REVISED
BIOLOGICAL RESOURCE ANALYSIS
SILVER OAKS ESTATES
CLAYTON, CONTRA COSTA COUNTY, CALIFORNIA

August 15, 2014

Prepared for

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TABLE OF CONTENTS

FIGURES
(At Back of Report)

TABLES
(At Back of Report)

TABLES
(At Back of Report)

1. INTRODUCTION

Monk & Associates, Inc. (M&A) has prepared this biological resource analysis for the proposed Silver Oaks Estates residential development (herein referred to as the project site) located in the City of Clayton, Contra Costa County, California (Figures 1 and 2). The purpose of our analysis is to provide a description of existing biological resources on the project site and to identify potentially significant impacts that could occur to sensitive biological resources from the construction of the proposed residential development.

Biological resources include common plant and animal species, as well as special-status plants and animals as designated by the U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Wildlife (the Department), National Marine Fisheries Service (NMFS), and other resource organizations including the California Native Plant Society (CNPS). Biological resources also include waters of the United States and State, as regulated by the U.S. Army Corps of Engineers (Corps), California Regional Water Quality Control Board (RWQCB), and the Department. It is important to note that our analysis includes an assessment of the potential for impacts to regulated waters but does not provide the level of detail required for a formal delineation of waters suitable for submittal to the Corps.

This biological resources analysis also provides mitigation measures for “potentially significant” and “significant” impacts that could occur to biological resources. When implemented, the mitigation measures would reduce impacts to levels considered less than significant pursuant to the California Environmental Quality Act (CEQA). Accordingly, this report is suitable for review and inclusion in any review being conducted by the City of Clayton for the proposed project pursuant to the CEQA.

2. PROPERTY LOCATION AND SETTING

The proposed project site is a 13.96-acre property located in the City of Clayton, California (Figures 1 and 2) that that was originally developed with one main house, a guest house, and horse boarding paddocks and shelters. The main home on the site is in a state of disrepair, having partially-burned and collapsed. The other “guest home” is currently occupied with a resident that is acting as a grounds keeper. The project site also supports paved and graveled roadways and parking areas, and an old abandoned water tower that originally supported the main residence and a swimming pool next to the main residence that was long ago filled. The vegetation on the site is ruderal with remnants of oak woodland and landscaped areas. An old decadent fruit orchard occurs on the southern portion of the project site. Remnant riparian woodland also occurs in association with Mount Diablo Creek on the south side of the project site.

Pursuant to Section 21061.3 Public Resources Code the proposed project site likely meets the definition of an "infill site." It is surrounded by urban development. The project site is bordered to the north by Oakhurst Drive. The portions of Clayton that lie beyond Oakhurst Drive to the north and Mount Diablo Creek to the south contain numerous single-family home developments. Oakhurst Country Club Golf Course is immediately east of the project site, while Lydia Lane Community Park is located near the southwestern border of the project site (Figure 3). The areas of Clayton that lie east and west of the project site are also densely-covered with single-family homes.

3. PROPOSED PROJECT

3.1 Development Description

Development of the project site will include the construction of seven single-family detached homes and 52 multi-family residential unit townhomes, a community pool and cabana, as well as infrastructure associated with a residential development, such as roads, sidewalks, lighting, landscaping, and utilities (Attachment A). In addition, a sanitary sewer line must be connected from the proposed development to the existing sanitary sewer lines on the south side of Mount Diablo Creek.

3.2 Open Space Conservation Area

Much of the southern and western perimeter of the project site is proposed to be conserved in perpetuity as a conservation area consisting of the bed, bank, and channel of Mount Diablo Creek, as well as a 50-foot (and greater) setback from the top-of-bank (see Figure 3 for this "riparian setback" conservation area). This area will be recorded on the title of the property as a deed restricted conservation area consistent with the requirements of the East Contra Costa County Habitat Conservation Plan (ECCCHCP). This conservation area will protect Mount Diablo Creek and its associated riparian habitat. The northern/eastern limits of the conservation area, adjacent to the proposed development, will be fenced with vinyl-clad chain-link fencing that is four-feet in height to protect the conservation area from outside influences.

Although the bed, bank, and channel of Mt. Diablo Creek, along with a 50-foot (and greater) setback from the top-of-bank, are being preserved in perpetuity as part of the proposed project, a small portion of the creek will be temporarily impacted from construction associated with open cut trenching to connect the sewer line from the development to the existing sewerline that occurs immediately south of the creek. In addition, within the setback, an outfall structure will be constructed where storm water would be discharged from the project site, vegetated stormwater detention basins will be constructed, and small portions of a private road and a private driveway will be constructed.

4. ANALYSIS METHODS

Prior to preparing this biological resource analysis report, M&A researched the most recent version of the Department's Natural Diversity Database, RareFind 3.1 application (CNDDB 2013) for historic and recent records of special-status plant and animal species (that is, threatened, endangered, rare) known to occur in the region of the project site (Figure 4). M&A also searched the 2013 electronic version of the CNPS's *Inventory of Rare and Endangered Plants of California* (2001) for records of special-status plants known in the region of the project site. Additionally those "covered" and "no-take species" considered by the ECCCHCP to have the potential to occur on the project site are also addressed in this report. All special-status species records were compiled in tables. M&A examined all known record locations for special-status species to determine if special-status species could occur on the project site or within an area of affect.

During the initial investigations conducted by M&A to understand constrains to development of the project, M&A biologist Mr. Geoff Monk met with representatives of the Regional Water

Quality Control Board (RWQCB) (Ms. Katie Hart) and the Department of Fish and Wildlife (the Department) (Ms. Randi Adair) on the project site on March 23, 2011. The location of the top-of-bank and the edge of associated riparian vegetation was discussed during this on-site meeting. During the meeting the initially proposed top-of-bank setback was modified per the recommendations of Ms. Hart and Ms. Adair to ensure that development of the project site would incorporate a creek setback that protected all riparian vegetation with high resource value. Several oaks that were "cabled" together and that had otherwise fallen in part to the ground that were within the proposed area of development were also discussed with Ms. Hart and Ms. Adair. Minor impacts to trees on the outside edge of the "riparian zone" were considered permittable by the Department and the RWQCB.

M&A biologists Mr. Geoff Monk, Mr. Brian Spirou and/or Ms. Sarah Lynch conducted general site and permitting assessment investigations on June 22, 2010, August 10, 2010, July 26, 2012, August 8, 2012, September 11, 2012, and finally on February 25, 2013. During all site visits the habitats on the site were examined and the plants and wildlife species observed were recorded in project note books. M&A also evaluated the habitats on and adjacent to the site to determine if these areas could support special-status species known from the region of the project site. The results of our literature research and field reconnaissance surveys are provided in the sections below.

5. RESULTS OF RESEARCH AND PROJECT SITE ANALYSES

5.1 Soils

The proposed project site consists of two soil types: Perkins gravelly loam and Zamora silty clay loam (Figure 5).

5.1.1 Perkins Soil Series

The Perkins series consist of very deep, well-drained soils that formed in alluvium derived from mixed rock sources. Perkins soils are on terraces and have slopes of 0 to 30 percent. The surface layer for Perkins soils are generally brown, loam, hard or very hard friable soil. The texture ranges between fine sandy loam, very fine sandy loam or loam, and gravel ranges from 1 percent to as much as 35 percent. The subsoil is a very hard friable soil with the color ranging from brown to yellowish-red. Texture is loam, clay loam, sandy clay loam, gravelly loam, gravelly loam, gravelly sandy clay loam or very gravelly sandy clay loam and averages 25 to 35 percent clay and 5 to 35 percent gravel. This is a well-drained soil with slow to rapid runoff and moderately slow permeability.

5.1.2 Zamora Soil Series

The Zamora series consist of moderately deep, well-drained soils that formed in alluvium from material weathered from mixed sedimentary rocks. Zamora soils are on alluvial fans and terraces, and have slopes of 0 to 9 percent. The surface layer for Zamora soils are generally gray-brown silt loams that are hard or very hard and massive when dry. The texture ranges between fine sandy loam, loam, silt loam or light silty clay loam. The subsoil is a very hard friable soil with the color ranging from brown to yellowish-brown. Texture is silty clay loam, silt loam, and gravelly loam; it averages less than 35 percent clay and less than 15 percent very fine sand. This is a well-drained soil with slow to medium runoff and moderately slow permeability.

5.2 Site Topography

Topography of the project site varies from nearly-flat, previously-graded areas, such as are found under the houses, in the horse paddocks, parking areas, and out-buildings, to a gently sloping (approximately 8% grade) hill that bisects that project site into northern and southern halves. Project site elevation averages approximately 350 feet above sea level.

5.3 Site Hydrology

The overall slope of the project site is from north to south, which directs all surface waters on the project site into Mount Diablo Creek. Mount Diablo Creek flows along the southern and western boundaries of the project site (Figures 2 and 3). While Mount Diablo Creek is an intermittent stream (blue line creek on the USGS topographic map), the flows in this creek can be extremely variable. In the late-summer months, flows are typically reduced to a minute trickle, while during large winter storm events the flows can reach the top of bank, as evidenced by bank erosion and vegetation wrack-lines. Mount Diablo Creek flows into Seal Creek, which empties into Suisun Bay. Other than Mount Diablo Creek, there are no other potential waters of the U.S. or State on the project site.

The proposed project will hydromodify and treat stormwater falling on impervious surfaces of the post developed project site prior to being delivered to Mount Diablo Creek. The requirements for stormwater hydromodification and treatment after the project site is developed is presented under the Regulatory Section below under (RWQCB and NPDES requirements).

5.4 Plant Communities and Associated Wildlife Habitats

A complete list of plant species observed on the project site is presented in Table 1. Nomenclature used for plant names follows *The Jepson Manual* Second Edition (Baldwin 2012) and changes made to this manual as published on the Jepson Interchange Project website (http://ucjeps.berkeley.edu/interchange/index.html). Table 2 is a complete list of wildlife species observed on the project site. Nomenclature for wildlife follows the Department's *Complete list of amphibian, reptile, bird, and mammal species in California* (2008) and any changes made to species nomenclature as published in scientific journals since the publication of the Department's list.

The project site supports two native plant communities and three anthropogenic (that is, man-established) communities/land use types. The native plant communities are: oak woodland (1.50 acres) and riparian woodland (5.27 acres). The majority of the riparian woodland will be permanently protected by the proposed project within a deed restricted stream corridor of approximately 6.60 acres. The anthropogenic communities are ornamental-barren (3.6 acres), ruderal (0.31 acre), and pastoral (3.28 acres). A brief description of each is provided below.

5.4.1 Oak Woodland

Oak woodland on the project site is limited to two linear strips of vegetation dominated by mature valley oak (*Quercus lobata*) and coast live oak (*Quercus agrifolia*) trees. Due to the project site's long history of human use, this plant community has been modified by the introduction of ornamental tree species such as deodar cedar (*Cedrus deodara*), incense cedar (*Calocedrus decurrens*), and tobira (*Pittosporum tobira*). Native shrubs found in this community

onsite are toyon (*Heteromeles arbutifolia*) and holly leaf redberry (*Rhamnus illicifolia*). There is no herbaceous layer under the shrubby understory; a dense layer of oak leaf litter lies on the ground underneath the canopy.

The oak woodland on the project site, while relatively small in size, provides suitable foraging and nesting habitat for common birds observed in the area, such as Anna's hummingbird (*Calypte anna*), western scrub jay (*Aphelocoma californica*), bushtits (*Psaltriparus minimus*), acorn woodpecker (*Melanerpes formicivorus*), Nuttall's woodpecker (*Picoides nuttallii*), northern flicker (*Colaptes auratus*), chestnut-backed chickadee (*Poecile rufescens*), dark-eyed junco (*Junco hyemalis*), and oak titmouse (*Baeolophus inornatus*). Mammals such as raccoon (*Procyon lotor*) and fox squirrel (*Sciurus niger*) may also forage and nest in the oak woodland on the project site.

5.4.2 RIPARIAN WOODLAND

The riparian woodland community runs along Mt. Diablo Creek on the south side of the project site (Figure 3). Total canopy cover averaged along this creek on the project site is approximately 60 to 70 percent. It is dominated by valley oaks and California buckeye (*Aesculus californica*) trees. Almond (*Prunus dulcis*) trees, black walnut (*Juglans hindsii*) trees, and Oregon ash (*Fraxinus latifolia*) are also present along the creek. Shrubby toyon and non-native Himalayan blackberry (*Rubus armeniacus*) are also present along the banks. The understory is herbaceous, dominated by non-native grasses, as well as non-native and native forbs (broad-leaved plants).

The mixture of oak and buckeye along with the understory vegetation provides wildlife with many different food sources, nesting opportunities, and cover from predators. Wildlife observed in the nearby oak woodland can also be expected to occur in the riparian woodland community due to its diverse plant composition, nesting, and foraging opportunities. Wildlife typically associated with riparian woodlands includes amphibians such as California slender salamander (*Batrachoseps attenuatus*) and Sierra tree frog (*Pseudacris sierra*). Reptiles expected within the riparian community include western terrestrial garter snake (*Thamnophis elegans*), aquatic garter snake (*Thamnophis couchii*), ring-neck snake (*Diadophis punctatus*), and northern alligator lizard (*Elgaria coerulea*). Common birds expected to use riparian woodlands include red shouldered hawk (*Buteo lineatus*), Cooper's hawk (*Accipter cooperii*), great horned owl (*Bubo virginianus*), barn owl (*Tyto alba*), northern flicker, downy woodpecker (*Picoides pubescens*), acorn woodpecker, Nuttall's woodpecker, western scrub jay, Steller's jay (*Cyanocitta stelleri*), oak titmouse, yellow-rumped warbler (*Dendroica coronata*), dark-eyed junco, California towhee, and chestnut-backed chickadee. Many of these species were heard or seen during M&A's February 25, 2013 site visit. Common mammals expected to use the riparian woodland for bedding areas, nesting, foraging, or as a movement corridor include fox squirrel, raccoon, striped skunk (*Mephitis mephitis*), Columbian black-tailed deer (*Odocoileus hemionus columbianus*), Virginia opossum (*Didelphis virginiana*), Norway rat (*Rattus norvegicus*), and/or black rat (*Rattus rattus*). Many of these mammal species, or indications of their presence, were also observed during M&A's site visits dating from 2010 to 2013.

This is merely a representative sample of the wildlife expected to occur in the riparian habitat on the project site. It is expected that at different times of the year different animals would be found,

especially during the spring and fall migration months when song birds including Neotropical migrants would occur in the riparian habitat.

5.4.3 ANTHROPOGENIC COMMUNITIES/LAND USE TYPES

The anthropogenic communities/land use types dominate the landscape of the project site (Figure 3). Such habitats include a small area of ruderal (weedy) vegetation in the project site's northwestern corner that is composed of non-native grasses and forbs such as rip-gut brome (*Bromus diandrus*), field hedge parsley (*Torilis arvensis*), Bermuda buttercup (*Oxalis pes-caprae*), broad-leaf filaree (*Erodium botrys*), dead nettle (*Lamium amplexicaule*), and Shepard's purse (*Capsella bursa-pastoris*). Former livestock paddocks/fenced enclosures (pastoral land type) are located in two separate areas of the project site. These paddocks are dominated by non-native grasses, thistles (*Cirsium vulgare*, *Carduus pycnocephala*), and mustards (*Brassica nigra*, for example). Finally, a large portion of the project site consists of barren ground in areas that were formerly a swimming pool, parking areas, and orchard. Remnant ornamental trees and shrubs are also present throughout ruderal and native habitats. Many of the wildlife species expected or observed in the project site's woodlands would be expected to also opportunistically use the project site's anthropogenic plant communities.

6. SPECIAL-STATUS SPECIES DEFINITION

6.1 Definitions

For purposes of this analysis, special-status species are plants and animals that are legally-protected under the California and Federal Endangered Species Acts (CESA and FESA, respectively) or other regulations, and species that are considered rare by the scientific community (for example, the CNPS). Special-status species are defined as:

- plants and animals that are listed or proposed for listing as threatened or endangered under the CESA (Fish and Game Code §2050 *et seq*.; 14 CCR §670.1 *et seq.*) or the FESA (50 CFR 17.12 for plants; 50 CFR 17.11 for animals; various notices in the Federal Register [FR] for proposed species);

- plants and animals that are candidates for possible future listing as threatened or endangered under the FESA (50 CFR 17; FR Vol. 64, No. 205, pages 57533-57547, October 25, 1999); and under the CESA (California Fish and Wildlife Code §2068);

- plants and animals that meet the definition of endangered, rare, or threatened under the California Environmental Quality Act (CEQA) (14 CCR §15380) that may include species not found on either State or Federal Endangered Species lists;

- Plants occurring on Ranks 1A, 1B, 2, 3, and 4 of CNPS' *Electronic Inventory* (CNPS 2001). The Department recognizes that Ranks 1A, 1B, and 2 of the CNPS inventory contain plants that, in the majority of cases, would qualify for State listing, and the Department requests their inclusion in EIRs. Plants occurring on CNPS Ranks 3 and 4 are "plants about which more information is necessary," and "plants of limited distribution," respectively (CNPS 2001). Such plants may be included as special-status species on a case by case basis due to local significance or recent biological information;

- migratory nongame birds of management concern listed by USFWS (Migratory Nongame Birds of Management Concern in the United States: The list 1995; Office of Migratory Bird Management; Washington D.C.; Sept. 1995);

- animals that are designated as "species of special concern" by the Department (2013);

- Animal species that are “fully-protected” in California (Fish and Wildlife Codes 3511, 4700, 5050, and 5515).

In the paragraphs below we provide further definitions of legal status as they pertain to the special-status species discussed in this report or in the attached tables.

Federal Endangered or Threatened Species. A species listed as Endangered or Threatened under the FESA is protected from unauthorized “take” (that is, harass, harm, pursue, hunt, shoot, trap) of that species. If it is necessary to take a Federally-listed Endangered or Threatened species as part of an otherwise lawful activity, it would be necessary to receive permission from the USFWS prior to initiating the take.

State Threatened Species. A species listed as Threatened under the state Endangered Species Act (§2050 of California Fish and Wildlife Code) is protected from unauthorized “take” (that is, harass, pursue, hunt, shoot, trap) of that species. If it is necessary to “take” a state listed Threatened species as part of an otherwise lawful activity, it would be necessary to receive permission from the Department prior to initiating the “take.”

California Species of Special Concern. These are species in which their California breeding populations are seriously declining and extirpation from all or a portion of their range is possible. This designation affords no legally mandated protection; however, pursuant to the CEQA Guidelines (14 CCR §15380), some species of special concern could be considered “rare.” Pursuant to its rarity status, any unmitigated impacts to rare species could be considered a “significant effect on the environment” (§15382). Thus, species of special concern must be considered in any project that will, or is currently, undergoing CEQA review, and/or that must obtain an environmental permit(s) from a public agency.

CNPS Rank Species. The CNPS maintains an inventory of special status plant species. This inventory has four lists of plants with varying rarity. These lists are: Rank 1, Rank 2, Rank 3, and Rank 4. Although plants on these lists have no formal legal protection (unless they are also state or federal listed species), the Department requests the inclusion of Rank 1 species in environmental documents. In addition, other state and local agencies may request the inclusion of species on other lists as well. Rank 1 species have the highest priority: Rank 1A species are thought to be extinct, and Rank 1B species are known to still exist but are considered “rare, threatened, and endangered in California and elsewhere.” All of the plants constituting Rank 1B meet the definitions of Section 1901, Chapter 10 (Native Plant Protection Act) or Sections 2062 and 2067 (California Endangered Species Act) of the California Fish and Game Code, and are eligible for state listing (CNPS 2001). Rank 2 species are rare in California, but more common elsewhere. Ranks 3 and 4 contain species about which there is some concern, and are review and

watch lists, respectively. Additionally, in 2006 CNPS updated their lists to include "threat code extensions" for each list. For example, Rank 1B species would now be categorized as Rank 1B.1, Rank 1B.2, or Rank 1B.3. These threat codes are defined as follows: .1 is considered "seriously endangered in California (over 80% of occurrences threatened/high degree and immediacy of threat)"; .2 is "fairly endangered in California (20-80% of occurrences threatened)"; .3 is "not very endangered in California (less than 20% of occurrences threatened or no current threats known)."

Under the CEQA review process only CNPS Rank 1 and 2 species are considered since these are the only CNPS species that meet CEQA's definition of "rare" or "endangered." Impacts to Rank 3 and 4 species are not regarded as significant pursuant to CEQA.

Fully Protected Birds. Fully protected birds, such as the white-tailed kite and golden eagle, are protected under California Fish and Game Code (§3511). Fully protected birds may not be "taken" or possessed (i.e., kept in captivity) at any time.

6.2 Potential Special-Status Plants Species On or Near the Project Site

Figure 4 provides a graphical illustration of the closest known records for special-status species within 5 miles of the project site. It is important to note that the area surrounding the project site has experienced rapid growth over the last 10 years and many CNDDB record locations are now developed. In fact the project site is completely surrounded by high density urban development on three sides and a golf course occurs on the balance of the project site boundary.

No special-status plants have been mapped on or adjacent the project site. However, according to the CNPS *Inventory* and the Department's CNDDB, a total of 25 special-status plant species are known to occur in the region of the project site (Table 3). Most of these plants occur in specialized habitats such as chaparral and broadleaf forest, or on serpentine or alkaline soils. The project site provides suitable habitat for a single species of the 25 special-status plant species known from the region of the project site: Diablo helianthella. This species is discussed in detail below.

6.2.1 DIABLO HELIANTHELLA

Diablo helianthella (*Helianthella castanea*) is a CNPS Rank 1B.2 species. It has no state or federal status. This member of the sunflower family is found in a variety of habitat types including broadleaved upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, and valley and foothill grassland. It is a perennial herb that blooms from March through June. This plant is threatened by urbanization, grazing, and fire suppression. This species has been observed in chaparral habitats within the Black Diamond Regional Park approximately 2.6 miles east of the project site (CNDDB Occurrence No. 29).

The riparian woodland that occurs on the project site provides suitable habitat for Diablo helianthella. Regardless, no special-status plant species have been observed by M&A botanists during numerous site investigations conducted during the periods when this species would have been identifiable in 2010, 2012, 2013, and 2014. *As such, impacts to Diablo helianthella are not regarded as significant pursuant to CEQA.*

6.3 Potential Special-Status Wildlife Species on or near the Project Site

Figure 4 provides a graphical illustration of the closest known records for special-status species within 5 miles. It is important to note that the area around the project site has experienced rapid growth over the last 10 years and many CNDDB record locations are now developed. In fact the project site is completely surrounded by high density urban development on three sides and a golf course occurs on the balance of the project site boundary.

No special-status animals have ever been mapped on or adjacent to the project site. In addition, M&A wildlife biologists have conducted numerous site evaluations in 2010, 2012, 2013, and 2014, during which, no special-status species have been observed on the project site. However, according to the CNDDB, a total of five special-status animal species are known to occur within five miles of the project site (Table 4). Only one of these five special-status species has any possibility of occurring on the project site: the California red-legged frog (*Rana draytonii*). However, because of the sensitivity of some of the special-status wildlife species known to occur in the area, and/or the potential presence of some of the species on or immediately adjacent to the project site, we discuss four of these species further below.

6.3.1 California red-legged frog

The California red-legged frog was federally listed as threatened on May 23, 1996 (Federal Register 61: 25813-25833) and as such is protected pursuant to the Federal Endangered Species Act. On March 16, 2010 the USFWS issued the final designation for California red-legged frog Critical Habitat (USFWS 2010). The project site is located outside of Critical Habitat (Critical Habitat Unit CCS-2A is located approximately four miles to the south). The California red-legged frog is also a state "species of special concern."

The California red-legged frog is typically found in ponds, slow-flowing portions of ephemeral, perennial, and intermittent streams that maintain water in the summer months. This frog is also found in hillside seeps that maintain pool environments or saturated soils throughout the summer months. Populations probably cannot be maintained if all surface water disappears (i.e., no available surface water for egg laying and larval development habitat). Larval California red-legged frogs require 11-20 weeks of permanent water to reach metamorphosis (i.e., to change from a tadpole into a frog) in water depths of 10 to 20 inches (USFWS 2002). Riparian vegetation such as willows and emergent vegetation such as cattails are preferred red-legged frog habitats, though not necessary for this species to be present. Populations of California red-legged frog will be reduced in size or eliminated from ponds supporting non-native species such as bullfrog (*Rana catesbeiana*), Centrarchid fish species (such as sunfish, bluegill, or largemouth bass), and signal and red swamp crayfish (*Pacifastacus leniusculus* and *Procambarus clarkii*, respectively), all of which are known California red-legged frog predators. However, the presence of these non-native species does not preclude the presence of the California red-legged frog.

California red-legged frogs also use upland habitats for migration and dispersal. The USFWS *Recovery Plan for the California Red-Legged Frog* states that frog overland excursions via uplands can vary between 0.25 mile up to 3 miles during the course of a wet season, and that frogs "have been observed to make long-distance movements that are straight-line, point to point migrations rather than using corridors for moving in between habitats" (USFWS 2002).

The USFWS *Recovery Plan for the California Red-Legged Frog* also states that populations are "most likely to persist where multiple breeding areas are embedded within a matrix of habitats used for dispersal." "The primary constituent elements for California red-legged frogs are aquatic and upland areas where suitable breeding and non-breeding habitat is interspersed throughout the landscape and is interconnected by unfragmented dispersal habitat" (USFWS 2002).

M&A biologists Geoff Monk and Sarah Lynch have evaluated the project site for California red-legged frog habitat; they are both federal 10(a)(1)(A) permit holders with authorization to survey for and handle California red-legged frogs for identification purposes. Based on their surveys of the project site from 2010 to 2013, it has been determined that the project site does not provide the aquatic habitat necessary to support a breeding or likely migrating California red-legged frog population. No California red-legged frogs have been observed onsite during numerous surveys in Mount Diablo Creek.

It is important to note that other than Mount Diablo Creek, there are no other waters of the U.S. (i.e. wetlands or other waters) on or adjacent to the project site that could support the California red-legged frog. On the project site, Mount Diablo Creek does not support large or deep plunge pools required by the California red-legged frog as escape cover and/or for reproduction. Rather, it is a rocky, cobbly creek that does not support herbaceous or emergent wetland plant cover. Thus, M&A concludes that in the absence of deep plunge pools, emergent vegetation in the creek, deeper water flows year round, that eggs, tadpoles, or metamorphs of the California red-legged frog would not survive in this creek within the project site.

While Mount Diablo Creek is a perennial creek, it is noteworthy that dry season flows are contributed primarily from adjacent urban runoff. In normal rainfall years, this creek dries down relatively quickly to very low flows (i.e., a trickle) or has no flows. The high flows in Mount Diablo Creek, which can be flashy (wrack lines occur in the canopy vegetation above the creek thalweg some 15 feet), would be highly likely to detach and wash any amphibian eggs downstream, off of the project site into a high density urban setting.

