

Appendix A

Natural Environment Study (2000) and Update (2010)



H. T. HARVEY & ASSOCIATES
ECOLOGICAL CONSULTANTS

**MONTEREY BRIDGES
NATURAL ENVIRONMENT STUDY
BRIDGE NUMBER 412
MONTEREY COUNTY, CALIFORNIA**

By

H. T. HARVEY & ASSOCIATES

Daniel Stephens, Principal
Patrick Boursier, Ph.D., Division Head
Mary Bacca, M.S., Botanist
Andrew Dilworth, B.S., Botanist
Dave Johnston, Ph.D., Wildlife Biologist

Prepared for:

David Powers & Associates, Inc.
1885 The Alameda, Suite 204
San Jose, CA 95126

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Project No. 1212-03

I. SUMMARY OF FINDINGS AND CONCLUSIONS

The Peachtree Road Bridge over Pancho Rico Creek (County No. 412) is located east of San Ardo in Monterey County. The Monterey County Department of Public Works has proposed to replace the existing bridge with a structure that will meet current Caltrans seismic codes. The proposed bridge will be a 2-lane structure that is 28 feet wide and 80 feet long. Bridge construction will include: removal of existing bridge, construction of a concrete bent consisting of two 36-inch CIDH piles and extensions, construction of abutment grade beam and bent cap, installation of precast/prestressed deck units, construction of new roadway approaches and installation of rock slope protection.

Six biotic habitats were identified on the project site including: aquatic (0.04 acres), sandbar (0.09 acres), ruderal (0.03 acres), mulefat scrub (0.05 acres), foothill pine-oak woodland (0.22 acres), and non-native annual grassland (0.08 acres).

Potential jurisdictional waters on site included seasonal wetlands (131 ft²) and tributary waters (0.06 acres). The remaining area of the project site (0.54 acre) did not meet the regulatory definition of jurisdictional waters. The extent of DFG jurisdiction within the project site (0.24 acres) is defined in part by the top of bank and by the limit of riparian canopy. A red willow tree and mulefat shrubs provide approximately 2,826 ft² (0.06 acre) of riparian canopy within the project site.

Reconnaissance-level surveys were conducted in November 1997 for habitats capable of supporting special-status plants within the project site. At that time, the "Area of Potential Effects" (APE) was not defined and, consequently, survey effort included areas that have since been excluded from the project site. Follow-up surveys for special-status plant species were conducted in June and July 1998. The entire project area, as defined by the APE for a general plan sheet dated 28 January 1998 (Biggs Cardosa Associates, Inc. Job No. 97061), was hiked in order to observe all habitats on site. A subsequent general plan dated 2 December 1998 expanded the APE beyond the area that was surveyed intensively during the summer of 1998. Additional surveys for special-status plant species that could occur in the expanded APE were conducted in April, May, and June 2000.

An initial list of special-status plant species that could occur on site (based upon the 28 January 1998 APE boundary) included: Abbott's bush mallow, Davidson's bush mallow, Santa Lucia mint, Santa Lucia horkelia, and one-sided monkeyflower. These 5 species were not found on site during surveys conducted in 1998 and are considered to be absent from the site. Based upon the current APE, which encompasses additional habitats (e.g. serpentine soils, foothill pine-oak woodland), a total of 15 additional species were considered. These species included: San Benito thorn-mint, Santa Cruz Mountains pussypaws, showy madia, purple amole, straight-awned spineflower, Brewer's clarkia, Jolon clarkia, gypsum-loving larkspur, small-flowered gypsum-loving larkspur, San Benito poppy, Salinas Valley goldfields, pale-yellow layia, Carmel Valley bushmallow, slender pentachaeta, and Michael's rein orchid. These species were not found on site during the spring 2000 surveys and are considered to be absent from the site. The

original five special-status plant species are not expected to occur within the expanded APE due to the marginal habitat present.

The only species of note that was detected on site was Paso Robles navarretia (*Navarretia jaredii*), a CNPS 4 species.

Reconnaissance-level surveys were conducted in the winter, spring, and summer months of 1998 for potential habitat for special-status animal species that are known to occur regionally. Various special-status animal species have been identified as historically, or currently, occurring in the project vicinity.

Special-status animal species that may rarely or occasionally use the site, but not nest or breed there, include red-legged frog, Bald Eagle, Golden Eagle, Prairie Falcon, Sharp-shinned Hawk, California Horned Lark, California Yellow Warbler, Yellow-breasted Chat, Northern Harrier, Ferruginous Hawk, Prairie Falcon, Merlin, Townsend's big-eared bat, pallid bat, and California mastiff bat. Other potentially occurring special-status species include Coast Range newt, foothill yellow-legged frog, western pond turtle, California legless lizard, California horned lizard, and ringtail. Potential breeding and foraging habitat occurs on site for the White-tailed Kite, Loggerhead Shrike and Cooper's Hawk.

The Area of Potential Effects includes a construction corridor surrounding the bridge that will be approximately 375 feet long with a width ranging from 40 to 100 feet. The proposed project will have a number of effects on the biological resources of the project site. Several of these impacts have been determined to have less-than-significant impacts on the biotic resources. These less-than-significant impacts include loss of aquatic, sandbar, ruderal, mulefat scrub, foothill pine-oak woodland and non-native annual grassland habitats.

In addition, the placement of fill within tributary waters (jurisdictional waters) will be minimal (104 ft²). Likewise, direct impacts to DFG habitat will total 0.02 acre or 9% of the total DFG habitat on site. This direct impact may include a single red willow tree that has a canopy of approximately 561 ft². Collectively, this loss of DFG habitat is considered to be a less-than-significant impact.

The proposed project supports potential habitat for 20 special-status plant species. However, surveys conducted during the respective blooming periods in 1998 and 2000 did not locate any of these special-status plant species on site. Therefore, loss of potential habitat for these species is a less-than-significant impact.

The wildlife habitats found on site are locally abundant, and the loss of these on-site habitats was determined to have less-than-significant impacts on terrestrial and aquatic vertebrate habitats. Red-legged frogs have not been recorded for this drainage, and breeding habitat does not occur on site; however, this species may forage or move through the site. Most of the special-status wildlife species are unlikely to nest on site and foraging habitat is marginal or absent. Several special-status terrestrial vertebrates

may be occasional visitors, migrants, or transients. In general, the movements of amphibian, reptile, bird, and mammal species are not expected to be hindered or restricted in any way by the proposed project.

The proposed project was determined to result in potentially significant impacts to several biotic resources as summarized below:

Degradation of water quality may occur during construction due to the use of heavy equipment along the creek bed. Several mitigation measures, as provided by the California Department of Fish and Game and Best Management Practices as recommended by Caltrans, are proposed to reduce this impact to a less-than-significant level.

Preconstruction surveys are recommended for nesting raptors including Cooper's Hawk and White-tailed Kite.

If all of the mitigation measures described in this document are successfully implemented the project will have no significant cumulative effects on biological resources in the project area.

The adoption and successful implementation of the mitigation measures identified in this NES will mitigate all project impacts to biotic resources to a less-than significant level. Therefore, there are no significant unmitigable impacts from the project.

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II. INTRODUCTION

H. T. Harvey & Associates conducted a background review and field surveys for the Peachtree Road Bridge (Monterey County No. 412) over Pancho Rico Creek during the fall of 1997, the spring and summer of 1998 and the winter of 1999. These studies included a Biological Assessment, a Wetlands Delineation Technical Assessment, and a Natural Environment Study. All work, including the preparation of this report, was conducted according to guidelines prepared for the California Department of Transportation (Caltrans 1990).

PROJECT DESCRIPTION

The Monterey County Department of Public Works has proposed to replace the existing bridge with a structure that will meet current Caltrans seismic codes. The proposed bridge will be a 2-lane structure that is 28 feet wide and 80 feet long. Bridge construction will include: removal of existing bridge, construction of a concrete bent consisting of two 36-inch CIDH piles and extensions, construction of abutment grade beam and bent cap, installation of precast/prestressed deck units, construction of new roadway approaches and installation of slope rock protection (Biggs Cardosa Associates, Inc. Job No. 97061). This project will not require pile drivers and heavy equipment within the channel of Pancho Rico Creek (pers. comm. Tony Notaro, Biggs Cardosa Associates, Inc., 1871 The Alameda, Suite 200, San Jose, CA 95126).

STUDIES REQUIRED

H. T. Harvey & Associates biologists surveyed the Peachtree Road bridge (Monterey County No. 412) project site. The purpose of these surveys was to map biotic habitats within the project boundaries, to identify plants and animals found on site, and to conduct surveys for special-status plant and animal species, and their habitats. In addition, surveys were conducted to assess the degree of impact to tree species within the zone of construction. Surveys were also conducted for areas meeting the regulatory definition of "Waters of the United States." Such areas are subject to the jurisdiction of the U. S. Army Corps of Engineers (ACOE) under Section 404 of the Clean Water Act (1972) and the Rivers and Harbors Act (1899).

SURVEY DATES AND SURVEYING PERSONNEL

Field biologists conducted surveys of the project site in November 1997, April, May, June and July 1998, February 1999, and April, May, and June 2000. Personnel from H. T. Harvey & Associates included botanists (Mary Bacca, M.S. and Andrew Dilworth, B.S.), a wildlife biologist (Dr. Dave Johnston) and a herpetologist (Dr. Mark Jennings).

III. STUDY METHODOLOGY

IDENTIFICATION OF BIOTIC HABITATS

Field surveys were conducted within an "Area of Potential Effects" (APE). The survey method involved hiking the entire project area as defined by the APE. Plant communities were described in terms of their dominant tree, shrub and herbaceous vegetation composition and wherever possible, classified according to the nomenclature of Holland (1986) and Sawyer and Keeler-Wolf (1995). The major plant communities were mapped onto a general plan sheet with a scale of 1-inch : 10-feet (approximate). Lists were maintained of all plant species encountered during the surveys (Appendix A).

ASSESSMENT OF WILDLIFE USE OF THE PROJECT SITE

The wildlife survey consisted of hiking the entire project site, the adjacent areas, ¼ mile upstream, and ½ mile downstream. Site visits were made both during the day and also during night hours to survey for nocturnal vertebrates. All biotic habitats were also assessed for potentially suitable habitat for special-status species. All wildlife species observed during the surveys, and species determined to potentially occur on site were listed (Appendix B).

IDENTIFICATION OF JURISDICTIONAL WATERS

Field surveys were conducted within the project boundaries for areas which met the regulatory definition of jurisdictional waters. These studies were conducted at a level of effort sufficient for review by the ACOE. Topographic maps of the study area were obtained from several sources and were reviewed prior to field surveys. These sources included U.S. Geological Survey Quadrangle maps of the area surrounding the project site and aerial photographs contained in the *Soil Survey of Monterey County* (Soil Conservation Service; SCS 1978).

Waters of the U.S. Regulations Overview

Areas meeting the regulatory definition of "Waters of the United States" are subject to the regulatory jurisdiction of the ACOE. The ACOE under provisions of Section 404 of the Clean Water Act (1972), has jurisdiction over "Waters of the United States" (jurisdictional waters). These waters may include all waters used, or potentially used, for interstate commerce, including all waters subject to the ebb and flow of the tide, all interstate waters, all other waters (intrastate lakes, rivers, streams, mudflats, sandflats, playa lakes, natural ponds, etc.), all impoundments of waters otherwise defined as "Waters of the U. S.", tributaries of waters otherwise defined as "Waters of the U. S.", the territorial seas, and wetlands adjacent to "Waters of the U.S." (33 CFR, Part 328, Section 328.3).

Areas not considered to be jurisdictional waters include non-tidal drainage and irrigation ditches excavated on dry land, artificially-irrigated areas, artificial lakes or ponds used for

irrigation or stock watering, small artificial water bodies such as swimming pools, and water-filled depressions (33 CFR, Part 328).

Construction activities within jurisdictional waters are regulated by the ACOE. The placement of fill material into such waters must be in compliance with permit requirements of the ACOE. No ACOE permit will be effective in the absence of state water quality certification pursuant to Section 401 of the Clean Water Act. The State Water Resources Control Board is the state agency charged with implementing water quality certification in California.

Identification of Jurisdictional Wetlands (Special Aquatic Sites)

Surveys were conducted within the project boundaries for areas which met the technical criteria of jurisdictional wetlands. The vegetation, soils, and hydrology of the site were examined following the guidelines outlined in the "Routine Determination Method" in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987). ACOE data forms are provided in Appendix C.

The property was examined for topographic features, drainages, alterations to site hydrology and areas of significant recent disturbance by hiking the entire site. A determination was then made as to whether normal environmental conditions were present at the time of the field surveys. Data were used to document which portions of the site were wetlands. Information obtained in the field was drawn onto a general plan sheet (Biggs Cardosa Associates, Inc.) with a scale of 1-inch : 10-feet (approximate). This sheet provided limited topographic information and detail and consequently the location and extent of potential jurisdictional wetlands is approximate.

Vegetation. Plants observed at each of the sample sites were identified to species using standard floras appropriate for central California, wherever necessary. Such floras included *A California Flora and Supplement* (Munz and Keck 1973), *Manual of the Grasses of the United States* (Hitchcock 1971), and *Weeds of California* (Robbins, et al. 1970). The wetland indicator status of each species was obtained from the 1987 Wetland Plant List, California (Reed 1988). The names of plants were generally not taken from *The Jepson Manual* (Hickman 1993), as these names are not totally consistent with scientific names used in the *1988 Wetland Plant List, California* (Reed 1988) and the *National List of Scientific Plant Names* (Smithsonian Inst. 1982). A list of species for each observation area was then compiled and an assessment of the dominant species made (Appendix A). It was then determined which of the observation areas supported wetland vegetation.

Wetland indicator species are so designated according to their frequency of occurrence in wetlands. For instance, a species with a presumed frequency of occurrence of 67% to 99% in wetlands is designated a facultative wetland indicator species. The wetland indicator groups, indicator symbol and the frequency of occurrence of species within them in wetlands are as follows:

Table 1. Plant Wetland Indicator Status Categories. *

INDICATOR CATEGORY	SYMBOL	FREQUENCY OF OCCURRENCE
OBLIGATE	OBL	greater than 99%
FACULTATIVE WETLAND	FACW	67 - 99%
FACULTATIVE	FAC	34 - 66%
FACULTATIVE UPLAND	FACU	1 - 33%
UPLAND	UPL	less than 1%

* Based upon information contained in the Corps of Engineers Wetland Delineation Manual (Environmental Laboratory 1987).

Obligate and facultative wetland indicator species are hydrophytes that occur "in areas where the frequency and duration of inundation or soil saturation produce permanently or periodically saturated soils of sufficient duration to exert a controlling influence on the plant species present" (Environmental Laboratory 1987). Facultative indicator species may be considered wetland indicator species when found growing in hydric soils that experience periodic saturation. A complete list of the vascular plants of the project site, and their current indicator status has been provided in Appendix A.

Soils. Where possible, the top 22 inches of the soil profile was examined for hydric characteristics. Such characteristics include the presence of organic soils (Histisols), histic epipedons, aquic or peraquic moisture regime, presence of soil on hydric soil list, mottling indicated by the presence of gleyed or bright spots of colors (in the former case, blue grays; in the latter case, orange red, or red brown) within the soil horizons observed. Mottling of soils usually indicates poor aeration and lack of good drainage. Munsell Soil Notations (Munsell Soil Color Charts, Kollmorgen Instr. Corp. 1990) were recorded for the soil matrix for each soil sample. The last digit of the Munsell Soil Notation refers to the chroma of the sample. This notation consists of numbers beginning with 0 for neutral grays and increasing at equal intervals to a maximum of about 20. Chroma values of the soil matrix which are one (1) or less, or of two (2) or less when mottling is present, are typical of soils which have developed under anaerobic conditions.

In sandy soils, such as alluvial deposits in the bottom of drainage channels, hydric soil indicators include high organic matter content in the surface horizon and streaking of subsurface horizons by organic matter. All soil colors indicated in this report were taken under clear, sunny skies using moistened soil samples.

The *Soils of Monterey County, California* (SCS 1978) was consulted in order to determine which soil types have been mapped on the project site. Descriptions of soil mapping units and the list of hydric soils in Monterey County are included in Appendix D.

Hydrology. Each of the sample sites was examined for positive field indicators of wetland hydrology. Such indicators might include visual observation of inundation and/or soil saturation, water marks, drift lines, water-borne sediment deposits, water-stained leaves, and drainage patterns within wetlands.

Identification of Tributary Waters

Tributary waters are under the regulatory jurisdiction of the ACOE and extend to the ordinary high water (OHW) mark on opposing channel banks. The OHW mark is typically indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in character of soil, destruction of vegetation, exposed roots on the bank, deposition of leaf litter and other debris materials or lower limit of moss growth on channel banks.

Information obtained in the field was drawn directly onto a general plan sheet (Biggs Cardosa Associates, Inc.) with a 1-inch : 10-feet scale (approximate). This sheet provided limited topographic information and detail and consequently the location and extent of potential tributary waters is approximate.

CALIFORNIA DEPARTMENT OF FISH AND GAME CODE SECTIONS 1601-1603

Activities that result in the diversion or obstruction of the natural flow of a stream, or substantially change its bed, channel or bank, or utilize any materials (including vegetation) from the streambed require that the project applicant enter into a Streambed Alteration Agreement with the California Department of Fish and Game (DFG), under Sections 1601-1603 of the State Fish and Game Code. The DFG potentially extends the definition of stream to include "intermittent and ephemeral streams, rivers, creeks, dry washes, sloughs, blue-line streams (U.S. Geological Service), and watercourses with subsurface flows. Canals, aqueducts, irrigation ditches, and other means of water conveyance can also be considered streams if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife" (California Department of Fish and Game 1994).

Information obtained in the field was drawn directly onto a general plan sheet (Biggs Cardosa Associates, Inc.) with a 1-inch : 10-feet scale (approximate). This sheet provided limited topographic information and detail and consequently the location and extent of DFG jurisdiction is approximate.

ASSESSMENT OF RIPARIAN IMPACTS

All significant vegetation impacts were assessed during the biological investigation. For the purposes of determining appropriate mitigation ratios, the vegetation to be removed was categorized by habitat quality. The habitat quality categories were based on observed vegetation characteristics that correspond to fish and wildlife habitat values, including the presence or absence and the density of the overstory vegetation, the

presence or absence of native plant species, and the complexity of vegetation structure (i.e. presence of tree, shrub and herbaceous layers).

SPECIAL-STATUS PLANT AND WILDLIFE SURVEYS

Information concerning threatened, endangered or other special-status species that may occur in the area was obtained from the California Department of Fish and Game's (DFG) Natural Diversity Data Base (CNDDDB 1997) and the California Native Plant Society's *Inventory of Rare and Endangered Plants of California* (1994).

Utilizing California Natural Diversity Data Base reports (CNDDDB 1997), a search of published accounts of the location of these species was conducted for the Slack Canyon 7.5" U. S. Geological Survey (USGS) Topographical Quadrangle Map in which the project site occurs. The search was extended to the eight surrounding quadrangles including Priest Valley, Sherman Peak, Smith Mountain, Stockdale Mountain, Valleton, Wunpost, Pancho Rico Valley, and Monarch Peak. The results of this database search are provided in Appendix E.

Surveys were conducted for special-status plant species within the APE. Particular attention was given to the occurrence of various plant communities of special concern (e.g. sycamore alluvial woodland) and known associate species of these habitats.

Several special-status wildlife species are also known to occur in appropriate habitat in the region. Surveys were conducted in the field to search for special-status animals and their habitat within the project area.

Special Status Species Regulations Overview

Federal and state endangered species legislation gives several plant and animal species known to occur in the vicinity of the project site special status. In addition, state resource agencies and professional organizations, whose lists are recognized by agencies when reviewing environmental documents, have identified as sensitive some species occurring in the vicinity of the project site. Such species are referred to collectively as "species of special status."

Provisions of the federal Endangered Species Act (FESA) protect federally-listed threatened and endangered species and their habitats from unlawful take. "Take" under FESA includes activities such as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any of the specifically enumerated conduct." The U.S. Fish and Wildlife Service's (FWS) regulations define harm to include some types of "significant habitat modification or degradation." The U.S. Supreme Court ruled on June 29, 1995, that "harm" may include habitat modification "...where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering." Activities that may result in "take" of individuals are regulated by the FWS. The FWS produced an updated list of candidate species September 19, 1997 (FWS 1997; 50 CFR Part 17). The USFWS

discontinued the designation of Category 2 and Category 3 species in 1996 (FWS 1996). Candidate species are now species regarded by FWS as candidates for addition to the "List of Endangered and Threatened Wildlife and Plants." Candidate species are not afforded any legal protection under FESA. However, candidate species typically receive special attention from federal and state agencies during the environmental review process.

Provisions of California's Endangered Species Act (CESA) protect state-listed threatened and endangered species. The DFG regulates activities that may result in "take" of individuals (i.e., "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill"). Habitat degradation or modification is not expressly included in the definition of "take" under the California Fish and Game Code. The DFG, however, has interpreted "take" to include the "killing of a member of a species which is the proximate result of habitat modification ..."

The DFG has also produced three lists (amphibians and reptiles, birds, and mammals) of "species of special concern" that serve as "watch lists." Species on these lists either are of limited distribution or the extent of their habitats has been reduced substantially, such that threat to their populations may be imminent. Thus, their populations should be monitored. They may receive special attention during environmental review, but do not have statutory protection.

Vascular plants listed as rare or endangered by the California Native Plant Society (Skinner and Pavlik 1994), but which have no designated status under state endangered species legislation, are defined as follows:

- List 1B. Plants rare, threatened, or endangered in California and elsewhere.
- List 2. Plants rare, threatened, or endangered in California, but more numerous elsewhere.
- List 3. Plants about which we need more information - A review list.
- List 4. Plants of limited distribution - A watch list.

IV. ENVIRONMENTAL SETTING

The Peachtree Road Bridge over Pancho Rico Creek (County No. 412) is located east of San Ardo in Monterey County (Figure 1). The approximately 0.60 acre project site is situated within the northern portion of Slack Canyon. The project site is located on the U. S. Geological Survey Slack Canyon Quadrangle Map (Township 21 South; Range 12 East; Section 22); (Figure 2).

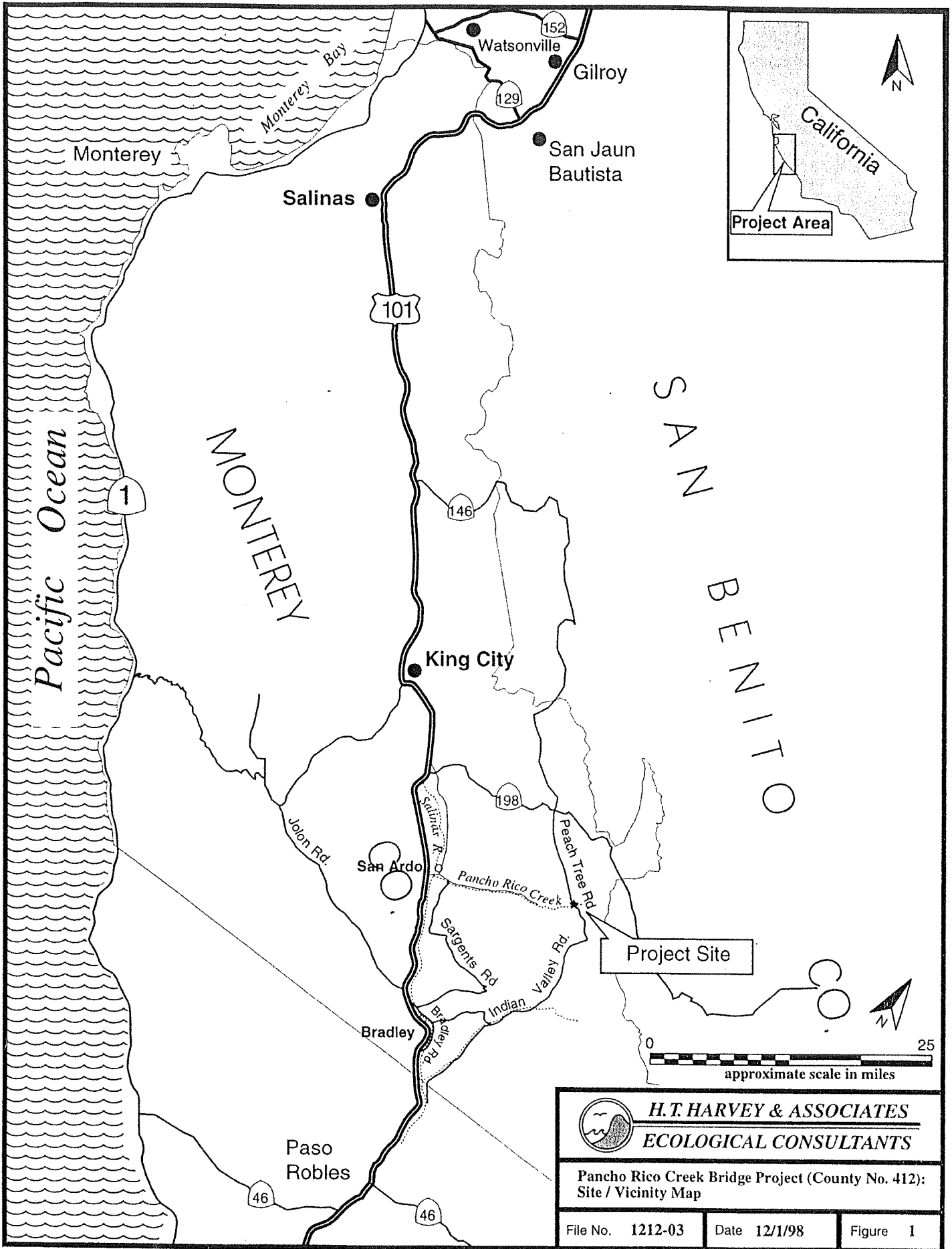
The annual rainfall amount for the eastern portion of Monterey County averages between 10-20 inches depending upon elevation. Mean annual temperatures for the area average approximately 55° F (Soil Conservation Service; SCS 1978). The elevation of the bridge occurs at approximately 1,760 feet National Geodetic Vertical Datum (NGVD).


The project site is underlain by the Climara clay, 15-20% slopes (Figure 3). The Climara series consists of well drained soils on uplands. These soils formed in material underlain by serpentine (SCS 1978).

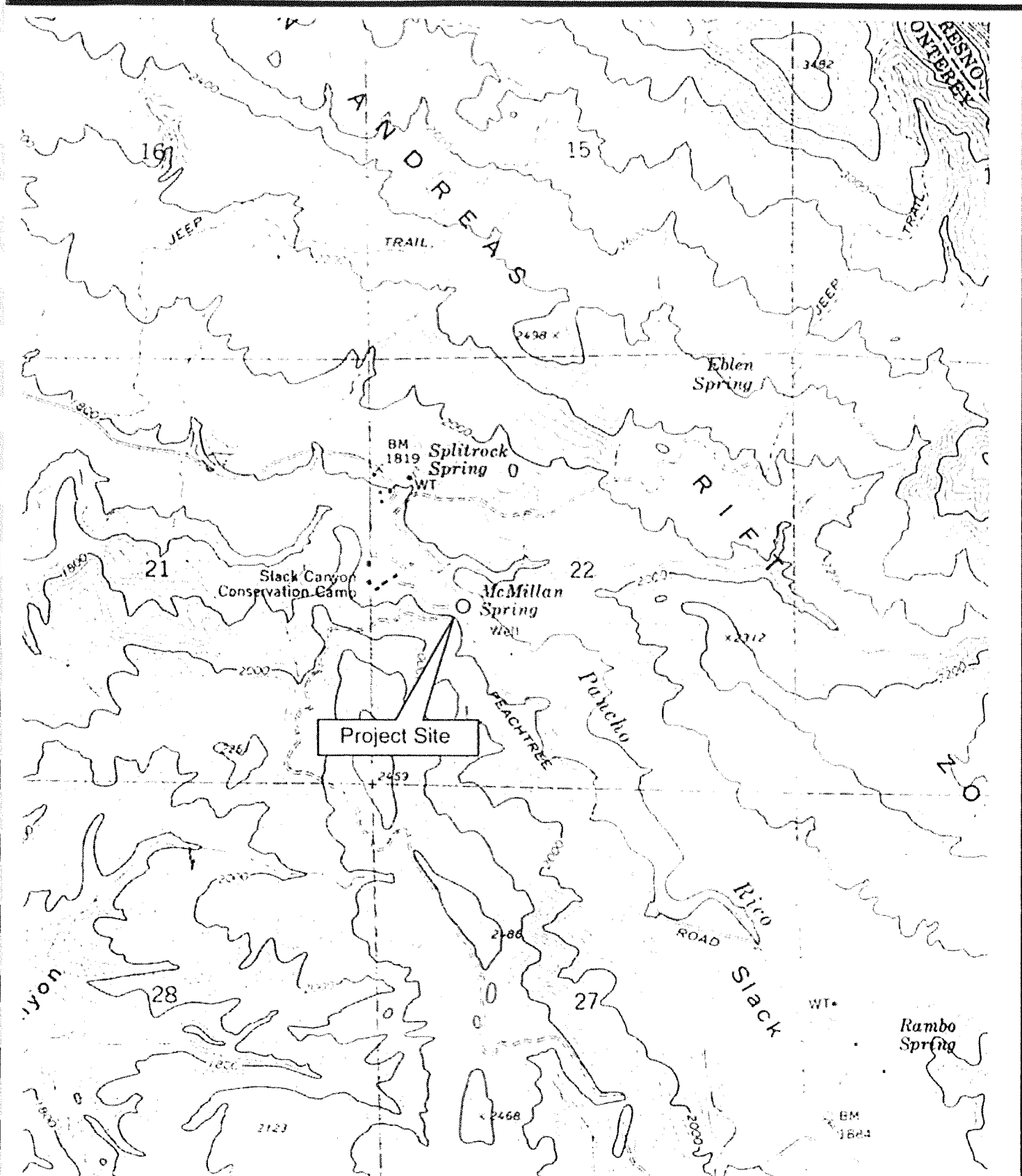
The National Wetland Inventory (NWI) classification system by the U. S. Fish and Wildlife Service (FWS) describes this portion of Pancho Rico Creek as riverine, intermittent streambed, temporarily flooded (Figure 4). A spring area defined as palustrine, scrub-shrub, saturated is also identified; this area is supposedly located south of the existing bridge, along the upper creek banks east of Peachtree Road. However, no such seep area within the APE was found during site surveys.

BIOTIC HABITATS

Six biotic habitats were identified on the project site including: aquatic, sandbar, ruderal, mulefat scrub, foothill pine-oak woodland, and non-native annual grassland (Figure 5). Where appropriate, the communities have been named according to Holland's system of classification (1986) and Sawyer and Keeler-Wolf (1995). Habitats were mapped directly onto a general plan sheet with a scale of 1-inch : 10-feet (approximate). Table 2 summarizes the relative size of these habitats. Please note that the entire project area of 0.60 acre includes approximately 0.09 acre of existing road that was not included in the habitat analysis below. In addition, the bridge structure is discussed below in the context of providing wildlife habitat, however, since its' area overlaps that of other habitat types, it is not included in Table 2. Lists of the vascular plant species observed and vertebrate species either expected to occur or observed on the project site during field surveys have been provided in Appendices A and B, respectively.



