APPENDIX 4.1-A
BIOLOGICAL RESOURCES ASSESSMENT

BIOLOGICAL RESOURCES ANALYSIS
KORTUM RANCH SUBDIVISION PROJECT
CALISTOGA, CALIFORNIA

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Prepared for

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1. INTRODUCTION

Monk & Associates, Inc. (M&A) has prepared this Biological Resources Analysis for the proposed Kortum Ranch Subdivision development site located in Calistoga, California (the project site) (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 subdivision for residential development (the project).

Biological resources include common plant and animal species, and special-status plants and animals as designated by the U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Wildlife (CDFW), National Marine Fisheries Service (NMFS), and other resource organizations including the California Native Plant Society. Biological resources also include waters of the United States (U.S.) and State, as regulated by the U.S. Army Corps of Engineers (Corps), California Regional Water Quality Control Board (RWQCB), and CDFW. It is important to note that our analysis includes an assessment of the potential for impacts to regulated waters. A formal delineation of "waters of the U.S." suitable for submittal to the Corps, the regulatory agency that defines waters of the U.S. has been conducted and will be submitted to the Corps concurrently for confirmation.

This Biological Resources Analysis also provides mitigation measures for "potentially significant" and "significant" impacts that could occur to biological resources. Whenever possible, upon implementation, the prescribed mitigation measures would reduce impacts to levels considered less than significant pursuant to the California Environmental Quality Act (CEQA) (Pub. Resources Code §§ 21000 et seq.; 14 Cal. Code Regs §§ 15000 et seq). Accordingly, this report is suitable for review and inclusion in any review being conducted by the City of Calistoga for the proposed project pursuant to the CEQA.

2. PROPERTY LOCATION AND SETTING

The project site is located in the southeast portion of the City of Calistoga, adjacent to the north of the southern city limit, at 500 Kortum Canyon Road on four parcels (APNs 011-290-007, 011-290-038, 011-290-039, and 011-310-023) totaling 30.1 acres (Figures 2, 3). Areas south, east, and west of the project site are primarily rural residences characterized by large, heavily wooded lots, with the exception of Lerner Drive immediately to the west of the project site which supports a few smaller residential properties. Existing commercial uses are located north of the project site with frontage along Foothill Boulevard. Further to the north beyond Foothill Boulevard are residential neighborhoods in the City of Calistoga.

The site was previously developed as the Busk Estate, which contained over 15 buildings and structures including a single-family home, apartment building, pool, and cabana, four detached garages, outbuildings, and work/storage sheds. The site also contained shipping containers, abandoned cars, trucks, tractors, and construction equipment. In addition to its residential use, the Busk Estate served as a storage facility for construction materials, debris, large piles of reinforced concrete pipes, stacked piles of creosote- soaked railroad ties, and telephone poles. The buildings and shipping containers have been removed from the property. Existing utilities,

retaining walls, and an active well remain on the site. The site contains distinct clearings that are devoid of vegetation and trees and that is where future single-family residences will be sited. Figures 2 and 3 provide aerial photographs of the project site and show the surrounding land uses. At present, Kortum Canyon Road serves as a primary access point to the site and Terrace Drive provides secondary access.

3. PROPOSED PROJECT

The Kortum Ranch Subdivision Project Site is comprised of four existing parcels (APNs 011-290-007; -038; -039; and 011-310-023) totaling 30.1 acres. The Kortum Ranch Subdivision Project proposes to subdivide the 30.1-acre project site into 22 lots ranging from approximately 0.38 to 6.1 acres.

At this time, the applicant is seeking approval of a Tentative Subdivision Map. Pursuant to CEQA Guidelines Section 21065, a "project" means an activity which may cause either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment. Though no physical development will be approved with the Tentative Subdivision Map, the reasonably foreseeable physical change resulting from approval of the Tentative Map will include construction of 22 new single-family residences, and as such this report contemplates the environmental impacts of such development.

4. ANALYSIS METHODS

4.1 Background Research

Prior to preparing this biological resource analysis report, M&A researched the most recent version of CDFW's Natural Diversity Database (CNDDB) (RareFind 6 application) (CNDDB 2023). The CNDDB is a database maintained by the CDFW that provides historic and recent records of special-status plant and animal species (that is, threatened, endangered, rare species) known from the state of California. M&A also searched the 2023 electronic version of the California Native Plant Society's (CNPS) *Inventory of Rare and Endangered Plants of California* (CNPS 2001) for records of special-status plants known in the region of the project site. 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.

4.2 Reconnaissance Surveys

M&A biologists Mr. Mark Jasper and Ms. Christy Owens conducted a general survey of the entire project site on February 13, 2023, to record biological resources and to assess the likelihood of resource agency regulated areas occurring on the project site. The survey involved searching all habitats on the site and recording all plant and wildlife species observed. M&A cross-referenced the habitats found on the project site against the habitat requirements of local or regionally known special-status species to determine if the proposed project could directly or indirectly impact such species.

M&A's site evaluation included a cursory examination of the site to determine if there could be potential areas within the project site that would be regulated as waters of the U.S. and/or State.

4.3 Wetland Delineation

On April 26, May 23, and July 14, 2023, M&A biologists Ms. Christy Owens, Ms. Sarah Lynch and Ms. Sarah McNamara visited the project site to examine potential Corps-regulated areas and/or all other areas that meet the definitions of wetlands/waters even if not within the Clean Water Act Section 404 jurisdiction of the Corps. M&A used the Corps' 1987 Wetlands Delineation Manual and the Corps' 2008 Regional Supplement for the Arid West Region to conduct this wetland delineation (Corps 2008). A jurisdictional determination request and the Draft Aquatic Resources Delineation Map (Sheet 1) were prepared in compliance with the Corps' 2016 Minimum Standards for Acceptance of Aquatic Resources Delineation Reports (Corps 2016a) and the 2016 Updated Map and Drawing Standards for the South Pacific Division Regulatory Program (Corps 2016b) and will be submitted to the Corps concurrently for confirmation.

4.4 Special-Status Plant Surveys

Special-status plant surveys were conducted on the project site (Figure 3) by M&A biologists Mr. Jasper and Ms. Owens on February 13, 2023, by Ms. Lynch and Ms. Owens on April 26, 2023 and by Ms. Owens and Ms. McNamara on May 23 and July 14, 2023. M&A's special-status plant surveys were appropriately timed for the special-status plant species known from the region with potential to occur on the project site. Surveys followed the USFWS (1996, 2000), CDFW (2018), and CNPS (2001) published survey guidelines. During the surveys, all areas of the project site were examined by walking systematic transects through potential habitat, and by closely examining any existing microhabitats that could support special-status plants. Nearly all plant species found on the project site were identified to species. All plants were identified to the level required to determine their rarity status using standard references such as The Jepson Manual, Second Edition (Baldwin 2012).

5. RESULTS OF RESEARCH AND PROJECT SITE ANALYSES

5.1 Topography and Hydrology

The property was previously developed and contains a combination of natural slopes and draws as well as flat, graded areas in the central part of the site where the site was terraced to accommodate the residential and outbuildings associated with the former Busk Estate. As presented in the Slope Analysis Exhibit (Attachment A), approximately 11.29 acres of the roughly 30.1-acre project site has slopes less than 30 percent, and 18.99 acres have slopes between 30 and 100 percent. Elevations range between approximately 810 feet above sea level (ABSL) on the east edge of the project site to 375 feet ABSL where Kortum Canyon Road exits the project site to the north.

The hydrology of the site has been significantly altered by the previous development and landscaping associated with the Busk Estate. The project site is crisscrossed by a disjointed network of pipes and rubber tubing installed when the property functioned as the Busk Estate that daylight in scattered locations throughout the project site and currently directs overland flows off adjacent hill slopes.

As things stand today, there are two distinct flow patterns on the project site (Figure 3). The western half of the project site receives flows from higher elevation slopes to the southwest. These flows are directed into the disjointed network of pipes that seems to follow the natural topography of the site, associated with draws/ravines, near the site's northwestern corner flowing underground at some points and daylighting in various locations out of culverts and drain boxes for short segments (Sheet 1). All flows in this area, both wetlands/other waters and piped runoff, leave the site near the northwest corner and enter the City of Calistoga's storm drain system, eventually reaching the Napa River north of the project site.

The eastern half of the project site also receives flows from higher elevation slopes to the south and a few seasonal wetlands have developed on the flat, graded pads/terraces. Otherwise, overland flows are conveyed via a combination of aboveground and underground piping/rubber tubing that direct flow toward the west side of Kortum Canyon Road, and then to the storm drain system at Kortum Canyon Road and Foothill Boulevard, eventually reaching the Napa River.

5.2 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 list of wildlife species observed on the project site. Nomenclature for wildlife follows the CDFW's *Complete List of Amphibian, Reptile, Bird, and Mammal Species in California* (2016) and any changes made to species nomenclature as published in scientific journals since the publication of the CDFW's list.

5.2.1 Anthropogenic Communities/Ruderal Herbaceous

The center of the site was previously developed as the Busk Estate, which originally contained over 15 buildings and structures and were later removed. These areas remain unvegetated and primarily consist of gravel-impregnated building pads with compacted soils and ruderal vegetation, but include scattered remnant landscaping between the graded terraces/pads comprised of ornamental species such as Lily-of-the-Nile (*Agapanthus orientalis*), prickly pear (*Opuntia* sp.), American century plant (*Agave americana*), golden bamboo (*Phyllostachys aurea*), heavenly bamboo (*Nandina domestica*), oleander (*Nerium oleander*), photinia (*Photinia serratifolia*), New Zealand cabbage tree (*Cordyline australis*), giant magnolia (*Magnolia grandiflora*), and olive (*Olea europaea*) as well as non-native weedy shrub species such as French broom (*Genista monspessulana*) which have colonized the area.

Scattered assemblages of ruderal (weedy) herbaceous species that occur on and adjacent to the graded pads include non-native grass species such as slender oats (*Avena barbata*), soft chess (*Bromus hordeaceus*), ripgut brome (*Bromus diandrus*), Mediterranean brome (*Bromus madritensis* ssp. *madritensis*), hare barley (*Hordeum murinum* ssp. *leporinum*), velvet grass (*Holcus lanatus*), rattlesnake grass (*Briza maxima*), perennial ryegrass (*Festuca perennis*), air grass (*Aira caryophyllea*), and nit grass (*Gastridium phleoides*) as well as non-native forbs. These non-native forb species include tall sock destroyer (*Torilis arvensis*), stinkwort (*Dittrichia graveolens*), California bur clover (*Medicago polymorpha*), bindweed (*Convolvulus arvensis*), sheep sorrel (*Rumex acetosella*), Bermuda buttercup (*Oxalis pes-caprae*) and yellow star thistle

(*Centaurea solstitialis*) as well as vetch (*Vicia benghalensis, V. hirsuta* and *V. sativa*) and geranium (*Geranium dissectum, G. molle* and *G. robertianum*).

Anthropogenic and ruderal herbaceous habitats typically provide suitable environments for common animals that are adapted to living in association with humans. Common wildlife species associated with ruderal communities include raccoon (*Procyon lotor*), Botta's pocket gopher, western fence lizard (*Sceloporus occidentalis*), American crow (*Corvus brachyrhynchos*), European starling (*Sturnus vulgaris*), house sparrow (*Passer domesticus*), and house finch (*Haemorhous mexicanus*).

5.2.2 Upland Douglas Fir Forest

Upland Douglas fir forest is a tall, mixed-age forest dominated by Douglas Fir (*Pseudotsuga menziesii* var. *menziesii*). On the project site, Douglas-fir is growing in association with Coast Redwood (*Sequoia sempervirens*), and a subcanopy is dominated by widespread growth of tan oak (*Notholithocarpus densiflorus* var. *densiflorus*), growing in association with madrone (*Arbutus menziesii*) and California bay (*Umbellularia californica*) trees. There is virtually no shrub layer or herbaceous layer due to the dense canopy and thick layer of duff except in the few open niches along Kortum Canyon Road. Species observed in these openings include shrub species such as wood rose (*Rosa gymnocarpa*), hazelnut (*Corylus cornuta*), spicebush (*Calycanthus occidentalis*), thimbleberry (*Rubus parviflorus*), Himalayan blackberry (*Rubus armeniacus*) and French broom as well as herbaceous species such as milkmaids (*Cardamine californica*), Miner's lettuce (*Claytonia perfoliata*), hounds tongue (*Cynoglossum grande*), carpet bugle (*Ajuga reptans*), yerba de selva (*Whipplea modesta*), false Solomon's seal (*Maianthemum racemosum*) and starflower (*Lysimachia latifolia*) as well as fern species including sword fern (*Polystichum munitum*), giant chain fern (*Woodwardia fimbriata*) and wood fern (*Dryopteris arguta*). The area of the project site just west of Kortum Canyon Road contains the steepest slopes onsite (slopes steeper than 30%) and the densest canopy (~60% closed or greater.) Few of the trees observed could be considered "old growth" due to their smaller size and stature. Mature Douglas firs onsite ranged from 14 to 20 inches in diameter at breast height (dbh)

Douglas fir seeds provide food for a number of small mammals, including chipmunks, mice, shrews, and western grey squirrels. Many songbirds eat the seeds right out of the cone. Bird species typical of this habitat include Pacific-slope flycatcher (*Empidonax difficilis*), chestnut-backed chickadee (*Poecile rufescens*), golden-crowned kinglet (*Regulus satrapa*), Hutton's vireo (*Vireo huttoni*), hermit warbler (*Setophaga occidentalis*), and varied thrush (*Ixoreus naevius*). Typical mammals include fisher, deer mouse, western red-backed vole, and western grey squirrel.

5.2.3 Mixed Evergreen Forest

Mixed evergreen forest is the dominant community on the steeper slopes surrounding the gravel-impregnated building pads at the center of the project site. This community is dominated by broadleaved trees, often with taller conifers interspersed, forming a relatively closed canopy. Most species are sclerophyllous, but some winter-deciduous species also occur. The overstory is comprised of an even mix of coast live oak (*Quercus agrifolia*), valley oak (*Quercus lobata*) and

Douglas fir growing association with California bay, madrone, tan oak, black oak (*Quercus kelloggii*) and deodar cedar (*Cedrus deodara*) which has naturalized on the project site. The canopy is moderately closed (~30% to 50%) with the denser canopy occurring where Douglas fir and tan oak are more dominant. The understory varies depending on canopy closure.

On the slopes north of the graded pads, the understory is nearly a monoculture of French broom with non-native grass and forb species only occurring within the few open niches whereas on the east-facing slopes, just west of Kortum Canyon Road, there is a fairly open shrub layer and diverse herb layer. The shrub layer includes native woody species like wood rose, poison oak (*Toxicodendron diversilobum*), toyon (*Heteromeles arbutifolia*), honeysuckle (*Lonicera hispidula*) and creeping snowberry as well as non-native species such as Himalayan blackberry and periwinkle (*Vinca major*). The herbaceous layer is dominated primarily by native grass and forb species including melic grass (*Melica torreyana and M. imperfecta*), purple needlegrass (*Stipa pulchra*), blue wildrye (*Elymus glaucus*), bedstraw (*Galium aparine, Galium murale*), hounds tongue, sanicle (*Sanicula bipinnata* and *S. crassicaulis*), California milkwort (*Rhinotropis californica*) and fairy bells (*Prosartes hookeri*) as well as non-native species such as bur-chervil (*Anthriscus caucalis*), dogtail grass (*Cynosurus echinatus*) and hare barley (*Hordeum murinum* ssp. *leporinum*).

Common wildlife species found in mixed evergreen forest habitats include: broad-footed mole (*Scapanus latimanus*), western gray squirrel (*Sciurus griseus*), Sonoma chipmunk (*Tamias sonomae*), Anna's Hummingbird (*Calypte anna*), Western Wood-peewee (*Contopus sordidulus*), Pacific-sloped Flycatcher (*Empidonax difficilis*), Downy Woodpecker (*Dryobates pubescens*), Northern Flicker (*Colaptes auratus*), Steller's Jay (*Cyanocitta stelleri*), Common Raven (*Corvus corax*), Chestnut-backed Chickadee (*Poecile rufescens*), White-breasted Nuthatch (*Sitta carolinensis*), Brown Creeper (*Certhia americana*), Spotted Towhee (*Pipilo maculatus*), Dark-eyed Junco (*Junco hyemalis*), Wilson's Warbler (*Wilsonia pusilla*), Yellow Warbler (*Dendroica petechia*), and Ash-throated Flycatcher (*Myiarchus cinerascens*).

5.2.4 MIXED OAK WOODLAND

Oak woodlands are a characteristic vegetational cover in the foothills and valleys of California. This plant community occurs at elevations from 196 to 2,296 feet above sea level where summers are warm and dry while winters are mild (Barbour et al., 2007) and is transitional between the grasslands of the hot dry valleys and the montane forests of moist cool uplands. In interior mountain ranges, oak woodlands grade into montane mixed coniferous forests. This habitat has an overstory tree canopy dominated by oaks (*Quercus* spp.) and an understory dominated by grasses and forbs. The most common woodland type consists of scattered trees and shrubs with an understory of annual grassland. Depending on the canopy density, shrubs of chaparral or coastal scrub communities may grow in canopy openings and underneath the trees (Holland & Keil 1995). The dominant oak species in the overstory varies and can occur in monospecific (of a single species) or mixed stands. In oak savanna, the tree canopy is less than 8% with most of the vegetative cover coming from an herbaceous understory, typically annual grassland (Sawyer and Keeler-Wolfe 2009).

The northwestern portion of the project site, near Lerner Drive, is dominated by mixed oak woodland. The overstory varies between a relatively closed canopy (~40% closed) to a relatively open one (~15% closed) and is comprised of a relatively even mix of coast live oak and valley oak growing association with other species including, blue oak (*Quercus douglasii*), black oak, tanbark oak (*Notholithocarpus densiflorus*) and California bay. The shrub layer onsite varies between a dense monoculture of French broom with some occurrences of Scotch broom (*Cytisus scoparius*) and a relatively open shrub layer comprised native species including toyon, green-leaf manzanita (*Arctostaphylos manzanita* ssp. *manzanita*), poison oak, sticky monkeyflower (*Diplacus aurantiacus*) and non-native species including European olive (*Olea europaea*) and broom. In more open areas with a relatively sparse shrub layer, the herbaceous layer was well-developed with a mix of native and non-native grass and forb species. Grass species observed in this plant community include purple needlegrass, blue wildrye, melic (*M. imperfecta* and *M. torreyana*), and secund bluegrass (*Poa secunda*) as well as non-native taxa such as Kentucky bluegrass (*Poa pratensis* ssp. *pratensis*) and a similar suite of non-native annual grass species found in ruderal herbaceous habitat. Native forb species observed in the herbaceous layer include blue dicks (*Dipterostemon capitatus* ssp. *capitatus*), hedge nettle (*Stachys ajugoides* and *S. rigida* var. *quercetorum*), blue-eyed grass (*Sisyrinchium bellum*), bicolored lupine (*Lupinus bicolor*), fairy lantern (*Calochortus amabilis*), mules ears (*Wyethia glabra*), clovers (*Trifolium hirtum, T. willdenovii, T. subterraneum, T. dubium* and *T. ciliolatum*), pearly everlasting (*Anaphalis margaritacea*), ground iris (*Iris microsiphon*) and sanicle (*Sanicula crassicaulis* and *S. bipinnata*) as well as non-native forb species including vetch (*Vicia benghalensis, V. hirsuta* and *V. sativa*), geranium (*Geranium dissectum, G. molle* and *G. robertianum*), Italian thistle (*Carduus pycnocephalus* ssp. *pycnocephalus*) and mustard (*Brassica nigra* and *Sinapis arvensis*) as well as vetch and geranium species.

Trees in the oak woodland plant community provide foraging, roosting, and nesting habitat for a large variety of wildlife species, including raptors such as the Great Horned Owl (*Bubo virginianus*), Red-shouldered Hawk (*Buteo lineatus*) and Red-tailed Hawk (*Buteo jamaicensis*). Common birds identified in the oak woodlands onsite include Nuttall's Woodpecker (*Picoides nuttallii*), Chestnut-backed Chickadee (*Poecile rufescens*), Orange-crowned Warbler (*Oreothlypis celata*), and Yellow-rumped Warbler (*Setophaga coronata*). Table 2 provides a complete list of wildlife species observed on the project site during M&A's site investigations.

5.2.5 Ephemeral and Intermittent Drainages and Riparian Woodland

There are several discontinuous drainage scours within the narrow draws/ravines in the steeper areas of the project site. These are features that may have flowed previously but now exhibit only sporadic evidence of scour and ephemeral flows due to the modified hydrology of the site including an overland and underground piping system historically installed. These ravines/draws, where the discontinuous ephemeral drainage scours occur, are characterized by a riparian overstory where the tree species characteristic of mixed oak woodland and/or mixed evergreen intergrade with riparian species including black oak, Oregon ash (*Fraxinus latifolia*), California buckeye (*Aesculus californica*), bigleaf maple (*Acer macrophyllum*) and California sycamore (*Platanus racemosa*). The understory in these drainages is largely comprised of bur-chervil, geranium (*G. dissectum*, and *G. robertianum*) and goose grass (*Galium aparine*), and assorted fern species including goldback fern (*Pentagramma triangularis*), California polypody

(*Polypodium californica*), maidenhair fern (*Adiantum jordanii*), sword fern and woodfern. Other species observed in these ephemeral scour segments include English ivy (*Hedera helix*), wild grape (*Vitis californica*), honeysuckle, Himalayan blackberry and periwinkle. There is one spring along/adjacent to Kortum Canyon Road. The Michele Caviglia Memorial Spring flows out of a pipe west of Kortum Canyon Road and into a bucket. The overflow runs down the west edge of Kortum Canyon Road on pavement where it eventually enters the City of Calistoga's storm drain system via drain inlet.

Riparian woodland is one of the most valuable wildlife habitats of temperate climates. The mixture of riparian tree species comprising the overstory such as maple, oak, sycamore and/or ash along with the dense cover of shrubby understory vegetation including Himalayan blackberry, snowberry, honey suckle, and poison oak, provides wildlife with many different food sources, nesting opportunities, and cover from predators. Wildlife observed in adjacent woodland and forest communities can also be expected to occur in the riparian woodland community due to its diverse plant composition, nesting, and foraging opportunities. Wildlife associated with riparian woodlands includes amphibians such as California slender salamander (*Batrachoseps attenuatus*), California toad (*Anaxyrus boreas halophilus*), and Sierran tree frog (*Pseudacris sierra*). Where there is perennial water, such as the onsite man-made seasonal pond, the non-native bullfrog (*Lithobates catesbeiana*) may also occur. Reptiles expected within the riparian community include western terrestrial garter snake (*Thamnophis elegans*), ring-neck snake (*Diadophis punctatus*), and common king snake (*Lampropeltis getula*). Common birds expected to hunt/forage or roost in riparian woodlands include Red-shouldered Hawk, Cooper's Hawk (*Accipiter cooperii*), Great horned Owl, Barn Owl (*Tyto alba*), Northern Flicker (*Colaptes aura*), Downy Woodpecker (*Picoides pubescens*), Acorn Woodpecker (*Melanerpes formicivorus*), Nuttall's Woodpecker (*Picoides nuttallii*), California Scrub-Jay (*Aphelocoma californica*), Steller's Jay (*Cyanocitta stelleri*), Oak Titmouse (*Baeolophus inornatus*), Yellow-rumped Warbler, Dark-eyed Junco (*Junco hyemalis*), California Towhee (*Pipilo crissalis*), and Chestnut-backed Chickadee (*Poecile rufescens*). Common mammals expected to use the riparian woodland for bedding areas, nesting, foraging, or as wildlife corridors include raccoon, striped skunk, Columbian black-tailed deer, Virginia opossum, and the introduced pests: Norway rat (*Rattus norvegicus*) and black rat (*Rattus rattus*).

This is merely a representative sample of the wildlife expected to occur in riparian habitats within 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 thousands of songbirds including Neotropical migrants would occur in riparian habitats.

5.2.6 SEASONAL WETLANDS AND POND

Seasonal wetlands are habitats that may appear dry in the summer and fall months but following the first winter rains become saturated or hold water for a period of several weeks to months at a time. Seasonal wetlands may remain inundated for a prolonged periods typically due to the presence of impervious soils and/or confining topography such as topographic low areas. Hydric soils are soils that are saturated, flooded, or ponded long enough during the growing season to develop anaerobic (absence of free oxygen) conditions within the upper part of the soil profile. Owing to soils with high clay content or that otherwise are mostly or partially impervious, any time depressional topography occurs or is created through human activities, such areas often trap

seasonal rainfall over short to long durations of the winter and spring. Such areas eventually are dominated by seasonal wetland plants and otherwise persist as seasonal wetlands.

There are several seasonal wetlands that have developed on the compacted terraces associated with the previous Busk Estate. These wetlands occur in slight topographic low areas, having developed primarily due to the exceedingly shallow soil profile associated with the terraces which remains saturated for sufficient duration for wetland characteristics to develop. These features are dominated by facultative vegetation, primarily Italian ryegrass (*Festuca perennis*) growing in association with Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*) and curly dock (*Rumex crispus*) as well as a mix of native and non-native facultative and hydrophytic (water-loving) associates including umbrella sedge (*Cyperus eragrostis*), slender rush (*Juncus tenuis*), toad rush (*Juncus bufonius*) and rabbit's foot grass (*Polypogon monspeliensis*). One wetland was mapped where Kortum Canyon Road enters the project site at the northern boundary, just west of the road. This area is essentially a roadside ditch where the City of Calistoga's storm drain system briefly daylights at a headwall and flows north offsite for approximately 200 feet before reentering the City's storm drain system via culvert. This wetland is dominated by a mix of hydrophytic and facultative species, primarily Himalayan blackberry, small-fruit bulrush (*Scirpus microcarpus*), and broad-leaved cattail (*Typha latifolia*).

There is a pond in the western central portion of the project site, that was likely constructed in a historic drainage/draw by widening/deepening the channel and then constructing a downslope berm to retain the water. At the time of M&A's site surveys, which was a year with above normal rainfall, this pond had standing water to a depth of approximately 24 inches in the spring months and by mid-July this pond was 85% dry. This pond has very steep sides and supports very little emergent vegetation excepting umbrella sedge, curly dock, and bulrush (*Bolboschoenus* sp.) The overstory associated with this feature was dominated primarily by Oregon ash growing in association with California sycamore and coast live oak with the bank dominated by non-native woody species such as French broom with native vines such as wild grape and honeysuckle also present. All areas mapped as wetlands were characterized by a dominance of hydrophytic vegetation and the adjacent upland areas were dominated by upland vegetation. Wetland boundaries were demarcated by the transition to upland vegetation, typical species include soft chess, geranium (*Geranium robertianum* and *G. dissectum*), slender oats, ripgut brome, and Mediterranean brome (*Bromus madritensis* ssp. *madritensis*) on the project site.

Seasonal wetlands provide wildlife with a seasonal water source that allows animals to drink and forage in the water during the winter and spring months. Amphibians such as the Sierran tree frog (*Pseudacris sierra*) and the California toad (*Anaxyrus boreas halophilus*) will lay their eggs in seasonal wetland habitats of sufficient depth and complete their life cycle in the wetlands. Invertebrates such as mayflies (Ephemeroptera), damselflies (Odonata), and predaceous diving beetles (Dytiscidae) are commonly associated with inundated seasonal wetland habitats and complete their life cycle in the wetlands.

5.3 Wildlife Corridors

Wildlife corridors are linear and/or regional habitats that provide connectivity to other natural vegetation communities within a landscape fractured by urbanization and other development. Wildlife corridors have several functions: 1) they provide avenues along which wide-ranging animals can travel, migrate, and breed, allowing genetic interchange to occur; 2) populations can move in response to environmental changes and natural disasters; and 3) individuals can recolonize habitats from which populations have been locally extirpated (Beier and Loe 1992). All three of these functions can be met if both regional and local wildlife corridors are accessible to wildlife. Regional wildlife corridors provide foraging, breeding, and retreat areas for migrating, dispersing, immigrating, and emigrating wildlife populations. Local wildlife corridors also provide access routes to food, cover, and water resources within restricted habitats.

The entire project site currently serves as a local corridor for terrestrial wildlife movement. Development of a portion of the site will force some local wildlife to move and find other suitable habitat to move through. However, the proposed project would not constitute a barrier to wildlife movement as the surrounding area provides ample forest and woodland habitats for wildlife to safely move through undetected to avoid predators.

6. SPECIAL-STATUS SPECIES

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 Game Code §2068);

- plants and animals that meet the definition of endangered, rare, or threatened under the CEQA (14 CCR §15380) that may include species not found on either CESA or FESA lists;

- plants occurring on Ranks 1A, 1B, 2A, 2B, 3, and 4 of the CNPS' electronic *Inventory* (CNPS 2001). The CDFW recognizes that Ranks 1A, 1B, 2A and 2B of the CNPS inventory contain plants that, in the majority of cases, would qualify for State listing, and the CDFW 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 (more on CNPS Rank species below);

- migratory nongame birds of management concern listed by the 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 CDFW (2023);

- animal species that are "fully protected" in California (Fish and Game Codes 3511, 4700, 5050, and 5515).

