

Biological Resources Assessment

RTE 20 217 Telecommunications Project Lake County, California

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SUMMARY

The proposed project is situated 2.36 miles north of the census designated place of Clearlake Oaks and 2.29 miles north of the City of Clearlake in unincorporated Lake County, California. The proposed tower project site is located 0.11 miles (560 feet) northwest of State Highway 20 (see Appendix A, Figures 1 and 2). This project is being undertaken to provide improved telecommunications services to the local area through the installation of a new communications tower and associated equipment. Synthesis Planning was contracted by the project proponent to perform this Biological Resources Assessment for the proposed project.

Three (3) vegetation communities were observed within the study area and include the following: 1. *Adenostoma fasciculatum* Shrubland Alliance, 2. *Avena* spp. – *Bromus* spp. Herbaceous Semi-Natural Alliance, and 3. Ruderal-disturbed vegetation. As part of this Biological Resources Assessment the potential for occurrence of special-status plant species and special-status wildlife species was evaluated.

Best Construction Practices and Avoidance and Minimization Measures as well as Standard Construction Conditions to prevent take of individuals discussed above are included in this report.

List of Acronyms and Abbreviations

BMP	Best Management Practices
BRA	Biological Resources Assessment
CDFG	California Department of Fish and Game
CDFW	California Department of Fish and Wildlife (formerly CDFG)
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRLF	California red-legged frog
CSC	California Species of Concern
DBH	Diameter breast height
ESHA	Environmentally Sensitive Habitat Area
FESA	Federal Endangered Species Act
FGC	Fish and Game Code
MBTA	Migratory Bird Treaty Act
NMFS	National Marine Fisheries Service
RWQCB	Regional Water Quality Control Board
SWPPP	Stormwater Pollution Prevention Plan
USFWS	U.S. Fish and Wildlife Service
USGS	United States Geological Survey
USACE	US Army Corps of Engineers
UTM	Universal Trans Mercator
WHR	Wildlife Habitat Relationships

1.0 INTRODUCTION

The purpose of this Biological Resources Assessment is to provide technical information and to review the proposed project study area, situated 2.36 miles north of the census designated place of Clearlake Oaks and 2.29 miles north of the City of Clearlake in unincorporated Lake County, California. The proposed tower project site is located 0.11 miles (560 feet) northwest of State Highway 20 (see Appendix A, Figures 1 and 2). This project is being undertaken to provide improved telecommunications services to the local area through the installation of a new communications tower and associated equipment. Synthesis Planning prepared this Biological Resources Assessment (BRA) to provide sufficient detail to determine the potential effects of the proposed project on federally- and state-listed wildlife and plant species. This BRA was conducted to determine the potential for special-status vegetation communities, plant and animal species to occur within the project study area, and to identify the limitations to potential development of the project. The BRA is prepared in accordance with legal requirements found in Section 7 (a)(2) of the Endangered Species Act (16 U.S.C. 1536(c)) and also provides information required for an Initial Study/Mitigated Negative Declaration as part of the California Environmental Quality Act (CEQA) review for the project. The document presents technical information upon which later decisions regarding project effects are developed.

The project area is located in Section 2 of the Benmore Canyon 7.5-minute topographic quadrangle. The project site is located within Township 13N and Range 07W. Surrounding land uses consist of agricultural, recreational, rural residences, and open space.

1.1 Project Description

A review of zoning drawings indicated that the proposed project would include:

- Construction of 30 feet by 30 feet (900 square feet, or 0.02 acres of ground disturbance) level pad area. The pad area would be covered with gravel on portions not used for equipment installation. 100 % of the tower site would occur within undisturbed chaparral habitat;
- Construction of a short driveway to the tower site from the existing access roadway. The access roadway would measure 15 feet by 30 feet (450 square feet, or 0.01 acres);
- Installation of a 150-foot Lattice tower on the pad area;
- Installation of telecommunications equipment and other related equipment within various areas of the gravel pad;
- Installation of a six (6) foot tall chain link fence around the telecommunications site;
- Installation of 1,250 feet (0.24 miles) of underground power and fiber optic cable between the tower site and an existing connection point near State Highway 20 and the terminus of the existing access road. These cables will be installed in the existing access road in pre-disturbed areas and within chaparral habitat previously disturbed during the construction of the tower site and access driveway.

The existing access roadway would be upgraded as well to provide access to the telecommunications tower site. Minor grading of the existing roadway would be conducted, and

AB gravel would be applied to create stable access to the tower site. All work would occur within the current boundaries of the existing roadway. The access roadway will be an all surface roadway that will be capable of supporting equipment weighing up to 75,000 pounds.

The proposed project will permanently disturb approximately 1,350 square feet (0.03 acres) of undisturbed land that is currently vegetated with native chaparral habitat for construction of the tower site and proposed access driveway. All other project activities would occur within existing disturbed areas (access road and fiber-optic cable/power alignment).

Staging Areas and Fueling

Storage areas for contractor equipment and materials will be determined prior to project construction activities. The project proponent, with the assistance of a biologist, will review the local project area and locate staging areas that are in previously disturbed areas that will not have potential to affect wildlife habitat or species. Staging areas will be located in pre-disturbed areas and will be approved by Lake County prior to use. The proposed project site will be used as a staging area for project activities as well. In addition, to prevent contamination of fuel and other project materials into adjacent habitat areas, the following best management measures will be implemented:

- The use or storage of petroleum-powered equipment shall be accomplished in a manner to prevent the potential release of petroleum materials into adjacent habitat areas, including waters of the State and U.S.,
- Areas for fuel storage, refueling and servicing of construction equipment must be located in an upland location outside of sensitive habitat,
- Wash sites must be located in upland locations to ensure wash water does not flow into stream channels or wetlands.
- All construction equipment must be in good working condition, showing no signs of fuel or oil leaks. All questionable motor oil, coolant, transmission fluid, and hydraulic fluid hoses, fittings and seals shall be replaced. The mechanical equipment shall be inspected on a daily basis to ensure no leaks. All leaks shall be repaired in the equipment staging area or other suitable location prior to resumption of construction activity.
- Oil absorbent and spill containment materials shall be located on site when mechanical equipment is in operation within 100 feet of a waterway. If a spill occurs, no additional work shall occur until, 1) the mechanical equipment is inspected by the contractor and the leak has been repaired, 2) the spill has been contained, and 3) CDFW, RWQCB and Lake County are contacted and have evaluated the impacts of the spill.

Construction Scheduling

The estimated time period for construction is 90 working days for the entire project. Work will begin as soon as all regulatory clearances and permits are obtained.

Operations and Maintenance

The facilities would be constructed to current construction-industry standards and codes.

Construction Best Management Practices

Construction BMPs will be incorporated in the construction of the project and include, but are not limited to, the following:

- To avoid debris contamination into drainages and other sensitive wildlife habitats, silt fence or other sediment control devices will be placed around construction sites in these areas to contain spoils from construction excavation activities.
- Surveys for identified special-status species shall be conducted by qualified biologists at the appropriate times before construction starts to determine occupancy at the site. If no special-status species are found, no further action other than the Best Management Practices identified above are required. If individuals are found, including nesting birds, a buffer zone around the species or nest will be required at a sufficient distance to prevent take of individual species.
- Due to the potential for special-status species to occur, move through, or into the project area, an on-site biological monitor, shall at a minimum, check the ground beneath all equipment and stored materials each morning prior to work activities during disturbing activities to prevent take of individuals. All pipes or tubing Four (4) inches or greater shall be sealed by the relevant contractor with tape at both ends to prevent animals from entering the pipes at night. All trenches and other excavations shall be backfilled the same day they are opened, or shall have an exit ramp built into the excavation to allow animals to escape.
- Environmental Awareness Training shall be presented to all personnel working in the field on the proposed project site. Training shall consist of a brief presentation in which biologists knowledgeable of endangered species biology and legislative protection shall explain endangered species concerns. Training shall include a discussion of special-status plants and sensitive wildlife species. Species biology, habitat needs, status under the California and Federal Endangered Species Acts, and measures being incorporated for the protection of these species and their habitats shall also be discussed.
- Project site boundaries shall be clearly delineated by stakes and /or flagging to minimize inadvertent degradation or loss of adjacent habitat areas during project operations. Staff and/or its contractors shall post signs and/or place fence around the project site to restrict access of vehicles and equipment unrelated to project operations.

2.0 STUDY METHODOLOGY

This Biological Resources Assessment used the best available scientific and commercial data to evaluate the potential effects to biological resources from the proposed project. Literature review, aerial imagery and field surveys informed the descriptions of the vegetation communities, identification of present and past occurrences of special-status species in the vicinity of the proposed project, and the assessment of habitats for special-status animal species.

2.1 Literature Search

Information on special-status plant and animal species was compiled through a review of the literature and database searches. Database searches for known occurrences of special-status species focused on the Benmore Canyon, Clearlake Oaks, Clearlake Highlands, and Lower Lake U.S. Geologic Service 7.5-minute topographic quadrangle. The following sources were reviewed to determine which special-status plant and wildlife species have been documented in the vicinity of the project site:

- U.S. Fish and Wildlife Service (USFWS) quadrangle species lists (USFWS 2023)
- USFWS list of special-status animals for Lake County (USFWS 2023)
- California Natural Diversity Database records (CNDDDB) (CNDDDB 2023)
- California Department of Fish and Wildlife's (CDFW) Special Animals List (CDFW 2023)
- State and Federally Listed Endangered and Threatened Animals of California (CDFW ^[1]_{SEP} 2023)
- California Native Plant Society (CNPS) Electronic Inventory records (CNPS 2023)
- CDFG publication "California's Wildlife, Volumes I-III" (Zeiner et al. 1990)

The USFWS electronic list of Endangered and Threatened Species was queried electronically (www.fws.gov/sacramento/es_spp_lists-overview.htm). The CalFish IMAPS Viewer (www.calfish.org/DataandMaps/CalFishGeographicData), developed by CDFW Biogeographic Branch for analysis of fisheries, was also reviewed. ^[1]_{SEP}

The CDFW BIOS website and the *California Essential Habitat Connectivity Project: A strategy for conserving a connected California* (Spencer et al. 2010) were reviewed for wildlife movement information. The CDFW BIOS website and the CNDDDB were review for documented nursery sites. Other sources of information regarding reported occurrences include locations previously reported to the U.C Berkeley Museum of Vertebrate Zoology and the California Academy of Sciences.

2.2 Field Surveys

Cord Hute, Senior Biologist for Synthesis Planning, conducted botanical and biological surveys of the project site and buffer area on December 8, 2023. Mr. Hute analyzed on-site and buffer area habitats for suitability for special-status plant and animal species during these surveys.

A reconnaissance-level biological survey of the project site was conducted. Habitat types

encountered during the surveys were characterized primarily by dominant and subdominant plant species, and wildlife use was described based on known and anticipated occurrences. Species were recorded as present if they were observed, if species' vocalizations were heard, or if diagnostic field signs were found (i.e., scat, tracks, pellets). Surveys were conducted on the project site and in an area approximately 200 feet wide around the project site (hereafter referred to as the project buffer area).

Special-status wildlife species, in particular, were surveyed for to determine the presence or absence of such species or their habitat.

The survey was conducted to identify the following:

- Suitability of habitat(s) to support sensitive wildlife species;
- Presence of wildlife species and their habitats;
- Potential of the site to contain sensitive habitats, including vernal pools, natural wetlands, etc.;
- Potential of the site to support sensitive small mammal species;
- Potential of the site to support sensitive avian species (e.g., migratory birds, raptors, waterfowl, etc.);
- Habitat condition, quality and vegetation associations; and
- On-site, adjacent and surrounding land uses.

Synthesis utilized the guidance of Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities (CDFW 2023). Plant surveys were conducted using demographic survey techniques/guidelines including conducting floristically based surveys, identifying to species level for all plants encountered, and identifying to the level necessary to detect sensitive plants, if present. When possible, the surveys were conducted within the correct phenological time to detect targeted sensitive plant species. The identity of plant species not currently blooming were determined, where feasible, by other characteristics or features of the plants structure. Botanical field surveys were conducted in a manner which maximized the likelihood of locating special status plants and sensitive natural communities that were present. Botanical field surveys were floristic in nature, meaning that every plant taxon that occurs in the project area is identified to the taxonomic level necessary to determine rarity and listing status. Surveys were limited to habitats known to support special status plants. During field surveys, the entire project site and a 200-foot buffer area around the project site were surveyed on 30 foot transects through the entire survey area. Botanical field surveys were conducted at the times of year when plants will be both evident and identifiable (during flowering or fruiting). See Section 5 for survey results and impacts discussion.

Synthesis utilizes GIS Pro, a mobile software program, to collect field data on plant and animal species identified during surveys. The program is installed on an Apple iPad. Aerial topographic maps and satellite photographic images are loaded into the GIS Pro program on the iPad in order to provide as accurate location data as possible during the documentation of individual plant species populations. In addition, the iPads operate on an internal GIS locator independent of cellular service data coverage, which ensures the most accurate location possible during remote field work. When a special-status plant species or population was observed, the surveying biologist creates a population polygon (or

area) in GIS Pro. The polygon is drawn corresponding to the location and shape and size of boundaries of the population. The date the species is observed, the biologist's name, and species name are recorded in the polygon record. Data on the estimated number of individual plants observed in each population may also be collected. A CNDDDB field survey form is completed for each special-status species or population identified. In the case of the proposed project, no sensitive wildlife species were observed during surveys.

2.3 Impact Assessment Methodology

The on-site vegetation communities, present and past occurrence locations of federally and state listed species and federal and state species of concern within close proximity of the proposed project area, and habitats for special-status plant and animal species were examined. Based on the current site conditions, the potential for occurrence on the site for special-status biological resources was evaluated and the project description was used to determine any potential direct or indirect effects.

The determination of whether the proposed project may result in adverse impacts to federally-listed special-status species was based on guidelines established by the USFWS under Section 7(a) of the Federal Endangered Species Act (FESA), under which a project that may have an adverse effect impact on listed biological resources must be assessed. FESA states that, "each federal agency shall...insure that any action authorized, funded, or carried out by such agency (hereinafter in this section referred to as an "agency action") is not likely to jeopardize the continued existence of any endangered or threatened or result in the destruction or adverse modification of habitat of such species." Thus, components of the proposed project were deemed to have an adverse impact on special-status biological resources if they could result in effects as described in the above statement to any listed species or its habitat.

The determination of whether the proposed project may result in adverse impacts to State special-status species was based on CEQA, the CDFW and the CNPS guidelines for special status plants and animals.

Potential impacts from the project to habitats not occupied by species but for which habitats occurred was also evaluated.

3.0 ENVIRONMENTAL BASELINE

The project area is located within the North Coast Bioregion, a bioregion that encompasses the area from southwestern Oregon to southern Monterey County and contains the southern extent of the mixed hardwood forest with redwood. The North Coast Bioregion is delineated by the Pacific Ocean on the west and the Coast Ranges Mountains on the east and encompasses those lands west of the highest ridgeline dividing areas that drain directly into the Pacific Ocean from those areas that drain toward the interior. Habitats within this bioregion include both mesic (moist) habitats, such as freshwater marsh, and xeric (dry) habitats, such as chaparral, and are typical of a Mediterranean type climate. Average rainfall in the area is 40 inches (Welsh 1994).

3.1 Wetlands and Waters of the U.S. and State

Wetlands are generally considered to be areas that are periodically or permanently inundated by surface or ground water, and support vegetation adapted to life in saturated soil. Wetlands are recognized as important features on a regional and national level due to their high inherent value to fish and wildlife, use as storage areas for storm and flood waters, and water recharge, filtration, and purification functions. Technical standards have been developed as a method of defining wetlands through consideration of three criteria: hydrology, soils, and vegetation (USACE 1987).

The U.S. Army Corps of Engineers (USACE), CDFW, and Regional Water Quality Control Board (RWQCB) have jurisdiction over modifications to stream channels, river banks, lakes, and other wetland features. Jurisdiction of the Corps is established through the provisions of Section 404 of the Clean Water Act, which prohibits the discharge of dredged or fill material into “waters” of the United States without a permit, including certain wetlands and unvegetated “other waters of the U.S.” The Corps also has jurisdiction over navigable waters, including tidally influenced ones below Mean High Water, under Section 10 of the Rivers and Harbors Act. Jurisdictional authority of the CDFG is established under Section 1602 of the Fish and Game Code, which pertains to activities that would disrupt the natural flow or alter the channel, bed, or bank of any lake, river, or stream. The Fish and Game Code states that it is “unlawful to substantially divert or obstruct the natural flow or substantially change the bed, channel or bank of any river, stream or lake” without notifying the Department, incorporating necessary mitigation, and obtaining a Streambed Alteration agreement. The Wetlands Resources Policy of the CDFW states that the Fish and Game Commission will “strongly discourage development in or conversion of wetlands... unless, at a minimum, project mitigation assures there will be no net loss of either wetland habitat values or acreage.” Jurisdictional authority of the RWQCB is established pursuant to Section 401 of the Clean Water Act, which typically requires a water quality certification when an individual or nationwide permit is issued by the Corps. The RWQCB also has jurisdiction over “waters of the State” under the Porter-Cologne Water Quality Control Act.

In addition to the definition and classification procedures developed by federal agencies, some California resource and regulatory agencies have developed their own wetland definition and classification procedures. Although these State agency procedures are generally based on the USFWS and USACE definition and classification procedure described above, they do differ in specific details.

Numerous State agencies regulate, manage, or otherwise control natural resources within California through a wide variety of general and specific laws and directives, which are carried out by resource departments, commissions, and boards.