 H.T. HARVEY & ASSOCIATES ECOLOGICAL CONSULTANTS		
Pancho Rico Creek Bridge Project (County No. 412): Site / Vicinity Map		
File No. 1212-03	Date 12/1/98	Figure 1



Project Site



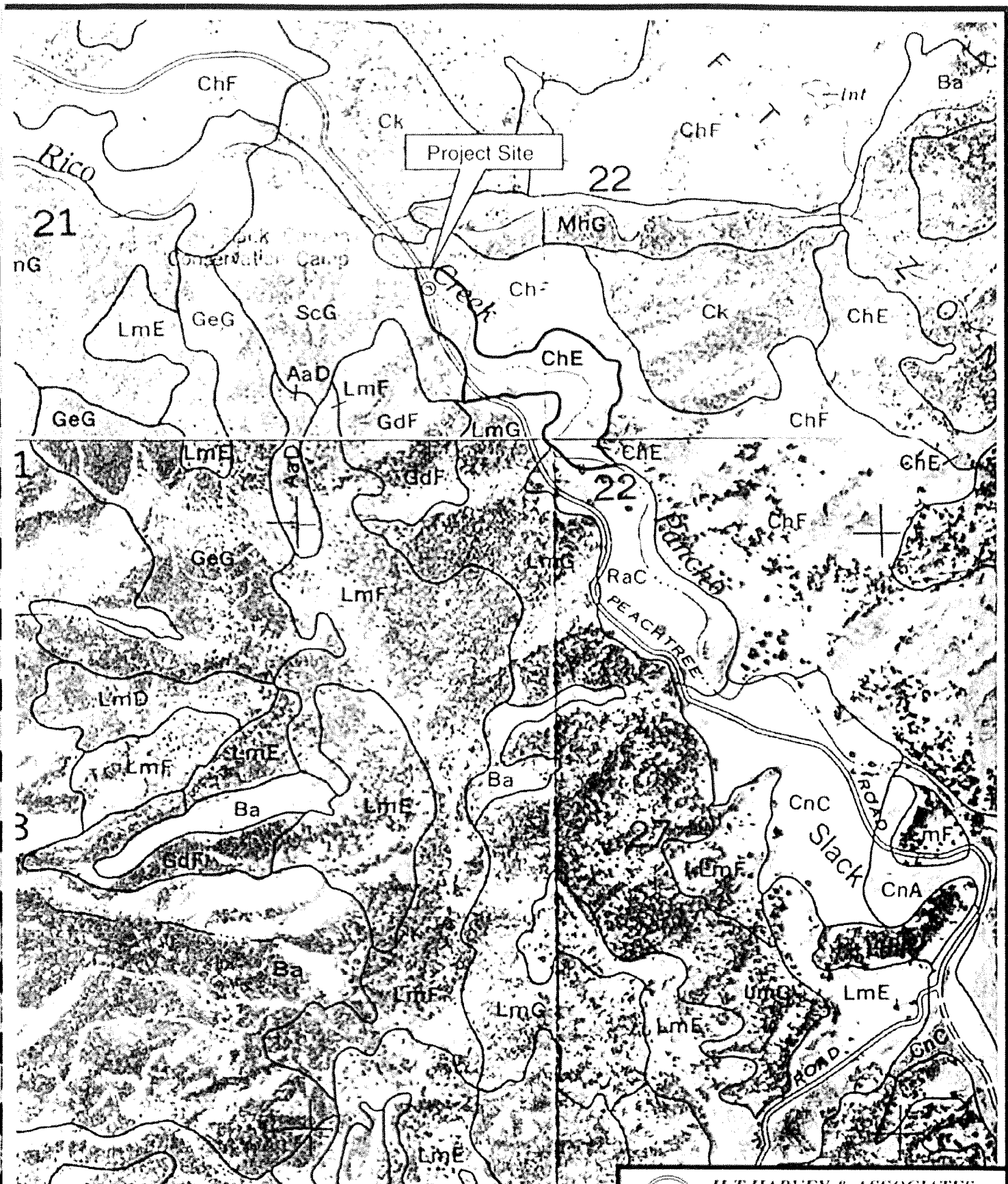
1,500 0 1,500
approximate scale in feet



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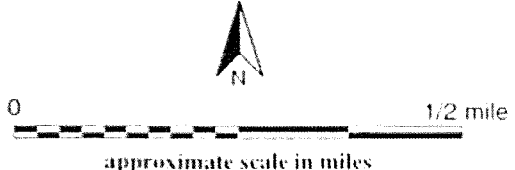
Pancho Rico Creek Bridge Project (County No. 412):
U.S.G.S. Quadrangle (Slack Canyon Quadrangle)


File No. 1212-03	Date 2/24/99	Figure 2
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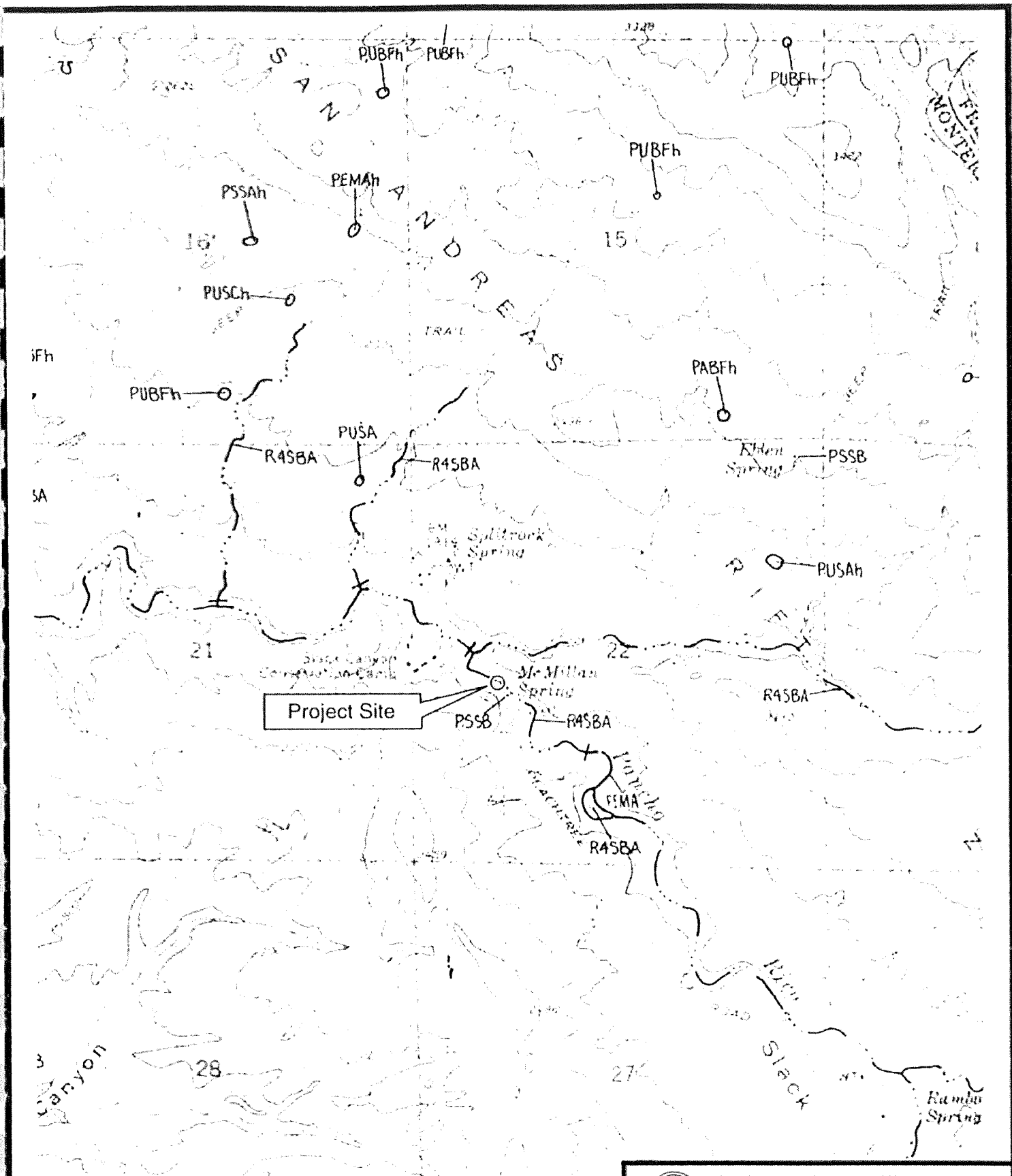


LEGEND

ChE Climara Clay
15-30% slopes

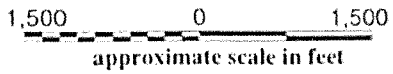


 H. HARVEY & ASSOCIATES ECOLOGICAL CONSULTANTS		
Pancho Rico Creek Bridge Project (County No. 412): Soils Map		
File No.	1212-03	Date
		2/24/99
		Figure
		3



LEGEND

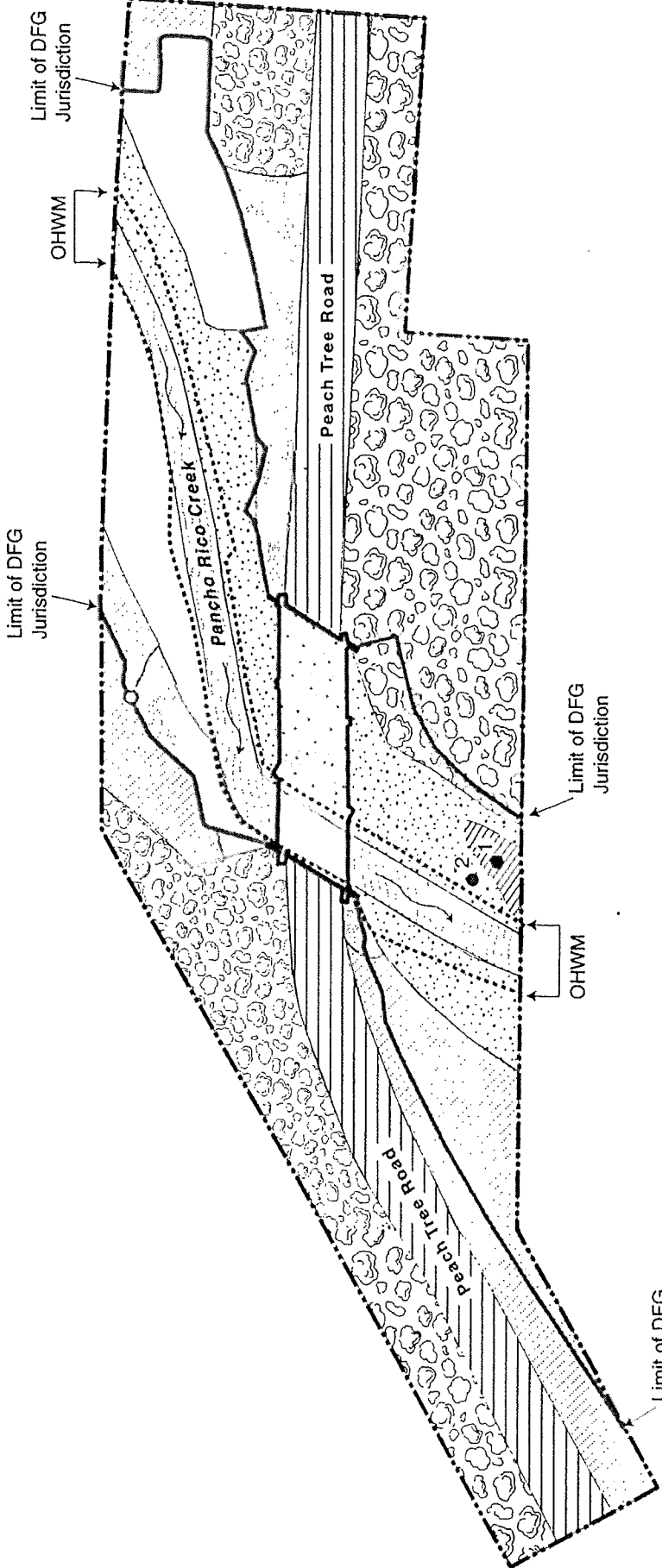
- PSSOB Palustrine, Scrub-shrub, Saturated
- R4SBA Riverine, Intermittent streambed, Temporarily Flooded



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ECOLOGICAL CONSULTANTS

Pancho Rico Creek Bridge Project (County No. 412);
 N.W.I. Map (Slack Canyon Quadrangle)

File No. 1212-03	Date 2/24/99	Figure 4
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LEGEND

--- Area of Potential Effects (APE)	— Existing Bridge
[Pattern] Aquatic	— Limit of DFG Jurisdiction
[Pattern] Sandbar	○ Location of Riparian Tree
[Pattern] Ruderal	Potential Waters of the U.S.
[Pattern] Mulefat Scrub	[Pattern] Wetland
[Pattern] Foothill Pine-Oak Woodland	● 1 Sample Point
[Pattern] Non-native Annual Grassland Tributary Water (OHWM)
[Pattern] Existing Hardscape	



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Pancho Rico Creek Bridge Project (County No. 412):
 Habitat Map

File No. 1212-03 Date 2/24/99 Figure 5

Table 2. Acreage summary of Habitats Found at the Bridge Number 412 Project Site, Monterey County, California.

Habitat Type	Acres	Percent of Total
Aquatic	0.04	7.8
Sandbar	0.09	17.6
Ruderal	0.03	5.9
Mulefat Scrub	0.05	9.8
Foothill-pine Woodland	0.22	43.1
Non-native Annual Grassland	0.08	15.7
TOTAL=	0.51	100.0

Aquatic

Vegetation. Aquatic habitat occurs within the low-flow channel of Pancho Rico Creek (Figure 5). Approximately 0.04 acre of aquatic habitat exists within the project boundaries (Table 2). This deep-water habitat does not support either emergent or terrestrial vegetation.

Wildlife. The low-flow channel of Pancho Rico Creek provides habitat for various aquatic insects, which provide food for a number of vertebrates. Although the channel may become dry during the late summer or during fall months, perennial pools exist in the creek and adjacent to the low flow channel ensuring the survivability of many aquatic vertebrates. Larvae of both Pacific treefrogs (*Hyla regilla*) and western toads (*Bufo boreas*) were found in pools on site and in four-foot deep pools about 1/3 mile downstream. Pools on site were up to about 18 inches deep providing potential foraging habitat for California red-legged frogs (*Rana aurora draytonia*) and yellow-legged frogs (*Rana boylei*) although there are no records for either species for this creek. Predators such as garter snakes (*Thamnophis sirtalis*, and *T. couchi*) may forage on the larvae or adults of these species. Green Herons (*Butorides striatus*) also forage at the stream's edge and bullfrogs (*Rana catesbiana*) may also occur, although there are also no records for this introduced frog for this reach.

Sandbar

Vegetation. Approximately 0.09 acre of sandbar habitat occurs along both banks of the creek (Figure 5). These gravely sandbars support a sparse cover of herbaceous species that include sourclover (*Melilotus indica*) and sedge (*Carex* sp.).

Wildlife. Although sparsely covered with vegetation, the sandbars on site provide a unique habitat for wildlife species associated with the aquatic habitat. Small ponds that could occur within this habitat form refuges for breeding Pacific treefrogs and western toads. The tadpoles of these species, along with small fishes, are preyed upon by garter

snakes. Also foraging on the edge of this habitat are herons including the Great Blue Heron (*Ardea herodias*) and mammals such as raccoon (*Procyon lotor*) and gray fox (*Urocyon cinereoargenteus*). Ground feeders such as the Brewer's Blackbirds (*Euphagus cyanocephalus*), forage on these sandbars and shorebirds such Spotted Sandpipers (*Actitis macularia*) are expected along the water's edge.

Ruderal

Vegetation. Ruderal habitat occurs in eroded areas associated with the bridge abutments and along Peachtree Road (Figure 5). Approximately 0.03 acre of ruderal habitat occurs on site (Table 2). Common species include ripgut brome (*Bromus diandrus*), sourlover, soft chess (*Bromus hordeaceus*), wild oats (*Avena fatua*), and cheatgrass (*Bromus tectorum*). A remnant native component includes a few California sagebrush shrubs (*Artemisia californica*) and four-spot (*Clarkia purpurea* ssp. *quadrivulnera*).

Wildlife. Although disturbed, several wildlife make use of this habitat, particularly where the adjacent mulefat scrub provides foraging habitat and the ruderal habitat provides additional cover. Western fence lizards (*Sceloporus occidentalis*) are common at the edge of this habitat and gopher snakes (*Pituophis melanoleucus*) and western rattlesnakes (*Crotalus viridis*) forage on several of the rodent species present including Botta's pocket gopher (*Thomomys bottae*) and deer mice (*Peromyscus maniculatus*). A Black Phoebe (*Sayornis nigricans*) was observed on a fence line above this habitat and House Finch, (*Carpodacus mexicanus*), and Lesser Goldfinch (*Carduelis psaltria*) eat seeds here. Gray fox, bobcat (*Lynx rufous*) and Red-tailed Hawks (*Buteo jamaicensis*) prey on these and other smaller vertebrates.

Mulefat Scrub

Vegetation. Mule fat scrub occurs upstream from the existing bridge, along both banks of the channel (Figure 5). Approximately 0.05 acre of this riparian habitat occurs on site (Table 2). Overall cover of the mule fat (*Baccharis salicifolia*) shrubs is relatively open, allowing for the establishment of herbaceous species such as common cocklebur (*Xanthium strumarium*) and sedges.

Wildlife. This habitat provides foraging and breeding habitat for a variety of wildlife. Pacific tree frogs were observed in this habitat among the mule fat bordering the wetter sandbar habitat. Garter snakes (*Thamnophis* sp.) also occur at this edge, and western fence lizards were observed among dry leaves under shrubs. Birds observed foraging here include Song Sparrows (*Melospiza melodia*), and White crowned and Golden Crowned Sparrows (*Zonotrichia leucophrys* and *Z. atricapilla*).

Foothill Pine-Oak Woodland

Vegetation. Foothill pine-oak woodland habitat occurs along the canyon slopes above the creek channel (Figure 5). Approximately 0.22 acre of this habitat occurs on site (Table 2). Several species of oak such as valley oak (*Quercus lobata*), coast live oak

(*Quercus agrifolia*) and interior live oak (*Quercus wislizenii*) occur along with foothill pine (*Pinus sabiniana*). The most dense tree canopy occurs south of the creek, along the relatively steep hillside above Peachtree Road. Woody vegetation in the understory included poison oak (*Toxicodendron diversilobum*) and toyon (*Heteromeles arbutifolia*). Herbaceous species included bluegrass (*Poa* sp.), clarkia (*Clarkia unguiculata*), miner's lettuce (*Claytonia perfoliata* ssp. *perfoliata*), Italian thistle (*Carduus pycnocephalus*), and chick lupine (*Lupinus microcarpus*). The hillslope north of the channel supports a more open canopy with a significant grassland component. Herbaceous species observed in these more open areas included needlegrass (*Nassella* sp.), wild oats, slender oats (*Avena barbata*), riggut brome, prickly lettuce (*Lactuca serriola*), rancher's fireweed (*Amsinckia menziesii*), clarkia, poverty weed (*Iva axillaris* ssp. *robustior*), and common sowthistle (*Sonchus oleraceus*). A dense stand of California coffeeberry (*Rhamnus californica*) is located along an upstream upper creek terrace, south of the channel (Figure 5).

Wildlife. This habitat is drier than the coast live oak woodland that is found closer to the coast; however, salamanders such as Ensatina (*Ensatina eschscholtzii*) and California slender salamander (*Batrachoseps attenuatus*) are still expected under logs and other debris in this habitat. A Gilbert's skink (*Eumeces gilberti*) was observed under loose leaves under the canopy of a live oak and western fence lizard and alligator lizard are also expected here. Gopher snakes and smaller snakes such as the ringneck snake (*Diadophis punctatus*) may also occur here. Oak Titmouse (*Parus inornatus*), Chestnut Backed Chickadee (*Parus rufescens*), and Bushtits (*Psaltriparus minimus*) were observed gleaning insects off the foliage of on-site oaks. Mature trees also attract several woodpeckers including Acorn Woodpecker (*Melanerpes formicivorus*) and Northern Flicker (*Colaptes auratus*), both of which were also observed in this habitat on site. California mouse (*Peromyscus californicus*) may nest at the bases of trees among roots, and are preyed upon by predators such as the gray fox. This habitat is also important to the black-tailed deer (*Odocoileus hemionus*) that forage on grasses and browse lower branches of oaks.

Non-native Annual Grassland

Vegetation. Non-native annual grassland habitat on site occurs along the upper creek terraces below the foothill pine-oak woodland habitat (Figure 5). This grassland community is approximately 0.08 acre (Table 2). Common species observed included wild oats, yellow star-thistle (*Centaurea solstitialis*), sourclover, soft brome, Mediterranean barley (*Hordeum geniculatum*), prickly lettuce (*Lactuca serriola*), and riggut brome.

Wildlife. Although relatively small, these areas are influenced by the non-native grassland habitat adjacent to the site, along the flat portions of the canyon. The non-native annual grassland habitat on-site is highly disturbed. However, some terrestrial reptiles and mammals occur here in upland soils, away from the periodic flooding of lower areas that are closer to the creek channel. Many of the vertebrates found in the ruderal habitat are also found in the non-native grassland on site. Western fence lizards are common at the edge of this habitat and gopher snakes, racers (*Coluber constrictor*)

and western rattlesnakes forage on several of the rodent species present including Bottae's pocket gopher and California meadow mouse (*Microtus californicus*). Many of the birds and predatory species found here are primarily the same as those from the adjacent ruderal and mule fat habitats.

Existing Bridge Structure

Vegetation. The asphalt and concrete of the bridge did not provide suitable substrate for vegetation. The bridge is approximately 60 feet long and 16 feet wide.

Wildlife. Bridges may form man-made-habitat for wildlife that mimics cliffs or rocky crevices found in more natural situations. This bridge is constructed out of steel and does not hold heat like concrete bridges, therefore, it does not present suitable roosting habitat for bats. Swallow nests were not found on this bridge. No other types of wildlife roosts or nests were observed on this bridge during the reconnaissance-level surveys.

V. IN-DEPTH STUDIES FOR SPECIAL LAWS

JURISDICTIONAL WATERS DELINEATION TECHNICAL ASSESSMENT

Potential jurisdictional waters subject to provisions of Section 404 of the Clean Water Act were identified within the project site (Figure 5). Potential jurisdictional waters on site included seasonal wetlands and tributary waters. The remainder of the site did not meet the regulatory definition of a jurisdictional water under Section 404 of the Clean Water Act.

AREAS MEETING THE REGULATORY DEFINITION OF JURISDICTIONAL WATERS

Identification of Potential Jurisdictional Wetlands

A potential jurisdictional wetland is located along the upper reach of the southern, downstream sandbar (Figure 5). This area totals approximately 131 ft² (0.003 acre) and occurs within a relatively shallow depression of sand and gravel deposits. This potential wetland is located within a portion of the channel that receives periodic scouring and deposition from heavy winter stream flows. Therefore, this potential jurisdictional wetland could be destroyed during such flows.

Field characteristics of hydrophytic vegetation, hydric soils and wetland hydrology were obtained at Sample Point 1 (Appendix C). Vegetative cover was limited to a sparse stand of sedge (*Carex* sp.). Previous surveys during the summer months of 1998 documented this area as being a relatively dense stand of sedge. Hydric soil characteristics included organic matter streaks. Hydrologic field indicators observed included algal mats, sediment deposits, and drainage patterns.

Identification of Tributary Waters

Tributary waters, as defined by the ordinary high water (OHW) mark on opposing channel banks of Pancho Rico Creek, totaled approximately 0.06 acre within the project boundaries (Figure 5). The average width of the OHW mark within the project area was approximately 12 feet. Along both banks, the OHW mark was marked by an abrupt change in elevation (e.g. shelving) and a lack of vegetation.

AREAS NOT MEETING THE REGULATORY DEFINITION OF JURISDICTIONAL WATERS

The remaining area of the project site (0.54-acre) did not meet the regulatory definition of jurisdictional waters. These upland areas included the majority of sandbar habitat, ruderal, non-native annual grassland, mulefat scrub, foothill pine-oak woodland and the existing road.

Upland areas lacked field indicators of hydrophytic vegetation, hydric soils and wetland hydrology. An upland site within the sandbar habitat was sampled at Sample Point 2 (Appendix C). This sample point was approximately 6 feet north of Sample Point 1 and was located on an elevated portion of the sandbar. Vegetation was absent. The gravely sand at this location did not display any hydric soil indicators. Hydrologic indicators observed included algal mats and sediment deposits.

CALIFORNIA DEPARTMENT OF FISH AND GAME CODE SECTIONS 1601-1603

The bed and bank of Pancho Rico Creek is subject to the regulatory jurisdiction of the DFG under Sections 1601-1603. The removal of vegetation, placement of fill, or other impacts from construction within the river will require a Streambed Alteration Agreement from the DFG.

The majority of DFG jurisdiction within the project site is defined by the top of bank (Figure 5). Total DFG jurisdiction on site is approximately 0.24 acres. Approximately 2,826 ft² (0.06 acre) of riparian canopy from a red willow (561 ft²) and mulefat scrub (2,265 ft²) occurs within the APE (Figure 5).

SPECIAL-STATUS SPECIES

Special-Status Plant Surveys

Reconnaissance-level surveys were conducted in November 1997 for habitats capable of supporting special-status plants within the project site. At that time, the APE was not defined and the survey effort included areas that have since been excluded from the project area. Follow-up surveys for special-status plant species were conducted in June and July 1998. At that time, the APE was defined by a general plan figure dated January 28, 1998 (Biggs Cardosa Associates, Inc.). The entire area within the APE was hiked in order to observe all habitats on site. Based upon current site plans dated December 2, 1998, the APE was expanded. Consequently, the summer 1998 surveys did not include this expanded area. However, the spring 2000 surveys did include this latest, expanded APE.

The special-status plant species that occur in the vicinity in habitats similar to those found on the project site are described below. The legal status and likelihood of occurrence of these species on site are given in Table 3. Expanded descriptions are included of only those species that listed as either Federally or State endangered or threatened, Federal or State proposed endangered or threatened, Federal or State Candidate species, or where found on site (regardless of status).

Several plant species that have been given special status under state and/or federal species legislation are known to occur in the surrounding regions of the project site. However, these species occur in habitats which are not currently present on site such as:

Table 3. Special status species, their status and potential occurrence at the Bridge Number 412 Project Site, Monterey County.

NAME	*STATUS	HABITAT	POTENTIAL FOR OCCURRENCE ON SITE
Federal or State Endangered or Threatened Species			
Santa Lucia mint (<i>Pogogyne clareana</i>)	SE, CNPS 1B	Riparian woodland, along intermittent creeks; 980 - 1300 ft.	Marginal habitat on site; species not observed during blooming period and is considered to be absent from the site.
Longhorn Fairy Shrimp (<i>Branchinecta longiantenna</i>)	FE	Vernal pools.	No habitat on site and presumed absent. Nearest record to the west on Fort Hunter Liggett.
Vernal Pool Tadpole Shrimp (<i>Lepidurus packardii</i>)	FE	Vernal pools and swales containing clear to highly turbid water.	No habitat on site, no recent records, and presumed absent.
California Red-legged Frog (<i>Rana aurora draytoni</i>)	FT, SP, CSSC	Streams, freshwater pools and ponds with overhanging vegetation.	Potential foraging habitat but no breeding habitat on site. Not observed but may occur on site.
San Joaquin Antelope Ground Squirrel (<i>Ammospermophilus leucurus</i>)	ST	Annual grassland dominated by Atriplex or other scattered shrubs on sandy soils. Often uses kangaroo rat burrows.	Marginal habitat and out of range. Presumed absent.
San Joaquin Kit Fox (<i>Vulpes macrotis munica</i>)	FE, ST	Desert alkali scrub and annual grasslands, may forage in adjacent agricultural habitats.	Marginal habitat on site and no records exist for the area. Presumed absent.
Bald Eagle (<i>Haliaeetus leucocephalus</i>)	SP, SE, FE	Winter resident on Lake San Antonio near bridge #450, to the south and a rare migrant elsewhere in Salinas Valley.	Rare winter migrant
Least Bell's Vireo (<i>Vireo bellii pusillus</i>)	SE, FE	Formally breeding on Salinas River, but there are no recent records.	Marginal habitat exists several hundred feet upstream from site but there are no records, for this area. Presumed absent.
Bank Swallow (<i>Riparian riparia</i>)	ST	Colonies in sandy banks along riparian habitat	Marginal habitat and no nesting records in the area. Presumed absent.
Federal or State Proposed Endangered or Threatened Species			
Purple amole (<i>Chlorogalum purpureum</i> var. <i>purpureum</i>)	FPT, CNPS 1B	Cismontane woodland, valley and foothill grassland; +/-980 ft.	Potentially suitable habitat on site; species not observed during blooming period. Considered absent.
Federal or State Candidate Species			
Arroyo Toad (<i>Bufo microscaphus californicus</i>)	FPE, CSSC	Breeding occurs only in overflow pools adjacent to the inflow channel of 3rd to greater-order streams that are free of predatory fishes, and other isolated pools with shallow gravel bases.	Marginal habitat, and well outside of range. Presumed absent.
California Tiger Salamander (<i>Ambystoma californiense</i>)	FC, CSSC	Vernal or temporary pools in annual grasslands, or open stages of woodlands.	No habitat on site, no recent records, and presumed absent.
California Species of Special Concern			
Foothill Yellow-legged Frog (<i>Rana boylei</i>)	CSSC	Rocky streams in a variety of habitats. Found in coast ranges.	Potential foraging habitat but only marginal breeding habitat on site. Not observed but may occur on site.
Western Spadefoot Toad (<i>Scaphiopus hammondi</i>)	CSSC	Grasslands with temporary pools.	No habitat on site. Presumed absent.
Western Pond Turtle (<i>Clemmys marmorata</i>)	CSSC	Permanent or nearly permanent water in a variety of habitats.	Potential habitat on site. May forage or move through site.
California Legless Lizard	CSSC	Sandy or loose loamy soils under sycamores, cottonwoods, or	Marginal habitat, and not observed on site during surveys. May

NAME	*STATUS	HABITAT	POTENTIAL FOR OCCURRENCE ON SITE
<i>Anniella pulchra</i>		oaks on stream terraces, or under sparse vegetation of chaparral or pine-oak woodland.	occur on site.
Coast Range Newt (<i>Taricha torosa torosa</i>)	CSSC	Breed in ponds, reservoirs, and slow-moving streams.	Marginal habitat, no recent records. Not observed on site during surveys. May occur on site.
California Horned Lizard (<i>Phrynosoma coronatum frontale</i>)	CSSC	Exposed gravelly-sandy substrates usually containing scattered shrubs, clearings in riparian woodlands.	Marginal habitat, but not observed on site during surveys. May occur on site.
San Joaquin Coachwhip (<i>Masticophis flagellum ruddocki</i>)	CSSC	Open dry areas with little or no tree cover.	No habitat, presumed absent.
Two-striped Garter Snake (<i>Thamnophis hammondi</i>)	CSSC	Perennial and intermittent streams having rocky beds bordered by willow thickets or other dense vegetation.	Marginal habitat but out of range, and no recent records. Presumed absent.
Northern Harrier (<i>Circus cyaneus</i>)	CSSC	Forages in open to herbaceous stages of many habitats.	Transient and winter visitor for this part of Monterey County.
Ferruginous Hawk (<i>Buteo regalis</i>)	CSSC	Forages in open valleys and agricultural lands.	Transient and winter visitor.
Sharp-shinned Hawk (<i>Accipiter striatus</i>)	CSSC	Migrant and winter visitor to forested areas.	Transient and winter visitor.
Cooper's Hawk (<i>Accipiter cooperi</i>)	CSSC	Summer resident of riparian corridors and remote canyons. Breeds in riparian woodlands and wooded canyons. Pre-disturbance survey for nests needed for any construction or disturbance during March - July.	Foraging and breeding habitat on site. Likely to occur throughout the year.
Prairie Falcon (<i>Falco mexicanus</i>)	CSSC	Resident in dry open country, additional migrants in winter.	May move through the site but no foraging or breeding habitat on site.
Golden Eagle (<i>Aquila chrysaetos</i>)	CSSC	Breeds in cliffs or in large trees or structures.	Foraging habitat but no nesting habitat on site. Breeding records for the area but not within the influence of the site.
Merlin (<i>Falco columbarius</i>)	CSSC	Uses many habitats in winter and migration.	Rare in winter and migration.
California Horned Lark (<i>Eremophila alpestris actia</i>)	CSSC	Short-grass prairie, annual grasslands, coastal plains, open fields.	Marginal foraging habitat adjacent to the site but no nesting habitat on, or adjacent to, the site.
California Yellow Warbler (<i>Dendroica petechia brewsteri</i>)	CSSC	Breeds in riparian woodland and meadow edges.	Marginal breeding habitat adjacent to, but not on, the site; may move through the site.
Yellow-breasted Chat (<i>Icteria virens</i>)	CSSC	Breeds in extensive riparian woodland habitat.	No habitat, but may be transient
Loggerhead Shrike (<i>Lanius ludovicianus</i>)	CSSC	Resident in dry open grasslands.	Potential foraging and breeding habitat, may occur on site.
Townsend's Big-eared Bat (<i>Corynorhinus townsendii</i>)	CSSC	Roosts in caves and mine tunnels in a variety of habitats. Extremely sensitive to human disturbance. Forages in a variety of habitats.	Potential foraging habitat, but no evidence of any bats roosting on bridge.
California Mastiff Bat (<i>Eumops perotis californicus</i>)	CSSC	Forages over many habitats; requires tall cliffs or buildings for roosting sites.	May forage over site, although no roosting habitat exists on the project site.
Pallid Bat (<i>Antrozous pallidus</i>)	CSSC	Forages over many habitats.	Foraging habitat, but no evidence of any bats roosting on bridge.