- bat species that are designated on the Western Bat Working Group's (WBWG) Regional Bat Species Priority Matrix as: "RED OR HIGH." This priority is justified by the WBWG as follows: "Based on available information on distribution, status, ecology, and known threats, this designation should result in these bat species being considered the highest priority for funding, planning, and conservation actions. Information about status and threats to most species could result in effective conservation actions being implemented should a commitment to management exist. These species are imperiled or are at high risk of imperilment."

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 CESA (§2050 of California Fish and Game 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 CDFW 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 federally-listed species), the CDFW 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. The Rank 1 and 2 species are defined below:

- Rank 1A: Presumed extinct in California;
- Rank 1B: Rare, threatened, or endangered in California and elsewhere;
- Rank 2A: Plants presumed extirpated in California, but more common elsewhere;
- Rank 2B: Rare, threatened, or endangered in California, but more common 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 (CESA) of the 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 reviewed by the CDFW and maintained on "watch lists."

Additionally, in 2006, the 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 (*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 (i.e., kept in captivity) at any time.

6.2 Potential Special-Status Plants on the Project Site

Figure 4 provides a graphical illustration of the closest known records for special-status plant species within 3 miles of the project site and helps readers visually understand the number of sensitive species that occur in the vicinity of the project site. No special-status plants had been mapped on or adjacent the project site prior to M&A's special-status plant surveys in 2023 (see below for more details). According to the CNPS' *Inventory* and the CDFW's CNDDB, a total of 21 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 serpentine grasslands, coastal prairie, vernal pools, wet meadows and seeps, none of which occur on the project site.

Formal special-status plant surveys were conducted on the project site by M&A biologists Mr. Jasper and Ms. Owens on February 13, 2023, by Ms. Lynch and Ms. Owens on April 26, 2023, and by Ms. Owens and Ms. McNamara on May 23 and July 14, 2023. **One special-status plant species, narrow-anthered brodiaea (*Brodiaea leptandra*) was observed onsite during M&A's 2023 surveys.** This species is discussed in further detail below.

6.2.1 NARROW-ANTHERED BRODIAEA

Narrow-anthered brodiaea (*Brodiaea leptandra*) is a CNPS Rank 1B.2 species. It has no state or federal status. Narrow-anthered brodiaea belongs to the Themidaceae (brodiaea) family. This species is a perennial herb that sprouts from a corm (an underground stem) and blooms as a scape (a bare, flower-bearing stem), growing 20-70 centimeters (8-30 inches) tall. It flowers between May and July and is found in broad-leaved upland forest, cismontane woodland, coniferous forest, valley and foothill grasslands, and chaparral habitats between 40-1,220 meters above sea level (130-4,000 feet). This species is threatened by development, foot traffic, and collecting.

Approximately 31 individuals of narrow-anthered brodiaea were observed under low to moderate cover of oak trees (*Q. lobata, Q. douglasii, and Q. agrifolia*) on the west side of the project site during appropriately timed surveys conducted by M&A in 2023. The distribution of this species on the project site is shown on Exhibit A. As narrow-anthered brodiaea has no state or federal status, impacts to this species are only considered significant pursuant to CEQA. *As such, pursuant to the CEQA, the proposed project will result in potentially significant impacts to this special-status plant species.* Mitigation may be implemented to reduce these impacts to levels regarded as less than significant pursuant to the CEQA. Please see the Impacts and Mitigations section below for further details.

6.3 Potential Special-Status Animals on the Project Site

Figure 5 provides a graphical illustration of the closest known records for special-status animal species within 3 miles of the project site and helps readers visually understand the number of sensitive species that occur in the vicinity of the project site. No special-status animal records have ever been mapped on or adjacent to the project site. However, a total of nine (9) special-status animal species are known to occur in the region (Table 4). Of these nine species, only one species has any possibility of occurring on the project site, pallid bat. This species is discussed below as well as five other special-status animal species which are discussed as well due to their sensitivity.

6.3.1 AMERICAN PEREGRINE FALCON

The American peregrine falcon (*Falco peregrinus anatum*) is a state fully protected species. It was delisted by the federal government in August 1999 and by the State of California in 2009 due to the recovery success of this species. It remains fully protected by the CDFW. In 1980, the peregrine falcon had fewer than 10 breeding pairs in the state of California (PFDB 1990). Brought to near extinction by the widespread use of the pesticide DDT (Hickey 1969), the peregrine falcon population has slowly been recovering in California and elsewhere due to legislation which banned the use of DDT in the United States (Kiff 1988). By 1990, the population in California had increased to over 100 breeding pairs (PFDB 1990). Reports from

1999 suggest that at least 1,650 peregrine breeding pairs exist in the U.S. and Canada (http://www.fws.gov/northdakotafieldoffice/endspecies/endangered_species_act_success_s.htm).

Peregrine falcons nest on coastal cliffs and isolated rocky cliffs of the coastal mountain ranges and Sierra Nevada Mountains of California. In addition to natural nesting sites, peregrine falcons will breed on man-made structures such as buildings and bridges. Peregrine falcon is a carnivorous species that preys primarily upon medium-sized birds which they catch in flight.

The closest documented nesting record to the project site and the only occurrence within 3 miles documents two adults and one young observed in May 2001, roughly 2.3 miles southeast of the project site (Occurrence #12). Neither the project site nor the surrounding area provides suitable nesting cliffs or tall buildings with unobstructed panoramic views that would provide suitable nesting substrate for this species. Therefore, *no impacts to this species are anticipated from this project.*

6.3.2 California Red-Legged Frog

The California red-legged frog (CRLF) (*Rana draytonii*) 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 (FESA). The California red-legged frog is also a California "species of special concern." On March 16, 2010, the USFWS issued the final designation for California red-legged frog Critical Habitat (USFWS 2010); **the project site is not within designated critical habitat** for this species (USFWS updated 2010) (Figure 6).

The California red-legged frog is typically found in ponds, slow-flowing portions of 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 CRLF 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 CRLF will be reduced in size or eliminated from ponds supporting non-native species such as bullfrog, 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 CRLF predators. However, the presence of these non-native species does not preclude the presence of the CRLF.

California red-legged frogs use both aquatic and upland habitats for migration and dispersal. The USFWS' *Recovery Plan for the California Red-Legged Frog* states that California red-legged 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 information presented in the USFWS' Recovery Plan was obtained in part from a publication by Bulger et al. (2003).

Bulger et al. (2003) studied 19 radio-tagged CRLF in Santa Cruz County and found that "*most migrating individuals moved to the nearest pond to breed, and to the nearest pond or stream after breeding. The three exceptions to this pattern all resided in the same pond (not used for breeding) during the summer and then migrated to breed in a pond 2800 m distant."* Bulger et al. (2003) further stated that that their data showed that *"there is a relatively small segment of the adult population that is liable to migrate in any given year, and that most adults are resident year around at favorable breeding sites."* Data on migration rates from this study indicate that *"more than 75% of the adult population is resident at permanent aquatic sites over the course of a year. Moreover, 90% of the radio-tagged frogs that were not migrating between aquatic sites remained within 60 meters of water at all times and the farthest any non-migrating frog moved from water was 130 meters."* For frogs that did migrate, Bulger et al. (2003) reported that *"most migrating frogs moved overland in approximately straight lines to target sites without apparent regard to vegetation type or topography."* Bulger et al. (2003) also states that *they did not locate individual frogs daily,* and that they "*do not have tightly bounded data on numbers of days spent moving versus resting".* Thus, to an extent, straight line migrations were determined by using departure and final resting/breeding locations.

Working in Point Reyes National Seashore on the coast of California, Fellers and Kleeman (2007) radio-tagged 115 CRLF in the greater Olema Valley [in Marin County] and determined that "*the median distance moved from breeding sites was 0 m, but for the 36 frogs that moved ≥ 30 m, the median was 150 m (range = 30-1400 m). In many cases, frogs almost certainly moved more than the straight-line distance between sites. This was confirmed with individuals that were located in transit. Presumed distance moved for those frogs that moved ≥ 30 m was 185 m (median, range = 30-1400 m).*"

As reported by Fellers and Kleeman (2007), migrations of CRLF that were radio-tagged to determine movements were conducted at study sites near the Pacific Ocean where summer fog and high relative humidity reduce the risk of desiccation for dispersing amphibians. Bulger et al. (2003) studies similarly were conducted near the Pacific Ocean where summer fog and relative humidity are much higher than in inland populations of the California red-legged frog. In locations that are characterized by hot and seasonally dry climates, desiccation mortality likely influences movements of the CRLF to a greater extent. Tatarian (2005) studied an inland population of CRLFs in eastern Contra Costa County where the climate is far drier than the coastal environment. Tatarian (2005) found that all movements of CRLF started after the first 0.5 cm of rain in the fall, with more terrestrial movements being made in the fall pre-breeding season (57%) than in the winter breeding season (32%) or spring post-breeding season (11%). Tatarian (2007) also found that California red-legged frogs moved greater average distances aquatically (84.6 m) than terrestrially (27.7 m). Greater terrestrial distances were moved in the pre-breeding season (35.2 m) than in the breeding season (15.5 m) or post-breeding season (16.3 m) with the majority of movements occurring for only one of the 3-4-day survey periods. The majority of frogs (57%) were position faithful within a pool, indicating they did not migrate at all. These data likely suggest that long forays across the landscape that occur by a small percentage of breeding frogs in coastal populations are less likely in dry inland locations where the threat of desiccation is much higher.

The only known CNDDB record of CRLF (Occurrence #1601) within 3 miles of the project site is a historic record for an adult female collected prior to 1915, mapped to the general location of the City of Calistoga, and presumed to be extirpated. The next closest extant record of CRLF (Occurrence #738) documents two juveniles observed in a roadside spring channel in April 1979 roughly 8.6 miles northeast of the project site. Since the maximum overland migration distance for CRLF is 3 miles, it would not be found at the man-made pond onsite.

Given that there are no current, extant records within 3 miles of the project site and the only habitat onsite is a man-made pond with no direct connectivity to any other aquatic resources, no impacts to this species are anticipated from this project.

6.3.3 Northern Spotted Owl

The Northern Spotted Owl (*Strix occidentalis caurina*) (NSO) was listed as a federally threatened species on June 26, 1990. This species' distribution is primarily limited to old-growth forests of the Pacific Northwest including California, Oregon, Washington, and southwest British Columbia. Because of the threatened status of this owl species, all proposed projects within the current and/or historic range of the spotted owl must address potential impacts to this species. This owl is also a California "species of special concern" which affords it protection pursuant to CEQA.

NSO is a medium-sized owl, typically 16.5 to 19 inches tall. Females are generally larger than males. It has an average wingspan of 48 inches and weighs between 17 and 34 ounces. Spotted owls have dark eyes, no ear-tufts, and are gray-brown in color with round to oval white spots on their head, back, and breast. Spotted owls are carnivorous, usually feeding on small prey including deer mice, woodrats (*Neotoma sp*), flying squirrels (*Glaucomys sabrinus*), and other small rodents. They will also prey on bats, birds, insects, and reptiles. They are primarily nocturnal but may also hunt during the day during nesting season. Spotted owls are monogamous, breed between February and April, and lay 1 or 2 eggs in March or April that hatch after 28 to 32 days. Young remain with their parents for 60 to 90 days (Gutiérrez et al., 2020).

The NSO roosts, forages, and breeds in old-growth/mature forests with many large trees, densely closed canopies (i.e., highly sheltered from sunlight), and high levels of habitat structure (i.e., the overall abundance and complexity of three-dimensional vegetation in a given habitat, such as that provided by trees and shrubs). NSO breeding habitat must contain naturally occurring nest sites, or suitable nests built by other animals, as this species does not build its own nest (Gutiérrez et al., 2020). Nest sites require as much as 85 to 95 percent canopy closure, and are typically placed in broken-topped trees, cavities, or on naturally occurring platforms. Tree species associated with NSO breeding habitat include western hemlock (*Tsuga heterophylla*), Douglas-fir **(***Pseudotsuga menziesii* var. *menziesii*), redwood (*Sequoia sempervirens*), ponderosa pine (*Pinus ponderosa*), and western red cedar (*Thuja plicata*), but may also include mixed evergreen, mixed conifer, pine-oak, and riparian forests.

The nearest positive observation of a breeding pair is from 2004 and is located roughly 0.8 mile southwest of the project site (Figure 7). The nearest activity center (established in 2011) is roughly 1.1 miles to the southwest. According to CDFW's Spotted Owl Observations Database (https://wildlife.ca.gov/Data/CNDDB/Spotted-Owl-FAQ), an activity center is described as

follows: "Activity Center: Spotted owls have been characterized as central-place foragers, where individuals forage over a wide area and subsequently return to a nest or roost location that is often centrally-located within the home range (Rosenberg and McKelvey 1999). Activity centers are a location or point within the core use area that represent this central location. Nest sites are typically used to identify activity centers, or in cases where nests have not been identified, breeding season roost sites or areas of concentrated nighttime detections may be used to identify activity centers (U.S. Fish and Wildlife Service 2011)." No suitable mature, old growth forest habitat is present on the project site (Figure 3). The largest trees observed on the project site's forested areas are roughly 15 to 20 inches dbh at maximum, which is on the smaller side for this cavity-nesting owl. Also, where these trees grow, the forest lacks structure; that is, the multi-layered canopies that this owl prefers are absent, and large cavities and/or snags required for NSO nesting are also not present.

N*o impacts to this species are anticipated given that there are no suitable nesting trees/nesting conditions as described above. Thus, impacts to NSO from project site development would be considered less than significant pursuant to CEQA.*

6.3.4 PALLID BAT

The pallid bat (*Antrozous pallidus*) is a California "species of special concern." It has no federal status. The "species of special concern" status designation does not provide any special legally mandated protection for this bat species. However, this status designation likely meets the definition of "rare" pursuant to the California Environmental Quality Act (CEQA) (14 CCR §15380(2)(A)). As such, potential impacts to this species should be considered during any CEQA review. Any unmitigated impacts to this species would likely be regarded as a significant adverse impact pursuant to CEQA (§21068).

This bat is a locally common species of low elevations in California. It occurs throughout California except for the high Sierra Nevada from Shasta to Kern Counties, and the northwestern corner of the state from Del Norte and western Siskiyou counties to northern Mendocino County. It occurs in a wide variety of habitats. It is most common in open, dry habitats with rocky areas for roosting. Day roosts are in caves, crevices, mines, and occasionally in hollow trees and buildings. Roost must protect bats from high temperatures. Night roosts may be in more open sites such as porches and open buildings. Pallid bat is a social species that roosts in groups of 20 or more.

The closest known CNDDB record for the pallid bat to the project site documents four adults observed via infrared camera and acoustic detection beneath a bridge over Napa River roughly 1.4 miles to the east (CNDDB Occurrence #436). All structures have been removed from the project site so there are no structures left on site that pallid bat could roost in. However, there are a limited number of mature, larger trees on the project site that could support large enough cavities to be suitable for pallid bat to roost in. Therefore, as this species could roost on the project site, *impacts to pallid bat are regarded as potentially significant pursuant to the CEQA.* Mitigation could be implemented to reduce these impacts to levels regarded as less than significant pursuant to the CEQA. See the Impacts and Mitigations Section for details.

6.3.5 TOWNSEND'S BIG-EARED BAT

Townsend's big-eared bat (*Corynorhinus townsendii townsendii*) is a California "species of special concern." As such, potential impacts to this bat species should be considered during any CEQA review. Any unmitigated impacts to this species would likely be regarded by the State resource agency (the CDFW) as a significant adverse impact pursuant to CEQA (§21068).

Once considered common in California, this species is found in all but subalpine and alpine habitats. Although these bats eat a variety of beetles and other soft-bodied insects, small moths make up the principal food source for this species. It is believed that roosting sites are the most important limited resource for Townsend's big-eared bat. This species requires caves, mines, tunnels, high buildings, or other human-made structures for roosting and for maternity sites, potentially using separate sites for day, night, hibernation, or maternity roosts. Although this species shows high site fidelity if undisturbed, it is extremely sensitive to disturbance of roosting sites (a single visit may result in abandonment of the roost).

The nearest CNDDB record of this species documents two adults captured in an abandoned building in the vicinity of Grant Avenue at Garnett Creek roughly one mile north of the project site (CNDDB Occurrence #623). Given that there are no existing abandoned buildings, caves, or mines on the project site, this species is not expected to occur on the project site. *Due to the lack of suitable roosting habitat on the project site, no impacts to this species from this project are anticipated.*

6.3.6 WESTERN POND TURTLE

The western pond turtle (*Emys marmorata*) is a California "species of special concern." In April of 2015, the USFWS issued a 90-day finding on a petition to list this species under FESA. In September 2016, M&A spoke with USFWS' Sacramento Field Office and was told that they "hope to finish a 12-month finding in the fiscal year of 2021" (G. Tarr, USFWS, Sacramento Field Office, pers. comm. with S. Lynch of M&A, September 21, 2016). The USFWS' website says that the listing status of this turtle is still "under review" (last checked August 30, 2023). Until the western pond turtle is formally listed it is not afforded the protections of FESA.

The western pond turtle is a habitat generalist, inhabiting a wide range of fresh and brackish, permanent, and intermittent water bodies from sea level to about 4,500 feet above sea level (USFWS 1992). Typically, this species is found in ponds, marshes, ditches, streams, and rivers that have rocky or muddy bottoms. This turtle is most often found in aquatic environments with plant communities dominated by watercress, cattail, and other aquatic vegetation. It is a truly aquatic turtle that usually only leaves the aquatic site to reproduce and to overwinter. Recent field work has demonstrated that western pond turtles may overwinter on land or in water or may remain active in water during the winter season; this pattern may vary considerably with latitude, water temperature, and habitat type and remains poorly understood (Jennings and Hayes 1994).

The western pond turtle also requires upland areas for burrowing habitat where it digs nests and buries its eggs. These nests can extend from 52 feet to 1,219 feet from watercourses (Jennings and Hayes 1992), however most pond turtles nest in uplands within 250 meters of water (Bury, unpublished). Upland nest sites are usually found in areas with sparse vegetation. Sunny, barren, and undisturbed (not disked) land provides optimal habitat, while shady riparian habitat and planted agricultural fields do not provide suitable habitat (op. cit.). Eggs are typically laid from

March to August (Zeiner et. al. 1988), with most eggs being laid in May and June. Hatchlings will stay in the nest until the following April (Bury, unpublished). Predators of juvenile pond turtles include the non-native bullfrog (*Lithobates catesbeiana*) and Centrarchid fish (sunfish). This turtle is most visible between April and July when it can be observed basking in the sun. In areas where the water is very warm during these months, however, it will bask in the warm water and will be more difficult to observe. It eats plants, insects, worms, fish, and carrion (Stebbins 2003).

The closest CNDDB occurrence of this species documents one adult observed basking and swimming in Napa River in Calistoga in June 2017 roughly 0.3 mile north of the project site (CNDDB Occurrence No. 455). Given that the closest record of this species is in the Napa River and the La Pradera ditch which are both north of Hwy 128 (a significant barrier to migration) and the project site, no impacts to this species are anticipated from the proposed project. While the seasonal man-made pond on the project site provides suitable habitat for this species, there is no migration pathway between the closest record and this feature or the project site uplands due to all waters on the project site entering the City's stormdrain system before flowing to the Napa River and Hwy 128 being a major migration barrier between the 2017 record and the project site. Any ponds to the south are more than 1,219 feet from the project site, which is outside the maximum migration distance for the species. ***No impacts to this species from the proposed project are anticipated.***

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 its relevance to the proposed project is discussed.

7.1 Federal Endangered Species Act

The 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 (ITP) through approval of a Habitat Conservation Plan (HCP).

In the case of saltwater fish and other marine organisms, the requirements of FESA are enforced by the 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 "reasonably certain to occur."

Section 9 applies to any person, corporation, federal agency, or any local or State agency. If "take" of a listed species (other than a plant species) is necessary to complete an otherwise lawful activity, this triggers the need to obtain an ITP 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 such as the Corps), or through Section 10 of FESA which requires preparation of an HCP (for State and local agencies, or individuals, and projects without a federal "nexus"; for example, projects that do not need a Corps permit).

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 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 USFWS and the federal agency contemplating a discretionary approval (that is, the federal "action 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 USFWS/NMFS is required. As part of the formal consultation, the USFWS/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 USFWS/NMFS prepares a Biological Opinion it will contain either a "jeopardy" or "non-jeopardy" decision. If the USFWS/NMFS concludes that a proposed project would result in adverse modification of critical habitat or would jeopardize the continued existence of a federally-listed species (that is, it will issue a jeopardy decision), the nexus federal agency would be most unlikely to authorize its discretionary permit. If the USFWS/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, and counties that are proposing a project that might result in incidental take, Section 10 provides the mechanism for obtaining that take authorization. Under Section 10 of FESA, for the applicant to obtain an ITP, the applicant is required to submit a "conservation plan" to the USFWS or NMFS that specifies the impacts that are likely to result to federally-listed species, and the measures the 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 the USFWS. Section 10(a)(2)(B) of FESA provides statutory criteria that must be satisfied before an ITP can be issued.

7.1.1 Responsible Agency

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

7.1.2 Applicability to the proposed project

The project site does not provide fisheries habitat and implementation of a RWQCB-approved Storm Water Management Plan will ensure that the project does not result in impacts to receiving waters where federally listed fish species could occur. Thus, the project would not result in impacts to federally-listed fish species. As such, consultation with the NMFS for the proposed project is not warranted.

While there are several, federally listed plant and wildlife species known to occur in the region of the project site, these species are not expected to occur on the project site or be impacted by the proposed development.

Formal special-special status plant surveys were conducted on the project site in 2023 by M&A. *No federally listed plant species were observed during appropriately timed surveys.*

While there are federally listed animal species that occur in the region, none are anticipated to occur on the project site or be impacted by the proposed project. The only known CNDDB record of CRLF within 3 miles of the project site is a historic record for an adult female collected

prior to 1915, mapped to the general location of the City of Calistoga, and presumed to be extirpated. The next closest extant record of CRLF documents two juveniles observed in a roadside spring channel in April 1979 roughly 8.6 miles northeast of the project site. Since the maximum overland migration distance for CRLF is 3 miles, it would not be found at the man-made pond onsite.

The nearest positive observation of an NSO breeding pair is from 2004 and is located roughly 0.8 mile southwest of the project site. The nearest activity center (established in 2011) is roughly 1.1 miles to the southwest. The nearest known northern spotted owl nest was found in 2006, roughly 1 mile south of the project site. However, there is no suitable mature, old growth forest habitat onsite. The largest trees observed on the project site are roughly 15 to 20 inches dbh at most, and the habitat also lacks the multi-layered canopies and large cavities and/or snags required for NSO nesting. Further, the proximity of development immediately adjacent to the north of this area makes it highly unlikely that this species would nest anywhere close to the project site.

As such, no impacts to federally listed plants or wildlife are anticipated from the proposed project.

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.).

7.2.1 Applicability to The Proposed Project

Raptors such as White-tailed Kite, Red-tailed Hawk, and Red-shouldered Hawk could nest on the project site. These raptors (birds of prey) would be protected by the Migratory Bird Treaty Act. Also, common songbirds and wading birds (mallards, for example) that could occur on the site would be protected pursuant to this Act. 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. 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 of potentially occurring species in the Impacts and Mitigations section below.

7.3 California Endangered Species Act

7.3.1 Section 2081 of the California Endangered Species Act

In 1984, the State legislated the CESA (Fish and Game 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), CDFW considerations pursuant to CESA are limited to those actions that would result in the direct take of a listed species.

If the CDFW determines that a proposed project could impact a State-listed threatened or endangered species, the CDFW 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 CDFW and/or USFWS (if it is a federally 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 Fish and Game Code would be necessary (versus a federal ITP for federally listed species). The CDFW will issue an ITP 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 an 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 CDFW 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 FESA, 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 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.

Fish and Game Code §2080.1 allows an applicant who has obtained a "non-jeopardy*"* federal Biological Opinion pursuant to Section 7 of the FESA, or who has received a federal 10(a) permit (federal ITP) pursuant to the FESA, to submit the federal opinion or permit to the CDFW for a determination as to whether the federal document is "consistent" with CESA. If after 30 days the CDFW determines that the federal ITP 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 CDFW 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 CESA permit under Section 2081(b). Section 2080.1 is of no use if an affected species is State-listed, but not federally listed.

State and federal ITPs 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 ITP(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 THE PROPOSED PROJECT

No State-listed plant or animal species have potential to occur on the project site or to be impacted by the proposed project (Tables 3 and 4, respectively).

7.4 California Fish and Game 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 and golden eagle, 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.

7.4.1 APPLICABILITY TO THE PROPOSED PROJECT

Raptors that could be impacted by the project include White-tailed Kite, Red-tailed Hawk, and Red-shouldered Hawk. These raptors and many common passerine birds could nest on the project site. Preconstruction nesting surveys would have to be conducted for nesting birds (including raptors) to ensure that there is no direct take of these birds, or their eggs or nests, as applicable, during the construction of the proposed project. Any active nests that are found during preconstruction surveys would have to be avoided by the proposed project. Suitable non-disturbance buffers would be established around nest sites until the nesting cycle is complete. More specifics on nesting bird surveys and protection buffers are provided below in the Impacts and Mitigations section.

7.5 City of Calistoga General Plan Open Space and Conservation Element

7.5.1 C. GOALS, OBJECTIVES, POLICIES AND ACTIONS

Conserve The Value and Function of Calistoga's Open Space as A Biological Resource

Objective OSC-1.1 Maintain biodiversity within the Planning Area with special emphasis on species that are sensitive, rare, declining, unique or represent valuable biological resources.

Policies

- **P1.1-1** When reviewing development proposals, the City should include assessment of impacts on both individual species and overall biodiversity within the Planning Area.
- **P1.1-2** Impacts to movement corridors that link wildlife habitat areas should be considered when reviewing development proposals. These corridors should be protected.
- **P1.1-3** The City should encourage efforts to identify and map biological resources on the gliderport property, which provides an important and unique habitat area within the city limits.
- **P1.1-4** The City shall explore the possibility of designating parcels as Natural Resource Preservation Areas in areas of the City known to contain sensitive and unique species, in order to protect these resources. Examples of such sensitive natural resource areas include the gliderport, Mount Washington, geothermal marshland areas and the Napa River corridor. Any such designation would respect property rights.

Actions

- **A1.1-1** Prepare and maintain an updated list of State and federal rare, threatened, and endangered species known or suspected to occur in the Planning Area, as well as special status or rare and endangered species identified by the California Department of Fish and Game and the California Native Plant Society. This list should be monitored and updated at least every two years.
- **A1.1-2** Develop and adopt guidelines establishing wildlife corridors, biological habitat preservation techniques, and wetlands restoration methods.
- **A1.1-3** Work with applicable agencies to ensure that biological resources are analyzed in local review of development proposals.
- **A1.1-4** Develop and adopt guidelines to enforce regulations concerning the protection of special status species known or suspected to occur in the Planning Area.

Applicability to the Proposed Project

This Biological Resources Constraints Analysis identifies biological resources on the project site and analyzes the potential effects of the proposed project on the project site. Vegetation communities on the project site have been assessed and are discussed in Section 5 of this report. Aside from short, discontinuous bands of riparian woodland associated with the potential other waters drainages and the man-made pond, none of these plant communities identified onsite are considered a CDFW sensitive natural community. Please note that any riparian woodland identified on the project site is negligible in acreage and not identified as a riparian corridor on

Figure OSC-1. However, there is significant oak woodland and mixed evergreen forest habitat on the project site which the City considers to be a moderately significant resource.[1]

M&A conducted a formal wetland delineation to examine potential Corps-regulated areas and/or all other areas that meet the definitions of wetlands/waters even if not within the Clean Water Act Section 404 jurisdiction of the Corps and a jurisdictional determination request and the Draft Aquatic Resources Delineation Map (Sheet 1) is being submitted concurrently to the Corps for confirmation. Approximately 0.13 acre of potential seasonal wetlands and 0.025 acre (378 linear feet) of potential other waters drainages have been mapped on the project site although these features are of overall low quality given the highly modified hydrology of the project site.

The project site currently functions as a local wildlife corridor only. However, the proposed project would not constitute a barrier to wildlife movement as the project footprint is essentially abutting existing development to the north, and wildlife would just move around the proposed development using the perimeter of the project site which is contiguous with the surrounding infrequent rural residences and heavily, wooded undeveloped property that occurs on the other three sides.

Special status plants and animals with potential to occur on the project site are discussed above in Section 6 which includes determinations of whether the project has potential for significant impacts to each species and/or their habitats that could occur onsite. See the Impacts and Mitigations section of this report for further detail.

Objective OSC-1.2 Minimize impacts to sensitive natural habitats including riparian forest and scrub, freshwater marsh associated with drainages and geothermal areas, oak woodland and savannah, and native grasslands.

Policies

- **P1.2-1** Policies of the Land Use Element concerning design and development considerations to protect natural resources in areas of ecological sensitivity such as Mount Washington and the gliderport shall be supported.
- **P1.2-2** Review new development and geothermal resource exploitation in order to ensure the maximum protection of native tree species, riparian vegetation, important concentrations of natural plants and important wildlife habitat.
- **P1.2-3** Prior to approving specific development plans on undeveloped parcels, biological and wetland assessments to determine the presence or absence of populations of special-status species, sensitive natural communities, and wetland resources shall be conducted. Assessments shall:
    - Be conducted by qualified specialists in botany, wildlife biology and wetland ecology.
    - Include, as necessary, detailed field surveys conducted during the appropriate time of the year to permit detection of sensitive resources.