The Keene-Nejedly California Wetlands Preservation Act (1976) is the only State legislation besides the Coastal Act to define wetlands. The act states there "is a need for an affirmative and sustained public policy and program directed at their [wetlands] preservation, restoration, and enhancement, in order that such wetlands shall continue in perpetuity". The act provided for acquisition of ten important wetlands, using funds from several sources, and was intended to support preparation of a statewide wetlands plan. However, acquisition funds were not allocated in 1976.

The State Regional Water Quality Control Boards primary role is to enforce the federal Clean Water Act, and in doing so, assert regulatory authority over development activities affecting the water quality of navigable water and wetlands. Under Section 401(a)(1) of the Clean Water Act: Any applicant for a Federal license or permit to conduct any activity...which may result in any discharge into the navigable waters, shall provide the licensing or permitting agency a certification from the State...that any such discharge will comply with the applicable provisions of Sections 301, 302, 303, 306, and 307 of this Act.

In turn, California Code of Regulations Section 3831(k) defines the State certification required under Section 401 as:

'Water Quality Certification' means a certification that there is a reasonable assurance that an activity which may result in a discharge to navigable waters of the United States will not violate water quality standards, where the activity requires a federal license or permit.

In practice, the regional boards have applied their authority over water quality standards to all waters of the State, including wetlands. Discharge to wetlands and riparian wetlands may violate water quality objectives (e.g., turbidity, temperature, or salinity); impair beneficial uses (e.g., groundwater recharge, recreation, wildlife habitat, fish migration, and shellfish harvesting); and conflict with the anti-degradation policy.

The California Department of Fish and Wildlife has Statewide resource responsibilities and authority that directly and indirectly influence projects and activities in coastal zone wetlands. In addition to being responsible for the maintenance and protection of California's fish and wildlife, the CDFW has authorities under California's Public Resources Code, and the federal Fish and Wildlife Coordination Act to regulate or comment on activities in wetland and riparian areas. The CDFW also assumes primary responsibility for implementation of the California State Endangered Species Act, and the Streambed Alteration Agreement (Fish and Game Code Sections 1601–1603). This agreement is one of the State's few direct legal instruments for the protection of streams, rivers, and lakes. The CDFW also comments directly to the USACE concerning fish and wildlife aspects of Section 10 and Section 404 permits. CDFW's official position regarding the protection of wetlands is that development projects should not result in a net loss of either wetland acreage or wetland habitat value.

A delineation of wetlands and watercourses within the project study area was conducted by a Synthesis Planning wetland ecologist during the site visit. Synthesis Planning did not identify wetland habitat or stream courses within the proposed project site or buffer area.

3.2 Vegetation Communities and Wildlife Habitat

Wildlife habitat classifications for this report is based on the California Department of Fish and Game's Wildlife Habitat Relationships (WHR) System (CDFG 1988) which places an emphasis on dominant vegetation, vegetation diversity and physiographic character of the habitat. The value of a site to wildlife is influenced by a combination of the physical and biological components of the immediate environment, and includes such features as type, size, and diversity of vegetation communities present and their degree of disturbance. As a plant community is degraded by loss of understory species, creation of openings, and a reduction in canopy area, a loss of structural diversity generally results. Degradation of the structural diversity of a community typically diminishes wildlife habitat quality, often resulting in a reduction of wildlife species diversity.

Vegetation communities are often classified based on the dominant plant species within the community. Wildlife habitats are typically distinguished by vegetation type, with varying combinations of plant species providing different resources for use by wildlife. As a result, wildlife habitats are often classified on a more inclusive manner of the structure of the habitat rather than the specifics of the plant species, resulting in several vegetation communities occurring under one type of wildlife habitat.

The following is a discussion of existing vegetation communities found within the proposed project site and buffer area. Three (3) vegetation community types were observed within the study area. Where appropriate vegetation community types are described using The Manual of California Vegetation Online Website (CNPS 2023). Vegetation types observed were: 1. *Adenostoma fasciculatum* Shrubland Alliance, 2. *Avena* spp. – *Bromus* spp. Herbaceous Semi-Natural Alliance, and 3. Ruderal-disturbed vegetation. For a list of plant species observed in these vegetative communities during biological surveys, please refer to Appendix B.

1. *Adenostoma fasciculatum* Shrubland Alliance was observed within the undeveloped portions of the proposed project site, as well as large areas of the project buffer area. Most of this biome only gets about 10-17 inches of rain, but in California rainfall amounts of up to 40 inches may occur at northern and high elevation locations. Most rain comes in the winter. Because of the long period of summer, only plants with hard leaves, such as scrub oaks and chamise shrubs, can survive.

Most chaparral vegetation occurs on steep hills and mountains below 5,000 feet elevation. Chaparral soils range from deep, weakly developed soils to shallow, rocky soils. Generally chaparral is thought to occur upon thin, porous, and rocky soils that are relatively low in nitrogen, potassium and phosphorous. While chaparral and other Mediterranean-type vegetation changes over time (depending on fire and disturbance regimes), chaparral is likely to be the edaphic climax vegetation on well-drained rocky soils with or without the influence of fire. Due to their coarse

grain size and their high content of weatherable minerals, these soils are susceptible to erosion, and on steeper slopes, to landslides.

Soils under chamise may exhibit hydrophobicity, repelling water on the soil surface. However, when water does penetrate the soil surface, it drains rapidly through the coarse soil textures, offering little water-holding capacity. Fire can cause some soils to become water repellent or hydrophobic. The mechanism of hydrophobic soil formation has been explained and identified as important to post-fire sediment yields.

Chaparral is composed largely of evergreen, sclerophyllous shrub species that range from 1 to 4 meters in height. Other growth forms including soft-leaved subshrubs, perennial herbs, geophytes (bulbs and corms), and annual herbs, are less abundant in mature chaparral but can be present in abundance in early and late successional stands of chaparral. Depending on the species composition and underlying topography and soil, the structure of chaparral can range from low, monotonous, smooth-textured vegetation to more heterogeneous stands approaching the vertical structure of woodlands.

Chaparral generally is thought to be a fire-dependent system, based on the many adaptations of its characteristic species, and its resilience in form and species composition to periodic burning. Most of the characteristic shrub species in chaparral can be organized into three adaptive strategies related to fire: (1) shrubs that have stems that regenerate following fire from below ground burls (resprouters); (2) shrubs that produce large amounts of dormant seed that persist for long periods of time and germinate by heat or chemical processes initiated by fire (obligate seeders); and (3) plants that apply both strategies.

The abundance and diversity of wildlife in California's chaparral is not commonly recognized. Chaparral habitat supports nearly 50 species of mammals, but none live exclusively in chaparral. Some are found primarily in mature chaparral and others in young chaparral and along ecotones between chaparral and other plant communities. Several prefer riparian areas in and near chaparral. Predators in California's chaparral include mountain lions (*Puma concolor*), bobcats (*Lynx rufus*) and coyotes (*Canis latrans*). These predators prey on black-tailed deer (*Odocoileus hemionus columbianus*), rabbits and ground squirrels. Although many bird species travel over and through the chaparral, only a few reside year-round. Common birds in chaparral ecosystems include the wrentit (*Chamaea fasciata*), Western Scrub Jay (*Aphelocoma californica*), California towhee, (*Melospiza crissalis*), spotted towhee (*Pipilo maculatus*) and California thrasher (*Toxostoma redivivum*). Birds especially common in chaparral for several years after a fire include Costa's hummingbird (*Calypte costae*), sage sparrow (*Artemisiospiza belli*), rufous-crowned sparrow (*Aimophila ruficeps*), lazuli bunting (*Passerina amoena*), and Lawrence's goldfinch (*Carduelis lawrencei*).

2. *Avena* spp. – *Bromus* spp. Herbaceous Semi-Natural Alliance was observed within small portions of the project buffer area along the existing access road to the tower site. Common species found in this community were composed of introduced grasses and broadleaf weedy species, which quickly re-colonize disturbed areas.

Grasslands support a variety of mammals, birds, and reptiles, and provide foraging habitat for raptors. Many species use the grassland for only part of their habitat requirements, foraging in the grassland and seeking cover in surrounding tree and scrub cover. Grassland cover provides foraging, nesting, and denning opportunities for resident species such as western fence lizard (*Sceloporus occidentalis*), northern alligator lizard (*Elgaria coerulea*), gopher snake (*Pituophis melanoleucus*), western meadowlark (*Sturnella neglecta*), goldfinch (*Carduelis tristis*), ring-necked pheasant (*Phasianus colchicus*), red-winged blackbird (*Agelaius phoeniceus*), California ground squirrel (*Spermophilus beecheyi*), California vole (*Microtus californicus*), pocket gophers (*Thomomys* spp.), black-tailed jackrabbit (*Lepus californicus*), and occasionally black-tailed deer (*Odocoileus hemionus columbianus*).

The rodent, bird, and reptile populations offer foraging opportunities for avian predators such as the northern harrier hawk (*Circus cyaneus*), American kestrel (*Falco sparverius*), red-tailed hawk (*Buteo jamaicensis*), golden eagle (*Aquila chrysaetos*), barn owl (*Tito alba*), and great horned owl (*Bubo virginianus*). Mammalian predators which utilize grasslands include gray fox (*Urocyon cinereoargenteus*) and long-tailed weasel (*Mustela frenata*).

3. Ruderal-disturbed vegetation was observed within the disturbed areas of the existing access road that will be improved, as well as other existing access roads that will be used for access to the project site. This vegetation type is comprised mostly of non-native weedy herbaceous forb plants.

4.0 SPECIAL-STATUS SPECIES AND THEIR HABITATS

4.1 Regulatory Requirements

4.1.1 Federal Endangered Species Act (FESA)

To determine whether the proposed project may result in adverse effects to federally listed species, the criteria used was based on guidelines established by the USFW under Section 7(a) of the FESA, in which a project that may have an adverse effect on listed biological resources must be assessed. FESA (16 U.S. Code [USC 1531–1544]) provides for the conservation of species that are Endangered or Threatened throughout all or a significant portion of their range, as well as the protection of habitats on which they depend.

Section 7 requires federal agencies to consult with USFWS or NMFS, or both, before performing any action (including actions such as funding a program or issuing a permit) that may affect listed species or designated Critical Habitat. The section 7 consultations are designed to assist Federal agencies in fulfilling their duty to ensure federal actions "do not jeopardize" the continued existence of a species or destroy or adversely modify Critical Habitat.

The USFWS defines temporary and permanent effects as areas denuded, manipulated, or otherwise modified from their pre-project conditions, thereby removing one or more essential components of a listed species' habitat as a result of project activities that include, but are not limited to, construction, staging, storage, lay down, vehicle access, parking, etc. According to the USFWS, temporary effects are limited to one construction season and, at a minimum, are fully restored to baseline habitat values or better within one year following initial disturbance. Permanent effects are not temporally limited and include all effects not fulfilling the criteria for temporary effects.

4.1.2 Federal Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) (Title 16, United States Code [USC], Part 703) enacts the provisions of treaties between the United States, Great Britain, Mexico, Japan, and the Soviet Union and authorizes the U.S. Secretary of the Interior to protect and regulate the taking of migratory birds. It establishes seasons and bag limits for hunted species and protects migratory birds, their occupied nests, and their eggs (16 USC 703, 50 Code of Federal Regulations [CFR] 21, 50 CFR 10). Most actions that result in taking of, or the permanent or temporary possession of, a protected species constitute violations of the MBTA. The MBTA also prohibits destruction of occupied nests. The Migratory Bird Permit Memorandum (MBPM-2) dated April 15, 2003, clarifies that destruction of most unoccupied bird nests (without eggs or nestlings) is permissible under the MBTA; exceptions include nests of federally threatened or endangered migratory birds, bald eagles (*Haliaeetus leucocephalus*), and golden eagles (*Aquila chrysaetos*). USFWS is responsible for overseeing compliance with the MBTA.

4.1.3 California Endangered Species Act (CESA)

The California Endangered Species Act (CESA (FGC §§ 2050–2116) is administered by CDFW. The CESA prohibits the "taking" of listed species except as otherwise provided in state law. The

CESA includes FGC Sections 2050–2116, and policy of the state to conserve, protect, restore, and enhance any endangered species or any threatened species and its habitat. The CESA requires mitigation measures or alternatives to a proposed project to address impacts to any State listed endangered, threatened or candidate species, or if a project would jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of habitat essential to the continued existence of those species, if there are reasonable and prudent alternatives available consistent with conserving the species or its habitat which would prevent jeopardy. Section 86 of the FGC defines take as “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.” Unlike the ESA, CESA applies the take prohibitions to species under petition for listing (state candidates) in addition to listed species. Section 2081 of the FGC expressly allows CDFW to authorize the incidental take of endangered, threatened, and candidate species if all of the following conditions are met:

- The take is incidental to an otherwise lawful activity.
- The impacts of the authorized take are minimized and fully mitigated.
- Issuance of the permit will not jeopardize the continued existence of the species.
- The permit is consistent with any regulations adopted in accordance with §§ 2112 and 2114 (legislature-funded recovery strategy pilot programs in the affected area).
- The applicant ensures that adequate funding is provided for implementing mitigation measures and monitoring compliance with these measures and their effectiveness.

The CESA provides that if a person obtains an incidental take permit under specified provisions of the ESA for species also listed under the CESA, no further authorization is necessary under CESA if the federal permit satisfies all the requirements of CESA and the person follows specified steps (FGC § 2080.1).

4.1.4 California Fish and Game Code

The California Constitution establishes the California Fish and Game Commission (Commission) (CA Constitution Article 4, § 20). The California Fish and Game Code (FGC) delegates the power to the Commission to regulate the taking or possession of birds, mammals, fish, amphibian and reptiles (FGC § 200). The Commission has adopted regulations setting forth the manner and method of the take of certain fish and wildlife in the California Code of Regulations, Title 14.

4.1.5 California Fish and Game Code- Species Protection

The FGC establishes CDFW (FGC § 700) and states that the fish and wildlife resources of the state are held in trust for the people of the state by and through CDFW (FGC § 711.7(a)). All licenses, permits, tag reservations and other entitlements for the take of fish and game authorized by FGC are prepared and issued by CDFW (FGC § 1050 (a)).

Provisions of the FGC provide special protection to certain enumerated species such as:

- § 3503 protects eggs and nests of all birds.
- § 3503.5 protects birds of prey and their nests.
- § 3511 lists fully protected birds.
- § 3513 protects all birds covered under the federal Migratory Bird Treaty Act.

- § 3800 defines nongame birds.
- § 4150 defines nongame mammals.
- § 4700 lists fully protected mammals.
- § 5050 lists fully protected amphibians and reptiles.
- § 5515 lists fully protected fish species.

4.1.6 Lake County Regulations

The Open Space, Conservation and Recreation Chapter (Chapter 9) of the Lake County General Plan contains goals, policies, and programs designed to address biological resources, along with other resources in the County. The purpose of the Biological Resources section (Section 9.1) is to preserve and protect environmentally sensitive significant habitats, enhance biodiversity, and promote healthy ecosystems throughout the County. Policies commit the County to protect resources such as rare and endangered species, environmentally sensitive habitats, riparian corridors and wetlands.

4.2 Special-Status Species Reviewed

For the purposes of this Biological Resources Assessment, special-status species include those that are federally listed as Endangered, Threatened or Proposed for federal listing (candidate) under the USFWS. Other species also evaluated in this Biological Assessment include non-listed federal and California Special Species of Concern (CSC) and those species that fall under the jurisdiction of the USFWS such as the MBTA and the CDFW, such as CEQA Section 15380(d).

Impacts to special-status species were assessed if: (1) those species occurred in habitats similar to those of the project sites and buffer areas, and (2) were known to occur within the general vicinity of the proposed project sites.

Federally and State-Listed Plant Species. Review of the USFWS (USFWS 2023), the CNPS (CNPS 2023), and the CNDDB (CNDDB 2023) revealed that 34 listed plant species and species of concern have potential to occur in the general project area. Please refer to Table 1 for a list of these species and their habitat requirements. Potential habitat is present for 28 of these 34 plant species within the project site and buffer area. Botanical surveys were conducted on December 8, 2023.

Table 1. Special-Status Species Potentially Occurring in the Proposed Project Site and Buffer Area

Federal Status			State Status		Habitat/Observances		Potential to Occur on Project Site and Buffer Area	
Common Name		Scientific Name						
Birds								
Golden eagle	<i>Aquila chrysaetos</i>	-	Fully Protected/Watch List	Golden eagles are found in open and semi-open habitats from sea level to 3,600 meters elevation. Habitat types that they inhabit include tundra, shrublands, grasslands, woodland-brushlands, and coniferous forests. Most golden eagles are found in mountainous areas, but they also nest in wetland, riparian and estuarine habitats.	Potentially present. This species may be present feeding in the general project buffer area but is not likely to be found nesting as no nesting habitat is present. No individuals of this species were observed during surveys. This species has not been documented within the boundaries of or in proximity to the proposed project site (CDFW 2023) (see Figure 3).			
Western yellow-billed cuckoo	<i>Coccyzus americanus occidentalis</i>	FT	CE	Riparian forest.	None. No potential habitat suitable for this species was observed within the proposed project site or buffer area.			
Osprey	<i>Pandion haliaetus</i>	-	Watch List	Nests along open shores, bays, freshwater lakes, and larger streams. Build large nests in tree-tops within 15 miles of good fish-producing body of water.	Potentially present. This species is not expected to be present nesting in the general project area and is not likely to be found in the proposed project site. Potential nesting habitat was observed in the general project area outside of the project site and buffer. No individuals of this species were observed during surveys. This species has not been documented within the boundaries of or in proximity to the proposed project site (CDFW 2023) (see Figure 3).			
Northern spotted owl	<i>Strix occidentalis caurina</i>	FT	CT	Northern spotted owls are very territorial and intolerant of habitat disturbance. They prefer old-growth forests with tree canopies that are high and open enough for the owls to fly between and underneath the trees. Preferred areas have large trees with broken tops, deformed limbs or large holes used as nesting sites. Each pair needs a large amount of land for hunting and nesting, and although they do not migrate, spotted owls may shift their ranges in response to seasonal changes that make hunting difficult.	None. No potential habitat suitable for this species was observed within the proposed project site or buffer area.			