State Protected Species or CNPS Species

NAME	*STATUS	HABITAT	POTENTIAL FOR OCCURRENCE ON SITE
Abbott's Bush Mallow (<i>Malacothamnus abboiti</i>)	CNPS 1B	Riparian scrub, among willows near rivers; < 1300 ft.	Potentially suitable habitat on site; species not observed on site during blooming period. Species is presumed to be absent from site.
Carmel Valley Bush Mallow (<i>Malacothamnus palmeri</i> var. <i>involutus</i>)	CNPS 1B	Chaparral, cismontane woodland; within interior valleys; 100 - 2600 ft.	Potentially suitable habitat on site; species not observed on site during blooming period. Species is considered to be absent from site.
Davidson's Bush Mallow (<i>Malacothamnus davidsonii</i>)	CNPS 1B	Chaparral, coastal scrub, riparian woodland; sandy washes and flats; 800 - 2300 ft.	Marginal habitat on site; species not observed on site during blooming period. Species is considered to be absent from site.
Pale-yellow Layia (<i>Layia heterotricha</i>)	CNPS 1B	Cismontane woodland, piñon-juniper woodland, valley and foothill grassland; on alkaline or clay soils; < 5250 ft.	Potentially suitable habitat on site; species not observed on site during blooming period. Species is considered to be absent from site.
Showy Madia (<i>Madia radiata</i>)	CNPS 1B	Grassy slopes in cismontane woodland and valley and foothill grassland; < 2950 ft.	Potentially suitable habitat on site; species not observed on site during blooming period. Species is considered to be absent from site.
Slender Pentachaeta (<i>Pentachaeta exilis</i> ssp. <i>aeolica</i>)	CNPS 1B	Cismontane woodland, valley and foothill grassland; < 2200 ft.	Potentially suitable habitat on site. Species not observed on site during blooming period. Species is considered to be absent from site.
Straight-awned Spineflower (<i>Chorizanthe rectispina</i>)	CNPS 1B	Chaparral, cismontane woodland, coastal scrub; 650 - 2000 ft.	Potentially suitable habitat on site. Species not observed on site during blooming period. Species is considered to be absent from site.
Santa Cruz Mountains Pussypaws (<i>Calyptridium parryi</i> var. <i>hesseae</i>)	CNPS 3	Chaparral, cismontane woodland; 2300 - 3600 ft.	Potentially suitable habitat on site. Species not observed on site during blooming period. Species is considered to be absent from site.
Brewer's Clarkia (<i>Clarkia breweri</i>)	CNPS 4	Chaparral, cismontane woodland, coastal scrub; often on serpentine soils; < 3300 ft.	Potentially suitable habitat on site. Species not observed on site during blooming period. Species is considered to be absent from site.
Gypsum-loving Larkspur (<i>Delphinium gypsophilum</i> ssp. <i>gypsophilum</i>)	CNPS 4	Chenopod scrub, cismontane woodland, valley and foothill grassland; 500 - 3900 ft.	Potentially suitable habitat on site. Species not observed on site during blooming period. Species is considered to be absent from site.
Small-flowered Gypsum-loving Larkspur (<i>Delphinium gypsophilum</i> ssp. <i>parviflorum</i>)	CNPS 4	Cismontane woodland; 650 - 1200 ft.	Potentially suitable habitat on site. Species not observed on site during blooming period. Species is considered to be absent from site.
Jolon Clarkia (<i>Clarkia jolonensis</i>)	CNPS 4	Cismontane woodland; +/- 1600 ft.	Potentially suitable habitat on site. Species not observed on site during blooming period. Species is considered to be absent from site.
Michael's Rein Orchid (<i>Piperia michaelii</i>)	CNPS 4	Coastal bluff scrub, closed-cone coniferous forest, cismontane woodland, lower montane coniferous forest; generally dry sites; < 2300 ft.	Potentially suitable habitat on site. Species not observed on site during blooming period. Species is considered to be absent from site.
One-sided Monkeyflower (<i>Mimulus fremontii</i>)	CNPS 4	Sandy, disturbed areas among shrubs, often along streambanks and benches; 250 - 8200 ft.	Potential habitat on site; species not observed on site during blooming period. Species is considered to be absent from site..
Paso Robles navarretia (<i>Navarretia Jaredii</i>)	CNPS 4	Cismontane woodland, valley and foothill grassland; clay and serpentine soils.	Approximately 75-100 plants found on site during spring 2000 surveys.

NAME	*STATUS	HABITAT	POTENTIAL FOR OCCURRENCE ON SITE
Salinas Valley Goldfields (<i>Lasthenia leptalea</i>)	CNPS 4	Cismontane woodland, valley and foothill grassland; < 1600 ft.	Potentially suitable habitat on site. Species not observed on site during blooming period. Species is considered to be absent from site.
San Benito Poppy (<i>Eschscholzia hypoleucoides</i>)	CNPS 4	Chaparral, cismontane woodland, valley and foothill grassland; on serpentine clays; 1600 - 4900 ft.	Potentially suitable habitat on site. Species not observed on site during blooming period. Species is considered to be absent from site.
San Benito Thorn-mint (<i>Acanthomintha obovata</i> ssp. <i>obovata</i>)	CNPS 4	Chaparral, valley and foothill grassland; heavy clay, alkaline, serpentine soils; < 4900 ft.	Potentially suitable habitat on site. Species not observed on site during blooming period. Species is considered to be absent from site.
Santa Lucia Horkelia (<i>Horkelia yadorii</i>)	CNPS 4	Granitic, sandy soils; meadow edges, seasonal streambeds in chaparral, cismontane woodland; 1200 - 6200 ft.	Poor-quality habitat on site; species not observed during blooming period and is considered to be absent from the site.
Salinas Pocket Mouse (<i>Perognathus inornatus psammophilus</i>)	CSSC	Found only in upper Salinas Valley in fine sandy soils. Forages on Artemisia and Atriplex seeds and remains underground in the winter.	Marginal habitat but no recent records in the area. Presumed absent.
Monterey Dusky-footed Woodrat (<i>Neotoma fuscipes tuctana</i>)	CSSC	Found in hardwood forests and oak riparian habitat	Potential habitat on site but no nests observed. Presumed present.
White-tailed Kite (<i>Elanus leucurus</i>)	SP	Resident of river valleys, riparian woodlands, and adjacent fields. Pre-disturbance survey for nests needed for any construction or disturbance during March - July.	Marginal foraging and breeding habitat on site. May occur on site.
Ringtail (<i>Bassariscus astutus</i>)	SP	Prefers riparian and heavily wooded habitats near water.	Suitable habitat on the site, presumed present.

SPECIAL STATUS SPECIES CODE DESIGNATIONS

- FE = Federally listed Endangered
 FT = Federally listed Threatened
 FC = Federal Candidate. Sufficient biological information to support a proposal to list the species as Endangered or Threatened
 SE = State listed Endangered
 ST = State listed Threatened
 CSSC = California Species of Special Concern
 SP = State Protected Species
 CNPS 1A = Plants considered by CNPS to be extinct
 CNPS 1B = Plants considered by CNPS to be rare, threatened, or endangered in California, and elsewhere
 CNPS 4 = Plants considered by CNPS to be of limited distribution or infrequent throughout California

chaparral, vernal pools, chenopod scrub, alkaline soils, pinyon juniper woodland, coastal bluff scrub, coastal dunes, coastal scrub, coastal prairie, meadows, broadleaved upland forest, north coast coniferous forest, closed-cone coniferous forest, riparian woodland, and lower montane coniferous forest.

An initial list of special-status plant species that could occur on site (based upon the 28 January 1998 APE boundary) included: Abbott's bush mallow, Davidson's bush mallow, Santa Lucia mint, Santa Lucia horkelia, and one-sided monkeyflower. These species are associated with riparian habitats and drainages. Surveys for these species occurred during the appropriate blooming periods in the summer of 1998. None of these species were found within the APE as defined by the 28 January 1998 site plan. Based upon the current APE (dated 2 December 1998), which encompasses additional habitats (e.g. foothill pine-oak woodland), a total of 15 additional species have the potential to occur on site. These species include: San Benito thorn-mint, Santa Cruz Mountains pussypaws, showy madia, purple amole, straight-awned spineflower, Brewer's clarkia, Jolon clarkia, gypsum-loving larkspur, small-flowered gypsum-loving larkspur, San Benito poppy, Salinas Valley goldfields, pale-yellow layia, Carmel Valley bushmallow, slender pentachaeta, and Michael's rein orchid. Surveys for these species were conducted in the spring of 2000. However, none of these 15 additional special-status plant species were found on site. The original five special-status plant species are not expected to occur within the expanded APE due to the marginal habitat present.

Special-Status Wildlife Surveys

A reconnaissance-level field survey was conducted on 4 November 1997, and later, more in-depth field surveys were conducted on 7, 17, and 18 May 1998 by wildlife biologist, Dr. David Johnston, for special-status animal species on-site. The legal status and likelihood of occurrence of these species on site are given in Table 3. Expanded descriptions are included of only those species for which potentially suitable habitat occurs on the project site, for which surveys were conducted, or for which the resource agencies have expressed particular concern. In addition, a table of the vertebrates predicated and observed on site is included as Appendix B.

Federal or State Endangered or Threatened Species

Santa Lucia Mint (*Pogogyne clareana*). **Federal listing status: None; State listing status: Endangered; CNPS list: 1B.** Habitat for Santa Lucia mint includes riparian woodland, along intermittent creeks at elevations ranging from 980 to 1300 feet. The blooming period for this annual member of the mint family (Lamiaceae) is from May through June. This species is known from only 5 locations (near Ft. Hunter Liggett) within Monterey County (Skinner and Pavlik 1994). Potentially suitable habitat occurs on site for Santa Lucia mint. Surveys during the blooming period for this species were conducted and no populations were found on site. Therefore, this species is considered to be absent from the site.

California Red-legged Frog (*Rana aurora draytonii*). Federal listing status: **Threatened**; State listing status: **State Protected and Species of Special Concern.** The USFWS listed the California red-legged frog as federally threatened on May 23, 1996 (61 Fed. Reg. 25813). The red-legged frog is a medium-sized frog with reddish-colored legs. This species is generally restricted to riparian habitats in California and northern Baja California. Red-legged frogs prefer deep, quiet pools (more than 3 feet deep) in creeks, rivers, or lakes below 1,000 meters in elevation (about 3,000 feet). Habitat requirements include fresh emergent or dense riparian vegetation, especially willows adjacent to shorelines. Red-legged frogs can survive in seasonal bodies of water that are dry for short periods if there is a permanent water body or dense vegetation stands nearby. The adults are normally active at night and breed in ponds and creeks or in marshes during the late winter or early spring after waters recede. Females attach eggs in a single cluster to a vegetation brace just under the surface of the water. The eggs hatch in just over a week and the resulting larvae feed on plant and animal material on the bottom of the pond. It takes at least four months for the larvae to metamorphose into juvenile frogs.

Red-legged frogs have not been reported for Pancho Rico Creek although surveys for the project site were conducted at a reconnaissance-level. Willow habitat is relatively sparse in this section of the creek, but roots do extend into shallow pools on site. Downstream from the site, about 1/3 mile, adequate pools (4 ft. deep) with woody twigs extending into these pools, provide marginal breeding habitat. Therefore, California red-legged frogs may breed downstream of the site, and forage or move through the site.

Federal or State Proposed Endangered or Threatened Species

Purple Amole (*Chlorogalum purpureum* var. *purpureum*). Federal listing status: **Proposed Threatened**; State listing status: **None**; CNPS list: **1B**. Purple amole is found in cismontane woodland and valley and foothill grassland at approximately 1000 feet elevation. This bulbiferous member of the lily family (Liliaceae) flowers from May through June. Purple amole is known from only 5 occurrences near Jolon on Ft. Hunter Liggett property. Potentially suitable habitat does exist on site for purple amole. Surveys during the blooming period for this species were conducted and no populations were found on site. Therefore, this species is considered to be absent from the site.

California Species of Special Concern

Western Pond Turtle (*Clemmys marmorata*). Federal listing status: **None**; State listing status: **Species of Special Concern.** The western pond turtle is an aquatic turtle that usually leaves the aquatic site to reproduce, to aestivate, and to over winter. This turtle requires some slack or slow water although it will occur where enough food resources occur in faster moving waters. Nesting areas usually occur in upland areas. During the spring of 1998 there was enough pool or deep water habitat as well as potential breeding grounds to support this species on site. Therefore, western pond turtles may forage or move through the site.

Foothill Yellow-legged Frog (*Rana boylei*). Federal listing status: None; State listing status: Species of Special Concern. The foothill yellow-legged frog is a moderate-sized frog that is highly variable in color (usually gray, brown, green, or yellow with a mottled appearance). The under-surfaces of the legs and lower belly are yellow or orange-yellow in the largest individuals. The range of this species was historically known to occur in most Pacific drainages from Marion County in Oregon to Los Angeles County in California. Yellow-legged frog habitat includes stream cobbles and boulders where females can deposit masses of eggs on the downstream side allowing a gentle flow of water over the eggs. The streams where this species occurs are generally shallow, small to medium-sized streams, but are infrequent or absent in habitat where introduced aquatic predators occur such as bullfrogs. Neither larvae or adults of this species were detected on site or in the adjacent area (1/4 mile upstream and 1/2 mile downstream of the site) although marginal breeding habitat exists on and adjacent to the project site. Therefore, this species is not expected to breed on site, but may forage or move through the site if it even occurs regionally.

Loggerhead Shrike (*Lanius ludovicianus*). Federal listing status: None; State Listing Status: Species of Special Concern. Over the last 20 years, some populations of the Loggerhead Shrike have declined significantly. These populations are primarily in eastern North America. Other populations, however, including those in western North America, appear to be decreasing as well. In California, Loggerhead Shrikes are still considered a fairly common species. Shrikes generally build their nests in dense shrubs or bushes in open areas. Although not observed during reconnaissance-level surveys, this species may nest or forage on site.

Cooper's Hawk (*Accipiter cooperii*). Federal listing status: None; State listing status: Species of Special Concern. The Cooper's Hawk is a larger accipiter than the Sharp-shinned Hawk, and thus, this species can prey upon medium-sized birds (e.g., jays, doves, and quail) and occasionally takes small mammals and reptiles. The Cooper's Hawk prefers landscapes where wooded areas occur in patches and groves, which facilitates the ambush hunting tactics employed by this species. Breeding pairs in California prefer nest sites within dense stands of live oak woodland or riparian areas and prey heavily on young birds during the nesting season. The pine-oak woodland habitat on the site offers suitable nesting habitat for the Cooper's Hawk, although no nests were observed during surveys.

Monterey Dusky-footed Woodrat (*Neotoma fuscipes luciana*). Federal listing status: None; State listing status: Species of Special Concern. This species builds its dens on the ground or in piles of debris in a variety of woodland types, but it generally prefers hardwood forests and brushlands. Woodrats feed on berries, fungi, leaves, flowers, and nuts. These animals are quite common and widespread in hardwood forests in the Santa Lucia Range in western Monterey County. Habitat exists on the project site but no woodrat dens were observed during reconnaissance-level surveys. This species may occur on the site.

State Protected Species or CNPS Species

Paso Robles navarretia (*Navarretia jaredii*). Federal listing status: None; State listing status: None; CNPS List 4. Paso Robles navarretia is found in clay and serpentine soils within cismontane woodland, valley and foothill grassland, and chaparral habitats. This annual herb flowers from April to June. Approximately 75-125 plants were observed immediately east of the roadway and north of Pancho Rico Creek. A CNDDDB statewide search for this species did not reveal any known occurrences. Therefore, the extent and distribution of Paso Robles navarretia could not be determined. The California Native Plant Society does not regard List 4 species as rare from a statewide perspective, but does recommend that their status be monitored regularly.

White-tailed Kite (*Elanus caeruleus*). Federal listing status: None; State listing status: Protected. This species prefers habitats with low ground cover and variable tree growth. Kite nests are built near the tops of oaks, willows, or other dense broad-leaved deciduous trees in partially cleared or cultivated fields, grassy foothills, marsh, riparian, woodland, and savanna. Kites prey primarily on small rodents (especially the California vole), but also feed on birds, insects, reptiles, and amphibians. When prey is abundant these birds may rear two broods in a single breeding season. Once considered endangered, the kite is now fairly common, though fully protected, in the state of California. Suitable breeding habitat exists in the taller trees on the project site. Although White-tailed Kites were not observed during the reconnaissance-level surveys, this species may breed on the site.

Ringtail (*Bassariscus astutus*). Federal listing status: None; State listing status: Fully Protected (California Fish and Game Code, section 4700). Ringtails are a close relative of the raccoon. They inhabit cavities in rock outcrops, talus slopes, and hollows in trees, logs and snags. Ringtails are usually not found more than 0.8 km from permanent water. This secretive carnivore is nocturnal and feeds mainly on rodents and rabbits and less frequently on birds, reptiles, invertebrates, fruit, nuts, and some carrion. Ringtails may forage in part of the project site.

VI. PROJECT IMPACTS

The proposed project will have a number of effects on the biological resources of the project site. The Area of Potential Effects includes a construction corridor surrounding the bridge that will be approximately 375 feet long with the corridor width ranging from 40-100 feet (total APE area = 0.60 acre). In general, the test for significance in this analysis has been the relative abundance of a given habitat, or its constituent plant and animal species regionally, or the presence of ordinances, statutes, or other state and federal codes which serve to protect a habitat or individual plant and animal species (CEQA Appendix G).

For clarification, the APE identified the maximum zone within which construction activities will take place; it was not assumed that all biotic resources within this defined area will be directly impacted. The detailed project description and engineering plans were used to determine project impacts. The APE also defined the area within which detailed surveys for biotic resources were primarily focused.

LESS THAN SIGNIFICANT ENVIRONMENTAL EFFECTS

The biological resources listed below are considered sufficiently abundant regionally that project impacts to them, when considered in the context of this project alone, would be less-than-significant. These biotic resources are otherwise unprotected by local, state and federal codes, which serve to protect a habitat or individual plant and animal species (CEQA Appendix G).

Loss of Aquatic Habitat

The proposed project will result in the loss of approximately 87 ft² of aquatic habitat due to the construction of sacked concrete slope protection along the northern creek bank. This loss represents approximately 5% of the total aquatic habitat on site. Although the loss of aquatic habitat in terms of area is not significant, any impacts to water quality would be a potentially significant impact (*See Degradation of Water Quality During Construction under Significant Impacts section*).

Approximately 104 ft² of the sacked concrete slope protection will be placed within Pancho Rico Creek, a tributary water of the U.S. The placement of concrete within a Water of the U. S. (jurisdictional water) is considered a fill activity and will require a permit from the ACOE. The ACOE will not issue a permit without prior 401 Certification from the Regional Water Quality Control Board (RWQCB). The proposed bridge piles are located beyond the limits of the ACOE. The potential wetland located downstream from the existing bridge will not be directly impacted (e.g. fill is not anticipated) by the proposed project. The relatively small loss of tributary waters is considered to be a less-than-significant impact.

Nationwide Permits that may be applicable to this proposed project include: Nationwide Permit 18 (*Minor Discharges*) and Nationwide Permit 13 (*Bank Stabilization*).

Loss of Sandbar Habitat

The proposed project will result in approximately 341 ft² of direct (permanent) impacts to sandbar habitat (9% of the total sandbar habitat on site). The installment of sacked concrete slope protection along the creek banks will result in the loss of approximately 327 ft² of sandbar habitat. The construction of two, 36-inch bridge piles will result in an additional 14 ft² of direct impacts.

The proposed bridge width will extend an additional 12 feet beyond the existing bridge. Indirect impacts due to shading from the new, wider bridge will affect approximately 531 ft² of sandbar habitat. The remaining sandbar habitat on site may be temporarily impacted due to construction activities within the channel. Temporary impacts are generally regarded as self-mitigating. The flora and fauna associated with this habitat type are relatively common along Pancho Rico Creek and other drainages throughout the region. The sandbar habitat on site supports a minimal amount of vegetation. When viewed in the context of existing sandbar habitat along Pancho Rico Creek, the relatively small loss of this habitat type due to direct and indirect impacts is considered to be non-significant.

Loss of Ruderal Habitat

The construction of both bridge abutments as well as the installment of sack concrete slope protection will result in the direct loss of approximately 0.01-acre (436 ft²) of ruderal habitat (33% of the total ruderal habitat on site). An additional 17 ft² of ruderal habitat will be shaded due to the new, wider bridge. The remaining ruderal habitat on site may be temporarily impacted due to construction activities within the channel. Temporary impacts are generally regarded as self-mitigating. This highly disturbed habitat is associated with unstable creek banks that are actively eroding. Ruderal habitat is relatively common regionally and the plant and animal species that utilize this habitat type are generally abundant. Therefore, the loss of ruderal habitat is a less-than-significant impact.

Potential Loss of Mulefat Scrub

The proposed project will not result in direct impacts to mulefat scrub habitat. However, construction activities within the channel may result in the temporary loss of some or all of the mulefat scrub habitat (0.05 acre) within the APE. This relatively fast-growing riparian shrub is expected to recolonize on the sandy creek terraces that may be disturbed during construction. Therefore, the potential (temporary) loss of mulefat scrub habitat is not a significant impact.

Potential Loss of Foothill Pine-Oak Woodland Habitat

The majority of direct impacts (344 ft²) to foothill pine-oak woodland habitat will occur where the canopy is relatively dense (downstream from bridge, south of creek). In

addition, the remaining foothill pine-oak woodland habitat on site (0.2 acres) could also be impacted during project construction. The total area to be directly impacted (344 ft²) is relatively small in both the context of the total area of this habitat on site and within the surrounding region. Therefore, the potential loss of foothill pine-oak woodland habitat will be a less-than-significant impact.

Loss of Non-native Annual Grassland Habitat

Installation of sacked concrete slope protection will directly impact approximately 222 ft² of non-native annual grassland habitat, the majority of which is located along the road slope downstream from the bridge. This loss represents approximately 7% of the total non-native annual grassland habitat on site. The proposed project could also result in temporary impacts to the remaining non-native annual grassland on site. Temporary impacts are generally regarded as self-mitigating. The flora and fauna associated with this habitat type are relatively common throughout the region. Therefore, project impacts to non-native annual grassland habitat are a less-than-significant impact.

Impacts to the Bed and Banks of Pancho Rico Creek

Approximately 0.24 acres of the project site occurs within the bed and banks of Pancho Rico Creek (DFG regulated habitat). The degraded condition of this portion of Pancho Rico Creek does not provide high-quality riparian habitat for wildlife. Riparian canopy within this area comprises a total of approximately 0.06 acre or 27% of the total riparian area on site. Direct impacts to the bed and banks of the creek will result from the construction of the bridge abutments and associated sacked concrete slope protection. This loss will total approximately 0.02 acre or 8% of the total riparian area on site. The construction of rock slope protection along the northern bank, upstream from the bridge, may impact a single red willow. This tree has a canopy of approximately 561 ft² and is rooted at the top of a severely eroded bank.

The expansion of the bridge width will result in indirect impacts (e.g. shading) to the bed and banks of Pancho Rico Creek; this amount will total approximately 0.02 acre. The area to be affected by shading consists primarily of aquatic and sandbar habitats. These habitats do not support significant vegetative cover. Therefore, shading effects to these areas will not result in a significant impact.

Direct impacts to that portion of the creek that supports herbaceous, non-native species will not be considered a significant impact. The potential loss of the single red willow tree, when viewed in the context of the entire length of the creek and its associated willow riparian habitat, is not considered to be a significant impact.

Construction within the creek bank will require some grading and removal of vegetation. Aside from a single red willow tree, the vegetation to be affected is limited to mostly non-native, herbaceous species. A Streambed Alteration Agreement from the DFG will be required prior to construction within the creek channel.

Potential Impacts to Special-status Plants

The project site offers potentially suitable habitat for a number of special-status plant species including: Santa Lucia mint, Abbott's bush mallow, Davidson's bush mallow, one-sided monkeyflower, Santa Lucia horkelia, San Benito thorn-mint, Santa Cruz Mountains pussypaws, showy madia, purple amole, straight-awned spineflower, Brewer's clarkia, Jolon clarkia, gypsum-loving larkspur, small-flowered gypsum-loving larkspur, San Benito poppy, Salinas Valley goldfields, pale-yellow layia, Carmel Valley bushmallow, slender pentachaeta, and Michael's rein orchid. Surveys for the first 5 of these species were conducted during the spring and summer of 1998. Surveys for the additional 15 species were conducted in the spring of 2000. No populations of any of these species were found on site. Therefore, loss of potential habitat for these 20 special-status plant species is a less-than-significant impact.

The only species of note that was detected on site included Paso Robles navarretia (*Navarretia jaredii*), a CNPS 4 species. Approximately 75-125 plants were observed immediately east of the roadway and north of Pancho Rico Creek. A CNDDDB statewide search for this species did not reveal any known occurrences. Therefore, the extent and distribution of Paso Robles navarretia could not be determined. The California Native Plant Society does not regard List 4 species as rare from a statewide perspective, but does recommend that their status be monitored regularly. We conclude that the presence of Paso Robles navarretia should be reported to the California Department of Fish and Game's National Diversity Database, but that the proposed project will not result in significant impact to this species.

Potential Impacts to the California Red-legged Frog

No records exist for California red-legged frogs in Pancho Rico Creek. However, potential breeding and rearing habitat exists upstream and downstream from the proposed work area. Therefore, the potential exists for frogs to move through the work area during periods of wet weather that are concurrent with construction activities. For clarification, breeding habitat does not occur within or immediately adjacent to the APE, and no such habitat will be lost from implementation of the proposed construction activities. To ensure that frogs do not occur in this portion of the creek during construction, three consecutive nights of surveys by a qualified herpetologist will commence approximately 72 hours before construction work. Should findings be negative, the project should proceed as scheduled. Should red-legged frogs be found on site or immediately adjacent to the work area, the USFW will be contacted for instructions on how to proceed with a Section 7 consultation. California red-legged frogs will not be moved from the project construction area without a Biological Opinion and Section 10 permit from USFWS. The aforementioned surveys and, if necessary, subsequent protective measures agreed upon by USFWS, will reduce the potential impacts to the red-legged frog to a less-than-significant level.

Loss of Habitat for Selected Special-Status Animal Species

Some special-status species may utilize habitats on site to either breed or forage. Marginal habitat exists on site for the coast California newt, western pond turtle, horned lizard and California legless lizard. More appropriate habitat for these species is locally abundant, and the loss of habitat on site is considered a less-than-significant impact.

Potential breeding habitat exists on site for Loggerhead Shrike, Cooper's Hawk and White-tailed Kite. However, habitat for these species occurs locally and is regionally abundant. Therefore the loss of the on-site habitat to these species is expected to be less-than-significant.

Reconnaissance-level field surveys for special-status species' habitats, such as Yellow Warbler and other special status animals within the project development area, were conducted as noted previously. Most of the special-status species are unlikely to nest on site and foraging habitat is marginal or absent. Several special-status terrestrial vertebrates may be occasional visitors, migrants, or transients. These species include Sharp-shinned Hawk, Ferruginous Hawk, Northern Harrier, Prairie Falcon, Golden Eagle, Merlin, California Horned Lark, California Gull, Bank Swallow, Townsend's big-eared bat, California Mastiff bat, pallid bat, or ringtail. Potential impacts to these species is expected to be less-than-significant.

Project Related Impacts on the Regional Movements of Wildlife

The current project does not include any permanent fencing at ground level and therefore it should not act as a barrier to the movements of migratory birds or regional movements of other birds and wildlife. In addition, the actual bridge contact with the water will be restricted to permanent piers and should not act as a barrier to aquatic wildlife such as western pond turtles or fishes. In general, the movements of amphibian, reptile, bird, and mammal species are not expected to be hindered or restricted in any way by the proposed project. Therefore, the project is expected to have a less-than-significant impact on the movements of migratory and local populations of wildlife.