The project site's uplands also likely have little value to migrating California red-legged frogs. Surrounding developments around the project site present significant impediments to overland travel by California red-legged frogs to or through the project site. Impediments include but are not limited to high density urban development and major roads with high vehicle use.

Mount Diablo Creek on the project site is also not a likely valuable migration corridor for the California red-legged frog since it flows from downtown Clayton into the project site, and then into urban Concord. These developed and urban areas support buildings or backyards (constructed long ago) that extend to the top-of-banks of this creek downstream of the project site and upstream of where this creek enters a large and extensive culvert system/concrete sided flood control channel that winds its way through Concord emptying into Seal Creek, which empties into Suisun Bay. The appurtenant structures downstream of the project site effectively truncate any migration corridor value of this creek. In the urban settings present downstream of the project site, conditions that are required to support the California red-legged frog were long

ago converted to urban development. Conversely, there is almost no likelihood that the California red-legged frog would migrate from downstream locations to upstream locations (that include the project site) as this frog would be most unlikely to exist in downstream urban creek settings. Thus, the California red-legged frog is not expected to use Mount Diablo Creek on the project site.

Regardless of the challenges posed by Mount Diablo Creek as a migration corridor for the California red-legged frog, the Service will likely consider the creek corridor suitable dispersal habitat for California red-legged frog. As such, although it is unlikely that development of the proposed project will result in impacts the California red-legged frog, *impacts to California red-legged frog habitat are nonetheless regarded as potentially significant pursuant to the CEQA. Mitigation can be implemented that will reduce impacts to levels regarded as less than significant.* The Impacts and Mitigation sections below address these impacts.

6.3.2 CALIFORNIA TIGER SALAMANDER

The California tiger salamander (CTS) (*Ambystoma californiense*) has different state and federal legal protections. The Santa Barbara Distinct Population Segment (DPS) of the CTS was federally listed as endangered on January 19, 2000. The Sonoma County DPS of the CTS was federally listed as endangered on July 22, 2002. Finally, the Central California DPS of the CTS was federally listed as threatened on August 4, 2004. On August 19, 2010, the CTS was also state listed as a threatened species under the California Endangered Species Act (CESA).

The project site falls into the range of the Central California Distinct Population Segment (DPS) of the CTS. The Service designated critical habitat for the Central California DPS in 2005. The project site is located *outside* of the closest mapped critical habitat for the Central California DPS. *The project site is located approximately 15.4 miles northwest of Critical Habitat Unit CV_18, Central Valley Region* (USFWS 2011).

Proposed projects may not impact the CTS without incidental taking authority from both the Service and the Department. Prior to impacting habitat that supports CTS, the Service must prepare an incidental take permit pursuant to either Section 7 or Section 10 of the Federal Endangered Species Act (FESA). Similarly, projects that impact CTS also require incidental taking authority from the. Under Section 2081 of CESA an incidental take permit may be authorized by the Department for proposed projects that impact the CTS. Finally, under Title 14, CCR 41 (1996), CTS is also a protected amphibian that may only be “taken or possessed” under a special permit issued by the Department pursuant to sections 650 and 670.7 of these regulations, or Section 2081 of the Fish and Game Code.

CTS occur in grasslands and open oak woodlands that provide suitable over summering and/or breeding habitats. CTS spend the majority of their lives underground. They typically only emerge from their subterranean refugia for a few nights each year during the rainy season to migrate to breeding ponds. Adult California tiger salamanders have been observed up to 2,092 meters (1.3 miles) from breeding ponds (USFWS 2004). As such, unobstructed migration corridors are an important component of CTS habitat.

CTS emerge during the first heavy, warm rains of the year, typically in late November and early December. In most instances, larger movements of CTS do not occur unless it has been raining hard and continuously for several hours. Typically, for larger movements of CTS to occur, nighttime temperatures also must be above 48° F. CTS are able to move over, through, or around almost all obstacles. Significant obstructions that block CTS movements include freeways and other major (heavy traffic) roads, rivers, and deep, vertical or near vertical sided, concrete irrigation/flood control ditches.

During the spring, summer, and fall months, most known populations of the CTS predominately use California ground squirrel burrows as over-summering habitat (Jennings and Hayes 1994; G. Monk personal observation). Other secondary subterranean refugia, or primary refugia where California ground squirrels are absent, likely include Botta's pocket gopher burrows, deep fissures in desiccated clay soils, and debris piles (e.g. downed wood, rock piles).

Stock ponds, seasonal wetlands, and deep vernal pools typically provide most of the breeding habitat used by CTS. In such locations, CTS attach their eggs to rooted, emergent vegetation, and other stable filamentous objects in the water column. Eggs are gelatinous and are laid singly or occasionally in small clusters. Eggs range in size from about ¾ the diameter of a dime to the full diameter of a dime. Occasionally CTS are found breeding in slow-moving, streams or ditches. Ditches and/or streams that are subject to rapid flows, even if only on occasion, typically will not support or sustain CTS egg attachment through hatching, and thus, are not usually used successfully by CTS for breeding (G. Monk and S. Lynch, pers. observations). Similarly, streams and/or ditches that support predators of CTS or their eggs and larvae such as fish, bullfrogs, red swamp crayfish, or signal crayfish, almost never constitute suitable breeding habitat.

Typically seasonal wetlands that are used for breeding must hold water into the month of May to allow enough time for larvae to fully metamorphose. In dry years, seasonal wetlands may dry too early to allow enough time for CTS larvae to successfully metamorphose. Under such circumstances, desiccated CTS larvae can be found in dried pools. In addition, as pools dry down to very small areas of inundation, CTS larvae become concentrated and are very susceptible to predation. However, in years exhibiting wet springs, these same pools can remain inundated long enough through continual rewetting to allow CTS larvae ample time to successfully metamorphose.

The closest record for CTS occurs approximately 1.2 miles north of the project site in the grazed grasslands of Concord Naval Weapons Station (CNDDB Occurrence No. 949). Outside of the Mount Diablo Creek corridor, the entirety of the project site is considered uplands (i.e., there are no wetlands or other waters). As the project site is devoid of seasonal wetlands, ponds, and pools, it does not provide suitable breeding habitat for the CTS. Although marginal ruderal grassland habitat occurs on the project site, this habitat is unavailable for use by over summering and migrating CTS due to its isolation from extant CTS populations by the surrounding high-density urban development. *As such, impacts to California tiger salamander are not regarded as significant pursuant to CEQA.*

6.3.3 WESTERN BURROWING OWL

The western burrowing owl (*Athene cunicularia* ssp. *hypugaea*) is a California "species of special concern." Its nest, eggs, and young are also protected under California Fish and Game Code (§3503, §3503.5, and §3800). The burrowing owl is also protected from direct take under the Migratory Bird Treaty Act (50 CFR 10.13). Finally, based upon this species' rarity status, any unmitigated impacts to rare species would be considered a "significant effect on the environment" pursuant to §21068 of the CEQA Statutes and §15382 of the CEQA Guidelines. Thus, this owl species must be considered in any project that will, or is currently, undergoing CEQA review, and/or that must obtain an environmental permit(s) from a public agency. When these owls occur on project sites, typically, mitigation requirements are mandated in the conditions of project approval from the CEQA lead agency.

The nearest record of western burrowing owl to the project site is CNDDB Occurrence Number 337, which was observed 2.65 miles to the north of the project site. This record consists of a burrow with sign (white wash and pellets), but no actual owls were mentioned in the record. Accordingly, western burrowing owls do not currently occupy the project site, nor are they likely to occupy the site in the future.

Burrowing owl habitat is usually found in annual and perennial grasslands, characterized by low-growing vegetation. Often, the burrowing owl utilizes rodent burrows, typically ground squirrel burrows, for nesting and cover. They may also on occasion dig their own burrows, or use man-made objects such as concrete culverts or rip-rap piles for cover. They exhibit high site fidelity, reusing burrows year after year. Occupancy of suitable burrowing owl habitat can be verified at a site by observation of these owls during the spring and summer months or, alternatively, its molted feathers, cast pellets, prey remains, eggshell fragments, or excrement (white wash) at or near a burrow. Burrowing owls typically are not observed in grasslands with tall vegetation or wooded areas because the vegetation obscures their ability to detect avian and terrestrial predators. Since burrowing owls spend the majority of their time sitting at the entrances of their burrows, grazed grasslands seem to be their preferred habitat because it allows them to view the world at 360 degrees without obstructions.

No burrowing owls or suitable owl burrows were observed on the project site during M&A's site assessments conducted from 2010-2013. The project site does not provide suitable habitat for western burrowing owl. Owing to the absence of sufficient open area with broad vistas, these owls would not be able to avoid predation on the project site. Thus, the proposed project would be most unlikely to impact western burrowing owls. *Regardless, impacts to western burrowing owls are nonetheless regarded as potentially significant pursuant to the CEQA. Mitigation can be implemented that will reduce impacts to levels regarded as less than significant.* The Impacts and Mitigation sections below address these impacts.

6.3.4 ALAMEDA WHIPSNAKE

The Alameda whipsnake is a state and federal listed threatened species. The U.S. Fish and Wildlife Service designated critical habitat for this species on October 2, 2006 (Federal Register 71:58176-58231). The project site is located outside of the USFWS' critical habitat units designated for Alameda and Contra Costa Counties.

The Alameda whipsnake is a slender snake with adults reaching a length of 3 to 5 feet. The dorsal surface is colored sooty black or dark brown with a distinct yellow-orange stripe down each side. This extremely fast-moving snake holds its head high off the ground to peer over grass or rocks for potential prey. It is an active daytime predator. Rock outcrops are an important feature of Alameda whipsnake habitat because they provide retreat opportunities for whipsnakes and promote lizard populations. Lizards, especially the western fence lizard (*Sceloporus occidentalis*), appear to be the most important prey item of whipsnakes, although other prey items are taken, including skinks, frogs, snakes, and birds.

Adult whipsnakes appear to have a bimodal seasonal activity pattern with a large peak during the spring mating season and a smaller peak during late summer and early fall. Although short above-ground movements may occur during the winter, Alameda whipsnakes generally retreat in November into a hibernacula (shelter used during the snake's dormancy period) and emerge in March. Courtship and mating occur from late-March through mid-June. During this time, males move around throughout their home ranges, while females appear to remain at or near their hibernaculum, where mating occurs.

Alameda whipsnakes are typically found in chaparral and coastal sage scrub communities (i.e., communities dominated by chamise or coastal sage plants). Telemetry data indicate that, although home ranges of Alameda whipsnakes are centered on shrub communities, they venture up to 150 meters (500 ft.) into adjacent habitats, including grassland, oak savanna, and occasionally oak-bay woodland (USFWS 2000). In fact, recent analysis of habitat types used by Alameda whipsnakes indicates that Alameda whipsnakes are found outside “typical” habitat (that is, chaparral or coastal scrub habitat) about 29 percent of the time, and are found in annual grassland, oak woodland, and riparian habitats, and other open habitats that are associated with chaparral/scrub communities. Telemetry data indicate that whipsnakes remain in grasslands for periods ranging from a few hours to several weeks at a time. Grassland habitats are used by male whipsnakes most extensively during the mating season in spring. Female whipsnakes use grassland areas most extensively after mating, possibly in their search for suitable egg-laying sites.

Core areas (areas of concentrated use) of the Alameda whipsnake most commonly occur on east, south, southeast, and southwest facing slopes. However, recent information indicates that whipsnakes do make use of west, north, and northwest facing slopes in more open stands of scrub habitat. Alameda whipsnakes inhabit the inner coast range in western and central Contra Costa and Alameda counties. There are five remaining populations (Sobrante Ridge, Oakland Hills, Hayward Hills, Mount Diablo vicinity and the Black Hills, Wauhab Ridge) with little or no genetic flow between them. The closest known occurrence of Alameda whipsnake to the project site is approximately 2.6 miles to the west (CNDDB Occurrence Number 61). Due to the sensitivity of this species, the Department has suppressed the CNDDB record details for this species.

Because the dominant plant communities on the project site are pastoral, riparian woodland, and oak woodland, and the areas surrounding the project site consist almost exclusively of high density residential developments and its associated infrastructure, such as paved roadways, there are no chaparral/coastal scrub habitats (core whipsnake habitats) on or adjacent to the project

site. While whipsnakes are known to use grassland habitats for various periods in their life cycle, the grassland habitat must occur in proximity to coastal scrub or chaparral habitat, and there is no true grassland habitat on or adjacent to the project site. Finally, core habitats are most utilized by this snake species since they provide the highest concentration of prey populations (lizards) and the slope and exposure most needed by this snake (for thermoregulation). The closest occurrence of any contiguous patch of coastal scrub habitat to the project site is approximately two miles to the south. Numerous heavily trafficked roadways and densely developed residential communities lie between the project site and this nearest coastal scrub community. The project site is both unsuitable for and inaccessible to Alameda whipsnakes, and hence, no impacts to this special-status species are expected from the proposed development. *As such, impacts to Alameda whipsnakes are not regarded as significant pursuant to CEQA.*

7. REGULATORY FRAMEWORK FOR NATIVE WILDLIFE, FISH, AND PLANTS

This section provides a discussion of those laws and regulations that are in place to protect native wildlife, fish, and plants. Under each law we discuss their pertinence to the proposed development.

7.1 Federal Endangered Species Act

The Federal Endangered Species Act (FESA) forms the basis for the federal protection of threatened or endangered plants, insects, fish and wildlife. FESA contains four main elements, they are as follows:

Section 4 (16 USCA §1533): Species listing, Critical Habitat Designation, and Recovery Planning: outlines the procedure for listing endangered plants and wildlife.

Section 7 (§1536): Federal Consultation Requirement: imposes limits on the actions of federal agencies that might impact listed species.

Section 9 (§1538): Prohibition on Take: prohibits the "taking" of a listed species by anyone, including private individuals, and State and local agencies.

Section 10: Exceptions to the Take Prohibition: non-federal agencies can obtain an incidental take permit through approval of a Habitat Conservation Plan.

In the case of salt water fish and other marine organisms, the requirements of FESA are enforced by the National Marine Fisheries Service (NMFS). The USFWS enforces all other cases. Below, Sections 9, 7, and 10 of FESA are discussed since they are the sections most relevant to the proposed project.

Section 9 of FESA as amended, prohibits the "take" of any fish or wildlife species listed under FESA as endangered. Under Federal regulation, "take" of fish or wildlife species listed as threatened is also prohibited unless otherwise specifically authorized by regulation. "Take," as defined by FESA, means "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." "Harm" includes not only the direct taking of a species itself, but the destruction or modification of the species' habitat resulting in the potential injury of the species. As such, "harm" is further defined to mean "an act which actually

kills or injures wildlife; such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering" (50 CFR 17.3).

A December 2001 decision by the 9th Circuit Court of Appeals (Arizona Cattle Growers' Association, Jeff Menges, vs. the U.S. Fish and Wildlife Service and Bureau of Land Management, and the Southwest Center for Biological Diversity) ruled that the USFWS must show that a threatened or endangered species is present on a project site and that it would be taken by the project activities. According to this ruling, the USFWS can no longer require mitigation based on the probability that the species could use the site. Rather they must show that it is actually present.

Section 9 applies to any person, corporation, federal agency, or any local or State agency. If "take" of a listed-species is necessary to complete an otherwise lawful activity, this triggers the need to obtain an incidental take permit either through a Section 7 Consultation as discussed further below (for federal actions or private actions that are permitted or funded by a federal agency), or requires preparation of a Habitat Conservation Plan (HCP) pursuant to Section 10 of FESA (for state and local agencies, or individuals, and projects without a federal "nexus").

Section 7(a)(2) of the Act requires that each federal agency consult with the USFWS to ensure that any action authorized, funded or carried out by such agency is not likely to jeopardize the continued existence of an endangered or threatened species or result in the destruction or adverse modification of critical habitat for listed species. Critical habitat designations mean: (1) specific areas within a geographic region currently occupied by a listed species, on which are found those physical or biological features that are essential to the conservation of a listed species and that may require special management considerations or protection; and (2) specific areas outside the geographical area occupied by a listed species that are determined essential for the conservation of the species.

The Section 7 consultation process applies only to actions taken by federal agencies, or actions by private parties that require federal agency permits, approval, or funding (for example, a private landowner applying to the Corps for a permit). Section 7's consultation process is triggered by a determination of the "action agency" — i.e., the federal agency that is carrying out, funding, or approving a project — that the project "may affect" a listed species or critical habitat. If an action is likely to adversely affect a listed species or designated critical habitat, formal consultation with the USFWS is required. As part of the formal consultation, the USFWS prepares a Biological Opinion assessing whether the proposed action is likely to result in jeopardy to a listed species or adversely modify designated critical habitat. If the USFWS finds "no jeopardy" or adverse modification, it provides an incidental take permit which allows for the taking of a limited number of listed species or critical habitat.

The Section 7 consultation process only applies to actions taken by federal agencies that are considering authorizing discretionary projects. Section 7 is by and between the NMFS and/or the Service and the federal agency contemplating a discretionary approval (that is, the "federal nexus agency," for example, the Corps or the Federal Highway Administration). Private parties, cities, counties, etc. (i.e., applicants) may participate in the Section 7 consultation *at the discretion of*

the federal agencies conducting the Section 7 consultation. The Section 7 consultation process is triggered by a determination of the "action agency" – that is, the federal agency that is carrying out, funding, or approving a project - that the project "may affect" a listed species or critical habitat. If an action is likely to adversely affect a listed species or designated critical habitat, formal consultation between the nexus agency and the Service/NMFS is required. As part of the formal consultation, the Service/NMFS may resolve any issues informally with the nexus agency or may prepare a formal Biological Opinion assessing whether the proposed action would be likely to result in "jeopardy" to a listed species or if it could adversely modify designated critical habitat. If the Service/NMFS prepares a Biological Opinion it will contain either a "jeopardy" or "non-jeopardy" decision. If the Service/NMFS concludes that a proposed project would result in adverse modification of critical habitat or would jeopardize the continued existence of a federal listed species, the nexus federal agency would be most unlikely to authorize its discretionary permit (that is, it will issue a jeopardy decision). If the Service/NMFS prepares a "non-jeopardy" Biological Opinion, the nexus federal agency may authorize the discretionary permit making all conditions of the Biological Opinion conditions of its discretionary permit. A non-jeopardy Biological Opinion constitutes an "incidental take" permit that allows applicants to "take" federally listed species while otherwise carrying out legally sanctioned projects.

For non-federal entities, for example private parties, cities, counties that are considering a discretionary permit, Section 10 provides the mechanism for obtaining take authorization. Under Section 10 of FESA, the applicant for an "incidental take permit" is required to submit a "conservation plan" to USFWS or NMFS that specifies, among other things, the impacts that are likely to result from the taking, and the measures the permit applicant will undertake to minimize and mitigate such impacts, and the funding that will be available to implement those steps. Conservation plans under FESA have come to be known as "habitat conservation plans" or "HCPs" for short. The terms incidental take permit, Section 10 permit, and Section 10(a)(1)(B) permit are used interchangeably by USFWS. Section 10(a)(2)(B) of FESA provides statutory criteria that must be satisfied before an incidental take permit can be issued.

7.1.1 Responsible Agency

FESA gives regulatory authority over terrestrial species and non-anadromous fish to the USFWS. The NMFS has authority over marine mammals and anadromous fish.

7.1.2 Applicability to the proposed project

The project site does not provide fisheries habitat (Leidy et al 2003): flows in Mount Diablo Creek are too low and intermittent during the summer months. Hence, there would be no impacts to federally listed fish species.

The highly disturbed project site does not provide suitable habitat for federally listed plants. In addition, no special status plants of any kind have been identified onsite during multiple surveys conducted by M&A botanists in 2010, 2012, 2013, and 2014. Thus, no impacts to federally listed plants are expected.

The California red-legged frog is the only federally listed species that has potential to occur on the project site. Regardless of the unsuitable upland habitat present on the project site, and lack of suitable breeding habitat present on or adjacent to the project site, the Service will likely

consider the Mount Diablo Creek corridor suitable dispersal habitat for California red-legged frog. As such, although it is unlikely that development of the proposed project will result in impacts the California red-legged frog, impacts to California red-legged frog habitat are nonetheless regarded as potentially significant pursuant to the CEQA. The Impacts and Mitigation sections below address these impacts.

7.2 Federal Migratory Bird Treaty Act

The Migratory Bird Treaty Act of 1918 (16 U.S.C. §§ 703-712, July 3, 1918, as amended 1936, 1960, 1968, 1969, 1974, 1978, 1986 and 1989) makes it unlawful to "take" (kill, harm, harass, shoot, etc.) any migratory bird listed in Title 50 of the Code of Federal Regulations, Section 10.13, including their nests, eggs, or young. Migratory birds include geese, ducks, shorebirds, raptors, songbirds, wading birds, seabirds, and passerine birds (such as warblers, flycatchers, swallows, etc.).

Executive Order 13186 for conservation of migratory birds (January 11, 2001) requires that any project with federal involvement address impacts of federal actions on migratory birds. The order is designed to assist federal agencies in their efforts to comply with the MBTA and does not constitute any legal authorization to take migratory birds. The order also requires federal agencies to work with the USFWS to develop a memorandum of understanding (MOU). Protocols developed under the MOU must promote the conservation of migratory bird populations through the following means:

- avoid and minimize, to the extent practicable, adverse impacts on migratory bird resources when conducting agency actions;
- restore and enhance habitat of migratory birds, as practicable; and prevent or abate the pollution or detrimental alteration of the environment for the benefit of migratory birds, as practicable.

7.2.1 Applicability to Proposed Project

The ruderal grassland and woodlands present on the project site provide suitable habitat for nesting raptors. These raptors would be protected by the Migratory Bird Treaty Act, as would any geese, ducks, shorebirds, wading birds, or passerine birds (perching birds) that could occur on the site. As long as there is no direct mortality of species protected pursuant to this Act caused by development of the site, there should be no constraints to development of the site. To comply with the Migratory Bird Treaty Act, all active nest sites would have to be avoided while such birds were nesting. Upon completion of nesting, the project could commence as otherwise planned. Please review specific requirements for avoidance of nest sites for potentially occurring nesting birds in the Impacts and Mitigations section below.

7.3 State Endangered Species Act

7.3.1 Section 2081 of the State Endangered Species Act

In 1984, the state legislated the California Endangered Species Act (CESA) (Fish and Wildlife Code §2050). The basic policy of CESA is to conserve and enhance endangered species and their habitats. State agencies will not approve private or public projects under their jurisdiction that would impact threatened or endangered species if reasonable and prudent alternatives are

available. Because CESA does not have a provision for "harm" (see discussion of FESA, above), the Department considerations pursuant to CESA are limited to those actions that would result in the direct take of a listed species.

If the Department determines that a proposed project could impact a State-listed threatened or endangered species, the Department will provide recommendations for "reasonable and prudent" project alternatives. The CEQA lead agency can only approve a project if these alternatives are implemented, unless it finds that the project's benefits clearly outweigh the costs, reasonable mitigation measures are adopted, there has been no "irreversible or irretrievable" commitment of resources made in the interim, and the resulting project would not result in the extinction of the species. In addition, if there would be impacts to threatened or endangered species, the lead agency typically requires project applicants to demonstrate that they have acquired "incidental take" permits from the Department and/or USFWS (if it is a Federal listed species) prior to allowing/permitting impacts to such species.

If proposed projects would result in impacts to a State-listed species, an "incidental take" permit pursuant to §2081 of the California Fish and Game Code would be necessary (versus a Federal incidental take permit for Federal listed species) the Department will issue an incidental take permit only if:

1) The authorized take is incidental to an otherwise lawful activity;
2) the impacts of the authorized take are minimized and fully mitigated;
3) measures required to minimize and fully mitigate the impacts of the authorized take:
    a) are roughly proportional in extent to the impact of the taking on the species;
    b) maintain the project applicant’s objectives to the greatest extent possible; and,
    c) capable of successful implementation; and,
4) adequate funding is provided to implement the required minimization and mitigation measures and to monitor compliance with, and the effectiveness of, the measures.

If an applicant is preparing a HCP as part of the federal 10(a) permit process, the HCP might be incorporated into the §2081 permit if it meets the substantive criteria of §2081(b). To ensure that an HCP meets the mitigation and monitoring standards in Section 2081(b), an applicant should involve the Department staff in development of the HCP. If a final Biological Opinion (federal action) has been issued for the project pursuant to Section 7 of the federal Endangered Species Act, it might also be incorporated into the §2081 permit if it meets the standards of §2081(b).

No §2081 permit may authorize the take of a species for which the Legislature has imposed strict prohibitions on all forms of “take.” These species are listed in several statutes that identify “fully protected” species and “specified birds.” *See* California Fish and Game Code §§ 3505, 3511, 4700, 5050, 5515, and 5517. If a project is planned in an area where a “fully protected” species or a “specified bird” occurs, an applicant must design the project to avoid all take.

In September 1997, Assembly Bill 21 (Fish and Game Code §2080.1) was passed. This bill allows an applicant who has obtained a “non-jeopardy” federal Biological Opinion pursuant to Section 7, or who has received a federal 10(a) permit (federal incidental take permit), to submit the federal opinion or permit to the Department for a determination as to whether the federal

document is "consistent" with CESA. If after 30 days the Department determines that the federal incidental take permit is consistent with state law, and that all state listed species under consideration have been considered in the federal Biological Opinion, then no further permit or consultation is required under CESA for the project. However, if the Department determines that the federal opinion or permit is not consistent with CESA, or that there are state listed species that were not considered in the federal Biological Opinion, then the applicant must apply for a state permit under Section 2081(b). The process provided in Fish and Game Code §2080.1 (Assembly Bill 21) may be of use when the incidental take would occur to species that are listed under both the federal and state endangered species acts. Assembly Bill 21 is of no use if an affected species is state-listed, but not federally listed.

State and federal incidental take permits are issued on a discretionary basis, and are typically only authorized if applicants are able to demonstrate that impacts to the listed species in question are unavoidable, and can be mitigated to an extent that the reviewing agency can conclude that the proposed impacts would not jeopardize the continued existence of the listed species under review. Typically, if there would be impacts to a listed species, mitigation that includes habitat avoidance, preservation, and creation of endangered species habitat is necessary to demonstrate that projects would not threaten the continued existence of a species. In addition, management endowment fees are usually collected as part of the agreement for the incidental take permit(s). The endowment is used to manage any lands set-aside to protect listed species, and for biological mitigation monitoring of these lands over (typically) a five-year period.

7.3.2 Applicability to Proposed Project

The project site does not provide fisheries habitat (Leidy et al 2003). Hence, there would be no impacts to state-listed fish species. The highly disturbed project site does not provide suitable habitat for state-listed plants. No special status plants of any kind have been identified onsite during multiple surveys conducted by M&A botanists in 2010, 2012, 2013, and 2014. Thus, no impacts to state-listed plants are expected. Finally, the project site does not provide habitat for any state-listed animal species. Thus an incidental take permit from the Department is not warranted for the proposed project.

