hysterocarpus traski pomo	Russian River tule perch	None	None	G5T4	S4	Special Concern	Aquatic | Klamath/North coast flowing waters
Lasiurus blossevillii	western red bat	None	None	G5	S3	Special Concern	Cismontane woodland | Lower montane coniferous forest | Riparian forest | Riparian woodland
Lasiurus cinereus	hoary bat	None	None	G5	S4	none	Broadleaved upland forest | Cismontane woodland | Lower montane coniferous forest | North coast coniferous forest

APPENDIX B: SPECIAL-STATUS ANIMAL SPECIES LIST

USGS 9-QUADRANGLE MAPS- *Santa Rosa, Healdsburg, Mark West Springs, Calistoga, Sebastopol, Kenwood, Two Rock, Cotati, Glen Ellen*

CNDDB - March 2019

Scientific Name	Common Name	Federal List	State List	Global Rank	State Rank	Dept. Fish and Wildlife Rank	Habitat
Lavinia symmetricus navarroensis	Navarro roach	None	None	G4T1T2	S2S3	Special Concern	Aquatic | Sacramento/San Joaquin flowing waters
Linderiella occidentalis	California linderiella	None	None	G2G3	S2S3	none	Vernal pool
Myotis thysanodes	fringed myotis	None	None	G4	S3	none	
Myotis volans	long-legged myotis	None	None	G5	S3	none	Upper montane coniferous forest
Myotis yumanensis	Yuma myotis	None	None	G5	S4	none	Lower montane coniferous forest | Riparian forest | Riparian woodland | Upper montane coniferous forest
Oncorhynchus kisutch pop. 4	coho salmon - central California coast ESU	Endangered	Endangered	G4	S2?	none	Aquatic
Oncorhynchus mykiss irideus pop. 8	steelhead - central California coast DPS	Threatened	None	G5T2T3Q	S2S3	none	Aquatic | Sacramento/San Joaquin flowing waters
Pandion haliaetus	osprey	None	None	G5	S4	Watch List	Riparian forest
Rana boylii	foothill yellow-legged frog	None	Candidate Threatened	G3	S3	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

APPENDIX B: SPECIAL-STATUS ANIMAL SPECIES LIST

USGS 9-QUADRANGLE MAPS- *Santa Rosa, Healdsburg, Mark West Springs, Calistoga, Sebastopol, Kenwood, Two Rock, Cotati, Glen Ellen*

CNDDB - March 2019

Scientific Name	Common Name	Federal List	State List	Global Rank	State Rank	Dept. Fish and Wildlife Rank	Habitat
Rana draytonii	California red-legged frog	Threatened	None	G2G3	S2S3	Special Concern	Aquatic | Artificial flowing waters | Artificial standing waters | Freshwater marsh | Marsh & swamp | Riparian forest | Riparian scrub | Riparian woodland | Sacramento/San Joaquin flowing waters | Sacramento/San Joaquin standing waters | South coast flowing waters | South coast standing waters | Wetland
Riparia riparia	bank swallow	None	Threatened	G5	S2	none	Riparian scrub | Riparian woodland
Syncaris pacifica	California freshwater shrimp	Endangered	Endangered	G2	S2	none	Aquatic | Sacramento/San Joaquin flowing waters
Taricha rivularis	red-bellied newt	None	None	G4	S2	Special Concern	Broadleaved upland forest | North coast coniferous forest | Redwood | Riparian forest | Riparian woodland

APPENDIX B: SPECIAL-STATUS ANIMAL SPECIES LIST

USGS 9-QUADRANGLE MAPS- *Santa Rosa, Healdsburg, Mark West Springs, Calistoga, Sebastopol, Kenwood, Two Rock, Cotati, Glen Ellen*

CNDDB - March 2019

Scientific Name	Common Name	Federal List	State List	Global Rank	State Rank	Dept. Fish and Wildlife Rank	Habitat
Taxidea taxus	American badger	None	None	G5	S3	Special Concern	Alkali marsh | Alkali playa | Alpine | Alpine dwarf scrub | Bog & fen | Brackish marsh | Broadleaved upland forest | Chaparral | Chenopod scrub | Cismontane woodland | Closed-cone coniferous forest | Coastal bluff scrub | Coastal dunes | Coastal prairie | Coastal scrub | Desert dunes | Desert wash | Freshwater marsh | Great Basin grassland | Great Basin scrub | Interior dunes | Ione formation | Joshua tree woodland | Limestone | Lower montane coniferous forest | Marsh & swamp | Meadow & seep | Mojavean desert scrub | Montane dwarf scrub | North coast coniferous forest | Oldgrowth | Pavement plain | Redwood | Riparian forest | Riparian scrub | Riparian woodland | Salt marsh | Sonoran desert scrub | Sonoran thorn woodland | Ultramafic | Upper montane coniferous forest | Upper Sonoran scrub | Valley & foothill grassland

APPENDIX C
PLANT INVENTORY LIST

Appendix C: Plant Inventory List
3496 Santa Rosa Avenue, Santa Rosa, CA

FAMILY	SPECIES NAME	COMMON NAME	NATIVE=N INTRODUCED=I
Alismataceae			
	Alisma aquatica-plantago	water plantain	N
Apiaceae			
	Daucus carota	wild carrot	I
	Eryngium aristulatum	California button celery	N
Araliaceae			
	Hedera helix	English ivy	I