SIGNIFICANT ENVIRONMENTAL EFFECTS

The biological resources listed below are considered sufficiently rare regionally that project impacts to them would be considered significant, or are otherwise protected by local, state and federal laws.

Degradation of Water Quality During Construction

The replacement of Bridge Number 412 will not require dewatering of the river channel (pers. comm. Anthony Notaro, Engineer, Biggs Cardosa Associates, Inc. 1871 The Alameda, Suite 200, San Jose, CA 95126). However, water quality may be impacted during the construction of the two bridge piles and their associated concrete bent cap and during the installment of sacked concrete slope protection. Therefore, construction

activities within the channel could have a significant adverse effect on water quality downstream of the project due to increased turbidity or siltation, or contact of new concrete with live flow. This could affect aquatic invertebrates, fish and amphibians and would be considered a significant impact.

Disturbance of Active Raptor Nests

Nesting raptors as well as all other bird nests are protected under provisions of the Migratory Bird Treaty Act and the California Department of Fish and Game (DFG) Codes 3503, 3503.5, and 3800. Raptors could nest in oaks or pines on site (or in nearby trees off site). Construction disturbance to nesting raptors could result in the incidental loss of fertile eggs or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered "taking" by DFG, and would be considered a significant impact.

VII. MITIGATION MEASURES

Mitigation measures for those biotic impacts considered significant are proposed below. The successful implementation of all these mitigation measures will reduce the significant biotic impacts of the project to a less-than-significant level.

Degradation of Water Quality During Construction

The project applicant intends to conform with Best Management Practices (BMP) as described under Section 7-1.01G 'Water Pollution' (Caltrans 1992). A copy of these BMP's are attached in Appendix F.

The following recommendations by the DFG must be followed regardless if the watercourse on site is dewatered or not in order to comply with proper mitigation measures:

- 1) No equipment will be operated in the live stream channel.
- 2) When work in a flowing stream is unavoidable, any stream flow shall be diverted around the work area by a barrier, temporary culvert or a new channel capable of permitting upstream and downstream fish movement.
- 3) Construction of the barrier or the new channel shall normally begin in the downstream area and continue in an upstream direction and the flow shall be diverted only when construction of the diversion is completed.
- 4) No debris, soil, silt, sand, bark, slash, sawdust, cement, concrete, washings, petroleum products or other organic or earthen material shall be allowed to enter into or be placed where it may be washed by rainfall or runoff into waters of the State.
- 5) Contact between new concrete and live flow will be avoided or minimized to the maximum extent feasible.

If these measures are implemented, then potentially adverse effects upon water quality will be reduced to a less-than-significant level.

Disturbance to Nesting Raptors

Several raptors, such as the Red-shouldered Hawk, and special-status species such as the White-tailed Kite and Cooper's Hawk, may breed on or adjacent to the site. Therefore, the mitigation measures described below should be implemented to reduce the adverse environmental effects of the proposed project on any raptors nesting within the project site or immediately adjacent to the site. Implementation of Mitigation 1 or 2 is expected to reduce the potential project-related environmental effects on nesting raptors to a less-than significant level.

Mitigation 1. Avoidance. Avoid Nesting Season Construction. Grading and other construction activities shall be scheduled to avoid the nesting season to the extent feasible. The nesting season for most raptors in the Monterey area extends from January through August.

Mitigation 2. Preconstruction/Predisturbance Surveys. If it is not possible to schedule demolition and construction between August and February, then preconstruction surveys for nesting raptors will be conducted by a qualified ornithologist or wildlife biologist to ensure that no raptor nests will be disturbed during project implementation. This survey will be conducted no more than 14 days prior to the initiation of construction activities during the early part of the breeding season (January through April) and no more than 30 days prior to the initiation of these activities during the late part of the breeding season (May through August). During this survey, the biologist will inspect all trees in and immediately adjacent to the impact areas for raptor nests. If an active raptor nest is found close enough to the construction area to be disturbed by these activities, the ornithologist, in consultation with CDFG, will determine the extent of a construction-free buffer zone to be established around the nest.

VIII. CUMULATIVE EFFECTS

If all of the mitigation measures described in this document are successfully implemented the project will have no significant cumulative effects on biological resources in the project area.

IX. CITED REFERENCES AND PERSONAL CONTACTS

Cited References

- California Department of Transportation (Caltrans). 1990. Guidance for Consultants: Procedures for Completing the Natural Environmental Study and Related Biological Reports.
- California Department of Transportation (Caltrans). 1992. Standard Specifications, State of California, Department of Transportation.
- California Native Plant Society. 1994. Inventory of Rare and Endangered Vascular Plants of California. Edited by M. W. Skinner and B. Pavlik.
- CNDDDB 1998. California Natural Diversity Data Base, Rarefind. California Department of Fish and Game.
- Environmental Laboratory. 1987. U.S. Corps of Engineers Wetlands Delineation Manual. Department of the Army.
- Hall, E. R. and Kelson, K. R. 1959. The Mammals of North America. Vol. I. The Ronald Press Co. New York. p. 484.
- Hickman, J. C. 1993. The Jepson Manual: Higher Plants of California. University of California Press.
- Hitchcock, A.S. 1971. Manual of the Grasses of the United States. Dover Publications.
- Holland, R. F. 1986. Preliminary Description of the Terrestrial Natural Communities of California. California Department of Fish and Game.
- Jameson, E. W. Jr. and H. J. Peeters. 1988. California Mammals. University of California Press. pp. 286-287.
- Jennings, M. R. and Hayes, M. P. 1994. Amphibian and Reptile Species of Special Concern in California. Final Report to the California Department of Fish and Game Department. Contract # 8023.
- Kollmorgen Instruments Corp. 1990. Munsell Soil Color Charts. New York.
- Munz, P. A. and D. E. Keck. 1968. A California Flora and Supplement. University of California Press.
- Reed, Porter B. 1988. 1988 Wetland Plant List, California. U.S. Fish and Wildlife Service.

- Robbins, W.W., M.K. Bellue, and W.S. Ball. 1970. Weeds of California. California State Department of Agriculture.
- Roberson, Don. 1985. Monterey Birds. Status and Distribution of Birds of Monterey County, California. Monterey Peninsula Audubon Society. Carmel, California.
- Sawyer, J. O. and T. Keeler-Wolf. 1995. A Manual of California Vegetation. California Native Plant Society.
- Smithsonian Institution. 1982. National List of Scientific Plant Names. USDA.
- Soil Conservation Service. 1978. Soil Survey of Monterey County. U. S. Department of Agriculture.
- Stebbins, R. C. 1954. Amphibians and reptiles of western North America. McGraw-Hill Book Company, New York, New York.
- Sweet, S. S. 1991. Ecology and status of the arroyo toad (*Bufo microscaphus californicus*) on the Los Padres National Forest of southern California with management recommendations. Report to United States Department of Agriculture, Forest Service Los Padres National Forest, Goleta, California, under Contract.
- Sweet, S. S. 1993. Ecology and status of the arroyo toad (*Bufo microscaphus californicus*) on the Los Padres National Forest of southern California with management recommendations. Report to United States Department of Agriculture, Forest Service Los Padres National Forest, Goleta, California, under Contract.

Personal Contacts

- Bitman, Roxanne. California Department of Fish and Game. 1220 S Street, Sacramento, CA 95814. (916) 323-8970.
- Bolster, Betsy. California Department of Fish and Game. 1416 Ninth Street. Rm 1280. Sacramento, CA. 95825. (916) 654-3806.
- Delgado, Bruce. Botanist, Bureau of Land Management, USDA. 20 Hamilton Court, Hollister, CA 95023. (831) 630-5000.
- Hesler, John. Vice President, David J. Powers & Associates, Inc. Environmental Consultants & Planners, 1885 The Alameda, Suite 204, San Jose, CA 95126. (408) 248-9641.
- Jennings, Mark. Herpetologist. 39913 Sharon Avenue, Davis, CA. (530) 753-2727.

Notaro, Anthony, Engineer, Biggs Cardosa Associates, Inc. 1871 The Alameda, Suite 200, San Jose, CA 95126. (408) 296-5515.

Orton-Palmer, Amelia. United States Fish and Wildlife Service. 2493 Portola Rd. Suite B. Ventura, CA. 93003. (805) 644-1766.

Schnabel, Roy. Engineering Manager, Biggs Cardosa Associates, Inc. 1871 The Alameda, Suite 200, San Jose, CA 95126. (408) 296-5515.

APPENDIX A.
PLANTS OBSERVED AT THE
MONTEREY COUNTY BRIDGE NUMBER 412
PROJECT SITE

Appendix A. Plants Observed at the Bridge Number 412 Project Site, Monterey County, California.			
FAMILY NAME	SCIENTIFIC NAME	COMMON NAME	INDICATOR STATUS
Apiaceae	<i>Conium maculatum</i>	poison hemlock	FACW
	<i>Lomatium</i> sp.	lomatium	---
Asclepiaceae	<i>Asclepias eriocarpa</i>	kotolo	NOL
Asteraceae	<i>Anthemis cotula</i>	mayweed	FACU
	<i>Centaurea melitensis</i>	toalote	UPL
	<i>Centaurea solstitialis</i>	yellow starthistle	UPL
	<i>Ericameria</i> sp.	ericameria	---
	<i>Lasthenia californica</i>	California goldfields	FACU#
	<i>Lactuca serriola</i>	prickly lettuce	FAC
	<i>Sonchus oleraceus</i>	common sowthistle	NI
	<i>Xanthium strumarium</i>	common cocklebur	FAC+
	Brassicaceae	<i>Arabis</i> sp.	arabis
<i>Erysimum capitatum</i> ssp. <i>capitatum</i>		capitate western wallflower	NOL
Caprifoliaceae	<i>Symphoricarpos albus</i> var. <i>laevigatus</i>	snowberry	FACU
Cyperaceae	<i>Scirpus pungens</i>	common threesquare	OBL
Fabaceae	<i>Astragalus</i> sp.	milkvetch	---
	<i>Lupinus latifolius</i> var. <i>latifolius</i>	broad-leaved lupine	FAC
	<i>Melilotus indica</i>	sourclover	FAC
	<i>Vicia sativa</i>	vetch	FACU
Fagaceae	<i>Quercus wislizensii</i> var. <i>frutescens</i>	dwarf interior live oak	NOL
Juncaceae	<i>Juncus balticus</i>	Baltic rush	OBL
Lamiaceae	<i>Lamium purpureum</i>	red henbit	NOL
	<i>Trichostema lanceolatum</i>	vinegar weed	NOL
Liliaceae	<i>Calochortus splendens</i>	splendid lily	NOL
	<i>Dichelostemma capitatum</i> ssp. <i>capitatum</i>	blue dicks	NOL
Poaceae	<i>Avena fatua</i>	wild oats	UPL
	<i>Bromus carinatus</i> var. <i>carinatus</i>	California brome	NOL
	<i>Bromus diandrus</i>	rippgut grass	UPL
	<i>Bromus mollis</i>	soft brome	FACU-
	<i>Distichlis spicata</i>	saltgrass	FACW
	<i>Hordeum geniculatum</i>	Mediterranean barley	FAC
	<i>Elymus tritichoides</i>	creeping wildrye	FAC+
	<i>Lolium multiflorum</i>	Italian ryegrass	FAC

Appendix A. Plants Observed at the Bridge Number 412 Project Site, Monterey County, California.

FAMILY NAME	SCIENTIFIC NAME	COMMON NAME	INDICATOR STATUS
	<i>Melica imperfecta</i>	imperfect melic	NOL
	<i>Poa gracillima</i>	Pacific bluegrass	FACU#
	<i>Piptatherum miliaceum</i>	smilo grass	UPL
	<i>Polypogon monspeliensis</i>	rabbitfoot grass	FACW+
Polemoniaceae	<i>Gilia</i> sp.	gilia	---
	<i>Microsteris gracilis</i>	false phlox	FACU#
	<i>Navarretia jaredii</i>	Paso Robles navarretia	NOL
Polygonaceae	<i>Emex spinosa</i>	Devil's thorn	NOL
	<i>Rumex crispus</i>	curly dock	FACW-
Ranunculaceae	<i>Clematis ligusticifolia</i>	virgin's bower	FAC
	<i>Ranunculus hebecarpus</i>	pubescent-fruited buttercup	NOL
Rhamnaceae	<i>Rhamnus ilicifolia</i>	holly-leaf redberry	NOL
Rubiaceae	<i>Galium andrewsii</i> ssp. <i>andrewsii</i>	phlox-leaved bedstraw	NOL
	<i>Galium porrigens</i> var. <i>tenue</i>	narrow-leaved climbing bedstraw	NOL
Salicaceae	<i>Salix laevigata</i>	red willow	FACW
Scrophulariaceae	<i>Castilleja attenuata</i>	valley tassels	NOL
	<i>Castilleja foliolosa</i>	wooly Indian paintbrush	NOL
	<i>Keckiella breviflora</i> var. <i>breviflora</i>	gaping penstemon	NOL
Verbenaceae	<i>Verbena robusta</i>	robust verbena	FACW

The species are arranged alphabetically by family name for all vascular plants encountered during the plant survey. Plants are also listed alphabetically within each family. In some cases it was not possible to accurately identify a particular plant to the species level due to the absence of specific anatomic structures required for identification.

APPENDIX B.
VERTEBRATE WILDLIFE SPECIES OF THE
MONTEREY COUNTY BRIDGE NUMBER 412
PROJECT SITE

Common Name	Scientific Name	Status	Predicted	Observed
CLASS: AMPHIBIA				
ORDER: CAUDATA (Salamanders)				
FAMILY: PLETHODONTIDAE (Lungless Salamanders)				
Coast Range California Newt	<i>Taricha torosa torosa</i>		x	
Ensatina	<i>Ensatina eschscholtzii</i>		x	
California Slender Salamander	<i>Batrachoseps attenuatus</i>		x	
ORDER: SALIENTIA (Frogs and Toads)				
FAMILY: BUFONIDAE (True Toads)				
Western Toad	<i>Bufo boreas</i>			x
FAMILY: HYLIDAE (Treefrogs and Relatives)				
Pacific Treefrog	<i>Hyla regilla</i>			x
FAMILY: RANIDAE (True Frogs)				
California Red-legged Frog	<i>R..a. draytonii</i>	CSSC,SP, FT	x	
Foothill Yellow-legged Frog	<i>Rana boylei</i>	CSSC	x	
Bullfrog	<i>Rana catesbeiana</i>		x	
CLASS: REPTILIA				
ORDER: TESTUDINATA (Turtles)				
FAMILY: EMYDIDAE (Pond and Marsh Turtles)				
Western Pond Turtle	<i>Clemmys marmorata</i>	CSSC	x	
ORDER: SQUAMATA (Lizards and Snakes)				
SUBORDER: SAURIA (Lizards)				
FAMILY: IGUANIDAE (Iguanids)				
Coast Horned Lizard	<i>Phrynosoma coronatum frontale</i>		x	
Western Fence Lizard	<i>Sceloporus occidentalis</i>			x
FAMILY: SCINCIDAE (Skinks)				
Gilbert's Skink	<i>Eumeces gilberti</i>			x
Western Skink	<i>Eumeces skiltonianus</i>		x	
FAMILY: TEIIDAE (Whiptails and Relatives)				
Western Whiptail	<i>Cnemidophorus tigris</i>		x	
FAMILY: ANGUIDAE (Alligator Lizards and Relatives)				
Southern Alligator Lizard	<i>Elgaria multicarinatus</i>		x	
California Legless Lizard	<i>Anniella pulchra</i>		x	
SUBORDER: SERPENTES (Snakes)				
FAMILY: COLUBRIDAE (Colubrids)				
Ringneck Snake	<i>Diadophis punctatus</i>		x	
Racer	<i>Coluber constrictor</i>		x	

Common Name	Scientific Name	Status	Predicted	Observed
California Whipsnake	<i>Masticophis lateralis</i>		x	
Gopher Snake	<i>Pituophis melanoleucus</i>		x	
Common Kingsnake	<i>Lampropeltis getulus</i>			x
Southwestern Black-headed Snake	<i>Tantilla hobartsmithi</i>		x	
Common Garter Snake	<i>Thamnophis sirtalis</i>		x	
Western Terrestrial Garter Snake	<i>Thamnophis elegans</i>		x	
Santa Cruz Garter Snake	<i>Thamnophis atratus</i>		x	
Night Snake	<i>Hypsiglena torquata</i>		x	
FAMILY: VIPERIDAE (Vipers)				
Western Rattlesnake	<i>Crotalus viridis</i>		x	
CLASS: AVES				
ORDER: CICONIIFORMES (Hérons, Storks, Ibises, and Relatives)				
FAMILY: ARDEIDAE (Hérons and Bitterns)				
Great Blue Heron	<i>Ardea herodias</i>		x	
Great Egret	<i>Ardea alba</i>		x	
Snowy Egret	<i>Egretta thula</i>		x	
Green Heron	<i>Butorides striatus</i>			x
FAMILY: CATHARTIDAE (New World Vultures)				
Turkey Vulture	<i>Cathartes aura</i>		x	
ORDER: ANSERIFORMES (Screamers, Ducks, and Relatives)				
FAMILY: ANATIDAE (Swans, Geese, and Ducks)				
Mallard	<i>Anas platyrhynchos</i>		x	
ORDER: FALCONIFORMES (Vultures, Hawks, and Falcons)				
FAMILY: ACCIPITRIDAE (Hawks, Old World Vultures, and Harriers)				
Golden Eagle	<i>Aquila chrysaetos</i>	CSSC, SP	x	
Sharp-shinned hawk	<i>Accipiter striatus</i>	CSSC	x	
Cooper's Hawk	<i>Accipiter cooperii</i>	CSSC	x	
Ferruginous Hawk	<i>Buteo regalis</i>	CSSC	x	
Rough-legged Hawk	<i>Buteo lagopus</i>		x	
Red-tailed Hawk	<i>Buteo jamaicensis</i>		x	
FAMILY: FALCONIDAE (Caracaras and Falcons)				
American Kestrel	<i>Falco sparverius</i>		x	
Prairie Falcon	<i>Falco mexicanus</i>	CSSC	x	
ORDER: GALLIFORMES (Megapodes, Currassows, Pheasants, and Relatives)				
FAMILY: ODONTOPHORIDAE (New World Quails)				
Wild Turkey	<i>Meleagris gallopavo</i>			x
California Quail	<i>Callipepla californica</i>			x
ORDER: CHARADRIIFORMES (Shorebirds, Gulls, and Relatives)				
FAMILY: CHARADRIIDAE (Plovers and Relatives)				
Killdeer	<i>Charadrius vociferus</i>		x	
FAMILY: SCOLOPACIDAE (Sandpipers and Relatives)				

Common Name	Scientific Name	Status	Predicted	Observed
Greater Yellowlegs	<i>Tringa melanoleuca</i>		x	
Lesser Yellowlegs	<i>Tringa flavipes</i>		x	
Spotted Sandpiper	<i>Actitis macularia</i>		x	
ORDER: COLUMBIFORMES (Pigeons and Doves)				
FAMILY: COLUMBIDAE (Pigeons and Doves)				
Rock Dove ¹	<i>Columba livia</i>		x	
Mourning Dove	<i>Zenaida macroura</i>		x	
ORDER: STRIGIFORMES (Owls)				
FAMILY: TYTONIDAE (Barn Owls)				
Barn Owl	<i>Tyto alba</i>		x	
FAMILY: STRIGIDAE (Typical Owls)				
Western Screech Owl	<i>Otus kennicottii</i>		x	
Great Horned Owl	<i>Bubo virginianus</i>		x	
ORDER: APODIFORMES (Swifts and Hummingbirds)				
FAMILY: APODIDAE (Swifts)				
Common Poor-will	<i>Phalaenoptilus nuttallii</i>		x	
White-throated Swift	<i>Aeronautes saxatalis</i>		x	
FAMILY: TROCHILIDAE (Hummingbirds)				
Anna's Hummingbird	<i>Calypte anna</i>			x
ORDER: CORACIIFORMES (Kingfishers and Relatives)				
FAMILY: ALCEDINIDAE (Kingfishers)				
Belted Kingfisher	<i>Ceryle alcyon</i>		x	
ORDER: PICIFORMES (Woodpeckers and Relatives)				
FAMILY: PICIDAE (Woodpeckers)				
Red-breasted Sapsucker	<i>Sphyrapicus ruber</i>		x	
Acorn Woodpecker	<i>Melanerpes formicivorus</i>		x	
Lewis's Woodpecker	<i>Melanerpes lewis</i>		x	
Nuttall's Woodpecker	<i>Picoides nuttallii</i>		x	
Downy Woodpecker	<i>Picoides pubescens</i>		x	
Northern Flicker	<i>Colaptes auratus</i>			x
ORDER: PASSERIFORMES (Perching Birds)				
FAMILY: TYRANNIDAE (Tyrant Flycatchers)				
Western Wood-Pewee	<i>Contopus sordidulus</i>		x	
Black Phoebe	<i>Sayornis nigricans</i>			x
Say's Phoebe	<i>Sayornis saya</i>		x	
Ash-throated Flycatcher	<i>Myiarchus cinerascens</i>			x
Cassin's Kingbird	<i>Tyrannus vociferans</i>		x	
Western Kingbird	<i>Tyrannus verticalis</i>			x
FAMILY: LANIIDAE (Shrikes)				
Loggerhead Shrike	<i>Lanius ludovicianus</i>	CSSC	x	

Common Name	Scientific Name	Status	Predicted	Observed
FAMILY: VIREONIDAE (Typical Vireos)				
Hutton's Vireo	<i>Vireo huttoni</i>		x	
FAMILY: CORVIDAE (Jays, Magpies, and Crows)				
Western Scrub-Jay	<i>Aphelocoma californica</i>			x
American Crow	<i>Corvus brachyrhynchos</i>		x	
Common Raven	<i>Corvus corax</i>			x
FAMILY: MONARCHIDAE (Monarch Flycatchers)				
Western Bluebird	<i>Sialia mexicana</i>			x
Swainson's Thrush	<i>Catharus ustulatus</i>		x	
Hermit Thrush	<i>Catharus guttatus</i>		x	
American Robin	<i>Turdus migratorius</i>		x	
FAMILY: HIRUNDINIDAE (Swallows)				
Northern Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>			x
Barn Swallow	<i>Hirundo rustica</i>		x	
Cliff Swallow	<i>Petrochelidon pyrrhonota</i>			x breeding
FAMILY: PARIDAE (Titmice)				
Oak Titmouse	<i>Baeolophus inornatus</i>			x
FAMILY: AEGITHALIDAE (Bushtit)				
Bushtit	<i>Psaltriparus minimus</i>		x	
FAMILY: SITTIDAE (Nuthatches)				
White-breasted Nuthatch	<i>Sitta carolinensis</i>		x	
FAMILY: TROGLODYTIDAE (Wrens)				
Bewick's Wren	<i>Thryomanes bewickii</i>			x
House Wren	<i>Troglodytes aedon</i>		x	
FAMILY: REGULIDAE (Kinglets)				
Ruby-crowned Kinglet	<i>Regulus calendula</i>		x	
FAMILY: TIMALIIDAE (Babblers)				
Wrentit	<i>Chamaea fasciata</i>		x	
FAMILY: MIMIDAE (Mockingbirds and Thrashers)				
Northern Mockingbird	<i>Mimus polyglottos</i>		x	
California Thrasher	<i>Toxostoma redivivum</i>		x	
FAMILY: STURNIDAE (Starlings)				
European Starling ¹	<i>Sturnus vulgaris</i>		x	
FAMILY: BOMBYCILLIDAE (Waxwings)				
Cedar Waxwing	<i>Bombycilla cedrorum</i>		x	
FAMILY: PARULIDAE (Wood Warblers)				
Orange-crowned Warbler	<i>Vermivora celata</i>		x	
Townsend's Warbler	<i>Dendroica townsendi</i>		x	

Common Name	Scientific Name	Status	Predicted	Observed
Yellow-rumped Warbler	<i>Dendroica coronata</i>		x	
FAMILY: EMBERIZIDAE (Emberizines)				
Spotted Towhee	<i>Pipilo maculatus</i>		x	
California Towhee	<i>Pipilo crissalis</i>			x
Savannah Sparrow	<i>Passerculus sandwichensis</i>		x	
Song Sparrow	<i>Melospiza melodia</i>			x
Lark Sparrow	<i>Chondestes grammacus</i>		x	
Lincoln's Sparrow	<i>Melospiza lincolnii</i>		x	
White-crowned Sparrow	<i>Zonotrichia leucophrys</i>			x
Golden-crowned Sparrow	<i>Zonotrichia atricapilla</i>			x
Dark-eyed Junco	<i>Junco hyemalis</i>		x	
FAMILY: CARDINALIDAE (Cardinals, Grosbeaks, and Relatives)				
Lazuli Bunting	<i>Passerina amoena</i>		x	
Black-headed Grosbeak	<i>Pheucticus melanocephalus</i>		x	
FAMILY: ICTERIDAE (Icterines)				
Red-winged Blackbird	<i>Agelaius phoeniceus</i>			x
Western Meadowlark	<i>Sturnella neglecta</i>		x	
Brewer's Blackbird	<i>Euphagus cyanocephalus</i>			x
Brown-headed Cowbird	<i>Molothrus ater</i>		x	
Bullock's Oriole	<i>Icterus bullockii</i>		x	
FAMILY: FRINGILLIDAE (Finches)				
Purple Finch	<i>Carpodacus purpureus</i>		x	
House Finch	<i>Carpodacus mexicanus</i>		x	
Pine Siskin	<i>Carduelis pinus</i>		x	
Lesser Goldfinch	<i>Carduelis psaltria</i>		x	
Lawrence's Goldfinch	<i>Carduelis lawrencei</i>		x	
American Goldfinch	<i>Carduelis tristis</i>		x	
CLASS: MAMMALIA				
ORDER: MARSUPIALIA (Opossums, Kangaroos, and Relatives)				
FAMILY: DIDELPHIDAE (Opossums)				
Virginia Opossum ¹	<i>Didelphis virginiana</i>		x	
ORDER: INSECTIVORA (Shrews and Moles)				
FAMILY: SORICIDAE (Shrews)				
Vagrant Shrew	<i>Sorex vagrans</i>		x	
Ornate Shrew	<i>Sorex ornatus</i>		x	

Common Name	Scientific Name	Status	Predicted	Observed
FAMILY: TALPIDAE (Moles)				
Broad-footed Mole	<i>Scapanus latimanus</i>		x	
ORDER: CHIROPTERA (Bats)				
FAMILY: VESPERTILIONIDAE (Vespertilionid Bats)				
Yuma Myotis	<i>Myotis yumanensis</i>		x	
California Myotis	<i>Myotis californicus</i>		x	
Western Small-footed Myotis	<i>Myotis ciliolabrum</i>		x	
Long-eared Bat	<i>Myotis evotis</i>		x	
Western Pipistrelle	<i>Pipistrellus hesperus</i>		x	
Big Brown Bat	<i>Eptesicus fuscus</i>		x	
Hoary Bat	<i>Lasiurus cinereus</i>		x	
Townsend's Big-eared Bat	<i>Corynorhinus townsendii</i>	CSSC	x	
Pallid Bat	<i>Antrozous pallidus</i>	CSSC	x	
FAMILY: MOLOSSIDAE (Free-tailed Bat)				
Brazilian Free-tailed Bat	<i>Tadarida brasiliensis</i>		x	
California Mastiff Bat	<i>Eumops perotis californicus</i>	CSSC	x	
ORDER: LAGOMORPHA (Rabbits, Hares, and Pikas)				
FAMILY: LEPORIDAE (Rabbits and Hares)				
Desert Cottontail	<i>Sylbilagus audubonii</i>		x	
Black-tailed Hare	<i>Lepus californicus</i>		x	
ORDER: RODENTIA (Squirrels, Rats, Mice, and Relatives)				
FAMILY: SCIURIDAE (Squirrels, Chipmunks, and Marmots)				
California Ground Squirrel	<i>Spermophilus beecheyi</i>		x	
FAMILY: GEOMYIDAE (Pocket Gophers)				
Botta's Pocket Gopher	<i>Thomomys bottae</i>			x
FAMILY: HETEROMYIDAE (Pocket Mice and Kangaroo Rats)				
California Pocket Mouse	<i>Chaetodipus californicus</i>		x	
Narrow-faced Kangaroo Rat	<i>Dipodomys venustus</i>		x	
Heermann's Kangaroo Rat	<i>Dipodomys heermanni</i>		x	
FAMILY: CRICETIDAE (Deer Mice, Voles, and Relatives)				
Western Harvest Mouse	<i>Reithrodontomys megalotis</i>		x	
Southern Grasshopper Mouse	<i>Onychomys torridus</i>		x	
Brush Mouse	<i>Peromyscus boylii</i>		x	
Pinyon Mouse	<i>Peromyscus truei</i>		x	
Deer Mouse	<i>Peromyscus maniculatus</i>		x	

Common Name	Scientific Name	Status	Predicted	Observed
Monterey Dusky-footed Woodrat	<i>Neotoma fuscipes luciana</i>	CSSC	x	
California Vole	<i>Microtus californicus</i>		x	
ORDER: CARNIVORA (Carnivores)				
FAMILY: CANIDAE (Foxes, Wolves, and Relatives)				
Coyote	<i>Canis latrans</i>			x
Gray Fox	<i>Urocyon cinereoargenteus</i>		x	
FAMILY: PROCYONIDAE (Raccoons and Relatives)				
Ringtail	<i>Bassariscus astutus</i>		x	
Raccoon	<i>Procyon lotor</i>			x
FAMILY: MUSTELIDAE (Weasels, Badgers, and Relatives)				
Long-tailed Weasel	<i>Mustela frenata</i>		x	
Badger	<i>Taxidea taxus</i>		x	
Western Spotted Skunk	<i>Spilogale gracilis</i> [= <i>putorius</i>]		x	
Striped Skunk	<i>Mephitis mephitis</i>		x	
FAMILY: FELIDAE (Cats)				
Bobcat	<i>Lynx rufus</i>		x	
FAMILY: CERVIDAE (Deer, Elk, and Relatives)				
Mule Deer	<i>Odocoileus hemionus</i>			x

¹ Introduced

SPECIAL STATUS SPECIES CODE DESIGNATIONS

FE = Federally Endangered
 FT = Federally listed Threatened
 SE = State listed Endangered
 ST = State listed Threatened
 FPE = Federally Proposed Endangered

FPT = Federally Proposed Threatened
 CSSC = California Species of Special Concern
 SP = State Protected Species

APPENDIX C.

**ACOE DATAFORMS: ROUTINE DETERMINATION
FOR MONTEREY BRIDGE NUMBER 412
PROJECT SITE**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Sample Number
1

Project/Site: Peachtree Road Bridge (No. 412) Applicant/Owner: Monterey County Department of Public Works Investigator: M. Bacca	Date: February 2, 1999 County: Monterey State: California
Do Normal Circumstances exist on the site? <input checked="" type="radio"/> Yes <input type="radio"/> No Is the site significantly disturbed (Atypical Situations?) <input type="radio"/> Yes <input checked="" type="radio"/> No Is the area a potential Problem Area? <input type="radio"/> Yes <input checked="" type="radio"/> No (If needed, explain on reverse.)	Community ID: <u>Sandbar</u> Transect ID : _____ Plot ID: _____

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Carex sp.</u>	<u>H</u>	<u>—</u>	9. _____	_____	_____
2. _____	_____	_____	10. _____	_____	_____
3. _____	_____	_____	11. _____	_____	_____
4. _____	_____	_____	12. _____	_____	_____
5. _____	_____	_____	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks: Carex sp. was assumed to be at least a Facultative hydrophyte.