Common Name		Scientific Name	Federal Status	State Status	Habitat/Observances	Potential to Occur on Project Site and Buffer Area
Mammals						
Pallid bat	<i>Antrozous pallidus</i>	-	CSC	Found in deserts, grasslands, shrublands, woodlands, and forests. Most common in dry habitats with rocky areas for roosting. Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	Potentially Present. Potential habitat suitable for this species was observed within the proposed project site and buffer area. No sign of this species was observed during biological surveys nor were any maternity sites identified. This species has not been documented within the boundaries of or in proximity to the proposed project site (CDFW 2023) (see Figure 3).	
Townsend's big-eared bat	<i>Corynorhinus townsendii</i>	-	CSC	Throughout California in a wide variety of habitats. Most common in mesic sites. Roosts in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.	Potentially Present. Potential habitat suitable for this species was observed within the proposed project site and buffer area. No sign of this species was observed during biological surveys nor were any maternity sites identified. This species has been documented approximately 1.21 miles west of the proposed project site (CDFW 2023) (see Figure 3).	
Amphibians and Reptiles						
Western pond turtle	<i>Emys marmorata</i>	Candidate Threatened	CSC	A thoroughly aquatic turtle of ponds, marshes, rivers, streams, and irrigation ditches with aquatic vegetation. Require basking sites and suitable upland habitat (sandy banks or grassy open fields) for egg-laying.	None. No potential habitat suitable for this species was observed within the proposed project site or buffer area.	
California red-legged frog	<i>Rana draytonii</i>	FT	CSC	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11 to 20 weeks of permanent water for larval development. Must have access to aestivation habitat, consisting of small mammal burrows and moist leaf litter.	Potentially Present. Potential upland aestivation habitat suitable for this species was observed within the proposed project site and buffer area. No aquatic breeding habitat for this species was observed within the proposed project site or buffer area. However, aquatic breeding habitat is present in a farm pond approximately 0.42 miles south of the proposed project site. No sign of this species was observed during biological surveys. This species has not been documented within the general vicinity of the proposed project site	

Common Name		Scientific Name	Federal Status	State Status	Habitat/Observances	Potential to Occur on Project Site and Buffer Area according to CNDDB (CDFW 2023) (see Figure 3).
Foothill yellow-legged frog (North Coast DPS)		<i>Rana boylei</i>	-	CSC	Partly-shaded, shallow streams and riffles with a rocky substrate in a variety of habitats. Need at least some cobble-sized substrate for egg-laying. Require at least 15 weeks to attain metamorphosis.	None. No potential habitat suitable for this species was observed within the proposed project site or buffer area.
Red-bellied newt		<i>Taricha rivularis</i>	-	CSC	Adults migrate from terrestrial to aquatic habitats seasonally for breeding. There are no detailed descriptions of terrestrial habitats, and what information is available is somewhat inconsistent between sources. Several sources state that this species' range is confined to the coast redwood belt, but Riemer (1958) notes that red-bellied newts are not restricted to redwood forests, nor are they particularly abundant in that habitat. However, none of these authors specifically describe the terrestrial habitat for this species. Twitty (1966) comments that California laurel (<i>Umbellularia californica</i>) trees are common near his study site at Pepperwood Creek, but no other tree species are mentioned. Petranka (1998) states that red-bellied newts are found predominantly in redwood forests. I (S.B.M.) have observed terrestrial adults in forest dominated by Douglas-fir (<i>Pseudotsuga menziesii</i>), tan oak (<i>Lithocarpus densiflorus</i>), and madrone (<i>Arbutus menziesii</i>) in southern Humboldt County, and colleagues have seen them within redwood forest in Mendocino County (S. Sillett and J. Spickler, personal communication). Clearly, multiple forest types are used by this species. Adults use terrestrial sites for underground retreats during the dry season (May–October) and for foraging and migration prior to winter breeding. Both Twitty (1966) and Licht and Brown (1967) mentioned that red-bellied newts at their study sites (Pepperwood Creek and Skaggs Springs, respectively, both in Sonoma County) were found on steep, heavily wooded slopes that rise from the south bank of the breeding stream (i.e., north-facing slopes). Packer (1960) noted that at Pepperwood Creek, the banks and north-facing slopes are littered with many fallen trees and branches that provide cover for red-bellied newts	None. No potential habitat suitable for this species was observed within the proposed project site or buffer area.

Federal Status			Potential to Occur on Project Site and Buffer Area	
Common Name	Scientific Name	State Status	Habitat/Observances	
Insects				
Monarch - California overwintering population	<i>Danaus plexippus pop. I</i>	Candidate	CSC	and other amphibians. Aquatic habitats include streams and rivers; red-bellied newts apparently do not use ponds or other standing water habitats for breeding (Riemer, 1958; Stebbins, 1985; Petranka, 1998). Males tend to enter the streams before females and therefore spend more time in the aquatic habitat (Twitty, 1942, 1955; Packer, 1963). Males also tend to breed more frequently than females; males breed usually every 1-2 years, whereas females usually breed only ≥ 2 years. Consequently, females may spend several years on land before entering the water again for breeding.
Fish				
Sacramento perch	<i>Archoplites interruptus</i>	-	CSC	No Potential. The proposed cannabis growing area is currently in areas of active agriculture. Therefore, no suitable habitat exists for this species within the proposed project site or buffer area.
Clear Lake tulle perch	<i>Hysterocarpus traskii lagunae</i>	-	CSC	None. No potential habitat suitable for this species was observed within the proposed project site or buffer area.

Federal Status			Habitat/Observances		Potential to Occur on Project Site and Buffer Area
Common Name	Scientific Name	State Status			
Clear Lake hitch	<i>Lavinia exilicauda chi</i>	-	CT	are found near tules in areas where the lake floor is made up of gravel and or sand. Tule Perch may form shoals or schools, and are often found associated with centrarchids. While the perch focus their feeding on the bottom of a lake, they may also forage in the water column. Dietary components in various types of water may include shrimp, crabs, clams, chironomid midges, and aquatic insects. Found only in Clear Lake, Lake County, and associated ponds. Spawns in streams flowing into Clear Lake.	None. No potential habitat suitable for this species was observed within the proposed project site or buffer area.
Plants					
Bent-flowered fiddleneck	<i>Amsinckia lunaris</i>	-	List 1B.2	Coastal bluff scrub, cismontane woodland, and valley and foothill grassland. Blooms March to June. Elevation: 3-500 m.	Potentially present. Potential habitat for this species occurs within the proposed project site and buffer area. No individuals of this species were observed during surveys. This species has not been documented within the boundaries of or in proximity to the proposed project site (CDFW 2021) (see Figure 3).
Twig-like snapdragon	<i>Antirrhinum virga</i>	-	List 4.3	Chaparral and lower montane coniferous forest. Blooms June to July. Elevation: 100-2,015 m.	Potentially present. Potential habitat for this species occurs within the proposed project site and buffer area. No individuals of this species were observed during surveys. This species has not been documented within the boundaries of or in proximity to the proposed project site (CDFW 2023) (see Figure 3).
Konociti manzanita	<i>Arctostaphylos</i> <i>Manzanita ssp.</i> <i>elegans</i>	-	List 1B.3	Chaparral, cismontane woodland, and lower montane coniferous forest. Blooms January to July. Elevation: 225-1,830 meters.	Potentially present. Potential habitat for this species occurs within the proposed project site and buffer area. No individuals of this species were observed during surveys. This species has not been documented within the boundaries of or in proximity to the proposed project site (CDFW 2023) (see Figure 3).
Raiche's manzanita	<i>Arctostaphylos stanfordiana ssp.</i> <i>raichei</i>	-	List 1B.1	Chaparral and lower montane coniferous forest. Blooms February to April. Elevation: 485 – 1,070 m.	Potentially present. Potential habitat for this species occurs within the proposed project site and buffer area. No individuals of this species were observed during

Common Name	Scientific Name	Federal Status	State Status	Habitat/Observances	Potential to Occur on Project Site and Buffer Area	
Serpentine milkweed	<i>Asclepias solanoana</i>	-	List 4.2	Chaparral, cismontane woodland, and lower montane coniferous forest. Blooms May to August. Elevation: 230-1,860 m.		surveys. This species has not been documented within the boundaries of or in proximity to the proposed project site (CDFW 2023) (see Figure 3). Potentially present. Potential habitat for this species occurs within the proposed project site and buffer area. No individuals of this species were observed during surveys. This species has not been documented within the boundaries of or in proximity to the proposed project site (CDFW 2023) (see Figure 3).
Cleveland's milk-vetch	<i>Astragalus clevelandii</i>	-	List 4.3	Chaparral, cismontane woodland, and riparian forest. Blooms June to September. Elevation: 200-1,500 m.		Potentially present. Potential habitat for this species occurs within the proposed project site and buffer area. No individuals of this species were observed during surveys. This species has not been documented within the boundaries of or in proximity to the proposed project site (CDFW 2023) (see Figure 3).
Jepson's milk-vetch	<i>Astragalus rattanii</i> var. <i>jepsonianus</i>	-	List 1B.2	Chaparral, cismontane woodland, and valley and foothill grassland. Blooms March to June. Elevation: 295-700 m.		Potentially present. Potential habitat for this species occurs within the proposed project site and buffer area. No individuals of this species were observed during surveys. This species has not been documented within the boundaries of or in proximity to the proposed project site (CDFW 2023) (see Figure 3).
Watershield	<i>Brasenia schreberi</i>	-	List 2B.3	Marshes and swamps. Blooms June to September. Elevation: 30-2,200 m.		None. No potential habitat suitable for this species was observed within the proposed project site or buffer area.
Pink star-tulip	<i>Calochortus uniflorus</i>	-	List 4.2	Coastal prairie, coastal scrub, meadows, seeps, north coast coniferous forest. Elevational range: 10 – 1,070 meters. Blooming period: April through June.		None. No potential habitat suitable for this species was observed within the proposed project site or buffer area.
Four-petaled pussypaws	<i>Calyptridium quadripetalum</i>	-	List 4.3	Chaparral and lower montane coniferous forest. Blooms April to June. Elevation: 315-2,040 m.		Potentially present. Potential habitat for this species occurs within the proposed project site and buffer area. No individuals of this species were observed during surveys. This species has not been documented within the boundaries of or in

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Common Name	Scientific Name	Federal Status	State Status	Habitat/Observances	Potential to Occur on Project Site and Buffer Area
Tracy's clarkia	<i>Clarkia gracilis ssp. tracyi</i>	-	List 4.2	Chaparral. Blooms April to July. Elevation: 65-650 m.	proximity to the proposed project site (CDFW 2023) (see Figure 3). Potentially present. Potential habitat for this species occurs within the proposed project site and buffer area. No individuals of this species were observed during surveys. This species has not been documented within the boundaries of or in proximity to the proposed project site (CDFW 2023) (see Figure 3).
Serpentine collomia	<i>Collomia diversifolia</i>	-	List 4.3	Chaparral and cismontane woodland. Blooms May to June. Elevation: 200-600 m.	Potentially present. Potential habitat for this species occurs within the proposed project site and buffer area. No individuals of this species were observed during surveys. This species has not been documented within the boundaries of or in proximity to the proposed project site (CDFW 2023) (see Figure 3).
Serpentine bird's-beak	<i>Cordylanthus tenuis ssp. brunneus</i>	-	List 4.3	Chaparral, closed-cone coniferous forest, and cismontane woodland. Blooms July to August. Elevation: 305-915 m.	Potentially present. Potential habitat for this species occurs within the proposed project site and buffer area. No individuals of this species were observed during surveys. This species has not been documented within the boundaries of or in proximity to the proposed project site (CDFW 2023) (see Figure 3).
Swamp larkspur	<i>Delphinium uliginosum</i>	-	List 4.2	Chaparral, valley and foothill grassland. Blooms May to June. Elevation: 340-610 m.	Potentially present. Potential habitat for this species occurs within the proposed project site and buffer area. No individuals of this species were observed during surveys. This species has not been documented within the boundaries of or in proximity to the proposed project site (CDFW 2023) (see Figure 3).
Brandege's eriastrum	<i>Eriastrum brandegeae</i>	-	List 1B.1	Chaparral and cismontane woodland. Blooms April to August. Elevation: 410-845m.	Potentially present. Potential habitat for this species occurs within the proposed project site and buffer area. No individuals of this species were observed during surveys. This species has not been documented within the boundaries of or in

Federal Status			State Status		Habitat/Observances		Potential to Occur on Project Site and Buffer Area
Common Name	Scientific Name						proximity to the proposed project site (CDFW 2023) (see Figure 3).
Tripod buckwheat	<i>Eriogonum tripodum</i>	-	List 4.2		Chaparral and cismontane woodland. Blooms May to July. Elevation: 200-1,600 m.		Potentially present. Potential habitat for this species occurs within the proposed project site and buffer area. No individuals of this species were observed during surveys. This species has not been documented within the boundaries of or in proximity to the proposed project site (CDFW 2023) (see Figure 3).
Loch Lomond button-celery	<i>Eryngium constancei</i>	FE	CE, List 1B.1		Vernal pools. Blooms April to June. Elevation: 460-855 m.		None. The proposed project site and buffer area does not contain habitat in which this species could occur.
St. Helena fawn lily	<i>Erythronium helenae</i>	-	List 4.2		Chaparral, cismontane woodland, lower montane coniferous forest, and valley and foothill grassland. Blooms March to May. Elevation: 350-1,220 m.		Potentially present. Potential habitat for this species occurs within the proposed project site and buffer area. No individuals of this species were observed during surveys. This species has not been documented within the boundaries of or in proximity to the proposed project site (CDFW 2023) (see Figure 3).
Adobe-lily	<i>Fritillaria pluriflora</i>	-	List 1B.2		Chaparral, cismontane woodland, and valley and foothill grassland. Blooms February to April. Elevation: 60-705 m.		Potentially present. Potential habitat for this species occurs within the proposed project site and buffer area. No individuals of this species were observed during surveys. This species has not been documented within the boundaries of or in proximity to the proposed project site (CDFW 2023) (see Figure 3).
Purdy's fritillary	<i>Fritillaria purdyi</i>	-	List 4.3		Chaparral, cismontane woodland, and lower montane coniferous forest. Blooms March to June. Elevation: 175-2,255 m.		Potentially present. Potential habitat for this species occurs within the proposed project site and buffer area. No individuals of this species were observed during surveys. This species has not been documented within the boundaries of or in proximity to the proposed project site (CDFW 2023) (see Figure 3).
Boggs Lake hedge-hyssop	<i>Gratiola heterosepala</i>	-	CE, List 1B.2		Found in marshes and swamps (lake margins), vernal pools. Elevational range: 10 to 2,375 meters. Blooming period: April through August.		None. No potential habitat suitable for this species was observed within the proposed project site or buffer area.

Common Name		Scientific Name	Federal Status	State Status	Habitat/Observances	Potential to Occur on Project Site and Buffer Area
Hall's harmonia		<i>Harmonia hallii</i>	-	List 1B.2	Chaparral on serpentine hills and ridges. Elevational range: 335 – 930 meters. Blooming period: April to June.	Potentially present. Potential habitat for this species occurs within the proposed project site and buffer area. No individuals of this species were observed during surveys. This species has not been documented within the boundaries of or in proximity to the proposed project site (CDFW 2023) (see Figure 3).
Mendocino tarplant		<i>Hemizonia congesta</i> <i>ssp. calyculata</i>	-	List 4.3	Cismontane woodland and valley and foothill grassland. Blooms July to November. Elevation: 225-1,400 m.	Potentially present. Potential habitat for this species occurs within the proposed project buffer area. No individuals of this species were observed during surveys. This species has not been documented within the boundaries of or in proximity to the proposed project site (CDFW 2023) (see Figure 3).
Two-earpellate western flax		<i>Hesperolinon bicarpellatum</i>	-	List 1B.2	Chaparral on serpentine barrens. Elevational range: 180 – 825 meters. Blooming period: May to July.	Potentially present. Potential habitat for this species occurs within the proposed project site and buffer area. No individuals of this species were observed during surveys. This species has not been documented within the boundaries of or in proximity to the proposed project site (CDFW 2023) (see Figure 3).
Sharsmith's western flax		<i>Hesperolinon sharsmithiae</i>	-	List 1B.2	Chaparral. Blooms May to July. Elevation: 270-300 m.	Potentially present. Potential habitat for this species occurs within the proposed project site and buffer area. No individuals of this species were observed during surveys. This species has not been documented within the boundaries of or in proximity to the proposed project site (CDFW 2023) (see Figure 3).
Bolander's horkelia		<i>Horkelia bolanderi</i>	-	List 1B.2	Lower montane coniferous forest, chaparral, meadows, seeps, valley and foothill grassland. Elevational range: 455 – 855 meters. Blooming period: May to August.	Potentially present. Potential habitat for this species occurs within the proposed project site and buffer area. No individuals of this species were observed during surveys. This species has not been documented within the boundaries of or in proximity to the proposed project site (CDFW 2023) (see Figure 3).