FAMILY	SPECIES NAME	COMMON NAME	NATIVE=N INTRODUCED=I
Asteraceae			
	Achellia millefolium	yarrow	N
	Anthemis cotula	dog fennel	I
	Artemesia douglasiana	mugwort	I
	Baccharis pilularis	coyote brush	N
	Centaurea solstitianus	yellow star thistle	I
	Chicorum intybus	chicory	I
	Cirsium vulgare	bull thistle	I
	Gnaphalium californicum	California cudweed	N
	Hemizonia congesta spp. luzulifolia	hayfield tarweed	N
	Hypocharis radicata	rough cat's ear	I
	Lactuca saligna	willowleaf lettuce	N
	Lactuca serriola	prickly lettuce	I
	Lasthenia glaberrima	smooth goldfield	N
	Leontodon taraxocoides	hawkbit	I
	Matricaria matricarioides	pineapple weed	I
	Picris echioides	bristly ox tongue	I
	Senecio vulgaris	common groundsel	I
	Silybum marianum	milk thistle	I
	Sonchus oleraceus	sow thistle	I
	Xanthium strumarium v. canaden	cocklebur	I
Caprifoliaceae			
	Symphoricarpos albus	snowberry	N
Caryophyllaceae			
	Cerastrium viscosum	chickweed	I
Chenopodiaceae			
	Atriplex patula	fat hen	I
	Chenopodium album	lambs quarters	I
Convolvulaceae			
	Convolvulus arvensis	bindweed	I
Cruciferae			
	Brassica rapa	field mustard	I
	Lepidium nitidum	pepper grass	N
	Raphanus sativus	wild radish	I

FAMILY	SPECIES NAME	COMMON NAME	NATIVE=N INTRODUCED=I
Cyperaceae			
	Cyperus eragrostis	nut-sedge	I
	Eleocharis macrostachya	creeping spiked sedge	N
Euphorbiaceae			
	Eremocarpus setigerus	turkey mullen	N
Fabaceae			
	Acacia dealbata	silver wattle	I
	Lathyrus odoratus	sweet pea	I
	Lotus corniculatus	birdsfoot trefoil	I
	Lotus purshianus	Spanish lotus	N
	Medicago polymorpha	bur-clover	I
	Trifolium subterraneum	subterranean clover	I
	Trifolium variegatum	white-tip clover	N
	Vicia sativa	spring vetch	I
	Vicia villosa	winter vetch	I
Fagaceae			
	Quercus agrifolia	coast live oak	N
	Quercus lobata	valley oak	N
Gentianaceae			
	Centaurium erythraea	common centaury	N
Geraniaceae			
	Erodium cicutarium	redstem filaree	I
	Erodium moschatum	whitestem filaree	I
	Geranium dissectum	wild geranium	I
	Geranium molle	dove's foot geranium	I
Juglandaceae			
	Juglans regia	English walnut	I
Juncaceae			
	Juncus bufonius	toadrush	N
	Juncus phaeocephalus	brown head rush	N
	Juncus tenuis	slender rush	N
Lamiaceae			
	Mentha arvensis	field mint	N
	Mentha pelugium	pennyroyal	I

FAMILY	SPECIES NAME	COMMON NAME	NATIVE=N INTRODUCED=I
Liliaceae			
	Allium unifolium	wild onion	N
	Brodiaea elegans	harvest brodiaea	N
Lythraceae			
	Lythrum hyssopifolia	hyssop loosestrife	I
Malvaceae			
	Malva rotundifolia	mallow	I
Onagaraceae			
	Camissonia ovatum	sun cup	N
	Epilobium ciliatum	willow herb	N
Plantaginaceae			
	Kickxia elatine	sharp-leaved fluellin	I
	Plantago lanceolata	English plantain	I
Poaceae			
	Avena barbata	slender wild oat	I
	Avena fatua	wild oat	I
	Bromus diandrus	rip-gut brome	I
	Bromus mollis	soft chess	I
	Cynodon dactylon	bermuda grass	I
	Danthonia californicus	California oatgrass	N
	Festuca perennis	perennial rye grass	I
	Hordeum brachyantherum	meadow barley	N
	Hordeum marinum spp. gussoneanum	Mediterranean barley	I
	Hordeum murinum ssp. leporinum	foxtail barley	I
	Phalaris aquatica	Harding grass	I
	Pleuropogon californicus	semaphore grass	N
	Poa annua	annual bluegrass	I
	Polypogon monspeliensis	rabbitsfoot grass	I
	Vulpia bromoides	six-weeks bromegrass	I
Polemoniaceae			
	Navarretia squarrosa	skunkweed	N

FAMILY	SPECIES NAME	COMMON NAME	NATIVE=N INTRODUCED=I
Polygonaceae			
	Polygonum aviculare	common knotweed	I
	Rumex acetosella	sheep sorrel	I
	Rumex crispus	curly dock	I
Primulaceae			
	Anagallis arvensis	scarlet pimpernel	I
Ranunculaceae			
	Ranunculus californicus	California buttercup	N
	Ranunculus muricatus	spiny buttercup	I
Rosaceae			
	Prunus sp.	native plum	I
	Rubus armeniacus	Himalayan berry	I
Rubiaceae			
	Galium aparine	cleavers	I
Salicaceae			
	Populus fremontii	Fremont cottonwood	N
	Salix lasiolepis	arroyo willow	N
Scrophulariaceae			
	Parentucellia viscosa	parentucella	I