7.4 Applicable CEQA Regulations

Section 15380 of CEQA defines "endangered" species as those whose survival and reproduction in the wild are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, disease, or other factors. "Rare" species are defined by CEQA as those who are in such low numbers that they could become endangered if their environment worsens; or the species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range and may be considered "threatened" as that term is used in the FESA. The CEQA Guidelines also state that a project will normally have a significant effect on the environment if it will "substantially affect a rare or endangered species of animal or plant or the habitat of the species." The significance of impacts to a species under CEQA, therefore, must be based on analyzing actual rarity and threat to that species despite its legal status or lack thereof.

7.4.1 APPLICABILITY TO PROPOSED PROJECT

This document addresses impacts to species that would be defined as endangered or rare pursuant to Section 15380 of the CEQA. This document is suitable for use by the CEQA lead agency (in this case the City of Clayton) for preparation of any CEQA review document prepared for the proposed project. This report has been prepared as a Biology Section that is suitable for incorporation into an initial study or the biology section of an Environmental Impact Report.

7.5 California Fish and Wildlife Code §§ 3503, 3503.5, 3511, and 3513

California Fish and Game Code §§3503, 3503.5, 3511, and 3513 prohibit the "take, possession, or destruction of birds, their nests or eggs." Disturbance that causes nest abandonment and/or loss of reproductive effort (killing or abandonment of eggs or young) is considered "take." Such a take would also violate federal law protecting migratory birds (Migratory Bird Treaty Act).

All raptors (that is, hawks, eagles, owls) their nests, eggs, and young are protected under California Fish and Game Code (§3503.5). Additionally, "fully protected" birds, such as the white-tailed kite (*Elanus leucurus*) and golden eagle (*Aquila chrysaetos*), are protected under California Fish and Game Code (§3511). "Fully protected" birds may not be taken or possessed (that is, kept in captivity) at any time.

7.5.1 APPLICABILITY TO THE PROJECT

The project site provides suitable nesting habitat for raptors and passerine birds. These birds would be protected by the Fish and Game Codes that project nesting birds. As long as there is no direct mortality of species protected pursuant to this Act caused by development of the site, there should be no constraints to development of the site. To comply with the Fish and Game Codes that project nesting birds, non-disturbance buffers would have to be established around any active nesting site and would have to be of sufficient size to protect the nesting birds from harm. Upon completion of nesting, the buffers could be removed and the project could commence as otherwise planned. Please review specific requirements for avoidance of nest sites in the Impacts and Mitigations section below.

7.6 Protected Amphibians

Under Title 14 of the California Code of Regulations (CCR 14, Division 1, Subdivision 1, Chapter 5, §41. Protected Amphibians), protected amphibians, such as the California red-legged frog may only be taken under special permit from California Department of Fish and Wildlife issued pursuant to Sections 650 and 670.7 of these regulations.

7.6.1 APPLICABILITY TO THE PROJECT

The California red-legged frog is a "protected amphibian" listed under Title 14 of the California Code of Regulations, and may only be taken with prior authorization from the Department pursuant to a special permit from the Department issued pursuant to sections 650 and 670.7 of the California Code of Regulations, or Section 2081 of the Fish and Wildlife Code. Based on M&A's background research, knowledge of biological resource issues in Sonoma County, field studies conducted on the project site to date, and the presence of only marginal habitat for wildlife onsite, M&A concludes the development of this project site would not result in take of any protected amphibian. Regardless, impacts to the California red-legged frog are nonetheless

regarded as potentially significant pursuant to the CEQA. The Impacts and Mitigation sections below address these impacts.

7.7 City of Clayton General Plan

Below we provide language from the portions of the City's General Plan that pertain to Biological Resources and Water Resources.

7.7.1 Open Space/Conservation Element, Objective 1

"To promote the City's greenbelts as the basis of its open space system."

> Goal 1a: Designate as greenbelt, stream channel areas for flood control setback, maintenance of riparian habitat and preservation of open space.
>
> Goal 1b: Designate as greenbelt, areas of significant vegetation, prominent features, or scenic beauty.

7.7.2 Applicability to the Proposed Project, Objective 1

The southern and western perimeter of the project site is bounded by Mount Diablo Creek, a perennial stream. Just beyond the southern top-of-bank of Mount Diablo Creek lies an existing recreational trail. Thus, this reach of Mount Diablo Creek already serves as a greenbelt. As part of the proposed project, the bed, bank, and channel of Mount Diablo Creek, as well as a 50-foot (and greater) setback from the northern top-of-bank, will be preserved in perpetuity via deed restriction. This conservation area will effectively increase the size of the greenbelt in this portion of the City of Clayton.

7.7.3 Open Space/Conservation Element, Objective 3

"To establish an open space conservation designation to preserve natural resources, to manage resources, to provide for outdoor recreation, to promote health and safety and to ensure orderly growth."

> Goal 3e: Utilize the environmental review process to evaluate habitat impacts of a project and identify appropriate mitigations. This review may be done on an area-wide basis, for example, as through the Marsh Creek Road Specific Plan.

7.7.4 Applicability to the Proposed Project, Objective 3

In addition to this Biological Resources Analysis, a Planning Survey Report (PSR) was submitted to the City of Clayton as part of the project's application process (at the request of the City). The PSR is the application used to apply for project coverage under the East Contra Costa County Habitat Conservation Plan ECCCHCP. The aforementioned deed-restricted conservation area along Mount Diablo Creek is a development requirement of the ECCCHCP; thus, the project is in compliance with the ECCCHCP.

7.8 City of Clayton Tree Ordinance

7.8.1 15.70.015 DEFINITIONS.

C. "Protected Tree" means any tree that is of the following varieties: ash (*Fraxinus dipetala*); Bay (*Umbellularia californica*); Box Elder (*Acer negundo*); Buckeye (*Aesculus californica*); Cherry (*Prunus emarginata, Prunus illicifolia, Prunus subcordata*); Cottonwood (*Populus fremontii*); Elderberry (*Sambucus mexicana*); Hop Tree (*Ptelea crenulata*); Madrone (*Arbutus menziesii*); Maple (*Acer macrophyllum*); Oak (*Quercus agrifolia, Quercus chrysolepis, Quercus douglasii, Quercus kelloggii, Quercus lobata, Quercus wislizeni*); Sycamore (*Platanus racemosa*); or Walnut (*Juglans hindsii*).

D. "Tree" means a live woody plant having a single perennial stem or a multi-stemmed perennial plant which is over fifteen (15) feet in height at maturity.

E. "Trunk Diameter" means the diameter of a tree trunk as measured four (4) feet, six (6) inches above natural grade.

7.8.2 15.70.020 PERMIT REQUIRED.

A tree removal permit should be obtained prior to the removal of:

A. A tree with a single trunk or multiple trunks with a cumulative trunk diameter of six (6) inches or greater, located on private or public property; or

B. A tree of any size specifically required to be planted as part of a development application, landscape plan, or tree replacement plan approved by the City after April 1, 2005.

7.8.3 15.70.025 APPLICATION.

A permit application should be completed and filed with the Community Development Department and should include:

A. The application form established by the Community Development Department in order to have the information needed to demonstrate compliance with the standards set forth in Section 15.70.035.

B. A fee or deposit as established by resolution of the City Council.

C. A site plan indicating the quantity, location, size, species, and dripline of the tree(s) proposed for removal as well as the tree(s) to be retained.

D. An arborist report and/or soils report, if required by the Director. The arborist report should be prepared by a certified arborist. The Director may require the certified arborist to be independent of the tree removal company. The arborist report should address relevant issues including: health of the tree, soil conditions, irrigation conditions, grade levels of adjacent terrain, structural integrity, and options for removal of the tree.

E. A tree replacement plan indicating the quantity, location, size, and species of the proposed replacement tree(s), if required by the Director, in accordance with Section 15.70.040.

F. Any additional items that may be required by the Director to demonstrate compliance with the standards set forth in Sections 15.70.030.A or 15.70.035, as applicable.

7.8.4 15.70.030 PROCESS.

D. Permit Expiration. A tree removal permit is valid for ninety (90) days from the date of permit approval, unless otherwise specified.

7.8.5 15.70.040 Tree Replacement Plan.

A tree replacement plan should meet the following standards:

A. At the time of planting, the replacement tree(s) should meet one of the following criteria or a pro-rated combination of the criteria based upon the trunk diameters of the respective replacement trees:

1. A cumulative trunk diameter that is equal to no less than fifty (50) percent of the trunk diameter of the removed tree.

2. A cumulative trunk diameter that is equal to no less than thirty-three (33) percent of the trunk diameter of the removed tree if the replacement tree(s) are of a variety listed in Section 15.70.015.C as a protected tree. (Ord. 404, 2007)

B. The replacement tree should not impede the solar access rights of existing solar panels located on any other property.

C. The replacement tree should be irrigated on a regular basis until the tree is established.

D. The property owner should remain responsible for the health and survival of the replacement tree(s) for two (2) years after planting. If a replacement tree dies, is damaged, or removed within the two (2) year period, the property owner should replace the tree in accordance with the standards in this section and the originally-approved tree replacement plan. If the tree cannot be replaced for any reason, a tree removal permit for the replacement tree should be obtained in accordance with Section 15.70.020.

F. If a replacement tree cannot be planted due to limitations of the site, the Director or Planning Commission, as applicable, may require the applicant to pay an in- lieu fee, as established by resolution of the City Council, to the City for the cost of purchasing and installing any tree(s) of equivalent value in public parks, open space areas, or landscape medians. Values established by the International Society of Arboriculture or a comparable arborist organization should be used for calculating the value of any tree(s) removed.

G. The replacement tree(s) should be planted within sixty (60) days of the removal of the tree as otherwise specified by the Director or Planning Commission. (Ord. 404, 2007)

7.8.6 15.70.045 TREE PROTECTION DURING CONSTRUCTION.

A. Tree Protection Plan Required. A tree protection plan should be submitted for review and approval as part of a development application if a tree subject to Section 15.70.020 is located within fifty (50) feet of construction (including grading and installation of underground utility lines) associated with the respective development application.

B. Preparation of Plan. At the discretion of the Director, the tree protection plan should either be prepared by the applicant or a certified arborist. The applicant should be responsible for any costs associated with preparation of the plan.

C. Waiver of Plan. The Director or Planning Commission may waive the requirement for a tree protection plan if the Director or Planning Commission determines that the development activity is minor in nature and will not significantly modify the ground area within or immediately surrounding the dripline of the tree.

D. Plan Requirements. The tree protection plan should include, but not be limited to, the following attributes:

1. Identify the location of the tree trunk and dripline of all on- and off-site trees subject to Section 15.70.020.

2. A protective fence should be installed around all trees subject to the tree protection plan. The protective fence should be installed prior to commencement of any construction activity and should remain in place for the duration of construction.

3. Grading, excavation, deposition of fill, erosion, compaction, and other construction-related activities should not be permitted within the dripline or at locations which may damage the root system of trees subject to the tree protection plan, unless such activities are specifically allowed by the tree protection plan. Tree wells may be used if specifically allowed by the tree protection plan.

4. Oil, gas, chemicals, vehicles, construction equipment, machinery, and other construction materials should not be allowed within the dripline of trees subject to the tree protection plan.

5. Additional measures may be required, as determined by the Planning Commission or Director.

7.8.7 APPLICABILITY TO THE PROPOSED PROJECT

M&A reviewed the January 29, 2013 Tree Exhibit (DK Consulting) prepared for the project applicant which shows that 83 “protected trees” would need to be removed within the development footprint to accommodate the proposed development (Attachment A, Sheet 5). Construction associated with the open cut trenching needed to install the sewer pipeline would require the removal of an additional tree, and potentially require construction within the dripline of 8 additional trees. According to the City of Clayton’s Tree Ordinance, a “protected tree” is any of the following species: ash, bay, box elder, buckeye, cherry, cottonwood, elderberry, hop

tree, madrone, maple, oak (*Quercus agrifolia, Quercus chrysolepis, Quercus douglasii, Quercus kelloggii, Quercus lobata, Quercus wislizeni*), sycamore, or walnut. The number of protected trees to be removed may increase slightly once the grading plans are finalized. The City of Clayton requires a tree removal permit to remove any protected tree with a single trunk or multiple trunks of a cumulative trunk diameter of six inches or greater, located on private or public property. Impacts to protected trees would be a regarded as potentially significant pursuant to the CEQA. The Impacts and Mitigation sections below address this impact Details of tree removal and replacement are presented in the Impacts and Mitigations Section.

8. REGULATORY REQUIREMENTS PERTAINING TO WATERS OF THE UNITED STATES AND STATE

This section presents an overview of the criteria used by the U.S. Army Corps of Engineers, the California Regional Water Quality Control Board, the State Water Resources Control Board, and the Department to determine those areas within a project area that would be subject to their regulation.

8.1 U.S. Army Corps of Engineers Jurisdiction and General Permitting

8.1.1 SECTION 404 OF THE CLEAN WATER ACT

Congress enacted the Clean Water Act "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters" (33 U.S.C. §1251(a)). Pursuant to Section 404 of the Clean Water Act (33 U.S.C. 1344), the U.S. Army Corps of Engineers (Corps) regulates the disposal of dredged or fill material into "waters of the United States" (33 CFR Parts 328 through 330). This requires project applicants to obtain authorization from the Corps prior to discharging dredged or fill materials into any water of the United States.

In the Federal Register "waters of the United States" are defined as, "...all interstate waters including interstate wetlands...intrastate lakes, rivers, streams (including intermittent streams), wetlands, [and] natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce..." (33 CFR Section 328.3).

Limits of Corps' jurisdiction:

(a) Territorial Seas. The limit of jurisdiction in the territorial seas is measured from the baseline in a seaward direction a distance of three nautical miles. (See 33 CFR 329.12)

(b) Tidal Waters of the United States. The landward limits of jurisdiction in tidal waters:

(1) Extends to the high tide line, or
(2) When adjacent non-tidal waters of the United States are present, the jurisdiction extends to the limits identified in paragraph (c) of this section.

(c) Non-Tidal Waters of the United States. The limits of jurisdiction in non-tidal waters:

(1) In the absence of adjacent wetlands, the jurisdiction extends to the ordinary high water mark, or
(2) When adjacent wetlands are present, the jurisdiction extends beyond the

ordinary high water mark to the limit of the adjacent wetlands.
(3) When the water of the United States consists only of wetlands the jurisdiction extends to the limit of the wetland.

Section 404 jurisdiction in "other waters" such as lakes, ponds, and streams, extends to the upward limit of the ordinary high water mark (OHWM) or the upward extent of any adjacent wetland. The OHWM on a non-tidal water is:

- the "line on shore established by the fluctuations of water and indicated by physical characteristics such as a clear natural line impressed on the bank; shelving; changes in the character of soil; destruction of terrestrial vegetation; the presence of litter or debris; or other appropriate means that consider the characteristics of the surrounding areas" (33 CFR Section 328.3[e]).

Wetlands are defined as: "...those areas that are inundated or saturated by surface or ground water at a frequency and duration to support a prevalence of vegetation adapted for life in saturated soil conditions" (33 CFR Section 328.8 [b]). Wetlands usually must possess hydrophytic vegetation (i.e., plants adapted to inundated or saturated conditions), wetland hydrology (e.g., topographic low areas, exposed water tables, stream channels), and hydric soils (i.e., soils that are periodically or permanently saturated, inundated or flooded) to be regulated by the Corps pursuant to Section 404 of the Clean Water Act.

8.1.1.1 Significant Nexus of Tributaries

On December 2, 2008, the Corps and the Environmental Protection Agency (EPA) issued joint guidance on implementing the U.S. Supreme Court decision in the consolidated cases *Rapanos v. United States* and *Carabell v. United States* (herein referred to simply as "Rapanos") (Corps 2008b) which address the jurisdiction over waters of the United States under the Clean Water Act. In this joint guidance these agencies provide guidance on where they will assert jurisdiction over waters of the U.S.

The EPA and Corps will assert jurisdiction over the following waters:

- Traditional navigable waters
- Wetlands adjacent to traditional navigable waters
- Non-navigable tributaries of traditional navigable waters that are relatively permanent where the tributaries typically flow year-round or have continuous flow at least seasonally (for example, typically three months).
- Wetlands that directly abut such tributaries.

The agencies generally will not assert jurisdiction over the following features:

- Swales or erosional features (e.g., gullies, small washes characterized by low volume, infrequent, or short duration flow); and
- Ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water.

The agencies will apply the significant nexus standard as follows:

- A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by all wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical and biological integrity of downstream traditional navigable waters; and significant nexus includes consideration of hydrologic and ecologic factors.

8.1.1.2 Isolated Areas Excluded from Section 404 Jurisdiction

In addition to areas that may be exempt from Section 404 jurisdiction, some isolated wetlands and waters may also be considered outside of Corps jurisdiction as a result of the Supreme Court's decision in Solid Waste Agency of Northern Cook County (SWANCC) v. United States Army Corps of Engineers (531 U.S. 159 [2001]). Isolated wetlands and waters are those areas that do not have a surface or groundwater connection to, and are not adjacent to a navigable "Waters of the U.S.," and do not otherwise exhibit an interstate commerce connection.

8.1.1.3 Permitting Corps Jurisdictional Areas

To remain in compliance with Section 404 of the Clean Water Act, project proponents and property owners (applicants) are required to be permitted by the Corps prior to discharging or otherwise impacting waters of the United States. In many cases, the Corps must visit a proposed project area (to conduct a "jurisdictional determination") to confirm the extent of area falling under their jurisdiction prior to authorizing any permit for that project area. Typically, at the time the jurisdictional determination is conducted, applicants (or their representative) will discuss the appropriate permit application that would be filed with the Corps for permitting the proposed impact(s) to "waters of the United States."

Pursuant to Section 404 of the Clean Water Act, the Corps normally provides two alternatives for permitting impacts to the type of "waters of the United States" found in the project area. The first alternative would be to use Nationwide Permit(s) (NWP). The second alternative is to apply to the Corps for an Individual Permit (33 CFR Section 235.5(2)(b)). The application process for Individual Permits is extensive and includes public interest review procedures (i.e., public notice and receipt of public comments) and must contain an "alternatives analysis" that is prepared pursuant to Section 404(b) of the Clean Water Act (33 U.S.C. 1344(b)). The alternatives analysis is also typically reviewed by the federal EPA and thus brings another resource agency into the permitting framework. Both the Corps and EPA take the initial viewpoint that there are practical alternatives to the proposed project if there would be impacts to waters of the U.S., and the proposed permitted action is not a water dependent project (e.g. a pier or a dredging project). Alternative analyses therefore must provide convincing reasons that the proposed permitted impacts are unavoidable. Individual Permits may be available for use in the event that discharges into regulated waters fail to meet conditions of NWP(s).

NWPs are a type of general permit administered by the Corps and issued on a nationwide basis that authorize minor activities that affect Corps regulated waters. Under NWP, if certain conditions are met, the specified activities can take place without the need for an individual or regional permit from the Corps (33 CFR, Section 235.5[c][2]). In order to use NWP(s), a project must meet 27 general nationwide permit conditions, and all specific conditions pertaining to the NWP being used (as presented at 33 CFR Section 330, Appendices A and C). It is also important to note that pursuant to 33 CFR Section 330.4(e), there may be special regional conditions or

modifications to NWPs that could have relevance to individual proposed projects. Finally, pursuant to 33 CFR Section 330.6(a), Nationwide permittees may, and in some cases must, request from the Corps confirmation that an activity complies with the terms and conditions of the NWP intended for use (*i.e.,* must receive "verification" from the Corps).

Prior to finalizing design plans, the applicant needs to be aware that the Corps maintains a policy of "no net loss" of wetlands (waters of the United States) from project area development. Therefore, it is incumbent upon applicants that propose to impact Corps regulated areas to submit a mitigation plan that demonstrates that impacted regulated areas would be recreated (*i.e.,* impacts would be mitigated). Typically, the Corps requires mitigation to be "in-kind" (i.e., if a stream channel would be filled, mitigation would include replacing it with a new stream channel), and at a minimum of a 1:1 replacement ratio (i.e., one acre or fraction there of recreated for each acre or fraction thereof lost). Often a 2:1 replacement ratio is required. Usually the 2:1 ratio is met by recreation or enhancement of an equivalent amount of wetland as is impacted, in addition to a requirement to preserve an equivalent amount of wetland as is impacted by the project. In some cases, the Corps allows "out-of-kind" mitigation if the compensation site has greater value than the impacted site. For example, if project designs call for filling an intermittent drainage, mitigation should include recreating the same approximate jurisdictional area (same drainage widths) at an offsite location or on a set-aside portion of the project area. Finally, there are many Corps approved wetland mitigation banks where wetland mitigation credits can be purchased by applicants to meet mitigation compensation requirements. Mitigation banks have defined service areas and the Corps may only allow their use when a project would have minimal impacts to wetlands.

8.1.2 APPLICABILITY TO THE PROPOSED PROJECT

A formal wetland delineation has not been completed for the project site. M&A biologists are trained wetland biologists who conducted site assessment surveys of the project site in 2010, 2012, and in 2013. Aside from Mount Diablo Creek, no waters of the U.S. or State occur on the project site. The location of the creek's top-of-bank was determined in the field during a site visit with representatives of the RWQCB (K. Hart) and the Department (R. Adair) on March 23, 2011.

While the proposed development avoids the creek as much as practicable, it will be necessary to discharge stormwater runoff from onsite detention basin facilities into a single outfall structure constructed at outside the creeks bank. The project's stormwater outfall has been conscientiously designed to avoid impacting Clean Water Act protected waters of the U.S. and State. The outfall design keeps rip-rap out of the bed and channel (i.e., above the ordinary high water marks (OHWM)) of Mount Diablo Creek while erosion control and flow energy dissipation will be constructed into the outfall design. As water enters the outfall structure from the 18-inch high density polyethylene (HDPE) stormdrain pipe, it will flow through a 250 cubic-foot (approximately) energy-dissipation area constructed within the confines of the concrete outfall structure. This energy-dissipation area is essentially a concrete box that is filled with CalTrans "light-class" rip-rap. The rip-rap dissipates the energy of the stormwater outflow, dramatically reducing the velocity of water leaving the stormdrain system. Once the water enters the energy-dissipater, it trickles through the rip-rap and into an approximately 10-foot long gravel-filled energy-dissipater, which slows the water's velocity even further. From the gravel-filled

dissipater, water trickles onto the banks of Mount Diablo Creek, well-above the OHWM, and trickles into the low-flow channel of Mount Diablo Creek at a low-enough velocity as to not cause erosion of the bank, bed, or channel.

In addition, a sanitary sewer line must be installed to connect the proposed development to the existing sanitary sewer lines on the south side of Mount Diablo Creek. Project development plans originally proposed installation of this sewer pipeline via "jack and bore," under Mount Diablo Creek, which would allow the applicant to avoid Clean Water Act regulated areas. However, since the original Biological Resource Analysis was submitted in 2013, the feasibility of this method has been reevaluated and the applicant is now proposing installation of the sewer line via open cut trenching. The approximately 10-foot wide trench would traverse approximately 70 feet of Mount Diablo Creek (between TOBs). If open cut trenching occurs, the applicant should obtain coverage under the ECCCHC's Regional General Permit (RGP), which covers impacts to Corps' jurisdiction, prior to construction.

8.2 State Water Resources Control Board (SWRCB) / California Regional Water Quality Control Board (RWQCB)

8.2.1 Section 401 of the Clean Water Act

The SWRCB and RWQCB regulate activities in "waters of the State" (which includes wetlands) through Section 401 of the Clean Water Act. While the Corps administers a permitting program that authorizes impacts to waters of the United States, including wetlands and other waters, any Corps permit authorized for a proposed project would be inoperative unless it is a NWP that has been certified for use in California by the SWRCB, or if the RWQCB has issued a project specific certification or waiver of water quality. Certification of NWPs requires a finding by the SWRCB that the activities permitted by the NWP will not violate water quality standards individually or cumulatively over the term of the permit (the term is typically for five years). Certification must be consistent with the requirements of the federal Clean Water Act, the California Environmental Quality Act, the California Endangered Species Act, and the SWRCB's mandate to protect beneficial uses of waters of the State. Any denied (i.e., not certified) NWPs, and all Individual Corps permits, would require a project specific RWQCB certification of water quality.

Additionally, if a proposed project would impact waters of the State, including wetlands, the project applicant must demonstrate that the project is unable to avoid these adverse impacts, or water quality certification will most likely be denied. Section 401 Certification may also be denied based on significant adverse impacts to waters of the United States/State, including wetlands. The RWQCB has also adopted the Corps' policy that there should be "no net loss" of wetlands. Thus, prior to certifying water quality, the RWQCB will impose avoidance mitigation requirements on project proponents that impact waters of the State.

8.2.2 Applicability to the Proposed Project

The Corps would regulate impacts to Mount Diablo Creek, which is within their jurisdiction pursuant to the Clean Water Act. Any authorization from the Corps to impact Clean Water Act jurisdiction, obtained via the ECCCHC's RGP, would be inoperative without also obtaining authorization from the RWQCB pursuant to Section 401 of the Clean Water Act (i.e., without obtaining a certification of water quality). The ECCCHC's RGP does not cover impacts to RWQCB's jurisdiction.

While the development plans avoid the creek as much as practicable, it will be necessary to discharge stormwater runoff from onsite detention basin facilities into a single outfall structure constructed outside the creeks bank.

In addition, a sanitary sewer line must be installed to connect the proposed development to the existing sanitary sewer lines on the south side of Mount Diablo Creek. Project development plans originally designed this sewer pipeline as being "jack and bored" under Mount Diablo Creek, which would allow the applicant to avoid Clean Water Act regulated areas. However, the applicant now proposes to open cut trench through a 10-foot wide stretch of Mount Diablo Creek in order to install a sewer pipeline. If open cut trenching occurs, the applicant will be required to obtain a permit from the RWQCB.

Any impacts to waters of the State would have to be mitigated to the satisfaction of the RWQCB prior to the time this resource agency would issue a permit for impacts to such features. The RWQCB requirements for issuance of a "401 Permit" typically parallel the Corps requirements for permitting impacts to Corps regulated areas pursuant to Section 404 of the Clean Water Act. Also, please refer to the applicability section of the Porter-Cologne Water Quality Control Act below for other applicable actions that may be imposed on the project by the RWQCB prior to the time any certification of water quality is authorized for the project.

8.2.3 PORTER-COLOGNE WATER QUALITY CONTROL ACT

The Porter-Cologne Water Quality Control Act, Water Code § 13260, requires that "any person discharging waste, or proposing to discharge waste, that could affect the waters of the State to file a report of discharge" with the RWQCB through an application for waste discharge (Water Code Section 13260(a)(1). The term "waters of the State" is defined as any surface water or groundwater, including saline waters, within the boundaries of the State (Water Code § 13050(e)). It should be noted that pursuant to the Porter-Cologne Water Quality Control Act, the RWQCB also regulates "isolated wetlands," or those wetlands considered to be outside of the Corps' jurisdiction pursuant to the SWANCC decision (see Corps Section above).