Common Name		Scientific Name	Federal Status	State Status	Habitat/Observances	Potential to Occur on Project Site and Buffer Area
California satintail		<i>Imperata brevifolia</i>	-	List 2B.1	Chaparral, coastal scrub, Mojavean desert scrub, meadows, seeps, and riparian scrub. Blooms September to May. Elevation: 0-1,215 meters.	Potentially present. Potential habitat for this species occurs within the proposed project site and buffer area. No individuals of this species were observed during surveys. This species has not been documented within the boundaries of or in proximity to the proposed project site (CDFW 2023) (see Figure 3).
Burke's goldfields		<i>Lashenia burkei</i>	FE	CE, List 1B.1	Vernal pools, meadows, and seeps. Blooms April to June. Elevation: 15-600 meters.	None. No potential habitat suitable for this species was observed within the proposed project site or buffer area.
Colusa layia		<i>Layia septentrionalis</i>	-	List 1B.2	Found in chaparral, cismontane woodland, valley and foothill grassland. Elevational range: 100 to 1095 meters. Blooming period: April through May.	Potentially present. Potential habitat for this species occurs within the proposed project site and buffer area. No individuals of this species were observed during surveys. This species has not been documented within the boundaries of or in proximity to the proposed project site (CDFW 2023) (see Figure 3).
Bristly leptosiphon		<i>Leptosiphon acicularis</i>	-	List 4.2	Found in chaparral, cismontane woodland, coastal prairie, and valley and foothill grassland. Elevational range: 55 to 1,500 meters. Blooming period: April through July.	Potentially present. Potential habitat for this species occurs within the proposed project site and buffer area. No individuals of this species were observed during surveys. This species has not been documented within the boundaries of or in proximity to the proposed project site (CDFW 2023) (see Figure 3).
Woolly meadowfoam		<i>Limnanthes floccosa</i> <i>ssp. floccosa</i>	-	List 4.2	Vernal pools in chaparral, cismontane woodland, and valley and foothill grassland. Elevation range: 60 to 1,335 meters. Blooming period: March through June.	None. No potential habitat suitable for this species was observed within the proposed project site or buffer area.
Hoover's lomatium		<i>Lomatium hooveri</i>	-	List 4.3	Chaparral and cismontane woodland. Blooms April to July. Elevation: 300-885 m.	Potentially present. Potential habitat for this species occurs within the proposed project site and buffer area. No individuals of this species were observed during surveys. This species has not been documented within the boundaries of or in proximity to the proposed project site (CDFW 2023) (see Figure 3).
Napa lomatium		<i>Lomatium repostum</i>	-	List 4.2	Broadleaved upland forest, chaparral, and cismontane woodland. Blooms March to June. Elevation: 90-	Potentially present. Potential habitat for this species occurs within the proposed

Common Name	Scientific Name	Federal Status	State Status	Habitat/Observances	Potential to Occur on Project Site and Buffer Area
Oval-leaved viburnum	<i>Viburnum ellipticum</i>	-	List 2B.3	Found in chaparral, cismontane woodland, and lower montane coniferous forest. Elevational range: 215 to 1,400. meters. Blooming period: May through June.	project site and buffer area. No individuals of this species were observed during surveys. This species has not been documented within the boundaries of or in proximity to the proposed project site (CDFW 2023) (see Figure 3).
Environmentally Sensitive Habitat Areas					
Clear Lake Drainage Resident Trout Stream (Not present in project site or buffer)					
Northern Basalt Flow Vernal Pool (Not present in project site or buffer)					
Northern Volcanic Ash Vernal Pool (Not present in project site or buffer)					
Coastal and Valley Freshwater Marsh (Not present in project site or buffer)					
Great Valley Mixed Riparian Forest (Not present in project site or buffer)					

Status Codes:

Federal
FE = Federally listed as Endangered
FT = Federally listed as Threatened
FC = Federal Candidate species

State
CE = California listed as Endangered
CT = California listed as Threatened
CR = California listed as Rare
CFP = California Fully Protected
CSC = Species of Special Concern
WL = CDFW Watch List
FP = Fully Protected

California Rare Plant Rank (formerly known as CNPS Lists)
California Rare Plant Rank 1A = Plants presumed extinct in California
California Rare Plant Rank 1B = Plants rare, threatened, or endangered in California and elsewhere
California Rare Plant Rank 2A = Plants presumed extirpated from California, but more common elsewhere
California Rare Plant Rank 2B = Plants rare or endangered in California, but more common elsewhere
California Rare Plant Rank 3 = Plants about which we need more information; a review list

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California Rare Plant Rank 4 = Plants of limited distribution; a watch list.

California Rare Plant Rank Rarity Status of .1 = Seriously endangered in California

California Rare Plant Rank Rarity Status of .2 = Fairly endangered in California

Status, distribution, and habitat information from the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database RareFind 5 (CDFW 2023); California Native Plant Society, California Rare Plant Electronic Inventory (CNPS 2023); and USFWS Online Endangered Species Database (USFWS 2023).

These surveys were conducted within the blooming period of one (1) of the 28 special-status plant species identified as potentially occurring within the project site and buffer area. Survey findings for the one (1) targeted special-status plant species that had a blooming period during the survey was negative. We cannot say with certainty if any of the remaining 27 plant species are present in the project site or buffer area without conducting additional surveys.

4.3 Special-Status Wildlife Species

The following is a discussion of species having potential to occur on site and/or are species that are prominent in today's regulatory environment. This document does not address impacts to species that may occur in the region but for which no habitat occurs on site. Species-specific information described below is primarily from USFWS 2023 and CDFW 2023, unless otherwise noted.

Golden Eagle - The golden eagle is the most widely distributed species of eagle. Like all eagles, it belongs to the family Accipitridae. The golden eagle is a very large raptor, 26 to 40 inches in length. Its wings are broad and the wingspan is 5 feet 11 inches to 7 feet 8 inches. Golden eagles' wingspan is the fifth largest among living eagle species. Females are larger than males, with a bigger difference in larger subspecies.

Adults of both sexes have similar plumage and are primarily dark brown, with some grey on the inner wing and tail, and a paler, typically golden color on the back of the crown and nape that gives the species its common name. Unlike other *Aquila* species, where the tarsal feathers are typically similar in color to the rest of the plumage, the tarsal feathers of golden eagles tend to be paler, ranging from light golden to white. In addition, some full-grown birds (especially in North America) have white "epaulettes" on the upper part of each scapular feather tract. The bill is dark at the tip, fading to a lighter horn color, with a yellow cere. Like many accipitrids, the bare portion of the feet is yellow. There are subtle differences in coloration among subspecies, described below. Juvenile golden eagles are similar to adults but tend to be darker, appearing black on the back especially in East Asia. They have a less faded color. Young birds are white for about two-thirds of their tail length, ending with a broad, black band. Occasionally, juvenile eagles have white patches on the remiges at the bases of the inner primaries and the outer secondaries, forming a crescent marking on the wings which tends to be divided by darker feathers. Rarely, juvenile birds may have only traces of white on the tail. Compared to the relatively consistently white tail, the white patches on the wing are extremely variable; some juveniles have almost no white visible. Juveniles of less than 12 months of age tend to have the most white in their plumage. By their second summer, the white underwing coverts are usually replaced by a characteristic rusty brown color. By the third summer, the upper-wing coverts are largely replaced by dark brown feathers, although not all feathers moult at once which leaves many juvenile birds with a grizzled pattern. The tail follows a similar pattern of maturation to the wings. Due to the variability between individuals, juvenile eagles cannot be reliably aged by sight alone. Many golden eagles still have white on the tail during their first attempt at nesting. The final adult plumage is not fully attained until the birds are between 5 and a half and 6 and a half years old.

Golden eagles are fairly adaptable in habitat but often reside in areas with a few shared ecological characteristics. They are best suited to hunting in open or semi-open areas and search them out

year-around. Native vegetation seems to be attractive to them and they typically avoid developed areas of any type from urban to agricultural as well as heavily forested regions. In desolate areas (e.g., the southern Yukon), they can occur regularly at road kills and garbage dumps. The largest numbers of golden eagles are found in mountainous regions today, with many eagles doing a majority of their hunting and nesting on rock formations. However, they are not solely tied to high elevations and can breed in lowlands if the local habitats are suitable. The golden eagles here often nest in chaparral and oak woodland, oak savanna and grassland amongst low rolling hill typified by diverse vegetation.

Golden eagles use their agility and speed combined with powerful feet and massive, sharp talons to snatch up a variety of prey, mainly hares, rabbits, and marmots and other ground squirrels. Golden eagles maintain home ranges or territories that may be as large as 77 square miles). They build large nests in cliffs and other high places to which they may return for several breeding years. Most breeding activities take place in the spring; they are monogamous and may remain together for several years or possibly for life. Females lay up to four eggs, and then incubate them for six weeks. Typically, one or two young survive to fledge in about three months. These juvenile golden eagles usually attain full independence in the fall, after which they wander widely until establishing a territory for themselves in four to five years.

This species may be present transiting through the general project site and buffer area but is not likely to be found in the proposed project site. Suitable foraging habitat was observed in the general project area; potential nesting habitat was observed in the general project buffer area. No individuals of this species were observed during surveys. This species has not been documented within the boundaries of or in proximity to the proposed project site (CDFW 2023) (see Figure 3). Therefore, it is highly unlikely this species will be impacted by proposed project activities.

Osprey - The osprey is a diurnal, fish-eating bird of prey with a cosmopolitan range. It is a large raptor, reaching more than 24 inches in length and 71 inches across the wings. It is brown on the upperparts and predominantly greyish on the head and underparts. The upperparts are a deep, glossy brown, while the breast is white and sometimes streaked with brown, and the underparts are pure white. The head is white with a dark mask across the eyes, reaching to the sides of the neck. The irises of the eyes are golden to brown, and the transparent nictitating membrane is pale blue. The bill is black, with a blue cere, and the feet are white with black talons. A short tail and long, narrow wings with four long, finger-like feathers, and a shorter fifth, give it a very distinctive appearance.

The osprey tolerates a wide variety of habitats, nesting in any location near a body of water providing an adequate food supply. It is found on all continents except Antarctica, although in South America it occurs only as a non-breeding migrant.

The osprey is piscivorous, with fish making up 99% of its diet. It typically takes fish weighing 150–300 grams (5.3–10.6 ounces) and about 25–35 centimeters (9.8–13.8 inches) in length, but the weight can range from 50 grams (1.8 ounces) to 2 kilograms (4.4 pounds). Virtually any type of fish in that size range are taken.

Ospreys have vision that is well adapted to detecting underwater objects from the air. Prey is first sighted when the osprey is 10–40 m (33–131 ft) above the water, after which the bird hovers momentarily then plunges feet first into the water. Occasionally, the osprey may prey on rodents, rabbits, hares, other birds, and small reptiles.

The osprey breeds near freshwater lakes and rivers, and sometimes on coastal brackish waters. Rocky outcrops just offshore are also used. The nest is a large heap of sticks, driftwood, turf or seaweed built in forks of trees, rocky outcrops, utility poles, artificial platforms or offshore islets. Generally, ospreys reach sexual maturity and begin breeding around the age of three to four, though in some regions with high osprey densities, such as Chesapeake Bay in the U.S., they may not start breeding until five to seven years old, and there may be a shortage of suitable tall structures. If there are no nesting sites available, young ospreys may be forced to delay breeding.

This species is not expected to be present nesting in the general project area and is not likely to be found in the proposed project site. Potential nesting habitat was observed in the general project area outside of the project site and buffer. No individuals of this species were observed during surveys. This species has not been documented within the boundaries of or in proximity to the proposed project site (CDFW 2023) (see Figure 3).

Townsend's Big-Eared Bat - Townsend's big-eared bat is found throughout California, but the details of its distribution are not well known. This species is found in all but subalpine and alpine habitats, and may be found at any season throughout its range. Once considered common, Townsend's big-eared bat now is considered uncommon in California. It is most abundant in mesic habitats. This species requires caves, mines, tunnels, buildings, or other human-made structures for roosting. They may use separate sites for night, day, hibernation, or maternity roosts. Hibernation sites are cold, but not below freezing. Individuals may move within the hibernaculum to find suitable temperatures. Maternity roosts are warm. Roosting sites are the most important limiting resource. This species feeds on small moths. Beetles and a variety of soft-bodied insects also are taken. This species mates from November-February, but many females are inseminated before hibernation begins. Sperm is stored until ovulation occurs in spring. Gestation lasts 56 to 100 days, depending on temperature, size of the hibernating cluster, and time in hibernation. Births occur in May and June, peaking in late May. A single litter of 1 is produced annually. Young are weaned in 6 weeks and fly in 2.5 to 3 weeks after birth. Growth rate depends on temperature. The maternity group begins to break up in August. Females mate in their first autumn, males in their first or second autumn. About half of young females return to their birth site after their first hibernation.

This species may forage intermittently within the project site and buffer area. No maternity or roosting sites were observed within the project site and buffer area. No individual bats were observed in the proposed project site or buffer area during surveys. This species has been documented approximately 1.21 miles west of the proposed project site (CDFW 2023) (see Figure 3).

Pallid Bat - The pallid 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. A wide variety of habitats are occupied, including grasslands, shrublands, woodlands, and forests from sea level up through mixed conifer forests. The species 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. Bats move deeper into cover if temperatures rise. Night roosts may be in more open sites, such as porches and open buildings. Few hibernation sites are known, but probably uses rock crevices.

Maternity colonies form in early April, and may have a dozen to 100 individuals. Males may roost separately or in the nursery colony. Pallid bats require water, but has a good urine-concentrating ability. This species prefers rocky outcrops, cliffs, and crevices with access to open habitats for foraging.

This species may forage intermittently within the project site and buffer area. Potential roosting and maternity habitat was observed within areas of the project buffer (trees). No individual pallid bats or any nesting/maternity sites were observed in the proposed project site or buffer area during surveys. This species has not been documented within the boundaries of or in proximity to the proposed project site (CDFW 2023) (see Figure 3).

California Red-Legged Frog - Breeding habitat for this frog is primarily in ponds, but they will also breed in slow moving streams, or deep pools in intermittent streams. Inhabited ponds are typically permanent and contain emergent and shoreline vegetation. Sufficient pond depth and shoreline cover are both critical, because they provide means of escape from predators for the frogs (Stebbins 1985, CDFW 1988). Additionally, emergent vegetation is necessary for the deposition of eggs. The breeding period begins during heavy rains, from early to late winter, usually November through early May. The larvae mature in 11 to 20 weeks.

Non-breeding California red-legged frogs have been found in both aquatic and upland habitats. The majority of individuals prefer dense, shrubby or emergent vegetation, closely associated with deep (>0.7 meters) still, or slow moving water. However, some individuals use habitats that are removed from aquatic habitats, seeking cover in ground squirrel burrows, under boulders and logs and in non-native grasslands. Upland refugia habitat includes areas up to 90 meters from a stream corridor and includes natural features, such as boulders, rocks, trees, shrubs, and logs. Incised stream channels with portions narrower than 18 inches and depths greater than 18 inches may also provide habitat. In general, densely vegetated terrestrial areas within the riparian corridor provide important sheltering habitat during the winter flooding of the streams. Along the coast, upland habitat is used throughout the year with animals making straight- line movements between water bodies regardless of the terrain (Bulger et al. 2003).

During dry periods, California red-legged frogs are seldom found far from water. However, during wet weather, individuals may make overland excursions through upland habitats over distances up to 2 miles. These dispersal movements are generally straight-line, point-to-point migrations rather than following specific habitat corridors. Dispersal distances are believed to depend on the availability of suitable habitat and prevailing environmental conditions. Very little is known about how California red-legged frogs use upland habitats during these periods.

During summer, California red-legged frogs often disperse from their breeding habitat to forage and seek summer habitat if water is not available (USFWS 2023). This habitat may include shelter under boulders, rocks, logs, industrial debris, agricultural drains, watering troughs, abandoned sheds, or hay-ricks. They will also use small mammal burrows, incised stream channels, or areas with moist leaf litter (Jennings and Hayes 1994). This summer movement behavior, however, has not been observed in all California red-legged frog populations studied.

The historical range of the California red-legged frog extended along the coast from the vicinity of Point Reyes National Seashore, Marin County, California and inland from Redding, Shasta County southward to northwestern Baja California, Mexico (Jennings and Hayes 1985). The current distribution of this species includes only isolated localities in the Sierra Nevada, northern Coast and Northern Traverse Ranges. It is still common in the San Francisco Bay area and along the central coast. It is now believed to be extirpated from the southern Transverse and Peninsular Ranges (USFWS 2023).

Potential aquatic foraging and breeding habitat suitable for this species was observed in a farm pond approximately 0.42 miles south of the proposed project site. Potential aestivation habitat was observed within the project site and buffer area. No sign of this species was observed during biological surveys. This species has the potential to use upland areas found in the project site and buffer area for upland refugia. Portions of the proposed project site and buffer area has appropriate vegetative cover to serve as upland refugia habitat. Additionally, they are located within 2.0 miles of appropriate aquatic breeding habitat. Appropriate cover (i.e., logs or other debris) was observed during biological surveys in the project buffer area. Potential aestivation burrow sites were not observed within the project buffer area during biological surveys. This species has not been documented within the boundaries of or in proximity to the proposed project site (CDFW 2023) (see Figure 3). The proposed project site is not located within mapped critical habitat for this species as designated by USFWS (USFWS 2023).

4.4 Critical Habitat

No Federally-designated critical habitat was identified within the proposed project site or buffer area (USFWS 2023).

4.5 Special Status Natural Communities

No special-status natural communities were identified within the proposed project site.

5.0 IMPACTS ANALYSIS AND STANDARD CONSTRUCTION CONDITIONS

This section summarizes the potential biological impacts from implementation of the proposed project. The analysis of these effects is based on a reconnaissance-level biological survey of the project site and buffer area, a review of existing databases and literature, and personal professional experience with biological resources of the region. Potential effects to federally- and state-listed special-status animal species may occur from the proposed project. Standard Construction Conditions for these biological impacts are provided below. A synopsis of the species potentially affected is presented in Table 2, and is followed by Standard Construction Conditions to avoid “take” of individuals.