[1] The entire project site is identified on Figure OSC-1 as "Woodland, Forest and Chaparral" which is considered a moderately significant resource under the City's General Plan.

- Produce mitigation plans for impacts to biological resources, as necessary. These mitigation plans should include wildlife preservation management plans, where necessary, including adequate mitigation for loss of wildlife habitat components that are critical to maintenance of special-status and other important species.

Actions

- **A1.2-1** Amend the requirements of the Hillside Development Ordinance to specifically include preservation of forest lands.
- **A1.2-2** Develop and adopt guidelines to enforce regulations concerning assessment and mitigation of impacts to sensitive biological resources caused by new development.

Applicability to the Proposed Project

This report has been prepared as a Biology section that is suitable for incorporation by the CEQA lead agency (in this case the City of Calistoga) into a CEQA review document such as a MND or an Environmental Impact Report. This document addresses potential impacts to species that would be defined as endangered or rare pursuant to Section 15380 of the CEQA. The analyses upon which this report is predicated includes biological reconnaissance surveys to assess potential suitable habitat for special-status plant and wildlife species, a formal wetland delineation and appropriately timed special-status plant surveys conducted in 2023, all conducted by M&A qualified botanists/biologists/wetland specialists.

Any proposed impacts to plant or wildlife species protected pursuant to the CEQA will be reduced to levels regarded as less than significant pursuant to the CEQA with incorporation of the mitigation measures listed in the Impacts and Mitigations section below.

Objective OSC-1.3 Conserve Calistoga's native trees and vegetation, which are important biological and aesthetic resources within the Planning Area.

Policy

- **P1.3-1** Continue to implement and enforce the provision of the Tree Preservation Ordinance, particularly with regard to preservation of native trees of significant size.

Actions

- **A1.3-1** Develop or adopt design guidelines that incorporate the specific requirements of the Tree Preservation Ordinance.
- **A1.3-2** Develop and adopt design guidelines for landscaping in new development that emphasize the use of native and drought-tolerant plant species to the extent possible.
- **A1.3-3** Continue to disseminate information to the public on the benefits of using native and drought tolerant plant species for both water conservation and native species preservation purposes.
- **A1.3-4** Consider implementation of a tree planting program to ensure the development and maintenance of an expanding "urban forest" in Calistoga.

Applicability to the Proposed Project
There are multiple native tree species on the project site including Douglas's fir, coast live oak, blue oak, and tanbark oak with a dbh greater than 6 inches, and multiple valley oaks with a dbh greater than 12 inches; these trees meet the City's definition of a "protected" tree. Prior to any impacts to trees onsite, the project proponent will have a tree survey performed by a Certified Arborist, prepare a Tree Preservation Plan, and obtain a Tree Removal/Disturbance Permit from the City of Calistoga. The project will do its best to preserve native trees onsite and those that cannot be preserved will be replanted in accordance with the City's Tree Ordinance. The Director of Public Works or their representative will determine the number of trees to be replanted. The proposed landscape plan will incorporate drought tolerant and/or native plant species into the landscape plan for the project to the greatest feasible extent. See the Impacts and Mitigation sections below for further details.

Objective OSC-1.4 Coordinate with other levels of government and interested agencies to preserve natural resources.

Policies

- **P1.4-1** The City shall support Napa County efforts to minimize the conversion of chaparral and forest to vineyards within the Planning Area. These include policies of the Napa County General Plan, such as enforcement of hardwood cutting criteria and preservation of Valley and Live Oak groves.
- **P1.4-2** The City shall encourage and support groups like the Land Trust of Napa County in their efforts to acquire and preserve natural resource open space.

Action

- **A1.4-1** Seek funding for open space acquisition from federal, state, and regional agencies.

Applicability to the Proposed Project
Areas outside the project development footprint will be preserved as Open Space and protected in perpetuity via deed restriction as feasible.

Objective OSC-1.5 Prevent the degradation and loss of Calistoga's wetland areas.

Policies

- **P1.5-1** The City shall protect and enhance the freshwater marsh areas associated with Calistoga's geothermal resources that provide habitat for endemic and unique species.
- **P1.5-2** The City shall recognize Calistoga's network of drainage ditches as important wetland resource in the Planning Area. Drainage ways shall be considered when evaluating impacts of proposed development on wetland resources.

- **P1.5-3** Wetlands shall be protected and enhanced. Adequate mitigation shall be provided where complete avoidance is not feasible.
- **P1.5-4** Any proposed modifications to wetlands shall require appropriate coordination with representatives of the California Department of Fish and Game (CDFG), and US Army Corps of Engineers (Corps) to ensure that the concerns and possible requirements of both agencies can be easily incorporated into the proposed plans.

Applicability to the Proposed Project

Approximately 0.13 acre of seasonal wetlands and 0.025 acre (378 linear feet) of potential other waters drainages that may be regarded waters of the U.S. and/or State have been mapped on the project site (Sheet 1).

Prior to impacting any waters of the U.S. or State on the project site, the Applicant will obtain all necessary permits/authorizations and implement appropriate mitigation as required by the federal and state agencies (i.e., Corps, RWQCB, and CDFW) and potential impacts will be minimized by the project to the extent possible. Impacts to waters of the U.S. and/or State can be reduced to less-than-significant levels through various means, including avoidance, minimization of impacts, and mitigation compensation. Impacts to waters of the U.S./State must be mitigated at a minimum 1:1 ratio or as otherwise determined by the Corps and/or the RWQCB at the time permits are issued for the proposed project. Mitigation is typically met through purchase of credits from a Corps (and RWQCB) approved wetlands conservation bank. Alternatively, for features such as other waters drainages, such a feature could be moved and reconstructed in kind or as otherwise determined by the Corps and/or the RWQCB. The quantity and nature of mitigation required will be based upon the Corps and RWQCB issuance of permits stating the extent to which waters of the U.S./State will be impacted and what mitigation ratio would apply to the project.

Objective OSC-2.1 Conserve riparian habitat associated with the Napa River and its tributary drainages.

Policies

- **P2.1-1** The City shall explore funding mechanisms to restore and enhance the Napa River edges, including sources such as:
    - Drinking Water, Clean Water, Watershed Protection and Flood Protection Bond Act, passed in 2000.
    - CALFED Bay-Delta grants
    - National Parks Service Rivers, Trails, and Conservation Assistance Program
    - California Forest Stewardship program
    - Urban Streams restoration grants
    - Urban Forestry Grants
- **P2.1-2** The City shall amend the Subdivision Ordinance to require any development that includes grading, dredging, or filling within the protective streamside buffer to include a riparian habitat management plan.

- **P2.1-3** All waterways shall be buffered to prevent development in riparian setback area and preserve the open space associated with rivers and streams in Calistoga.

Action

- **A2.1-1** Revise the Municipal Code so new development is required to maintain and enhance riparian setback areas, including planting and restoration of streamside vegetation, and implementation of erosion control measures where necessary.

Applicability to the Proposed Project

No impacts from the proposed project to any riparian habitat associated with Napa River or its tributaries are anticipated. The riparian habitat on the project site is limited to short, discontinuous bands along the potential other waters drainages due to the highly modified hydrology and ad hoc storm water system on the project site.

Objective OSC-2.2 Expand efforts to ensure that development does not harm the water quality of the Napa River and its tributary drainages.

Policy

- **P2.2-1** Require developments which would contribute to erosion and silt flows into watercourses to mitigate these impacts.

Actions

- **A2.2-1** Revise the Subdivision Ordinance and other Municipal Codes to incorporate alternative stormwater management policies that reduce the creation of impermeable surfaces in new development. Examples of such policies include:
    - Ensuring separation of new driveways from the storm drain system (requiring sheet flow to terminate on turf or groundcover).
    - Modifying minor and local street design standards to reduce road and sidewalk width requirements and eliminate curb-gutter requirements.
    - Requiring the use of vegetative swales (biofilters).
    - Requiring detention/infiltration basins.
- **A2.2-2** Amend the Zoning Ordinance to include the following provisions:
    - Require development proposed in erosion-prone areas to include a soils and hydrological analysis for environmental review.
    - Permit and encourage the use of gravel and other permeable materials in parking lots, where feasible, especially in outlying spaces used only during peak demand or for occasional use.

Applicability to the Proposed Project

A Stormwater Pollution Prevention Plan (SWPPP) and Stormwater Control Plan (SWCP) will detail Best Management Practices (BMPs) for erosion control and the prevention of pollutant discharges both during and after construction, respectively, that will minimize the discharge of pollutants to the greatest extent practicable and protect downstream receiving waters, which is the Napa River.

7.6 City of Calistoga Tree Ordinance

19.01.040 Requirements

A. Protected Trees

1. Any tree with a dbh greater than 12 inches.
2. Any native oak with a dbh greater than six inches.
3. Any Valley Oak, seedling, sapling, or older.
4. Any tree bearing an active nest of a fully protected bird (see Fish and Game Code Section 3511).

B. Temporary Protective Fencing

Before the start of any on-site work, every protected tree within or immediately adjacent to the area of on-site work shall have installed around it a temporary protective fence at the outer margin of the root protection zone. It shall remain in place and be properly maintained for the duration of all work at the site.

C. Restrictions

Any disturbances including, but not limited to the following, which might cause harm to a protected tree, are strictly prohibited within the root protection zone of that tree, unless otherwise exempted (see below) or unless a tree permit is obtained that specifically grants such an exemption:

1. Removal of a protected tree;
2. Removal of any heritage tree without specific approval of the Council;
3. Removing, moving, or failing to install and maintain proper temporary protective fencing prior to completion of all on-site work;
4. Parking or use of vehicles, equipment, or of other devices which might compact the soil;
5. Storage or use of construction materials;
6. Storage or use of chemicals or of other substances which might be harmful to trees;
7. Pruning shall be performed in accordance with WCISA standards;
8. Trenching, including that required for an irrigation system;
9. Any permanent or temporary structures;
10. Grading, cutting, filling, or changing the natural grade in any way;
11. Installation of irrigation system;
12. Irrigation within 10 feet of a trunk of a tree;
13. Attaching signs, posters, notices, wires, or devices of any sort to the trunk;
14. Covering with any substance impermeable to air and rain water, such as asphalt, concrete, plastic, etc.;
15. Burning, open fires, open flames;
16. Chemical toilets;
17. Compaction of the soil;
18. Cleaning or washing any tools or equipment such as paint brushes, masonry trowels, cement mixtures, etc.;
19. Installation of a septic system and/or leach lines immediately up-grade from a protected tree;

20. Installation of a drainage barrier such as a swimming pool, retaining wall, etc., immediately down-grade from a protected tree.

D. Exemptions

The following trees are exempted from the provisions of this chapter:

1. Trees judged in an emergency to be hazardous to life or property by responsible members of police, fire, or public works departmental representatives.

2. Trees subject to trimming, bracing, and cutting back by any public utility.

E. Tree Protection Plan

In order to protect trees and to increase their chances for natural survival, a tree protection plan shall be required as part of all applications for discretionary projects and/or permits under any other part of this code. A reasonable effort shall be made to design the plan such that negative impacts on protected trees are minimized.

1. The tree protection plan shall be designed or reviewed by and shall have the approval of an arborist who is hired by the City and paid for by the applicant. The City-hired arborist shall certify that the plan complies with this chapter, protecting and preserving protected trees from indiscriminate or unnecessary removal.

2. The tree protection plan shall include:

a. A simple plot plan showing the location, estimated drip line, size, species, and condition of each protected tree whose root protection zone falls within 20 feet of all proposed activities, including trenching, grading, landscaping, parking of vehicles, and any similar activity.

b. A list of measures that will be taken to ensure the protection and survival of the trees, with special attention given to the restrictions listed in subsection (C) of this section.

c. A landscaping plan, if appropriate, that will not adversely affect said trees.

3. In case of disagreement with the certifying arborist, the Director of Public Works may seek a second, qualified arborist's opinion, who may reject or modify the tree protection plan.

F. Tree Removal/Disturbance Permit Required

1. Tree removal/disturbance permits may be issued for trees meeting the following criteria:

a. Any tree authorized for removal by other ordinances or laws of the City, County, State, or United States of America;

b. Any tree determined by an arborist to be hazardous, dead, or hopelessly diseased;

c. Trees in commercial orchards and tree farms;

d. Where the continued existence of the tree will produce economic hardship (such as a tree growing against a foundation).

2. All applications directed to the City, including those relating to construction on a vacant lot, construction of an additional structure, changes in height or footprint of an existing structure, replacement or relocation of any utility or driveway or removal/disturbance permits, shall be referred to the Department of Public Works for determination of whether a tree permit is needed before a building permit is issued.

3. All applications directed to the City for tree permits, including those relating to construction on a vacant lot, construction of an additional structure, changes in height or footprint of an existing structure, replacement or relocation of any utility or driveway or removal/disturbance permits, shall include the following:

a. A simple plot plan as that required for a tree protection plan, if not already submitted for the project in question, showing all pertinent information such as topography around and near the tree(s) in question, grade changes, etc.
b. Nature of the disturbance or removal applied for
c. A statement of the reason and necessity for disturbing or removing the tree(s) in question.
d. Written consent of the owner of the land.
e. The diameter, drip line parameters, species, condition, and number of trees on parcel. The plot plan shall also include the location, specifies, and size of desired replacement trees;
f. Documentation, including the opinion of an arborist may, at the discretion of the Director of Public Works, be an additional requirement of the application.

4. Replacement/restoration shall conform to the guidelines established by the Public Works Department.

Applicability to the proposed project

Prior to any impacts to trees onsite, the project proponent will have a tree survey performed by a Certified Arborist, prepare a Tree Preservation Plan, and obtain a Tree Removal/Disturbance Permit from the City of Calistoga. The project will do its best to preserve native trees onsite and those that cannot be preserved will be replanted in accordance with the City of Calistoga's Tree Ordinance. The Director of Public Works or their representative will determine the number of trees to be replanted. See the Impacts and Mitigation sections below for further details.

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

This section presents an overview of the criteria used by the Corps, the RWQCB, the State Water Resources Control Board (SWRCB), and the CDFW 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

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 (CWA) (33 U.S.C. 1344), the 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.

On November 18, 2021, the U.S. EPA and the Corps (the "agencies") announced the signing of a proposed rule to revise the definition of "waters of the United States." On December 7, 2021, the proposed rule was published in the Federal Register. The intent of the proposed rule was to put back into place the pre-2015 definition of "waters of the United States," (40 CFR 230.3(s)). The

final Revised Definition of "Waters of the United States" was published in the Federal Register on January 18, 2023 (33 C.F.R. § 328.3) (the final "Rule"). The 2023 Rule conforms to the limits expressed in the 2006 Rapanos decision, in the plurality opinion and Justice Kennedy's concurring opinion. Additionally, the agencies are in receipt of the U.S. Supreme Court's May 25, 2023 decision in the case of *Sackett v. Environmental Protection Agency* (herein *"Sackett* case"). In light of this decision, the agencies will interpret the phrase "waters of the United States" consistent with the Supreme Court's decision in the *Sackett* case. In *Sackett*, the Supreme Court adopted the Rapanos plurality's test for adjacent wetlands: only those wetlands with a continuous surface connection to other regulated waters, such that the two are indistinguishable. The 2023 Rule was amended on September 8, 2023, to incorporate the findings of the *Sackett* case. In *Sackett*, the Supreme Court adopted the Rapanos plurality's test for adjacent wetlands: only those wetlands with a continuous surface connection to other regulated waters, such that the two are indistinguishable.

In the published 2023 rule from the Federal Register, as amended on September 8, 2023, the term "waters of the United States" is defined as:

1. Waters which are:
    i. currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
    ii. The territorial seas; or
    iii. Interstate waters;
2. Impoundments of waters otherwise defined as waters of the United States under the definition, other than impoundments of waters identified under paragraph (a)(5) of this section;
3. Tributaries of waters identified in (a)(1) or (2), (4), or (6) of this section that are relatively permanent, standing or continuously flowing bodies of water;
4. Wetlands adjacent to the following waters:
    i. Waters identified in paragraph (a)(1) of this section; or
    ii. Relatively permanent, standing or continuously flowing bodies of water identified in paragraph (a)(2) or (a)(3) of this section and with a continuous surface connection to those waters;
5. Intrastate lakes and ponds not identified in paragraphs (a)(1) through (4) of this section that are relatively permanent, standing or continuously flowing bodies of water with a continuous surface connection to the waters identified in paragraph (a)(1) or (a)(3) of this section.

Waters of the United States do not include:

1. Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR 423.11(m) which also meet the criteria of this definition) are not waters of the United States.

2. Prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other Federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA.

3. Ditches (including roadside ditches) excavated wholly in and draining only dry land and that do not carry a relatively permanent flow of water.

4. Artificially irrigated areas that would revert to dry land if the irrigation ceased;

5. Artificial lakes or ponds created by excavating or diking dry land to collect and retain water and which are used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing;

6. Artificial reflecting or swimming pools or other small ornamental bodies of water created by excavating or diking dry land to retain water for primarily aesthetic reasons;

7. Waterfilled depressions created in dry land incidental to construction activity and pits excavated in dry land for the purpose of obtaining fill, sand, or gravel unless and until the construction or excavation operation is abandoned and the resulting body of water meets the definition of waters of the United States; and

8. Swales and erosional features (e.g., gullies, small washes) characterized by low volume, infrequent, or short duration flow.

Definitions:

1. *Wetlands* means those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

2. *Adjacent* means having a continuous surface connection.

3. *High tide line* means the line of intersection of the land with the water's surface at the maximum height reached by a rising tide. The high tide line may be determined, in the absence of actual data, by a line of oil or scum along shore objects, a more or less continuous deposit of fine shell or debris on the foreshore or berm, other physical markings or characteristics, vegetation lines, tidal gages, or other suitable means that delineate the general height reached by a rising tide. The line encompasses spring high tides and other high tides that occur with periodic frequency but does not include storm surges in which there is a departure from the normal or predicted reach of the tide due to the piling up of water against a coast by strong winds such as those accompanying a hurricane or other intense storm.

4. *Ordinary high water mark* means that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the

presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

5. *Tidal waters* means those waters that rise and fall in a predictable and measurable rhythm or cycle due to the gravitational pulls of the moon and sun. Tidal waters end where the rise and fall of the water surface can no longer be practically measured in a predictable rhythm due to masking by hydrologic, wind, or other effects.

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 ("OHWM"), 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.

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.

The Agencies jointly prepared an Instructional Guidebook to aid Corps field staff in completing the "Approved Jurisdictional Determination Form," taking into account judicial decisions (i.e., Rapanos v. United States, Carabell v. U.S. Army Corps of Engineers and U.S. v. Riverside Bayview Homes, Solid Waste Agency of Northern Cook County v. U.S. Army Corps of

Engineers (SWANCC)) interpreting the extent of Corps jurisdiction, and is intended to be used as the U.S. Army Corps of Engineers Regulatory National Standard Operating Procedures for conducting an approved jurisdictional determination. This Approved Jurisdictional Determination Form will be updated to reflect the 2023 Rule.

8.2 Permitting Corps Jurisdictional Areas

To remain in compliance with Section 404 of the CWA, 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, 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., seasonal wetlands would be filled, mitigation would include seasonal wetland mitigation), 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 if the Permittee is responsible for the mitigation. In some cases, the Corps allows "out-of-kind" mitigation if the compensation site has greater value than the impacted site. 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.

8.2.1 Applicability to the Proposed Project

On April 26, May 23, 2023 and July 14, 2023, M&A biologists Ms. Christy Owens, Ms. Sarah Lynch and/or Ms. Sarah McNamara visited the project site to examine potential Corps-regulated areas and/or all other areas that meet the definitions of wetlands/waters even if not within the Clean Water Act Section 404 jurisdiction of the Corps. M&A used the Corps' 1987 Wetlands Delineation Manual and the Corps' 2008 Regional Supplement for the Arid West Region to conduct this wetland delineation (Corps 2008). A jurisdictional determination request and the Draft Aquatic Resources Delineation Map (Sheet 1) were prepared in compliance with the Corps' 2016 Minimum Standards for Acceptance of Aquatic Resources Delineation Reports (Corps 2016a) and the 2016 Updated Map and Drawing Standards for the South Pacific Division Regulatory Program (Corps 2016b) and will be submitted to the Corps concurrently for confirmation.

Approximately 0.13 acre of seasonal wetlands and 0.025 acre (378 linear feet) of potential other waters drainages have been mapped on the project site (Sheet 1). These drainage scours and seasonal wetlands may fall under the Corps' jurisdiction as waters of the U.S. pursuant to Section 404 of the Clean Water Act depending on how the amended 2023 rule is applied in practice. All features flow north via the ad-hoc storm drain system on the project site and enter the City's storm drain system on the northern project site boundary which then flows north to the Napa River. According to the current site plans (Attachment B), there may be permanent impacts to waters of the U.S. from the proposed project.

Impacts to waters of the U.S./State must be mitigated at a minimum 1:1 ratio or as otherwise determined by the Corps. Mitigation is typically met through purchase of credits from a Corps (and RWQCB) approved wetlands conservation bank. Alternatively, for features such as potential other waters drainages, such a feature could be moved and reconstructed in kind or as otherwise determined by the Corps (and RWQCB). Please review the Impact Assessment and Proposed Mitigation Measures section below for further details.

8.3 California Regional Water Quality Control Board (RWQCB)

8.3.1 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 U.S., 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 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 CEQA, the CESA, 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. Where a project will result in dredge or fill of non-federal waters of the State, the RWQCB will authorize those fills through waste discharge requirements issued under the Porter Cologne Water Quality Control Act.

On April 2, 2019, the SWRCB adopted a State-level definition of "wetlands,' which definition is broader than the federal definition in that unvegetated areas may be considered a wetland water of the State. As a part of the same policy, the SWRCB adopted permit procedures and standards governing the discharge of dredged or fill material into wetlands and other waters of the State. The policy includes, among other things, requirements for analyses to identify the least environmentally damaging practicable alternative (LEDPA) and compensatory mitigation standards including a minimum 1:1 ratio for wetlands and streams, and full functional replacement of all waters on top of this minimum where applicable. The policy, which will govern both Section 401 certifications and Waste Discharge Requirements (WDRs), is scheduled to become effective nine months following the completion of review by the California Office of Administrative Law.

8.3.1.1 Applicability to the Proposed Project

Approximately 0.13 acre of seasonal wetlands and 0.025 acre (378 linear feet) of potential other waters drainages have been mapped on the project site (Sheet 1). These drainage scours and seasonal wetlands may fall under the Corps and/or RWQCB jurisdiction as waters of the U.S./State pursuant to Section 404 and Section 401 of the Clean Water Act depending on how the amended 2023 rule is applied in practice.

Since the RWQCB does not have a formal method for technically defining what constitutes waters of the State, M&A expects that the RWQCB should remain consistent with the Corps' determination of wetland and non-wetland waters. As such, any potential wetland or waters areas that were delineated using the Corps methods for consideration by the RWQCB and the SWRCB and shown on the Aquatic Resources Map regardless of whether a feature is Corps jurisdictional or not. Any Section 404 permit authorized by the Corps for the project 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).

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

(CWA). Under the current site plan (Attachment B), there will be impacts to potential waters of the U.S. and/or State from the proposed project.

Please refer to the Corps Applicability Section above for likely mitigation requirements for impacts to RWQCB regulated wetlands. 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. Please note that any isolated wetlands or other waters that are determined to be on the project site that are not regulated by the Corps pursuant to the SWANCC decision, would still be regulated by the RWQCB pursuant to the Porter-Cologne Water Quality Control Act (see below).

8.3.2 PORTER-COLOGNE WATER QUALITY CONTROL ACT

The uncontrolled discharge of pollutants into impaired water bodies is considered particularly detrimental. According to the EPA, **sediment is one of the most widespread pollutants contaminating U.S. rivers and streams**. Sediment runoff from construction sites is 10 to 20 times greater than from agricultural lands and 1,000 to 2,000 times greater than from forest lands (EPA 2005). Consequently, the discharge of stormwater from large construction sites is regulated by the RWQCB under the Clean Water Act and California's 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 (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 (BMPs) for 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.

8.3.2.1 Applicability to The Proposed Project

If the Corps determines there are waters of the U.S. and/or isolated waters of the State, the RWQCB would have jurisdiction over these areas pursuant to the Porter-Cologne Water Quality Control Act. Since any "threat" to water quality could conceivably be regulated pursuant to the Porter-Cologne Water Quality Control Act, care will be required when constructing the proposed project to be sure that adequate pre-and post-construction BMPs are incorporated into the project implementation plans. Please note that any isolated wetlands defined by the Corps on the project site, that are not regulated by the Corps pursuant to the SWANCC decision, would still be regulated by the RWQCB pursuant to the Porter-Cologne Water Quality Control Act.

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 Calistoga 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.

Since any "threat" to water quality could conceivably be regulated by the RWQCB or the SWRCB pursuant to the Porter-Cologne Water Quality Control Act, care will be required when constructing the proposed project to be sure that adequate pre and post construction BMPs are incorporated into the project implementation plans. Such BMPs, if correctly installed and maintained, are likely to keep the project in compliance with the Porter-Cologne Water Quality Control Act.

All stormwater runoff currently flows into the City of Calistoga's existing storm drain system. It is expected that project development will utilize/connect to, in part, the existing storm drain system to which all stormwater flows currently; however, pre-treatment of stormwater in accordance with Provision C.3 (discussed in the sections above) prior to release into the City's stormdrain system will be necessary. The project site does not have a complete stormwater drainage system. Therefore, when the project site is developed, a SWCP will need to be implemented to address stormwater run-off and treatment. A stormwater management system (and sewer system) will likely need to be installed into the street rights-of-way and tied into existing infrastructure. Additionally, during project construction it is important for the project proponent to have the components of a SWPPP and a SWCP in place; these documents are typically prepared by the project civil engineer. Please see the sections above for further discussion on site disturbance (grading) and stormwater management.

9. STATE WATER RESOURCES CONTROL BOARD (SWRCB)/RWQCB – STORMWATER MANAGEMENT

9.1 Construction General Permit

While federal Clean Water Act NPDES regulations allow two permitting options for construction related stormwater discharges (individual permits and General Permits), the SWRCB has elected to adopt only one statewide Construction 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 Construction 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 SWPPP which specifies 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. Achieve quantitatively-defined (i.e., numeric) pollutant-specific discharge standards, and conduct much more rigorous monitoring based on the project's projected risk level.

3. Perform inspections of all BMPs.

This Construction General Permit is implemented and enforced by the nine RWQCBs. It is also enforceable through citizens' suits and represents a dramatic shift in the SWRCB's approach to regulating new and redevelopment sites, imposing new affirmative duties and fixed standards on builders and developers.

Types of Construction Activity Covered by the Construction General Permit

- clearing,
- grading,
- 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.

The 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 SWRCB-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 RWQCB.

Improving the quality of site runoff is necessary to improve water quality in impaired and threatened streams, rivers, and lakes (that is, water bodies on the EPA's 303(d) list). The RWQCB prioritizes the water bodies on the 303(d) list according to potential impacts to beneficial uses. Beneficial uses can include a wide range of uses, such as nautical navigation; wildlife habitat; fish spawning and migration; commercial fishing, including shellfish harvesting; recreation, including swimming, surfing, fishing, boating, beachcombing, and more; water supply for domestic consumption or industrial processes; and groundwater recharge, among other uses. The State is required to develop action plans and establish Total Maximum Daily Loads (TMDLs) to improve water quality within these impaired water bodies. The TMDL is the quantity of a pollutant that can be safely assimilated by a water body without violating the applicable water quality standards.

Pursuant to the Clean Water Act, the RWQCB regulates construction discharges under the NPDES. The project sponsor of construction or other activities that disturb more than one acre of land must obtain coverage under NPDES Construction General Permit Order 2009-0009-DWQ, administered by the RWQCB[2].

9.1.1 Applicability to The Proposed Project

To obtain coverage under the SWRCB administered Construction General Permit, the applicant (typically through its civil engineer) must electronically file a number of permit-related compliance documents (Permit Registration Documents (PRDs), including a Notice of Intent (NOI), a risk assessment, site map, signed certification, SWPPP, Notice of Termination (NOT), NAL exceedance reports, and other site-specific PRDs that may be required. The PRDs must be prepared by a Qualified SWPPP Practitioner (QSP) or Qualified SWPPP Developer (QSD) and filed by a Legally Responsible Person (LRP) on the RWQCB's Stormwater Multi-Application Report Tracking System (SMARTS). (QSDs are typically civil engineers, professional hydrologists, engineering geologists, or landscape architects). Once filed, these documents become immediately available to the public for review and comment. At a minimum, the SWPPP should identify BMPs for implementation during project construction that are in accordance with the applicable guidance and procedures contained in the California Stormwater Quality Association's *California Stormwater Best Management Practices Handbook* (2015).

[2] CGP Order 2009-0009-DWQ remains in effect but has been amended by CGP Order 2009-0014-DWQ, effective February 14, 2011, and CGP Order 2009-0016-DWQ, effective July 17, 2012. The first amendment merely provided additional clarification to Order 2009-0009-DWQ, while Order 2009-0016-DWQ eliminated numeric effluent limits on pH and turbidity (except in the case of active treatment systems), in response to a legal challenge to the original order.