The RWQCB generally considers filling in waters of the State to constitute "pollution." Pollution is defined as an alteration of the quality of the waters of the state by waste that unreasonably affects its beneficial uses (Water Code §13050(1)). The RWQCB litmus test for determining if a project should be regulated pursuant to the Porter-Cologne Water Quality Control Act is if the action could result in any "threat" to water quality.

The RWQCB requires complete pre- and post-development Best Management Practices Plan (BMPs) of any portion of the project site that is developed. This means that a water quality treatment plan for the pre- and post-developed project site must be prepared and implemented. Preconstruction requirements must be consistent with the requirements of the National Pollutant Discharge Elimination System (NPDES). That is, a *Stormwater Pollution Prevention Plan* (SWPPP) must be developed prior to the time that a site is graded (see NPDES section below). In addition, a post construction BMPs plan, or a Stormwater Management Plan (SWMP) must be developed and incorporated into any site development plan.

8.2.4 APPLICABILITY TO PROPOSED PROJECT

The RWQCB will exert Clean Water Act authority within the Corps jurisdiction in Mount Diablo Creek. The limits of jurisdiction will extend to the outward boundaries of the ordinary high water marks and/or to the outside limits of adjacent wetland in this creek.

Since any "threat" to water quality could conceivably be regulated pursuant to the Porter-Cologne Water Quality Control Act, care will required be when constructing the proposed project to be sure that adequate pre and post construction Best Management Practices Plan (BMPs) are incorporated into the project implementation plans.

It should also be noted that prior to issuance of any permit from the RWQCB, this agency will require submittal of a Notice of Determination from the City of Clayton indicating that the proposed project has completed a review conducted pursuant to CEQA. The pertinent sections of the CEQA document (typically the biology section) are often submitted to the RWQCB for review prior to the time this agency will issue a permit for a proposed project.

The undeveloped project site does not have a stormwater drainage system, and no municipal provision for stormwater management exists on this project site. A stormwater management plan/program will be implemented to address storm water run-off and treatment. A stormwater management system (and sewer system) will be installed into the street right-of-ways and tied into existing infrastructure. It should be noted that the RWQCB can simply drop by the project site at any time to see that both a SWPPP and a SWMP are being implemented by the project as necessary to comply with the NPDES and the City of Clayton's C3 Phase II NPDES requirements.

8.2.5 NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

In 1972 the Clean Water Act was amended to state that the discharge of pollutants to waters of the United States from any point source is unlawful unless the discharge is in compliance with an NPDES permit. The 1987 amendments to the Clean Water Act added Section 402(p) which establishes a framework for regulating municipal and industrial stormwater discharges under the NPDES Program.

While federal regulations allow two permitting options for stormwater discharges (individual permits and General Permits), the SWRCB has elected to adopt only one statewide General Permit at this time that will apply to all stormwater discharges associated with construction activity, except from those on Tribal Lands, in the Lake Tahoe Hydrologic Unit, and those performed by the California Department of Transportation (CalTrans). The General Permit requires all dischargers where construction activity disturbs greater than one acre of land or those sites less than one acre that are part of a common plan of development or sale that disturbs more than one acre of land surface to:

1. Develop and implement a Storm Water Pollution Prevention Plan (SWPPP) which specifies Best Management Practices (BMPs) that will prevent all construction pollutants from contacting stormwater with the intent of keeping all products of erosion from moving off site into receiving waters.

2. Eliminate or reduce non-stormwater discharges to storm sewer systems and other waters of the nation.

3. Perform inspections of all BMPs.

This General Permit is implemented and enforced by the nine California Regional Water Quality Control Boards (RWQCBs).

Types of Construction Activity Covered by the General Permit

Construction activity subject to this General Permit includes clearing, grading, and disturbances to the ground such as stockpiling, or excavation that results in soil disturbances of at least one acre or more of total land area. Construction activity that results in soil disturbances to a smaller area would still be subject to this General Permit if the construction activity is part of a larger common plan of development that encompasses greater than one acre of soil disturbance, or if there is significant water quality impairment resulting from the activity. Construction activity does not include routine maintenance to maintain original line and grade, hydraulic capacity, or original purpose of the facility, nor does it include emergency construction activities required to protect public health and safety. Project proponents (landowners) should confirm with the local RWQCB whether or not a particular routine maintenance activity is subject to this General Permit.

8.2.6 2009 CHANGES TO THE NPDES PROGRAM AND USE OF THE GENERAL PERMIT

[This section excerpted in part from Morrison Foerster Legal Updates and News September 2009, by Robert L. Falk and Corinne Fratini]. The California State Water Resources Control Board ("State Water Board") has adopted a new National Pollutant Discharge Elimination System General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities ("Construction General Permit"). The new Construction General Permit which was issued pursuant to the federal Clean Water Act and is enforceable through citizens' suits, represents a dramatic shift in the State Water Board's approach to regulating new and redevelopment sites, imposing new affirmative duties and fixed standards on builders and developers. Changes to use of the General Permit became effective on July 1, 2010.

The new Construction General Permit does not completely carry forward the former qualitative and self-selected compliance approach based on preparation of a SWPPP. Instead, developers and construction contractors must implement specific BMPs, achieve quantitatively-defined (i.e., numeric) pollutant-specific discharge standards, and conduct much more rigorous monitoring based on the project's projected risk level.

The State Water Board's new quantitative standards take a two-tiered approach, depending on the risk level associated with the site in question. Exceedance of a benchmark Numeric Action Level ("NAL") measured in terms of pH and turbidity (a measure related to both the amount of sediment in and the velocity of site runoff) triggers an additional obligation to implement additional BMPs and corrective action to improve SWPPP performance. For medium- and high-risk sites, failure to meet more stringent numeric standards for pH and turbidity, known as Numeric Effluent Limitations ("NELs"), will also automatically result in a permit violation and be directly enforceable in administrative or, in the case of a citizens' group taking up the cause,

judicial forums. New minimum BMPs include Active Treatment Systems, which may be necessary where traditional erosion and sediment controls do not effectively control accelerated erosion; where site constraints inhibit the ability to construct a correctly-sized sediment basin; where clay and/or highly erosive soils are present; or where the site has very steep or long slope lengths.

In addition, the new Construction General Permit includes several "post-construction" requirements. These requirements entail that site designs provide no net increase in overall site runoff and match pre-project hydrology by maintaining runoff volume and drainage concentrations. To achieve the required results where impervious surfaces such as roofs and paved surfaces are being increased, developers must implement non-structural off-setting BMPs, such as landform grading, site design BMPs, and distributed structural BMPs (bioretention cells, rain gardens, and rain cisterns). This "runoff reduction" approach is essentially a State Water Board-imposed regulatory requirement to implement Low Impact Development ("LID") design features. Volume that cannot be addressed using non-structural BMPs must be captured in structural BMPs that are approved by the Regional Water Board.

Finally, the new Construction General Permit requires electronic filing of all Permit Registration Documents, NOIs, SWPPPs, annual reports, Notices of Termination, and NAL/NEL Exceedance Reports. This information will be readily available to the Water Boards and citizen enforcers who can then determine whether to initiate enforcement actions—actions which can result in significant penalties and legal fees.

8.2.7 Applicability to The Proposed Project

On September 2, 2009, the State Water Resources Control Board adopted Order No. 2009-0009-DWQ, which reissued the Construction General Permit (CGP) for projects disturbing one or more acres of land surface, or those sites less than one acre that are part of a common plan of development or sale that disturbs more than one acre of land surface. Effective July 1, 2010, the requirements of this order replaced and superseded State Water Board Orders No. 99-08-DWQ.

It is the responsibility of the applicant to obtain coverage under the General Permit prior to commencement of construction activities that disturb greater than one acre of area. As the process of receiving coverage under the General Permit became considerably more involved in July 2010, the project engineer should start this permitting loop with the RWQCB at least 6 months in advance of the commencement of the proposed project.

8.3 RWQCB Municipal Storm Water Permitting Program

The Municipal Storm Water Permitting Program regulates storm water discharges from municipal separate storm sewer systems (MS4s). MS4 permits were issued in two phases. Under Phase I, which started in 1990, the RWQCBs have adopted NPDES storm water permits for medium (serving between 100,000 and 250,000 people) and large (serving 250,000 people) municipalities. Most of these permits are issued to a group of co-permittees encompassing an entire metropolitan area. These permits are reissued as the permits expire.

As part of Phase II, the SWRCB adopted a General Permit for the Discharge of Storm Water from Small MS4s (WQ Order No. 2003-0005-DWQ) to provide permit coverage for smaller

municipalities, including non-traditional Small MS4s, which are governmental facilities such as military bases, public campuses, and prison and hospital complexes.

The MS4 permits require the discharger to develop and implement a Storm Water Management Plan/Program (SWMP) with the goal of reducing the discharge of pollutants to the maximum extent practicable (MEP). MEP is the performance standard specified in Section 402(p) of the Clean Water Act. The management programs specify what best management practices (BMPs) will be used to address certain program areas. The program areas include public education and outreach; illicit discharge detection and elimination; construction and post-construction; and good housekeeping for municipal operations. In general, medium and large municipalities are required to conduct chemical monitoring, though small municipalities are not.

8.3.1 RWQCB PHASE I PROGRAM REQUIREMENTS

The C.3 NPDES requirements went into effect for any project (public or private) that is "deemed complete" by the City or County (Lead Agency) on or after February 15, 2005, and which will result in the creation or replacement (other than normal maintenance) of at least 10,000 square feet of impervious surface area (roofs, streets, patios, parking lots, etc.). Intended to reduce the introduction of urban pollutants into San Francisco Bay, creeks, streams, lakes, and other water bodies in the region, Provision C.3 requires the onsite treatment of stormwater prior to its discharge into downstream receiving waters. Note that these requirements are in addition to the existing NPDES requirements for erosion and sedimentation controls during project construction.

Projects subject to Provision C3 must include the capture and onsite treatment of all stormwater from the site prior to its discharge, including rainwater falling on building rooftops. Project applicants are required to implement appropriate source control and site design measures and to design and implement stormwater treatment measures in order to reduce the discharge of stormwater pollutants to the *maximum extent practicable.* While the Clean Water Act does not define "maximum extent practicable," the Stormwater Quality Management Plans required as a condition of the municipal NPDES permits identify control measures (known as Best Management Plans, or BMPs) and, where applicable, performance standards, to establish the level of effort required to satisfy the maximum extent practicable criterion. It is ultimately up to the professional judgment of the reviewing municipal staff in the individual jurisdictions to determine whether a project's proposed stormwater controls will satisfy the maximum extent practicable criterion. However, there are numeric criteria used to ensure that treatment BMPs have been adequately sized to accommodate and treat a site's stormwater. The C3 requirements are quite extensive, and their complete explanation is not provided here. However, the following are minimums that should be understood and adhered to:

- The applicant must provide a detailed and realistic site design *and impervious surface area calculations*. This site design *and calculations* will be used by the Lead Agency (County or City) to determine/*verify* the amount of impervious surface area that is being created or replaced. It should include all proposed buildings, roads, walkways, parking lots, landscape areas, etc., that are being created or redeveloped. If large (greater than 10,000 square feet) lots are being created an effort will need to be made to determine the total impervious surface area that could be created on that parcel. For example if only a

portion of the lot is shown as a "building envelope" then the lead agency will need to consider that a driveway will have to be constructed to access the envelope and that the envelope will then be developed as shown. If the C.3 thresholds are met (creation/redevelopment of 10,000 square feet of impervious surface area), a Stormwater Control Plan (SWCP) (if required by the Lead Agency, or whatever steps for compliance with Provision C3 are required locally) must accompany the application.

- If a SWCP is required by the Lead Agency for the project it must be stamped by a Licensed Civil Engineer, Architect, or Landscape Architect.

Incorporating the C3 requirements into the early phases of new project planning will speed the approval process (by reducing or eliminating the need for redesign of the site plan once it gets to the municipal review process), improve the integration of treatment into site landscaping, enhance the project's aesthetics, reduce the water quality impacts of the project, improve the natural absorption of urban pollutants into the environment, and reduce the amount of stormwater discharged from the site. If these requirements are not incorporated into the early stages of site design, a subsequent redesign of the site plan may be required in order to provide all of the required onsite water treatment, adding unnecessarily to project development costs.

The Contra Costa County Flood Control and Water Conservation District, Contra Costa County and 16 incorporated cities in the County which include the City of Clayton, City of Concord, Town of Danville, City of El Cerrito, City of Hercules, City of Lafayette, City of Martinez, Town of Moraga, City of Orinda, City of Pinole, City of Pittsburg, City of Pleasant Hill, City of Richmond, City of San Pablo, City of San Ramon, and the City of Walnut Creek (hereinafter Dischargers) have joined to form the Contra Costa Clean Water Program (hereinafter the Program), and have submitted an NPDES permit application package dated June 30, 1998, for re-issuance of waste discharge requirements under the National Pollutant Discharge Elimination System (NPDES) to implement "A Stormwater Management Plan for the Contra Costa Clean Water Program" dated June 30, 1998 (hereinafter the Plan) to discharge stormwater runoff from storm drains and watercourses that its members own and/or operate.

Each of the Dischargers is individually responsible for adopting and enforcing ordinances, implementing assigned BMPs to prevent or reduce pollutants in stormwater, and providing funds for capital, operation, and maintenance expenditures necessary to implement such BMPs for the storm drain system that it owns and/or operates. Assigned BMPs to be implemented by each Discharger are listed as Performance Standards in the Plan. Enforcement actions concerning this Order will, whenever necessary, be pursued only against the individual Discharger(s) responsible for specific violations of this Order. It is the Regional Board's intent that this Order shall ensure attainment of applicable water quality objectives and protection of beneficial uses of receiving waters. This Order, therefore, includes requirements to the effect that discharges shall not cause or contribute to violations of water quality objectives nor shall they cause certain conditions to occur which create a condition of nuisance or water quality impairment in receiving waters. Accordingly, the Regional Board is requiring that these requirements be addressed through the implementation of BMPs to reduce pollutants in stormwater as provided in Provisions C.1 through C.14 of this Order.

8.3.2 APPLICABILITY TO THE PROPOSED PROJECT

The proposed project is required to meet the guidelines set forth under Provision C.3 of the San Francisco Bay Municipal Regional Permit. This provision requires new development and redevelopment projects to include appropriate pollutant source control, site design, and stormwater treatment measures to prevent stormwater pollution and increased runoff flows prior to discharge from the site. An increase in post-project runoff when compared to the pre-project runoff may cause downstream erosion of creek beds and banks or silt generation. Therefore, flow control measures are required to be incorporated into the project to reduce post-development runoff to pre-development conditions. This is attained by implementation of Integrated Management Practices (IMPs), such as bioretention swales and basins. An IMP is a facility that provides treatment, retention, and/or detention of runoff and is integrated into the site layout, landscaping, and drainage design. IMPs are incorporated into the proposed project, throughout the site, as a means to meet Provision C.3. The IMPs are sized by applying sizing factors and equations to the drainage areas flowing to each IMP.

The IMPs incorporated into the proposed project consist of bioretention facilities, including basins and swales. Stormwater runoff from developed areas within the project site is conveyed to these areas, which consist of a biologically active soil mix and plantings, through which the runoff percolates and pollutants are removed from the water. They also include a surface-level reservoir and a layer of drain rock for subsurface water storage and flow control.

The proposed project has integrated three bioretention facilities into the site design (Attachment A, Sheet 9). The first bioretention facility is a swale located west of lots 41 through 52. This swale treats the runoff from the roofs, driveways, and landscaped areas of lots 41 through 52. The second bioretention facility is a basin situated north of lot 17. This basin treats the runoff from the roofs, driveways, and landscaped areas of lots 1 through 16, as well as the adjacent entry road. The third bioretention facility is also a basin. It is located between lots 55 and 5 and treats the runoff from the roofs, driveways, and landscaped areas of lots 17 through 59, as well as the adjacent road. Runoff not treated by the three bioretention facilities is managed by either self-treating or self-retaining areas. Self-treating areas are natural, landscaped, or turf areas that drain directly offsite or to the storm drain system. Open space Parcels A through G are the self-treating areas of this site. Self-retaining areas are landscaped areas that are designed to retain the first one inch of rainfall without producing any runoff. This site's self-retaining area is located southeast of lot 58 and collects the runoff from the adjacent hammerhead driveway.

The proposed bioretention facilities, self-treating areas, and self-retaining area all will manage the stormwater runoff from the project site to prevent stormwater pollution and increases in post-project runoff flows and volumes.

8.4 California Department of Fish and Wildlife Protections

8.4.1 SECTION 1602 OF CALIFORNIA FISH AND GAME CODE

Pursuant to Section 1602 of the California Fish and Game Code, the Department regulates activities that divert, obstruct, or alter stream flow, or substantially modify the bed, channel, or bank of a stream which the Department typically considers to include its riparian vegetation. Any proposed activity in a natural stream channel that would substantially adversely affect an existing

fish and/or wildlife resource, would require entering into a Streambed Alteration Agreement (SBAA) with the Department prior to commencing with work in the stream. However, prior to authorizing such permits, the Department typically reviews an analysis of the expected biological impacts, any proposed mitigation plans that would be implemented to offset biological impacts and engineering and erosion control plans.

8.4.2 APPLICABILITY TO THE PROPOSED PROJECT

M&A biologists are trained wetland biologists who conducted site assessment surveys of the project site in 2010, 2012, and in 2013. Aside from Mount Diablo Creek, there are no other creeks or tributaries on the project site that would be regulated by the Department. M&A biologists met with R. Adair of the Department on the project site and together with Ms. Adair established a creek setback zone/conservation area. This conservation area includes the bed, bank, and channel of Mount Diablo Creek, along with its riparian vegetation and a 50-foot (and greater) setback from the top-of-bank of the creek channel.

Regardless, construction of the stormwater outfall and the open cut trenching through the Department's jurisdiction associated with installation of the sewer pipeline will require a permit from the Department pursuant to Section 1602 of the Fish and Game Code ("Streambed Alteration Agreement"). The project will result in impacts to the Department-regulated waters, and a Streambed Alteration Agreement should become a condition of project approval.

9. CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) REGULATIONS

A CEQA lead agency must determine if a proposed activity constitutes a project requiring further review pursuant to the CEQA. Pursuant to CEQA, a lead agency would have to determine if there could be significant adverse impacts to the environment from a proposed project. Typically, if within the city limits, the city would be the CEQA lead agency. If a discretionary permit (i.e., conditional use permit) would be required for a project (e.g. an occupancy permit must be issued), the lead agency typically must determine if there could be significant environmental impacts. This is usually accomplished by an "Initial Study." If there could be significant environmental impacts, the lead agency must determine an appropriate level of environmental review prior to approving and/or otherwise permitting the impacts. In some cases, there are "Categorical Exemptions" that apply to the proposed activity; thus the activity is exempt from CEQA. The Categorical Exemptions are provided in CEQA. There are also Statutory Exemptions in CEQA that must be investigated for any proposed project. If the project is not exempt from CEQA, the lowest level of review typically reserved for projects with no significant effects on the environment would be for the lead agency to prepare a "Negative Declaration." If a proposed project would have only minimal impacts that can be mitigated to a level of no significance pursuant to the CEQA, then a "Mitigated Negative Declaration" is typically prepared by the lead agency. Finally those projects that may have significant effects on the environment, or that have impacts that can't be mitigated to a level considered less than significant pursuant to the CEQA, typically must be reviewed via an Environmental Impact Report (EIR). All CEQA review documents are subject to public circulation, and comment periods.

Section 15380 of CEQA defines "endangered" species as those whose survival and reproduction in the wild are in immediate jeopardy from one or more causes, including loss of habitat, change

in habitat, overexploitation, predation, competition, disease, or other factors. “Rare” species are defined by CEQA as those who are in such low numbers that they could become endangered if their environment worsens; or the species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range and may be considered “threatened” as that term is used in FESA. The CEQA Guidelines also state that a project will normally have a significant effect on the environment if it will “substantially affect a rare or endangered species of animal or plant or the habitat of the species.” The significance of impacts to a species under CEQA, therefore, must be based on analyzing actual rarity and threat of extinction to that species despite its legal status or lack thereof.

9.1.1 APPLICABILITY TO THE PROPOSED PROJECT

This report has been prepared as a Biology Section that is suitable for incorporation into the biology section of a CEQA review document such as a Mitigated Negative Declaration or Negative Declaration This document addresses potential impacts to species that would be defined as endangered or rare pursuant to Section 15380 of the CEQA. This document is suitable for use by the CEQA lead agency (in this case the City of Clayton) for preparation of any CEQA review document prepared for the proposed project.

10. IMPACTS ANALYSIS

In this section we discuss potential impacts to sensitive biological resources including special-status animal species and waters of the United States and/or State. We follow each impact with a mitigation prescription that when implemented would reduce impacts to the greatest extent possible. This impact analysis is based on the Silver Oaks Estates Plan (dated 1/29/2013) that was prepared by dK Consulting.

10.1 Significance Criteria

A significant impact is determined using CEQA and CEQA Guidelines. Pursuant to CEQA §21068, a significant effect on the environment means a substantial, or potentially substantial, adverse change in the environment. Pursuant to CEQA Guideline §15382, a significant effect on the environment is further defined as a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historical or aesthetic significance. Other Federal, State, and local agencies’ considerations and regulations are also used in the evaluation of significance of proposed actions.

Direct and indirect adverse impacts to biological resources are classified as “significant,” “potentially significant,” or “less than significant.” Biological resources are broken down into four categories: vegetation, wildlife, threatened and endangered species, and regulated “waters of the United States” and/or stream channels.

10.1.1 THRESHOLDS OF SIGNIFICANCE

10.1.1.1 Plants, Wildlife, Waters

In accordance with Appendix G (Environmental Checklist Form) of the CEQA Guidelines, implementing the project would have a significant biological impact if it would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.

- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service.

- Have a substantial adverse effect on federally protected "wetlands" as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

10.1.1.2 Waters of the United States and State.

Pursuant to Section 404 of the Clean Water Act (33 U.S.C. 1344), the U.S. Army Corps of Engineers (Corps) regulates the discharge of dredged or fill material into waters of the United States, which includes wetlands, as discussed in the bulleted item above, and also includes "other waters" (stream channels, rivers) (33 CFR Parts 328 through 330). Substantial impacts to Corps regulated areas on a project site would be considered a significant adverse impact. Similarly, pursuant to Section 401 of the Clean Water Act, and to the Porter-Cologne Water Quality Control Act, the RWQCB regulates impacts to waters of the state. Thus, substantial impacts to RWQCB regulated areas on a project site would also be considered a significant adverse impact.

10.1.1.3 Stream Channels

Pursuant to Section 1602 of the California Fish and Game Code, the Department regulates activities that divert, obstruct, or alter stream flow, or substantially modify the bed, channel, or bank of a stream which the Department typically considers to include riparian vegetation. Any proposed activity that would result in substantial modifications to a natural stream channel would be considered a significant adverse impact.

11. IMPACT ASSESSMENT AND PROPOSED MITIGATION

11.1 Impact BIO-1. The Development Project Could Have a Potentially Significant Adverse Impact on California Red Legged Frog Dispersal Habitat

The California red-legged frog is a federally listed threatened species and a California species of special concern. It is protected pursuant to the Federal Endangered Species Act and CEQA. Due to the presence of ruderal grassland and Mount Diablo Creek, the project site would be regarded by the Service as providing California red-legged frog dispersal habitat (that is, the drainage onsite could be used by dispersing/migrating frogs). **Thus, impacts to the California red-legged frog from project site development would be regarded as potentially significant pursuant to CEQA.** Mitigation could reduce this impact to a level regarded as less than significant.

11.2 Mitigation Measure BIO-1. California Red-Legged Frog

Since the California red-legged frog is protected under the Federal Endangered Species Act, any impacts to its habitat must be authorized by the Service, and must otherwise be minimized to the greatest extent practicable. To obtain Incidental Take Coverage under the Federal Endangered Species Act the project shall be required to obtain coverage under the East Contra Costa County Habitat Conservation Plan and Natural Community Conservation Plan (ECCCHCP) as administered by the East Contra Costa County Habitat Conservancy (ECCCHC). At this time the applicant has applied to the ECCCHC for coverage under the ECCCHCP. The fee that is to be paid to append the project to the ECCCHCP is for permanent impacts to 7.38 acres of land plus 20 linear feet of impact Mount Diablo Creek. This fee has been calculated to be $201,526.86 but is subject to modification by the ECCCC.

Prior to construction of the proposed project, suitable amphibian exclusion fencing should be installed along the outside edge of designated stream zone setbacks to ensure that migrating California red-legged frogs are precluded from entering any designated work area. This fence should be permanent enough to ensure that it remains in good condition throughout the duration of the construction project on the project site. It should be installed prior to any site grading or other construction-related activities are implemented. The fence should remain in place during all site grading or other construction-related activities. The California red-legged frog exclusion fence could be “silt fence” that is buried along the bottom edge.

Finally, the applicant will enlist the services of a federal 10(a)(1)(A) permitted biologist to conduct preconstruction surveys along the project site tributary at least 24 hours prior to any grading or earth-moving activities in or adjacent to Mount Diablo Creek to ensure these activities do not result in direct take of this species. Should a California red-legged frog be discovered in a work area where it could be harmed by project activities, all such activities will cease pending notification of the Service *and approval by this agency* for appropriate translocation actions. These actions would likely include that the 10(a)(1)(A) permitted biologist net any frogs in harm’s way and move them up or downstream of the project site, and that temporary exclusion fencing be installed isolating any work area within Mount Diablo Creek from access by California red-legged frogs. Finally, in the event that California red-legged frogs are found on the project site during preconstruction surveys, thereafter all work in or adjacent to Mount Diablo Creek (adjacent would include ground disturbing actions or vehicle/equipment use within

50 feet of the top-of-bank of this creek) would require that a full-time qualified California red-legged frog biological monitor be present while such work is underway.

These measures, when implemented, would reduce project impacts to the California red-legged frog to a level considered less than significant.

11.3 Impact BIO-2. Development of the Project Would Have a Less than Significant Impact on Nesting Raptors with Incorporation of Mitigation Measures

Nesting raptors (birds of prey) and passerine (perching) birds are protected pursuant to California Fish and Game Code (Sections 3503, 3503.5, 3513), and the Federal Migratory Bird Treaty Act. The oaks, cedars, and other trees and shrubs present on the project site provide suitable nesting habitat for raptors and passerines. In addition, the grassland on the project site provides suitable nesting habitat for ground nesting birds such as ground nesting birds such as killdeer (*Charadrius vociferus*), western meadowlark (*Sturnella neglecta*), and mourning dove. The project proponent can avoid impacts to nesting birds by conducting preconstruction nesting surveys and implementing avoidance measures. *As such, pursuant to the CEQA, impacts to nesting passerine birds would be less than significant with incorporation of mitigation measures.*

11.4 Mitigation BIO-2. Nesting Raptors and Passerines

In order to avoid impacts to nesting raptors and passerines, nesting surveys should be conducted prior to commencement of construction work if this work would begin between February 1st and August 31st. The nesting raptor and passerine surveys should include examination of all trees, shrubs, and grassland within 300 feet of the entire project site.