HYDROLOGY

<p>Recorded Data (describe in Remarks):</p> <p>_____ Stream, Lake, or Tide Gauge</p> <p>_____ Aerial Photographs</p> <p>_____ Other</p> <p><input checked="" type="checkbox"/> No Recorded Data Available</p> <p>Field Observation:</p> <p>Depth of Surface Water: <u>0</u> (in.)</p> <p>Depth to Free Water in Pit: <u>>8"</u> (in.)</p> <p>Depth to Saturated Soil: <u>0</u> (in.)</p>	<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators:</p> <p>_____ Inundated</p> <p><input checked="" type="checkbox"/> Saturated</p> <p>_____ Water Marks</p> <p>_____ Drift Lines</p> <p><input checked="" type="checkbox"/> Sediment Deposits</p> <p><input checked="" type="checkbox"/> Drainage Patterns in Wetlands</p> <p>Secondary Indicators (2 or more required):</p> <p>_____ Oxidized Root Channels in Upper 12 in.</p> <p>_____ Water-Stained Leaves</p> <p>_____ Local Soil Survey Data</p> <p>_____ FAC-Neutral Test</p> <p>_____ Other (Explain in Remarks)</p>
<p>Remarks: Algal mats also observed.</p>	

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Sample Number
2

Project/Site: Peachtree Road Bridge (No. 412) Applicant/Owner: Monterey County Department of Public Works Investigator: M. Bacca	Date: February 2, 1999 County: Monterey State: California
Do Normal Circumstances exist on the site? <input checked="" type="radio"/> Yes <input type="radio"/> No Is the site significantly disturbed (Atypical Situations?) <input type="radio"/> Yes <input checked="" type="radio"/> No Is the area a potential Problem Area? <input type="radio"/> Yes <input checked="" type="radio"/> No (If needed, explain on reverse.)	Community ID: <u>Sandbar</u> Transect ID : _____ Plot ID: _____

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. _____	_____	_____	9. _____	_____	_____
2. _____	_____	_____	10. _____	_____	_____
3. _____	_____	_____	11. _____	_____	_____
4. _____	_____	_____	12. _____	_____	_____
5. _____	_____	_____	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). _____

No vegetation present.

HYDROLOGY

Recorded Data (describe in Remarks): _____ Stream, Lake, or Tide Gauge _____ Aerial Photographs _____ Other <input checked="" type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: _____ Inundated _____ Saturated _____ Water Marks _____ Drift Lines <input checked="" type="checkbox"/> Sediment Deposits _____ Drainage Patterns in Wetlands
Field Observation: Depth of Surface Water: <u>0</u> (in.) Depth to Free Water in Pit: <u>>8"</u> (in.) Depth to Saturated Soil: <u>>8"</u> (in.)	Secondary Indicators (2 or more required): _____ Oxidized Root Channels in Upper 12 in. _____ Water-Stained Leaves _____ Local Soil Survey Data _____ FAC-Neutral Test _____ Other (Explain in Remarks)
Remarks: Algal mats also observed.	

APPENDIX D.
SOILS OF THE
MONTEREY BRIDGE 412 PROJECT SITE

SOIL SURVEY OF

Monterey County, California



UNITED STATES DEPARTMENT OF AGRICULTURE
Soil Conservation Service
In cooperation with the
U.S. Forest Service and
University of California Agricultural Experiment Station

SOIL SURVEY

table at a depth of 48 to 60 inches were also included.

Runoff is very slow, and there is no erosion hazard. Roots can generally penetrate to a depth of 60 inches or more, but some can penetrate only to a depth of 18 to 36 inches because of the water table. The available water capacity is 6 to 9 inches. Flooding occurs 3 or 4 times in 7 out of 10 years and has a duration of as long as 14 to 40 days, mostly in the Carr Lake and Merritt Lake areas. If drained, this soil reacts like Carr Lake clay, moderately wet.

This soil is used mostly for irrigated row crops, principally celery, artichokes, and lettuce. Capability unit IIIw-5(14); range site not assigned.

Cg—Clear Lake clay, moderately wet. This is a nearly level soil on flood plains and in basins. It has the profile described as representative of the series.

Included with this soil in mapping were areas of Carr Lake clay that has a water table at a depth of 18 to 36 inches, which make up about 10 percent of the mapping unit, and areas of Pacheco, Mocho, Salinas, and Cropley soils. Also included were areas of very dark grayish brown, dark grayish brown, or grayish brown clays or silty clays, which make up as much as 10 acres. In areas on the south edge of Salinas near Abbott Street and Harkins Road, this Clear Lake soil is underlain by Antioch soils at a depth of about 24 to 36 inches. This is common where the terrace soils have eroded into the basins or flood plains. In some of these areas the soil has mottles but no water table. In areas north of Blanco Road from Armstrong Road west past Cooper Road the surface layer is nearly olive gray. In some areas it is clay, typically 18 to 24 inches thick, abruptly overlying a substratum of silt loam to very fine sand. Near Espinosa Road and the Castroville-Salinas Highway, areas of this soil are underlain by silty clay, silty clay loam, or muck at a depth of 18 to 24 inches and areas of other soils have an organic surface layer. The water table in this vicinity is about 18 to 60 inches from the surface. In 6 to 10 percent of the acreage the water table is at a depth of 36 to 60 inches but there are no mottles, or common to many medium distinct to prominent mottles but no water table.

Runoff is very slow, and there is no erosion hazard. Roots can penetrate to a depth of more than 60 inches, and the available water capacity is 8 to 10 inches. During periods of long and above-normal rainfall, this soil can be flooded for periods of 2 to 14 days a year in 7 out of 10 years, particularly in the areas of Carr Lake and Merritt Lake. This soil is presently partly drained, but it was poorly drained when it formed. The water table has been lowered by open drainage ditches and tile drains, by deepening drainage channels, and by limping.

This soil is used mostly for intensively irrigated row crops, principally celery, lettuce, broccoli, and cauliflower. Near Aromas a few apple orchards have been established. In some areas west of Salinas small amounts of salts are accumulating near the surface. Capability unit IIw-5(14); range site not assigned.

Climara Series

The Climara series consists of well drained soils on

uplands. These soils formed in material underlain by hard, greenish gray serpentine. Slopes are 15 to 50 percent. The vegetation consists of annual grasses and forbs and a few scattered pines, chamise, and California junipers. The elevation is 500 to 3,000 feet. The mean annual precipitation is 10 to 25 inches, the mean annual air temperature is 58° to 60° F, and the frost-free season is about 150 days. Summers are hot and dry, and winters are cool and moist.

In a representative profile the surface layer is dark gray, mildly alkaline to moderately alkaline clay about 21 inches thick. It is underlain by olive gray calcareous clay. Greenish gray serpentine is at a depth of 40 inches.

Permeability is slow, and the available water capacity is 4.5 to 7 inches. Roots penetrate to a depth of 30 to 40 inches.

Climara soils are used mostly for range.

Representative profile of Climara clay, 30 to 50 percent slopes, about 4,700 feet SE of Catfish Lake in SE 1/4 NW 1/4, sec. 2, T. 23 S., R. 14 E.

A11—0 to 11 inches; dark gray (5Y 4/1) light clay, very dark gray (5Y 3/1) when moist; strong medium and coarse angular blocky structure; very hard, friable, very sticky and very plastic; common very fine roots; common very fine tubular pores; mildly alkaline; gradual smooth boundary.

A12—11 to 21 inches; dark gray (5Y 4/1) clay, very dark gray (5Y 3/1) when moist; strong medium and coarse angular and subangular blocky structure and weak coarse prismatic structure; very hard, firm, very sticky and very plastic; common very fine and few medium roots; common very fine tubular pores; many small and medium intersecting slickensides; very slightly effervescent with lime in soft masses; moderately alkaline; gradual smooth boundary.

Cca—21 to 40 inches; olive gray (5Y 5/2) clay, dark olive gray (5Y 3/2) when moist; areas of gray and brown (5Y 5/1 and 7.5YR 5/4), very dark gray and brown (5Y 5/1 and 7.5YR 4/4) when moist; weak coarse and very coarse angular blocky structure; very hard, firm, very sticky and very plastic; few very fine and medium roots; common very fine tubular pores; strongly effervescent with lime disseminated and in soft filaments; moderately alkaline; abrupt smooth boundary.

IIR—40 to 46 inches; greenish gray serpentine.

The A1 horizon is dark gray or gray, and texture is clay or heavy clay loam. Reaction ranges from neutral to moderately alkaline. When dry, these soils crack from the surface to a depth of about 33 inches.

The Cca horizon is dark gray, gray, and olive gray, and texture is light clay or clay. Depth to lime commonly is 11 inches, and depth to bedrock ranges from 30 to 40 inches. In some places 10 to 15 percent fine angular gravel and some cobbles are throughout the soil.

ChE—Climara clay, 15 to 30 percent slopes. This is a moderately steep soil on uplands. Slopes are mostly 25 percent.

Included with this soil in mapping were areas of Diablo and Gilroy soils, Rock outcrop-Xerorthents, Xererts-Xerolls complex, and Climara clay, 30 to 50 percent slopes. Also included were areas where sheet and rill erosion is moderate and wet spots.

Runoff is rapid, and the erosion hazard is moderate. This soil is used mostly for range. Capability unit IVE-5(15); Clayey range site.

ChF—Climara clay, 30 to 50 percent slopes. This is a steep soil on uplands. It has the profile described as representative of the series. Slopes are mostly 40 percent.

Included with this soil in mapping were small areas of Montara, Millsholm, Gilroy, and Alo soils, Climara clay, 15 to 30 percent slopes, Rock outcrop-Xerorthents association, and Xererts-Xerolls complex. Also included were areas of clays that are similar to this Climara clay, but are calcareous throughout or are 40 to more than 60 inches deep to bedrock, and small areas of moderate sheet and rill erosion.

Runoff is rapid, and the erosion hazard is high.

This Climara soil is used for range. Small landslips, landslides, seeps, and springs are common on this soil. Capability unit VIe-1(15); Clayey range site.

Ck—Climara-Montara complex. The soils in this complex are steep to very steep. They formed on uplands in material that was derived from serpentine. Slopes are 30 to 75 percent. The Climara soil has slopes of 30 to 50 percent, and the Montara soil has slopes of 30 to 75 percent.

Climara soils make up 45 percent of this complex and Montara soils 20 percent. The rest consists of Gilroy, Millsholm, Alo, Nacimiento, and Diablo soils, Rock outcrop-Xerorthents association, Badland, severely eroded areas, and Xererts-Xerolls complex. These soils were so intermingled or so small in extent that it was not feasible to map them separately at the scale used.

Runoff is rapid, and the erosion hazard is high or very high.

This complex is used for range, watershed, and wildlife habitat. The soils have many landslips or landslides and are very unstable. Capability unit VIIe-1(15); Climara soil in Clayey range site, Montara soil in Serpentine range site.

Coastal Beaches

Cm—Coastal beaches. This land type is on narrow, sandy beaches and adjacent sand dunes. It is partly covered by water during high tides and is exposed during low tides. The beaches can consist of all sand, all gravel, all cobbles, or all boulders, or a mixture of any of these. There are no beaches in some areas where very steep escarpments or uplands rise abruptly from the water. This land type is mostly barren.

Included in mapping were areas of Dune land, Rock outcrop-Xerorthents association, and Psamments and Fluvents, frequently flooded.

Drainage is excessive to very poor. Permeability is very rapid, and the available water capacity is 2 or 3 inches. Runoff is slow, but the erosion hazard is very high because of wind and wave action. Depth of the root zone is variable, but where the beaches are mostly sand, roots can penetrate to a depth of 60 inches or more.

This land type is used mainly for recreation. It has no value for farming. Capability unit VIIIw-1(15); range site not assigned.

Cropley Series

The Cropley series consists of well drained soils on terraces, alluvial fans, flood plains, and in small basins. These soils formed in alluvium derived from sedimentary rocks. Slopes are 0 to 9 percent. The vegetation consists of annual grasses and forbs. The elevation is generally 50 to 1,500 feet, but ranges to 2,800 feet in

Priest Valley. The mean annual precipitation is 12 to 18 inches, the mean annual air temperature is 57° to 60° F, and the frost-free season is about 250 days, but in Priest Valley is only about 140 days. Summers are warm and dry, except in the northern Salinas Valley where they are often foggy, and winters are cool and moist.

In a representative profile the surface layer is very dark gray, moderately alkaline silty clay about 36 inches thick. Below this is dark gray and yellowish brown, moderately alkaline calcareous silty clay 10 inches thick. The underlying material is pale brown, very pale brown and light gray, moderately alkaline, calcareous silty clay and silty clay loam to a depth of more than 76 inches.

Permeability is slow, and the available water capacity is 8 to 10 inches. Roots penetrate to a depth of more than 60 inches. This soil has a high shrink-swell limitation that causes severe hazards for building sites, roads, and structures (fig. 2).

Cropley soils are used mostly for irrigated row crops. Some are used for dryland grain or annual pasture.

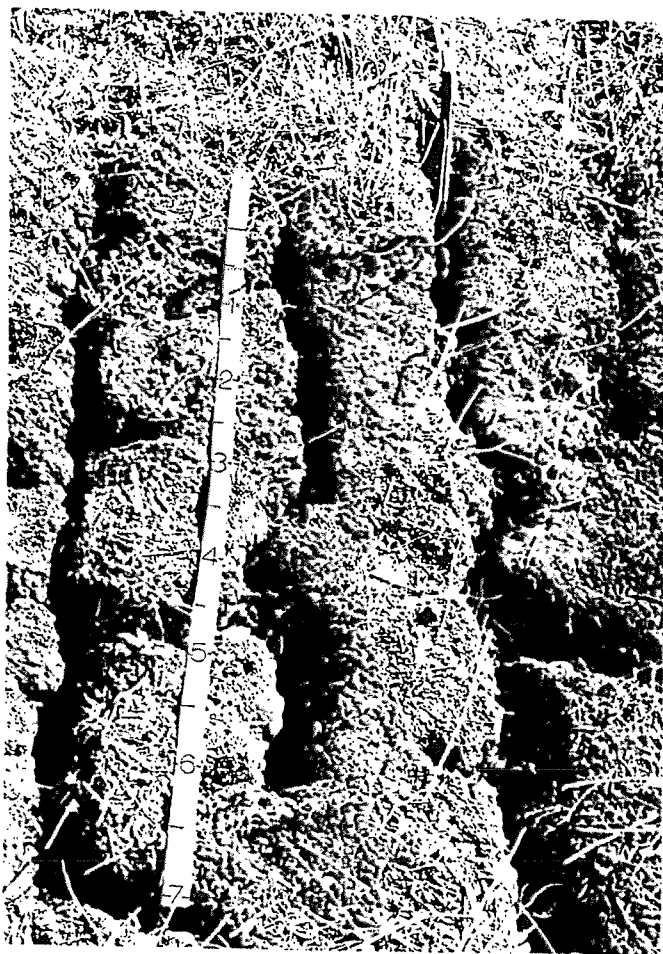


Figure 2.—Cropley silty clay after the soil has dried and maximum shrinkage has occurred. Cracks extend to a depth of about 4 feet. This soil has a high shrink-swell limitation that causes severe hazards for building sites, roads, and structures.

FIELD OFFICE OFFICIAL LIST OF HYDRIC SOIL MAP UNITS
FOR
MONTEREY COUNTY, CALIFORNIA

Map Units are listed in alpha-numeric order by map unit symbol. The 'HYDRIC CRITERIA' column refers to criteria defined in 'Hydric Soils of the United States' (USDA Miscellaneous Publication No. 1491 June, 1991.) The 'FSA ITEMS' column contains information needed for Food Security Act determinations required by Section 512.11(h)(4) of the National Food Security Act Manual (August 1991).

March 16, 1992

Soil Survey Area No.: CA053
Soil Survey Name: MONTEREY COUNTY, CALIFORNIA

Map Symbol	Map Unit Name (C) Component (I) Inclusion	Hyd?	Hydric Criteria	Hydric Landforms	FSA Items	Foot-Notes
AF	AQUIC XEROFLUVENTS (C) AQUIC XEROFLUVENTS	Y	4	Flood Plain	4,5	1
AaC	ALO SILTY CLAY, 2 TO 9 PERCENT SLOPES (C) ALO	N				
AaD	ALO SILTY CLAY, 9 TO 15 PERCENT SLOPES (C) ALO	N				
AaE	ALO SILTY CLAY, 15 TO 30 PERCENT SLOPES (C) ALO	N				
AaF	ALO SILTY CLAY, 30 TO 50 PERCENT SLOPES (C) ALO	N				
Ab	ALO-MILLSHOLM COMPLEX (C) ALO (C) MILLSHOLM	N N				
Ac	ALVISO SILTY CLAY LOAM (C) ALVISO	Y	2B3,4	Basin Floor	4,5	
Ad	ALVISO SILTY CLAY LOAM, DRAINED (C) ALVISO	Y	2B3,4	Basin Floor	4,5	
AeA	ANTIOCH VERY FINE SANDY LOAM, 0 TO 2 PERCENT SLOPES (C) ANTIOCH	N				

March 16, 1992

Soil Survey Area No.: CA053
 Soil Survey Name: MONTEREY COUNTY, CALIFORNIA

Map Symbol	Map Unit Name (C) Component (I) Inclusion	Hyd?	Hydric Criteria	Hydric Landforms	FSA Items	Foot-notes
AeC	ANTICCH VERY FINE SANDY LOAM, 2 TO 9 PERCENT SLOPES (C) ANTICCH	N				
AeD	ANTICCH VERY FINE SANDY LOAM, 9 TO 15 PERCENT SLOPES (C) ANTICCH (I) CLEAR LAKE	N Y	2B3	Basin Floor	1,5	
AgC	ARBUCKLE GRAVELLY LOAM, 2 TO 9 PERCENT SLOPES (C) ARBUCKLE	N				
AgD	ARBUCKLE GRAVELLY LOAM, 9 TO 15 PERCENT SLOPES (C) ARBUCKLE	N				
AKD	ARNOLD LOAMY SAND 9 TO 15 PERCENT SLOPES (C) ARNOLD	N				
AKF	ARNOLD LOAMY SAND, 15 TO 50 PERCENT SLOPES (C) ARNOLD	N				
Am	ARNOLD-SAN ANDREAS COMPLEX (C) ARNOLD (C) SAN ANDREAS	N N				
Ar	ARNOLD-SANTA YNEZ COMPLEX (C) ARNOLD (C) SANTA YNEZ	N N				

March 16, 1992

Soil Survey Area No.: CA053
 Soil Survey Name: MONTEREY COUNTY, CALIFORNIA

Map Symbol	Map Unit Name (C) Component (I) Inclusion	Hyd?	Hydric Criteria	Hydric Landforms	FSA Items	Footnotes
AsA	ARROYO SECO GRAVELLY SANDY LCAM, 0 TO 2 PERCENT SLOPES (C) ARROYO SECO	N				
AsB	ARROYO SECO GRAVELLY SANDY LCAM, 2 TO 5 PERCENT SLOPES (C) ARROYO SECO	N				
AsC	ARROYO SECO GRAVELLY SANDY LCAM, 5 TO 9 PERCENT SLOPES (C) ARROYO SECO	N				
AvA	ARROYO SECO GRAVELLY LCAM, 0 TO 2 PERCENT SLOPES (C) ARROYO SECO	N				
AvB	ARROYO SECO GRAVELLY LCAM, 2 TO 5 PERCENT SLOPES (C) ARROYO SECO	N				
AyD	AYAR SILTY CLAY, 5 TO 15 PERCENT SLOPES (C) AYAR	N				
AyE	AYAR SILTY CLAY, 15 TO 30 PERCENT SLOPES (C) AYAR	N				
AyF	AYAR SILTY CLAY, 30 TO 50 PERCENT SLOPES (C) AYAR	N				
Ba	BADLAND (C) BADLAND (I) PSAMMENTS (I) FLUENTS	N Y Y	 4 4	 Alluvial Flat (plain) Alluvial Flat (plain)	 4,5 4,5	

March 16, 1992

Soil Survey Area No.: CA053
 Soil Survey Name: MONTEREY COUNTY, CALIFORNIA

Map Symbol	Map Unit Name (C) Component (I) Inclusion	Hyd? Hydric Cri- teria	Hydric Landforms	FSA Items	Foot- notes
Bbc	BAYWOOD SAND, 2 TO 15 PERCENT SLOPES (C) BAYWOOD	N			
CaD	CHAMISE SHALY LOAM, 9 TO 15 PERCENT SLOPES (C) CHAMISE	N			
CaE	CHAMISE SHALY LOAM, 15 TO 30 PERCENT SLOPES (C) CHAMISE	N			
CaF	CHAMISE SHALY LOAM, 30 TO 50 PERCENT SLOPES (C) CHAMISE	N			
CbA	CHUALAR LOAM, 0 TO 2 PERCENT SLOPES (C) CHUALAR	N			
CbB	CHUALAR LOAM, 2 TO 5 PERCENT SLOPES (C) CHUALAR	N			
CbC	CHUALAR LOAM, 5 TO 9 PERCENT SLOPES (C) CHUALAR	N			
CcG	CIENEGA FINE GRAVELLY SANDY LOAM, 30 TO 75 PERCENT SLOPES (C) CIENEGA	N			
Cd	CIENEGA-ROCK OUTCROP COMPLEX (C) CIENEGA (C) ROCK OUTCROP	N N			

March 16, 1992

Soil Survey Area No.: CA053
 Soil Survey Name: MONTEREY COUNTY, CALIFORNIA

Map Symbol	Map Unit Name (C) Component (I) Inclusion	Hyd?	Hydric Cri- teria	Hydric Landforms	FSA Items	Foot- notes
Ce	CIENEBA-SUR-ROCK OUTCRCP COMPLEX (C) CIENEBA (C) ROCK OUTCRCP (C) SUR	N N N				
Cf	CLEAR LAKE CLAY (C) CLEAR LAKE	Y	283,4	Basin Floor	4,5	
Cg	CLEAR LAKE CLAY, MODERATELY WET (C) CLEAR LAKE	Y	283,4	Basin Floor	4,5	1
ChE	CLIMARA CLAY, 15 TO 30 PERCENT SLOPES (C) CLIMARA (I) UNNAMED	N Y	4	Depression	4,5	
ChF	CLIMARA CLAY, 30 TO 50 PERCENT SLOPES (C) CLIMARA (I) UNNAMED	N Y	4	Depression	4,5	
Ck	CLIMARA-MONTARA COMPLEX (C) CLIMARA (C) MONTARA	N N				
Cm	COASTAL BEACHES (C) COASTAL BEACHES	Y	4	Beach	4	
ChA	CROPLEY SILTY CLAY, 0 TO 2 PERCENT SLOPES (C) CROPLEY (I) CLEAR LAKE	N Y	283	Basin Floor	1,5	
ChC	CROPLEY SILTY CLAY, 2 TO 9 PERCENT SLOPES (C) CROPLEY	N				

March 16, 1992

Soil Survey Area No.: CA053
 Soil Survey Name: MONTEREY COUNTY, CALIFORNIA

Map Symbol	Map Unit Name (C) Component (:) Inclusion	Hyd?	Hydric Cri- teria	Hydric Landforms	FSA Items	Foot- notes
DaA	DANVILLE SANDY CLAY LOAM, 0 TO 2 PERCENT SLOPES (C) DANVILLE	N				
DaC	DANVILLE SANDY CLAY LOAM, 2 TO 9 PERCENT SLOPES (C) DANVILLE	N				
DbO	DIABLO CLAY, 9 TO 15 PERCENT SLOPES (C) DIABLO	N				
DbE	DIABLO CLAY, 15 TO 30 PERCENT SLOPES (C) DIABLO (:) AQUIC XEROFLUVENTS	N Y	4	Flood Plain	4,5	
DbF	DIABLO CLAY, 30 TO 50 PERCENT SLOPES (C) DIABLO	N				
DcC	DIBBLE LOAM, 2 TO 9 PERCENT SLOPES (C) DIBBLE (:) UNNAMED	N Y	4	Swale	4,5	
DcB	DIBBLE SILT LOAM, 9 TO 15 PERCENT SLOPES (C) DIBBLE	N				
DcE	DIBBLE SILT LOAM, 15 TO 30 PERCENT SLOPES (C) DIBBLE	N				
DdF	DIBBLE SILT LOAM, 30 TO 50 PERCENT SLOPES (C) DIBBLE	N				

March 16, 1992

Soil Survey Area No.: CA053
 Soil Survey Name: MONTEREY COUNTY, CALIFORNIA

Map Symbol	Map Unit Name (C) Component (I) Inclusion	Hyd?	Hydric Cri- teria	Hydric Landforms	FSA Items	Foot- notes
DeA	DOCAS SILTY CLAY LOAM, 0 TO 2 PERCENT SLOPES (C) DOCAS		N			
DeC	DOCAS SILTY CLAY LOAM, 2 TO 9 PERCENT SLOPES (C) DOCAS		N			
Df	DUNE LAND (C) DUNE LAND (I) UNNAMED (I) COASTAL BEACHES		N Y Y			
				4 4	Depression Beach	4,5 4,5
EaA	ELDER SANDY LOAM, 0 TO 2 PERCENT SLOPES (C) ELDER		N			
EbC	ELDER VERY FINE SANDY LOAM, 2 TO 9 PERCENT SLOPES (C) ELDER		N			
EcA	ELDER LOAM, GRAVELLY SUBSTRATUM, 0 TO 2 PERCENT SLOPES (C) ELDER		N			
EdB	ELKHORN FINE SANDY LOAM, 2 TO 5 PERCENT SLOPES (C) ELKHORN (I) UNNAMED		N Y			
				4	Depression	4,5
EdC	ELKHORN FINE SANDY LOAM, 5 TO 9 PERCENT SLOPES (C) ELKHORN		N			

March 16, 1992

Soil Survey Area No.: CA053
 Soil Survey Name: MONTEREY COUNTY, CALIFORNIA

Map Symbol	Map Unit Name (C) Component (I) Inclusion	Hyd?	Hydric Cri- teria	Hydric Landforms	FSA Items	Foot- notes
EdD	ELKHORN FINE SANDY LOAM, 9 TO 15 PERCENT SLOPES (C) ELKHORN	N				
EeD	ELKHORN FINE SANDY LOAM, THIN SURFACE VARIANT, 5 TO 15 PERCENT SLOPES (C) ELKHORN VARIANT	N				
EeE	ELKHORN FINE SANDY LOAM, THIN SURFACE VARIANT, 15 TO 30 PERCENT SLOPES (C) ELKHORN VARIANT	N				
Fa	FLUVENTS, STONY (C) FLUVENTS	Y	4	Flood Plain	4,5	
Ga	GAMBCA-SUR COMPLEX (C) GAMBCA (C) SUR	N N				
Gbc	GAREY SANDY LOAM, 2 TO 9 PERCENT SLOPES (C) GAREY	N				
Gbe	GAREY SANDY LOAM, 9 TO 30 PERCENT SLOPES (C) GAREY	N				
Gbf2	GAREY SANDY LOAM, 30 TO 50 PERCENT SLOPES, ERODED (C) GAREY	N				
Gc	GAREY-OCEANO COMPLEX (C) GAREY (C) OCEANO	N N				

March 16, 1992

Soil Survey Area No.: CA053
 Soil Survey Name: MONTEREY COUNTY, CALIFORNIA

Map Symbol	Map Unit Name (C) Component (I) Inclusion	Hyc?	Hydric Cri- teria	Hydric Landforms	FSA items	Foot- notes
GcE	GAVIOTA SANDY LOAM, 15 TO 30 PERCENT SLOPES (C) GAVIOTA		N			
GdF	GAVIOTA SANDY LOAM, 30 TO 75 PERCENT SLOPES (C) GAVIOTA		N			
GeE	GAVIOTA-SAN ANDREAS COMPLEX, 15 TO 30 PERCENT SLOPES (C) GAVIOTA (C) SAN ANDREAS		N N			
GeG	GAVIOTA-SAN ANDREAS COMPLEX, 30 TO 75 PERCENT SLOPES (C) GAVIOTA (C) SAN ANDREAS		N N			
GfE	GAZOS SILT LOAM, 15 TO 30 PERCENT SLOPES (C) GAZOS		N			
GfF	GAZOS SILT LOAM, 30 TO 50 PERCENT SLOPES (C) GAZOS		N			
GgD2	GILROY GRAVELLY LOAM, 30 TO 75 PERCENT SLOPES, ERODED (C) GILROY		N			
GgE	GILROY GRAVELLY LOAM, 15 TO 50 PERCENT SLOPES (C) GILROY		N			

March 16, 1992

Soil Survey Area No.: CA053
 Soil Survey Name: MONTEREY COUNTY, CALIFORNIA

Map Symbol	Map Unit Name (C) Component (I) Inclusion	Hyd?	Hydric Criteria	Hydric Landforms	FSA Items	Foot-Notes
GhC	GLORIA SANDY LOAM, 2 TO 9 PERCENT SLOPES (C) GLORIA	N				
GhD	GLORIA SANDY LOAM, 9 TO 15 PERCENT SLOPES (C) GLORIA	N				
GhF	GLORIA SANDY LOAM, 15 TO 50 PERCENT SLOPES (C) GLORIA	N				
GkB	GORGONIO SANDY LOAM, 0 TO 5 PERCENT SLOPES (C) GORGONIO (I) FLUVENTS, STONY	N Y	4	Flood Plain	4,5	
GmB	GREENFIELD FINE SANDY LOAM, 0 TO 5 PERCENT SLOPES (C) GREENFIELD	N				
GmC	GREENFIELD FINE SANDY LOAM, 5 TO 9 PERCENT SLOPES (C) GREENFIELD	N				
GmD	GREENFIELD FINE SANDY LOAM, 9 TO 15 PERCENT SLOPES (C) GREENFIELD	N				
HaE	HAIRE LOAM, 15 TO 30 PERCENT SLOPES (C) HAIRE	N				
HbB	HANFORD GRAVELLY SANDY LOAM, 0 TO 5 PERCENT SLOPES (C) HANFORD	N				