9.2 RWQCB Municipal Stormwater Permitting Programs

The federal Clean Water Act was amended in 1987 to address urban stormwater runoff pollution of the nation's waters. In 1990, the EPA promulgated rules establishing Phase 1 of the NPDES stormwater program. The Phase 1 program for Municipal Separate Storm Sewer System (MS4s) requires operators that serve populations of 100,000 or greater to implement a stormwater management program to control polluted discharges from these MS4s. While Phase 1 of the municipal stormwater program has focused on large urban areas, Phase 2 of the municipal stormwater program was promulgated by the EPA for smaller urban areas including non-traditional Small MS4s, which are governmental facilities such as military bases, public campuses, and prison and hospital complexes.

MS4 permits require the discharger (or dischargers that are permitted by the MS4 permittees) to develop and implement a 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 which 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.

9.2.1 NPDES C.3 Requirements

The NPDES C.3 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. 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 that are typically addressed through acquisition of coverage under the SWRCB administered Construction General Permit. The C.3 requirements are typically required to be implemented by MS4 permittees (and their constituencies).

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 SWMPs required as a condition of the municipal NPDES permits identify control measures (i.e., 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.

9.2.1.1 Applicability to the Proposed Project

The SWRCB issued county-wide municipal stormwater permits in the early 1990s to operators of MS4s. On November 19, 2015, the SWRCB re-issued these county-wide municipal stormwater permits as one Municipal Regional Stormwater NPDES Permit to regulate stormwater discharges from municipalities and local agencies. Permittees in the San Francisco Bay area are included in a Municipal Regional Permit (MRP), issued to 76 cities, counties and flood control districts in 2009 and revised in 2015. Each of the Permittees must file an Annual Report that is comprised of three parts: regional, countywide, and individual. Some requirements of the MRP are being implemented by the Bay Area Stormwater Management Agencies Association (BASMAA) on behalf of all the MRP Permittees. Other elements are being implemented collaboratively by the Permittees through their respective countywide programs. As such, BASMAA and the countywide programs have submitted Annual Report elements on the regional and countywide collaborative tasks, respectively, on behalf of the MRP Permittees and the individual MRP Permittees have also submitted Annual Report elements on the Permit Provisions they have implemented individually.

It is the applicant's responsibility to ensure that the project civil engineer prepares all required Stormwater Planning documents for submittal to the lead agency (in this case, the City of Calistoga) to comply with its MS4 permit requirements. In addition, if the project includes a requirement to obtain a Clean Water Act Section 401 permit from the RWQCB, the SWMP (or equivalent plan) must be submitted to the RWQCB with the application package submitted for acquisition of a Section 401 permit (aka "water quality certification"). Under the currently proposed project design, the project proponent will need to apply for a Section 401 permit.

10. CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE PROTECTIONS

10.1 Section 1602 of California Fish and Game Code

Pursuant to Section 1602 of the California Fish and Game Code: "An entity may not substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake, unless all of the following occur:

(1) CDFW receives written notification regarding the activity in the manner prescribed by CDFW. The notification shall include, but is not limited to, all of the following:
   (A) A detailed description of the project's location and a map.
   (B) The name, if any, of the river, stream, or lake affected.
   (C) A detailed project description, including, but not limited to, construction plans and drawings, if applicable.
   (D) A copy of any document prepared pursuant to Division 13 (commencing with Section 21000) of the Public Resources Code.
   (E) A copy of any other applicable local, State, or federal permit or agreement already issued.
   (F) Any other information required by CDFW (Fish & Game Code 2014).

Please see Section 1602 of the current California Fish and Game Code for further details.

Please also note that while not stated in the regulations above, the CDFW typically considers its jurisdiction to include riparian vegetation (that is, the trees and bushes growing along the stream). Thus, any proposed activity in a natural stream channel that would substantially adversely affect an existing fish and/or wildlife resource, including its riparian vegetation, would require entering into a Streambed Alteration Agreement (SBAA) with the CDFW prior to commencing with work in the stream. However, prior to authorizing such permits, the CDFW 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.

10.1.1 Applicability to The Proposed Project

The ephemeral and discontinuous drainages on the project site all eventually drain into the City of Calistoga's storm drain system and then into Napa River. Several of these drainages exhibit bed, bank, and channel and therefore would likely be regulated by the CDFW. Any proposed changes/modifications to these drainage features onsite or riparian vegetation associated with them would require entering into an SBAA with the CDFW.

11. 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" (MND) 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.

11.1 Applicability to the Proposed Project

This report has been prepared as a Biology section that is suitable for incorporation by the CEQA lead agency (in this case the City of Calistoga) into a CEQA review document such as a MND or an Environmental Impact Report. This document addresses potential impacts to species that would be defined as endangered or rare pursuant to Section 15380 of the CEQA.

12. IMPACTS ANALYSIS

Below the criteria used in assessing impacts to Biological Resources is presented.

12.1 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.

12.1.1 THRESHOLDS OF SIGNIFICANCE

12.1.1.1 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 CDFW or USFWS.

- 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 CDFW or USFWS.

- Have a substantial adverse effect on state or federally protected "wetlands" (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 HCP, Natural Community Conservation Plan, or other approved local, regional, or State HCP.

12.1.1.2 Waters of the United States and State.

Pursuant to Section 404 of the Clean Water Act (33 U.S.C. 1344), the Corps regulates the discharge of dredged or fill material into waters of the U.S., 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.

12.1.1.3 Stream Channels

Pursuant to Section 1602 of the California Fish and Game Code, the CDFW regulates activities that divert, obstruct, or alter stream flow, or substantially modify the bed, channel, or bank of a stream which the CDFW 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.

13. IMPACT ASSESSMENT AND PROPOSED MITIGATION

In this section we discuss potential impacts to sensitive biological resources including special-status plant and animal species and waters of the U.S. and 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 Kortum ranch Subdivision Tentative Map prepared by Adobe Associates, Inc. on July 6, 2022 (Attachment B).

Appendix G – Checklist Items are listed below. Where there would be significant impacts to checklist categories, these impacts and required mitigation measures are fully discussed in the sections below.

Would the Proposed Project 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 CDFW or USFWS?

Yes. The proposed project may impact special-status plants, specifically narrow-anthered California brodiaea, nesting birds and raptors, and pallid bat as well as other bat species. See the impacts and mitigations detailed below.

Would the Proposed Project 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 CDFW or USFWS?

Yes, the proposed project would impact riparian habitat that is under the jurisdiction of CDFW pursuant to Section 1602 of California Fish and Game Code as well as natural communities, as identified by the CDFW and USFWS. See the impacts and mitigations detailed below.

Would the Proposed Project have a substantial adverse effect on state or federally protected "wetlands" (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Yes. The proposed project will impact federally and state regulated waters as depicted in the Preliminary Jurisdictional Map to be submitted to the Corps (Sheet 1). See the impacts and mitigations detailed below.

Would the Proposed Project 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?

No. The Proposed Project would not adversely impact or interfere with wildlife movement corridors.

Would the Proposed Project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Yes, there is a City of Calistoga tree ordinance and tree removal must be addressed. See the impacts and mitigations detailed below. There are no other local policies or ordinances with which this project would conflict.

Would the Proposed Project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

No, there are no Habitat Conservation Plans or Natural Community Conservation Plans in force in Napa County.

13.1 Impact BIO-1. Development of the Project May Have a Significant Adverse Effect on Narrow-anthered California Brodiaea (Potentially Significant).

Special-status plant surveys were conducted of the project site site by M&A biologists, Mr. Jasper and Ms. Owens on February 13, 2023, by Ms. Lynch and Ms. Owens on April 26, 2023, and by Ms. Owens and Ms. McNamara on May 23 and July 14, 2023. Surveys followed the USFWS (1996, 2002), CDFW (2018), and CNPS (2001) published survey guidelines.

During these protocol level surveys, only one special status plant was identified onsite: narrow-anthered California brodiaea (*Brodiaea leptandra*). Narrow-anthered California brodiaea (*Brodiaea leptandra*) is a CNPS Rank 1B.2 species. It has no state or federal status under FESA or CESA. In July 2023, M&A botanists identified a population of approximately 31 individuals of this this species growing under low to moderate cover of oak trees (*Q. lobata, Q. douglasii and Q. agrifolia*) on the west side of the project site. The distribution of this species on the project site is shown on Exhibit A.

Impacts to special-status plants from the proposed project would be **potentially significant pursuant to CEQA.** This impact could be mitigated to a level considered less than significant with implementation of Mitigation Measure BIO-1 below.

13.2 Mitigation Measure BIO-1. For Impacts to Special-Status Plants

Only one special-status plant has been identified on the project site. If feasible, project development plans shall consider avoidance to the extent practicable. If avoidance is not practicable while otherwise obtaining the project's objectives, then other suitable measures and mitigation shall be implemented. This would entail the development of a mitigation plan in consultation with CDFW personnel and submitted to the City of Calistoga for review and approval prior to the issuance of grading permits. As narrow-anthered brodiaea is a CNPS Rank 1B.2 species but is not otherwise protected pursuant to State or federal regulations, prior to

construction within the project area, a qualified botanist should collect the seeds, propagules, and topsoils, or other part of the plant (i.e., corms) that would ensure successful replanting of the population elsewhere. The seeds, propagules, or other plantable portions of all plants should be collected at the appropriate time of the year. Half of the propagules collected should be appropriately stored in long-term storage (for example, at California Academy of Sciences). The other half of the seeds, propagules, or other plantable portion of all plants should be planted at the appropriate time of year (late-fall months) in an area of the subject property or off-site, protected property that will not be impacted by the project (if the project has a designated off-site mitigation site for impacts on other special-status species, the plants can be seeded on the mitigation site). This area should be fenced with permanent fencing (for example, chain link fencing) to ensure protection of the species. The applicant should hire a qualified biologist to conduct annual monitoring surveys of the transplanted plant population for a five-year period and should prepare annual monitoring reports reporting the success or failure of the transplanting effort. These reports should be submitted to the City of Calistoga and any other appropriate resource agency (i.e., CDFW) no later than December 1st each monitoring year.

In lieu of the above prescribed mitigation, as allowed in writing by the City of Calistoga (for CEQA protected species only) and/or the CDFW (for CEQA), mitigation requirements may be satisfied via the purchase of qualified mitigation credits or the preservation of offsite habitat. ***Implementation of these mitigation measures would reduce impacts to special-status plant species to a level regarded as less than significant pursuant to CEQA.***

13.3 Impact BIO-2 Development of The Project Would Have a Potentially Significant Adverse Impact on Nesting Birds (Potentially Significant)

Common raptors such as Red-tailed Hawk, Sharp-shinned Hawk (*Accipiter striatus*), Cooper's Hawk, and Red-shouldered Hawk are all known from the area and could nest on the project site. Common songbirds (passerine birds) could also nest on the project site. All of these birds are protected under the Migratory Bird Treaty Act (50 CFR 10.13) and their eggs and young are protected under California Fish and Game Code Sections 3503, 3503.5. Any project-related impacts to these species would be considered a significant adverse impact. Potential impacts to these species from the proposed project include disturbance to nesting birds and possibly death of adults and/or young. In the absence of survey results, it must be concluded that impacts to nesting raptors, songbirds, and wading birds from the proposed project would be **potentially significant pursuant to CEQA.** This impact could be mitigated to a level considered less than significant with implementation of Mitigation Measure BIO-2 below.

13.4 Mitigation Measure BIO-2. Nesting Birds

To avoid impacts to nesting birds, a preconstruction nesting bird survey should be conducted within 15 days prior to construction work or tree removal if this work would start between February 1st and August 31st. The nesting bird survey should include an examination of all trees onsite and within 200 feet of the entire project site (i.e., within a zone of influence of nesting birds), not just trees slated for removal. The zone of influence includes those areas outside the project site where birds could be disturbed by earth-moving vibrations and/or other construction-related noise.

If birds are identified nesting on or within the zone of influence of the construction project, a qualified biologist should establish a temporary protective nest buffer around the nest(s). The nest buffer should be staked with orange construction fencing. The buffer must be of sufficient size to protect the nesting site from construction-related disturbance and should be established by a qualified ornithologist or biologist with extensive experience working with nesting birds near and on construction sites. Typically, adequate nesting buffers are 50 feet from the nest site or nest tree dripline for small birds and up to 300 feet for sensitive nesting birds that include several raptor species known from the region of the project site but that are not expected to occur on the project site. Upon completion of nesting surveys, if nesting birds are identified on or within a zone of influence of the project site, a qualified ornithologist/biologist that frequently works with nesting birds should prescribe adequate nesting buffers to protect the nesting birds from harm while the project is constructed.

No construction or earth-moving activity should occur within any established nest protection buffer prior to September 1 unless it is determined by a qualified ornithologist/biologist that the young have fledged (that is, left the nest) and have attained sufficient flight skills to avoid project construction zones, or that the nesting cycle is otherwise completed. In the region of the project site, most passerine species complete nesting by mid-July. This date can be significantly earlier or later and would have to be determined by the qualified biologist. At the end of the nesting cycle, and fledging from the nest by its occupants, as determined by a qualified biologist, temporary nesting buffers may be removed, and construction may commence in established nesting buffers without further regard for the nest site. ***Implementation of these mitigation measures would reduce impacts to nesting birds to a level regarded as less than significant pursuant to CEQA.***

13.5 Impact BIO-3. Bats –Tree Removal and Site Development May Have a Potentially Significant Impact on Pallid Bat and Other Bat Species (Potentially Significant)

The trees onsite may provide roosting and maternity habitat for the pallid bat among other bat species. Pallid bat is designated by the State as a "species of special concern." Additionally, all bats, regardless of special-status, are protected against take. California Fish and Game Code Section 4150 prohibits the take of all bat species. California Fish and Game Code Section 4150, part A states "A mammal occurring naturally in California that is not a game mammal, fully protected mammal, or fur-bearing mammal (i.e., a mammal trapped for its fur), is a non-game mammal. A non-game mammal may not be taken or possessed except as provided in this code or in accordance with regulations adopted by the commission." Potential impacts to bats from the proposed project include loss of maternity and/or roosting habitat, death of individual adult bats and/or young. Thus, impacts to pallid bat and other bat species would be considered **potentially significant pursuant to CEQA**. This impact could be mitigated to a level considered less than significant with implementation of the Mitigation Measure below.

13.6 Mitigation Measure BIO-3. Bats

In order to avoid impacts to roosting pallid bat or other bat species, tree removal should only be conducted during seasonal periods of bat activity: between August 31 and October 15, when bats would be able to fly and feed independently, or between March 1 and April 1st to avoid hibernating bats, and prior to the formation of maternity colonies. Then a qualified biologist, one

with at least two years of experience surveying for bats, should do preconstruction surveys for roosting bats within 14 days of starting work. If the qualified biologist finds evidence of bat presence during the surveys, then he/she should develop a plan for removal and exclusion, in conjunction with the CDFW.

If tree removal must occur outside of the seasonal activity periods mentioned above (i.e., between October 16 and February 28/29, or between April 2 and August 30), then a qualified biologist, one with at least two years of experience surveying for bats, should do preconstruction surveys within 14 days of starting work. If roosts are found, a determination should be made whether there are young. If a maternity site is found, impacts to the maternity site will be avoided by establishment of a non-disturbance buffer until the young have reached independence. The size of the buffer zone should be determined by the qualified bat biologist at the time of the surveys. If the qualified biologist finds evidence of bat presence during the surveys, then he/she should develop a plan for removal and exclusion, when there are not dependent young present, in conjunction with the CDFW.

As any impacts to roosting bats and maternity sites would be temporary only, preconstruction surveys and, as necessary, avoidance buffers for maternity hibernacula/young and/or the development and implementation of a removal and exclusion plan would serve to adequately avoid/minimize any impacts to bat species. The table below summarizes required actions depending on time of year.

Time Periods	**Bat Activity/Non-Activity Period**	**Mitigation Measures**
January 1 – Feb. 28/29	Hibernation	For tree or building removal: A qualified biologist shall complete preconstruction surveys within 14 days prior to starting work to check for hibernating bats. If the qualified biologist finds evidence of bat presence during the surveys, then he/she shall develop a plan for removal and exclusion in conjunction with the CDFW.
March 1 – April 1	Seasonal Bat Activity (after hibernation and prior to maternity)	For tree or building removal: A qualified biologist shall complete preconstruction surveys for roosting bats within 14 days prior to starting work. If the qualified biologist finds evidence of bat presence during the surveys, then he/she shall develop a plan for removal and exclusion, in conjunction with the CDFW.
April 2 – August 30	Maternity Time	For tree or building removal: A qualified biologist shall complete preconstruction surveys within 14 days prior to starting work to check for maternity sites. **If a maternity site is found, impacts to the maternity site will be avoided by establishment of a non-disturbance buffer until the young have reached independence.** The size of the buffer zone shall be determined by the qualified bat biologist at the time of the surveys. Once young have reached independence, the biologist should develop a plan for bat removal and exclusion in conjunction with CDFW.
August 31 – Oct. 15	Seasonal Bat Activity (when bats are able to fly and feed independently)	For tree or building removal: A qualified biologist shall complete preconstruction surveys for roosting bats within 14 days prior to starting work. If the qualified biologist finds evidence of bat presence during the surveys, then he/she shall develop a plan for removal and exclusion, in conjunction with the CDFW.

Oct. 16 – Dec. 31	Hibernation	For tree or building removal: A qualified biologist shall complete preconstruction surveys within 14 days prior to starting work to check for hibernating bats. If hibernation roosts are found, the qualified biologist shall develop a plan for removal and exclusion in conjunction with the CDFW.

Implementation of these mitigation measures would reduce impacts to pallid bat and other bat species to a level regarded as less than significant pursuant to CEQA.

13.7 Impact BIO-4. Development of the Proposed Project Would Have a Significant Impact on Waters of the United States and/or State (Significant)

The proposed project will result in impacts to areas that meet the criteria as wetlands and other waters that are within the Corps' and/or RWQCB jurisdiction pursuant to Sections 404 and/or 401 of the Clean Water Act, respectively, or the Porter-Cologne Water Quality Control Act. Areas subject to jurisdiction by one or both of these two agencies include the 0.13-acre of seasonal wetlands (W1 through W5 on Sheet 1) and the 0.025-acre (378 linear feet) of ephemeral, discontinuous drainages (OW 1 through OW 7 on Sheet 1) mapped on the project site. While the extent of impacts that would occur to "waters of the U.S. and/or State" from the proposed project is unknown at this writing and is pending Corps confirmation, such impacts would be regarded as **significant adverse impacts.** Such impacts could be mitigated to a level considered less than significant.

13.8 Mitigation Measure BIO-4. Impacts to Waters of the United States and/or State

Impacts to potential waters of the U.S. and/or State can be reduced to less-than-significant levels through various means, including avoidance, minimization of impacts, and mitigation compensation. An Aquatic Resources Delineation Map has been prepared and will be submitted to the Corps for confirmation. Once that map is confirmed, the full extent of waters of the U.S. will be known and the extent of impacts to regulated areas ascertained. Since at this time the RWQCB does not have a formal method for technically defining what constitutes waters of the State, M&A expects that the RWQCB should remain consistent with the Corps' determination.

Based on the Corps-confirmed map, jurisdictional waters will be avoided by the project where possible. Because full avoidance of waters of the U.S. and State is probably not possible, potential impacts should be minimized, to the extent feasible, through changes to project design. Impacts should also be minimized by the use of BMPs to protect preserved wetlands/other waters and ensure water quality in wetlands and other waters within the watershed. These practices can include installing orange construction fencing, silt fencing, hay or gravel wattles, and other protective measures.

For those wetland areas that cannot be avoided, permits from the Corps and/or RWQCB should be acquired that allows the removal of specified wetlands and other waters. Mitigation compensation wetlands should be enhanced/created to replace those wetlands permanently affected by project activities. If possible, wetlands will be created on-site and will resemble those wetlands affected by the project (known as in-kind replacement). If wetlands cannot be created in-kind and on-site, other alternatives will be explored with the regulatory agencies and

approvals will be obtained for creating compensation wetlands at an off-site location. Mitigation requirements for these impacts should be that all impacted wetlands are replaced at a minimum 1:1 ratio (for each square foot of impact, one square foot of wetland would be enhanced/created) or as otherwise specified in permitting conditions imposed by the Corps and RWQCB. Mitigation requirements would be based upon the existing conditions of the regulated area(s) impacted. If there are pool environments that would be impacted by the project, wetland plant/animal populations should be relocated from the pools that would be impacted to any re-created pools. Topsoils should be removed from pools that would be impacted, and placed into the re-created pools. These topsoils would contain a seed bank of the impacted pool plant species which would germinate with fall/winter hydration of the re-created pools. If there are impacts to wetlands, adequate compensation would include creating wetlands at a suitable location that:

- remain inundated or saturated for sufficient duration to support hydrophytic vegetation;

- exhibit plant and invertebrate species richness comparable to existing wetlands;

Minimum requirements for mitigating impacts to wetlands include:

- Replacement of impacted wetlands at a 1:1 ratio. For permanent wetland impacts, wetlands can be replaced at a minimum ratio of one acre created for each acre, or fraction thereof, permanently impacted.

- Creation of in perpetuity preservation. The Corps and other regulatory agencies generally require that wetlands not impacted by the proposed project and any new wetlands created to mitigate project impacts be set aside in perpetuity, either through deed restrictions or conservation easements.

- Establishment of a five-year monitoring program to monitor the progress of the wetland mitigation toward an established goal. At the end of each monitoring year, an annual report will be submitted to the Corps, RWQCB and other resource agencies that permitted the project. This report will document the hydrological and vegetative condition of the mitigation wetlands, and will recommend remedial measures as necessary to correct deficiencies.

- In lieu of creating compensation wetlands, as approved by the Corps and RWQCB, the applicant may purchase mitigation credits from an approved mitigation bank at a 1:1 ratio or as otherwise required by the Corps and RWQCB at the time permits are issued.

Aside from the minimum replacement ratio and in perpetuity protection, various regulatory agencies may provide additional conditions and stipulations for permits. Implementation of the measures just described above would reduce potentially significant impacts to waters of the U.S./State to a level considered less-than-significant pursuant to the CEQA. Any other conditions that are stipulated for wetland impacts by the Corps and/or RWQCB should also become conditions of project approval.

13.9 Impact BIO-5. Development of the Proposed Project Would Have a Significant Impact on CDFW Fish and Game Code Section 1602 Jurisdictional Areas (Significant)

Several of the ephemeral, discontinuous drainages on the project site exhibit bed, bank, and channel, and as such are within the CDFW's jurisdiction pursuant to Section 1602 of the California Fish and Game Code. The proposed project may result in impacts to one or more of these drainage features during construction of the proposed development, as illustrated on the site plans (Attachment B).

Impacts to Section 1602 jurisdictional areas would be regarded as **significant pursuant to the CEQA**. Mitigation could be implemented to reduce these impacts to levels regarded as less than significant pursuant to the CEQA.

13.10 Mitigation Measure BIO- 5. Mitigation for Significant Impacts to Section 1602 Jurisdictional Areas

The project proponent would be required to enter into a Streambed Alteration Agreement (SBAA) pursuant to Section 1602 with the CDFW prior to any proposed changes/modifications to the bed, bank, or channel of the discontinuous drainages (Sheet 1) or to any of associated riparian vegetation. Compensation for impacts to riparian vegetation would be implemented as negotiated with the CDFW in the SBAA process and as required by the SBAA executed for the project. Typically, the CDFW requires tree replacement at a 3:1 mitigation to impacts ratio for tree removal. Mitigation may be accomplished via one of the following:

a. Replacement/enhancement planting onsite along a constructed linear mitigation feature or along an existing onsite drainage;

b. Replacement/enhancement planting at an offsite location;

c. Purchase of riparian credits from an approved mitigation or conservation bank or as otherwise required/approved by the CDFW.

As necessary, a Tree Replacement and Riparian Enhancement Plan would be submitted to the CDFW (and RWQCB) for approval prior to implementation of the proposed project. The Tree Replacement and Riparian Enhancement Plan would present detailed specifications regarding the proposed plant palette, irrigation and maintenance of the plantings, success criteria, and would provide a maintenance and monitoring prescription consistent with CDFW (and RWQCB) requirements for impacts to riparian vegetation.

Implementation of these measures would reduce significant impacts to Section 1602 jurisdictional areas, including riparian habitat, to a level considered less-than-significant pursuant to the CEQA.

13.11 Impact BIO-6. Development of the Project Would Have a Significant Adverse Impact on Trees (Significant).

According to the City of Calistoga's Tree Ordinance, a "protected tree" is:

- Any tree with a dbh greater than 12 inches.
- Any native oak with a dbh greater than six inches.
- Any Valley Oak, seedling, sapling, or older.
- Any tree bearing an active nest of a fully protected bird (see Fish and Game Code Section 3511).

Though a tree survey of the project site has not yet been performed, M&A observed multiple native oak trees including coast live oak, blue oak and black oak with a dbh greater than 6 inches, multiple valley oak trees of varying dbh and non-oak species including Douglas's fir, tanbark oak and non-native trees with a dbh greater than 12 inches on the project site; these trees meet the City's definition of a "protected" tree. Any disturbances from the project which might cause harm to a protected tree, are strictly prohibited within the root protection zone of that tree, unless otherwise exempted or unless a tree permit is obtained that specifically grants such an exemption.

Hence, if impacts to any protected trees are proposed, a tree permit would be required for the project from the City of Calistoga, and mitigation in accordance with the City's Tree Ordinance (see Section 7.6.4 above for further details) would be required to offset any removed trees. In order to protect trees and to increase their chances for natural survival, a tree protection plan should be required as part of all applications for discretionary projects and/or permits under any other part of this code. A reasonable effort should be made to design the plan such that adverse impacts on protected trees are minimized. The trees onsite that are proposed for protection will need adequate fencing around the dripline (that is, the outer edge of the canopy) to ensure their root zone is protected during grading and to ensure their long-term survival. *Removal of a protected tree without a tree permit from the City of Calistoga is a significant adverse impact pursuant to CEQA*. This impact could be reduced to a less than significant level by incorporating Mitigation Measure BIO-6 below.

13.12 Mitigation BIO-6: Trees

Prior to any impacts to trees onsite, the project proponent will have a tree survey performed by a Certified Arborist, prepare a Tree Preservation Plan (as needed), and obtain a Tree Removal/Disturbance Permit from the City of Calistoga as required. The project will do its best to preserve native trees onsite and those that cannot be preserved will be replanted in accordance with the City of Calistoga's Tree Ordinance.

In order to mitigate the removal of protected trees, the applicant shall include the planting of appropriately sized native trees as part of the project's proposed landscaping, in conformance with the City of Calistoga's Tree Ordinance. If onsite planting is not feasible, the applicant may be allowed to pay an in-lieu fee, at the sole discretion of the City. All requirements and restrictions contained in Chapter 19.01 of the City's Municipal Code shall be complied with, including the incorporation of replacement trees for those trees slated for removal, protection of trees to remain around the project boundary, as well as any recommendations of the project arborist including those set forth in the Tree Preservation Plan.