Table 2: Special Status Animal Species Potentially Affected by the Proposed Project

Species	Status (Federal/State)	Habitat Present/Absent	Avoidance Yes/No
Pallid bat	-/CSC	Present	Yes
Townsend’s big-eared bat	-/CSC	Present	Yes
California red-legged frog	FT/CSC	Present	Yes

Potential Impacts to Common Wildlife and Plant Populations from Project Activities

Direct mortality or injury to common wildlife and plant populations could occur during ground disturbance activities associated with implementation of the project. Small vertebrate, invertebrate, and plant species are particularly prone to impact during project implementation because they are much less to non-mobile and cannot easily move out of the path of project activities. Other more mobile wildlife species, such as most birds and larger mammals, can avoid project-related activities by moving to other adjacent areas temporarily. Increased human activity and vehicle traffic in the vicinity may disturb some wildlife species. Because common wildlife species found in the project area are locally and regionally common, potential impacts to these resources are considered less than significant. Therefore, no avoidance or minimization measures are proposed at this time.

Potential Impacts to Nesting Special-Status Avian Species from Project Activities

Implementation of the proposed project could potentially impact individual, foraging, and nesting migratory birds, and raptor species should they become established within the proposed project site or buffer area prior to project implementation. Impacts to these species could occur through crushing by construction equipment during implementation of project activities. Actively nesting birds could also be affected due to noise and vibration from project activities, if nests are located close enough to project activities. Project related noise and vibration could cause the abandonment of active nest sites. Impacts to these species would be considered significant. In the event that nesting birds become established in the proposed project site or buffer area, the following Standard

Construction Conditions measures will be implemented.

If ground disturbing activities occur during the breeding season of these avian species (February through mid-September), surveys for active nests will be conducted by a qualified biologist no more than 10 days prior to start of activities. Pre-construction nesting surveys shall be conducted for nesting migratory avian and raptor species in the project site and buffer area. Pre-construction biological surveys shall occur prior to the proposed project implementation, and during the appropriate survey periods for nesting activities for individual avian species. Surveys will follow required CDFW and USFWS protocols, where applicable. A qualified biologist will survey suitable habitat for the presence of these species. If a migratory avian or raptor species is observed and suspected to be nesting, a buffer area will be established to avoid impacts to the active nest site. Identified nests should be continuously surveyed for the first 24 hours prior to any construction-related activities to establish a behavioral baseline. If no nesting avian species are found, project activities may proceed and no further Standard Construction Conditions measures will be required. If active nesting sites are found, the following exclusion buffers will be established, and no project activities will occur within these buffer zones until young birds have fledged and are no longer reliant upon the nest or parental care for survival.

- Minimum no disturbance of 250 feet around active nest of non-listed bird species and 250 foot no disturbance buffer around migratory birds;
- Minimum no disturbance of 500 feet around active nest of non-listed raptor species;
- and 0.5-mile no disturbance buffer from listed species and fully protected species until breeding season has ended or until a qualified biologist has determined that the birds have fledged and are no longer reliant upon the nest or parental care for survival.
- Once work commences, all nests should be continuously monitored to detect any behavioral changes as a result of project activities. If behavioral changes are observed, the work causing that change should cease and the appropriate regulatory agencies (i.e. CDFW, USFWS, etc.) shall be consulted for additional avoidance and minimization measures.
- A variance from these no disturbance buffers may be implemented when there is compelling biological or ecological reason to do so, such as when the project area would be concealed from a nest site by topography. Any variance from these buffers is advised to be supported by a qualified wildlife biologist and is recommended that CDFW and USFWS be notified in advance of implementation of a no disturbance buffer variance.

Potential Impacts to Pallid and Townsend's Big-Eared Bats from Project Activities

Implementation of the proposed project could potentially impact pallid and Townsend's big-eared bat maternity sites if these species are present in the project site or buffer area during implementation of the project and if they have established maternity or roosting sites. Impacts to bat maternity/roost sites would occur primarily from noise and vibration created from project construction equipment and construction related activities. Noise and vibration could lead to these bat species abandoning established roost/maternity sites. Impacts to these species would be considered significant. In the event that bat roost/maternity sites become established in the

proposed project buffer area prior to project implementation, the following measures will be implemented to protect this species from potential impacts:

Pre-activity surveys (daytime habitat survey and nocturnal acoustic and emergence surveys) will be conducted for bat species and their roosting/maternity sites in the project site and buffer area. If a bat roosting/maternity site is identified during these surveys or suspected to be present, a buffer area will be established to avoid impacts on the burrow/maternity site, and subsequently the bat species. The following exclusion zone will apply:

- 300 feet for known or potential maternity roosting site. If deemed warranted project proponent will consult with Lake County and the appropriate state (CDFW) and Federal (USFWS) regulatory agencies to work out a plan to avoid impacts to the species before work resumes.

Trees with suitable bat habitat where the presence of bats is documented during surveys may only be removed using the two-step removal process detailed below and only during seasonal periods of bat activity from approximately March 1 – April 15 and September 1 – October 15. The two-step tree removal shall be conducted over two consecutive days, as follows:

1. On the afternoon of the first day, under direct supervision and instruction by a qualified biologist with experience conducting two-step tree removal, limbs and branches shall be removed by a tree cutter using chainsaws only. Limbs with cavities, crevices, or deep bark fissures shall be avoided.
2. On the second day, the entire tree shall be removed.

Potential Impacts to California Red-Legged Frog from Project Activities

Implementation of the proposed project has the potential to result in direct impacts to California red-legged frog (CRF) should they be present in the proposed project site during project activities. No individuals of this species were observed during biological surveys in upland refuge habitat (found in project site and buffer area), and none have been observed within the proposed project site or immediate buffer area as indicated by the search of the CNDDB database. No aquatic breeding habitat was observed in either the project site or buffer area during biological surveys.

Direct impacts to individuals of these species could result from ground disturbance activities during project implementation within upland refuge habitat when movement across these areas is occurring. Impacts could also occur in refuge habitat if individuals of this species are aestivating in underground refugia or under debris. These species could be directly impacted by crushing by project equipment or vehicles. These impacts could result in direct mortality of individuals or small populations of these species. No direct impacts are proposed to the aquatic breeding and foraging habitat of this species, so no direct impacts are anticipated.

In order to reduce potential impacts to these species to a less than significant level, the following measures will be implemented:

The project proponent shall implement the following standard USFWS Mitigation and Avoidance Measures to prevent mortality of individual red-legged frog that may be found migrating across or aestivating on the proposed project sites during proposed project activities.

- Preconstruction surveys for CRF shall be completed within 48 hours prior to commencement of any earth-moving activity, construction, or vegetation removal within project sites, whichever comes first. The preconstruction survey shall include two nights of nocturnal surveys in areas of suitable habitat.
- If any CRF are encountered during the surveys, all work in the work area shall be placed on hold while the findings are reported to the CDFW and USFWS and it is determined what, if any, further actions must be followed to prevent possible take of this species.
- Where construction will occur in CRF habitat where CRF are potentially present, work areas will be fenced in a manner that prevents equipment and vehicles from straying from the designated work area into adjacent habitat areas. A qualified biologist will assist in determining the boundaries of the area to be fenced in consultation with Lake County, USFWS, and CDFW. All workers will be advised that equipment and vehicles must remain within the fenced work areas.
- The USFWS authorized biologist will direct the installation of the fence and will conduct biological surveys to move any individuals of these species from within the fenced area to suitable habitat outside of the fence. Exclusion fencing will be at least 24 inches in height. The type of fencing must be approved by the authorized biologist, the USFWS, and CDFW. This fence should be permanent enough to ensure that it remains in good condition throughout the duration of the construction project on the project site. It should be installed prior to any site grading or other construction-related activities are implemented. The fence should remain in place during all site grading or other construction-related activities. The frog exclusion fence could be “silt fence” that is buried along the bottom edge.
- If at any individuals of these species are found within an area that has been fenced to exclude these species, activities will cease until the authorized biologist moves the individuals.
- If any of these species are found in a construction area where fencing was deemed unnecessary, work will cease until the authorized biologist moves the individuals. The authorized biologist in consultation with USFWS and CDFW will then determine whether additional surveys or fencing are needed. Work may resume while this determination is being made, if deemed appropriate by the authorized biologist.
- Any individuals found during clearance surveys or otherwise removed from work areas will be placed in nearby suitable, undisturbed habitat. The authorized biologist will determine the best location for their release, based on the condition

of the vegetation, soil, and other habitat features and the proximity to human activities.

- Clearance surveys shall occur on a daily basis in the work area.
- The authorized biologist will have the authority to stop all activities until appropriate corrective measures have been completed.
- To ensure that diseases are not conveyed between work sites by the authorized biologist or his or her assistants, the fieldwork code of practice developed by the Declining Amphibian Populations Task Force will be followed at all times.
- Project activities shall be limited to daylight hours, except during an emergency, in order to avoid nighttime activities when CRF may be present. Because dusk and dawn are often the times when CRF are most actively foraging and dispersing, all construction activities should cease one half hour before sunset and should not begin prior to one half hour before sunrise.
- Traffic speed should be maintained at 10 miles per hour or less in the work area.

Potential Impacts to Special-Status Plant Species from Project Activities

Review of the USFWS (USFWS 2023), the CNPS (CNPS 2023), and the CNDDB (CNDDB 2023) revealed that 34 listed plant species and species of concern have potential to occur in the general project area. Potential habitat is present for 28 of these 34 plant species within the project site and buffer area. Botanical surveys were conducted on December 8, 2023. These surveys were conducted within the blooming period of one (1) of the 28 special-status plant species identified as potentially occurring within the project site and buffer area. Survey findings for the one (1) targeted special-status plant species that had a blooming period during the survey was negative. Therefore, no impacts to this species are expected due to project implementation.

Because botanical surveys were conducted outside of the blooming period of the remaining 27 special-status plant species that bloom outside of the survey dates, we cannot say with certainty that these species do not occur within the proposed project site or buffer area.

Implementation of the proposed project could potentially result in impacts on these 27 special-status plant species if they are located within the proposed project site during project activities. Direct impacts to these plant species could result from ground disturbance activities during project implementation within areas of potential habitat. Special-status plant species could be directly impacted by crushing of plants by construction equipment. These impacts could result in direct mortality of individuals or small populations of special-status plant species.

A qualified botanist will conduct pre-construction field surveys to identify any populations of special-status plant species within the proposed project site that will be disturbed during project activities during the 2024 survey season and prior to construction of the proposed project. These surveys shall be conducted prior to the initiation of any construction activities and coincide with

the appropriate flowering period of the special-status plant species with the potential to occur in the project area. If any special-status plant species populations are identified within or adjacent to the proposed disturbance areas, the project proponent shall implement the following measures to avoid impacts to these species:

- If any population(s) of special-status plant species is identified directly adjacent to the proposed project site, a qualified biologist retained by project proponent will clearly delineate the location of the plant population and install protective fencing between the disturbance zone and the plant population to ensure that the plant population is adequately protected.
- If a special-status plant population is identified within the proposed disturbance zone, the project proponent will consult with CDFW and USFWS to determine the appropriate measures to avoid or mitigate for impacts to the species or population. The project proponent will adjust the boundaries of the disturbance zone, where feasible, to avoid impacts to the plant species/population. Where avoidance is not feasible, the project proponent will implement one or more of the following measures: (1) transplant potentially affected plants to areas not planned for disturbance. If a plant is transplanted, two more plants shall be planted. Plantings shall be managed and monitored by the applicant and shall survive to 5 years after planting; (2) seed or purchase plants and place them in an area adjacent to the disturbance zone; (3) purchase credits at an approved mitigation bank at a ratio approved by CDFW, USFWS, and the project proponent.

6.0 CONCLUSIONS AND DETERMINATIONS

This project will incorporate reasonable and prudent measures for avoidance and minimization, described in Section 1.0, and species-specific avoidance and minimization measures. As a result, the project is not anticipated to result in take of any of the listed species or habitats described in this biological assessment.

Provided the precautions outlined above are followed, it has been concluded by Synthesis that the proposed project would:

- Have less than significant impacts upon federal and California endangered, threatened, proposed or candidate species;
- Not result in destruction or adverse modification of a critical habitat area of a federal or California endangered or threatened species; and
- Not result in “take” of migratory birds protected under the Migratory Bird Treaty Act and other state, local or federal laws.

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Appendix A

Project Figures



Figure 1. Project Vicinity Map

Synthesis Planning
442 San Marin Drive
Novato, California 94945
Telephone: (415) 328-7923

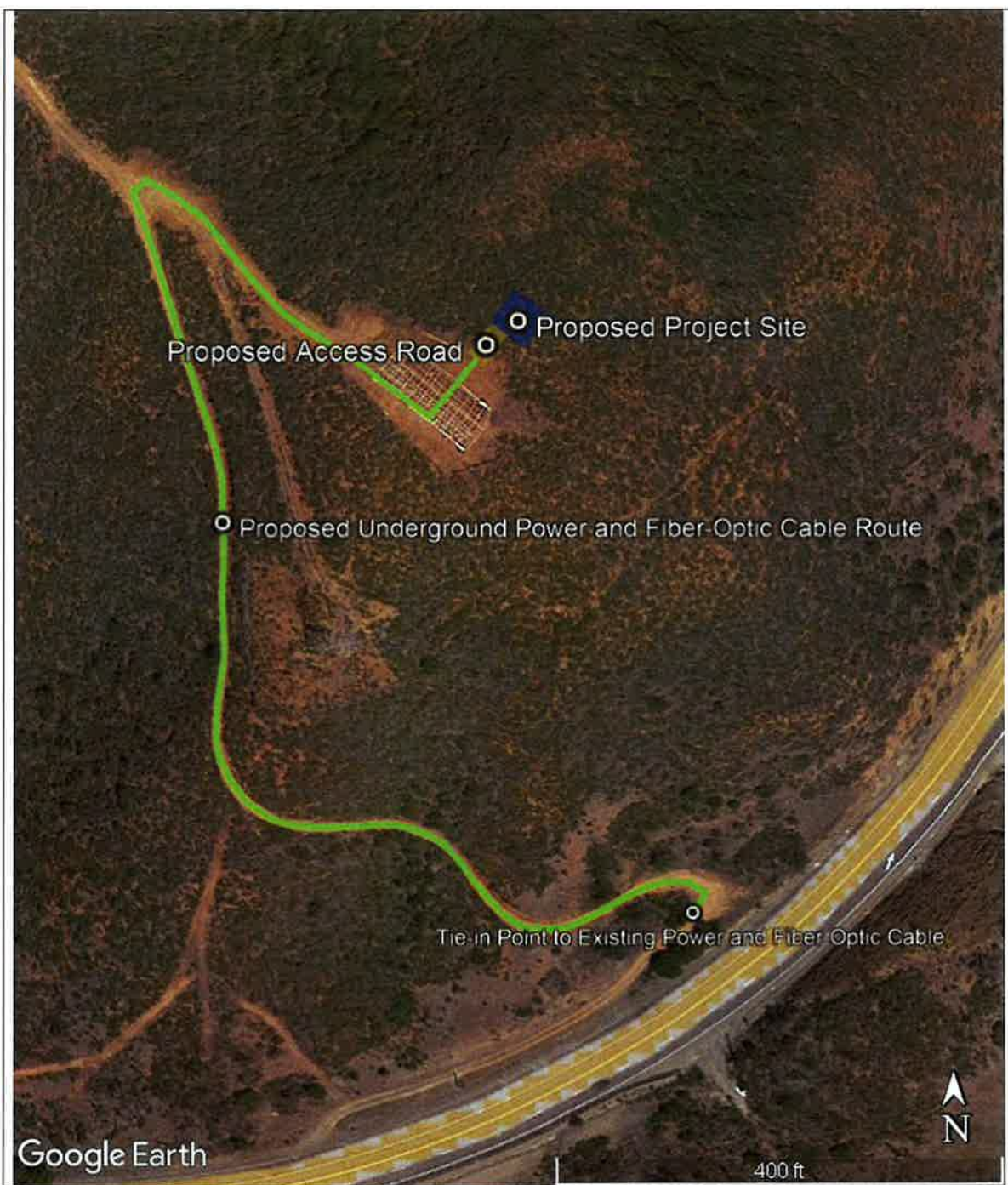


Figure 2. Project Location Map

Synthesis Planning
442 San Marin Drive
Novato, California 94945
Telephone: (415) 328-7923