11.4.1 Tree Nesting Raptors and Passerines

If nesting raptors or passerines are identified during the surveys within 300 feet of the project site (or 75-feet in the case of passerines), a 300-foot buffer (or 75-feet in the case of passerines) around the nest tree should be fenced with orange construction fencing. If the nest tree is located off the project site, then the buffer should be demarcated as per above, where the buffer occurs on the project site. *The size of the buffer may be altered if a qualified ornithologist conducts behavioral observations and determines the nesting raptors or passerines are well acclimated to disturbance.* If this occurs, the ornithologist should prescribe a modified buffer that allows sufficient room to prevent undue disturbance/harassment to the nesting raptors/passerines. No construction or earth-moving activity should occur within the established buffer until it is determined by a qualified ornithologist that the young have fledged (that is, left the nest) and have attained sufficient flight skills to avoid project construction zones. This typically occurs by July 15th. This date may be earlier or later, and would have to be determined by a qualified ornithologist. If a qualified ornithologist is not hired to watch the nesting raptors/passerines then the buffers should be maintained in place through the month of August and work within the buffer can commence September 1st.

If the nesting survey identifies a large stick nest or other type of raptor nest that is inactive at the time of the survey, but that was evidently used in the previous year (as evidenced by condition of the nest and possibly presence of whitewash and/or feathers/down on the nest), a protection buffer (as described above) should be established around the potential nesting tree if it is within

300 feet of the project site. This buffer should remain until a second follow-up nesting survey can be conducted to determine the status of the nest and eliminate the possibility that the nest is utilized by a late-spring nesting raptor (for example, Cooper's hawk). This second survey should commence even if construction has commenced. If during the follow-up late season nesting survey a nesting raptor is identified utilizing the nest, the protection buffer should remain until it is determined by a qualified ornithologist that the young have fledged and have attained sufficient flight skills to avoid project construction zones. If the nest remains inactive, the protection buffer can be removed and construction and earth moving activities can proceed unrestrained.

11.4.2 GROUND NESTING RAPTORS AND PASSERINES

In order to determine if ground-nesting raptors or passerines are nesting onsite, a qualified ornithologist would have to conduct walking transects through the project site's grassland habitat searching for nests. If ground-nesting raptors or passerines are identified during the surveys within 300 feet of the project site (or 75-feet in the case of passerines), a 300-foot buffer (or 75-feet in the case of passerines) around the nest site should be fenced with orange construction fencing. If the nest is located off the project site, then the buffer should be demarcated as per above where the buffer occurs on the project site. *The size of the buffer may be altered if a qualified ornithologist conducts behavioral observations and determines the nesting raptors or passerines are well acclimated to disturbance.* If this occurs, the ornithologist should prescribe a modified buffer that allows sufficient room to prevent undue disturbance/harassment to the nesting raptors/passerines. No construction or earth-moving activity should occur within the established buffer until it is determined by a qualified ornithologist that the young have fledged (that is, left the nest) and have attained sufficient flight skills to avoid project construction zones. This typically occurs by July 15th. This date may be earlier or later, and would have to be determined by a qualified ornithologist biologist. If a qualified ornithologist is not hired to watch the nesting raptors/passerines then the buffers should be maintained in place through the month of August and work within the buffer can commence September 1st.

Implementation of this mitigation measure would reduce impacts to nesting raptors and passerines to a level considered less than significant pursuant to the CEQA.

11.5 Impact BIO-3. Development of the Project Would Have a Less than Significant Impact on Protected Trees with Incorporation of Mitigation Measures.

According to the City of Clayton's Tree Ordinance a "protected tree" is any of the following species: ash, bay, box elder, buckeye, cherry, cottonwood, elderberry, hop tree, madrone, maple, coast live oak, canyon live oak, blue oak, California black oak, valley oak, interior live oak, sycamore, or walnut. The City of Clayton requires a tree removal permit to remove any protected tree with a single trunk or multiple trunks of a cumulative trunk diameter of six inches or greater, located on private or public property. M&A reviewed the January 29, 2013 Tree Exhibit (dK Consulting), which stipulates that 8 "protected trees" within the riparian zone would need to be removed to accommodate the proposed development. Construction associated with the open cut trenching needed to install the sewer pipeline would require the removal of an additional tree, and potentially require construction within the dripline of 8 additional trees. This number may increase slightly once the grading plans are finalized. Final tree removal numbers will have to be determined closer to the time the site grading plans are finalized. Removal of a protected tree

without a tree permit from the City of Clayton is a significant adverse impact pursuant to CEQA. This impact could be reduced to a less than significant level by incorporating mitigation.

11.6 Mitigation BIO-3: Trees

Approximately 83 code protected trees would be impacted by the proposed project. Implementation of the following mitigation would reduce impacts to protected trees to a level considered less than significant. In addition, it is likely that eight additional trees will be impacted by construction associated with installation of the stormwater outfall and sewer pipeline within the dripline of these trees.

To offset impacts resulting from the removal of protected trees, replacement trees should be planted per the City of Clayton's Tree Protection Ordinance, as determined by the Community Development Director. Replacement trees must be California native species that are found in Clayton in similar habitats to those habitats present on the project site (for example, coast live oaks, valley oak, California buckeyes, Fremont cottonwood). In lieu of compensating per the per the City of Clayton's Tree Protection Ordinance, for each protected tree that is removed, three replacement trees should be planted (3:1 mitigation ratio). In addition, any tree that is injured during grading or construction (for example, some of its roots are cut) will be compensated for by planting replacement trees at a 1:1 ratio. Replacement trees should be a minimum of 5 gallon replacements but no larger than 15 gallon size to ensure that healthy, smaller specimens are planted. The replacement trees should be monitored annually for five years by a qualified biologist or arborist. Annual monitoring reports should be submitted to the City of Clayton's Planning Department.

If required by the City of Clayton, a tree preservation and management plan should be prepared for the project. Preparation of this plan and subsequent planting and monitoring should be a condition of project approval and should be tied to a security bond posted by the developer. A cash bond prepared for the benefit of the City of Clayton or a cash deposit should be submitted to the City of Clayton by the applicant covering the costs of mitigation trees (and required irrigation) that are to be installed to compensate for impacts. The cash amount to be held by the City of Clayton should be determined by a qualified landscape company or landscape architect. The cash or bond should be held for 24 months and should be released upon receipt of a report from a qualified arborist or botanist that all planted trees are healthy and established.

The planting plan should include a planting detail that specifies where all replacement trees would be planted on the project site. The methods used to plant trees should also be specified. Adequate measures should be established to minimize predation of planted trees by rodents including, but not limited to, pocket gophers (*Thomomys bottae*) and/or California ground squirrels (*Spermophilus beechyi*).

All planted trees should be provided with a temporary irrigation system that would be maintained over a minimum three-year establishment period. The irrigation system should be placed on electric timers so that trees are automatically watered during the dry months of the establishment period. At the end of a suitable establishment period, the irrigation system could be removed.

At the end of a five-year monitoring period, at least 75 percent of planted trees should be in good health. If the numbers of planted trees falls below a 75 percent survival rate, additional trees should be planted to bring the total number of planted trees up to 100 percent of the original number of trees planted. Irrigation and follow-up monitoring should be established over an additional three year period after any replanting occurs. Any follow-up monitoring will be reported annually to the City of Clayton Planning Department.

Additionally, the following construction policies and guidelines for tree preservation and protection put forth by the City of Clayton should also be followed during project implementation:

1. Identify the location of the tree trunk and dripline of all on- and off-site trees subject to Section 15.70.020.

2. A protective fence should be installed around all trees subject to the tree protection plan. The protective fence should be installed prior to commencement of any construction activity and should remain in place for the duration of construction.

3. Grading, excavation, deposition of fill, erosion, compaction, and other construction-related activities should not be permitted within the dripline or at locations which may damage the root system of trees subject to the tree protection plan, unless such activities are specifically allowed by the tree protection plan. Tree wells may be used if specifically allowed by the tree protection plan.

4. Oil, gas, chemicals, vehicles, construction equipment, machinery, and other construction materials should not be allowed within the dripline of trees subject to the tree protection plan.

5. Additional measures may be required, as determined by the Planning Commission or Director.

Finally, it should be noted that all riparian tree species growing along Mount Diablo Creek on the project site will be protected in perpetuity by a permanent conservation easement setback established 50-feet from the creek's top-of-bank. The only exception would be 8 trees that are proposed to be impacted within the riparian zone. These trees and their removal were discussed with the RWQCB and the Department during an onsite meeting on March 23, 2011. Owing to the dead or diseased condition of these trees, or the minor infringement on the drip lines of these trees, these impacts were deemed approvable by the Department and the RWQCB.

The riparian conservation area will separate the top-of-bank of Mount Diablo Creek and its associated riparian vegetation from development associated with the Silver Oaks Estates project. The limits of the conservation area will be fenced with vinyl-clad chain-link fencing that is four-feet in height to protect the conservation area from outside influences.

Implementation of this mitigation measure would reduce impacts to protected trees to a level considered less than significant pursuant to the CEQA.

11.7 Impact BIO-4. The Development Project Would Have a Less than Significant Impact on Waters of the United States and/or State with Incorporation of Mitigation Measures.

While the development plans avoid the creek as much as practicable, it will be necessary to direct stormwater runoff from onsite detention basin facilities into a single outfall pipe placed within the creek's bank. In addition, a sanitary sewer line must be connected with the sanitary sewer lines on the south side of Mount Diablo Creek.

M&A biologist Mr. Geoff Monk met with representatives of the Regional Water Quality Control Board (Ms. Katie Hart) and the Department of Fish and Wildlife (Ms. Randi Adair) on the project site on March 23, 2011. The location of the top-of-bank and the edge of associated riparian vegetation was discussed during this on site meeting. Work associated with the installation of the outfall would remain above top-of-bank. The open cut trenching associated with the installation of the sewer line would result in impacts to approximately 0.03 acre below top-of-bank.

11.8 Mitigation Measure BIO-4. Waters of the United States and/or State

The stormwater outfall has been designed to remain outside of the Corps' and RWQCB's Clean Water Act jurisdiction. Regardless, prior to construction of the outfall, BMPs will be installed in order to ensure that sidecast spoils do not enter the creek channel.

The installation of the sanitary sewer line via open cut trenching would impact both Corps and RQQCB jurisdiction. The applicant is currently in the process of appending the project site to the ECCHCP. The fee associated with coverage under the ECCHCP includes impacts to the Corps jurisdiction. Pursuant to the RGP, the applicant proposes to notify the Corps in accordance with RGP general condition number 18 (Notification). In addition, the applicant proposes to pay the aquatic resources mitigation fee which included in the fee submitted to the ECCHC to obtain coverage under the ECCHCP.

However, impacts to the RWQCB's jurisdiction are not covered by the ECCHC's RGP. As such, if open cut trenching occurs, the applicant proposes to obtain a "certification of water quality" from the RWQCB for the proposed project. It should be noted that the RWQCB requires mitigation for all impacts to waters of the State, typically at a 2:1 replacement ratio.

Implementation of this mitigation measure would reduce impacts to waters of the U.S./State to a level considered less than significant.

11.9 Impact Bio 6. The Development Project Could Have Potentially Significant Adverse Impacts to California Department of Fish and Wildlife Jurisdiction Pursuant to Section 1602 of Fish and Game Code

The proposed project will include the installation of a stormwater outfall Mount Diablo Creek within the Department's jurisdiction pursuant to 1602 of the Fish and Game Code. The proposed project also includes an open cut trench through Mount Diablo Creek. These activities would have to be permitted by the Department pursuant to Section 1602 of the Fish and Game Code.

Impacts to the Department's 1602 jurisdiction (creek bank) would be a significant impact pursuant to CEQA. This impact could be mitigated to a level considered less than significant.

11.10 Mitigation Measure Bio 6. California Department of Fish and Game Jurisdiction Pursuant to Section 1602 of Fish and Game Code

The construction of a storm water outfall in Mount Diablo Creek, and open cut trenching a sewer line across Mount Diablo Creek will require a Lake and Streambed Alteration Agreement (SBAA) from the Department. The applicant should apply for a Section 1602 SBAA from the Department. The SBAA would detail the authorized activities, and provide specific terms and conditions for this project. Mitigation measures that would be required will likely include restoring the streambed to its original contours and replanting any impacted trees per the City of Clayton's Tree Ordinance or as otherwise specified in the 1602 Agreement with the Department. No work in Mount Diablo Creek should be authorized by the City without prior authorization of a SBAA by the Department.

This mitigation measure when implemented would reduce impacts to drainages to a level considered less than significant.

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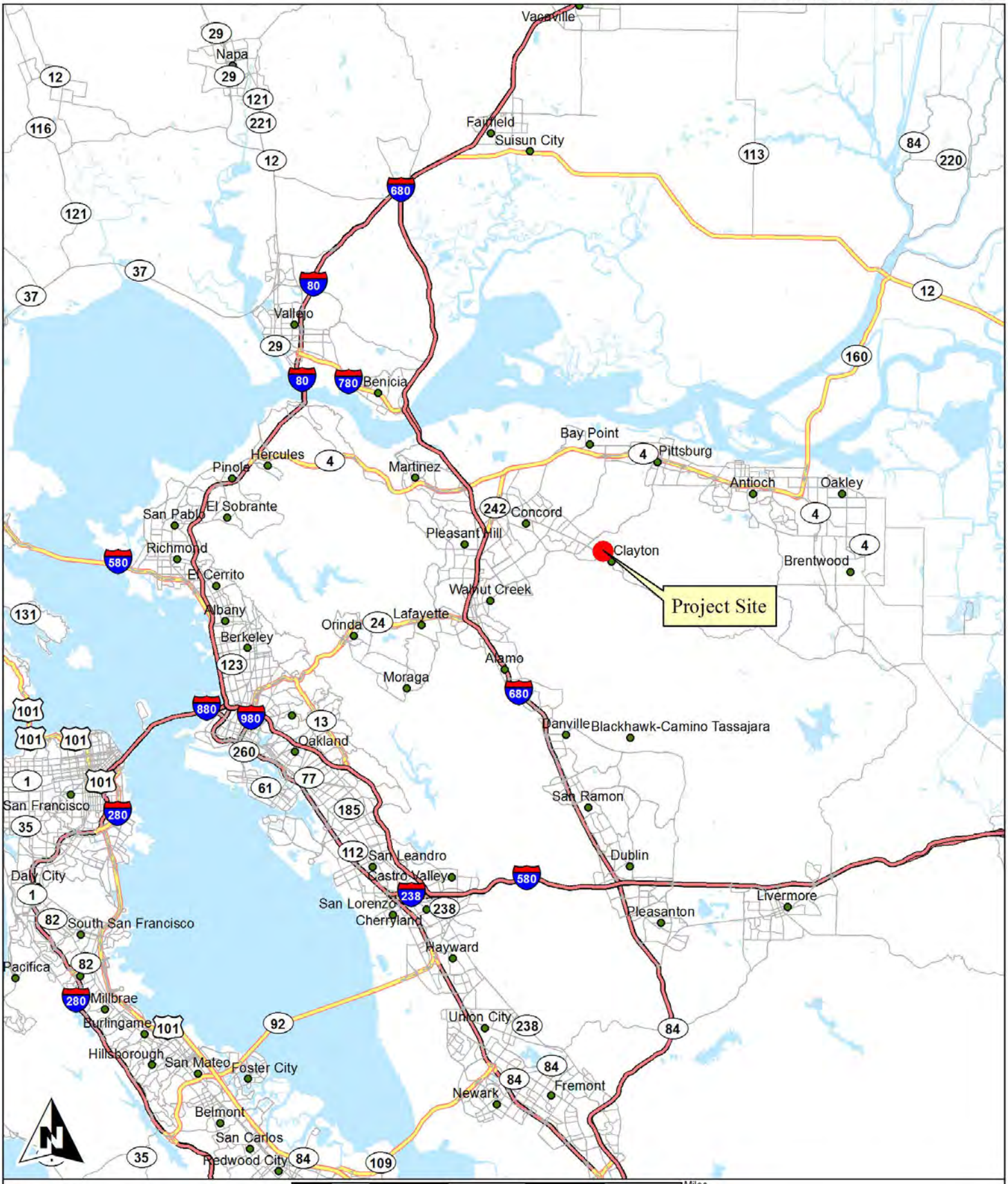

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Figure 1. Silver Oaks Estates Project Site
Regional Map
Clayton, California

County: Contra Costa
Map Preparation Date: February 25, 2013

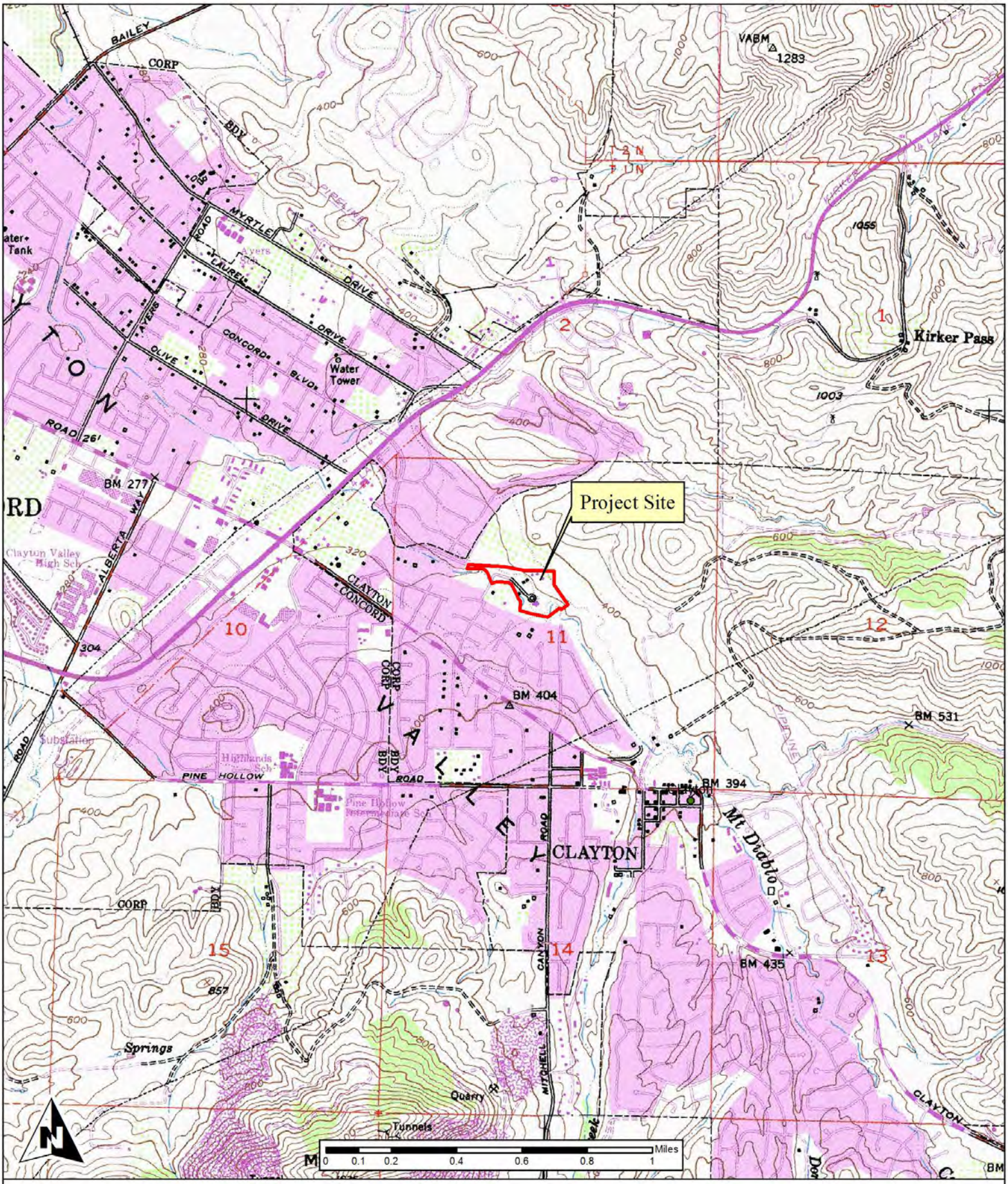

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Figure 2. Silver Oaks Estates
Project Site Locational Map
Clayton, California

County: Contra Costa
7.5 Minute Clayton Quadrangle
Map Preparation Date: June 4, 2013

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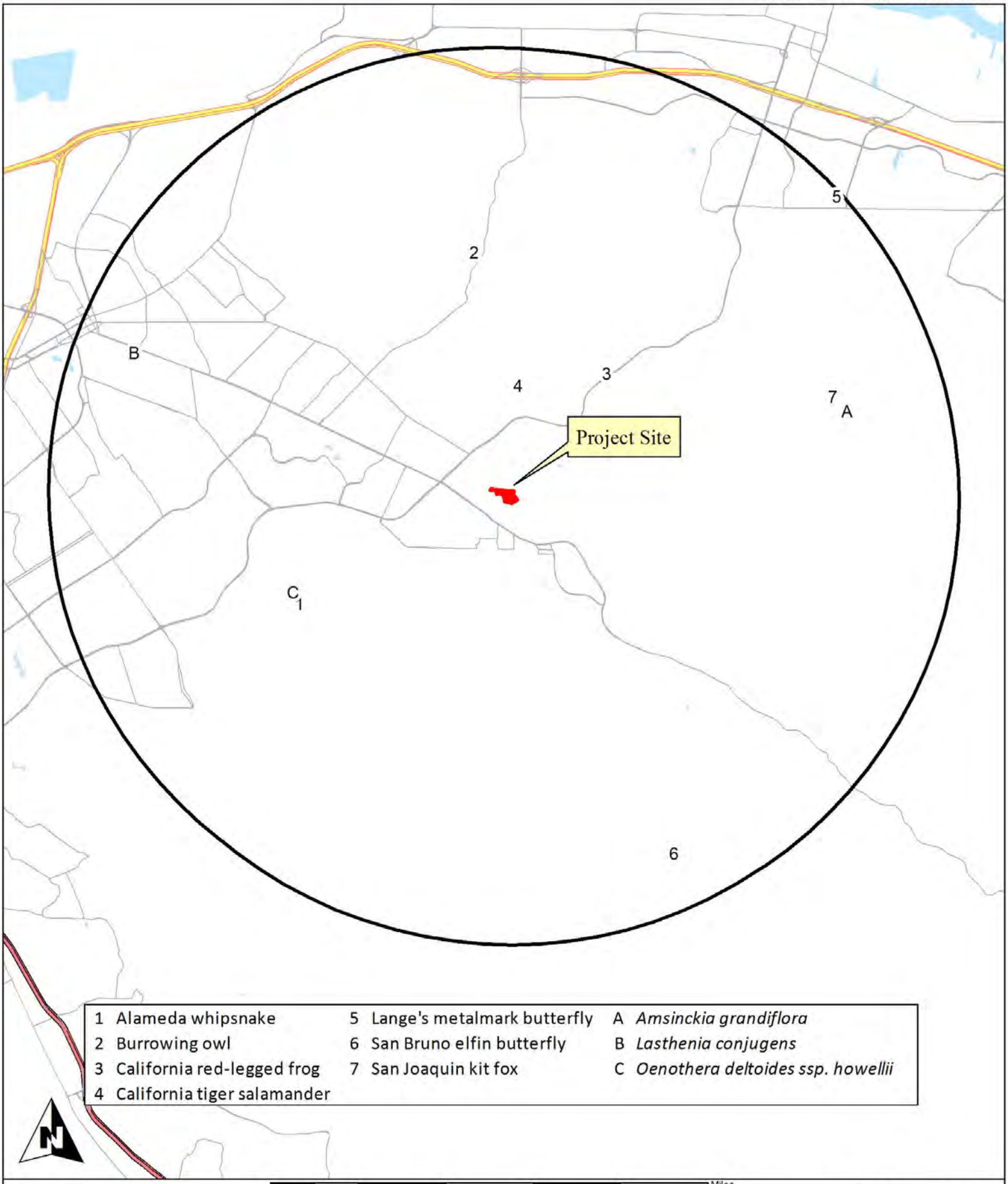
Figure 3. Riparian Setback Along Mt. Diablo Creek
Silver Oaks Estates Project Site
Clayton, California

Map Preparation Date: August 12, 2013
Aerial Photograph Source: ESRI



1 Alameda whipsnake	5 Lange's metalmark butterfly	A *Amsinckia grandiflora*
2 Burrowing owl	6 San Bruno elfin butterfly	B *Lasthenia conjugens*
3 California red-legged frog	7 San Joaquin kit fox	C *Oenothera deltoides ssp. howellii*
4 California tiger salamander		

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0 0.5 1 2 3 4 5 Miles

Figure 4. Closest Known Federal or State Endangered or Threatened Special-Status Species in the Vicinity of the Silver Oaks Estates Project Site

Map Preparation Date:
August 22, 2013
5-Mile Radius
Source: CDFW,
California Natural Diversity Data Base, 2013

Table 1

Plant Species Observed on the Silver Oaks Project Site

Gymnosperms

Cupressaceae

Calocedrus decurrens	Incense cedar

Pinaceae

**Cedrus deodara*	Deodar cedar
Pinus radiata	Monterey pine

Angiosperms - Dicots

Anacardiaceae

**Schinus molle*	Peruvian pepper tree

Apiaceae

**Conium maculatum*	Poison hemlock
**Torilis arvensis*	Field hedgeparsley

Apocynaceae

**Nerium oleander*	Oleander

Araliaceae

**Hedera helix*	English ivy

Asteraceae

Artemisia californica	California sagebrush
Baccharis pilularis subsp. consanguinea	Coyote brush
**Carduus pycnocephalus subsp. pycnocephalus*	Italian thistle
**Senecio vulgaris*	Common groundsel