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

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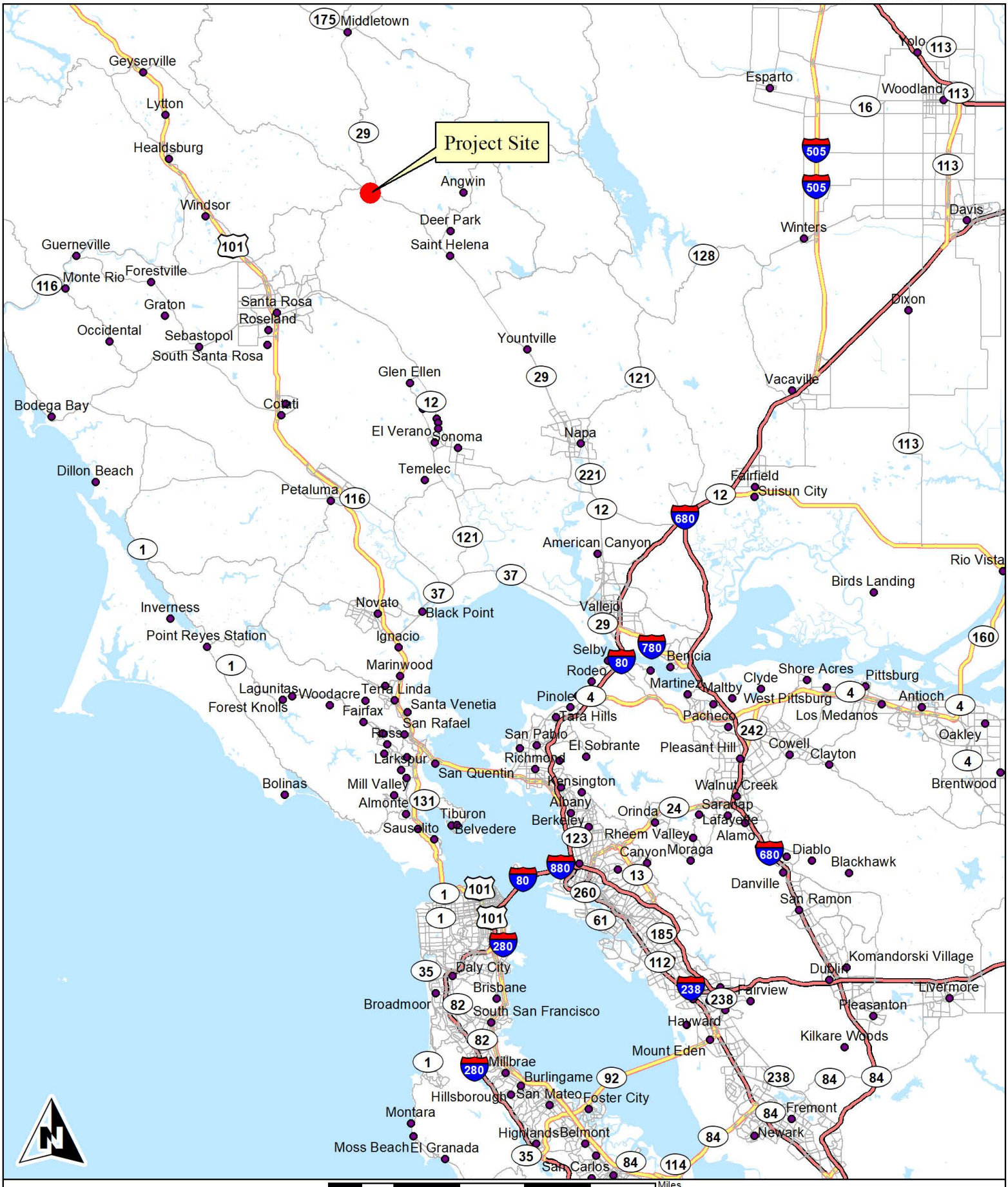
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Figure 1. Kortum Ranch Development, 500 Kortum Canyon Road
Project Site Regional Map
Calistoga, California

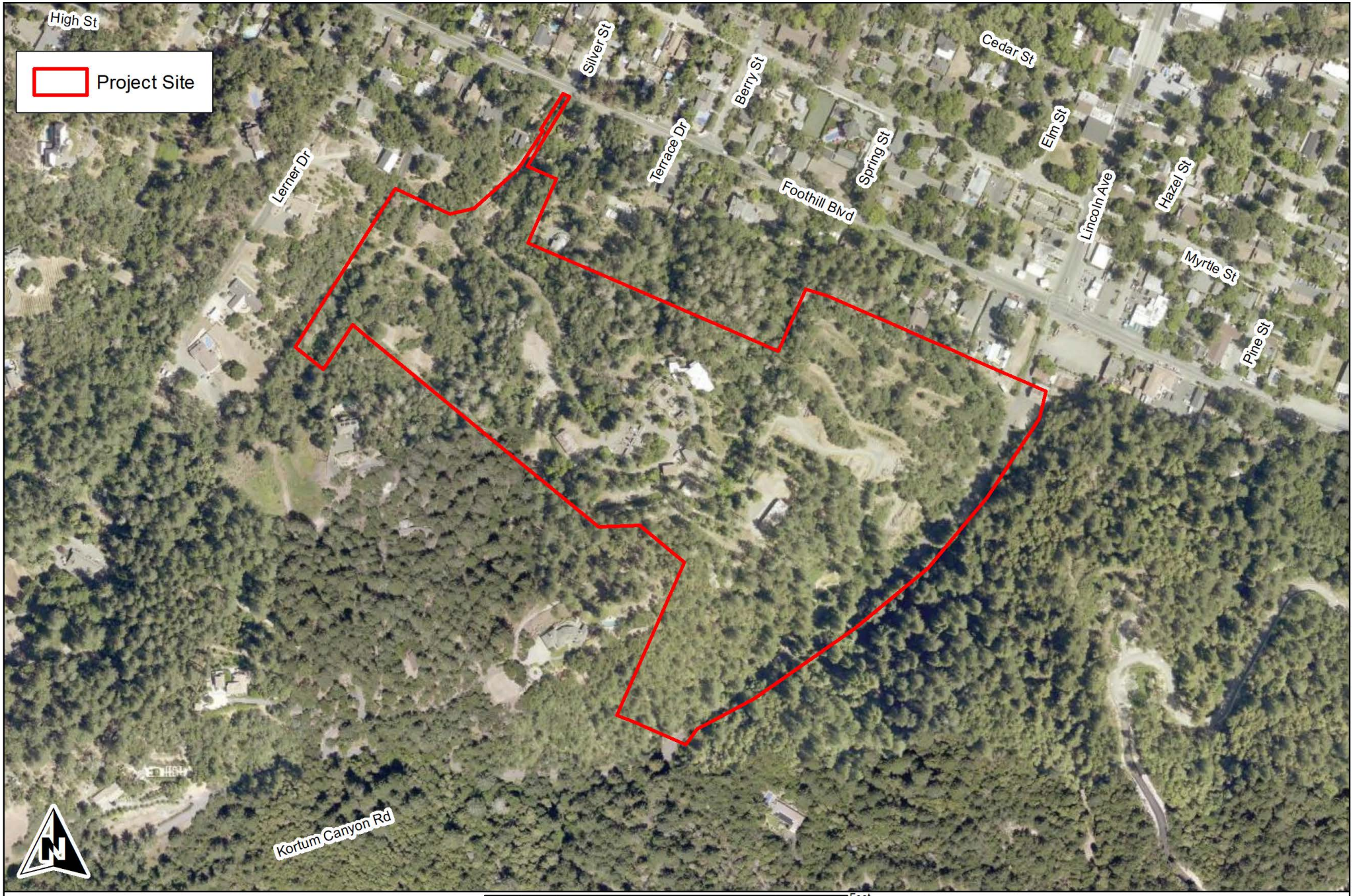
County: Napa
Map Preparation Date: November 16, 2023



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Figure 2. Kortum Ranch Development, 500 Kortum Canyon Road
Project Site Location Map
Calistoga, California

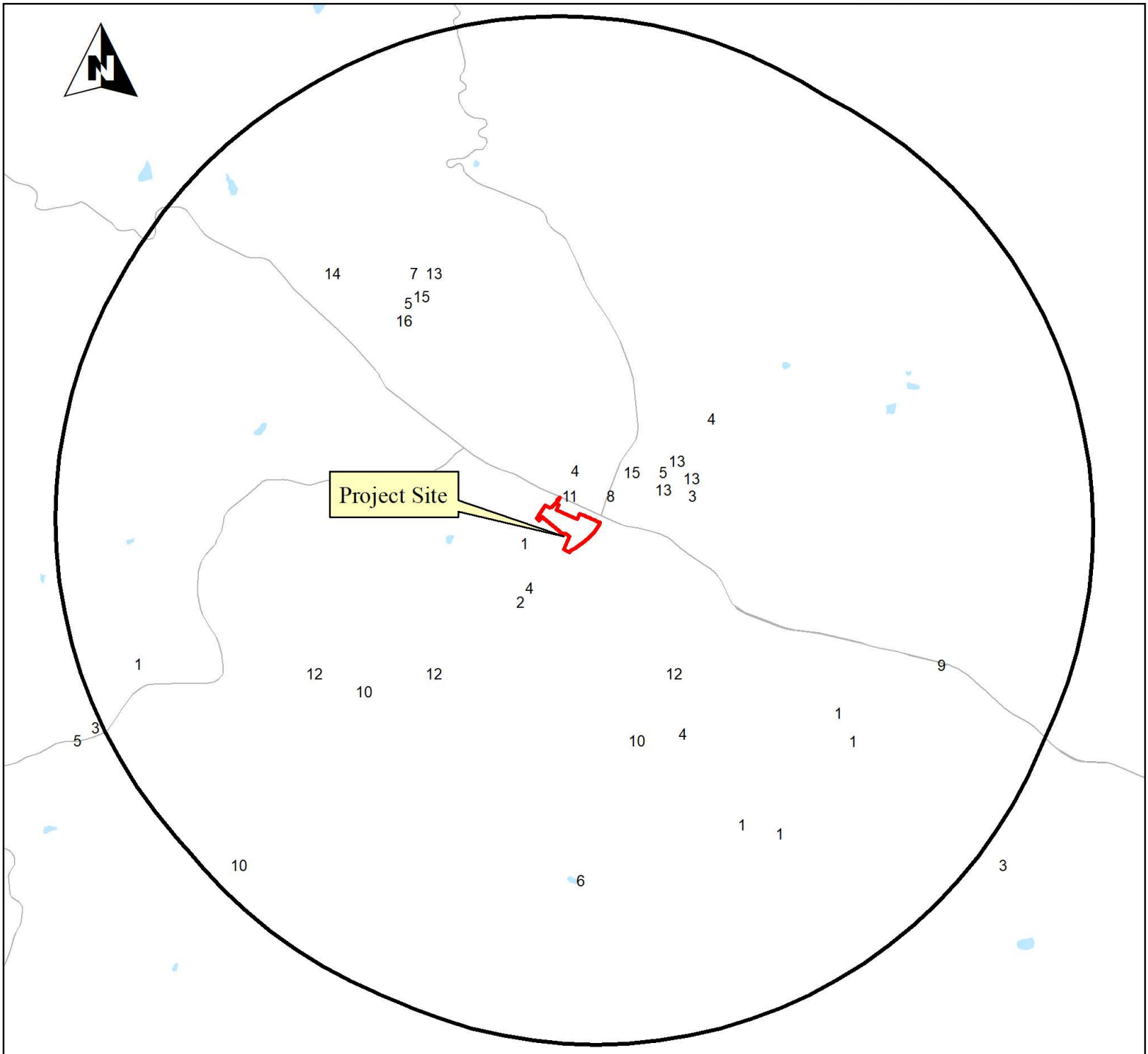
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Section: 1; T3S R3E
7.5-Minute Calistoga quadrangle
Aerial Photograph Source: ESRI
Map Preparation Date: November 16, 2023



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Figure 3. Aerial Photograph of the
Kortum Ranch Subdivision Project
Calistoga, California

Aerial Photograph Source: ESRI
Map Preparation Date: November 16, 2023



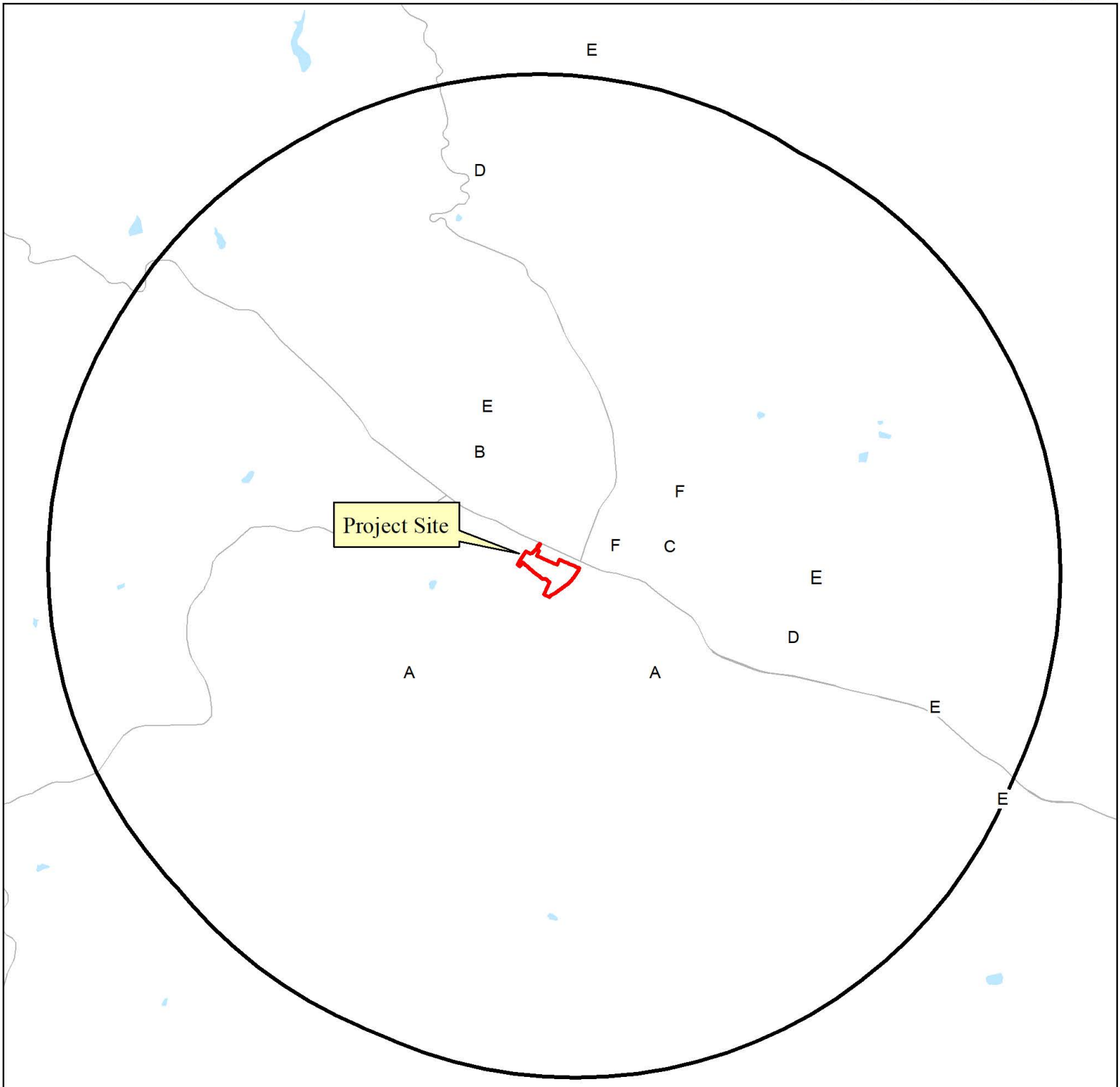
1 *Amorpha californica* var. *napensis*	6 *Eryngium constancei*	11 *Navarretia leucocephala* ssp. *bakeri*
2 *Arctostaphylos stanfordiana* ssp. *decumbens*	7 *Lasthenia burkei*	12 *Plagiobothrys strictus*
3 *Brodiaea leptandra*	8 *Leptosiphon jepsonii*	13 *Poa napensis*
4 *Ceanothus divergens*	9 *Limnanthes vinculans*	14 *Puccinellia simplex*
5 *Centromadia parryi* ssp. *parryi*	10 *Lupinus sericatus*	15 *Spergularia macrotheca* var. *longistyla*
		16 *Trifolium hydrophilum*

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0 0.5 1 2 3 Miles

Figure 4. Known Special-Status Plant Species within 3 Miles of the Kortum Ranch Development, 500 Kortum Canyon Road Calistoga, California

3-Mile Radius
Source: CDFW, California Natural Diversity Data Base, 2023
Map Preparation Date: November 16, 2023



A American Peregrine Falcon	C California red-legged frog	E Townsend's Big-eared Bat
B California freshwater shrimp	D Pallid Bat	F Western pond turtle

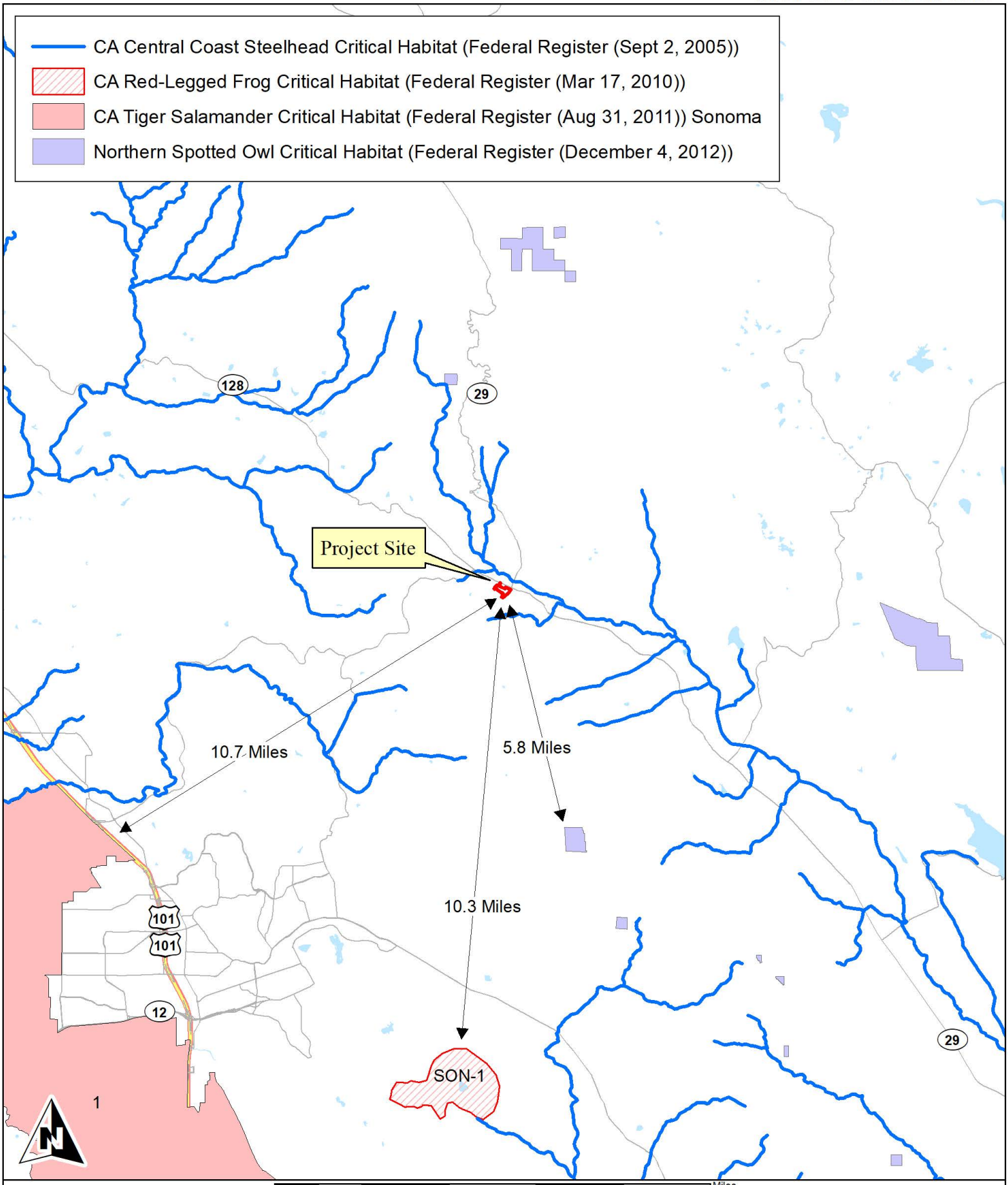
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0 0.5 1 2 3 Miles

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Figure 5. Known Special-Status Wildlife Species within 3 Miles of the Kortum Ranch Development, 500 Kortum Canyon Road Calistoga, California

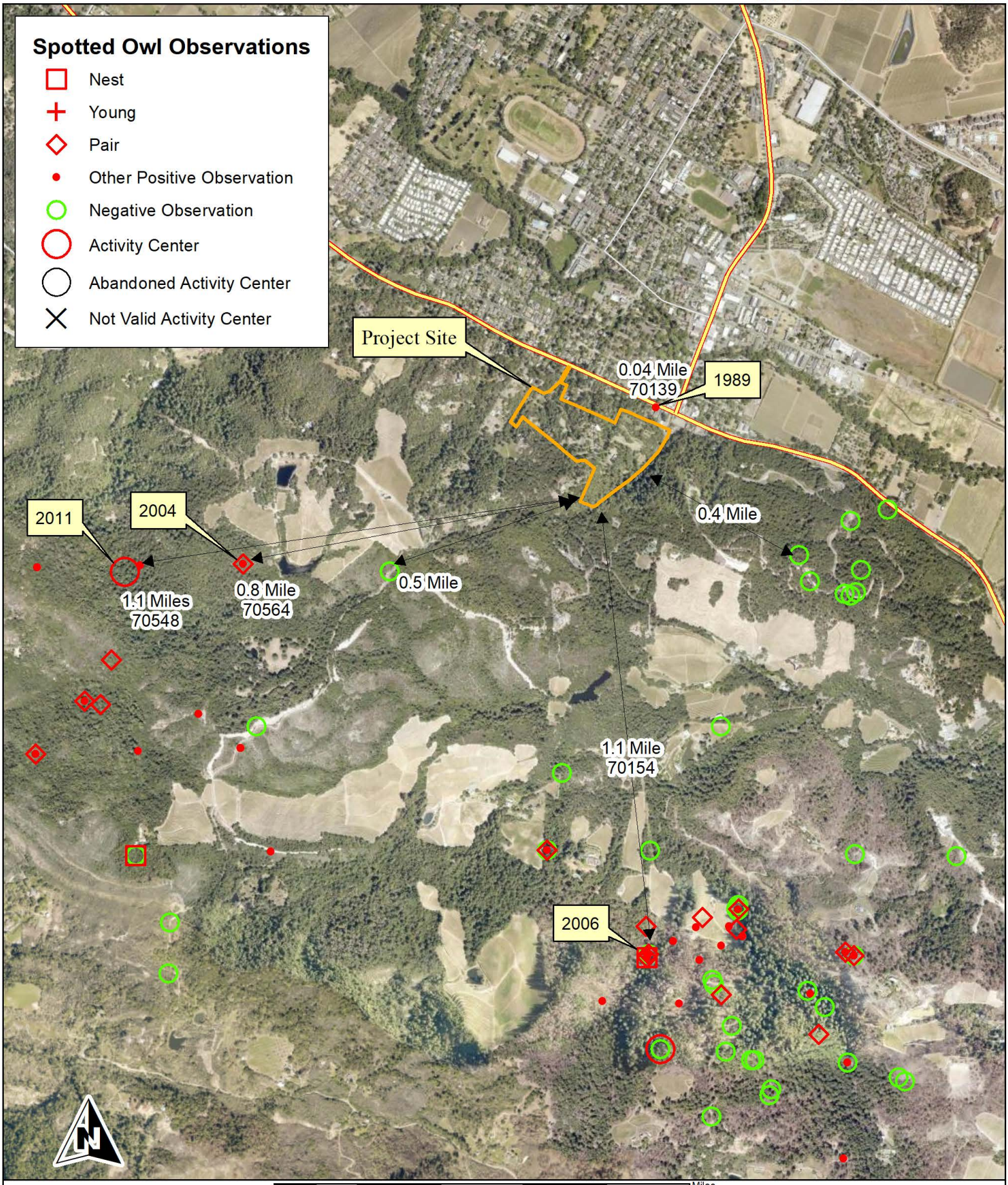
3-Mile Radius
Source: CDFW, California Natural Diversity Data Base, 2023
Map Preparation Date: November 16, 2023



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Figure 6. USFWS Critical Habitat
in the Vicinity of the
Kortum Ranch Subdivision Project Site

Source: USFWS
Map Preparation Date: November 17, 2023



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Figure 7. Known Northern Spotted Owl Occurrences in the Vicinity of the Kortum Ranch Subdivision Project Calistoga, California

Source: CDFW, California Natural Diversity Data Base, 2023
Map Preparation Date: September 20, 2023

Table 1

Plant Species Observed on the Kortum Ranch Project Site

Ferns and Allies	
Blechnaceae	
Woodwardia fimbriata	Giant chain fern
Dryopteridaceae	
Dryopteris arguta	Wood fern
Polystichum munitum	Western sword fern
Polypodiaceae	
Polypodium caifornicum	California polypody
Pteridaceae	
Adiantum jordanii	California maidenhair fern
Pentagramma triangularis	Goldenback fern
Gymnosperms	
Cupressaceae	
Sequoia sempervirens	Redwood
Pinaceae	
Pseudotsuga menziesii var. menziesii	Douglas-fir
Angiosperms - Dicots	
Anacardiaceae	
Toxicodendron diversilobum	Poison-oak
Apiaceae	
**Anthriscus caucalis*	Bur-chervil
**Daucus carota*	Queen Anne's lace
**Foeniculum vulgare*	Sweet fennel
Sanicula bipinnata	Poison sanicle
Sanicula crassicaulis	Gamble weed
**Scandix pecten-veneris*	Venus' needle
**Torilis arvensis*	Tall sock destroyer
Apocynaceae	
**Nerium oleander*	Oleander
**Vinca major*	Periwinkle
Araliaceae	
**Hedera canariensis*	Algerian ivy
**Hedera helix*	English ivy
Asteraceae	
Adenocaulon bicolor	Trail plant
Ambrosia psilostachya	Western ragweed
Anaphalis margaritacea	Pearly everlasting
Anisocarpus madioides	Woodland tarweed
Baccharis pilularis subsp. pilularis	Baccharis

* Indicates a non-native species

Table 1

Plant Species Observed on the Kortum Ranch Project Site

**Carduus pycnocephalus subsp. pycnocephalus*	Italian thistle
**Centaurea solstitialis*	Yellow starthistle
**Cirsium arvense*	Canada thistle
**Cirsium vulgare*	Bull thistle
**Dittrichia graveolens*	Stinkwort
Erigeron canadensis	Horseweed
Eriophyllum lanatum var. achillaeoides	Woolly sunflower
Heterotheca grandiflora	Telegraph weed
Hieracium albiflorum	White hawkweed
**Hypochaeris glabra*	Smooth cat's-ear
**Hypochaeris radicata*	Rough cat's-ear
**Lactuca saligna*	Willow lettuce
**Lactuca serriola*	Prickly lettuce
Madia sp.	Madia
**Pseudognaphalium luteoalbum*	Everlasting cudweed
**Silybum marianum*	Milk thistle
**Sonchus asper subsp. asper*	Prickly sow-thistle
**Taraxacum officinale*	Common dandelion
Wyethia glabra	Mules ears
Berberidaceae	
Nandina domestica	Heavenly bamboo
Betulaceae	
Corylus cornuta subsp californica	California hazelnut
Boraginaceae	
Amsinckia intermedia	Common fiddleneck
Cynoglossum grande	Grand hound's tongue
**Myosotis latifolia*	Forget-me-not
Nemophila heterophylla	White nemophila
Brassicaceae	
**Brassica nigra*	Black mustard
Cardamine californica	Milk maids
Cardamine oligosperma	Few-seed bittercress
**Nasturtium officinale*	Water cress
**Sinapis arvensis*	Wild mustard
Cactaceae	
**Opuntia sp.*	Prickly pear
Calycanthaceae	
Calycanthus occidentalis	Spicebush
Caprifoliaceae	
Lonicera hispidula	California honeysuckle
Symphoricarpos mollis	Creeping snowberry
Caryophyllaceae	
**Cerastium glomeratum*	Mouse-ear chickweed
Silene laciniata subsp. californica	California pink

* Indicates a non-native species

Table 1

Plant Species Observed on the Kortum Ranch Project Site

**Spergularia bocconi*	Boccone's sand-spurrey
Convolvulaceae	
**Convolvulus arvensis*	Bindweed
Ericaceae	
Arbutus menziesii	Madrone
Arctostaphylos manzanita subsp. manzanita	Common manzanita
Euphorbiaceae	
Croton setiger	Turkey mullein
**Euphorbia oblongata*	Golden spurge
**Euphorbia pepulus*	Petty spurge
Fabaceae	
Acmispon americanus var. americanus	Spanish-clover
Acmispon glaber var. glaber	Deerweed
**Cytisus scoparius*	Scotch broom
**Genista monspessulana*	French broom
**Lathyrus hirsutus*	Caley pea
Lathyrus vestitus var. vestitus	Wild pea
Lupinus bicolor	Bicolored lupine
Lupinus nanus	Sky lupine
**Medicago polymorpha*	California burclover
**Robinia pseudoacacia*	Black locust
**Spartium junceum*	Spanish broom
Trifolium ciliolatum	Foothill clover
**Trifolium dubium*	Little hop clover
**Trifolium hirtum*	Rose clover
**Trifolium incarnatum*	Crimson clover
**Trifolium subterraneum*	Subterranean clover
Trifolium willdenovii	Tomcat clover
**Vicia benghalensis*	Purple vetch
**Vicia hirsuta*	Tiny vetch
**Vicia sativa*	Common vetch
Fagaceae	
Notholithocarpus densiflorus var. densiflorus	Tanbark oak
Quercus agrifolia var. agrifolia	Coast live oak
Quercus douglasii	Blue oak
Quercus kelloggii	California black oak
Quercus lobata	Valley oak
Geraniaceae	
**Geranium dissectum*	Cut-leaf geranium
**Geranium molle*	Dove's-foot geranium
**Geranium robertianum*	Geranium
Hydrangeaceae	
Whipplea modesta	Yerba de selva

* Indicates a non-native species

Table 1

Plant Species Observed on the Kortum Ranch Project Site

Lamiaceae	
**Lamium amplexicaule*	Deadnettle
Stachys ajugoides	Bugle hedge-nettle
Stachys rigida var. quercetorum	Hedge nettle
Lauraceae	
Umbellularia californica	California bay
Magnoliaceae	
**Magnolia grandiflora*	Magnolia
Montiaceae	
Claytonia perfoliata	Miner's lettuce
Myrsinaceae	
**Lysimachia arvensis*	Scarlet pimpernel
Lysimachia latifolia	Starflower
Oleaceae	
Fraxinus latifolia	Oregon ash
**Olea europaea*	Olive
Onagraceae	
Clarkia purpurea subsp. quadrivulnera	Four spot
Oxalidaceae	
**Oxalis pes-caprae*	Bermuda buttercup
Phrymaceae	
Diplacus aurantiacus var. aridus	Sticky monkeyflower
Erythranthe guttata	Seep monkeyflower
Plantaginaceae	
**Kickxia elatine*	Sharppoint fluellin
**Plantago lanceolata*	English plantain
Platanaceae	
Platanus racemosa	Western sycamore
Polemoniaceae	
Navarretia squarrosa	Skunkweed
Polygalaceae	
Rhinotropis californica	California milkwort
Polygonaceae	
Persicaria sp.	Smartweed
**Rumex acetosella*	Sheep sorrel
**Rumex crispus*	Curly dock
**Rumex pulcher*	Fiddle dock
Ranunculaceae	
Delphinium nudicaule	Red larkspur
Ranunculus occidentalis var. occidentalis	Western buttercup