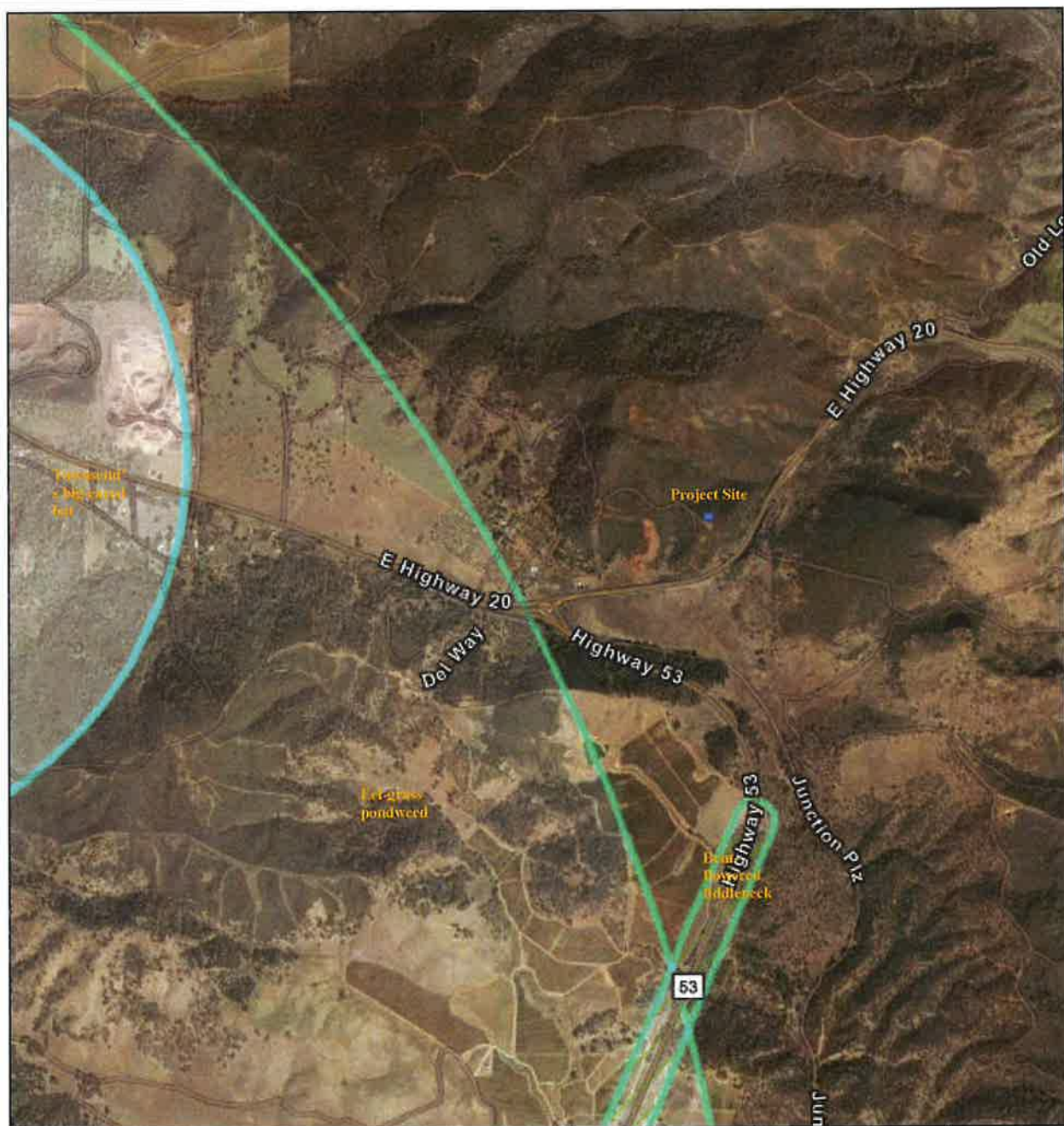


Figure 3. CNDDDB Species Occurrences in the Vicinity of the Project Site

Synthesis Planning
 442 San Marin Drive
 Novato, California 94945
 Telephone: (415) 328-7923

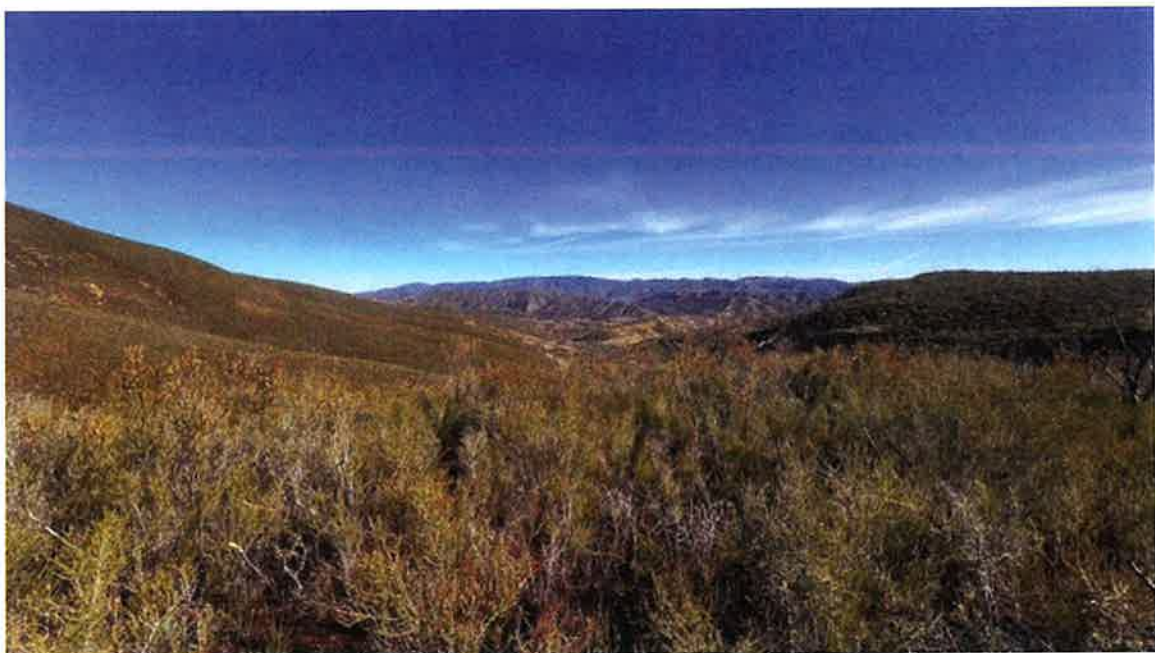
Appendix B

List of Plant Species Observed During Biological Surveys

Common Name (Scientific Name)
Chamise (<i>Adenostoma fasciculatum</i>)
Pointleaf manzanita (<i>Arctostaphylos pungens</i>)
Slender wild oat (<i>Avena barbata</i>)
Black mustard (<i>Brassica nigra</i>)
Rattlesnake grass (<i>Briza maxima</i>)
California brome (<i>Bromus carinatus carinatus</i>)
Ripgut grass (<i>Bromus diandrus</i>)
Soft chess (<i>Bromus hordeaceus</i>)
Smooth brome (<i>Bromus inermis</i>)
Red brome (<i>Bromus rubens</i>)
Sego lily (<i>Calochortus nuttallii</i>)
Buckbrush ceanothus (<i>Ceanothus cuneatus</i>)
Yellow star-thistle (<i>Centaurea solstitialis</i>)
California mountain mahogany (<i>Cercocarpus betuloides</i>)
Dove weed (<i>Croton setigerus</i>)
Bristly dogstail-grass (<i>Cynosurus echinatus</i>)
Scotch broom (<i>Cytisus scoparius</i>)
Squirrel tail grass (<i>Elymus elymoides</i>)
California yerba santa (<i>Eriodictyon californicum</i>)
Common woolly sunflower (<i>Eriophyllum lanatum</i>)
Broadleaf filaree (<i>Erodium botrys</i>)
Red-stem filaree (<i>Erodium cicutarium</i>)
California holly (<i>Heteromeles arbutifolia</i>)
Bearstem biscuit root (<i>Lomatium nudicaule</i>)
Common mallow (<i>Malva neglecta</i> Wallr.)
Cheeseweed (<i>Malva parviflora</i>)
Purple needlegrass (<i>Nassella pulchra</i>)
Bristly ox tongue (<i>Picris echioides</i>)
Gray pine (<i>Pinus sabiniana</i>)
English plantain (<i>Plantago lanceolata</i>)
Common plantain (<i>Plantago major</i>)
Blue oak (<i>Quercus douglasii</i>)
Interior live oak (<i>Quercus wislizeni</i>)
Radish (<i>Raphanus sativus</i>)
Dandelion (<i>Taraxacum officinale</i>)
Tocalote (<i>Centaurea melitensis</i>)
Poison-oak (<i>Toxicodendron diversilobum</i>)
Rat's-tail fescue (<i>Vulpia myuros</i>)

Appendix C

Site Photos



Proposed tower site. View looking northeast.



Proposed tower site. View looking northwest.



Proposed tower site. View looking southwest.



Existing access road to proposed tower site. View looking southeast.



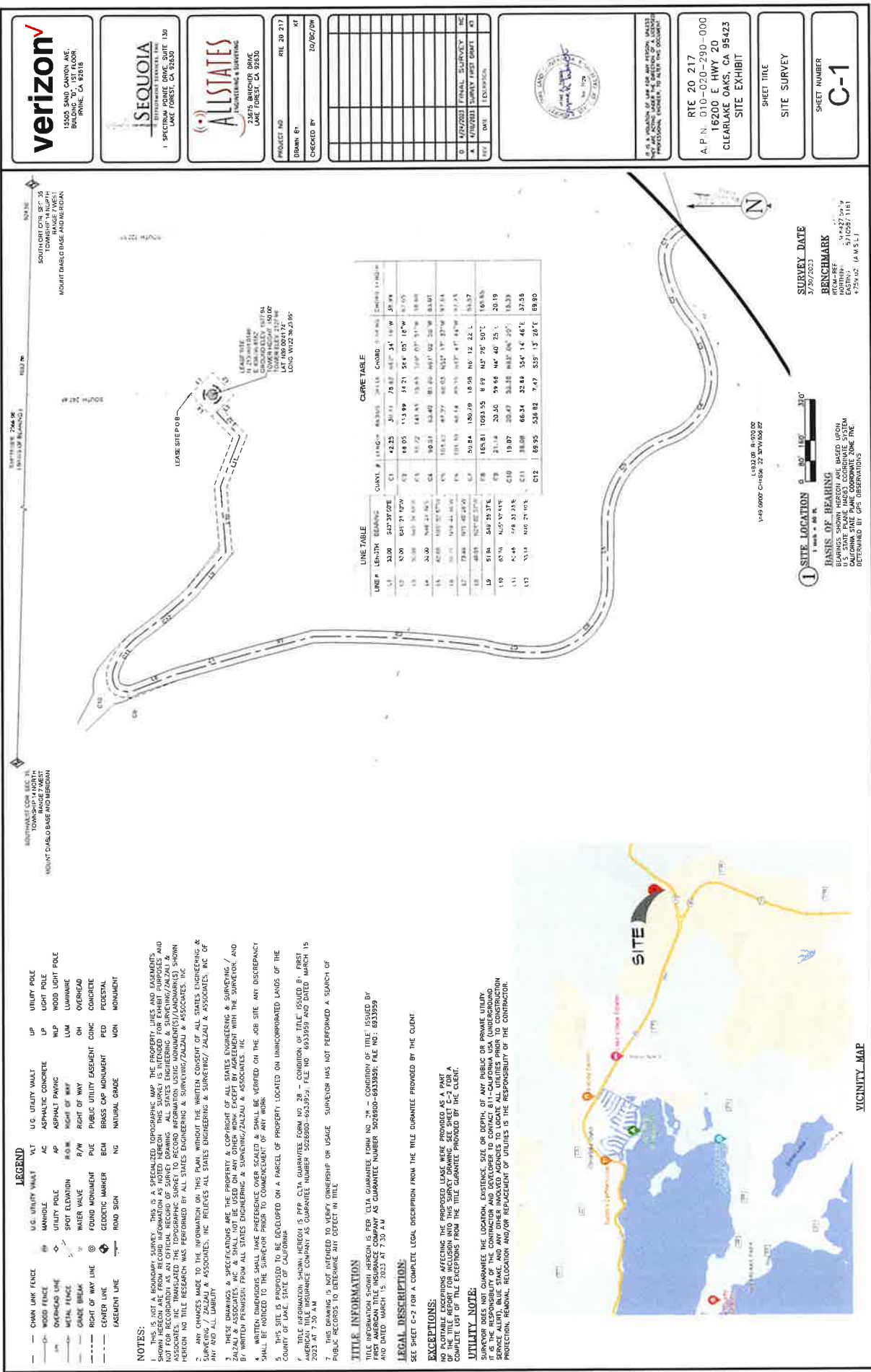
Existing access road to proposed tower site. View looking north.



Existing access road to proposed tower site. View looking northeast.

Appendix D

Engineering Drawings



15005 SAND CANYON AVE
BALDWIN, CA 92018

1 SPECTRUM DRIVE SUITE 130
LAKE FOREST, CA 92550

2525 BRUNNEN DRIVE
LAKE FOREST, CA 92550

PROJECT NO: R1E 20 217
DRAWN BY: 47
CHECKED BY: 20/06/2023

DATE: 3/20/2023
TIME: 10:00 AM
BY: DAVID A. SMITH
FOR: VERIZON

R1E 20 217
A.P.N. 010-020-290-000
16200 E HWY 20
CLEARLAKE OAKS, CA 95423
SITE EXHIBIT

SHEET TITLE
SITE SURVEY

SHEET NUMBER
C-1

LINE TABLE		CURVE TABLE	
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97	10.00	97	10.00
98	10.00	98	10.00
99	10.00	99	10.00
100	10.00	100	10.00

NOTES:

1. THIS IS NOT A BOUNDARY SURVEY. THE PROPERTY LINES AND EASEMENTS SHOWN HEREON ARE BASED UPON THE RECORDS OF THE SAN JOSE OFFICE OF THE CITY ENGINEER AND THE RECORDS OF THE SAN JOSE OFFICE OF THE COUNTY ENGINEER. THE RECORDS OF THE SAN JOSE OFFICE OF THE CITY ENGINEER AND THE RECORDS OF THE SAN JOSE OFFICE OF THE COUNTY ENGINEER ARE THE ONLY RECORDS OF THE PROPERTY LINES AND EASEMENTS SHOWN HEREON. NO TITLE RESEARCH WAS PERFORMED BY ALL STATES ENGINEERING & SURVEYING/ZALZAU & ASSOCIATES, INC.

2. ANY CHANGES MADE TO THE INFORMATION ON THIS PLAN WITHOUT THE WRITTEN CONSENT OF ALL STATES ENGINEERING & SURVEYING/ZALZAU & ASSOCIATES, INC. SHALL BE VERIFIED ON THE JOB SITE. ANY DISCREPANCY SHALL BE NOTICED TO THE SURVEYOR PRIOR TO COMMENCEMENT OF ANY WORK.

3. THESE DIMENSIONS & SPECIFICATIONS ARE THE PROPERTY & COPYRIGHT OF ALL STATES ENGINEERING & SURVEYING/ZALZAU & ASSOCIATES, INC. & SHALL NOT BE USED ON ANY OTHER WORK EXCEPT BY AGREEMENT WITH THE SURVEYOR, AND BY WRITTEN PERMISSION FROM ALL STATES ENGINEERING & SURVEYING/ZALZAU & ASSOCIATES, INC.

4. WRITTEN DIMENSIONS SHALL HAVE PREFERENCE OVER SCALED & SHALL BE VERIFIED ON THE JOB SITE. ANY DISCREPANCY SHALL BE NOTICED TO THE SURVEYOR PRIOR TO COMMENCEMENT OF ANY WORK.

5. THIS SITE IS PROPOSED TO BE DEVELOPED ON A PARCEL OF PROPERTY LOCATED ON UNINCORPORATED LANDS OF THE COUNTY OF LAKE, STATE OF CALIFORNIA.

6. THE INFORMATION SHOWN HEREON IS THE PROPERTY OF ALL STATES ENGINEERING & SURVEYING/ZALZAU & ASSOCIATES, INC. & SHALL NOT BE USED ON ANY OTHER WORK EXCEPT BY AGREEMENT WITH THE SURVEYOR, AND BY WRITTEN PERMISSION FROM ALL STATES ENGINEERING & SURVEYING/ZALZAU & ASSOCIATES, INC.

7. THIS DRAWING IS NOT INTENDED TO VERIFY OWNERSHIP OR USAGE. SURVEYOR HAS NOT PERFORMED A SEARCH OF PUBLIC RECORDS TO DETERMINE ANY DEFECT IN TITLE.

TITLE INFORMATION

THE INFORMATION SHOWN HEREON IS THE PROPERTY OF ALL STATES ENGINEERING & SURVEYING/ZALZAU & ASSOCIATES, INC. & SHALL NOT BE USED ON ANY OTHER WORK EXCEPT BY AGREEMENT WITH THE SURVEYOR, AND BY WRITTEN PERMISSION FROM ALL STATES ENGINEERING & SURVEYING/ZALZAU & ASSOCIATES, INC.

LEGAL DESCRIPTION

SEE SHEET C-2 FOR A COMPLETE LEGAL DESCRIPTION FROM THE TITLE GUARANTEE PROVIDED BY THE CLIENT.

EXCEPTIONS:

NO ROTABLE EXCEPTIONS AFFECTING THE PROPOSED LEASE WERE PROVIDED AS A PART OF THE TITLE GUARANTEE PROVIDED BY THE CLIENT. THE CLIENT IS RESPONSIBLE FOR A COMPLETE LIST OF THE EXCEPTIONS FROM THE TITLE GUARANTEE PROVIDED BY THE CLIENT.

UTILITY NOTE:

THE SURVEYOR HAS LOCATED THE EXISTING UTILITY, SITE OR DEPTH OF ANY PUBLIC OR PRIVATE UTILITY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR AND DEVELOPER TO CONTACT THE CALIFORNIA UTILITY SERVICE AGENCY, BLUE STAKE, AND ANY OTHER INVOLVED AGENCIES TO LOCATE ALL UTILITIES PRIOR TO CONSTRUCTION. PROTECTION, REMOVAL, RELOCATION AND/OR REPLACEMENT OF UTILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR.