Brassicaceae

**Brassica nigra*	Black mustard
**Capsella bursa-pastoris*	Shepherd's purse
Cardamine oligosperma	Few-seed bitter cress

Cucurbitaceae

Marah fabaceus	California man-root

Fabaceae

**Medicago polymorpha*	California burclover
**Robinia pseudoacacia*	Black locust

Fagaceae

Quercus agrifolia var. agrifolia	Coast live oak
Quercus lobata	Valley oak

Geraniaceae

**Erodium botrys*	Broad-leaf filaree
**Geranium molle*	Dove's-foot geranium

Hamamelidaceae

**Liquidambar styraciflua*	Liquidambar

* Indicates a non-native species

Table 1

Plant Species Observed on the Silver Oaks Project Site

Juglandaceae	
**Juglans regia*	English walnut
Lamiaceae	
**Lamium amplexicaule*	Deadnettle
Lythraceae	
**Punica granatum*	Pomegranate
Montiaceae	
Claytonia perfoliata	Miner's lettuce
Moraceae	
**Ficus carica*	Fig
Oleaceae	
**Ligustrum sp.*	Privet
**Olea europaea*	Olive
Oxalidaceae	
**Oxalis pes-caprae*	Bermuda buttercup
Pittosporaceae	
**Pittosporum tobira*	Japanese pittosporum
Polygonaceae	
**Rumex crispus*	Curly dock
Rhamnaceae	
Rhamnus ilicifolia	Hollyleaf redberry
Rosaceae	
**Eriobotrya japonica*	Loquat
Heteromeles arbutifolia	Toyon
**Prunus dulcis*	Almond tree
Prunus sp.	Prunus
**Rubus armeniacus*	Himalayan blackberry
Rubiaceae	
Galium aparine	Goose grass
Rutaceae	
**Citrus sp.*	orange tree
Sapindaceae	
Aesculus californica	California buckeye
Scrophulariaceae	
**Myoporum laetum*	Myoporum
Urticaceae	
**Urtica urens*	Dwarf nettle

Angiosperms -Monocots

* Indicates a non-native species

Table 1

Plant Species Observed on the Silver Oaks Project Site

Poaceae	
**Bromus diandrus*	Ripgut grass

* Indicates a non-native species

Table 2
Wildlife Species Observed on the Silver Oaks Estates Project Site

Reptiles	
Western fence lizard	*Sceloporus occidentalis*
Birds	
Turkey vulture	*Cathartes aura*
Red-tailed hawk	*Buteo jamaicensis*
Mourning dove	*Zenaida macroura*
Anna's hummingbird	*Calypte anna*
Acorn woodpecker	*Melanerpes formicivorus*
Nuttall's woodpecker	*Picoides nuttallii*
Northern flicker	*Colaptes auratus*
Black phoebe	*Sayornis nigricans*
Western scrub jay	*Aphelocoma californica*
American crow	*Corvus brachyrhynchos*
Common raven	*Corvus corax*
Chestnut-backed chickadee	*Poecile rufescens*
Oak titmouse	*Baeolophus inornatus*
Bushtit	*Psaltriparus minimus*
White-breasted nuthatch	*Sitta carolinensis*
Bewick's wren	*Thryomanes bewickii*
Ruby-crowned kinglet	*Regulus calendula*
American robin	*Turdus migratorius*
Northern mockingbird	*Mimus polyglottos*
European starling	*Sturnus vulgaris*
Spotted towhee	*Pipilo maculatus*
California towhee	*Pipilo crissalis*
Song sparrow	*Melospiza melodia*
Dark-eyed junco	*Junco hyemalis*
House finch	*Carpodacus mexicanus*
Lesser goldfinch	*Spinus psaltria*
Mammals	
Fox squirrel	*Sciurus niger*
California ground squirrel	*Spermophilus beecheyi*
Raccoon	*Procyon lotor*

Table 3

Special-Status Plant Species with the Potential to Occur in the Vicinity of the Silver Oaks Estates Project Site

Family Taxon Common Name	Status*	Flowering Period	Habitat	Area Locations	Probability on Project Site
Apiaceae					
Sanicula saxatilis Rock sanicle	Fed: - State: CR CNPS: Rank 1B.2	April-May	Broad-leaf upland forest; chaparral; valley and foothill grassland; [rocky].	Closest known occurrence is 3.4 miles south of the project site (CNDDB Occurrence No. 4).	None. No rocky substrates occur on the project site. No impact expected.
Asteraceae					
Blepharizonia plumosa Big tarplant	Fed: - State: - CNPS: Rank 1B.1	July-October	Valley and foothill grassland.	Closest known occurrence is 1.8 miles west of the project site (CNDDB Occurrence No. 55).	None. Ruderal grassland present on the project site has been disturbed by past land uses. No impacts expected.
Helianthella castanaea Diablo helianthella	Fed: - State: - CNPS: Rank 1B.2	March-June	Broadleafed upland forest; chaparral; cismontane woodland; coastal scrub; riparian woodland; valley and foothill grassland.	Closest known occurrence is 2.6 miles east of the project site (CNDDB Occurrence No. 29).	None. Although marginal habitat occurs within the riparian woodland present on the project site, this species would have been identifiable at the time of site visits. No impact expected. See
Lasthenia conjugens Contra Costa goldfields	Fed: FE State: - CNPS: Rank 1B.1	March-June	Valley and foothill grassland (mesic); vernal pools.	Closest known occurrence is 3.9 miles to the west in a field near Concord. This is a 1946 record and the population is believed to be extirpated due to development (CNDDB Occurrence No. 11).	None. No mesic grassland, seasonal wetlands, or vernal pools occur on the project site. No impacts expected.
Madia radiata Show golden madia	Fed: - State: - CNPS: Rank 1B.1	March-May	Cismontane woodland; valley and foothill grassland.	Closest known occurrence is 3.6 miles east of the project site (CNDDB Occurrence No. 27) last observed in early 1930s.	None. Cismontane woodland does not occur on the project site and the ruderal grassland has been disturbed by past land uses. No impacts expected.
Monolopia gracilens Small-flowered monolopia	Fed: State: CNPS: Rank 1B.2	March-July	Coniferous and broadleafed upland forest openings, chaparral openings, and serpentine valley and foothill grassland. Elevation 100-1200 m.	Closest known occurrence is 2.6 miles south of the project site (CNDDB Occurrence No. 42).	None. No forest or chaparral habitat occurs on the project site. The ruderal grassland present onsite has been disturbed by past land uses. No impacts expected.

Table 3

Special-Status Plant Species with the Potential to Occur in the Vicinity of the Silver Oaks Estates Project Site

Family Taxon Common Name	Status*	Flowering Period	Habitat	Area Locations	Probability on Project Site
Senecio aphanactis Chaparral ragwort	Fed: - State: - CNPS: Rank 2B.2	January-April	Foothill woodland; coastal scrub; (alkaline).	Closest known occurrence is 2.4 miles east of the project site (CNDDB Occurrence No. 14).	None. No alkaline soils occur on the project site. No impacts expected.
Boraginaceae					
Amsinckia grandiflora Large-flowered fiddleneck	Fed: FE State: CE CNPS: Rank 1B.1	April-May	Cismontane woodland, Valley and foothill grassland	Closest known occurrence is 3.9 miles east of the project site (CNDDB Occurrence No. 9).	None. No ciscmontane woodland occurs on the project site. Ruderal grassland present onsite has been disturbed by past land uses. No impact expected.
Phacelia phacelioides Mount Diablo phacelia	Fed: - State: - CNPS: Rank 1B.2	April-May	Chaparral; cismontane woodland; [rocky]; occasionally serpentine soils.	Closest known occurrence is a 1930 record from Meridian Summit at Mt. Diablo, 2.9 miles south of the project site (CNDDB Occurrence No. 17).	None. No chaparral habitat or rocky soils occur on the project site. No impact expected.
Brassicaceae					
Streptanthus albidus peramoenus Uncommon jewelflower	Fed: - State: - CNPS: Rank 1B.2	April-June	Chaparral; valley and foothill grassland; [serpentinite].	Closest known occurrence is 4.0 miles south of the project site (CNDDB Occurrence No. 9).	None. No serpentine soils occur on the project site. No impact expected.
Streptanthus hispidus Mount Diablo jewelflower	Fed: - State: - CNPS: Rank 1B.3	March-June	Chaparral; valley and foothill grassland; [rocky].	Closest known occurrence is 3.2 miles south of the project site (CNDDB Occurrence No. 7).	None. No chaparral habitat occurs on the project site. Ruderal grassland has been disturbed by past land uses. No impacts expected.
Tropidocarpum capparideum Caper-fruited tropidocarpum	Fed: - State: - CNPS: Rank 1B.1	March-April	Valley and foothill grassland (alkaline hills).	Closest known occurrence is an 1896 collection record for "Clayton" (CNDDB Occurrence No. 10).	None. No grasslands on alkaline soils or hills occur on the project site. No impacts expected.

Table 3

Special-Status Plant Species with the Potential to Occur in the Vicinity of the Silver Oaks Estates Project Site

Family Taxon Common Name	Status*	Flowering Period	Habitat	Area Locations	Probability on Project Site
Campanulaceae					
Campanula exigua Chaparral harebell	Fed: - State: - CNPS: Rank 1B.2	May-June	Chaparral (rocky, usually serpentinite).	Closest known occurrence is 3.7 miles south of the project site (CNDDB Occurrence No. 25).	None. No chaparral habitat occurs on the project site. No impacts expected.
Chenopodiaceae					
Extriplex joaquinana San Joaquin spearscale	Fed: - State: - CNPS: Rank 1B.2	April-October	Chenopod scrub; meadows; valley and foothill grassland; [alkaline].	Closest known occurrence is 3.9 miles northwest of the project site (CNDDB Occurrence No. 87).	None. No alkaline soils or wetland areas occur on the project site. No impact expected.
Ericaceae					
Arctostaphylos auriculata Mount Diablo manzanita	Fed: - State: - CNPS: Rank 1B.3	January-March	Chaparral (sandstone).	Closest known occurrence is 2.6 miles east of the project site (CNDDB Occurrence No. 7).	None. No manzanitas observed onsite. No impacted expected.
Arctostaphylos manzanita laevigata Contra Costa manzanita	Fed: - State: - CNPS: Rank 1B.2	January-February	Chaparral (rocky),	Closest known occurrence is 2.9 miles east of the project site, approximately 0.5-mile southwest of Nortonville and east of Clayton. Occurrence info. last update in 1991 (CNDDB Occurrence No. 8).	None. No chaparral habitat occurs onsite. No manzanitas observed during multiple surveys of the project site. No impact expected.
Geraniaceae					
California macrophylla Round-leaved filaree	Fed: - State: - CNPS: Rank 1B.1	March-May	Cismontane woodland; valley and foothill grassland/clay.	Closest known occurrence is 1.1 mile northeast of the project site (CNDDB Occurrence No. 50). Last observed at this location is circa 1862.	None. No cismontane woodland occurs on the project site. Ruderal grassland present onsite has been disturbed by past land uses. No impact expected.

Table 3

Special-Status Plant Species with the Potential to Occur in the Vicinity of the Silver Oaks Estates Project Site

Family Taxon Common Name	Status*	Flowering Period	Habitat	Area Locations	Probability on Project Site
Liliaceae					
Calochortus pulchellus Mt. Diablo fairy lantern	Fed: - State: - CNPS: Rank 1B.2	April-June	Chaparral; cismontane woodland; valley and foothill grassland.	Closest known occurrence is 2.1 miles south of the project site (CNDDB Occurrence No. 17).	None. No chaparral or cismontane woodlands occur on the project site. The ruderal grassland present onsite has been disturbed by past land uses. No impacts expected.
Linaceae					
Hesperolinon breweri Brewer's western flax	Fed: - State: - CNPS: Rank 1B.2	May-July	Chaparral; cismontane woodland; valley and foothill grassland; [mostly serpentinite].	Closest known occurrence is 2.7 miles south of the project site (CNDDB Occurrence No. 2).	None. No serpentine soils occur on the project site. Herbaceous communities the occur onsite have been disturbed over the years. No impacts expected.
Malvaceae					
Malacothamnus hallii Hall's bush mallow	Fed: - State: - CNPS: Rank 1B.2	May-September	Chaparral.	Closest known occurrence is 2.2 miles south of the project site (CNDDB Occurrence No. 22).	None. No chaparral habitat occurs on the project site. No impact expected.
Onagraceae					
Oenothera deltoides howellii Antioch dunes evening-primrose	Fed: FE State: CE CNPS: Rank 1B.1	March-September	Interior dunes.	Known from Lime Ridge approximately 1.9 miles west of the project site (CNDDB Occurrence No. 11).	None. No dune habitat occurs on the project site. No impacts expected.
Orobanchaceae					
Cordylanthus nidularius Mount Diablo bird's-beak	Fed: FC State: CR CNPS: Rank 1B.1	July-August	Chaparral (serpentinite).	Closest known occurrence is 3.9 miles south of the project site (CNDDB Occurrence No. 1).	None. No chaparral or serpentine soils occur on the project site. No impact expected.

Table 3

Special-Status Plant Species with the Potential to Occur in the Vicinity of the Silver Oaks Estates Project Site

Family Taxon Common Name	Status*	Flowering Period	Habitat	Area Locations	Probability on Project Site
Polemoniaceae					
Navarretia gowenii Lime Ridge navarretia	Fed: - State: - CNPS: Rank 1B.1	May-June	Chaparral.	Closest known occurrence is at Lime Ridge below the antenna facility (2008 record) approximately 2.7 miles southwest of the project site (CNDDB Occurrence No. 3).	None. No chaparral occurs on the project site. No impact expected.
Polygonaceae					
Eriogonum truncatum Mount Diablo buckwheat	Fed: - State: - CNPS: Rank 1B.1	April-September	Chaparral; coastal scrub; valley and foothill grassland; [sandy].	Closest known occurrence is 2.3 miles southwest of the project site (CNDDB Occurrence No. 2).	None. No chaparral, coastal scrub, or sandy grasslands occur on the project site. No impact expected.
Ranunculaceae					
Delphinium californicum interius Hospital Canyon larkspur	Fed: - State: - CNPS: Rank 2.2	April-June	Cismontane woodland (mesic).	Closest known occurrence is 1.3 miles southwest of the project site (CNDDB Occurrence No. 17).	None. No chaparral or mesic cismontane woodland occur on the project site.. No impact expected.

Table 3

Special-Status Plant Species with the Potential to Occur in the Vicinity of the Silver Oaks Estates Project Site

Family Taxon Common Name	Status*	Flowering Period	Habitat	Area Locations	Probability on Project Site

***Status**

Federal:
FE - Federal Endangered
FT - Federal Threatened
FPE - Federal Proposed Endangered
FPT - Federal Proposed Threatened
FC - Federal Candidate

State:
CE - California Endangered
CT - California Threatened
CR - California Rare
CC - California Candidate
CSC - California Species of Special Concern

CNPS:
Rank 1A - Presumed extinct in California
Rank 1B - Plants rare, threatened, or endangered in California and elsewhere
Rank 1B.1 - Seriously endangered in California (over 80% occurrences threatened/ high degree and immediacy of threat)
Rank 1B.2 - Fairly endangered in California (20-80% occurrences threatened)
Rank 1B.3 - Not very endangered in California (<20% of occurrences threatened or no current threats known)

CNPS Continued:
Rank 2 - Plants rare, threatened, or endangered in California, but more common elsewhere
Rank 2A - Extirpated in California, common elsewhere
Rank 2B.1 - Seriously endangered in California, but more common elsewhere
Rank 2B.2 - Fairly endangered in California, but more common elsewhere
Rank 2B.3 - Not very endangered in California, but more common elsewhere
Rank 3 - Plants about which we need more information (Review List)
Rank 3.1 - Plants about which we need more information (Review List) Seriously endangered in California
Rank 3.2 - Plants about which we need more information (Review List) Fairly endangered in California
Rank 4 - Plants of limited distribution - a watch list

Table 4

Special-Status Wildlife Species with the Potential to Occur in the Vicinity of the Silver Oaks Estates Project Site

Species	*Status	Habitat	Closest Locations	Probability on Project Site
Amphibians				
California tiger salamander *Ambystoma californiense*	Fed: FT State: CT Other:	In Sonoma Co. is listed as Endangered by USFWS. Found in grassland habitats of the valleys and foothills. Requires burrows for aestivation and standing water until late spring (May) for larvae to metamorphose.	Closest record for this species is located 1.2 miles north of the project site (Occurrence No. 949).	None. The project site is isolated from all known occurences in the region of the project site by significant barriers to dispersal. See Text.
California red-legged frog *Rana draytonii*	Fed: FT State: CSC Other:	Occurs in lowlands and foothills in deeper pools and streams, usually with emergent wetland vegetation. Requires 11-20 weeks of permanent water for larval development.	Closest record for this species is located 1.6 miles northeast of the project site (Occurrence No. 566) in a stock pond.	Low. Diablo Creek may be used at a migration corridor. However, suitable upland and breeding habitats do not occur on the project site. See text.
Reptiles				
Alameda whipsnake *Masticophis lateralis euryxanthus*	Fed: FT State: CT Other:	Coastal scrub and chaparral habitats of Contra Costa and Alameda Counties. Prefers south-facing slopes with a mosaic of shrubs, trees, and grassland.	Closest record for this species is located 2.6 miles to the west of the project site (CNDDB Occurrence No. 61).	None.No Coastal scrub and chaparral habitats occur on or near the project site. The project site is isolated from all known occurences in the region of the project site by significant barriers to dispersal. See text.
Birds				
Western burrowing owl *Athene cunicularia hypugaea*	Fed: -- State: CSC Other:	Found in open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	Closest record for this species is located 3.2 miles west of the project site (Occurrence No. 472).	Low. Marginal grassland habitat occurs on the project site. See text.

Table 4

Special-Status Wildlife Species with the Potential to Occur in the Vicinity of the Silver Oaks Estates Project Site

Species	*Status	Habitat	Closest Locations	Probability on Project Site
Mammals				
San Joaquin kit fox *Vulpes macrotis mutica*	Fed: FE State: CT Other:	Inhabits open grasslands with scattered shrubs. Needs loose-textured sand soils for burrowing.	Closest record for this species is located 3.7 miles east of the project site (Occurrence No. 555).	None.No suitable habitat occurs on the project site.

***Status**

Federal:
FE - Federal Endangered
FT - Federal Threatened
FPE - Federal Proposed Endangered
FPT - Federal Proposed Threatened
FC - Federal Candidate
FPD - Federally Proposed for delisting

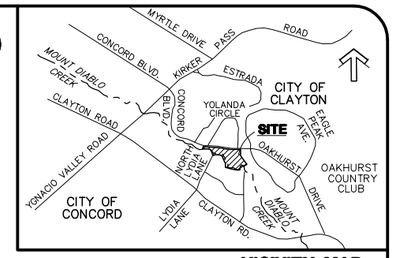
State:
CE - California Endangered
CT - California Threatened
CR - California Rare
CC - California Candidate
CSC - California Species of Special Concern
FP - Fully Protected
WL - Watch List. Not protected pursuant to CEQA

DEVELOPMENT PLAN & VESTING TENTATIVE MAP
SUBDIVISION 8516
SILVER OAK ESTATES
CITY OF CLAYTON
CONTRA COSTA COUNTY, CALIFORNIA
MARCH 2010
REVISED: MARCH 12, 2012
REVISED: JUNE 8, 2012

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.



VICINITY MAP
NOT TO SCALE

SHEET INDEX

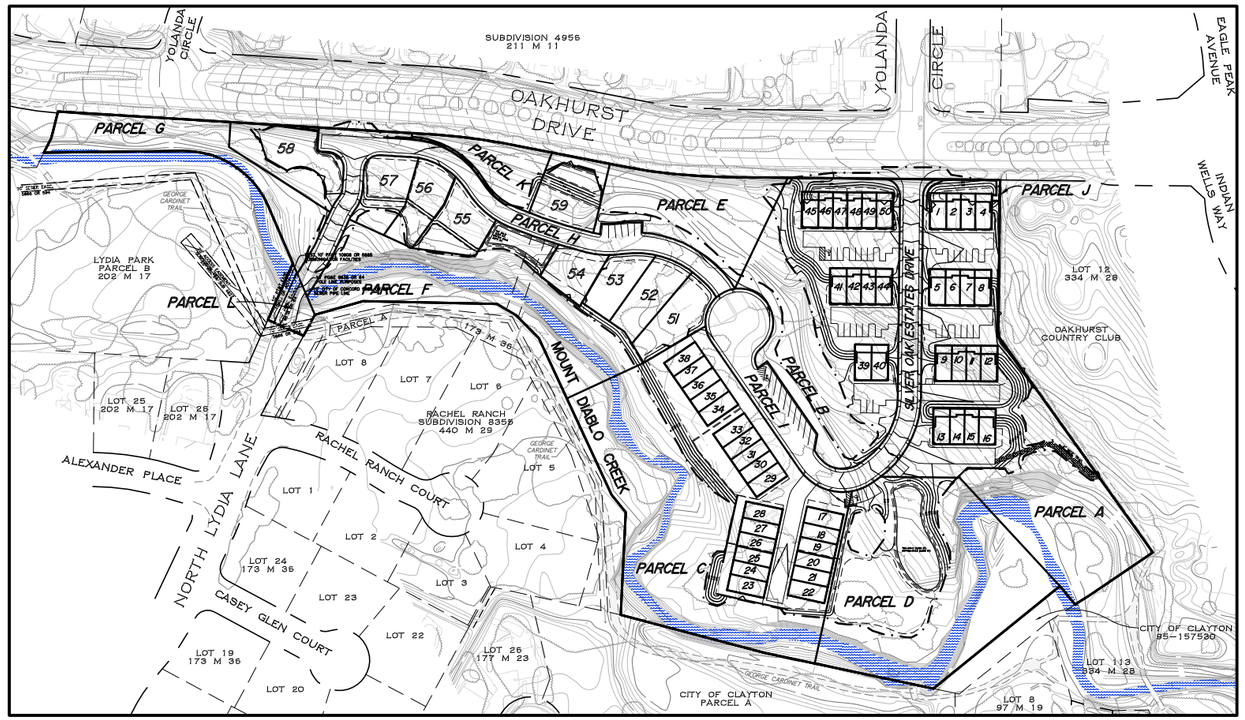
NO.	DESCRIPTION
1	COVER SHEET
2	HORIZONTAL CONTROL PLAN
3	GRADING & UTILITY PLAN
4	GRADING & UTILITY PLAN
5	TREE PRESERVATION PLAN
6	TREE INVENTORY PLAN
7	OPEN SPACE PLAN
8	SITE CROSS SECTIONS
9	BOUNDARY & TOPOGRAPHICAL SURVEY

PARKING REQUIREMENTS

CITERIA	REQUIRED	PROVIDED
SINGLE FAMILY	36	36
MULTI– FAMILY	100	125
ON STREET GUEST PARKING	25	47
ACCESSIBLE VAN PARKING	1	1
ACCESSIBLE CAR PARKING	2	2
TOTAL	164	211

PARCEL/LOT SUMMARY

PARCEL	AREA	%	USE	MAINTAINED BY:
A	1.75 AC.	12.5%	PASSIVE O.S.	TOWNHOUSE HOA
B	1.38 AC.	9.9%	PASSIVE O.S.	TOWNHOUSE HOA
C	2.18 AC.	15.6%	ACTIVE O.S.	TOWNHOUSE HOA
D	1.71 AC.	12.2%	POOL/ACTIVE O.S.	MASTER HOA
E	0.61 AC.	4.3%	PASSIVE O.S.	SINGLE FAMILY HOA
F	1.09 AC.	7.8%	ACTIVE O.S.	SINGLE FAMILY HOA
G	0.51 AC.	3.6%	ACTIVE O.S.	SINGLE FAMILY HOA
H	0.65 AC.	4.6%	RIGHT OF WAY	SINGLE FAMILY HOA
I	0.82 AC.	5.8%	RIGHT OF WAY	MASTER HOA
J	0.005 AC.	0.4%	EXISTING WELL	PROPERTY OWNER
K	0.22 AC.	1.6%	PASSIVE O.S.	SINGLE FAMILY HOA
L	0.09 AC.	0.6%	EXISTING BRIDGE	SINGLE FAMILY HOA
LOTS 51–59	1.55 AC.	11.1%	SINGLE FAMILY	LOT OWNER
LOTS 1–50	1.40 AC.	10.0%	TOWNHOUSE	LOT OWNER
TOTAL	13.96 AC.	100%		



DEVELOPMENT PLAN & VESTING TENTATIVE MAP
SCALE: 1"=100'

LOT SIZE SUMMARY

CRITERIA	SINGLE FAMILY	M.F.* TOWNHOUSE	M.F.*GREEN COURTS
MAX. LOT SIZE	13,965 S.F.	1,288 S.F.	1,176 S.F.
MIN. LOT SIZE	5,023 S.F.	1,121 S.F.	1,333 S.F.
AVERAGE LOT SIZE	7,523 S.F.	1,197 S.F.	1,197 S.F.
TYPICAL LOT DIMENSIONS	70' WIDE X 100' DEEP	21' WIDE X 53' DEEP	21' WIDE X 55' DEEP
NUMBER OF LOTS	9	28	22

LAND USE SUMMARY

CRITERIA	EXISTING	PROPOSED
LAND USE	2 SINGLE FAMILY RESIDENCES	SINGLE FAMILY RESIDENCES
ZONING	PD (PLANNED DEVELOPMENT)	PD (PLANNED DEVELOPMENT)
GENERAL PLAN	MD (S.F. MEDIUM DENSITY)	MD (S.F. MEDIUM DENSITY)
DENSITY	3.1–5 UNITS PER ACRE	3.1–5 UNITS PER NET ACRE
NET ALLOWABLE UNITS	43 – 69 UNITS	59 UNITS
PARCELS	1	9 PARCELS

REGISTERED PROFESSIONAL ENGINEER
ANDREW D. PALFFY
No. C 43704
DATE:_____
CIVIL
STATE OF CALIFORNIA

EXP. DATE 3-31-13

* MULTI–FAMILY

dk CONSULTING
PLANNING • ENGINEERING • CONSTRUCTION
1440 Maria Lane, Suite 200, Walnut Creek, California 94596 (925) 932-6868 Tel. (925) 932-0910 Fax

REGIONAL CONTEXT MAP
NOT TO SCALE

GENERAL NOTES

1. APPLICANT/DEVELOPER: CLYDE MILES CONSTRUCTION
   1850 MT. DIABLO BLVD., SUITE 440
   WALNUT CREEK, CA 94596
   (625) 427–4473
   CONTACT: JOHN PETERSON (925) 324–0800
2. OWNER: CALLIDA DEVELOPMENT, LLC
   1850 MT. DIABLO BLVD., SUITE 440
   WALNUT CREEK, CA 94596
   (925) 427–4473
2. CIVIL ENGINEER: dk CONSULTING
   1440 MARIA LANE, SUITE 200
   WALNUT CREEK, CA 94596
   (925) 932–6868
3. SOILS ENGINEER: ENGEO, INC.
   2401 CROW CANYON RD. SUITE 200
   SAN RAMON, CA 94583–1545
   (925) 838–1600
4. TOPOGRAPHY: EXISTING TOPOGRAPHY WAS GENERATED BY AN AERIAL FLIGHT USING BENCHMARK (C. 449) BEING A CUT "+" IN TRAFFIC SIGNAL STUD BOLT AT THE SOUTHWESTERLY CORNER, SOUTHWESTERLY RETURN AT THE INTERSECTION OF CONCORD BLVD. AND KIRKER PASS RD.
5. PROPERTY IS SUBJECT TO INUNDATION BY FLOOD WATER AND DOES LIE WITHIN THE 100–YEAR FLOOD PLAIN AS DELINEATED ON THE FLOOD INSURANCE RATE MAP (FIRM) AND SHOWN ON SHEET 9 OF THIS SET.
6. CONTOURS: 1' INTERVAL (LESS THAN 10% SLOPE)
   5' INTERVAL (OVER 10% SLOPE)
7. SITE AREA: 13.96 ACRES
8. ASSESSORS PARCEL NO.: 118–020–029

UTILITY SERVICE NOTES

1. WATER SUPPLY: CONTRA COSTA WATER DISTRICT
2. SEWAGE: CITY OF CONCORD SANITATION
3. GAS & ELECTRIC: P.G.& E.
4. TELEPHONE: PACIFIC BELL
5. CABLE: CONCORD CABLE (TCI)
6. FIRE DISTRICT: CONTRA COSTA COUNTY FIRE PROTECTION DISTRICT

DEMOLITION NOTES

1. ALL EXISTING TREES ON SOUTH SIDE OF CREEK SHALL REMAIN.
2. ALL TREES HAVE BEEN IDENTIFIED AND TAGGED BY A CERTIFIED ARBORIST AND A COMPREHENSIVE TREE STUDY PREPARED FOR THE PRESERVATION OF ONSITE TREES, SEE TREE PRESERVATION PLAN AND TREE INVENTORY PLAN.
3. ALL STRUCTURES INCLUDING; FENCES, CORRALS, SHEDS, AND GARAGES SHALL BE REMOVED.
4. THE EXISTING WELL ON LOT 56 SHALL BE ABANDONED AND EXISTING SEPTIC TANKS SHALL BE REMOVED.
4. THE EXISTING WELL IN PARCEL J SHALL NOT BE ABANDONED AND WILL REMAIN IN OPERATION FOR THE PROPERTY OWNER.