March 16, 1992

Soil Survey Area No.: CA053
 Soil Survey Name: MONTEREY COUNTY, CALIFORNIA

Map Symbol	Map Unit Name (C) Component (I) Inclusion	Hyd?	Hydric Criteria	Hydric Landforms	FSA Items	Footnotes
HcF	HENNEKE EXTREMELY STONY CLAY LOAM, 15 TO 75 PERCENT SLOPES (C) HENNEKE					
		N				
JaF	JUNIPERO LOAMY SAND, 30 TO 50 PERCENT SLOPES (C) JUNIPERO					
		N				
JbG	JUNIPERO SANDY LOAM, 30 TO 75 PERCENT SLOPES (C) JUNIPERO					
		N				
Jc	JUNIPERO-SUR COMPLEX (C) JUNIPERO (C) SUR					
		N				
		N				
LaO	LINNE SILTY CLAY LOAM 5 TO 15 PERCENT SLOPES (C) LINNE					
		N				
LaE	LINNE SILTY CLAY LOAM, 15 TO 30 PERCENT SLOPES (C) LINNE					
		N				
LaF	LINNE SILTY CLAY LOAM, 30 TO 50 PERCENT SLOPES (C) LINNE					
		N				
LbO	LINNE-DIABLO COMPLEX, 9 TO 15 PERCENT SLOPES (C) DIABLO (C) LINNE					
		N				
		N				

March 16, 1992

Soil Survey Area No.: CA053
 Soil Survey Name: MONTEREY COUNTY, CALIFORNIA

Map Symbol	Map Unit Name (C) Component (I) Inclusion	Hyd?	Hydric Cri- teria	Hydric Landforms	FSA Items	Foot- notes
LbE	LINNE-DIABLO COMPLEX, 15 TO 30 PERCENT SLOPES (C) DIABLO (C) LINNE		N N			
LcE	LINNE-SHEDD SILTY CLAY LOAMS, 15 TO 30 PERCENT SLOPES (C) LINNE (C) SHEDD		N N			
LcF	LINNE-SHEDD SILTY CLAY LOAMS, 30 TO 50 PERCENT SLOPES (C) LINNE (C) SHEDD		N N			
LcF2	LINNE-SHEDD SILTY CLAY LOAMS, 15 TO 50 PERCENT SLOPES, ERODED (C) LINNE (C) SHEDD		N N			
LcG2	LINNE-SHEDD SILTY CLAY LOAMS, 50 TO 75 PERCENT SLOPES, ERODED (C) LINNE (C) SHEDD		N N			
LdA	LOCKWOOD LOAM, 0 TO 2 PERCENT SLOPES (C) LOCKWOOD		N			
LdC	LOCKWOOD LOAM, 2 TO 9 PERCENT SLOPES (C) LOCKWOOD		N			

March 16, 1992

Soil Survey Area No.: CA053
 Soil Survey Name: MONTEREY COUNTY, CALIFORNIA

Map Symbol	Map Unit Name (C) Component (:) Inclusion	Hyd? Hydric	Cri- teria	Hydric Landforms	FSA Items	Foot- notes
LeA	LOCKWOOD SHALY LOAM, 0 TO 2 PERCENT SLOPES (C) LOCKWOOD		N			
LeC	LOCKWOOD SHALY LOAM, 2 TO 9 PERCENT SLOPES (C) LOCKWOOD (I) PACHECO (I) FLUVENTS,STONY		N Y Y	2A 4	Flood Plain Flood Plain	1,5 4,5 1 1
LeD	LOCKWOOD SHALY LOAM, 9 TO 15 PERCENT SLOPES (C) LOCKWOOD		N			
LgA	LOCKWOOD SHALY LOAM, 0 TO 2 PERCENT SLOPES, WET (C) LOCKWOOD		Y	2B3	Swale	1,5 1
LhE	LOPEZ SHALY LOAM, 15 TO 30 PERCENT SLOPES (C) LOPEZ		N			
LkF	LOS GATOS GRAVELLY LOAM, 30 TO 50 PERCENT SLOPES (C) LOS GATOS		N			
LkG	LOS GATOS GRAVELLY LOAM, 50 TO 75 PERCENT SLOPES (C) LOS GATOS		N			
LtD	LOS OSCS CLAY LOAM, 9 TO 15 PERCENT SLOPES (C) LOS OSCS		N			

March 16, 1992

Soil Survey Area No.: CA053
 Soil Survey Name: MONTEREY COUNTY, CALIFORNIA

Map Symbol	Map Unit Name (C) Component (I) Inclusion	Hyd?	Hydric Cri- teria	Hydric Landforms	FSA Items	Foot- notes
LmE	LOS CSCS CLAY LOAM, 15 TO 30 PERCENT SLOPES (C) LOS CSCS		N			
LmF	LOS CSCS CLAY LOAM, 30 TO 50 PERCENT SLOPES (C) LOS CSCS		N			
LmG	LOS CSCS CLAY LOAM, 50 TO 75 PERCENT SLOPES (C) LOS CSCS		N			
Ln	LOS CSCS-MILLSHOLM COMPLEX (C) LOS CSCS (C) MILLSHOLM		N N			
MK	MILLSHOLM-ALO ASSOCIATION (C) ALO (C) MILLSHOLM		N N			
MaE	MCCOY CLAY LOAM, 15 TO 30 PERCENT SLOPES (C) MCCOY		N			
MaF	MCCOY CLAY LOAM, 30 TO 50 PERCENT SLOPES (C) MCCOY		N			
MaG	MCCOY CLAY LOAM, 50 TO 75 PERCENT SLOPES (C) MCCOY		N			
MBE	MCCOY-GILROY COMPLEX, 15 TO 30 PERCENT SLOPES (C) GILROY (C) MCCOY		N N			

March 16, 1992

Soil Survey Area No.: CA053
 Soil Survey Name: MONTEREY COUNTY, CALIFORNIA

Map Symbol	Map Unit Name (C) Component (I) Inclusion	Hyd?	Hydric Criteria	Hydric Landforms	FSA Items	Foot-notes
MbG	MCCOY-GILROY COMPLEX, 30 TO 75 PERCENT SLOPES (C) GILROY (C) MCCOY	N N				
McG	MCCOY GRAVELLY LOAM, VERY STONY SUBSOIL VARIANT, 30 TO 75 PERCENT SLOPES (C) MCCOY VARIANT	N				
Md	MCMULLIN-PLASKETT COMPLEX (C) MCMULLIN (C) PLASKETT	N N				
Me	METZ LOAMY SAND (C) METZ	N				
Mf	METZ FINE SANDY LOAM (C) METZ (I) FLUVENTS (I) PACHECO (I) PSAMMENTS	N Y Y Y	 4 2A 4	 Flood Plain Flood Plain Flood Plain	 4,5 1,5 4,5	
Mg	METZ COMPLEX (C) METZ (C) METZ	Y N	4	Drainageways	4,5	
MhG	MILLSHOLM LOAM, 30 TO 75 PERCENT SLOPES (C) MILLSHOLM	N				
Mm	MILLSHOLM-GAZOS COMPLEX (C) GAZOS (C) MILLSHOLM	N N				
MnA	MOCCHO SILT LOAM, 0 TO 2 PERCENT SLOPES (C) MOCCHO (I) PACHECO	N Y	2A	Flood Plain	1,5	

March 16, 1992

Soil Survey Area No.: CA053
 Soil Survey Name: MONTEREY COUNTY, CALIFORNIA

Map Symbol	Map Unit Name (C) Component (I) Inclusion	Hyd?	Hydric Criteria	Hydric Landforms	FSA Items	Foot-notes
MoA	MOCCHO SILTY CLAY LOAM, 0 TO 2 PERCENT SLOPES (C) MOCCHO					
		N				
MoC	MOCCHO SILTY CLAY LOAM, 2 TO 9 PERCENT SLOPES (C) MOCCHO					
		N				
Mp	MONTARA-ROCK OUTCROP COMPLEX (C) MONTARA (C) ROCK OUTCROP					
		N				
		N				
NaD	NACIMIENTO SILTY CLAY LOAM, 9 TO 15 PERCENT SLOPES (C) NACIMIENTO					
		N				
NaE	NACIMIENTO SILTY CLAY LOAM, 15 TO 30 PERCENT SLOPES (C) NACIMIENTO					
		N				
NaF	NACIMIENTO SILTY CLAY LOAM, 30 TO 50 PERCENT SLOPES (C) NACIMIENTO					
		N				
NaG	NACIMIENTO SILTY CLAY LOAM, 50 TO 75 PERCENT SLOPES (C) NACIMIENTO					
		N				
NbF	NACIMIENTO-LOS OSOS COMPLEX, 30 TO 50 PERCENT SLOPES (C) LOS OSOS (C) NACIMIENTO (C) SAN BENITO					
		N				
		N				
		N				

March 16, 1992

Soil Survey Area No.: CA053
 Soil Survey Name: MONTEREY COUNTY, CALIFORNIA

Map Symbol	Map Unit Name (C) Component (:) Inclusion	Hyd?	Hydric Criteria	Hydric Landforms	FSA Items	Foot- notes
NbG	NACIMIENTO-LCS OSOS COMPLEX, 50 TO 75 PERCENT SLOPES (C) LOS CSCS (C) NACIMIENTO (C) SAN BENITO					
		X				
		X				
		X				
NcC	NARLON LOAMY FINE SAND, 2 TO 9 PERCENT SLOPES (C) NARLON	Y	2A	Marine Terrace	1,5	
NcE	NARLON LOAMY FINE SAND, 15 TO 30 PERCENT SLOPES (C) NARLON	Y	2A	Marine Terrace	1,5	
CaD	OCEANO LOAMY SAND, 2 TO 15 PERCENT SLOPES (C) OCEANO					
		X				
PR	PSAMMENTS AND FLUVENTS, OCCASIONALLY FLOODED (C) FLUVENTS (C) PSAMMENTS					
		X				
		X				
PS	PSAMMENTS AND FLUVENTS, FREQUENTLY FLOODED (C) FLUVENTS (C) PSAMMENTS	Y	4	Flood Plain	4,5	
		Y	4	Flood Plain	4,5	
Pa	PACHECO CLAY LOAM (C) PACHECO	Y	2A	Flood Plain	1,5	:
Pb	PACHECO SILTY CLAY LOAM, OCCASIONALLY FLOODED (C) PACHECO	Y	2A,4	Flood Plain	4,5	:

March 16, 1992

Soil Survey Area No.: CA053
 Soil Survey Name: MONTEREY COUNTY, CALIFORNIA

Map Symbol	Map Unit Name (C) Component (I) Inclusion	Hyd?	Hydric Criteria	Hydric Landforms	FSA Items	Foot-notes
PcC	PARKFIELD CLAY, 2 TO 9 PERCENT SLOPES (C) PARKFIELD	N				
PcE	PARKFIELD CLAY, 15 TO 30 PERCENT SLOPES (C) PARKFIELD (I) FLUVENTS	N Y	4	Flood Plain	4,5	
PdC	PFEIFFER FINE SANDY LOAM, 2 TO 9 PERCENT SLOPES (C) PFEIFFER	N				
PdD	PFEIFFER FINE SANDY LOAM, 9 TO 15 PERCENT SLOPES (C) PFEIFFER	N				
Pe	PFEIFFER-ROCK OUTCROP COMPLEX (C) PFEIFFER (C) ROCK OUTCROP	N N				
Pf	PICO FINE SANDY LOAM (C) PICO (I) PACHECO	N Y	2A	Flood Plain	1,5	
PgE	PINNACLES COARSE SANDY LOAM, 5 TO 30 PERCENT SLOPES (C) PINNACLES	N				
PHG2	PINNACLES STONY SANDY LOAM, 30 TO 75 PERCENT SLOPES, ERCOED (C) PINNACLES	N				
PKE	PINNACLES COARSE SANDY LOAM, VERY GRAVELLY SUBSOIL VARIANT, 5 TO 30 PERCENT SLOPES (C) PINNACLES VARIANT	N				

March 16, 1992

Soil Survey Area No.: CA053
 Soil Survey Name: MONTEREY COUNTY, CALIFORNIA

Map Symbol	Map Unit Name (C) Component (I) Inclusion	Hyd?	Hydric Cri- teria	Hydric Landforms	FSA Items	Foot- notes
PKF	PINNACLES COARSE SANDY LOAM, VERY GRAVELLY SUBSOIL VARIANT, 30 TO 50 PERCENT SLOPES (C) PINNACLES VARIANT		N			
Pm	PITS AND DUMPS (C) DUMPS (C) PITS (I) UNNAMED		N N Y	3,4	Flood Plain	4,5
PnA	PLACENTIA SANDY LOAM, 0 TO 2 PERCENT SLOPES (C) PLACENTIA (I) UNNAMED		N Y	3	Depression	4,5
PnC	PLACENTIA SANDY LOAM, 2 TO 9 PERCENT SLOPES (C) PLACENTIA		N			
PnD	PLACENTIA SANDY LOAM, 9 TO 15 PERCENT SLOPES (C) PLACENTIA		N			
PnE	PLACENTIA SANDY LOAM, 15 TO 30 PERCENT SLOPES (C) PLACENTIA		N			
PcE	PLACENTIA-ARBUCKLE COMPLEX, 15 TO 30 PERCENT SLOPES (C) ARBUCKLE (C) PLACENTIA		N N			
Pp	PLASKETT-RELIZ COMPLEX (C) PLASKETT (C) RELIZ		N N			

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Soil Survey Area No.: CA053
 Soil Survey Name: MONTEREY COUNTY, CALIFORNIA

Map Symbol	Map Unit Name (C) Component (I) Inclusion	Hyd?	Hydric Criteria	Hydric Landforms	FSA Items	Foot-notes
RC	ROCK OUTCROP-XERCERTHENT ASSOCIATION (C) ROCK OUTCROP (C) XERCERTHENT	N N				
RaA	RINCON CLAY LOAM, 0 TO 2 PERCENT SLOPES (C) RINCON	N				
RaC	RINCON CLAY LOAM, 2 TO 9 PERCENT SLOPES (C) RINCON	N				
RaD	RINCON CLAY LOAM, 9 TO 15 PERCENT SLOPES (C) RINCON	N				
RaE	RINCON CLAY LOAM, 15 TO 30 PERCENT SLOPES (C) RINCON	N				
Rb	RINDGE MUCK (C) RINDGE	Y	1	Slough	1	
SG	SANTA LUCIA-RELIZ ASSOCIATION (C) LOPEZ (C) RELIZ (C) SANTA LUCIA	N N N				
SaA	SALINAS LOAM, 0 TO 2 PERCENT SLOPES (C) SALINAS	N				
SbA	SALINAS CLAY LOAM, 0 TO 2 PERCENT SLOPES (C) SALINAS (I) PACHECO (I) CLEAR LAKE	N Y Y	2A 2B3,4	Flood Plain Basin Floor	1,5 4,5	

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Soil Survey Area No.: CA053
 Soil Survey Name: MONTEREY COUNTY, CALIFORNIA

Map Symbol	Map Unit Name (C) Component (:) Inclusion	Hyd?	Hydric Cri- teria	Hydric Landforms	FSA Items	Foot- notes
Sbc	SALINAS CLAY LOAM, 2 TO 9 PERCENT SLOPES (C) SALINAS		N			
ScE	SAN ANDREAS FINE SANDY LOAM, 15 TO 30 PERCENT SLOPES (C) SAN ANDREAS		N			
ScG	SAN ANDREAS FINE SANDY LOAM, 30 TO 75 PERCENT SLOPES (C) SAN ANDREAS		N			
ScF	SAN BENITO CLAY LOAM, 30 TO 50 PERCENT SLOPES (C) SAN BENITO		N			
ScG	SAN BENITO CLAY LOAM, 50 TO 75 PERCENT SLOPES (C) SAN BENITO		N			
SeG	SAN TIMOTEO GRAVELLY LOAM, 30 TO 75 PERCENT SLOPES (C) SAN TIMOTEO		N			
SfD	SANTA LUCIA SHALY CLAY LOAM, 2 TO 15 PERCENT SLOPES (C) SANTA LUCIA		N			
SfE	SANTA LUCIA SHALY CLAY LOAM, 15 TO 30 PERCENT SLOPES (C) SANTA LUCIA		N			
SfF	SANTA LUCIA SHALY CLAY LOAM, 30 TO 50 PERCENT SLOPES (C) SANTA LUCIA		N			

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Soil Survey Area No.: CA053
 Soil Survey Name: MONTEREY COUNTY, CALIFORNIA

Map Symbol	Map Unit Name (C) Component (I) Inclusion	Hyd?	Hydric Criteria	Hydric Landforms	FSA Items	Foot- notes
ShC	SANTA YNEZ FINE SANDY LOAM, 2 TO 9 PERCENT SLOPES (C) SANTA YNEZ (I) ALVISO	N Y	2B3,4	Slough	4,5	
ShD	SANTA YNEZ FINE SANDY LOAM, 9 TO 15 PERCENT SLOPES (C) SANTA YNEZ	N				
ShD2	SANTA YNEZ FINE SANDY LOAM, 5 TO 15 PERCENT SLOPES, ERODED (C) SANTA YNEZ	N				
ShE	SANTA YNEZ FINE SANDY LOAM, 15 TO 30 PERCENT SLOPES (C) SANTA YNEZ	N				
SmG3	SHEDD SILT LOAM, 30 TO 75 PERCENT SLOPES, SEVERELY ERODED (C) SHEDD	N				
SnD	SHEDD SILTY CLAY LOAM, 9 TO 15 PERCENT SLOPES (C) SHEDD	N				
SnE	SHEDD SILTY CLAY LOAM, 15 TO 30 PERCENT SLOPES (C) SHEDD	N				
SnF2	SHEDD SILTY CLAY LOAM, 30 TO 50 PERCENT SLOPES, ERODED (C) SHEDD	N				

March 16, 1992

Soil Survey Area No.: CA053
 Soil Survey Name: MONTEREY COUNTY, CALIFORNIA

Map Symbol	Map Unit Name (C) Component (I) Inclusion	Hyd?	Hydric Criteria	Hydric Landforms	FSA Items	Footnotes
So0	SHERIDAN COARSE SANDY LOAM, 5 TO 15 PERCENT SLOPES (C) SHERIDAN (I) MARLOM	N Y	2A	Marine Terrace	1,5	
SoE	SHERIDAN COARSE SANDY LOAM, 15 TO 30 PERCENT SLOPES (C) SHERIDAN	N				
SoG	SHERIDAN COARSE SANDY LOAM, 30 TO 75 PERCENT SLOPES (C) SHERIDAN	N				
Sp0	SNELLING-GREENFIELD COMPLEX, 5 TO 15 PERCENT SLOPES (C) GREENFIELD (C) SNELLING	N N				
SpE2	SNELLING-GREENFIELD COMPLEX, 9 TO 30 PERCENT SLOPES, ERODED (C) GREENFIELD (C) SNELLING	N N				
SrA	SORRENTO CLAY LOAM, 0 TO 2 PERCENT SLOPES (C) SORRENTO	N				
SrC	SORRENTO CLAY LOAM, 2 TO 9 PERCENT SLOPES (C) SORRENTO	N				
Ss	SUR-JUNIPERO COMPLEX (C) JUNIPERO (C) SUR	N N				

March 16, 1992

Soil Survey Area No.: CA053
 Soil Survey Name: MONTEREY COUNTY, CALIFORNIA

Map Symbol	Map Unit Name (C) Component (I) Inclusion	Hyd?	Hydric Criteria	Hydric Landforms	FSA Items	Foot-notes
St	SUR-PLASKETT COMPLEX (C) PLASKETT (C) SUR	N N				
TaC	TANGAIR FINE SAND, 0 TO 5 PERCENT SLOPES (C) TANGAIR	Y	2B2	Marine Terrace	1,5	1
TbB	TUJUNGA FINE SAND, 0 TO 5 PERCENT SLOPES (C) TUJUNGA (I) FLUVENTS (I) PSAMMENTS	N Y Y	4 4	Flood Plain Flood Plain	4,5 4,5	
VaD	VISTA COARSE SANDY LOAM, 5 TO 15 PERCENT SLOPES (C) VISTA	N				
VaE	VISTA COARSE SANDY LOAM, 15 TO 30 PERCENT SLOPES (C) VISTA	N				
VaG	VISTA COARSE SANDY LOAM, 30 TO 75 PERCENT SLOPES (C) VISTA	N				
Vb	VISTA-ROCK OUTCROP COMPLEX (C) ROCK OUTCROP (C) VISTA	N N				
XA	XERERTS-XEROLLS COMPLEX (C) XERERTS (C) XEROLLS (I) UNNAMED	N N Y	4	Depression	4,5	

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Soil Survey Area No.: CA053
Soil Survey Name: MONTEREY COUNTY, CALIFORNIA

Map Symbol	Map Unit Name (C) Component (I) Inclusion	Hyd?	Hydric Cri- teria	Hydric Landforms	FSA Items	Foot- notes
XB	XERCRTHEMETS, SANDY (C) XERCRTHEMETS	N				
XC	XERCRTHEMETS, LOAMY (C) XERCRTHEMETS	N				
XD	XERCRTHEMETS, DISSECTED (C) XERCRTHEMETS	N				
	(C) XERCRTHEMETS	N				

Footnotes:

1. Hydrology has been altered in some or all areas of this map unit through drainage and/or protection from flooding. Soil characteristics indicate that hydric soil conditions existed prior to alteration of drainage.

APPENDIX E.

**CALIFORNIA NATURAL DIVERSITY DATA BASE SEARCH RESULTS
FOR MONTEREY BRIDGE NUMBER 412
PROJECT SITE**

California Department of Fish and Game
Natural Diversity Data Base
Full Condensed Report Multiple Records...
Monterey Bridge #412 - Project #1212-03

* AMBYSTOMA CALIFORNIENSE *
* CALIFORNIA TIGER SALAMANDER List Status-NDDB Element Ranks Other Lists *
* Element Code: AAAAAA01147 Federal: Candidate Global: G2G3 CDFG Status: SC *
* State: None State: S2S3 *

* Habitat Associations

General: ANNUAL GRASSLANDS & GRASSY UNDERSTORY OF VALLEY-FOOTHILL HARDWOOD HABITATS IN CENTRAL & NORTHERN CALIFORNIA.

Micro: NEED UNDERGROUND REFUGES, ESPECIALLY GROUND SQUIRREL BURROWS & VERNAL POOLS OR OTHER SEASONAL WATER SOURCES FOR BREEDING

Occurrence No. 248 Map Index: 26015 --Dates Last Seen-- Lat/Long: 36°07'03" / 120°43'37" Township: 21S

Occ Rank: Unknown Element: 1991-05-25 UTM: Zone-10 N3999180 E704573 Range: 11E

Origin: Natural/Native occurrence Site: 1991-05-25 Precision: NON-SPECIFIC Section: 12 Qtr SE

Presence: Presumed Extant S; Soil Type: POINT Meridian: M

Trend: Unknown Radius: 1/5 mile Elevation: 1550 ft

Main Source: SHAFFER, H.B. ET AL. 1993 (LIT)

Quad Summary: SLACK CANYON (3612016/316C)

County Summary: MONTEREY

SNA Summary:

Location: EAST SIDE OF PEACHTREE ROAD, 7.5 MILES SSE OF HWY 198 JUNCTION, PEACHTREE VALLEY.

-Comments-

Distribution:

Ecological:

Threat:

General: SHAFFER SITE #235. CTS PRESENT ON 25 MAY 1991; NUMBER AND LIFESTAGE UNKNOWN.

Owner/Manager: UNKNOWN

Date: 01/18/99 H.T. Harvey & Associates
Report: RF2WIDE Information dated 11/03/98

California Department of Fish and Game
Natural Diversity Data Base
Full Condensed Report Multiple Records...
Monterey Bridge #412 - Project #1212-03

* FALCO MEXICANUS (NESTING) *
* PRAIRIE FALCON List Status-NDDDB Element RanksOther Lists *
* Element Code: ABNKD06090 Federal: None Global: G5 CDFG Status: SC *
* State: None State: S3 *

* Habitat Associations -

General: INHABITS DRY, OPEN TERRAIN, EITHER LEVEL OR HILLY.

Micro: BREEDING SITES LOCATED ON CLIFFS. FORAGES FAR AFIELD, EVEN TO MARSHLANDS AND OCEAN SHORES.

* SENSITIVE *

Occurrence No. 173 Map Index: --Dates Last Seen-- Lat/Long: / Township:
Occ Rank: Unknown Element: 1981-05-26 UTM: Range:
Origin: Natural/Native occurrence Site: 1981-05-26 Precision: Section: Qtr
Presence: Presumed Extant Symbol Type: Meridian:
Trend: Unknown Radius: Elevation:

Main Source: CDFG RAPTOR NEST FILE 1981 (PERS)

Quad Summary: STOCKDALE MOUNTAIN (3512085/293A)

County Summary: MONTEREY

SNA Summary:

Location: *SENSITIVE* Location information suppressed.

-Comments-

Distribution: Please contact the California Natural Diversity Database, California Department of Fish and Game, for more information: (916) 324-3812.

Ecological:

Threat:

General:

Owner/Manager:

Occurrence No. 175 Map Index: --Dates Last Seen-- Lat/Long: / * SENSITIVE *
Occ Rank: Unknown Element: 1977-XX-XX UTM: Township:
Origin: Natural/Native occurrence Site: 1977-XX-XX Precision: Range:
Presence: Presumed Extant Symbol Type: Section: Qtr
Trend: Unknown Radius: Meridian:
Elevation:

Main Source: CDFG RAPTOR NEST FILE 1981 (PERS)

Quad Summary: SLACK CANYON (3612016/316C)

County Summary: MONTEREY

SNA Summary:

Location: *SENSITIVE* Location information suppressed.

-Comments-

Distribution: Please contact the California Natural Diversity Database, California Department of Fish and Game, for more information: (916) 324-3812.

Ecological:

Threat:

General:

Owner/Manager:

Occurrence No. 180 Map Index: --Dates Last Seen-- Lat/Long: / * SENSITIVE *
Occ Rank: Unknown Element: 1977-XX-XX UTM: Township:
Origin: Natural/Native occurrence Site: 1977-XX-XX Precision: Range:
Presence: Presumed Extant Symbol Type: Section: Qtr
Trend: Unknown Radius: Meridian:
Elevation:

Main Source: CDFG RAPTOR NEST FILE 1981 (PERS)

Quad Summary: SMITH MOUNTAIN (3612015/316D)

County Summary: FRESNO, MONTEREY

SNA Summary:

Location: *SENSITIVE* Location information suppressed.

-Comments-

Distribution: Please contact the California Natural Diversity Database, California Department of Fish and Game, for more information: (916) 324-3812.

Ecological:
Threat:
General:
Owner/Manager:

Date: 01/18/99 H.T. Harvey & Associates
Report: RF2WIDE Information dated 11/03/98

California Department of Fish and Game
Natural Diversity Data Base
Full Condensed Report Multiple Records...
Monterey Bridge #412 - Project #1212-03

* FALCO MEXICANUS (NESTING) (cont.) *
* PRAIRIE FALCON List Status-NDDB Element Ranks Other Lists *
* Element Code: ABNKD06090 Federal: None Global: G5 CDFG Status: SC *
* State: None State: S3 *

* * SENSITIVE *
Occurrence No. 181 Map Index: --Dates Last Seen-- Lat/Long: / Township:
Occ Rank: Unknown Element: 1977-XX-XX UTM: Range:
Origin: Natural/Native occurrence Site: 1977-XX-XX Precision: Section: Qtr
Presence: Presumed Extant Symbol Type: Meridian:
Trend: Unknown Radius: Elevation:
Main Source: CDFG RAPTOR NEST FILE 1981 (PERS)
Quad Summary: SMITH MOUNTAIN (3612015/316D)
County Summary: FRESNO, MONTEREY
SNA Summary:

Location: *SENSITIVE* Location information suppressed.

-Comments-

Distribution: Please contact the California Natural Diversity Database, California Department of Fish and Game, for more information: (916) 324-3812.

Ecological:

Threat:

General:

Owner/Manager:

Occurrence No. 184 Map Index: --Dates Last Seen-- Lat/Long: / * SENSITIVE *
Occ Rank: Unknown Element: 1977-XX-XX UTM: Township:
Origin: Natural/Native occurrence Site: 1982-05-25 Precision: Range:
Presence: Presumed Extant Symbol Type: Section: Qtr
Trend: Unknown Radius: Meridian:
Elevation:

Main Source: CDFG RAPTOR NEST FILE 1981 (PERS)

Quad Summary: BRADLEY (3512077/294D)*, WUNPOST (3512087/294A)

County Summary: MONTEREY

SNA Summary: Bradley

Location: *SENSITIVE* Location information suppressed.

-Comments-

Distribution: Please contact the California Natural Diversity Database, California Department of Fish and Game, for more information: (916) 324-3812.

Ecological:

Threat:

General:

Owner/Manager:

Occurrence No. 186 Map Index: --Dates Last Seen-- Lat/Long: / * SENSITIVE *
Occ Rank: Unknown Element: 1981-05-18 UTM: Township:
Origin: Natural/Native occurrence Site: 1981-05-18 Precision: Range:
Presence: Presumed Extant Symbol Type: Section: Qtr
Trend: Unknown Radius: Meridian:
Elevation:

Main Source: CDFG RAPTOR NEST FILE 1981 (PERS)

Quad Summary: MONARCH PEAK (3612027/317A)

County Summary: MONTEREY

SNA Summary:

Location: *SENSITIVE* Location information suppressed.

-Comments-

Distribution: Please contact the California Natural Diversity Database, California Department of Fish and Game, for more information: (916) 324-3812.

Ecological:

Threat:

General:

Owner/Manager:

California Department of Fish and Game
Natural Diversity Data Base
Full Condensed Report Multiple Records...
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* FALCO MEXICANUS (NESTING) (cont.) *
* PRAIRIE FALCON List Status-NDDB Element RanksOther Lists *
* Element Code: ABNKD06090 Federal: None Global: G5 CDFG Status: SC *
* State: None State: S3 *

* * SENSITIVE *
Occurrence No. 375 Map Index: --Dates Last Seen-- Lat/Long: / Township:
Occ Rank: Unknown Element: 1981-05-14 UTM: Range:
Origin: Natural/Native occurrence Site: 1981-05-14 Precision: Section: Qtr
Presence: Presumed Extant Symbol Type: Meridian:
Trend: Unknown Radius: Elevation:

Main Source: CDFG RAPTOR NEST FILE 1981 (PERS)
Quad Summary: STOCKDALE MOUNTAIN (3512085/293A)
County Summary: MONTEREY

SNA Summary:
Location: *SENSITIVE* Location information suppressed.

-Comments-
Distribution: Please contact the California Natural Diversity Database, California Department of Fish and Game, for more
information: (916) 324-3812.

Ecological:
Threat:
General:

Owner/Manager:

Date: 01/18/99 H.T. Harvey & Associates
Report: RF2WIDE Information dated 11/03/98

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* VULPES MACROTIS MUTICA

* SAN JOAQUIN KIT FOX

* Element Code: AMAJA03041

*

* Habitat Associations

List Status-NDDB Element Ranks Other Lists *

Federal: Endangered

Global: G4T2T3

CDFG Status: *

State: Threatened

State: S2S3

*

General: ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.

Micro: NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.