VICINITY MAP



2785 MITCHELL DRIVE, SUITE 9
WALNUT CREEK, CA 94598

SEQUOIA
DIFFUSION SERVICES, INC.
1 SPECTRUM POINTE DRIVE, SUITE 100
LAKE FOREST, CA 92650-2203

ALLSTATES
ENGINEERING & SURVEYING
25475 BIRCHMEAD DRIVE
VAN NUYS, CALIF. 91411

PROJECT ID,	WTE 20 217
DRAWN BY,	RN
CHECKED BY,	SS

2	04/01/2021	UPDATE FOR SURVEY	5/5
3	04/01/2021	PER REF	1.5
4	01/01/2021	KOR IDA KIN SAMBUTAL	5/5
5	01/01/2021	KEA IDA FOR APPROVAL	1.5
6	01/01/2021	KEA IDA FOR APPROVAL	4/4
7	01/01/2021	KEA IDA FOR REFUG	4/4

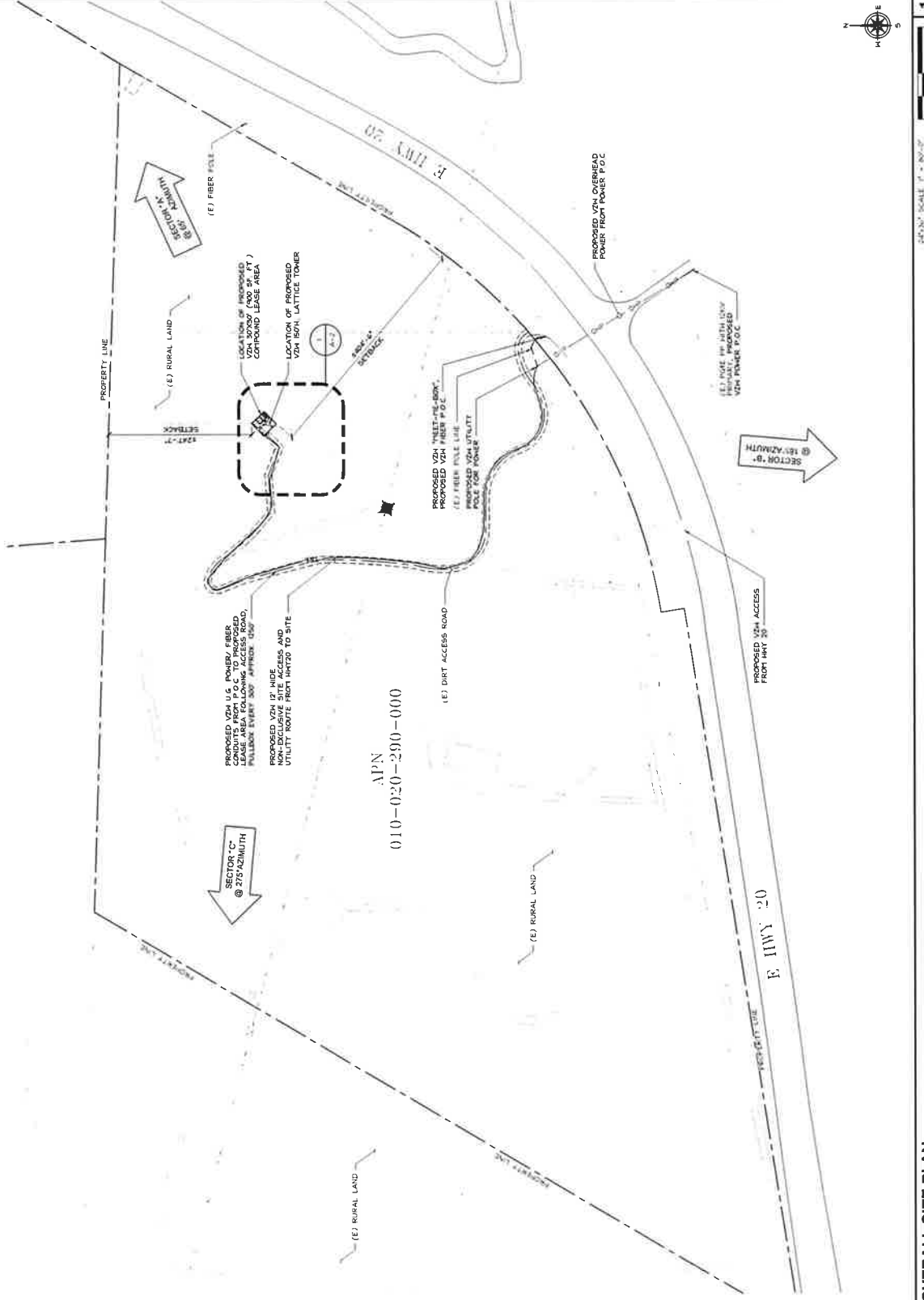
NOT TO BE USED
FOR CONSTRUCTION

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT

RTE 20 217
LATTICE TOWER:
16200 E HWY 20
CLEARLAKE OAKS, CA 95423

SHEET TITLE
OVERALL SITE PLAN

SHEET NUMBER
A-1



OVERALL SITE PLAN



SEQUOIA
ORIENTAL SERVICES, INC.
SPECTRUM PONTE DRIVE, SUITE 130
LAKE FOREST, CA 92630-2703

ALSTATES
ENGINEERING & SURVEYING
2875 BORTCHER DRIVE
LAKE FOREST, CA 92640

PROJECT ID:	ITE 20 201
DRAWN BY:	RN
CHECKED BY:	SS

[illegible]

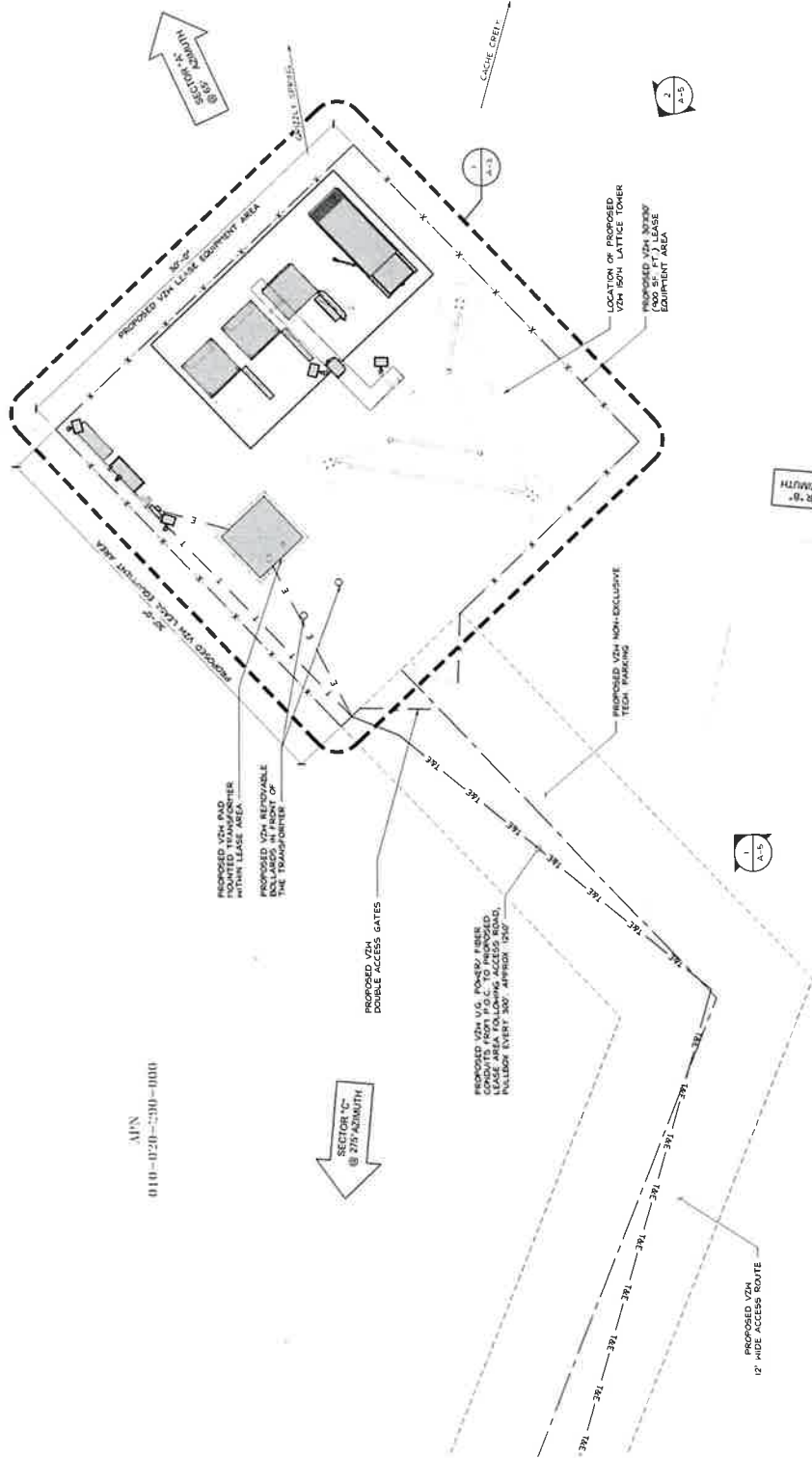
NOT TO BE USED
FOR CONSTRUCTION

IT IS A VIOLATION OF LAW FOR ANY PERSON UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

RTE 20 217
LATTICE TOWER:
16200 E HWY 20
CLEARLAKE OAKS, CA 95423

SHEET TITLE
ENLARGED SITE PLAN

SHEET NUMBER
A-2





ALLSTATES
ENGINEERING & SURVEYING
32475 DISTCHER DRIVE
LAKE FOREST, CA 92643

		UPDATE PER SURVEY	L6	L7
PER RPTS				
08 ZDA FOR SUBMITTAL	A			
08 ZDA FOR APPROVAL	B			
08 ZDA FOR APPROVAL	C			
08 ZDA FOR REVIEW	D			
DATE	E			

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

SHEET TITLE
ANTENNA LAYOUT PLAN

SHEET NUMBER
A-4



24,000	50,000	30,000	10,000
10,000	50,000	30,000	10,000

ANTENNA LAYOUT PLAN



7745 MITCHELL DRIVE, SUITE 9
MALIBU CREEK, CA 94028



1 SPECTRUM STREET, SUITE 200
MILPITAS, CA 95035



2505 BARTCHER DRIVE
LAKE FOREST, CA 92456

PROJECT ID: RTE 20 217
DESIGN BY: EN
CHECKED BY: SS

NO.	DATE	DESCRIPTION
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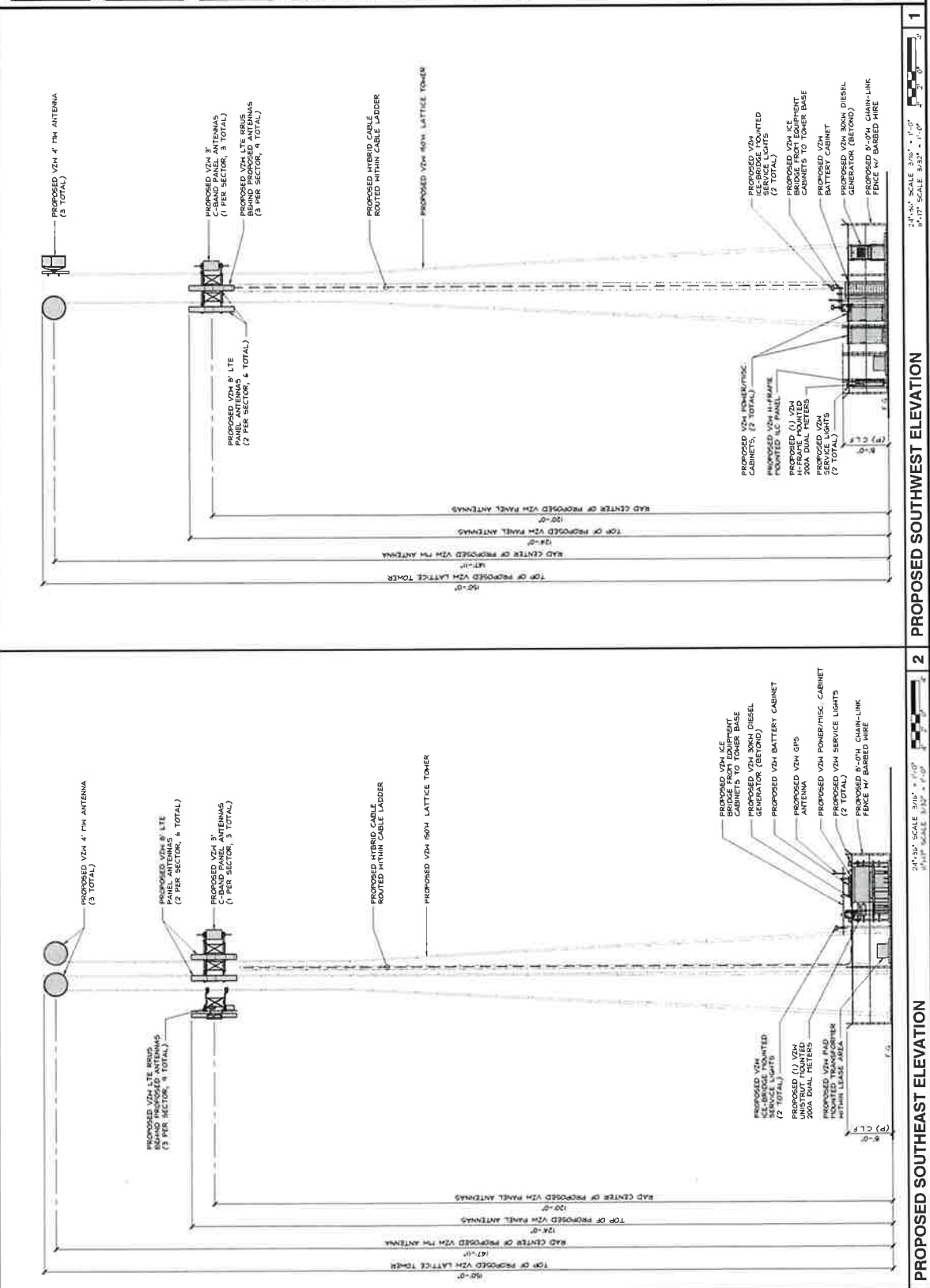
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ELEVATIONS

SHEET NUMBER
A-5



Appendix E

Biologist Profile

Cord E. Hute, Principal, Project Manager, Senior Project Biologist / Senior Environmental Planner

Mr. Hute has 29 years of experience in environmental permitting, planning, biological surveys, biological monitoring, and project management. His expertise includes environmental planning and project permitting; aquatic and terrestrial ecological surveys; endangered species surveys; Environmental Impact Reports (EIRs) and Environmental Impact Statements (EISs) under CEQA and NEPA; Biological Assessments and Environmental Assessments (EAs); environmental oversight/monitoring of construction projects; state and federal Endangered Species Act (ESA) consultations; wetland delineation and permitting; and wetland mitigation. He has provided services to both the private and public sectors—including telecommunications, utilities, oil and gas, public transportation projects, and residential and commercial development.

Cord has adeptly handled planning, permitting, and construction-monitoring projects throughout California, Nevada, Utah, Arizona, and New Mexico. He has managed and prepared innumerable environmental documents required to satisfy local, state, and federal agencies. And he has consulted and successfully negotiated with a variety of agencies, including the U.S. Army Corps of Engineers (USACE), U.S. Fish and Wildlife Service (USFWS), Bureau of Land Management (BLM), NOAA Fisheries, California Department of Fish and Game (CDFG), California Regional Water Quality Control Boards (RWQCB), California State Lands Commission (CSLC), California Public Utilities Commission (CPUC), and the San Francisco Bay Conservation and Development Commission (BCDC).

Fields of Competence

- Regulatory permitting
- NEPA and CEQA compliance
- Wetland and water course delineation
- Threatened and Endangered species consultations
- Botanical and wildlife field surveys
- Biological, habitat, and environmental assessments
- Regulatory and resource agency consultations and negotiations
- Environmental oversight and monitoring of construction projects
- Clean Water Act Section 401 and 404 compliance
- Mitigation and monitoring plans
- Horizontal directional drilling impacts and mitigation
- Project management

Education

- B.S., Environmental Science and Biology, University of Dubuque, 1995

Professional Affiliations

- Society of Wetland Scientists
- Society for Ecological Restoration
- The Wildlife Society

Key Projects

Pacific Gas and Electric (PG&E) Integrated Vegetation Management Program Project (2016 - Present), Butte, Plumas, and Yuba Counties, California. As a consultant to North State Forestry, conducted special-status nesting avian, plant, frog surveys, and water quality sampling for the PG&E Integrated Vegetation Management Program within the Plumas National Forest. Monitored vegetation clearing and herbicide application activities after completion of biological surveys. Managed a crew of 6 biologists to complete the project tasks.

Pacific Gas and Electric (PG&E) Integrated Vegetation Management Program Project (2013 - Present), Nevada, Sonoma, Glenn, Alameda, Contra Costa, Butte, Plumas, and Yuba Counties, California. As a consultant to High Country Forestry, conducted special-status plant, frog, and nesting avian surveys for the PG&E Routine and Integrated Vegetation Management Program within multiple Counties within California. Monitored vegetation clearing and herbicide application activities after completion of biological surveys. Managed a crew of biologists to complete the project tasks.

Pacific Gas and Electric Company Nesting Avian Species Surveys and Wetland Streamcourse Delineations (2014-2015), The Geysers, Sonoma and Lake County, California. Under contract to High Country Forestry, provided nesting avian species surveys and stream course/wetland delineation of vegetation planned for removal under power lines. In support of the project, prepared daily survey reports for submittal to High Country Forestry and Pacific Gas and Electric.