OWNER/DEVELOPER/SUBDIVIDER RESERVES THE RIGHT TO FILE MULTIPLE FINAL MAPS

DEVELOPMENT PLAN
VESTING TENTATIVE MAP
SUBDIVISION 8516
SILVER OAK ESTATES
CITY OF CLAYTON
CONTRA COSTA COUNTY, CALIFORNIA
dk JOB NO. 08-1022-10
SHEET 1 OF 9

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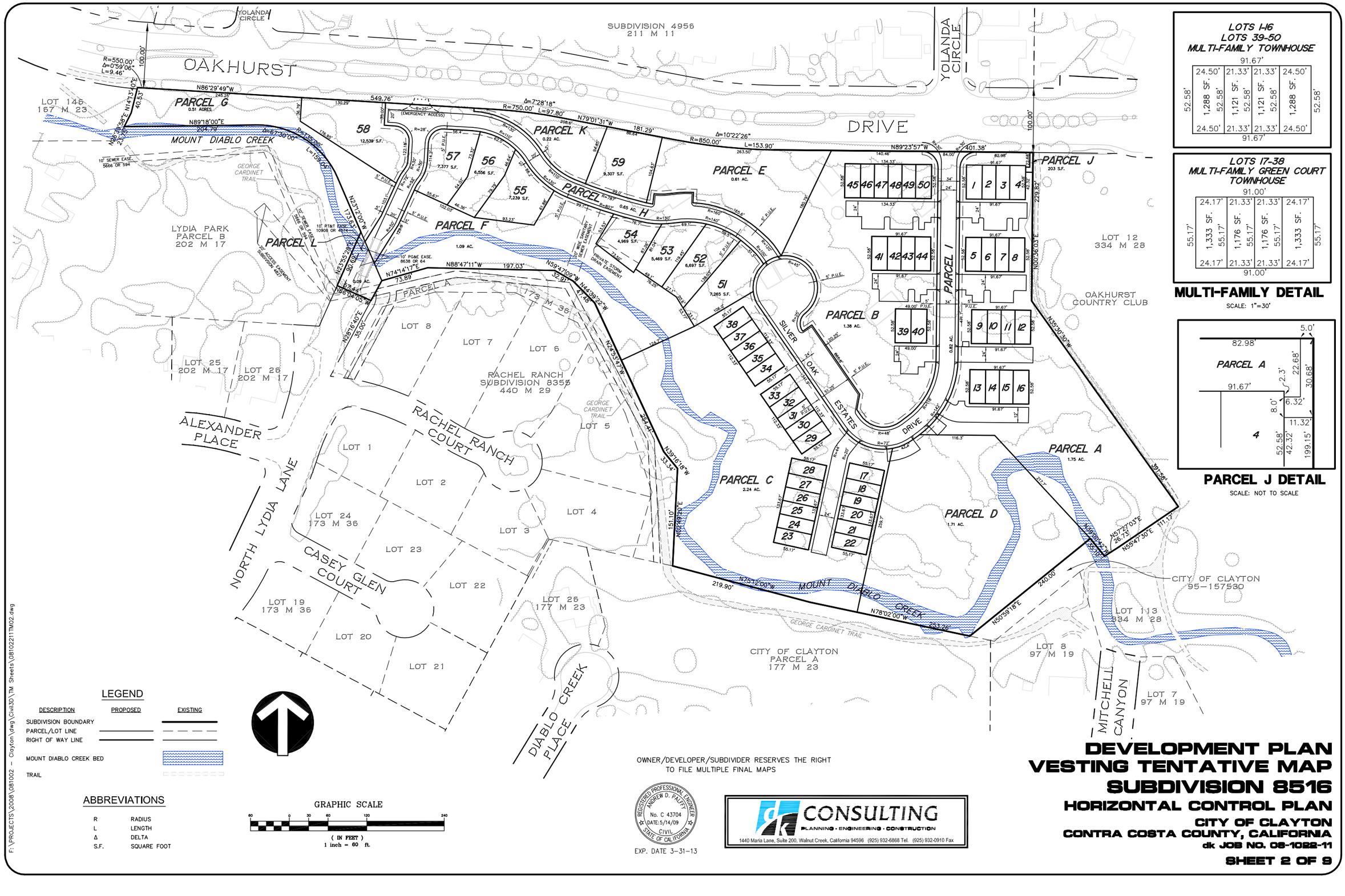

LEGEND

DESCRIPTION	PROPOSED	EXISTING
SUBDIVISION BOUNDARY		
PARCEL/LOT LINE		
RIGHT OF WAY LINE		
MOUNT DIABLO CREEK BED		
TRAIL		

ABBREVIATIONS

R	RADIUS
L	LENGTH
Δ	DELTA
S.F.	SQUARE FOOT

GRAPHIC SCALE

60 0 30 60 120 240

(IN FEET)

1 inch = 60 ft.

OWNER/DEVELOPER/SUBDIVIDER RESERVES THE RIGHT TO FILE MULTIPLE FINAL MAPS

REGISTERED PROFESSIONAL ENGINEER
ANDREW D. FALEY
No. C 43704
DATE: 5/14/09
CIVIL
STATE OF CALIFORNIA

EXP. DATE 3-31-13

dk CONSULTING
PLANNING · ENGINEERING · CONSTRUCTION
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DEVELOPMENT PLAN
VESTING TENTATIVE MAP
SUBDIVISION 8516
HORIZONTAL CONTROL PLAN
CITY OF CLAYTON
CONTRA COSTA COUNTY, CALIFORNIA
dk JOB NO. 08-1022-11
SHEET 2 OF 9

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OAKHURST

DRIVE

PARCEL G

MT. DIABLO CREEK

DENSE TREES & BRUSH GROUND NOT VISIBLE

GEORGE CARDINET TRAIL

LYDIA PARK
PARCEL B
202 M 17

INSTALL BOLLARDS (EMERGENCY ACCESS ONLY)

EXISTING MEDIAN CURB TO REMAIN

EXISTING CURB, GUTTER AND SIDEWALK TO REMAIN

PAD=341.0

PAD=341.9

PARCEL K

PARCEL E

PARCEL H

PARCEL F

PARCEL L

PARCEL A

EXISTING BRIDGE TO REMAIN

CONNECT 8" SS TO EX. SSMH

NORTH LYDIA LANE

LOT 8

LOT 7

LOT 6

173 M 36

RACHEL RANCH SUBDIVISION 8355
440 M 29

SHEET 4

LEGEND

DESCRIPTION	PROPOSED	EXISTING
SUBDIVISION BOUNDARY		
PARCEL/LOT LINE		
RIGHT OF WAY LINE		
FACE OF CURB		
CONTOUR LINE	120	500 498
PAD LINE		
LIMIT OF GRADING LINE		
RETAINING WALL		
SANITARY SEWER LINE & MANHOLE	8"SS	SS
STORM DRAIN LINE, MANHOLE, CATCH BASIN, RIP RAP	SDMH 18"SD CB HEADWALL	18" SD
WATER MAIN	8" WM	WM
PAD ELEVATION	PAD=100.0	
VERTICAL CURVE INFO	(123.0) 50'VC	
STREET SLOPE	3.0%	
PUBLIC UTILITY EASEMENT	P.U.E.	
SANITARY SEWER EASEMENT	S.S.E.	
TOP OF BANK		
SECTION LETTER AND SHEET LOCATION	A 5	
BIORETENTION SWALE		
FLOW-THROUGH PLANTER		
CONCRETE SIDEWALK		
EXISTING TREE		X229
MT. DIABLO CREEK BED		
TRAIL		
TREE DRIP LINE AS FIELD LOCATED BY MUNK & ASSOCIATES, GEOFF MUNK, PROJECT BIOLOGIST		

ABBREVIATIONS

TW/BW	TOP WALL/BOTTOM WALL ELEVATION
P	PAD ELEVATION
TC	TOP OF CURB ELEVATION
GB	GRADE BREAK
CB	CATCH BASIN
VC	VERTICAL CURVE
PIVC	POINT INTERSECTION AT VERTICAL CURVE
GF	GARAGE FLOOR ELEVATION

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

OWNER/DEVELOPER/SUBDIVIDER RESERVES THE RIGHT TO FILE MULTIPLE FINAL MAPS

REGISTERED PROFESSIONAL ENGINEER
ANDREW D. FALVEY
No. C 43704
DATE:
CIVIL
STATE OF CALIFORNIA

EXP. DATE 3-31-13

dk CONSULTING
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DEVELOPMENT PLAN
VESTING TENTATIVE MAP
SUBDIVISION 8516
GRADING & UTILITY PLAN
CITY OF CLAYTON
CONTRA COSTA COUNTY, CALIFORNIA
dk JOB NO. 08-1022-11

SHEET 3 OF 9

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SHEET 3

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

PARCEL A
173 M 36

PARCEL C

PARCEL B

PARCEL D

PARCEL E

PARCEL J

PARCEL A
177 M 23

CITY OF CLAYTON
95-157530

LOT 8
97 M 19

LOT 12
334 M 28

SILVER OAKS ESTATES DRIVE

OAKHURST DRIVE

YOLANDA CIRCLE

GEORGE CARDINET TRAIL

MT. DIABLO CREEK

OAKHURST COUNTRY CLUB

EXISTING CURB, GUTTER AND SIDEWALK TO REMAIN

EXISTING MEDIAN CURB TO REMAIN

EXISTING 18" SD TO BE RELOCATED

RIGHT TO ENTER & PERMISSION TO GRADE REQUIRED FROM ADJACENT PROPERTY OWNER

ABBREVIATIONS

TW/BW	TOP WALL/BOTTOM WALL ELEVATION
P	PAD ELEVATION
TC	TOP OF CURB ELEVATION
GB	GRADE BREAK
CB	CATCH BASIN
VC	VERTICAL CURVE
PIVC	POINT INTERSECTION AT VERTICAL CURVE
GF	GARAGE FLOOR ELEVATION

LEGEND

DESCRIPTION	PROPOSED	EXISTING
SUBDIVISION BOUNDARY		
PARCEL/LOT LINE		
RIGHT OF WAY LINE		
FACE OF CURB		
CONTOUR LINE	120	500 / 495
PAD LINE		
LIMIT OF GRADING LINE		
RETAINING WALL		
SANITARY SEWER LINE & MANHOLE	8"SS	SS
STORM DRAIN LINE, MANHOLE, CATCH BASIN, RIP RAP	SDMH 18"SD CB HEADWALL	18" SD
WATER MAIN	8" WM	WM
PAD ELEVATION	PAD=100.0	
VERTICAL CURVE INFO	(123.0) 50'VC	
STREET SLOPE	3.0%	

DESCRIPTION	PROPOSED	EXISTING
SECTION LETTER AND SHEET LOCATION	A 5	
TOP OF BANK		
TRAIL		
PUBLIC UTILITY EASEMENT		P.U.E.
BIORETENTION SWALE		
FLOW-THROUGH PLANTER		
CONCRETE SIDEWALK		
EXISTING TREE		X229
MT. DIABLO CREEK BED		
TREE DRIP LINE AS FIELD LOCATED BY MUNK & ASSOCIATES, GEOFF MUNK, PROJECT BIOLOGIST		

REGISTERED PROFESSIONAL ENGINEER
ANDREW D. FALFFY
No. C 43704
DATE:
CIVIL
STATE OF CALIFORNIA

EXP. DATE 3-31-13

dk CONSULTING
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OWNER/DEVELOPER/SUBDIVIDER RESERVES THE RIGHT TO FILE MULTIPLE FINAL MAPS

DEVELOPMENT PLAN
VESTING TENTATIVE MAP
SUBDIVISION 8516
GRADING & UTILITY PLAN
CITY OF CLAYTON
CONTRA COSTA COUNTY, CALIFORNIA
dk JOB NO. 08-1022-11

SHEET 4 OF 9

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OAKHURST

YOLANDA CIRCLE

DRIVE

LOT 146
167 M 23

PARCEL G

PARCEL K

PARCEL H

PARCEL E

PARCEL J

PARCEL F

PARCEL A

PARCEL I

PARCEL B

PARCEL C

PARCEL D

SILVER OAK ESTATES DRIVE

GEORGE CARDINET TRAIL

MOUNT DIABLO CREEK

LYDIA PARK
PARCEL B
202 M 17

LOT 12
334 M 28

OAKHURST
COUNTRY CLUB

LOT 25
202 M 17

LOT 26
202 M 17

LOT 8

LOT 7

LOT 6

173 M 36

RACHEL RANCH
SUBDIVISION 8355
440 M 29

LOT 5

LOT 1

LOT 2

LOT 3

LOT 4

LOT 24
173 M 36

LOT 23

LOT 22

LOT 19
173 M 36

LOT 20

LOT 21

LOT 26
177 M 23

ALEXANDER PLACE

RACHEL RANCH COURT

NORTH LYDIA LANE

CASEY GLEN COURT

DIABLO CREEK PLACE

CITY OF CLAYTON
95-157530

LOT 113
334 M 28

CITY OF CLAYTON
PARCEL A
177 M 23

LOT 8
97 M 19

LOT 7
97 M 19

MITCHELL CANYON

LEGEND

DESCRIPTION	PROPOSED	EXISTING
SUBDIVISION BOUNDARY		
PARCEL/LOT LINE		
RIGHT OF WAY LINE		
CONTOUR LINE	120	500 498
PAD LINE		
LIMIT OF GRADING LINE		
RETAINING WALL		
TREE LOCATION & NUMBER		229
TREE TO BE REMOVED	229	
MOUNT DIABLO CREEK BED		
TRAIL		

GRAPHIC SCALE

60 0 30 60 120 240

(IN FEET)
1 inch = 60 ft.

OWNER/DEVELOPER/SUBDIVIDER RESERVES THE RIGHT TO FILE MULTIPLE FINAL MAPS

ARBORIST

ARBORGUARD, Inc.
ATTN: PETER SORTWELL
21638 REDWOOD ROAD
CASTRO VALLEY, CA 94546
(888)969-8733

REGISTERED PROFESSIONAL ENGINEER
ANDREW D. FALEY
No. C 43704
DATE: 5/14/09
CIVIL
STATE OF CALIFORNIA

EXP. DATE 3-31-13

dk CONSULTING
PLANNING • ENGINEERING • CONSTRUCTION
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DEVELOPMENT PLAN
VESTING TENTATIVE MAP
SUBDIVISION 8516
TREE PRESERVATION PLAN
CITY OF CLAYTON
CONTRA COSTA COUNTY, CALIFORNIA
dk JOB NO. 08-1022-11
SHEET 5 OF 9

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TREE INVENTORY

NUMBER	SIZE(DIA.)	SPECIES	STATUS
207	15.2	WILLOW	TO REMAIN
208	7.6	WILLOW	TO REMAIN
209	14.7,6.6 & 6.0	WILLOW	TO REMAIN
210	38.2	VALLEY OAK	TO REMAIN
211	23.2	VALLEY OAK	TO REMAIN
212	11.3	CALIFORNIA BUCKEYE	TO REMAIN
213	9.8 & 5.5	CALIFORNIA BUCKEYE	TO REMAIN
214	27.5	WILLOW	TO REMAIN
215	8.9	ALMOND	TO REMAIN
216	26.7	OREGON ASH	TO REMAIN
217	30.7	CALIFORNIA BUCKEYE	TO REMAIN
218	16.0	WILLOW	TO REMAIN
219	12.2 & 6.0	CALIFORNIA BUCKEYE	TO REMAIN
220	30.2	VALLEY OAK	TO REMAIN
221	28.2	VALLEY OAK	TO REMAIN
222	16.2, 6.5 & 6.8	OREGON ASH	TO REMAIN
223	20.8	VALLEY OAK	TO REMAIN
224	14.5, 11.4 & 28.4	CALIFORNIA BUCKEYE	TO REMAIN
225	9.7	OREGON ASH	TO REMAIN
226	6.6	OREGON ASH	TO REMAIN
227	15.7	VALLEY OAK	TO REMAIN
228	6.5	CALIFORNIA BUCKEYE	TO REMAIN
229	20	VALLEY OAK	TO REMAIN
230	14.0	WILLOW	TO REMAIN
231	12.4,8.3,7.6,6.2&8	ELDERBERRY	TO REMAIN
232	10.0	WILLOW	TO REMAIN
233	11.0 & 11.0	WILLOW	TO REMAIN
234	7.5 & 3.6	WILLOW	TO REMAIN
235	10.2	CALIFORNIA BUCKEYE	TO REMAIN
236	8.9	CALIFORNIA BUCKEYE	TO REMAIN
237	7.3	CALIFORNIA BUCKEYE	TO REMAIN
238	9.2	CALIFORNIA BUCKEYE	TO REMAIN
239	6.8 & 8.1	CALIFORNIA BUCKEYE	TO REMAIN
240	13.7	CALIFORNIA BUCKEYE	TO REMAIN
241	11.2	CALIFORNIA BUCKEYE	TO REMAIN
242	12.8	CALIFORNIA BUCKEYE	TO REMAIN
243	8.7 & 5.7	CALIFORNIA BUCKEYE	TO REMAIN
244	7.4	CALIFORNIA BUCKEYE	TO REMAIN
245	18.2	BUTTERNUT	TO REMAIN
246	12.3,6.0,7.2&4.2	CALIFORNIA BLACK WALNUT	TO REMAIN
247	6.8	CALIFORNIA BUCKEYE	TO REMAIN
248	13.4	LIVE OAK	TO REMAIN
249	6.4,8,13.2,4.9,5.6,5.5,5.4,8.4,2.7,7.6,4.4,6.5,7.5,5.2,5.2,5	CALIFORNIA BUCKEYE	TO REMAIN
250	6.5	OREGON ASH	TO REMAIN
251	7.5	CALIFORNIA BLACK WALNUT	TO REMAIN
252	19.4	LIVE OAK	TO REMAIN
253	9	LIVE OAK	TO REMAIN
254	9.5	CALIFORNIA BUCKEYE	TO REMAIN
255	10.5	ALMOND	TO REMAIN
256	9.8,4.5,3,6.5,10.2,5	CALIFORNIA BUCKEYE	TO REMAIN
257	8.8 & 5.0	ELDERBERRY	TO REMAIN
258	15.4	LIVE OAK	TO REMAIN
259	7.2	LIVE OAK	TO REMAIN
260	8.8	ALMOND	TO REMAIN
261	7.9	VALLEY OAK	TO REMAIN
262	8.6	LIVE OAK	TO REMAIN
263	11.1	ALMOND	TO REMAIN
264	37.2	LIVE OAK	TO REMAIN
265	20.6,6.3,4.6,10.7	OREGON ASH	TO REMAIN
266	8.9,5.7,3.0	CALIFORNIA BUCKEYE	TO REMAIN
267	19	LIVE OAK	TO REMAIN
268	13.5	LIVE OAK	TO REMAIN
269	11.0,11.2	BLACK MULBERRY	TO REMAIN
270	7.5	LIVE OAK	TO REMAIN
271	7	CALIFORNIA BUCKEYE	TO REMAIN
272	7.6	CALIFORNIA BUCKEYE	TO REMAIN
273	9.0	CALIFORNIA BUCKEYE	TO REMAIN
274	12.9	LIVE OAK	TO REMAIN
275	11.5,10,8.5,9.2,8	ELDERBERRY	TO REMAIN
276	24.1	VALLEY OAK	TO REMAIN
277	10.8	CHINESE PISTACHE	TO REMAIN
278	28	WILLOW	TO REMAIN
279	6.4 & 4.8	CALIFORNIA BUCKEYE	TO REMAIN
280	9.7	CALIFORNIA BUCKEYE	TO REMAIN
281	18.8	LIVE OAK	TO REMAIN

TREE INVENTORY CONT'D

NUMBER	SIZE(DIA.)	SPECIES	STATUS
282	7.1,6.3,4.7,5.5,3.8,10.4,9.3,4.4,3.5,3	BUCKEYE	TO REMAIN
283	5.6,3.8	CALIFORNIA BUCKEYE	TO REMAIN
284	23.4	LIVE OAK	TO REMAIN
285	8.5,4.8,.4.7,9.2,3.9,3.6,9.9,7.6	CALIFORNIA BUCKEYE	TO REMAIN
286	6.5,3.8	CALIFORNIA BLACK WALNUT	TO REMAIN
287	8.1	CALIFORNIA BUCKEYE	TO REMAIN
288	9.7	CALIFORNIA BUCKEYE	TO REMAIN
289	9.3,5.5,13.5	CALIFORNIA BUCKEYE	TO REMAIN
290	9.0,11.2	CALIFORNIA PEPPER	TO REMAIN
291	14.2,17.2,10.1	LIVE OAK	TO REMAIN
292	65.7	VALLEY OAK	TO REMAIN
293	8.3	WILLOW	TO REMAIN
294	7.9	OREGON ASH	TO REMAIN
295	19.6	WILLOW	TO REMAIN
296	10	WILLOW	TO REMAIN
297	16.9	WILLOW	TO REMAIN
298	13.7, 5.9	WILLOW	TO REMAIN
299	10.5	VALLEY OAK	TO REMAIN
300	11.1	VALLEY OAK	TO REMAIN
301	12.7	VALLEY OAK	TO REMAIN
302	9.0 & 2.3	CALIFORNIA PEPPER	TO REMAIN
303	11.8	OREGON ASH	TO REMAIN
304	9.5 & 8.5	CALIFORNIA BLACK OAK	TO REMAIN
305	9.2 & 7.5	ALMOND	TO REMAIN
306	27.7	BLUE OAK	TO REMAIN
307	6.5	WILLOW	TO REMAIN
308	6	WILLOW	TO REMAIN
309	17.2 & 9.5	WILLOW	TO REMAIN
310	20.1	LIVE OAK	TO REMAIN
311	24.7	LIVE OAK	TO REMAIN
328	14.7	LIVE OAK	TO BE REMOVED
330	7.8	VALLEY OAK	TO BE REMOVED
331	17.6	VALLEY OAK	TO BE REMOVED
333	28	LIVE OAK	TO REMAIN
334	41.8	VALLEY OAK	TO BE REMOVED
335	15.5	LIVE OAK	TO BE REMOVED
336	7.7	LIVE OAK	TO BE REMOVED
337	17.2	LIVE OAK	TO BE REMOVED
338	9.7	LIVE OAK	TO BE REMOVED
339	12.6	LIVE OAK	TO BE REMOVED
340	13.4	LIVE OAK	TO BE REMOVED
341	6.5	LIVE OAK	TO BE REMOVED
342	9.2	VALLEY OAK	TO BE REMOVED
343	20.1	LIVE OAK	TO BE REMOVED
344	14.8	LIVE OAK	TO BE REMOVED
345	16.4	LIVE OAK	TO BE REMOVED
346	10	LIVE OAK	TO BE REMOVED
347	11.77 & 12.8	LIVE OAK	TO BE REMOVED
348	8.4	VALLEY OAK	TO BE REMOVED
349	10.5	LIVE OAK	TO BE REMOVED
350	14.2	LIVE OAK	TO BE REMOVED
351	8.4	LIVE OAK	TO BE REMOVED
352	11.5	LIVE OAK	TO BE REMOVED
353	16.9	LIVE OAK	TO BE REMOVED
354	12.3 & 12.7	LIVE OAK	TO BE REMOVED
355	41	LIVE OAK	TO BE REMOVED
356	12.4	LIVE OAK	TO REMAIN
357	9.9	LIVE OAK	TO REMAIN
358	9.4 & 16.9	CALIFORNIA PEPPER	TO REMAIN
359	21.3	CALIFORNIA PEPPER	TO REMAIN
360	21.1	LIVE OAK	TO BE REMOVED
361	6.5	DEODAR CEDAR	TO BE REMOVED
362	9.1	CALIFORNIA PEPPER	TO BE REMOVED
363	10.8	LIVE OAK	TO REMAIN
364	9	CALIFORNIA PEPPER	TO REMAIN
365	6.6	LIVE OAK	TO REMAIN
366	19.1	LIVE OAK	TO BE REMOVED
367	6.9	ORANGE TREE	TO BE REMOVED
368	38.5	LIVE OAK	TO BE REMOVED
369	34.4	VALLEY OAK	TO REMAIN
370	10.3	LIVE OAK	TO REMAIN
371	8.3	BLUE OAK	TO REMAIN
372	6.1	BLUE OAK	TO REMAIN
373	8.3	LIVE OAK	TO REMAIN
374	17.9	LIVE OAK	TO REMAIN
375	20	BOX-ELDER	TO REMAIN