Occurrence No. 7 Map Index: 23603 --Dates Last Seen-- Lat/Long: 35°54'59" / 120°51'07" Township: 26S

Occ Rank: Unknown Element: 1991-06-05 UTM: Zone-10 N3976621 E693826 Range: 12E

Origin: Natural/Native occurrence Site: 1991-06-05 Precision: NON-SPECIFIC Section: UN Qtr XX

Presence: Presumed Extant

Symbol Type: POLYGON

Meridian: M

Trend: Unknown

Area: 603,799.7 ac

Elevation: 00900 ft

Main Source: VANHERWEG, WILLIAM J. (OBS)

Quad Summary: PASO ROBLES (3512066/269B)*, LA PANZA NE (3512041/244A), LA PANZA RANCH (3512042/244B), CAMATTA RANCH

(3512043/245A), WILSON CORNER (3512044/245B), SANTA MARGARITA (3512045/246A), PACKWOOD CREEK (3512051/267D),

HOLLAND CANYON (3512052/267C), CAMATTA CANYON (3512053/268D), SHEDD CANYON (3512054/268C), CRESTON

(3512055/269D), TEMPLETON (3512056/269C), SAWTOOTH RIDGE (3512061/267A), ORCHARD PEAK (3512062/267B), CHOLAME

(3512063/268A), SHANDON (3512064/268B), ESTRELLA (3512065/269A), ADELAIDA (3512067/270A), CHOLAME VALLEY

(3512073/292D), RANCHITO CANYON (3512075/293D), SAN MIGUEL (3512076/293C), BRADLEY (3512077/294D), TIERRA

REDONDA MOUNTAIN (3512078/294C), WUNPOST (3512087/294A), HAMES VALLEY (3512088/294B), PANCHO RICO VALLEY

(3612017/317D), SAN ARDO (3612018/317C), MONARCH PEAK (3612027/317A), NATTRASS VALLEY (3612028/317B), LONOAK

(3612038/340C), ESPINOSA CANYON (3612111/318D), SAN LUCAS (3612121/318A), THOMPSON CANYON (3612122/318B),

PINALITO CANYON (3612131/341D), GREENFIELD (3612132/341C), PARAISO SPRINGS (3612133/342D), TOPO VALLEY

(3612141/341A), NORTH CHALONE PEAK (3612142/341B), SOLEDAD (3612143/342A)

County Summary: KERN, MONTEREY, SAN BENITO, SAN LUIS OBISPO

SNA Summary:

Location: SALINAS VALLEY-NORTH TO SOLEDAD; SOUTH TO CARRIZO PLAIN.

-Comments-

Distribution: DISTRIBUTION PATTERNS OVER THE ENTIRE AREA ARE NOT KNOWN BUT IN SOME AREAS DEN DENSITY IS ESTIMATED AT OVER 0.5 PER ACRE.

Ecological: VALLEY GRASSLAND, OAK WOODLAND, AGRICULTURE, DEVELOPED AREAS, ETC.

Threat: CATTLE GRAZING, DEVELOPMENT, AGRICULTURE, MILITARY OPERATIONS AT CAMP ROBERTS, COMPETITION FROM RED FOX AND COYOTES.

General: ADDITIONAL INFORMATION AVAILABLE IN THE ELEMENT FILE FOR VULPES MACROTIS MUTICA.
Owner/Manager: UNKNOWN

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* CLEMMYS MARMORATA PALLIDA *
* SOUTHWESTERN POND TURTLE *
* Element Code: ARAAD02032 *
* State: None *
* Habitat Associations *

List Status-NDDDB Element Ranks Other Lists *
Federal: Species of Concern Global: G4T2T3 CDFG Status: SC *

General: INHABITS PERMANENT OR NEARLY PERMANENT BODIES OF WATER IN MANY HABITAT TYPES;
BELOW 6000 FT ELEV.

Micro: REQUIRE BASKING SITES SUCH AS PARTIALLY SUBMERGED LOGS, VEGETATION MATS, OR OPEN MUD
BANKS. NEED SUITABLE NESTING SITES.

* SENSITIVE *

Occurrence No. 213 Map Index: --Dates Last Seen-- Lat/Long: / Township:
Occ Rank: Good Element: 1992-06-15 UTM: Range:
Origin: Natural/Native occurrence Site: 1992-06-15 Precision: Section: Qtr
Presence: Presumed Extant Symbol Type: Meridian:
Trend: Unknown Radius: Elevation:

Main Source: ELY, E. 1992 (OBS)

Quad Summary: PRIEST VALLEY (3612026/316B)

County Summary: MONTEREY

SNA Summary:

Location: *SENSITIVE* Location information suppressed.

-Comments-

Distribution: Please contact the California Natural Diversity Database, California Department of Fish and Game, for more
information: (916) 324-3812.

Ecological: RIPARIAN WITH OAKS.

Threat:

General:

Owner/Manager:

Date: 01/18/99 H.T. Harvey & Associates
Report: RF2WIDE Information dated 11/03/98

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* SYCAMORE ALLUVIAL WOODLAND *

List Status-NDDB Element Ranks Other Lists *

* Element Code: CTT62100CA Federal: None Global: G1 *

* State: None State: S1.1 *

* Habitat Associations

General: None for this Element

Micro: None for this Element

Occurrence No. 16 Map Index: 22054 --Dates Last Seen-- Lat/Long: 35°54'24" / 120°50'27" Township: 23S

Occ Rank: Poor Element: 1992-08-05 UTM: Zone-10 N3975547 E694855 Range: 10E

Origin: Natural/Native occurrence Site: 1992-08-05 Precision: SPECIFIC Section: 25 Qtr NE

Presence: Presumed Extant Symbol Type: POLYGON Meridian: M

Trend: Unknown Area: 11.4 ac Elevation: 480 ft

Main Source: KEELER-WOLF, T. 1992 (OBS)

Quad Summary: WUNPOST (3512087/294A)

County Summary: MONTEREY

SNA Summary:

Location: SALINAS RIVER, 3 MI SSE OF SAN ARDO OIL FIELD BETWEEN HWY 101 AND SALINAS RIVER.

-Comments-

Distribution: TWO POLYGONS REPRESENT THIS NARROW STRINGER OF PLATANUS RACEMOSA DOMINANCE.

Ecological: THIS OCCURRENCE IS BORDERED BY ANNUAL GRASSLAND AND VALLEY OAK WOODLAND.
SUBSTRATE IS ALLUVIAL AND DERIVED
FROM SEDIMENTARY ROCKS.

Threat: GRAZING, DISCING, AGRICULTURE, GROUNDWATER PUMPING ALL THREATEN THIS OCCURRENCE.

General: THIS STAND IS A REMNANT FROM TIMES WHEN RIVER FLOODED UP TO THE LEVEL WHERE THE
WOODLAND NOW EXISTS. TREES OLD

AND LARGE WITH NO EVIDENCE OF SMALL INDIVIDUALS OR CLUMPS. THIS WAS OCC #016 OF
CTT62100CA.

Owner/Manager: UNKNOWN

Date: 01/18/99 H.T. Harvey & Associates
Report: RF2WIDE Information dated 11/03/98

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* HEMIZONIA HALLIANA *
* HALL'S TARPLANT List Status-NDDDB Element Ranks Other Lists *
* Element Code: PDAST4R0C0 Federal: None Global: G1 CNPS List: 1B *
* State: None State: S1.1 R-E-D Code: 3-3-3 *
* Habitat Associations

General: CISMONTANE WOODLAND, CHENOPOD SCRUB, VALLEY AND FOOTHILL GRASSLAND.

Micro: REPORTED FROM A VARIETY OF SUBSTRATES INCL. CLAY, SAND, AND ALKALINE SOILS. 300-950M.

Occurrence No. 3 Map Index: 28724 --Dates Last Seen-- Lat/Long: 36°00'07" / 120°29'06" Township: 22S

Occ Rank: Unknown Element: 1935-05-10 UTM: Zone-10 N3986894 E726684 Range: 14E

Origin: Natural/Native occurrence Site: 1935-05-10 Precision: NON-SPECIFIC Section: 20 Qtr XX

Presence: Presumed Extant Symbol Type: POINT Meridian: M

Trend: Unknown Radius: 1 mile Elevation: 2900 ft

Main Source: KECK AND STOCKWELL #3252 UC (HERB)

Quad Summary: CURRY MOUNTAIN (3612014/315C)*, PARKFIELD (3512084/292B), STOCKDALE MOUNTAIN
(3512085/293A), SMITH MOUNTAIN
(3612015/316D)

County Summary: FRESNO, MONTEREY

SNA Summary:

Location: DIABLO RANGE, ABOUT 10.8 MILES NORTH OF PARKFIELD ON ROAD TO STONE CANYON.

-Comments-

Distribution: EXACT LOCATION UNKNOWN. MAPPED ABOUT 9 MILES NORTH ALONG PARKFIELD GRADE AND
THEN WEST ON DIRT ROAD TOWARDS
SULPHUR SPRINGS AND STONE CANYON.

Ecological: GROWING IN GUMBO CLAY MUD.

Threat:

General: MAIN SOURCE OF INFORMATION FOR THIS SITE IS 1935 COLLECTION BY KECK AND STOCKWELL.
B. BALDWIN HAS TRIED TO
SEARCH THIS AREA BUT ACCESS IS PROHIBITED.

Owner/Manager: UNKNOWN

Date: 01/18/99 H.T. Harvey & Associates
Report: RF2WIDE Information dated 11/03/98

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* MADIA RADIATA *
* SHOWY MADIA *
* Element Code: PDA650E0 List Status: NDDDB Element Ranks Other Lists *
* Federal: None Global: G2 CNPS List: 1B *
* State: None State: S2.1 R-E-D Code: 2-3-3 *

* Habitat Associations -
General: VALLEY AND FOOTHILL GRASSLAND, CISMONTANE WOODLAND.
Micro: GRASSY SLOPES; UNDER 900M.

Occurrence No. 14 Map Index: 24781 --Dates Last Seen-- Lat/Long: 36°00'55" / 120°32'49" Township: 22S
Occ Rank: Unknown Element: 1935-05-10 UTM: Zone-10 N3988233 E721067 Range: 13E
Origin: Natural/Native occurrence Site: 1935-05-10 Precision: NON-SPECIFIC Section: UN Qtr XX
Presence: Presumed Extant Symbol Type: POLYGON Meridian: M
Trend: Unknown Area: 129.4 ac Elevation: 2900 ft

Main Source: KECK AND STOCKWELL #3250 POM, RSA (HERB)

Quad Summary: SMITH MOUNTAIN (3612015/316D)

County Summary: MONTEREY

SNA Summary:

Location: STONE CANYON, NEAR STONE CANYON MINE.

-Comments-

Distribution: HERBARIUM LABEL STATES THAT THE COLLECTION WAS MADE WITHIN SIGHT OF THE STONE
CANYON COAL MINE AND WAS APPROX.
0.5 MILE FROM THIS MINE.

Ecological: IN GUMBO ADOBE MUD-FLOW, ON NORTH SLOPE.

Threat:

General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS 1935 COLLECTION BY KECK AND STOCKWELL.
NEEDS FIELD WORK.

Owner/Manager: UNKNOWN

Date: 01/18/99 H.T. Harvey & Associates
Report: RF2WIDE Information dated 11/03/98

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* MALACOTHAMNUS ABBOTTII *
* ABBOTT'S BUSH MALLOW *
* Element Code: PDMAL0Q010 *
* *
* Habitat Associations *
State: None State: S1.1 R-E-D Code: 3-3-3 *
List Status-NDDB Element Ranks Other Lists *
Federal: Species of Concern Global: G1 CNPS List: 1B *

General: RIPARIAN SCRUB
Micro: AMONG WILLOWS NEAR RIVERS
Occurrence No. 2 Map Index: 22512 --Dates Last Seen-- Lat/Long: 35°57'06" / 120°51'20" Township: 23S
Occ Rank: Fair Element: 1993-02-19 UTM: Zone-10 N3980521 E693409 Range: 10E
Origin: Natural/Native occurrence Site: 1993-02-19 Precision: SPECIFIC Section: 02 Qtr SE
Presence: Presumed Extant Symbol Type: POLYGON Meridian: M
Trend: Unknown Area: 9.5 ac Elevation: 550 ft
Main Source: YADON, V. 1991 (MAP)
Quad Summary: WUNPOST (3512087/294A)
County Summary: MONTEREY
SNA Summary: Sargent Creek
Location: NEAR SALINAS RIVER; SARGENT CREEK; E SIDE OF SP RR TRACKS, S SIDE OF SARGENTS ROAD.

-Comments-
Distribution: MOBIL PROPERTY.
Ecological: RIVER FLOOD AREA WITH BACCHARIS PILULARIS, SALVIA MELLIFERA, LOTUS SCOPARIUS, ARTEMISIA CALIFORNICA, ERIOGONUM FASCICULATUM, SALIX LASIOLEPIS AND ERIODICTYON TOMENTOSUM ACROSS THE ROAD.
Threat: PLANT FURTHEST UPSTREAM HAS BEEN KILLED (CATTLE?). PAST DISTURBANCE FROM HEAVY EQUIP. USED TO MAINTAIN RIVER CHANNELS.

General: ID CONFIRMED BY YADON. COGENERATION PROJECT COULD THREATEN PLANTS HERE.
Owner/Manager: PVT
Index: 22513 --Dates Last Seen-- Lat/Long: 35°56'56" / 120°51'56" Township: 23S Occurrence No. 3 Map
Occ Rank: Good Element: 1993-02-19 UTM: Zone-10 N3980194 E692513 Range: 10E
Origin: Natural/Native occurrence Site: 1993-02-19 Precision: SPECIFIC Section: 10 Qtr NE
Presence: Presumed Extant Symbol Type: POLYGON Meridian: M
Trend: Unknown Area: 9.5 ac Elevation: 450 ft
Main Source: YADON, V. 1991 (MAP)
Quad Summary: WUNPOST (3512087/294A)
County Summary: MONTEREY
SNA Summary: Sargent Creek
Location: VICINITY OF SALINAS RIVER; SARGENT CREEK; W SIDE OF SP RR TRACKS. NEAR CONFLUENCE OF CREEK AND SALINAS RIVER.

-Comments-
Distribution: TEXACO PROPERTY: SAN ARDO OIL FIELDS.
Ecological: RIVER FLOOD PLAIN WITH BACCHARIS PILULARIS, B. VIMINEA, SALIX LASIOLEPIS, ARTEMISIA CALIFORNICA, SAMBUCUS MEXICANA, BROMUS SP., BRASSICA SP., AND ATRIPLEX LENTIFORMIS.
Threat: OIL DRILLING & DREDGING, PAST DISTURBANCE BY HEAVY EQUIP USED TO MAINTAIN THE RIVER CHANNELS, GRAZING & RODENT ACTIVITY.
General: TOTAL OF 5 PLANTS HERE AND AT OCCURRENCE 2 (1991), 30 IN 1993. ID CONFIRMED BY V. YADON; TAXON PREVIOUSLY THOUGHT TO BE EXTINCT. COGENERATION PROJECT COULD THREATEN PLANTS HERE. CREEK BOTTOM IS MUD-FILLED W/ALLUVIUM FROM STORM RUNOFF.

Owner/Manager: PVT

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* MALACOTHAMNUS ABORIGINUM *
* INDIAN VALLEY BUSH MALLOW *
* Element Code: PDMAL0Q020 Federal: None Global: G3 CNPS List: 1B *
* State: None State: S3.2 R-E-D Code: 2-2-3 *

* Habitat Associations

General: CISMONTANE WOODLAND, CHAPARRAL.

Micro: GRANITIC OUTCROPS AND SANDY BARE SOIL, OFTEN IN DISTURBED SOILS; 150-1700M.

Occurrence No. 1 Map Index: 28907 --Dates Last Seen-- Lat/Long: 35°55'12" / 120°31'57" Township: 23S

Occ Rank: Unknown Element: 1990-09-17 UTM: Zone-10 N3977689 E722640 Range: 13E

Origin: Natural/Native occurrence Site: 1990-09-17 Precision: SPECIFIC Section: 23 Qtr NE

Presence: Presumed Extant Symbol Type: POINT Meridian: M

Trend: Unknown Radius: 80 meters Elevation: 2500 ft

Main Source: TAYLOR, D.W. 1990 (OBS)

Quad Summary: STOCKDALE MOUNTAIN (3512085/293A)

County Summary: MONTEREY

SNA Summary:

Location: HEAD OF VINEYARD CANYON ALONG VINEYARD CANYON ROAD, CHOLAME HILLS.

-Comments-

Distribution: MAPPED ABOUT 0.3 MILE SOUTHWEST OF THE HAIRPIN TURN IN THE NE 1/4 OF THE NE 1/4 SECTION 23.

Ecological: CHAPARRAL, GROWING ON ROADCUT.

Threat:

General: 30 PLANTS OBSERVED IN 1990.

Owner/Manager: PVT

Index: 28906 --Dates Last Seen-- Lat/Long: 35°55'29" / 120°42'04" Township: 23S Occurrence No. 2 Map

Occ Rank: Good Element: 1995-03-16 UTM: Zone-10 N3977832 E707415 Range: 17E

Origin: Natural/Native occurrence Site: 1995-03-16 Precision: SPECIFIC Section: 17 Qtr SW

Presence: Presumed Extant Symbol Type: POINT Meridian: M

Trend: Unknown Radius: 80 meters Elevation: 1250 ft

Main Source: TAYLOR, D.W. 1995 (OBS)

Quad Summary: VALLETON (3512086/293B)

County Summary: MONTEREY

SNA Summary:

Location: WEST SIDE OF INDIAN VALLEY, ABOUT 1.4 MILES NNW OF HARE CANYON ROAD AT INDIAN VALLEY ROAD, CHOLAME HILLS.

-Comments-

Distribution: MAPPED WITHIN THE SE 1/4 OF THE SW 1/4 OF SECTION 17.

Ecological: CHAPARRAL WITH SALVIA MELLIFERA-ADENOSTOMA FASCICULATUM-ERIOGONUM FASCICULATUM ASSOCIATION. SOILS ARE DERIVED

FROM WHITE MARINE SEDIMENTARY ROCKS.

Threat: SITE IS MODERATELY GRAZED.

General: 50 PLANTS OBSERVED IN 1995. INDIAN VALLEY IS THE SITE OF THE TYPE COLLECTION BY CURRAN (SN CAS).

Owner/Manager: PVT

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* CAMISSONIA HARDHAMIAE *
* HARDHAM'S EVENING-PRIMROSE List Status-NDDDB Element RanksOther Lists *
* Element Code: PDONA030N0 Federal: Species of Concern Global: G1Q CNPS List: 1B *
* State: None State: S1.2 R-E-D Code: 3-2-3 *
* Habitat Associations

General: CHAPARRAL, CISMONTANE WOODLAND. KNOWN ONLY FROM MONTEREY AND SAN LUIS OBISPO COUNTIES.

Micro: DECOMPOSED CARBONATE. 330-500M.

Occurrence No. 7 Map Index:12964 --Dates Last Seen-- Lat/Long: 35°58'05" / 120°37'54" Township: 22S

Occ Rank: Unknown Element: 1962-XX-XX UTM: Zone-10 N3982784 E713566 Range: 12E

Origin: Natural/Native occurrence Site: 1982-05-06 Precision: NON-SPECIFIC Section: 36 Qtr SW

Presence: Presumed Extant Symbol Type: POINT Meridian: M

Trend: Unknown Radius: 1/5 mile Elevation: 1300 ft

Main Source: HARDHAM, C. #10035A CAS (HERB)

Quad Summary: VALLETON (3512086/293B)

County Summary: MONTEREY

SNA Summary: Mouth of Sandy Creek

Location: SANDY VALLEY; BIG SANDY ABOUT 1.5 MILES NORTHEAST OF JUNCTION WITH INDIAN VALLEY ROAD, SOUTHWEST OF STOCKDALE MOUNTAIN.

-Comments-

Distribution:

Ecological: DRY DISTURBED SANDY DOLOMITE AREA IN BLUE OAK WOODLAND.

Threat:

General: MAIN SOURCE OF INFORMATION FOR THIS SITE IS 1962 COLLECTION BY HARDHAM. SEARCHED FOR BUT NOT FOUND IN 1982 (C.

CHAMBERLAIN).

Owner/Manager: UNKNOWN

Date: 01/18/99 H.T. Harvey & Associates
Report: RF2WIDE Information dated 11/03/98

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* CHORIZANTHE BILOBA VAR IMMEMORA *
* SAN BENITO SPINEFLOWER List Status-NDDB Element Ranks Other Lists *
* Element Code: PDPGN04025 Federal: Species of Concern Global: G3T1? CNPS List: 1B *
* State: None State: S1? R-E-D Code: 2-2-3 *
* Habitat Associations

General: CHAPARRAL, CISMONTANE WOODLAND.

Micro: SANDY AND GRAVELLY SOILS ON THE EAST SLOPE OF THE DIABLO RANGE. 695-750M.

Occurrence No. 3 Map Index: 12724 --Dates Last Seen-- Lat/Long: 36°11'39" / 120°42'30" Township: 20S

Occ Rank: Unknown Element: 1929-08-15 UTM: Zone-10 N4007717 E706056 Range: 12E

Origin: Natural/Native occurrence Site: 1929-08-15 Precision: NON-SPECIFIC Section: UN Qtr XX

Presence: Presumed Extant Symbol Type: POINT Meridian: M

Trend: Unknown Radius: 1 mile Elevation: 2300 ft

Main Source: ROWNTREE SN, SBBG (HERB)

Quad Summary: PRIEST VALLEY (36J2026/316B)

County Summary: MONTEREY, SAN BENITO

SNA Summary:

Location: PRIEST VALLEY.

-Comments-

Distribution: A 1938 COLLECTION BY EASTWOOD AND HOWELL (#5836, CAS) FROM "WALTHAM CREEK CANYON" COULD NOT BE LOCATED ON MAP.

COLLECTION MAY ACTUALLY HAVE BEEN FROM WARTHAN CREEK, JUST SOUTHEAST OF PRIEST VALLEY.

Ecological:

Threat:

General: SITE KNOWN ONLY FROM 1929 COLLECTION BY ROWNTREE. MAPPED AT NDDB AS 1 MILE CIRCLE CENTERED AT PRIEST V.

SCHOOL; UNKNOWN WHERE ACTUALLY COLLECTED. NEED MORE AND BETTER INFO.

Owner/Manager: UNKNOWN

Date: 01/18/99 H.T. Harvey & Associates
Report: RF2WIDE Information dated 11/03/98

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* NAVARRETIA NIGELLIFORMIS SSP RADIANS *
* SHINING NAVARRETIA List Status-NDDB Element Ranks Other Lists *
* Element Code: PDPLM0C0J2 Federal: None Global: G4T1 CNPS List: 1B *
* State: None State: S1.2 R-E-D Code: 2-2-3 *

* Habitat Associations

General: CISMONTANE WOODLAND, VALLEY AND FOOTHILL GRASSLAND, VERNAL POOLS.

Micro: 200-1000M.

Occurrence No. 8 Map Index: 31514 --Dates Last Seen-- Lat/Long: 36°11'35" / 120°45'32" Township: 20S

Occ Rank: Unknown Element: 1963-06-22 UTM: Zone-10 N4007498 E701525 Range: 11E

Origin: Natural/Native occurrence Site: 1963-06-22 Precision: NON-SPECIFIC Section: UN Qtr XX

Presence: Presumed Extant Symbol Type: POINT Meridian: M

Trend: Unknown Radius: 3/5 mile Elevation: 2600 ft

Main Source: ANONYMOUS #39519 CAS (HERB)

Quad Summary: MONARCH PEAK (3612027/317A)*, PRIEST VALLEY (3612026/316B)

County Summary: MONTEREY, SAN BENITO

SNA Summary:

Location: NEAR SUMMIT OF MUSTANG GRADE, EAST OF SAN LORENZO CREEK.

-Comments-

Distribution: MAPPED IN VICINITY OF MUSTANG FIRE CONTROL STATION ON MUSTANG RIDGE.

Ecological:

Threat:

General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS 1963 COLLECTION BY AN UNKNOWN COLLECTOR.

Owner/Manager: UNKNOWN

Date: 01/18/99 H.T. Harvey & Associates
Report: RF2WIDE Information dated 11/03/98

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* DELPHINIUM RECURVATUM *
* RECURVED LARKSPUR List Status-NDDDB Element RanksOther Lists *
* Element Code: PDRAN0B1J0 Federal: Species of Concern Global: G2 CNPS List: 1B *
* State: None State: S2.2 R-E-D Code: 1-2-3 *

* Habitat Associations

General: CHENOPOD SCRUB, VALLEY AND FOOTHILL GRASSLAND, CISMONTANE WOODLAND. MANY HISTORICAL AND DEGRADED SITES.

Micro: ON ALKALINE SOILS; OFTEN IN VALLEY SALTBUSH OR VALLEY CHENOPOD SCRUB. 3-685M.
Occurrence No. 57 Map Index: 12724 --Dates Last Seen-- Lat/Long: 36°11'39" / 120°42'30" Township: 20S
Occ Rank: Unknown Element: 1937-04-08 UTM: Zone-10 N4007717 E706056 Range: 12E
Origin: Natural/Native occurrence Site: 1937-04-08 Precision: NON-SPECIFIC Section: UN Qtr XX
Presence: Presumed Extant Symbol Type: POINT Meridian: M
Trend: Unknown Radius: 1 mile Elevation: 2300 ft

Main Source: WHILTON, E. SN RSA #400113 (HERB)

Quad Summary: PRIEST VALLEY (3612026/316B)

County Summary: MONTEREY, SAN BENITO

SNA Summary:

Location: PRIEST VALLEY.

-Comments-

Distribution:

Ecological:

Threat:

General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS 1937 COLLECTION BY WHILTON.

Owner/Manager: UNKNOWN

Date: 01/18/99 H.T. Harvey & Associates
Report: RF2WIDE Information dated 11/03/98

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* ANTIRRHINUM OVATUM *
* OVAL-LEAVED SNAPDRAGON List Status-NDDB Element Ranks Other Lists *
* Element Code: PDSCR2K010 Federal: None Global: G3 CNPS List: 4 *
* State: None State: S3.2 R-E-D Code: 1-2-3 *
* Habitat Associations -

General: CHAPARRAL, CISMONTANE WOODLAND, PINYON JUNIPER WOODLAND, VALLEY AND FOOTHILL GRASSLAND.

Micro: FROM OPEN HILLSIDES TO SMALL VEGETAL POOLS IN CLAY OR SANDY SOILS W/IN GRASSLAND OR WDLND. SITES OFTEN ALKALINE. 185-800M.

Occurrence No. 5 Map Index: 12724 --Dates Last Seen-- Lat/Long: 36°11'39" / 120°42'30" Township: 20S
Occ Rank: Unknown Element: 1948-06-26 UTM: Zone-10 N4007717 E706056 Range: 12E
Origin: Natural/Native occurrence Site: 1948-06-26 Precision: NON-SPECIFIC Section: UN Qtr XX
Presence: Presumed Extant Symbol Type: POINT Meridian: M
Trend: Unknown Radius: 1 mile Elevation: 2300 ft

Main Source: MUNZ, P.A. #12296 CAS, RSA (HERB)

Quad Summary: PRIEST VALLEY (3612026/316B)

County Summary: MONTEREY, SAN BENITO

SNA Summary:

Location: PRIEST VALLEY SCHOOL.

-Comments-

Distribution:

Ecological: DRY GRAVELLY SLOPE AMONG OAKS.

Threat:

General:

Owner/Manager: PVT

Date: 01/18/99 H.T. Harvey & Associates
Report: RF2WIDE Information dated 11/03/98

APPENDIX F.
CALTRANS STANDARD SPECIFICATIONS
FOR WATER POLLUTION CONTROL

quirements of Section 1860 of the Labor Code, the Contractor will be required to secure the payment of workers' compensation to his employees in accordance with the provisions of Section 3700 of the Labor Code.

Prior to the commencement of work, the Contractor shall sign and file with the Engineer a certification in the following form:

"I am aware of the provisions of Section 3700 of the Labor Code which require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and I will comply with such provisions before commencing the performance of the work of this contract."

Said certification is included in the contract, and signature and return of the contract as provided in Section 3-1.03, "Execution of Contract," shall constitute signing and filing of the said certificate.

7-1.01A(7) Suits to Recover Penalties and Forfeitures.—Attention is directed to Sections 1730 to 1733, inclusive, of the Labor Code concerning suits to recover amounts withheld from payment for failure to comply with requirements of the Labor Code or contract provisions based on such laws.

Said sections provide that a suit on the contract for alleged breach thereof in not making the payment is the exclusive remedy of the Contractor or his assignees with reference to amounts withheld for such penalties or forfeitures; and that such suit must be commenced and actual notice thereof received by the awarding authority prior to 90 days after completion of the contract and the formal acceptance of the job.

Submission of a claim under Section 9-1.07B, "Final Payment and Claims," for the amounts withheld from payment for such penalties and forfeitures is not a prerequisite for such suits and such claims will not be considered.

7-1.01B Fair Labor Standards Act.—The attention of bidders is invited to the fact that the State of California, Department of Transportation, has been advised by the Wage and Hour Division, U.S. Department of Labor, that contractors engaged in highway construction work are required to meet the provisions of the Fair Labor Standards Act of 1938 and as amended (52 Stat. 1060).

7-1.01C Contractor's Licensing Laws.—Attention is directed to the provisions of Chapter 9 of Division 3 of the Business and Professions Code concerning the licensing of contractors.

All bidders and contractors shall be licensed in accordance with the laws of this State and any bidder or contractor not so licensed is subject to the penalties imposed by such laws.

Attention is also directed to the provisions of Public Contract Code Section 10164, which provides as follows:

"10164. In all state projects where federal funds are involved, no bid submitted shall be invalidated by the failure of the bidder to be

licensed in accordance with the laws of this state. However, at the time the contract is awarded, the contractor shall be properly licensed in accordance with the laws of this state. The first payment for work or material under any contract shall not be made by the Controller unless and until the Registrar of Contractors State License the Controller that the records of the Contractors State License Board indicate that the contractor was properly licensed at the time the contract was awarded. Any bidder or contractor not so licensed shall be subject to all legal penalties imposed by law, including, but not limited to, any appropriate disciplinary action by the Contractors State License Board. The department shall include a statement to that effect in the standard form of prequalification questionnaire and financial statement. Failure of the bidder to obtain proper and adequate licensing for an award of a contract shall constitute a failure to execute the contract as provided in Section 10181 and shall result in the forfeiture of the security of the bidder."

7-1.01D Vehicle Code.—Pursuant to the authority contained in Vehicle Code Section 591, the Department has determined that within such areas as are within the limits of the project and are open to public traffic, the Contractor shall comply with all the requirements set forth in Divisions 11, 12, 13, 14 and 15 of the Vehicle Code.

Attention is directed to the statement in said Section 591 that this section shall not relieve him or any person from the duty of exercising due care. The Contractor shall take all necessary precautions for safe operation of his equipment and the protection of the public from injury and damage from such equipment.

7-1.01E Trench Safety.—Attention is directed to the provisions of Section 6705 of the Labor Code concerning trench excavation safety plans.

7-1.01F Air Pollution Control.—The Contractor shall comply with all air pollution control rules, regulations, ordinances and statutes which apply to any work performed pursuant to the contract, including any air pollution control rules, regulations, ordinances and statutes, specified in Section 11017 of the Government Code.