* Indicates a non-native species

Table 1

Plant Species Observed on the Kortum Ranch Project Site

Resedaceae	
**Reseda luteola*	Dyer's rocket
Rhamnaceae	
Ceanothus cuneatus var. cuneatus	Buck brush
Rosaceae	
Fragaria vesca	Wood strawberry
Heteromeles arbutifolia	Toyon
**Photinia serratifolia*	Taiwanese photinia
Rosa gymnocarpa subsp. gymnocarpa	Wood rose
**Rosa sp.*	Wild rose
**Rubus armeniacus*	Himalayan blackberry
Rubus parviflorus	Thimbleberry
Rubiaceae	
Galium aparine	Goose grass
Sapindaceae	
Acer macrophyllum	Big-leaf maple
Aesculus californica	California buckeye
Saxifragaceae	
Lithophragma affine	Woodland star
Lithophragma sp.	Woodland star
Simaroubaceae	
**Ailanthus altissima*	Tree of heaven
Violaceae	
Viola lobata subsp. lobata	Pine violet
Vitaceae	
Vitis californica	California wild grape
Angiosperms -Monocots	
Agavaceae	
**Agave americana*	American century plant
Chlorogalum pomeridianum var. pomeridianum	Soap plant
Yucca schidigera	Mohave yucca
Alliaceae	
**Allium triquetrum*	Onion
Amaryllidaceae	
**Agapanthus orientalis*	Lilly-of-the-Nile
Cyperaceae	
Bolboschoenus sp.	Bullrush
Cyperus eragrostis	Tall flatsedge
Scirpus microcarpus	Small-fruit bulrush

* Indicates a non-native species

Table 1

Plant Species Observed on the Kortum Ranch Project Site

Iridaceae	
Iris macrosiphon	Ground iris
Sisyrinchium bellum	Western blue-eyed grass
Juncaceae	
Juncus bufonius	Toad rush
Juncus patens	Spreading rush
Juncus tenuis	Slender rush
Luzula comosa var. comosa	Common wood-rush
Liliaceae	
Calochortus amabilis	Diogenes' lantern
**Cordylin australis*	New Zealand cabbage tree
Prosartes hookeri	Fairy bells
Melanthiaceae	
Toxicoscordion fremontii	Star zygadene
Poaceae	
**Agrostis stolonifera*	Spreading bent
**Aira caryophyllea*	Silver European hairgrass
**Avena barbata*	Slender wild oat
**Briza maxima*	Rattlesnake grass
**Bromus diandrus*	Ripgut grass
**Bromus hordeaceus*	Soft chess
**Bromus madritensis subsp. madritensis*	Foxtail chess
**Cynodon dactylon*	Bermudagrass
**Cynosurus echinatus*	Dogtail Grass
Elymus glaucus	Blue wildrye
Festuca californica	California fescue
Festuca idahoensis	Idaho fescue
**Festuca perennis*	perennial ryegrass
**Gastridium phleoides*	Nit grass
**Holcus lanatus*	Common velvet grass
**Hordeum marinum subsp. gussoneanum*	Mediterranean barley
**Hordeum murinum subsp. leporinum*	Hare barley
Melica imperfecta	Small-flowered melic
Melica torreyana	Torrey melic
**Phalaris aquatica*	Harding grass
**Phyllostachys aurea*	Fishpole bamboo
**Poa pratensis subsp. pratensis*	Kentucky bluegrass
Poa secunda	Secund bluegrass
**Polypogon monspeliensis*	Annual beard grass
**Stipa miliacea var. miliacea*	Smilo grass
Stipa pulchra	Purple needlegrass
Ruscaceae	
Maianthemum racemosum	False Solomon's seal
Themidaceae	
Brodiaea leptandra	Narrow-anthered California brodiaea

* Indicates a non-native species

Table 1

Plant Species Observed on the Kortum Ranch Project Site

Dichelostemma multiflorum	Wild hyacinth
Dipterostemon capitatum subsp. capitatum	Blue dicks
Dipterostemon capitatus paucitlorus	blue dick
Triteleia laxa	Ithuriel's spear
Typhaceae	
Typha latifolia	Broad-leaved cattail

* Indicates a non-native species

Table 2
Wildlife Species Observed on the Kortum Ranch Project Site

Reptiles	
Western fence lizard	*Sceloporus occidentalis*
Western skink	*Plestiodon skiltonianus skiltonianus*
Pacific gopher snake	*Pituophis catenifer catenifer*
Birds	
Turkey Vulture	*Streptopelia decaocto*
Red-shouldered Hawk	*Buteo lineatus*
Red-tailed Hawk	*Buteo jamaicensis*
Mourning Dove	*Zenaida macroura*
Anna's Hummingbird	*Calypte anna*
Acorn Woodpecker	*Melanerpes formicivorus*
Nuttall's Woodpecker	*Picoides nuttallii*
Downy Woodpecker	*Picoides pubescens*
Pacific-slope flycatcher	*Empidonax difficilis*
Cassin's vireo	*Vireo cassinii*
Warbling vireo	*Vireo gilvus*
Steller's Jay	*Cyanocitta stelleri*
California Scrub Jay	*Aphelocoma californica*
American Crow	*Corvus brachyrhynchos*
Common Raven	*Corvus corax*
Violet-green swallow	*Tachycineta thalassina*
Chestnut-backed Chickadee	*Poecile rufescens*
Oak Titmouse	*Baeolophus inornatus*
Bushtit	*Psaltriparus minimus*
White-breasted Nuthatch	*Sitta carolinensis*
Brown creeper	*Certhia americana*
Bewick's Wren	*Thryomanes bewickii*
American Robin	*Turdus migratorius*
Orange-crowned Warbler	*Oreothlypis celata*
Yellow-rumped Warbler	*Setophaga coronata*
Western tanager	*Piranga ludoviciana*
Spotted Towhee	*Pipilo maculatus*
California Towhee	*Melozone crissalis*
Dark-eyed Junco	*Junco hyemalis*
House Finch	*Haemorhous mexicanus*
Lesser Goldfinch	*Spinus psaltria*
Mammals	
Western gray squirrel	*Sciurus griseus*
Botta's pocket gopher	*Thomomys bottae*

Table 3

Special-Status Plant Species Known to Occur within 3 Miles of the Kortum Ranch Subdivision Project Site

Family Taxon Common Name	Status*	Flowering Period	Habitat	Area Locations	Probability on Project Site
Apiaceae					
Eryngium constancei Loch Lomand button-celery	Fed: FE State: CE CNPS: Rank 1B	April-June	Vernal pools.	The closest record for this species is located approximately 2 miles south of the project site (Occurrence No. 2).	None. No suitable habitat (vernal pools) on the project site. This species was not found onsite during appropriately timed rare plant surveys.
Asteraceae					
Centromadia parryi parryi Pappose tarplant	Fed: - State: - CNPS: Rank 1B.2	May-November	Coastal prairie; meadows and seeps; marshes and swamps; vernally wet grassland (sometimes alkaline).	The closest record for this species is located approximately 0.5 mile northeast of the project site (Occurrence No. 15).	None. Suitable grassland habitat on the project site. However, this species was not found onsite during appropriately timed rare plant surveys.
Lasthenia burkei Burke's goldfields	Fed: FE State: CE CNPS: Rank 1B.1	April-June	Meadows and seeps (mesic); vernal pools.	The closest record for this species is located approximately 1.7 miles northwest of the project site (Occurrence No. 36).	None. Marginal wetland habitat on the project site. However, this species was not found onsite during appropriately timed rare plant surveys.
Boraginaceae					
Plagiobothrys strictus Calistoga popcornflower	Fed: FE State: CT CNPS: Rank 1B.1	March-June	Broad-leaved upland forest; meadows; valley and foothill grassland; [alkaline areas near thermal springs]. Known from three extant populations (CNPS 2020).	The closest records for this species are located in the vicinity of the project site (Occurrence Nos. 2, 3, and 4).	None. No thermal springs or alkaline areas on the project site. This species was not found onsite during appropriately timed rare plant surveys.
Caryophyllaceae					
Spergularia macrotheca longistyla Long-styled sand-spurrey	Fed: - State: - CNPS: Rank 1B.2	February-May	Alkaline marshes, mud flats, meadows, hot springs. Occurs at elevations less than 200 M.	The closest record for this species is located approximately 0.5 mile northeast of the project site (Occurrence No. 19).	None. No alkaline areas or hot springs on the project site. This species was not found onsite during appropriately timed rare plant surveys.

Table 3

Special-Status Plant Species Known to Occur within 3 Miles of the Kortum Ranch Subdivision Project Site

Family Taxon Common Name	Status*	Flowering Period	Habitat	Area Locations	Probability on Project Site
Ericaceae					
Arctostaphylos stanfordiana decumbens Rincon manzanita	Fed: - State: - CNPS: Rank 1B.1	February-April	Chaparral (rhyolitic).	The closest record for this species is located approximately 0.42 mile southwest of the project site (Occurrence No. 14).	None. No chaparral habitat on the project site. This species was not found onsite during appropriately timed rare plant surveys.
Fabaceae					
Amorpha californica napensis Napa false indigo	Fed: - State: - CNPS: Rank 1B.2	April-July	Broadleaved upland forest (openings); chaparral, cismontane woodland. 150-2000 m.	The closest record for this species is located in the vicinity of the project site (Occurrence No. 61).	None. Suitable forest and woodland habitat on the project site. However, this species was not found onsite during appropriately timed rare plant surveys.
Astragalus claranus Clara Hunt's milkvetch	Fed: FE State: CT CNPS: Rank 1B.1	March-May	Cismontane woodland; valley and foothill grassland; [serpentinite, volcanic clay].	CNPS 1-Quad Search	None. No known occurrences within 3 miles. Suitable woodland habitat and volcanic soils on the project site. However, this species was not found onsite during appropriately timed rare
Lupinus sericatus Cobb Mountain lupine	Fed: - State: - CNPS: Rank 1B	March-June	Chaparral; cismontane woodland; lower coniferous forest. Strong ultramafic indicator.	The closest record for this species is located approximately 1.14 miles south of the project site (Occurrence No. 4).	None. No ultramific soils on the project site. This species was not found onsite during appropriately timed rare plant surveys.
Trifolium hydrophilum Saline clover	Fed: - State: - CNPS: Rank 1B.2	April-June	Marshes and swamps; valley and foothill grassland (mesic, alkaline); vernal pools. 0-300 m.	The closest record for this species is located approximately 0.55 mile northeast of the project site (Occurrence No. 18).	None. Marginal wetland habitat on the project site. This species was not found onsite during appropriately timed rare plant surveys.
Limnanthaceae					
Limnanthes vinculans Sebastopol meadowfoam	Fed: FE State: CE CNPS: Rank 1B.1	April-May	Meadows (mesic); vernal pools.	The closest record for this species is located approximately 2.2 miles southeast of the project site (Occurrence No. 53).	None. Marginal wetland habitat on the project site. However, this species was not found onsite during appropriately timed rare plant surveys.

Table 3

Special-Status Plant Species Known to Occur within 3 Miles of the Kortum Ranch Subdivision Project Site

Family Taxon Common Name	Status*	Flowering Period	Habitat	Area Locations	Probability on Project Site
Malvaceae					
Sidalcea hickmanii napensis Napa checkerbloom	Fed: State: CNPS: Rank 1B.1	April-June	chaparral	CNPS 1-Quad Search	None. No known occurrences within 3 miles. No chaparral habitat on the project site. This species was not found onsite during appropriately timed rare plant surveys.
Plantaginaceae					
Penstemon newberryi sonomensis Sonoma beardtongue	Fed: - State: - CNPS: Rank 1B	May-July	Chaparral (rocky).	CNPS 1-Quad Search	None. No chaparral habitat on the project site. No known occurrences within 3 miles. This species was not found onsite during appropriately timed rare plant surveys.
Poaceae					
Poa napensis Napa bluegrass	Fed: FE State: CE CNPS: Rank 1B	May-August	Meadows (alkaline, near hot springs).	The closest record for this species is located approximately 0.56 mile northeast of the project site (Occurrence No. 3).	None. No alkaline soils on the project site. This species was not found onsite during appropriately timed rare plant surveys.
Puccinellia simplex California alkali grass	Fed: State: CNPS: Rank 1B.2	March-June	Meadows and seeps, chenopod scrub, valley and foothill grasslands, vernal pools. Alkaline, vernally mesic. Sinks, flats, and lake margins. 1-915 m.	The closest record for this species is located approximately 2 miles northwest of the project site (Occurrence No. 62).	None. No alklaine soils on the project site. This species was not found onsite during appropriately timed rare plant surveys.
Polemoniaceae					
Leptosiphon jepsonii Jepson's leptosiphon	Fed: - State: - CNPS: Rank 1B.2	March-May	Chaparral; cismontane woodland (usually volcanic).	The closest record for this species is located in the vicinity of the project site (Occurrence No. 6).	None. There is suitable woodland habitat on the project site. However, this species was not found onsite during appropriately timed rare plant surveys.

Table 3

Special-Status Plant Species Known to Occur within 3 Miles of the Kortum Ranch Subdivision Project Site

Family Taxon Common Name	Status*	Flowering Period	Habitat	Area Locations	Probability on Project Site
Navarretia leucocephala bakeri Baker's navarretia	Fed: - State: - CNPS: Rank 1B.1	May-July	Cismontane woodland; lower montane coniferous forest; meadows (mesic); valley and foothill grassland; vernal pools.	The closest record for this species is located in the vicinity of the project site (Occurrence No. 14).	None. Marginal mesic grassland habitat on the project site. However, this species was not found onsite during appropriately timed rare plant surveys.
Rhamnaceae					
Ceanothus confusus Rincon Ridge ceanothus	Fed: - State: - CNPS: Rank 1B.1	February-April	Closed-cone coniferous forest; chaparral; cismontane woodland; [volcanic or serpentinite]. Elevation 150 - 1280 meters.	CNPS 1-Quad Search	None. No known occurrences within 3 miles. Suitable woodland and forest habitat on the project site. Hoever, this species was not found onsite during appropriately timed rare
Ceanothus divergens Calistoga ceanothus	Fed: - State: - CNPS: Rank 1B.2	March-April	Chaparral (serpentinite or volcanic).	The closest known records for this species are located adjacent to the project site (Occurrence Nos. 8 (south) and 26 (north)).	None. No chaparral habitat on the project site. This species was not found onsite during appropriately timed rare plant surveys.
Ceanothus sonomensis Sonoma ceanothus	Fed: - State: - CNPS: Rank 1B.2	February-April	Chaparral (sandy, serpentinite, or volcanic). Elevation 140 - 795 meters.	CNPS 1-Quad Search	None. No known occurrences within 3 miles. No chaparral onsite. This species was not found onsite during appropriately timed rare plant surveys.
Themidaceae					
Brodiaea leptandra Narrow-anthered California brodiaea	Fed: - State: - CNPS: Rank 1B.2	May-July	Broadleafed upland forest; chaparral; cismontane woodland; lower montane coniferous forest; valley and foothill grassland. Elevation 110 - 915 meters.	Only record of this species (from 2016) within 3 miles was mapped as best guess in the general vicinity of Calistoga (Occurrence No. 14).	High. Observed on the project site in oak woodland during appropriately timed survey. See text.

Table 3

Special-Status Plant Species Known to Occur within 3 Miles of the Kortum Ranch Subdivision 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 Known to Occur Within 3 Miles of the Kortum Ranch Subdivision Project Site

Species	*Status	Habitat	Closest Locations	Probability on Project Site
Invertebrates				
California freshwater shrimp *Syncaris pacifica*	Fed: FE State: CE Other:	Endemic to Marin, Napa, and Sonoma counties in low gradient streams with moderate to heavy riparian canopy. Needs shallow pools away from the main stream flow. Prefers undercut banks with exposed roots.	The closest record for this species is located approximately 0.31 mile north of the project site (Occurrence No. 11).	None. No suitable stream habitat on the project site.
Amphibians				
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 larvae development.	The closest record for this species is located within the vicinity of the project site (Occurrence No. 1601). This observation is from before 1915 and is presumed to be extirpated.	None. No suitable aquatic habitat on or in close proximity to the project site. Only occurrence in the area is from pre-1915 and is presumed to be extirpated. See text.
Reptiles				
Western pond turtle *Emys marmorata*	Fed: - State: CSC Other:	Uncommon to common in suitable aquatic habitat throughout CA, west of the Sierra-Cascade crest and absent from desert regions, except the Mojave River. Associated with permanent or nearly permanent water in a wide variety of habitat types.	The closest record for this species is located approximately 0.31 mile north of the project site (Occurrence No. 455).	None. No suitable permanent or nearly permanent aquatric habitat on or in close proximity to the project site.
Birds				
American Peregrine Falcon *Falco peregrinus anatum*	Fed: - State: FP Other:	Nests on high cliffs. Also nests on human-made structures. Nest consists of a scrape on a depression or ledge in an open site.	The closest records for this species are located within the vicinity of the project site (Occurrence Nos. 1 and 12).Non	None. No buildings or high cliffs on the project site. Preconstruction surveys will be conducted. See text.
Northern spotted owl *Strix occidentalis caurina*	Fed: FT State: CSC Other:	Old-growth forests or mixed stands of old-growth and mature trees. Occasionally in younger forests with patches of big trees. High, multistory canopy dominated by big trees, many trees with cavities or broken tops, woody debris and space under canopy.	The closest activity center for this species is located approximately 1.2 miles west of the project site (established in 2011).	Very low. No suitable nesting habitat within the project development footprint. Only suitable nesting trees are east of Kortum Canyon Road which will be left as Open Space. See text.

Table 4

Special-Status Wildlife Species Known to Occur Within 3 Miles of the Kortum Ranch Subdivision Project Site

Species	*Status	Habitat	Closest Locations	Probability on Project Site
Mammals				
Townsend's big-eared bat *Corynorhinus townsendii*	Fed: -- State: CSC Other: -	Occurs in humid coastal regions of northern and central California. Roosts in limestone caves, lava tubes, mines, and buildings. Extremely sensitive to disturbance.	The closest record for this species is located approximately 1 mile north of the project site (Occurrence No. 623).	None. No suitable limestone caves, lava tubes, mines, or any buildings on the project site for this species to nest or roost in. All occurrences in the vicinity of the project site are from the 1950's prior to extensive development in the area.
Pallid bat *Antrozous pallidus*	Fed: - State: CSC Other:	Occurs in deserts, grasslands, shrublands, woodlands, and forests. Most common in dry habitats with rocky areas for roosting. Roosts in caves, crevices, mines, and occasionally hollow trees. Night roosts in open areas such as porches and open buildings.	The closest record for this species is located approximately 1.4 miles east of the project site (Occurrence No. 436).	Very low. No impacts will occur to any potential roosting habitat. Preconstruction surveys will be conducted. See text.

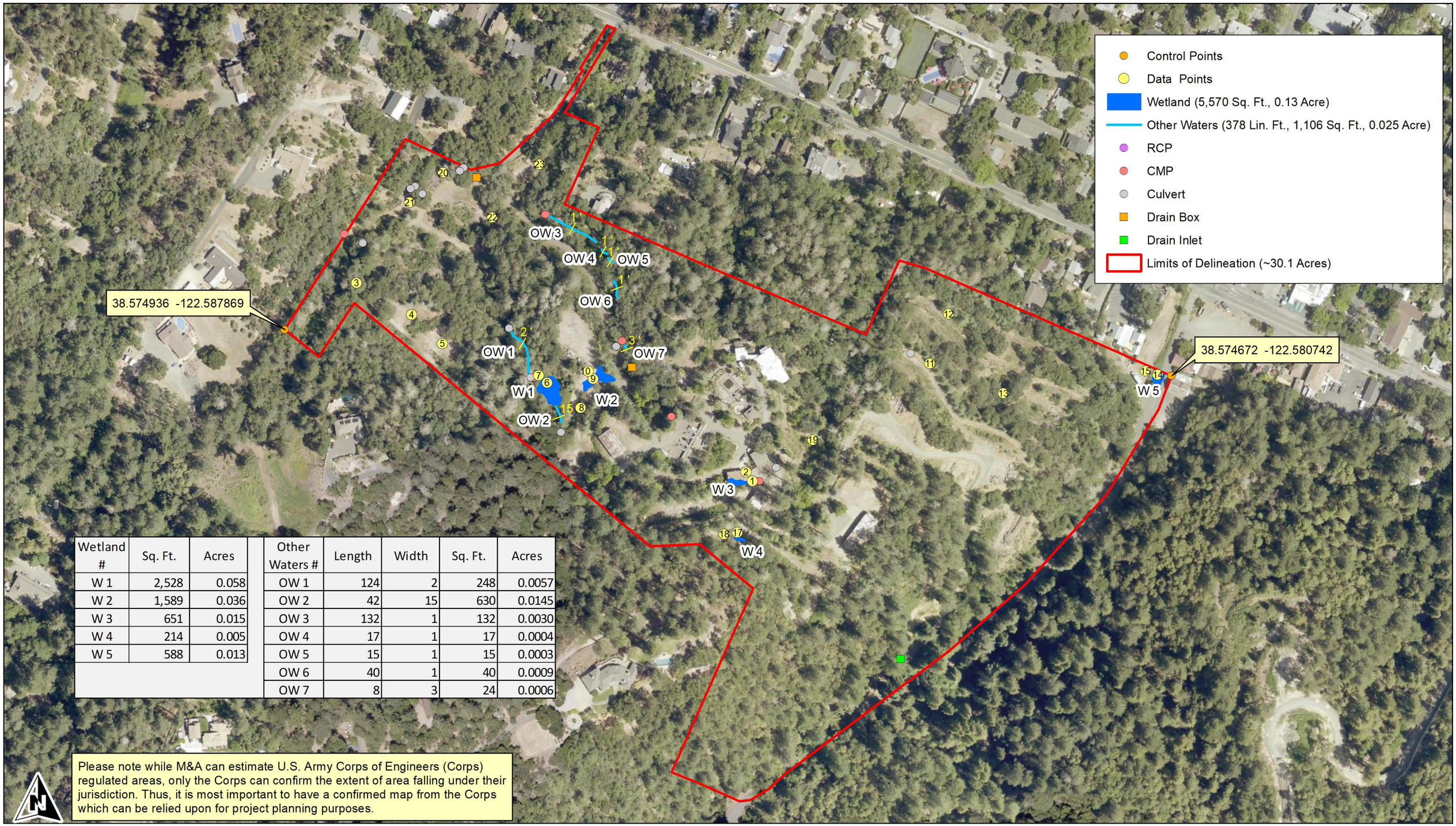
***Status**

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

State:
CSC - California Species of Special Concern
FP - Fully Protected
WL - Watch List. Not protected pursuant to CEQA

** This frog is listed as “endangered” in the east/southern Sierra, west/central, and southern California coasts and “threatened” in the Northern Sierra and Feather River. This frog is not protected pursuant to CESA on the northern coast of California (all counties from Marin and Solano Counties north to Oregon boarder).



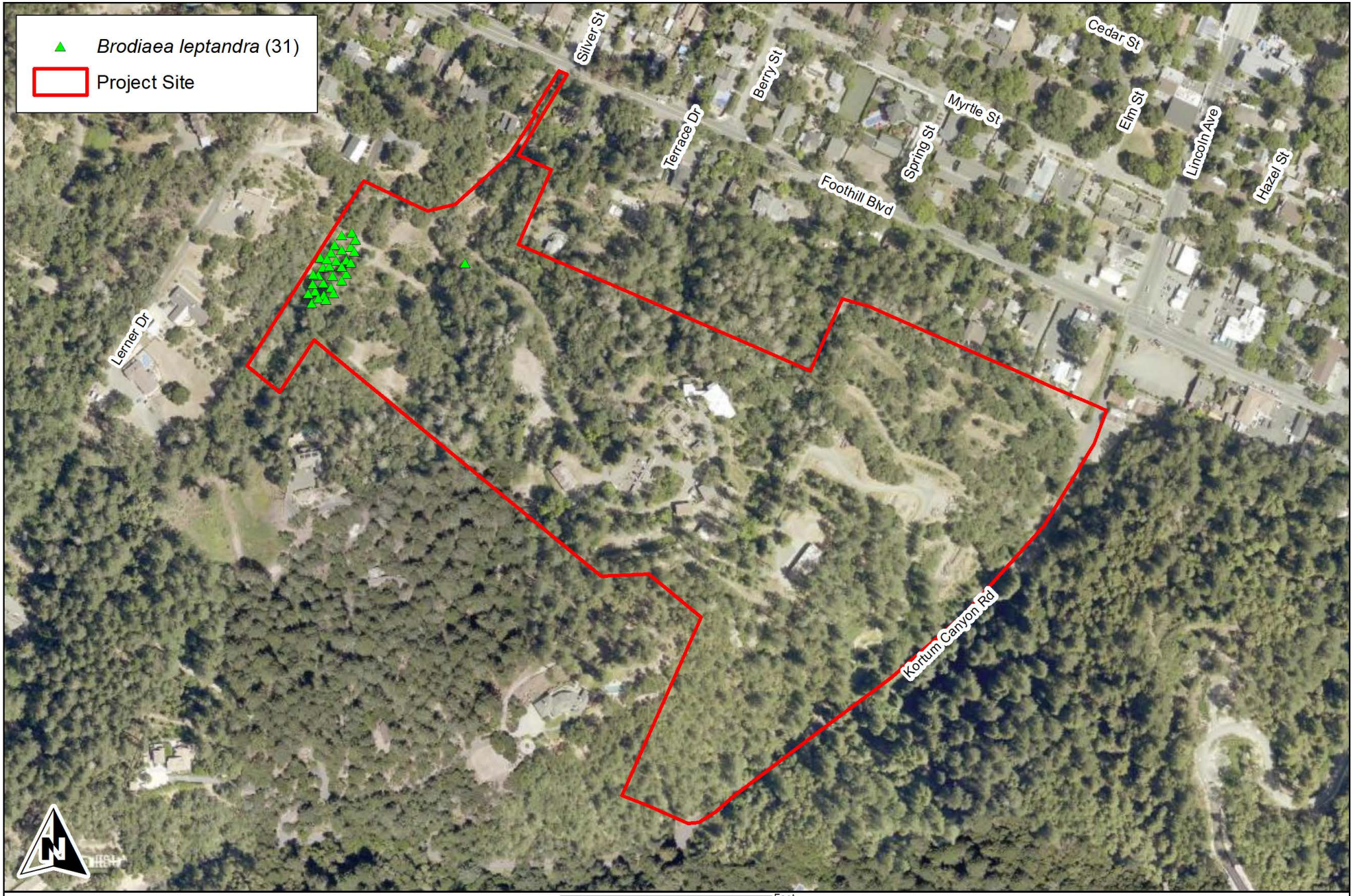
Wetland #	Sq. Ft.	Acres
W 1	2,528	0.058
W 2	1,589	0.036
W 3	651	0.015
W 4	214	0.005
W 5	588	0.013

Other Waters #	Length	Width	Sq. Ft.	Acres
OW 1	124	2	248	0.0057
OW 2	42	15	630	0.0145
OW 3	132	1	132	0.0030
OW 4	17	1	17	0.0004
OW 5	15	1	15	0.0003
OW 6	40	1	40	0.0009
OW 7	8	3	24	0.0006

Monk & Associates
Environmental Consultants
1136 Saranap Avenue, Suite Q
Walnut Creek, California 94595
(925) 947-4867

Sheet 1. Draft Aquatic Resources Delineation Map
Kortum Ranch Development, 500 Kortum Canyon Road Project Site
Calistoga, California

Delineation Conducted on: May 23, 2023
Delineation Conducted by: Christy Owens and Sarah McNamara
Aerial Photograph Source: ESRI
Map Preparation Date: November 17, 2023



Monk & Associates
Environmental Consultants
1136 Saranap Avenue, Suite Q
Walnut Creek, California 94595
(925) 947-4867

Exhibit A. Location of *Brodiaea leptandra*
Kortum Ranch Development, 500 Kortum Canyon Road Project Site
Calistoga, California

Aerial Photograph Source: ESRI
Map Preparation Date: November 17, 2023

APPROXIMATE BUILDING PAD AREA (SF)	
LOT 1	3,835
LOT 2	4,663
LOT 3	5,235
LOT 4	9,287
LOT 5	5,399
LOT 6	5,368
LOT 7	8,205
LOT 8	6,919
LOT 9	6,469
LOT 10	5,526
LOT 11	10,518
LOT 12	8,050

APPOXIMATE BUILDING PAD AREA (SF)	
LOT 13	9,348
LOT 14	20,623
LOT 15	15,446
LOT 16	10,571
LOT 17	10,097
LOT 18	11,361
LOT 19	4,448
LOT 20	8,648
LOT 21	6,436
LOT 22	6,576

NOT A PART OF THIS SUBDIVISION. SUBJECT TO PENDING CITY OF CALISTOGA LOT LINE ADJUSTMENT #_____

Proposed Parcel C
Kortum Ranch, LLC
Proposed Parcel 18.04 Acres

Proposed Parcel B
Kortum Ranch, LLC
Proposed Parcel 1.43 Acres

KORTUM CANYON ROAD

Calistoga Hills Resort LLC
APN 011-310-046

Linden Family TR
APN 011-290-040

Lands of Cantrell TR
APN 011-290-041

Lands of Cortez-Fernandez
APN 011-290-042

Lands of Brown
APN 011-290-008

Shaw Linda Lerner TR
APN 011-290-053

Lands of Sheppard
APN 011-300-020

Tadaima Inc
APN 011-300-013

Lands of Ardzrooni
APN 011-300-009

Lands of Kirkpatrick
APN 011-300-019

Lands of Sereni
APN 011-290-052

Lands of Martinez
APN 011-300-003

Lands of MacCloskey
APN 011-310-015

Lands of Joseph
APN 011-310-014

Lands of Cortez
APN 011-310-013

Lands of Cortez
APN 011-310-012

Lands of Cortez
APN 011-310-011

Lands of Kite
APN 011-310-010

APN 011-310-009

Lands of Cunningham
APN 011-310-008

Lands of Beck
APN 011-310-007

Lands of Beck
APN 011-310-006

Lands of Kite
APN 011-310-005

Lands of Kite
APN 011-310-004

Lands of Pena
APN 011-310-003

Lands of Gangbin
APN 011-310-002

Kaplan Julie B TR
APN 011-310-028

Kaplan Julie B TR
APN 011-310-027

Lands of Sheppard
APN 011-300-024

FOOTHILL BLVD

Slopes Table			
Color	Minimum Slope	Maximum Slope	Area
	0.00%	29.50%	491,840 SF (11.29 AC)
	29.50%	100.00%	827,176 SF (18.99 AC)

NOTE:
10-FT & 50-FT CONTOURS SHOWN ARE FROM LIDAR AND ARE SHOWN FOR GRAPHIC PURPOSES ONLY.