TREE INVENTORY CONT'D

NUMBER	SIZE(DIA.)	SPECIES	STATUS
376	7.4	PERSIMMON	TO BE REMOVED
377	24.6	LIVE OAK	TO REMAIN
378	7.3	PERSIMMON	TO BE REMOVED
379	28.8	BLUE OAK	TO REMAIN
380	10.5	VALLEY OAK	TO REMAIN
383	14	VALLEY OAK	TO BE REMOVED
384	14.6	VALLEY OAK	TO BE REMOVED
385	15.2	VALLEY OAK	TO BE REMOVED
387	12.8	VALLEY OAK	TO BE REMOVED
388	7.8 & 8.1	BLUE OAK	TO BE REMOVED
389	14.4	HOLLY OAK	TO BE REMOVED
390	14.5	CALIFORNIA SYCAMORE	TO BE REMOVED
391	16	HOLLY OAK	TO BE REMOVED
392	15	VALLEY OAK	TO BE REMOVED
393	10.7	VALLEY OAK	TO BE REMOVED
394	7.2	ALMOND	TO BE REMOVED
395	7,9,6.5	ALMOND	TO BE REMOVED
396	6.7 & 3.7	VALLEY OAK	TO BE REMOVED
397	9.7	VALLEY OAK	TO BE REMOVED
398	6.4	VALLEY OAK	TO BE REMOVED
399	7.8	VALLEY OAK	TO BE REMOVED
400	8.3	VALLEY OAK	TO BE REMOVED
401	7.4,6.5,4,5.7	CHINESE PISTACHE	TO BE REMOVED
402	8.3	VALLEY OAK	TO BE REMOVED
403	8	VALLEY OAK	TO BE REMOVED
404	9.2	VALLEY OAK	TO REMAIN
405	14.1	VALLEY OAK	TO REMAIN
406	6	VALLEY OAK	TO REMAIN
407	11.2	VALLEY OAK	TO REMAIN
408	6.4 & 4.9	ALMOND	TO REMAIN
409	9.2	VALLEY OAK	TO REMAIN
410	14.9	BLUE OAK	TO REMAIN
411	37	VALLEY OAK	TO REMAIN
412	7.9	DEODAR CEDAR	TO BE REMOVED
413	8.9	DEODAR CEDAR	TO BE REMOVED
414	13.4	INCENSE CEDAR	TO BE REMOVED
415	7.5	INCENSE CEDAR	TO REMAIN
416	24	BLUE OAK	TO REMAIN
417	17.6	VALLEY OAK	TO REMAIN
418	27.6	VALLEY OAK	TO REMAIN
419	23.6	BLUE OAK	TO REMAIN
420	16.1	LIVE OAK	TO REMAIN
421	7.1	ALMOND	TO REMAIN
422	12.5	BLUE OAK	TO REMAIN
423	7.7 & 3.7	ELDERBERRY	TO REMAIN
424	8.8	ALMOND	TO REMAIN
425	26.4	BLUE OAK	TO REMAIN
426	21.8	BLUE OAK	TO REMAIN
427	8.3	SCRUB OAK	TO REMAIN
428	14.7	BLUE OAK	TO REMAIN
429	14.4	BLUE OAK	TO REMAIN
430	8.2	LIVE OAK	TO REMAIN
431	11.2	BLUE OAK	TO REMAIN
432	26.5	VALLEY OAK	TO REMAIN
433	7	BLUE OAK	TO REMAIN
434	44.2	DEODAR CEDAR	TO BE REMOVED
435	32.3	DEODAR CEDAR	TO BE REMOVED
436	10.1	CALIFORNIA PEPPER	TO BE REMOVED
437	7.2	VALLEY OAK	TO BE REMOVED
439	9.8	DEODAR CEDAR	TO BE REMOVED
440	19.1 & 10.5	CALIFORNIA PEPPER	TO BE REMOVED
441	18.2	CALIFORNIA BUCKEYE	TO BE REMOVED
442	32.4	VALLEY OAK	TO REMAIN
443	22.7	VALLEY OAK	TO REMAIN
444	6	BLUE OAK	TO REMAIN
445	21	VALLEY OAK	TO REMAIN
446	11.8 & 6.3	BLUE OAK	TO REMAIN
447	12.9	VALLEY OAK	TO REMAIN
448	28.5	BLUE OAK	TO REMAIN
449	13	BLUE OAK	TO REMAIN
450	38.7	VALLEY OAK	TO REMAIN
451	13.3	ORANGE TREE	TO BE REMOVED
452	13	LIVE OAK	TO BE REMOVED
453	28.9	MONTEREY PINE	TO BE REMOVED
454	7.8	ELDERBERRY	TO BE REMOVED
455	6.4 & 9.6	VALLEY OAK	TO BE REMOVED

TREE INVENTORY CONT'D

NUMBER	SIZE(DIA.)	SPECIES	STATUS
456	6.4	VALLEY OAK	TO BE REMOVED
457	7.8	VALLEY OAK	TO BE REMOVED
458	6.7	ALMOND	TO BE REMOVED
459	11.7	ALEPPO PINE	TO BE REMOVED
460	60.7	VALLEY OAK	TO BE REMOVED
461	6.2 & 7.2	TOBIRA	TO BE REMOVED
462	6.2 & 5.5	CALIFORNIA PEPPER	TO BE REMOVED
463	6.4	ALMOND	TO BE REMOVED
464	14.2	LIVE OAK	TO BE REMOVED
465	12.4	VALLEY OAK	TO BE REMOVED
466	16.1	SOUTHERN MAGNOLIA	TO BE REMOVED
467	11.4	VALLEY OAK	TO BE REMOVED
468	10.5,6.7,7.3	TOBIRA	TO BE REMOVED
469	6.5,6.6,6,6.9	POMEGRANATE	TO BE REMOVED
470	4.1,5.8,7.1,7,5.7	POMEGRANATE	TO BE REMOVED
471	9.4 & 7.3	POMEGRANATE	TO BE REMOVED
472	8.3 & 6.6	POMEGRANATE	TO BE REMOVED
473	7.1 & 5.7	POMEGRANATE	TO BE REMOVED
474	39	LIVE OAK	TO REMAIN
475	6.4	ALMOND	TO BE REMOVED
476	7.2	ALMOND	TO BE REMOVED
477	23.5	LIVE OAK	TO BE REMOVED
478	12.7	LIVE OAK	TO BE REMOVED
479	8.8,5.9,6.6	BLACK MULBERRY	TO BE REMOVED
480	5.3 & 6.1	VALLEY OAK	TO BE REMOVED
481	46.9	LIVE OAK	TO BE REMOVED
482	6.6	CALIFORNIA PEPPER	TO BE REMOVED
483	10.5	EDIBLE FIG	TO BE REMOVED
484	6.1,6,10.8	BLACK MULBERRY	TO BE REMOVED
485	12.6 & 18	BLACK MULBERRY	TO BE REMOVED
486	14	EDIBLE FIG	TO BE REMOVED
487	13.4	EDIBLE FIG	TO BE REMOVED
488	10	EDIBLE FIG	TO BE REMOVED
489	14	EDIBLE FIG	TO BE REMOVED
490	8.5	PLUM	TO BE REMOVED
491	6.8 & 7.4	POMEGRANATE	TO BE REMOVED
492	6.4,6.2,6.6	POMEGRANATE	TO BE REMOVED
493	7.1,5.9,5.1	POMEGRANATE	TO BE REMOVED
494	49.8	VALLEY OAK	TO BE REMOVED
495	20.7	SCRUB OAK	TO BE REMOVED
496	10.3,3.7,3.8	LOQUAT	TO BE REMOVED
497	6.5	TOBIRA	TO BE REMOVED
498	33.8 & 61.5	VALLEY OAK	TO BE REMOVED
499	42.3	ALEPPO PINE	TO BE REMOVED
500	7,8.1 & 8.1	CALIFORNIA BUCKEYE	TO REMAIN
501	31.8	VALLEY OAK	TO REMAIN
502	12.7	INCENSE CEDAR	TO REMAIN
503	19.9,21.7,17.2	LIVE OAK	TO REMAIN
504	31.2	CAMPHOR TREE	TO BE REMOVED
505	39.5	CALIFORNIA PEPPER	TO BE REMOVED
506	11.7 & 10.9	CALIFORNIA PEPPER	TO REMAIN
507	19.5	FREMONT POPLAR	TO BE REMOVED
508	15	FREMONT POPLAR	TO BE REMOVED
509	19	CALIFORNIA PEPPER	TO BE REMOVED
510	7.5 & 3.7	VALLEY OAK	TO BE REMOVED
511	25.9	CALIFORNIA PEPPER	TO REMAIN
512	30.8	BLUE OAK	TO REMAIN
513	10.7	VALLEY OAK	TO BE REMOVED
514	14.1	VALLEY OAK	TO BE REMOVED
516	9.5	BLUE OAK	TO REMAIN
517	29.2	BLUE OAK	TO REMAIN
518	42.2	VALLEY OAK	TO REMAIN
519	24.8	LIVE OAK	TO BE REMOVED
520	14.5	ENGLISH WALNUT	TO BE REMOVED
521	29.4	BLUE OAK	TO REMAIN
522	15.9,13.1,10.7	CALIFORNIA PEPPER	TO REMAIN
523	6.4,6.2,6.5,3.5	ALMOND	TO BE REMOVED
524	7.3,6,5.8,3.4	ALMOND	TO BE REMOVED
525	7.7	VALLEY OAK	TO BE REMOVED
526	6.4	ALMOND	TO BE REMOVED
527	6.3 & 3.7	ALMOND	TO BE REMOVED
528	6.0 & 4.2	ALMOND	TO BE REMOVED
529	8.4	VALLEY OAK	TO BE REMOVED
530	8.4	ALMOND	TO REMAIN
531	6	WILLOW	TO REMAIN

TREE SCHEDULE

TREES LOCATED	302
TREES TO REMAIN	174
TREES TO BE REMOVED	128

ARBORIST

ARBORGUARD, Inc.
ATTN: PETER SORTWELL
21638 REDWOOD ROAD
CASTRO VALLEY, CA 94546
(888)969-8733

REGISTERED PROFESSIONAL ENGINEER
ANDREW D. FALVEY
No. C 43704
DATE: 5/14/09
CIVIL
STATE OF CALIFORNIA

EXP. DATE 3-31-13

OWNER/DEVELOPER/SUBDIVIDER RESERVES THE RIGHT TO FILE MULTIPLE FINAL MAPS

dk CONSULTING
PLANNING · ENGINEERING · CONSTRUCTION
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DEVELOPMENT PLAN
VESTING TENTATIVE MAP
SUBDIVISION 8516
TREE INVENTORY PLAN
CITY OF CLAYTON
CONTRA COSTA COUNTY, CALIFORNIA
dk JOB NO. 08-1022-11

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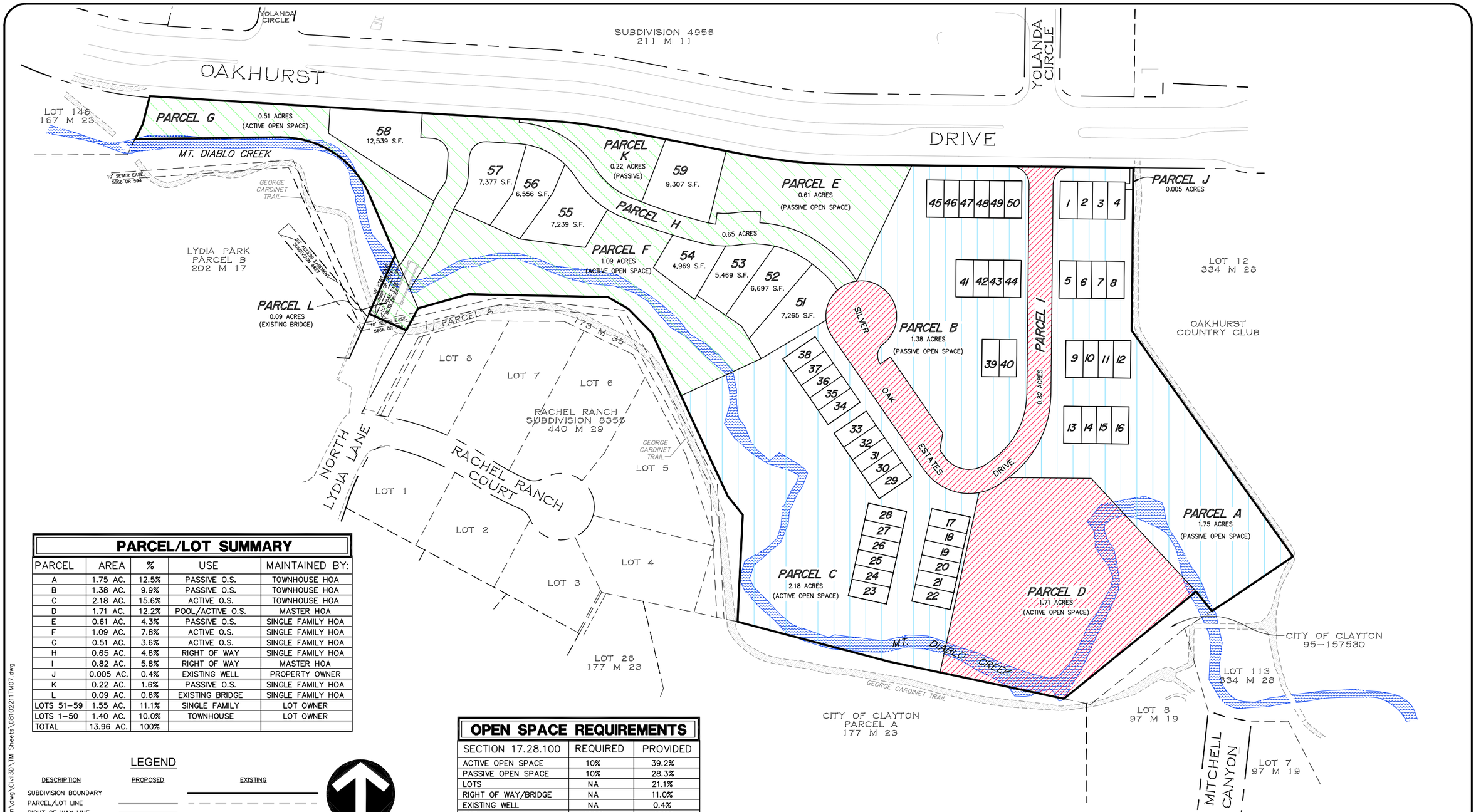

PARCEL/LOT SUMMARY

PARCEL	AREA	%	USE	MAINTAINED BY:
A	1.75 AC.	12.5%	PASSIVE O.S.	TOWNHOUSE HOA
B	1.38 AC.	9.9%	PASSIVE O.S.	TOWNHOUSE HOA
C	2.18 AC.	15.6%	ACTIVE O.S.	TOWNHOUSE HOA
D	1.71 AC.	12.2%	POOL/ACTIVE O.S.	MASTER HOA
E	0.61 AC.	4.3%	PASSIVE O.S.	SINGLE FAMILY HOA
F	1.09 AC.	7.8%	ACTIVE O.S.	SINGLE FAMILY HOA
G	0.51 AC.	3.6%	ACTIVE O.S.	SINGLE FAMILY HOA
H	0.65 AC.	4.6%	RIGHT OF WAY	SINGLE FAMILY HOA
I	0.82 AC.	5.8%	RIGHT OF WAY	MASTER HOA
J	0.005 AC.	0.4%	EXISTING WELL	PROPERTY OWNER
K	0.22 AC.	1.6%	PASSIVE O.S.	SINGLE FAMILY HOA
L	0.09 AC.	0.6%	EXISTING BRIDGE	SINGLE FAMILY HOA
LOTS 51-59	1.55 AC.	11.1%	SINGLE FAMILY	LOT OWNER
LOTS 1-50	1.40 AC.	10.0%	TOWNHOUSE	LOT OWNER
TOTAL	13.96 AC.	100%		

OPEN SPACE REQUIREMENTS

SECTION 17.28.100	REQUIRED	PROVIDED
ACTIVE OPEN SPACE	10%	39.2%
PASSIVE OPEN SPACE	10%	28.3%
LOTS	NA	21.1%
RIGHT OF WAY/BRIDGE	NA	11.0%
EXISTING WELL	NA	0.4%
TOTAL	100%	100%

LEGEND

DESCRIPTION	PROPOSED	EXISTING
SUBDIVISION BOUNDARY		
PARCEL/LOT LINE		
RIGHT OF WAY LINE		
MOUNT DIABLO CREEK BED		
TRAIL		
MASTER HOA		
SINGLE FAMILY HOMES HOA		
TOWNHOUSE HOA		

GRAPHIC SCALE

60 0 30 60 120 240

(IN FEET)
1 inch = 60 ft.

OWNER/DEVELOPER/SUBDIVIDER RESERVES THE RIGHT TO FILE MULTIPLE FINAL MAPS

REGISTERED PROFESSIONAL ENGINEER
ANDREW D. RALPHS
No. C 43704
DATE: 5/14/09
CIVIL
STATE OF CALIFORNIA

EXP. DATE 3-31-13

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DEVELOPMENT PLAN
VESTING TENTATIVE MAP
SUBDIVISION 8516
OPEN SPACE PLAN
CITY OF CLAYTON
CONTRA COSTA COUNTY, CALIFORNIA
dk JOB NO. 08-1022-11

SHEET 7 OF 9

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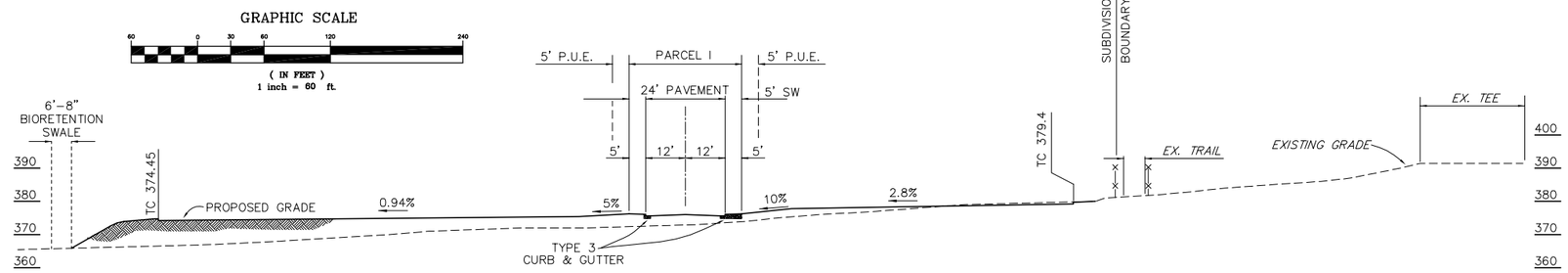
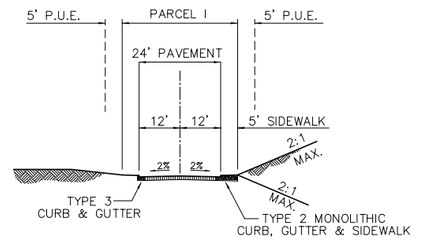
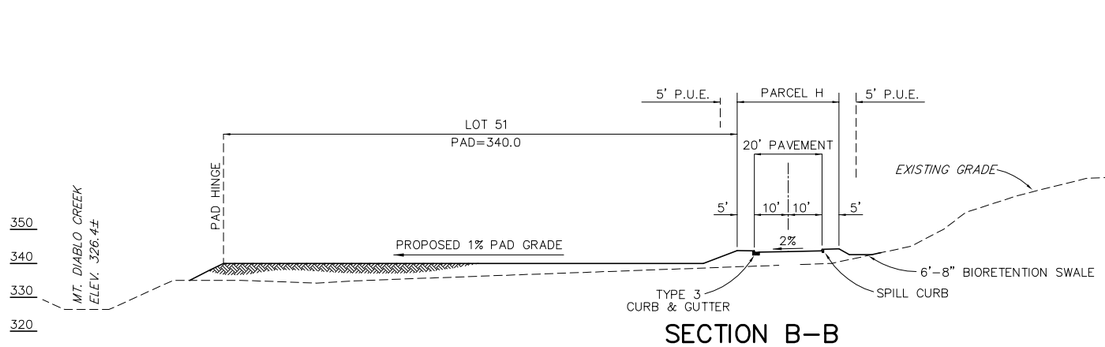


SECTION A–A



SECTION E–E
PARCEL I
(NO ON–STREET PARKING)



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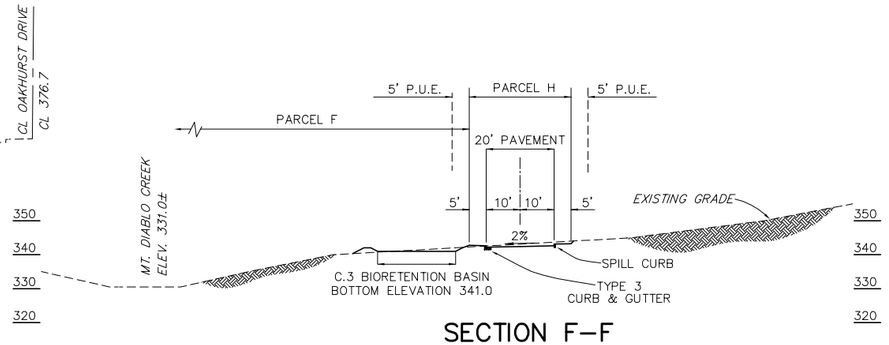
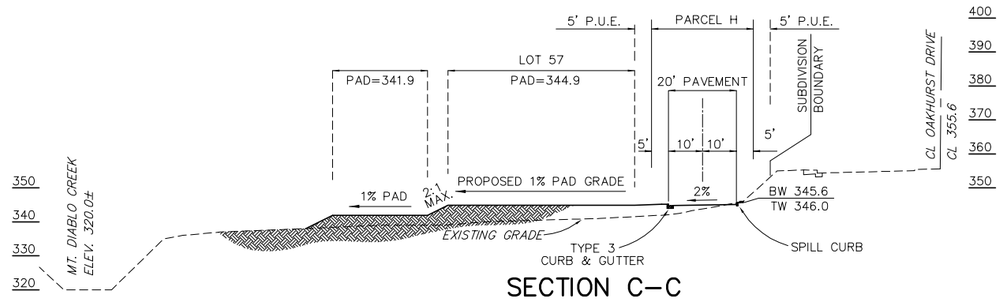
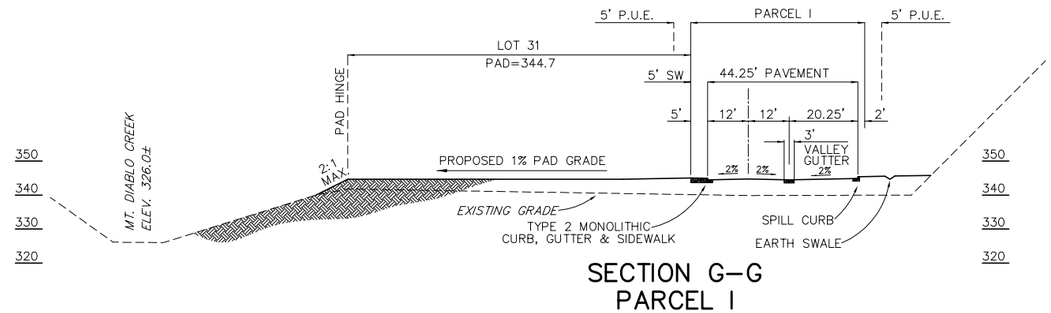


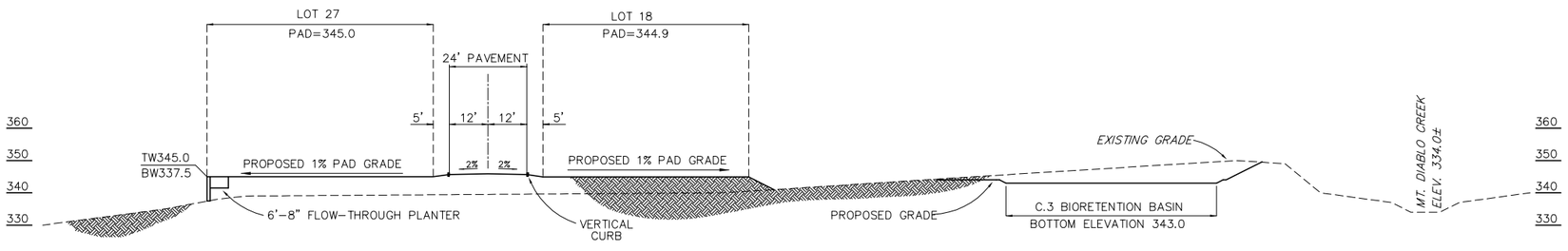
SECTION F–F
PARCEL H



SECTION C–C



SECTION G–G
PARCEL I



SECTION D–D

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REGISTERED PROFESSIONAL ENGINEER
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EXP. DATE 3–31–13

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DEVELOPMENT PLAN
VESTING TENTATIVE MAP
SUBDIVISION 8516
SITE CROSS SECTIONS
CITY OF CLAYTON
CONTRA COSTA COUNTY, CALIFORNIA
dk JOB NO. 08-1022-11

SHEET 8 OF 9

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REFERENCE:

FLOOD INSURANCE RATE MAP
MAP NUMBER 06013C0304F
CITY OF CLAYTON. CALIFORNIA
MAP REVISED: JUNE 16, 2009

NOTE: THE FIRM IS BASED ON THE NAD 83 DATUM, THE ELEVATIONS SHOWN ARE NAD 83 DATUM. DATUM OF THE TOPOGRAPHIC SURVEY FOR THIS VTM IS BASED ON THE NGVD 29 DATUM. THE CONVERSION FACTOR FOR THIS SITE FROM NAD 83 DATUM TO NGVD 29 DATUM IS −2.67'.

ABBREVIATIONS

R	RADIUS
L	LENGTH
Δ	DELTA
IMP	INTEGRATED MANAGEMENT PRACTICE

LEGEND

DESCRIPTION	EXISTING
SUBDIVISION BOUNDARY	
PARCEL/LOT LINE	
RIGHT OF WAY LINE	
CONTOUR LINE	500 498
TREE LOCATION & NUMBER	×375
SANITARY SEWER LINE & MANHOLE	SS
STORM DRAIN LINE, MANHOLE, CATCH BASIN, RIP RAP	18" SD
TOP OF BANK	
ZONE AE (SPECIAL FLOOD HAZARD AREAS INUNDATED BY 100-YEAR FLOOD)	
ZONE X (AREAS OF 500-YEAR FLOOD)	
BASE FLOOD ELEVATION (ELEVATION IN FEET) NAD 83 DATUM (SEE NOTE)	335
MOUNT DIABLO CREEK BED	
TRAIL	
IMP LOCATION	

GRAPHIC SCALE

60 0 30 60 120 240

(IN FEET)
1 inch = 60 ft.

OWNER/DEVELOPER/SUBDIVIDER RESERVES THE RIGHT TO FILE MULTIPLE FINAL MAPS

REGISTERED PROFESSIONAL ENGINEER
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DATE: 5/14/09
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STATE OF CALIFORNIA

EXP. DATE 3-31-13

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DEVELOPMENT PLAN
VESTING TENTATIVE MAP
SUBDIVISION 8516
BOUNDARY AND TOPOGRAPHIC SURVEY
CITY OF CLAYTON
CONTRA COSTA COUNTY, CALIFORNIA
dk JOB NO. 08-1022-11

SHEET 9 OF 9

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