Unless otherwise provided in the special provisions, material to be disposed of shall not be burned, either inside or outside the highway right of way.

7-1.01G Water Pollution.—The Contractor shall exercise every reasonable precaution to protect streams, lakes, reservoirs, bays, and coastal waters from pollution with fuels, oils, bitumens, calcium chloride and other harmful materials and shall conduct and schedule his operations so as to avoid or minimize muddying and silting of said streams, lakes, reservoirs, bays and coastal waters. Care shall be exercised to preserve roadside vegetation beyond the limits of construction.

Water pollution control work is intended to provide prevention,

control, and abatement of water pollution to streams, waterways, and other bodies of water, and shall consist of constructing those facilities which may be shown on the plans, specified herein or in the special provisions, or directed by the Engineer.

In order to provide effective and continuous control of water pollution it may be necessary for the Contractor to perform the contract work in small or multiple units, on an out of phase schedule, and with modified construction procedures. The Contractor shall provide temporary water pollution control measures, including but not limited to, dikes, basins, ditches, and applying straw and seed, which become necessary as a result of his operations. The Contractor shall coordinate water pollution control work with all other work done on the contract.

Before starting any work on the project, the Contractor shall submit, for acceptance by the Engineer, a program to control water pollution effectively during construction of the project. Such program shall show the schedule for the erosion control work included in the contract and for all water pollution control measures which the Contractor proposes to take in connection with construction of the project to minimize the effects of his operations upon adjacent streams and other bodies of water. The Contractor shall not perform any clearing and grubbing or earthwork on the project, other than that specifically authorized in writing by the Engineer, until such program has been accepted.

If the measures being taken by the Contractor are inadequate to control water pollution effectively, the Engineer may direct the Contractor to revise his operations and his water pollution control program. Such directions will be in writing and will specify the items of work for which the Contractor's water pollution control measures are inadequate. No further work shall be performed on said items until the water pollution control measures are adequate and, if also required, a revised water pollution control program has been accepted.

The Engineer will notify the Contractor of the acceptance or rejection of any submitted or revised water pollution control program in not more than 5 working days.

The State will not be liable to the Contractor for failure to accept all or any portion of an originally submitted or revised water pollution control program, nor for any delays to the work due to the Contractor's failure to submit an acceptable water pollution control program.

The Contractor may request the Engineer to waive the requirement for submission of a written program for control of water pollution when the nature of the Contractor's operation is such that erosion is not likely to occur. Waiver of this requirement will not relieve the Contractor from responsibility for compliance with the other provisions of this section. Waiver of the requirement for a written program for control of water pollution will not preclude requiring submission of a written program at a later time if the Engineer deems it necessary because of the effect of the Contractor's operations.

Unless otherwise approved by the Engineer in writing, the Con-

tractor shall not expose a total area of erodible earth material, which may cause water pollution, exceeding 750,000 square feet for each separate location, operation, or spread of equipment before either temporary or permanent erosion control measures are accomplished.

Where erosion which will cause water pollution is probable due to the nature of the material or the season of the year, the Contractor's operations shall be so scheduled that permanent erosion control features will be installed concurrently with or immediately following grading operations.

Nothing in the terms of the contract nor in the provisions in this Section 7-1.01G shall relieve the Contractor of the responsibility for compliance with Sections 5650 and 12015 of the Fish and Game Code, or other applicable statutes relating to prevention or abatement of water pollution.

When borrow material is obtained from other than commercially operated sources, erosion of the borrow site during and after completion of the work shall not result in water pollution. The material source shall be finished, where practicable, so that water will not collect or stand therein.

The requirements of this section shall apply to all work performed under the contract and to all non-commercially operated borrow or disposal sites used for the project.

The Contractor shall also conform to the following provisions:

1. Where working areas encroach on live streams, barriers adequate to prevent the flow of muddy water into streams shall be constructed and maintained between working areas and streams, and during construction of such barriers, muddying of streams shall be held to a minimum.
2. Removal of material from beneath a flowing stream shall not be commenced until adequate means, such as a bypass channel, are provided to carry the stream free from mud or silt around the removal operations.
3. Should the Contractor's operations require transportation of materials across live streams, such operations shall be conducted without muddying the stream. Mechanized equipment shall not be operated in the stream channels of such live streams except as may be necessary to construct crossings or barriers and fills at channel changes.
4. Water containing mud or silt from aggregate washing or other operations shall be treated by filtration, or retention in a settling pond, or ponds, adequate to prevent muddy water from entering live streams.
5. Oily or greasy substances originating from the Contractor's operations shall not be allowed to enter or be placed where they will later enter a live stream.
6. Portland cement or fresh portland cement concrete shall not be allowed to enter flowing water of streams.
7. When operations are completed, the flow of streams shall be

returned as nearly as possible to a meandering thread without creating possible future bank erosion, and settling pond sites shall be graded so they will drain and will blend in with the surrounding terrain.

8. Material derived from roadway work shall not be deposited in a live stream channel where it could be washed away by high stream flows.

9. Where there is possible migration of anadromous fish in streams affected by construction on the project, the Contractor shall conduct his operations so as to allow free passage of such migratory fish.

Compliance with the requirements of this section shall in no way relieve the Contractor from his responsibility to comply with the other provisions of the contract, in particular his responsibility for damage and for preservation of property.

Full compensation for conforming to the requirements of this section shall be considered as included in the prices paid for the various items of work and no additional compensation will be allowed therefor.

7-1.01H Use of Pesticides.—The Contractor shall comply with all rules and regulations of the Department of Food and Agriculture, the Department of Health, the Department of Industrial Relations and all other agencies which govern the use of pesticides required in the performance of the work on the contract.

Pesticides shall include but shall not be limited to herbicides, insecticides, fungicides, rodenticides, germicides, nematocides, bactericides, inhibitors, fumigants, defoliants, desiccants, soil sterilants, and repellents.

Any substance or mixture of substances intended for preventing, repelling, mitigating, or destroying weeds, insects, diseases, rodents, or nematodes and any substance or mixture of substances intended for use as a plant regulator, defoliant or desiccant shall be considered a pesticide.

7-1.01I Sound Control Requirements.—The Contractor shall comply with all local sound control and noise level rules, regulations and ordinances which apply to any work performed pursuant to the contract.

Each internal combustion engine, used for any purpose on the job or related to the job, shall be equipped with a muffler of a type recommended by the manufacturer. No internal combustion engine shall be operated on the project without said muffler.

7-1.01J Assignment of Antitrust Actions.—The Contractor's attention is directed to the following provisions of Public Contract Code 7103.5 and Government Code Sections 4553 and 4554, which shall be applicable to the Contractor and his subcontractors:

"In entering into a public works contract or a subcontract to supply goods, services, or materials pursuant to a public works

contract, the contractor or subcontractor offers and agrees to assign to the awarding body all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Sec. 15) or under the Cartwright Act (Chapter 2 (commencing with Section 16700) of Part 2 of Division 7 of the Business and Professions Code), arising from purchases of goods, services, or materials pursuant to the public works contract or the subcontract. This assignment shall be made and become effective at the time the awarding body tenders final payment to the contractor, without further acknowledgment by the parties.

"If an awarding body or public purchasing body receives, either through judgment or settlement, a monetary recovery for a cause of action assigned under this chapter, the assignor shall be entitled to receive reimbursement for actual legal costs incurred and may, upon demand, recover from the public body any portion of the recovery, including treble damages, attributable to overcharges that were paid by the assignor but were not paid by the public body as part of the bid price, less the expenses incurred in obtaining that portion of the recovery.

"Upon demand in writing by the assignor, the assignee shall, within one year from such demand, reassign the cause of action assigned under this part if the assignor has been or may have been injured by the violation of law for which the cause of action arose and (a) the assignee has not been injured thereby, or (b) the assignee declines to file a court action for the cause of action."

7-1.02 Weight Limitations.—Unless expressly permitted in the special provisions, construction equipment or vehicles of any kind which, laden or unladen, exceed the maximum weight limitations set forth in Division 15 of the Vehicle Code, shall not be operated over completed or existing treated bases, surfacing, pavement or structures in any areas within the limits of the project, whether or not such area is subject to weight limitations under Section 7-1.01D, "Vehicle Code," except as hereinafter provided in this Section 7-1.02.

After application of the curing seal, no traffic or Contractor's equipment will be permitted on cement treated base or lean concrete base for a period of 72 hours. After 72 hours, traffic and equipment operated on the base shall be limited to that used in paving operations and placing additional layers of cement treated base. No traffic or Contractor's equipment will be permitted on treated permeable base except for that equipment required to place the permeable base and the subsequent layer of pavement. Trucks used to haul treated base, portland cement concrete, or asphalt concrete shall enter onto the base to dump at the nearest practical entry point ahead of spreading equipment. Empty haul trucks shall exit from the base at the nearest practical exit point. Entry and exit points shall not be more than 1,000 feet ahead of spreading equipment except in locations where specifications prohibit operation of trucks outside the area occupied by the base or where steep slopes or other conditions preclude safe operation of hauling equipment. In such



MEMORANDUM

PROJECT# 1212-11

TO: Mr. John Hesler
David J. Powers & Associates
1871 The Alameda, Suite 200
San Jose, CA 95126

FROM: Patrick Boursier, Ph.D.
Principal, Senior Plant Ecologist

DATE: 22 July 2010

SUBJECT: **Monterey Bridges Natural Environment Study Update – Peach Tree Road Bridge Number 412, Monterey County, California**

H.T. Harvey & Associates previously prepared a Natural Environment Study (NES) for the Peachtree Road Bridge Replacement Project (Project¹). The California Department of Transportation (Caltrans) used the NES to initiate informal consultation with the U.S. Fish and Wildlife Service (USFWS) and received a letter of concurrence from the USFWS on 4 February 2002. The USFWS concurred that the Project was not likely to adversely affect the federally threatened California red-legged frog (*Rana draytonii*), and would have no effect on the federally threatened purple amole (*Chlorogalum purpureum*), the federally endangered San Joaquin kit fox (*Vulpes macrotis mutica*), arroyo toad (*Anaxyrus californicus*), longhorn fairy shrimp (*Branchinecta longiantenna*), or vernal pool tadpole shrimp (*Lepidurus packardii*), or the bald eagle (*Haliaeetus leucocephalus*), which was federally threatened at the time but has since been delisted.

Since the preparation of the 2000 NES, the California tiger salamander (*Ambystoma californiense*) has been listed as threatened under the Federal Endangered Species Act², and designated as a candidate for listing (with formal listing in progress) as threatened under the California Endangered Species Act. Because the California tiger salamander was not known to occur in the site vicinity in 2000, and it was not state or federally listed when the original NES was prepared, this species was considered absent from the Project site in the 2000 NES, and it was not included in the initial informal consultation with the USFWS. However, the California tiger salamander was discovered in the Project vicinity in 2006 during surveys conducted nearby for a separate project, necessitating an evaluation of the potential for this species to occur on the Project site. As requested by Caltrans, this technical memorandum serves as an addendum to the 2000 NES, and provides H. T. Harvey & Associates' assessment of whether the determinations

¹ H. T. Harvey & Associates. 2000. Monterey Bridges Natural Environment Study, Bridge Number 412, Monterey County, California. Prepared for David J. Powers & Associates.

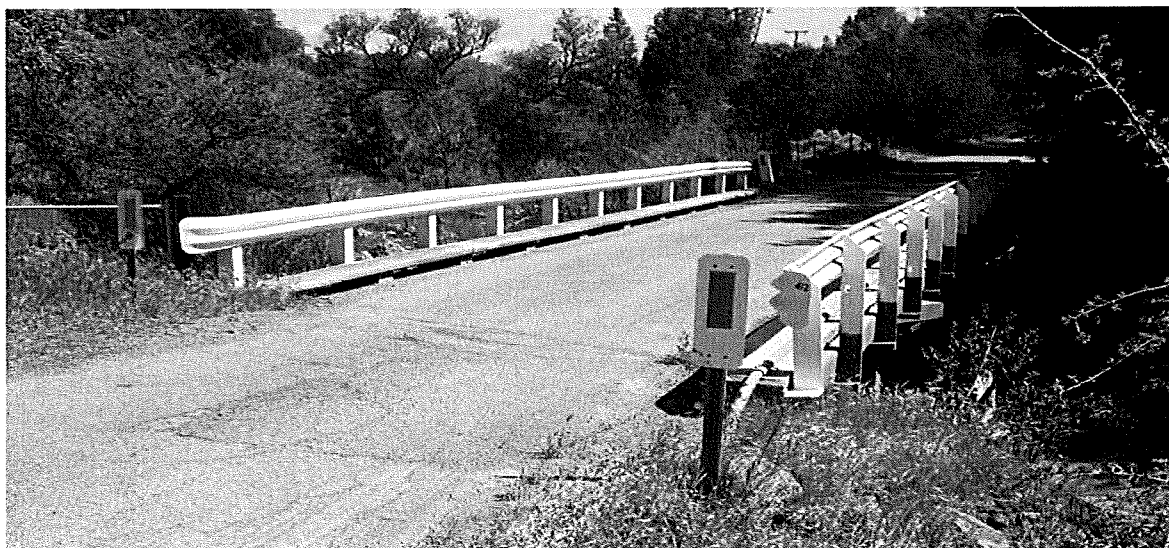
² [USFWS] U.S. Fish and Wildlife Service. 2004. Endangered and Threatened Wildlife and Plants; Determination of Endangered Status for the Sonoma County District Population Segment of the California Tiger Salamander. Final Rule. Federal Register 68(53): 13498-13520.



in the 2000 NES are still valid given current site conditions, new information about species' occurrences in the region, and changes to the original Project description.

PROJECT DESCRIPTION

The proposed Project is the replacement of the existing Peachtree Road Bridge over Pancho Rico Creek in Monterey County, California (Monterey County Bridge No. 412; Caltrans Bridge Number 44C-0151). The existing single-lane, 3-span bridge was constructed in 1955, and is approximately 17 feet (ft) wide and 59 ft long. The existing bridge does not meet current design or seismic safety standards. The Monterey County Department of Public Works has proposed to replace the existing bridge with a structure that will meet current Caltrans seismic codes.



In the Project description provided for the 2000 NES, the proposed bridge was to be approximately 28 ft wide and 80 ft long. Bridge construction was to include the removal of the existing bridge, the construction of a concrete bent consisting of two 36-inch diameter cast-in-drilled-hole concrete piles and extensions, the construction of an abutment grade beam and bent cap, the installation of precast/prestressed deck units, and the construction of new roadway approaches and installation of slope rock protection (Biggs Cardosa Associates, Inc. Job No. 97061). The Project would not require pile drivers and heavy equipment within the channel of Pancho Rico Creek (pers. comm. Tony Notaro, Biggs Cardosa Associates, Inc., 1871 The Alameda, Suite 200, San Jose, CA 95126).

The 2010 updated Project description states that the new bridge will be approximately 28 ft wide and 80 ft long, and will clear-span Pancho Rico Creek. The bridge will be supported by two abutments, one on each side of the creek. Each abutment will have short wing walls and will be supported on 24-inch diameter cast-in-drilled-hole concrete pilings. Sacked concrete slope protection will be provided at each abutment to protect against bank scour. The new bridge will be located along the same alignment as the existing bridge. The existing bridge will be removed and a new bridge will be constructed in its place. Peachtree Road will be closed to thru traffic for the duration of the Project. Excavation for the new bridge will be limited to that required for

construction of the two abutments and short wing walls. Abutment-related excavation is anticipated to extend to a depth of approximately 4 to 5 ft and the pilings will be approximately 30-ft deep. Work within the creek channel will be limited to removal of the existing steel piles, and diversion of Pancho Rico Creek will not occur. Construction is expected to take approximately 90 days to complete. All work within the bed, banks and channel of Pancho Rico Creek will be confined to a period between April 15 and October 15.

STUDY METHODS

Study Area

The Peachtree Road Bridge over Pancho Rico Creek is located east of San Ardo in Monterey County. The approximately 0.60-acre Project site is situated within the northern portion of Slack Canyon. The Project site is located on the U. S. Geological Survey Slack Canyon Quadrangle Map (Township 21 South; Range 12 East; Section 22).

Background Review

Updated information concerning threatened, endangered, or other special-status species that may occur in the Project region was collected from several sources and reviewed by H. T. Harvey & Associates biologists. The sources consulted included the California Natural Diversity Database (CNDDDB³) and the California Native Plant Society (CNPS) On-line Inventory of Rare and Endangered Plants of California⁴. A map depicting the locations of CNDDDB-mapped special-status plant and wildlife species, and sensitive habitats, in the Project vicinity is included as Figure 1.

Surveys

H. T. Harvey & Associates plant ecologist B. Cleary, M.S., conducted a reconnaissance-level survey of the site on 24 April 2010 to determine whether habitat conditions for special-status plants, or the distribution of sensitive/regulated habitats, had changed since 2000. H. T. Harvey & Associates wildlife ecologist R. Carle, M.S., conducted a reconnaissance-level survey of the site on 12 May 2010 to determine whether habitat conditions for special-status wildlife species had changed since 2000, to determine the potential suitability of the site for use by California tiger salamanders, and to determine whether any barriers to dispersal exist between the Project site and the new CNDDDB-mapped occurrence southeast of the site. The entire Project site was surveyed on foot.

RESULTS: ENVIRONMENTAL SETTING

The habitat types, species communities, and site conditions observed during the 2010 reconnaissance-level surveys were similar to those described in the 2000 NES. The biotic habitats present on the site are aquatic, sandbar, ruderal, mulefat scrub, foothill pine-oak

³ [CNDDDB] California Natural Diversity Data Base. 2010. Rarefind. California Department of Fish and Game.

⁴ [CNPS] California Native Plant Society. 2010. Inventory of Rare and Endangered Plants of California (7th edition). Rare Plant Scientific Advisory Committee, David P. Tibor, Convening Editor. <http://cnps.web.aplus.net/cgi-bin/inv/inventory.cgi>.

woodland, and non-native annual grassland; all of these habitats are currently characterized by similar vegetative structure and conditions as described in the 2000 NES. Several of these habitats, such as the ruderal and mulefat scrub habitats, appeared to have changed somewhat in distribution and acreage since the 2000 NES, but the conditions of these habitats are similar in terms of their potential to support various plant and wildlife species. Because the habitat conditions on the Project site are similar to the conditions in 2000, the determinations of the Project site's potential to provide habitat for the special-status species previously discussed in the 2000 NES remain valid, except for the one species (California tiger salamander) for which the known distribution in the site vicinity has changed.

Our background review of the CNDDDB identified no new special-status plant or animal species in the vicinity of the Project site, and no new special-status species (i.e., species that were not addressed in the 2000 NES) for which potentially suitable habitat occurs on the Project site. The original NES identified many special-status species for which potentially suitable habitat occurs on the Project site, but these species were considered absent due to other factors (i.e., the Project is outside the species' range, or no known records of the species occur in the Project vicinity). Of these species, the California tiger salamander is the only species whose known distribution in the vicinity of the Project site has changed since 2000 in a way that necessitates a reevaluation of potential on-site occurrence and potential Project impacts.

The 2000 NES determined that the California tiger salamander was not known to occur in the vicinity of the Project site and that suitable habitat was absent from the site. We identified a single new (2006) record of California tiger salamanders in the vicinity of the Project site, approximately 1.1 miles to the southeast. The following section provides a discussion of the potential for the California tiger salamander to occur on the Project site, given this new record.

CALIFORNIA TIGER SALAMANDER

The California tiger salamander was listed as federally threatened in August 2004 (USFWS 2004) and critical habitat was designated in August 2005⁵. The California tiger salamander was designated a candidate for state listing as threatened, and in March 2010, the California Fish and Game Commission voted to list the species as threatened.

The California tiger salamander's preferred breeding habitat consists of temporary ponded environments (e.g., vernal pool, ephemeral pool, or human-made ponds) surrounded by uplands that support small mammal burrows. California tiger salamanders will also utilize permanent ponds provided that aquatic, vertebrate predators are not present. Such ponds provide breeding and larval habitat, while burrows of small mammals such as California ground squirrels (*Spermophilus beecheyi*) and valley pocket gophers (*Thomomys bottae*) in upland habitats provide refugia for juvenile and adult salamanders during the dry season.

The range of the California tiger salamander is restricted to the Central Valley and the South Coast Range of California from Butte County south to Santa Barbara County. Tiger salamanders

⁵ [USFWS] U.S. Fish and Wildlife Service. 2005. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the California Tiger Salamander, Central Population. Final Rule. Federal Register 70(162): 49380-49458.

have disappeared from a significant portion of their range due to habitat loss from agriculture and urbanization and the introduction of non-native aquatic predators.

Survey Results

We identified one new record of California tiger salamanders, discovered in 2006, located approximately 1.1 miles southeast of the Project site in a seasonal pool surrounded by grasslands (Figure 1). There are no critical habitat units for the California tiger salamander in the vicinity of the Project site. The reconnaissance-level survey conducted on 12 May 2010 examined the suitability of the habitat on the Project site to support California tiger salamanders, as well as the presence or absence of barriers to dispersal between the site and the location of the 2006 record.

No suitable breeding habitat for California tiger salamanders is present on the Project site. This species does not typically breed in creeks, and Pancho Rico Creek does not provide suitable pools for this species. The ruderal and annual grassland habitats within the Project site provide conditions suitable for use as dispersal habitat for California tiger salamanders, and burrows of Botta's pocket gophers and California ground squirrels observed on the site provide potential aestivation sites for California tiger salamanders (Photos 1 and 2). Therefore, if a suitable breeding site is present close enough to the site to provide a source for tiger salamanders, there is some potential for tiger salamanders to use the Project site.



Photo 1. Burrow located in the bank of Pancho Rico Creek on the northeast side of the upstream end of Bridge 412.



Photo 2. Burrow located in the bank of Pancho Rico Creek on the northeast side of the upstream end of Bridge 412.

Several sources have reported California tiger salamanders dispersing up to one mile or more from breeding sites, and one study suggested that tiger salamanders had dispersed up to 1.3 miles from known breeding sites.⁶ Therefore, the presence of a known tiger salamander breeding pond 1.1 miles southeast of the site suggests that tiger salamanders could reach the site in the absence of barriers to dispersal. A review of aerial photographs of the area between the Project site and the nearest known occurrence of California tiger salamanders to the southeast revealed no discernable barriers to movement of individuals (*i.e.*, busy roads, development, or steep

⁶ Orloff, S. 2007. Migratory movements of California tiger salamanders in upland habitat—a five-year study. Pittsburg, California. Prepared for Bailey Estates, LCC by Ibis Environmental, Inc. May.

topographical features). Therefore, there is some potential for individual tiger salamanders to disperse to the Project site from the location 1.1 miles to the southeast. California tiger salamanders are most likely to disperse during or immediately following rain events; however, the generally dry conditions of the surrounding habitat and the lack of breeding ponds in the immediate vicinity of the Project site make the occurrence of tiger salamanders on the Project site unlikely. If California tiger salamanders do occur on-site, they are expected to occur here only in very low numbers given the distance between the site and the breeding pond.

Because the Project site is within potential dispersal range of a breeding pond, the possibility of occurrence on the site cannot be eliminated without intensive trapping surveys. According to the USFWS and CDFG protocol, trapping surveys would require the installation and monitoring of pitfall traps along drift fences along the project alignment for two wet seasons. In the absence of such surveys, California tiger salamander presence should be inferred from site conditions and the site's proximity to a known breeding pond.

Avoidance and Minimization Efforts

To minimize the potential for California tiger salamanders to be impacted by the Project site, the following measures will be implemented. If the USFWS or the CDFG recommend alternative measures, then those recommendations may take precedence.

- Flag the limits of work prior to the start of construction.
- Install exclusion fencing just outside of this work limit if work is conducted within Pancho Rico Creek at a time of year when water is present within the low-flow channel. Exclusion fencing for tiger salamanders is commonly created by installing smooth-faced fencing material (silt fence or plywood) buried in the ground a minimum of 15 centimeters (6 inches) and held in place by rigid stakes and/or by attachment to another type of fencing (*e.g.*, chain-link) to ensure that the fencing remains upright. The fencing should be installed during the dry season (prior to October 15) and should be a minimum of 1.1 m (3.5 ft) tall following installation. If plywood is used, the ends of each sheet must overlap by at least 15 centimeters (6 inches) and be tightly fastened together. The fencing must be inspected daily to ensure that it is in good repair, and repaired as necessary.
- Prevent any work in, or worker access to, areas outside of the established work limits.
- During construction, dedicated construction personnel will conduct daily checks of the exclusion fencing to ensure that it is functioning correctly (*e.g.*, without any gaps through which California tiger salamanders might enter the work area), and to maintain the fencing as needed. Prior to the start of work each day, these personnel will also inspect trenches and pits that were left open overnight.
- Train construction workers on California tiger salamander recognition, their potential for occurrence in the Project site, measures to avoid take, and penalties for take. A protocol will be developed and followed in the event that a California tiger salamander is encountered during Project construction. This protocol will include the following elements:

- All work that could result in direct injury, disturbance, or harassment of the individual animal must immediately cease;
- The foreman and inspector will be immediately notified;
- The foreman or the inspector will immediately notify the local Caltrans representative. The Caltrans representative will immediately notify the USFWS and CDFG; and;
- A qualified biologist approved by the USFWS to handle the individual salamander will be contacted to remove the individual to a safe location nearby.

Project Impacts

It is our understanding that there is to be no permanent impact to natural habitats that provide potential California tiger salamander habitat on the Project site, and that any temporary impacts to upland habitats that could be used by the California tiger salamander will be restored to their pre-existing conditions. The total area of temporary disturbance to upland habitats, including areas to be used for construction staging and storage is approximately 10,000 square feet (=0.23 acres). Therefore, no long-term loss or degradation of tiger salamander habitat will occur.

There is some potential for loss of individual tiger salamanders during construction. Individuals that are in burrows when construction occurs, or that occur above-ground on the construction site, may be injured or killed as a result of crushing by equipment or construction personnel. Noise and ground vibrations from the use of heavy equipment during construction may cause tiger salamanders to disperse, possibly into open areas where they are more susceptible to injury or mortality from predation, vehicular or foot traffic, or other construction activities. However, because the number of tiger salamanders expected to occur on the site would be very low (if the species occurs on the site at all), very few individuals could potentially be affected by the Project.

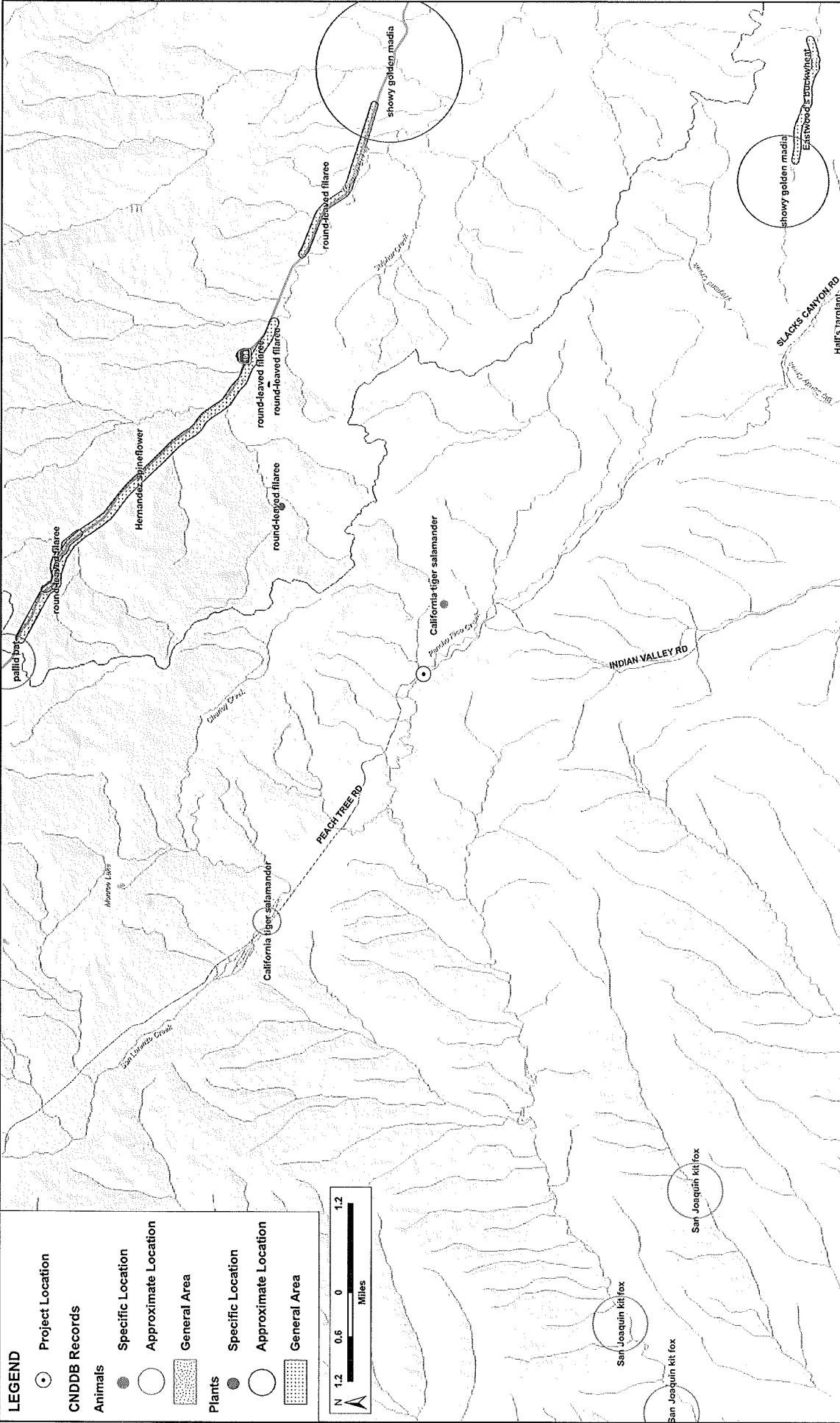
Because the Project is not expected to increase traffic along Peachtree Road, any mortality resulting from vehicles not associated with Project construction, either during or after construction, will not be an effect of this Project.

Compensatory Mitigation

Because there will be no permanent loss or degradation of California tiger salamander habitat, no compensatory mitigation is proposed.

Cumulative Effects

Cumulative impacts to California tiger salamanders result from past, current, and reasonably foreseeable future Projects in the region. Although such Projects will result in impacts to this species, it is expected that most current and future Projects that impact these habitats will have to mitigate these impacts through the CEQA, Section 1600, or Section 404/401 permitting process, as well as through the FESA Section 7 consultation process. As a result, most Projects in the region will mitigate their impacts to tiger salamanders, minimizing cumulative impacts to this species.



LEGEND

- Project Location
- CNDDDB Records
- Animals
- Specific Location
- Approximate Location
- ▨ General Area
- Plants
- Specific Location
- Approximate Location
- ▨ General Area

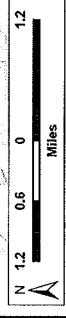


Figure 1: CNDDDB Records
 Monterey Bridges Natural Environmental Study Update - Bridge Number 412, Monterey County, California (1212-11)
 May 2010