THIS MAP IS FOR REFERENCE ONLY.

SLOPE ANALYSIS

80' 40' 0 40' 80' 160' 240'
Graphic Scale: 1" = 80'

December 20, 2022

SLOPE ANALYSIS EXHIBIT

KORTUM RANCH LLC
500 Kortum Canyon Road, Calistoga, CA
APN 011-290-017, 38 & 039 & 011-310-023

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T:\2021 PROJECTS\21105\dwg\Adobe-Design\Tentative Map\Exhibits\21105-Slope Analysis.dwg, Zac Ruiz, 12/20/2022 9:07:29 AM

KORTUM RANCH SUBDIVISION
TENTATIVE MAP

500 Kortum Canyon Road
Calistoga, California

APN 011-290-007, 038, 039 & 011-310-023

ABBREVIATIONS

AAI	ADOBE ASSOCIATES, INC.
AB	AGGREGATE BASE
AC	ASPHALT CONCRETE
AD	AREA DRAIN
ADA	AMERICANS WITH DISABILITIES ACT
APPROX	APPROXIMATE
BC	BEGIN HORIZONTAL CURVE
BCR	BEGIN CURB RETURN
BLDG	BUILDING
BM	BENCH MARK
BNDY	BOUNDARY
BO	BLOWOFF VALVE
BSW	BACK OF SIDEWALK
BVC	BEGIN VERTICAL CURVE
C&G	CURB & GUTTER
CB	CATCH BASIN
CIPP	CAST-IN-PLACE PIPE
℄	CENTERLINE
CL	CLASS
CMP	CORRUGATED METAL PIPE
CO	CLEANOUT
CONC	CONCRETE
CONN	CONNECTION
DCV	DETECTOR CHECK VALVE
DDCV	DOUBLE DETECTOR CHECK VALVE
DI	DRAINAGE INLET
DIA	DIAMETER
DS	DOWN SPOUT
DW	DOMESTIC WATER
DWG	DRAWING
DWY	DRIVEWAY
EC	END HORIZONTAL CURVE
ECR	END CURB RETURN
EG	EXISTING GROUND
EP	EDGE OF PAVEMENT
EL	ELEVATION
ESMT	EASEMENT
EUC	EUCALYPTUS
EVC	END VERTICAL CURVE
EX	EXISTING
FL	FLOWLINE
FG	FINISH GRADE
FH	FIRE HYDRANT
FR	FIRE RISER
FOC	FACE OF CURB
FS	FINISHED SURFACE
FW	FIRE WATER
G	GAS MAIN
GB	GRADE BREAK
GR	GRATE
GW	GUY WIRE
HC	HANDICAPPED RAMP
HDPE	HIGH DENSITY POLYETHYLENE
HORIZ	HORIZONTAL
HP	HIGH POINT
HWY	HIGHWAY
IG	INVERT GRADE
INV	INVERT
LF	LINEAR FEET
LAT	LATERAL
LS	LANDSCAPE
MAX	MAXIMUM
MH	MANHOLE
MIN	MINIMUM
MON	MONUMENT
NTS	MONUMENT
NL	NOT LOCATED IN FIELD
NO	NUMBER
NP	NO PARKING SIGN
OC	ON CENTER
PCC	POINT OF COMPOUND CURVE
PIV	POST INDICATOR VALVE
PL	PROPERTY LINE
PP	POWER POLE
PSI	POUNDS PER SQUARE INCH
PU	PUBLIC
PUE	PUBLIC UTILITY EASEMENT
PVC	POLYVINYL CHLORIDE PIPE
PR	PRIVATE
RCE	REGISTERED CIVIL ENGINEER
RCP	REINFORCED CONCRETE PIPE
RDWD	REDWOOD
RPBP	REDUCED PRESSURE BACKFLOW PREVENTOR
R/W	RIGHT OF WAY
RWL	RECLAIMED WATER LINE
S	SLOPE
SCH	SCHEDULE
SCWA	SONOMA COUNTY WATER AGENCY
SD	STORM DRAIN
SF	SQUARE FEET
SL	STREET LIGHT
SPEC	SPECIFICATIONS
SS	SANITARY SEWER
STA	STATION
STD	STANDARD
S/W	SIDEWALK
TC	TOP OF CURB
TEL	TELEPHONE
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VAR	VARIES
VC	VERTICAL CURVE
VERT	VERTICAL
W	WATER
WM	WATER METER
WV	WATER VALVE
WWF	WELDED WIRE FABRIC

LEGEND

PROPOSED	EXISTING	DESCRIPTION
		PROPERTY BOUNDARY
C		COMPACT PARKING
		CURB & GUTTER
		SANITARY SEWER & MANHOLE
		SANITARY SEWER & CLEANOUT
		SANITARY SEWER LATERAL
		STORM DRAIN & MANHOLE
		STORM DRAIN & DRAINAGE INLET (DI)
		STORM DRAIN & AREA DRAIN (AD)
		ROOF DRAIN & DOWN SPOUT (DS)
		WATER SERVICE / WM WATER SERVICE / RPBP
		FIRE LINE / DDCV
		BLOW-OFF
		WATER MAIN & GATE VALVE
		FIRE HYDRANT
		STREET SIGN
		STREET NAME SIGN
		JOINT TRENCH COMPOSITE DRY UTILITY (BY OTHERS)
		TRANSFORMER (BY OTHERS)
		LIGHT STANDARD
		UTILITY POLE W/WO GUY WIRE
C CX.X		DETAIL X ON SHEET CX.X
		GRASS-LINED DRAINAGE SWALE
		STRAW WATTLE

ENGINEER / SURVEY

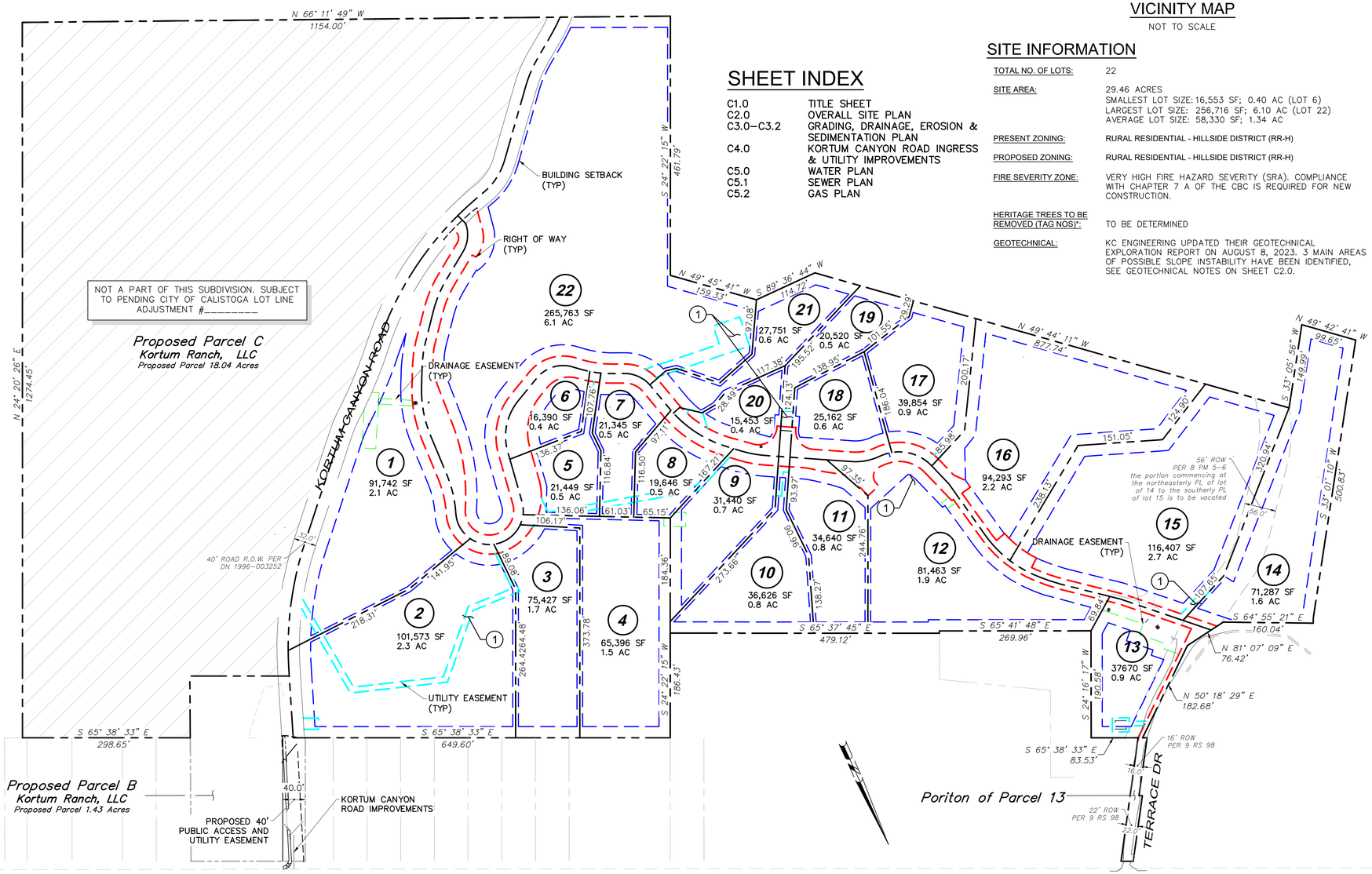
Adobe Associates, Inc.
1220 N Dutton Avenue
Santa Rosa, California 95401
Phone: (707) 541-2301
Fax: (707) 541-2301

OWNER

Kortum Ranch LLC
500 Kortum Canyon Road
Contact Adobe Associates, Inc
Tim Schram
Phone: (707) 541-2300

BENCHMARK

MARK: FOUND ¾" IRON PIPE, LS 3801, EL=628.51' AS SHOWN ON THE CAD FILE NAMED 1610-EXPORT BASE-2021 PROVIDED BY REB ENGINEERING. ADOBE ASSOCIATES POINT #31.
ELEVATIONS ARE -0.2' OF GPS DERIVED NAVD88 ELEVATIONS CALCULATED BASED UPON STATIC GPS MEASUREMENTS COLLECTED FEBRUARY 9, 2022 AND ADJUSTED USING THE NGS OPUS ADJUSTMENT TOOL ACCORDING TO GEOID 18



SITE MAP

100' 50' 0 50' 100' 200' 300'
Graphic Scale: 1" = 100'

KEY NOTES:

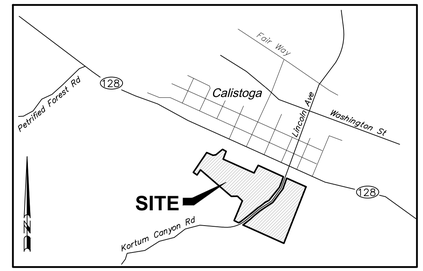
(1) FUTURE UTILITY EASEMENTS TO BE FURTHER DELINEATED UPON APPROVAL OF TENTATIVE MAP.

LEGEND:

RIGHT OF WAY
UTILITY EASEMENT

LEGEND:

RIGHT OF WAY
UTILITY EASEMENT
BUILDING SETBACKS
DRAINAGE EASEMENT



VICINITY MAP

NOT TO SCALE

SHEET INDEX

C1.0	TITLE SHEET
C2.0	OVERALL SITE PLAN
C3.0–C3.2	GRADING, DRAINAGE, EROSION & SEDIMENTATION PLAN
C4.0	KORTUM CANYON ROAD INGRESS & UTILITY IMPROVEMENTS
C5.0	WATER PLAN
C5.1	SEWER PLAN
C5.2	GAS PLAN

SITE INFORMATION

TOTAL NO. OF LOTS:	22
SITE AREA:	29.46 ACRES SMALLEST LOT SIZE: 16,553 SF; 0.40 AC (LOT 6) LARGEST LOT SIZE: 256,716 SF; 6.10 AC (LOT 22) AVERAGE LOT SIZE: 58,330 SF; 1.34 AC
PRESENT ZONING:	RURAL RESIDENTIAL - HILLSIDE DISTRICT (RR-H)
PROPOSED ZONING:	RURAL RESIDENTIAL - HILLSIDE DISTRICT (RR-H)
FIRE SEVERITY ZONE:	VERY HIGH FIRE HAZARD SEVERITY (SRA). COMPLIANCE WITH CHAPTER 7 A OF THE CBC IS REQUIRED FOR NEW CONSTRUCTION.
HERITAGE TREES TO BE REMOVED (TAG NOS)*:	TO BE DETERMINED
GEOTECHNICAL:	KC ENGINEERING UPDATED THEIR GEOTECHNICAL EXPLORATION REPORT ON AUGUST 8, 2023. 3 MAIN AREAS OF POSSIBLE SLOPE INSTABILITY HAVE BEEN IDENTIFIED, SEE GEOTECHNICAL NOTES ON SHEET C2.0.

Revisions			
No.	Date	Description	Approved

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My license expires 6/30/2025

REGISTERED PROFESSIONAL ENGINEER * TIMOTHY LEE SCHRAM * No. C67890 Exp.6/30/2025 * STATE OF CALIFORNIA * CIVIL

KORTUM RANCH SUBDIVISION
TITLE SHEET
500 Kortum Canyon Road
Calistoga, California
APN 011-290-007, 038, 039 & 011-310-023

SCALE: AS SHOWN
Date: July 10, 2023
Design by: IL, RMS
Drawn by: RMS
Checked by: TLS

Sheet
C1.0
1 of 9 Sheets
Job 21105

Lot Area Table	
Lot #	Area (ac)
1	2.49
2	2.41
3	1.03
4	1.50
5	0.49
6	0.38
7	0.49
8	0.45
9	0.72
10	0.84

Lot Area Table	
Lot #	Area (ac)
11	0.80
12	1.87
13	0.86
14	1.64
15	2.67
16	2.18
17	0.91
18	0.58
19	0.47
20	0.40

Lot Area Table	
Lot #	Area (ac)
21	0.64
22	6.29

NOT A PART OF THIS SUBDIVISION, SUBJECT TO PENDING CITY OF CALISTOGA LOT LINE ADJUSTMENT #_____

SHEET C3.0

SHEET C3.1

SHEET C3.2

SHEET C3.3

Lands of Peterson APN 020-060-003

Maria & Ida TR APN 011-290-033

Linden Family TR APN 011-290-040

Lands of Cantrell TR APN 011-290-041

Lands of Cortez-Fernandez APN 011-290-042

Lands of Brown APN 011-290-008

Lands of Sereni APN 011-290-052

Show Linda Lerner TR APN 011-290-053

Lands of Sheppard APN 011-300-020

Tadaima Inc APN 011-300-013

Lands of Ardzrooni APN 011-300-009

Lands of Kirkpatrick APN 011-300-019

Lands of Martinez APN 011-300-003

Kaplan Julie B TR APN 011-310-028

Lands of Sheppard APN 011-300-024

Kaplan Julie B TR APN 011-310-027

Lands of Pena APN 011-310-003

Lands of Gangbin APN 011-310-002

Lands of Kite APN 011-310-004

Lands of Kite APN 011-310-005

Lands of Beck APN 011-310-006

Lands of Beck APN 011-310-007

Lands of Cunningham APN 011-310-008

APN 011-310-009

Lands of Kite APN 011-310-010

Lands of Cortez APN 011-310-011

Lands of Cortez APN 011-310-012

Lands of Cortez APN 011-310-013

APN 011-310-014

APN 011-310-015

APN 011-310-046

KORTUM CANYON RD

FOOTHILL BLVD

TERRACE DR

PROPOSED ROAD ENTRANCE

PROPOSED RETAINING WALL

PROPOSED 20,000 GAL DW TANK

PROPOSED 350,000 GAL FW TANK

DRAINAGE EASEMENT

PROPOSED BIORETENTION (TYP)

20' UTILITY EASEMENT

10' UTILITY EASEMENT (TYP)

FSS TURNAROUND

EVA STARTS

PROPOSED ROAD

UTILITY EASEMENT (TYP)

PROPOSED CONTOURS (TYP)

PROPOSED TURNOUT PER FSS

PROPOSED RETAINING WALL

PROPOSED BIORETENTION (TYP)

POTENTIAL LOT 15 ACCES DRAINAGE EASEMENT

10' UTILITY EASEMENT (TYP)

PROPOSED EVA ACCESS TO LOT 15

PROPOSED PUMP HOUSE

PROPOSED ROAD WIDENING

PROPOSED SIDEWALK

PROPOSED 40' PUBLIC ACCESS AND UTILITY EASEMENT

PROPOSED SS LIFT STATION

40' ROAD R.O.W. PER DN 1996-003252

56' ROW PER B PM 5-6 * the portion commencing at the northeasterly PL of lot of 14 to the southerly PL of lot 15 is to be vacated

16' ROW PER 9 RS 98

22' ROW PER 9 RS 98

Ex Road

Ex Well

Ex Gravel Lot

Ex Access Gate to Lot 14

Ex Access to Lot 13

Ex Paved Swale (Approx)

Ex SD (TYP)

Ex DI (TYP)

GN

N 66° 11' 49" W 957.51' 1154.00'

N 24° 20' 26" E 1274.45'

S 24° 22' 15" W 461.79'

N 49° 45' 41" W 159.33'

S 89° 36' 44" W 114.72'

N 49° 44' 11" W 877.74'

N 49° 42' 41" W 99.65'

S 33° 05' 56" W 149.99'

S 33° 01' 07" W 500.83'

S 65° 37' 45" E 479.12'

S 65° 41' 48" E 269.96'

S 64° 55' 21" E 160.04'

N 81° 07' 09" E 76.42'

S 65° 38' 33" E 298.65'

S 65° 38' 33" E 205.01'

S 65° 38' 33" E 396.15'

S 65° 38' 33" E 649.60'

S 65° 38' 33" E 83.53'

N 50° 18' 29" E 182.68'

S 24° 22' 15" W 186.43'

N 24° 16' 05" W 190.89'

177.02'

110.00'

240.74'

264.48'

273.78'

184.38'

273.66'

244.76'

141.95'

69.08'

136.06'

106.17'

61.03'

65.15'

136.37'

116.84'

35.58'

102.93'

107.76'

97.11'

167.21'

162.05'

124.13'

186.04'

97.35'

85.98'

93.97'

90.96'

117.38'

138.95'

135.52'

97.08'

84.19'

98.17'

29.29'

115.80'

101.55'

200.17'

424.89'

154.50'

151.05'

238.11'

124.90'

220.94'

107.65'

69.84'

50.51'

129.91'

182.68'

83.53'

26.49'

26.46'

41.18'

78.14'

OVERALL SITE PLAN

80' 40' 0 40' 80' 160' 240'

Graphic Scale: 1" = 80'

LEGEND:

- RIGHT OF WAY
- UTILITY EASEMENT
- BUILDING SETBACKS
- DRAINAGE EASEMENT
- SHEET SECTION

GEOTECHNICAL NOTE

GN THIS AREA HAS BEEN IDENTIFIED BY KC ENGINEERING AS A LOCATION OF POSSIBLE SLOPE INSTABILITY AND DEBRIS FLOW. WHEN CONSTRUCTION LEVEL DOCUMENTS ARE PREPARED, THESE ARES WILL BE DETAILED ON HOW SLOPE STABILITY SHALL BE ACHIEVED.

T:\2021 PROJECTS\21105\dwg\Adobe-Design\Tentative Map\21105-C2.0_Overall Site Plan.dwg, Zac Ruiz, 8/15/2023 1:53:30 PM

Revisions

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KORTUM RANCH SUBDIVISION

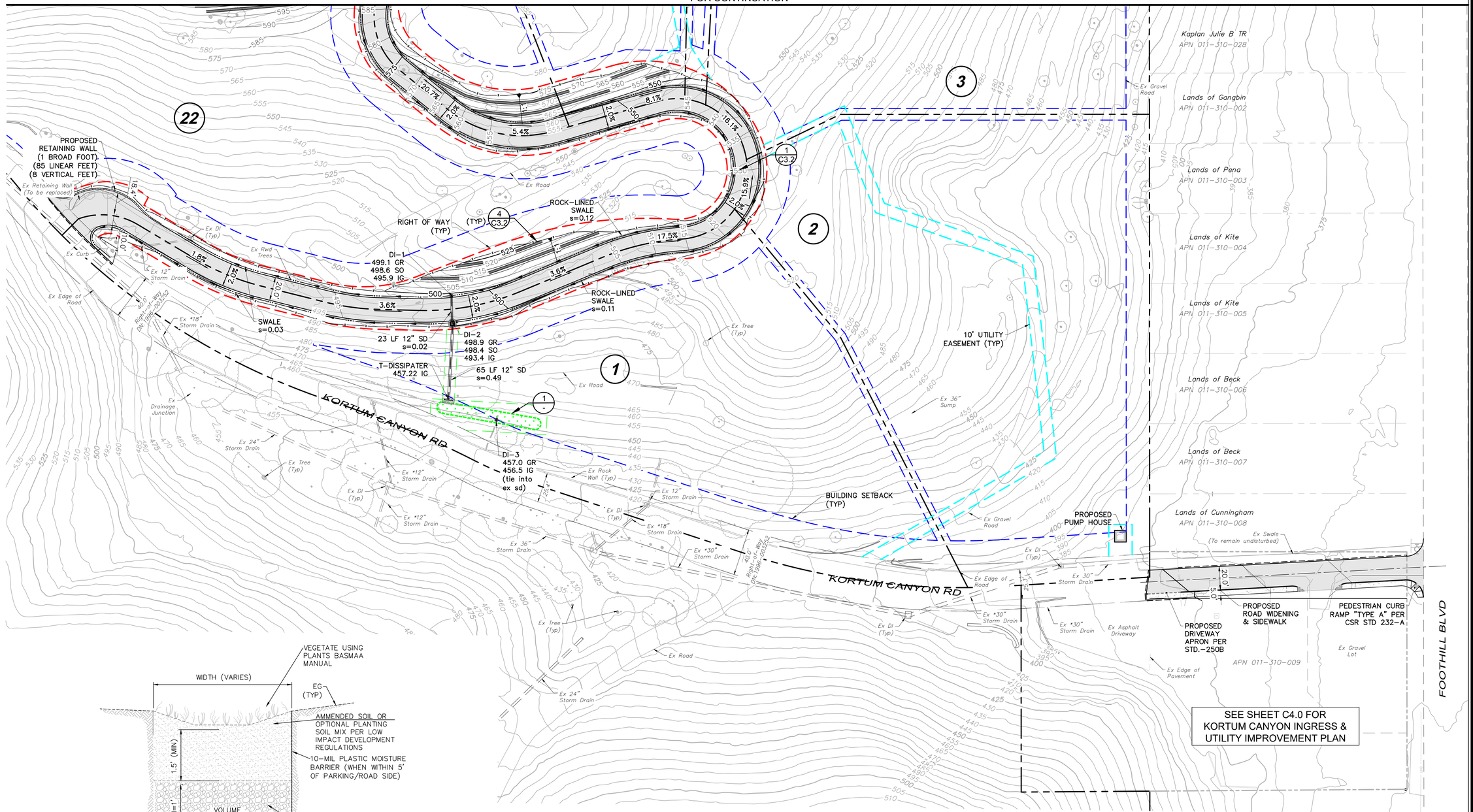
OVERALL SITE PLAN

500 Kortum Canyon Road
Calistoga, California
APN 011-290-007, 038, 039 & 011-310-023

SCALE: AS SHOWN
Date: July 10, 2023
Design by: IL, RMS
Drawn by: ____ RMS
Checked by: TLS

Sheet
C2.0
2 of 9 Sheets
Job 21105

MATCHLINE - SEE SHEET C3.1
FOR CONTINUATION



NOTES:
1. VEGETATION TO MEET BASMAA STANDARDS; PLANTINGS MAY INCLUDE TREES.
2. AMENDED SOILS SHALL HAVE INFILTRATION RATE 5"/HR MIN AND POROSITY=0.60 MIN.
3. DRAIN ROCK SHALL HAVE POROSITY = 0.40 MIN.