Bottlerock Energy Nesting Avian Species Surveys (2010-present), The Geysers, Lake County, California. In support of Bottlerock Energy's compliance with California Energy Commission's permit to operate their geothermal power plant in the Geysers, Lake County, California, provided yearly nesting avian species surveys for 104 constructed wooden nesting boxes and surrounding forest habitat. Surveys have included three (3) rounds of surveys per year between April and May of the year. Nesting avian species identified during the efforts included ash-throated flycatcher, chestnut-backed chickadee, tree swallows, violet green swallow, western bluebird, and red-tailed hawk. As part of the survey effort, prepared an annual survey report for submission to the California Energy Commission.

BLM, Bakersfield Field Office Cuyama River Dumps Cleanup Project (2017), Cuyama Valley, Santa Barbara County, California. Conducted biological surveys of proposed project site. Conducted protocol-level surveys for sensitive botanical species, nesting avian species, blunt-nosed leopard lizard, coast horned lizard, San Joaquin antelope squirrel, giant kangaroo rat, San Joaquin kit fox, and Kern spinx moth. Prepared biological resources assessment report for proposed project.

Crown Castle California State-Wide Fiber-Fed Distributed Antenna Communications System Projects (2016 - Present), Los Angeles, Orange, Riverside, San Diego,

San Mateo, San Luis Obispo, Monterey, Santa Barbara, Ventura, San Francisco, Alameda, Contra Costa, and San Joaquin Counties, California. Conducted biological and archaeological studies and surveys for over 6,000 individual fiber trenching, boring, pole placement, and node locations. Prepared biological and archeological technical reports for the studied locations for submission to the CPUC. Prepared CEQA analysis for project that complied with CPUC requirements and guidelines. Prepared and submitted NEPA EA reports, NEPA checklists, and Section 106 SHPO packages for numerous locations. Consulted with local, state, and federal resource agencies. Participated in the CEQA and NEPA environmental review process for the projects.

Geist Engineering and Environmental Group Cell Tower Installation Projects (2015 to Present), Mendocino, Sonoma, Napa, Lake, San Francisco, Alameda, Marin, Santa Clara, Tehama, Shasta, and Contra Costa County, California. As a consultant to Geist Engineering and Environmental Group, conducted biological surveys of 45 proposed cellular tower sites for clients such as AT&T, Verizon, and Incline Partners. Surveys included nesting birds and special-status mammal, amphibian, reptile, insect, fish, and plant species. Prepared biological resources survey reports for proposed projects. Prepared and submitted NEPA EA reports, NEPA checklists, and Section 106 SHPO packages for numerous locations. Consulted with local, state, and federal resource agencies. Participated in the CEQA and NEPA environmental review process for the projects. Secured necessary permits to build and operate projects.

Crown Castle San Diego County (Lake Murray, Caso Serra, and Blue Cypress Projects) Fiber-Fed Distributed Antenna Communications System Project (2016), San Diego County, California. Conducted biological and archaeological studies and surveys for 40 individual fiber trenching locations within the City of San Diego, California. Prepared biological and archeological technical reports for the studied locations for submission to the CPUC. Prepared CEQA analysis for project that complied with CPUC requirements and guidelines. Consulted with local, state, and federal resource agencies. Participated in the CPUC CEQA environmental review process for the project.

Crown Castle Palo Alto Fiber-Fed Distributed Antenna Communications System Project (2016), Palo Alto, Santa Clara County, California. Conducted biological and archaeological studies and surveys for 20 individual fiber trenching locations. Prepared biological and archeological technical reports for the studied locations for submission to the CPUC. Prepared CEQA analysis for project that complied with CPUC requirements and guidelines. Consulted with local, state, and federal resource agencies. Participated in the CPUC CEQA environmental review process for the project.

Crown Castle Pacific Grove Fiber-Fed Distributed Antenna Communications System Project (2016), Pacific Grove, Monterey County, California. Conducted biological and archaeological studies and surveys for 12 individual fiber trenching locations within the City of Pacific Grove, California. Prepared biological and archeological technical reports for the studied locations for submission to the CPUC. Prepared CEQA analysis for project that complied with CPUC requirements and guidelines. Consulted with local, state, and federal resource agencies. Participated in the CPUC CEQA environmental review process for the project.

Horizon Tower, LLC. Napa Valley expo Communications Tower Installation Project, City of Napa, Napa County, California. In support of project, conducted biological surveys of the project area and prepared a biological assessment report. Prepared a draft Initial Study/Negative Declaration for submittal to the 25th District Agricultural Association. Consulted with local, state, and federal agencies regarding the proposed project.

Crown Castle San Diego County Fiber-Fed Distributed Antenna Communications System Project (2014-2015), San Diego County, California. Conducted biological and archaeological studies and surveys for 141 individual fiber trenching locations throughout San Diego County. Prepared biological and archeological technical reports for the studied locations for submission to the CPUC. Prepared CEQA analysis for project that complied with CPUC requirements and guidelines. Consulted with local, state, and federal resource agencies. Participated in the CPUC CEQA environmental review process for the project.

New Path Networks City of Temecula/Murrieta Fiber-Fed Distributed Antenna Communications System Project: Cities of Temecula/Murrieta, Western Riverside County, California. Prepared a Proponent's Environmental Assessment for the installation of fiber-fed distributed antenna communications systems within the Cities of Temecula and Murrieta in western Riverside County, California. Managed the environmental planning of the proposed project. Consulted with local, state, and federal resource agencies. Conducted biological surveys of the proposed project areas. Participated in the CPUC CEQA environmental review process for the project.

Bradford Island Levee Raising and Widening Project, Contra Costa County, California, Nesting Avian Species Surveys (2013-Present), Contra Costa County, California. In support of Reclamation District # 2059's levee improvement project, provided yearly and pre-construction nesting avian species surveys for proposed work areas on Bradford Island in Contra Costa County, California. Recently finished pre-construction avian nesting surveys on April 17, 2014. Nesting avian species identified during the efforts included Swainson's hawk, red-tailed hawk, great horned owl, Barn swallow, common sparrow, red-winged blackbird, mourning dove, common grebe, American crow, cliff swallow, and western meadowlark. Provided avian nest monitoring during construction activities for the above species to ensure that no impacts occurred to actively nesting avian species.

Terminus Tract Levee Raising and Widening Project, San Joaquin County, California, Nesting Avian Species Surveys (2012-Present), San Joaquin County, California. In support of Reclamation District # 548's project, provided yearly and pre-construction nesting avian species surveys for proposed work areas on Terminus Tract in San Joaquin County, California. Nesting avian species identified during the efforts included Swainson's hawk, red-tailed hawk, Barn swallow, red-winged blackbird, mourning dove, American crow, and cliff swallow. Provided avian nest monitoring during construction activities for the above species to ensure that no impacts occurred to actively nesting avian species.

Union Island Levee Raising and Widening Project, Nesting Avian Species Surveys (2020), San Joaquin County, California. In support of Reclamation District # 1007's project, provided pre-construction nesting avian species surveys for proposed work areas. Nesting avian species identified during the efforts included Swainson's

hawk, red-tailed hawk, Barn swallow, red-winged blackbird, mourning dove, American crow, and cliff swallow. Provided avian nest monitoring during construction activities for the above species to ensure that no impacts occurred to actively nesting avian species.

Sensitive Species Surveys, Biological Assessments, Wetland and Water Course Delineations, Environmental Permitting, CEQA/NEPA Analysis, and Environmental Monitoring for Various Exploratory Natural Gas Wells, Seismic Surveys, Natural Gas Pipelines, and Development of Natural Gas and Oil Fields: State of California. As a consultant to Robert A. Booher Consulting, (between 2004 and Present worked on 500 individual projects), conducted sensitive species protocol-level biological surveys for a number of threatened and endangered species, including blunt-nosed leopard lizard, giant kangaroo rat, San Joaquin antelope squirrel, San Joaquin kit fox, Southwestern willow flycatcher, California condor, and numerous plant species. Conducted nesting avian species surveys. Prepared and conducted biological assessments. Prepared numerous environmental permitting packages for submission to BLM, USACE, RWQCB, USFWS, CDFG, CPUC, CSLC, planning departments of Contra Costa, Solano, Glenn, San Joaquin, Colusa, Sutter, Sacramento, Kern, Kings, Monterey, San Luis Obispo, Santa Barbara, and Ventura Counties, and numerous cities within these counties. Secured permits and approvals from these permitting agencies. Consulted with local, state, and federal agencies regarding the proposed projects. Managed the preparation of, conducted CEQA/NEPA analysis for, and prepared sections for inclusion in environmental assessments, initial studies, mitigated negative declarations, environmental assessments, and environmental impact reports and studies. Conducted environmental training and compliance monitoring of projects.

Foothills Resources, Inc. Grizzly Bluff Natural Gas Field Development Project Environmental Impact Report: Humboldt County, California. Completed sensitive species biological surveys, prepared biological assessment, conducted visual simulations, conducted air quality analysis, and prepared a programmatic and final environmental impact reports (EIR) for the project. Conducted public meetings required under CEQA. Consulted with regulatory agencies (including USACE, RWQCB, USFWS, CDFG, CPUC, CSLC, as well as others) during the preparation of the EIR and the public review process.

Naftex, Inc. Oil and Natural Gas Exploration Project, Kern County, California. In support of oil and natural gas exploration activities within the Edison Area east of Bakersfield within BLM lands, conducted biological surveys for special-status plant and animal species (including San Joaquin kit fox, blunt-nosed leopard lizards, San Joaquin antelope squirrel, burrowing owls, giant, short-nosed, and Tipton, and Hermann's kangaroo rats, kern mallow, San Joaquin woolly-threads, California jewelflower, Hoover's woolly-star, Bakersfield cactus, and oil netstraw, as well as other species). Prepared biological assessment reports and BLM Sensitive Species Review Form in support of biological surveys conducted. Conducted pre-construction biological surveys for special-status species prior to implementation of project activities, and prepared reports documenting findings of surveys.

Daybreak Oil and Gas, Inc. Poso Creek New Bear and Sunday Oil and Natural Gas Exploration Project, Kern County, California. In support of oil and natural gas

exploration activities within the Poso Creek Area northeast of Bakersfield, conducted biological surveys for special-status plant and animal species (including San Joaquin kit fox, blunt-nosed leopard lizards, San Joaquin antelope squirrel, burrowing owls, giant, short-nosed, and Tipton, and Hermann's kangaroo rats, kern mallow, San Joaquin woolly-threads, California jewelflower, Hoover's woolly-star, Bakersfield cactus, and oil netstraw, as well as other species). Prepared biological assessment report in support of biological surveys conducted. Conducted pre-construction biological surveys for special-status species prior to implementation of project activities, and prepared reports documenting findings of surveys.

E & B Natural Resources Management Company Wheeler Ridge Oil and Natural Gas Exploration Project, Kern County, California. Conducted protocol-level biological surveys for blunt-nosed leopard lizards, San Joaquin antelope squirrels, San Joaquin kit foxes, and western burrowing owls within the proposed well pad, buffer areas, and access roadways.

Gasco Cymric and Willow Oil and Natural Gas Exploration Project, Kern County, California. Conducted protocol-level biological surveys for blunt-nosed leopard lizards, San Joaquin antelope squirrels, San Joaquin kit foxes, and western burrowing owls within the proposed well pad, buffer areas, and access roadways.

Legacy Energy Oil and Natural Gas Exploration Project, Kern County, California. Conducted protocol-level biological surveys for blunt-nosed leopard lizards, San Joaquin antelope squirrels, San Joaquin kit foxes, and western burrowing owls within the proposed well pad, buffer areas, and access roadways.

Venoco, Inc. Sevier # 1-29 Oil and Natural Gas Exploration Project, Kern County, California. Conducted pre-construction biological surveys for special-status wildlife species, including San Joaquin kit foxes. Prepared pre-construction survey reports detailing the findings of the survey effort. Conducted environmental training of construction and drilling personnel.

Venoco, Inc. Monterey County Oil and Natural Gas Exploration Program, Monterey County, California. Conducted biological surveys for special-status plant and animal species for eight (8) individual well sites south of the Salinas Valley and the San Ardo Oil Filed in southern Monterey County. Prepared biological assessment reports for each well site in support of biological surveys conducted. Prepared Conditional Use Permit applications for each well. Participated in the CEQA environmental review process for each of the projects. Conducted environmental awareness training of construction and drilling personnel.

Salinas Energy Corporation Paris Valley Oil and Natural Gas Exploration Program, Monterey County, California. Conducted biological surveys for special-status plant and animal species for four (4) individual well sites within Paris Valley Area in south central Monterey County. Prepared biological assessment reports for each well site in support of biological surveys conducted. Prepared Conditional Use Permit applications for each well. Participated in the CEQA environmental review process for each of the projects. Conducted environmental awareness training of construction and drilling personnel.

Cirque Resources LP Kern Water Bank Oil and Natural Gas Exploration Project, Kern County, California.

Conducted biological surveys for special-status plant and animal species (including San Joaquin kit fox, blunt-nosed leopard lizards, San Joaquin antelope squirrel, burrowing owls, giant kangaroo rats, kern mallow, San Joaquin woolly-threads, California jewelflower, Hoover's woolly-star, Bakersfield cactus, and oil netstraw, as well as other species). Prepared biological assessment report in support of biological surveys conducted. Prepared greenhouse gases analysis of proposed project activities.

E and B Natural Resources Management Company South Cuyama Oil and Natural Gas Exploration Project, Santa Barbara County, California.

Conducted biological surveys for special-status plant and animal species (including San Joaquin kit fox, blunt-nosed leopard lizards, burrowing owls, Kern sphinx moth, etc.). Prepared biological assessment reports for submittal to BLM and Santa Barbara County in support of biological surveys conducted. Prepared Santa Barbara County Air Pollution Control District Authority to Construct/Permit to Operate permit application for the proposed project.

E and B Natural Resources Management Company Titan/Apollo Oil and Natural Gas Exploration Project, Santa Barbara County, California.

Conducted biological surveys for special-status plant and animal species (including San Joaquin kit fox, blunt-nosed leopard lizards, burrowing owls, Kern sphinx moth, etc.). Prepared biological assessment report in support of biological surveys conducted. Prepared Santa Barbara County Air Pollution Control District Authority to Construct/Permit to Operate permit application for the proposed project.

E and B Natural Resources Management Company Belgian Anticline 3D Seismic Survey Project, Kern County, California.

Conducted biological surveys for special-status plant and animal species. Prepared biological assessment report in support of biological surveys conducted. Comanaging environmental monitoring effort for field implementation of the project. As part of field implementation of project, conducting environmental awareness training of project personnel, biological surveys and mapping of sensitive habitats and species, environmental monitoring of seismic survey activities, documentation of species and habitat impacts, and preparing final reports for submission to the Bureau of Land Management, California Department of Fish and Game, U.S. Fish and Wildlife Service, BLM, as well as other regulatory agencies with jurisdiction over project.

Venoco, Inc. West Montalvo 3-D Seismic Survey Project, Cities of Oxnard and Ventura, and Ventura County, California.

In support of Venoco, Inc.'s proposed 3-D seismic survey, conducted biological surveys of the seismic study area and prepared a biological assessment report. Prepared a draft Initial Study/Mitigated Negative Declaration for submittal to Ventura County incorporating information from the Ventura County General Plan, zoning ordinances, and utilizing the requirements of the Ventura County Initial Study Assessment Requirements. Prepared regulatory permitting packages for submission to Ventura County, City of Oxnard, City of Ventura, California State Parks, and other regulatory agencies. Consulted with local, state, and federal agencies regarding the proposed project.

United States National Park Service Fort Baker Saterlee Road Improvement Project (2015), Marin County,

California. Conducted pre-construction biological surveys for *Lupinus albifrons*, the host plant for Mission Blue butterfly, a federally endangered species. In areas where this host plant species is identified, identified exclusion buffer zones and installed construction exclusion fencing at a minimum of 50 feet from identified lupine plants. Placed signs on the fencing identifying the areas as "Environmentally Sensitive Areas (ESA)". Conducted pre-construction nesting avian surveys of the project site and buffer area. Installed exclusionary buffer fencing that complied with the requirements of the California Department of Fish and Wildlife and the U.S. Fish and Wildlife Service. Prepared a pre-construction biological survey report detailing the findings of the biological surveys and mitigation measures implemented to protect these sensitive species. Participated in onsite meetings with the National Park Service and construction contractor to discuss project construction and the implementation of best management practices and mitigation measures to protect sensitive environmental resources. Prepared an environmental awareness training program binder for use during the project. The training program binder contained information on the regulatory requirements the project must comply with, the sensitive wildlife species (including mission blue butterfly and nesting migratory avian species) and habitats that may be present within the project site and buffer areas, photographs of sensitive wildlife species that may be encountered within the project site and buffer, mitigation and best management measures that shall be implemented during project implementation to protect sensitive biological resources, and a section on archeological and cultural resources that describes these resources and measures to protect them. Conducted environmental awareness training sessions with project team. Provided full time environmental monitoring during project implementation.

Extenet Systems Highway 35 Distributed Antenna System Project, San Mateo County, California, Pre-Construction Nesting Avian Species Surveys (March 2011 through August 2013), San Mateo County, California.

Prior to project implementation, prepared a Proponent's Environmental Assessment (CPUC-specific Initial Study and Mitigated Negative Declaration document) for the installation of fiber-fed distributed antenna communications systems within the Cities of Temecula and Murrieta in western Riverside County, California. Managed the environmental planning of the proposed project. Consulted with local, state, and federal resource agencies. Conducted biological surveys of the proposed project areas. Participated in the CPUC CEQA environmental review process for the project. Provided pre-construction nesting avian species surveys and active nest site monitoring for a 15-mile telecommunication project located in San Mateo County, California south of San Francisco. Nesting avian species identified during the efforts included long-eared owl, marbled murrelet, red-tailed hawk, western scrub jay, California quail, and acorn woodpecker. Managed the CPUC regulatory compliance program for the proposed project.