1 BIORETENTION RAIN GARDEN
NTS

GRADING, DRAINAGE, EROSION AND SEDIMENTATION PLAN

40' 20' 0 20' 40' 80' 120'
Graphic Scale: 1" = 40'

*NOTE:
STORMDRAIN PIPES DENOTED WITH ASTERISK* ARE APPROXIMATE

LEGEND:
- RIGHT OF WAY
- UTILITY EASEMENT
- BUILDING SETBACKS
- DRAINAGE EASEMENT

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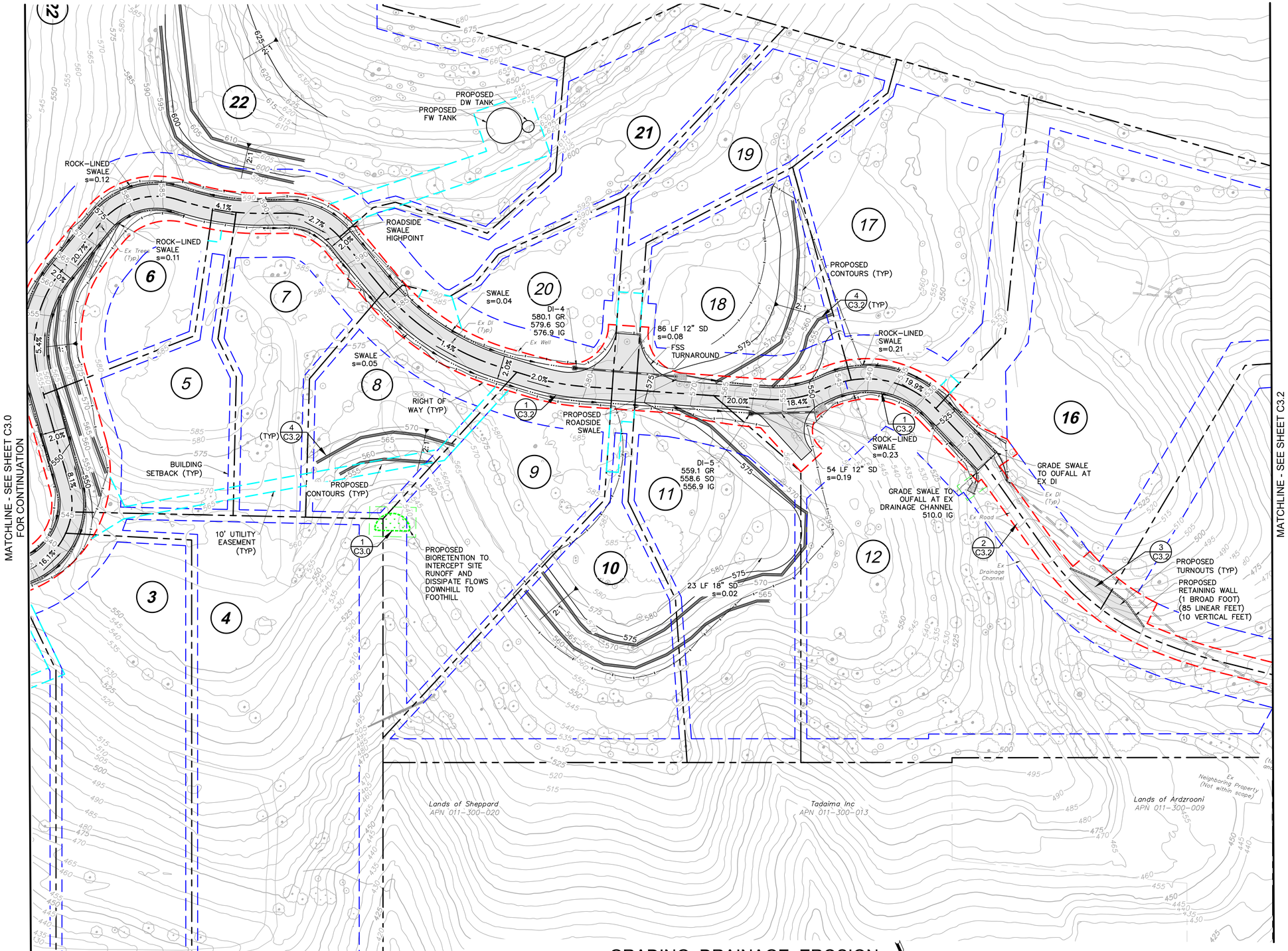
KORTUM RANCH SUBDIVISION GRADING, DRAINAGE, EROSION AND SEDIMENTATION PLAN

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Calistoga, California
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Drawn by: RMS
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Sheet
C3.0
3 of 9 Sheets
Job 21105

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GRADING, DRAINAGE, EROSION AND SEDIMENTATION PLAN

40' 20' 0 20' 40' 80' 120'

Graphic Scale: 1" = 40'

LEGEND:

- RIGHT OF WAY
- UTILITY EASEMENT
- BUILDING SETBACKS
- DRAINAGE EASEMENT

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500 Kortum Canyon Road
Calistoga, California

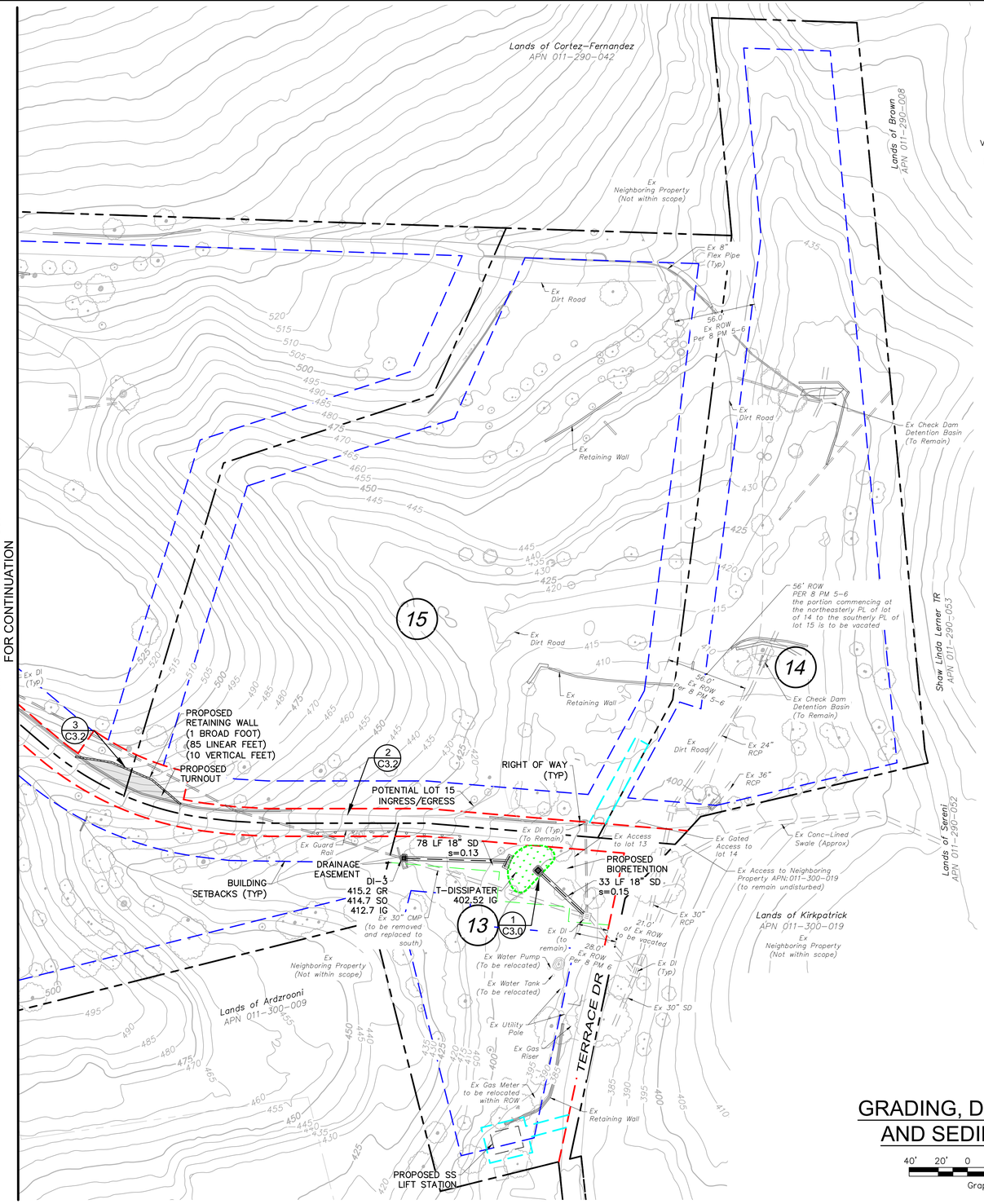
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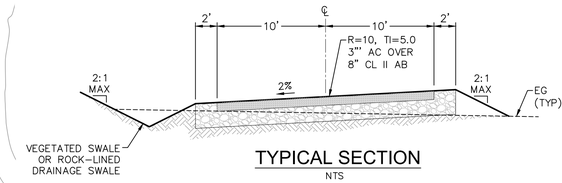
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C3.1
4 of 9 Sheets
Job 21105

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MATCHLINE - SEE SHEET C3.1
FOR CONTINUATION

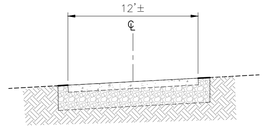




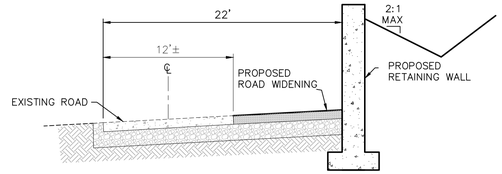
TYPICAL SECTION
NTS

R=10, TI=5,
3" AC OVER
8" CL II AB

1 MAIN ROAD
NTS

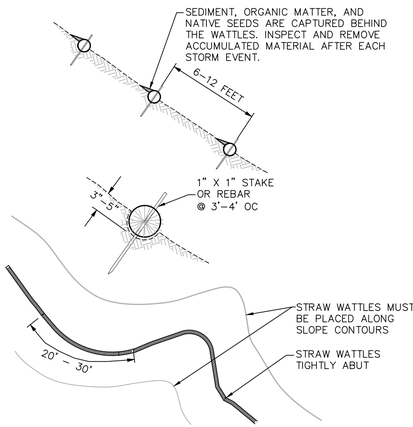


2 EVA
NTS



R=10, TI=5,
3" AC OVER
8" CL II AB

3 EXISTING ROAD WITH TURNOUT
NTS



NOTES:

1. STRAW WATTLES ARE TUBES MADE FROM STRAW AND BOUND W/ BIO-DEGRADABLE WRAPPED NETTING. THEY ARE APPROXIMATELY 8" DIA AND 20 – 30 FT LONG.
2. STRAW WATTLES TRAP SEDIMENT AND REDUCE SHEET & RILL EROSION BY REDUCING SLOPE GRADIENT, INCREASING INFILTRATION RATES AND BY PRODUCING A FAVORABLE ENVIRONMENT FOR PLANT ESTABLISHMENT.
3. STRAW WATTLE INSTALLATION REQUIRES THE PLACEMENT AND SECURE STAKING OF THE WATTLE IN A TRENCH, 3" – 5" DEEP, DUG ON CONTOUR. RUNOFF MUST NOT BE ALLOWED TO RUN UNDER OR AROUND WATTLE.

STRAW WATTLES
(CONSTRUCTION SPECIFICATIONS)

PREPARE SLOPE BEFORE THE WATTLING PROCEDURE IS STARTED. SHALLOW GULLIES SHOULD BE SMOOTHED AS WORK PROGRESSES.

DIG SMALL TRENCHES ACROSS SLOPE ON CONTOUR, TO PLACE WATTLES IN. THE TRENCH SHOULD BE DEEP ENOUGH TO ACCOMMODATE HALF THE THICKNESS OF THE WATTLE. WHEN THE SOIL IS LOOSE AND UNCOMPACTED, THE TRENCH SHOULD BE DEEP ENOUGH TO BURY THE WATTLE 2/3 OF ITS THICKNESS BECAUSE THE GROUND WILL SETTLE. IT IS CRITICAL THAT WATTLES ARE INSTALLED PERPENDICULAR TO WATER MOVEMENT, PARALLEL TO THE SLOPE CONTOUR.

START BUILDING TRENCHES AND INSTALL WATTLES FROM THE BOTTOM OF THE SLOPE AND WORK UP.

CONSTRUCT TRENCHES AT CONTOUR INTERVALS OF THREE TO EIGHT FEET APART DEPENDING ON STEEPNESS OF SLOPE. THE STEEPER THE SLOPE, THE CLOSER TOGETHER THE TRENCHES.

LAY THE WATTLE ALONG THE TRENCHES FITTING IT SNUGLY AGAINST THE SOIL. MAKE SURE NO GAPS EXIST BETWEEN THE SOIL AND THE STRAW WATTLE.

USE A STRAIGHT BAR TO DRIVE HOLES THROUGH THE WATTLE AND INTO THE SOIL FOR THE WOODEN STAKES.

DRIVE THE STAKE THROUGH THE PREPARED HOLE INTO THE SOIL. LEAVE ONLY ONE OR TWO INCHES OF STAKE EXPOSED ABOVE WATTLE.

INSTALL STAKES AT LEAST EVERY FOUR FEET APART THROUGH WATTLE. ADDITIONAL STAKES MAY BE DRIVEN ON THE DOWNSLOPE SIDE OF THE TRENCHES ON HIGHLY EROSIVE OR VERY STEEP SLOPES.

4 STRAW WATTLE
NTS

GRADING, DRAINAGE, EROSION AND SEDIMENTATION PLAN

40' 20' 0 20' 40' 80' 120'
Graphic Scale: 1" = 40'

LEGEND:
- RIGHT OF WAY
- UTILITY EASEMENT
- BUILDING SETBACKS
- DRAINAGE EASEMENT

No.	Date	Description	Approved

Revisions

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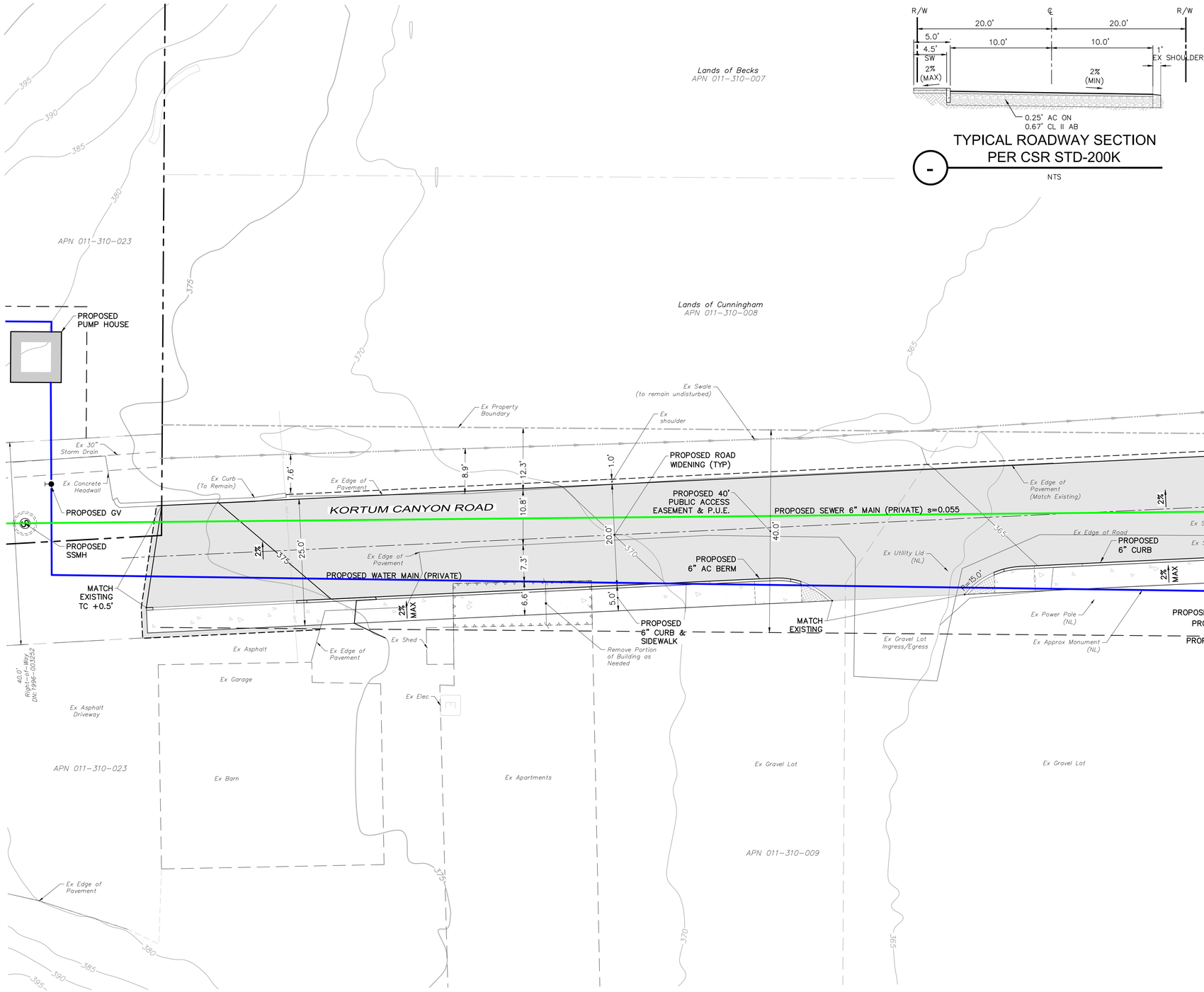
KORTUM RANCH SUBDIVISION GRADING, DRAINAGE, EROSION AND SEDIMENTATION PLAN

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SCALE: AS SHOWN
Date: July 10, 2023
Design by: IL, RMS
Drawn by: RMS
Checked by: TLS

Sheet
C3.2
5 of 9 Sheets
Job 21105

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HATCHING LEGEND:

- AC OVER CL II AB
- 4" PCC OVER 4" CL II AB
- TRUNCATED DOMES PER CBC 11B-247

KORTUM CANYON ROAD INGRESS & UTILITY IMPROVEMENTS

10' 5' 0 5' 10' 20' 30'

Graphic Scale: 1" = 10'

NOTE:

NL - NOT LOCATED IN THE FIELD

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Revisions			
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KORTUM RANCH SUBDIVISION
KORTUM CANYON ROAD INGRESS & UTILITY IMPROVEMENTS

500 Kortum Canyon Road
Calistoga, California
APN 011-290-007, 038, 039 & 011-310-023

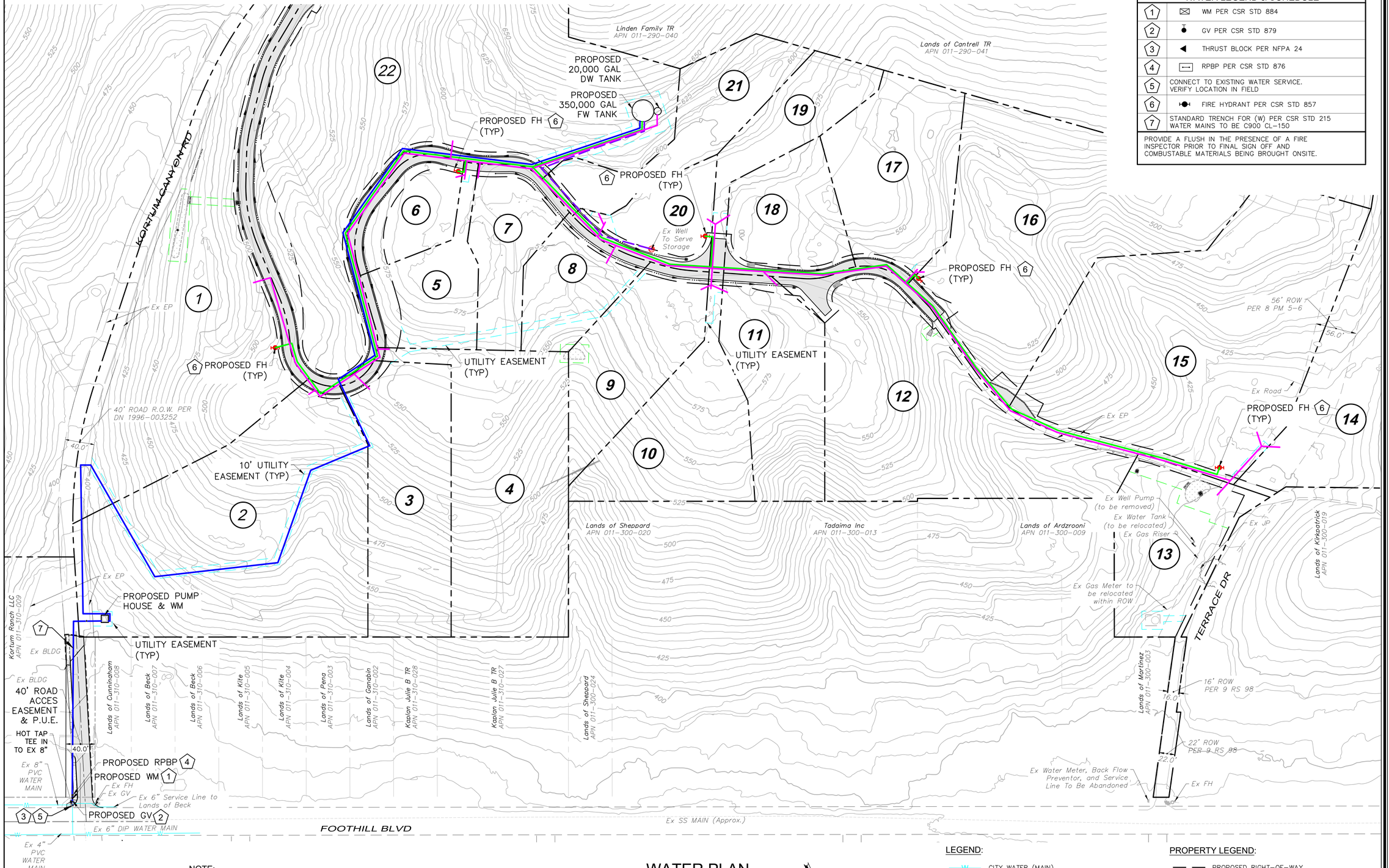
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Design by:	IL, RMS
Drawn by:	RMS
Checked by:	TLS

Sheet
C4.0
6 of 9 Sheets
Job 21105

WATER LEGEND & SCHEDULE

1	⊠	WM PER CSR STD 884
2		GV PER CSR STD 879
3		THRUST BLOCK PER NFPA 24
4		RPBP PER CSR STD 876
5		CONNECT TO EXISTING WATER SERVICE. VERIFY LOCATION IN FIELD
6		FIRE HYDRANT PER CSR STD 857
7		STANDARD TRENCH FOR (W) PER CSR STD 215 WATER MAINS TO BE C900 CL-150

PROVIDE A FLUSH IN THE PRESENCE OF A FIRE INSPECTOR PRIOR TO FINAL SIGN OFF AND COMBUSTABLE MATERIALS BEING BROUGHT ONSITE.



NOTE:

ALL NEW WATER METERS TO BE INSTALLED WITHIN THE PROPOSED OR EXISTING RIGHT-OF-WAY AND CONSTRUCTED TO SANTA ROSA CITY STANDARDS PER CALISTOGA REQUIREMENTS.

WATER PLAN

60' 30' 0 30' 60' 120' 180'

Graphic Scale: 1" = 60'

LEGEND:

- W — CITY WATER (MAIN)
- PRIVATE WATER (8" MAIN TO TANK)
- FIRE WATER (8" MAIN W/ 6" LAT TO FH)
- DOMESTIC WATER (6")
- WELL WATER (3")

PROPERTY LEGEND:

- PROPOSED RIGHT-OF-WAY
- PROPOSED UTILITY EASEMENT
- PROPOSED DRAINAGE EASEMENT

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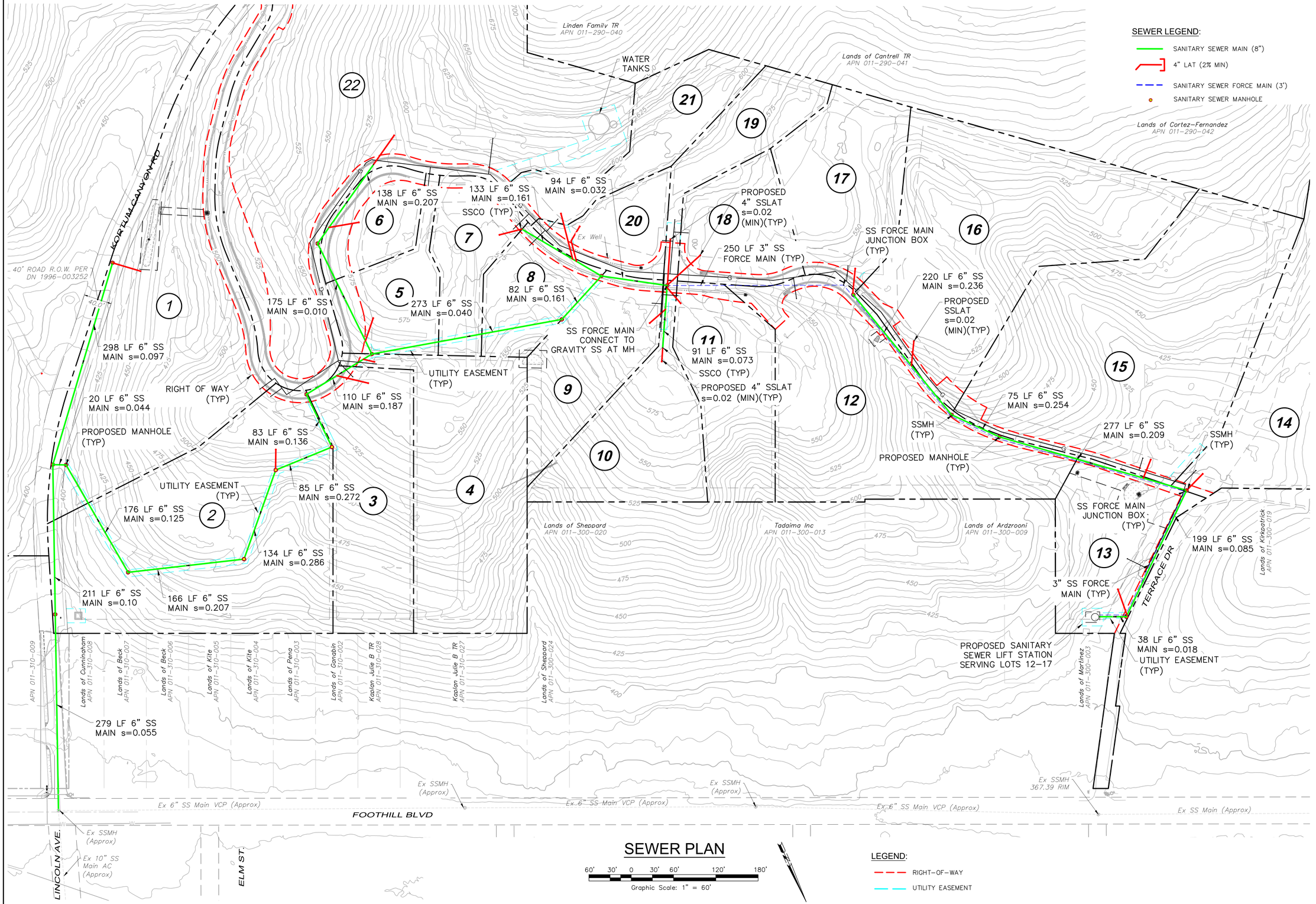
WATER PLAN

500 Kortum Canyon Road
Calistoga, California
APN 011-290-007, 038, 039 & 011-310-023

SCALE: AS SHOWN
Date: July 10, 2023
Design by: IL, RMS
Drawn by: RMS
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Sheet
C5.0
7 of 9 Sheets
Job 21105

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SEWER PLAN

60' 30' 0 30' 60' 120' 180'

Graphic Scale: 1" = 60'

LEGEND:
RIGHT-OF-WAY
UTILITY EASEMENT

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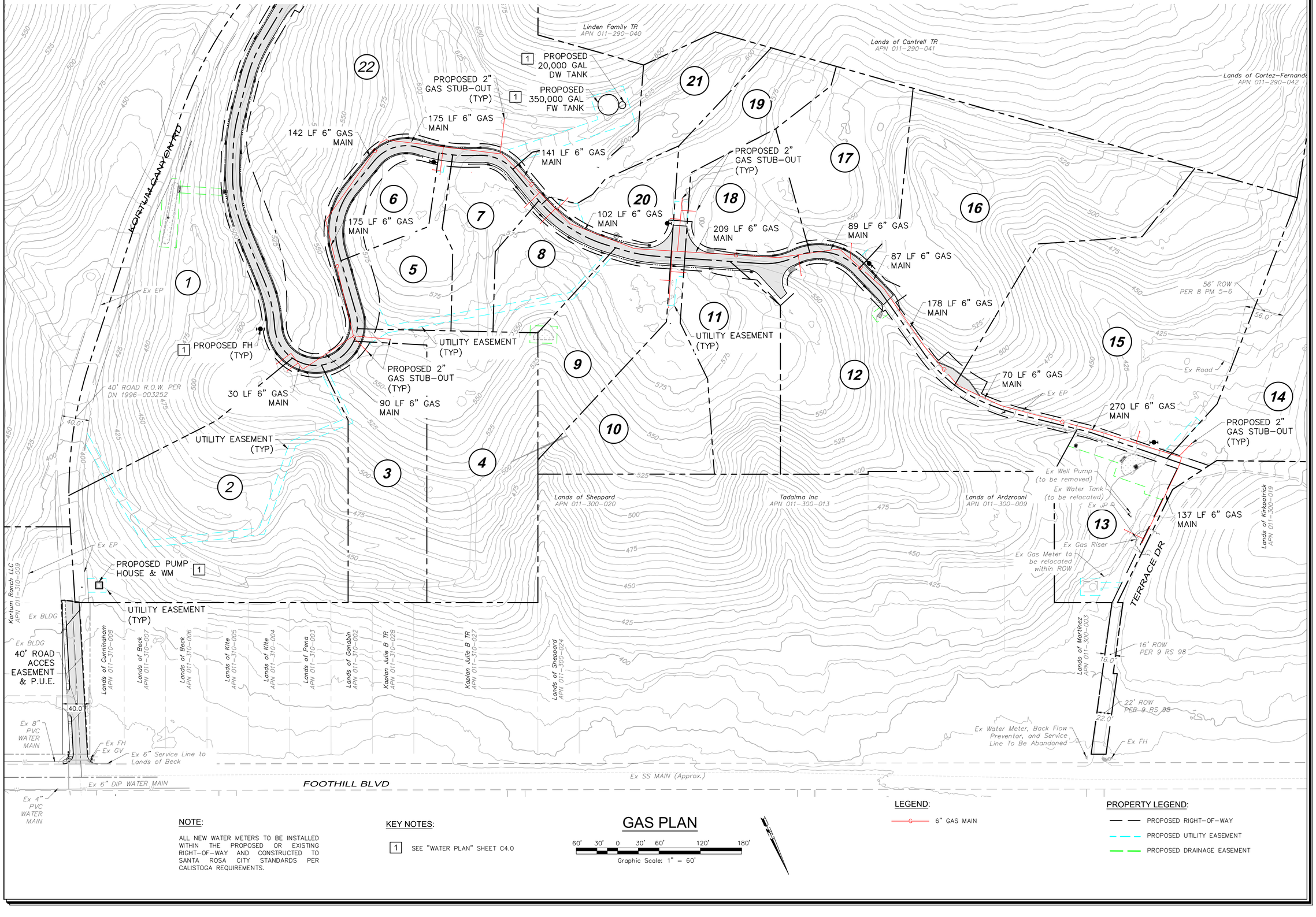
SEWER PLAN

500 Kortum Canyon Road
Calistoga, California
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Sheet
C5.1
8 of 9 Sheets
Job 21105

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NOTE:

ALL NEW WATER METERS TO BE INSTALLED WITHIN THE PROPOSED OR EXISTING RIGHT-OF-WAY AND CONSTRUCTED TO SANTA ROSA CITY STANDARDS PER CALISTOGA REQUIREMENTS.

KEY NOTES:

1 SEE "WATER PLAN" SHEET C4.0

GAS PLAN

60' 30' 0 30' 60' 120' 180'

Graphic Scale: 1" = 60'

LEGEND:

6" GAS MAIN

PROPERTY LEGEND:

PROPOSED RIGHT-OF-WAY

PROPOSED UTILITY EASEMENT

PROPOSED DRAINAGE EASEMENT

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KORTUM RANCH SUBDIVISION

GAS PLAN

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Sheet
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