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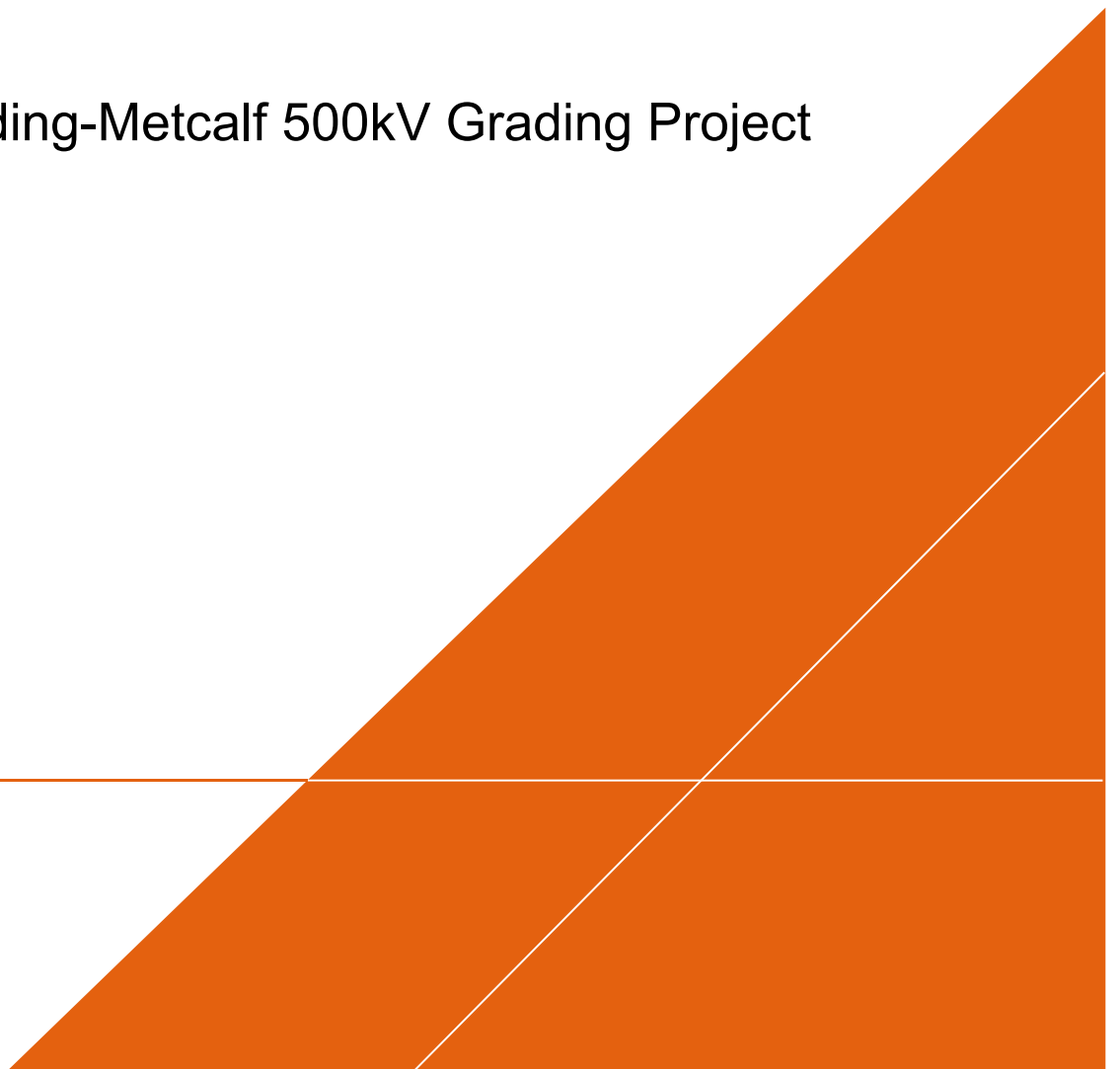
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Pacific Gas and Electric

BIOLOGICAL ASSESSMENT

Moss Landing-Metcalf 500kV Grading Project

August 2, 2016



BIOLOGICAL ASSESSMENT

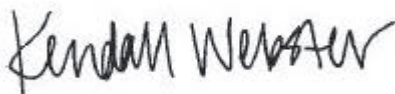
Moss Landing-Metcalf 500kV Grading
Project



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ACRONYMS AND ABBREVIATIONS

CDFW	California Department of Fish and Wildlife
CNDDDB	California Natural Diversity Database
LOD	Limits of Disturbance
MBTA	Migratory Bird Treaty Act
PG&E	Pacific Gas and Electric

EXECUTIVE SUMMARY

A discrepancy exists beneath the easternmost phase of the Metcalf-Moss Landing 500kV Circuit near Tower 004/024. To resolve the discrepancy, Pacific Gas and Electric (PG&E) plans to grade the top of a terrace located beneath the conductor. This Biological Assessment and the associated field survey was prepared for the proposed grading in Monterey County, California. The field reconnaissance survey was conducted on April 18, 2016 after conducting a desktop review. Three special-status plant species were observed within the limits of disturbance (LOD) for the grading activities: Hooker's manzanita (*Arctostaphylos hookeri*), Pajaro manzanita (*Arctostaphylos pajaroensis*), and Eastwood's goldenbush (*Ericameria fasciculata*). Recommendations are provided for measures to minimize impacts and control for the introduction of invasive species.

1 INTRODUCTION

This Biological Assessment and the associated field reconnaissance survey was prepared to support the proposed grading activity associated with the Metcalf-Moss Landing 500kV Circuit between Towers 004/024 and 004/025 in Monterey County, California (Figure 1). This report describes the existing conditions at the site, field survey methods, findings, and recommended mitigation measures.

2 EXISTING CONDITIONS

The proposed grading area is located approximately 100 feet to the northeast of tower 004/024 on the Moss Landing-Metcalf circuit between towers 004/024 and 004/025 (hereafter the 'Site'). The Site is 425 feet above sea level and sits at the top of a northeast-southwest running ridge. Immediately to the northwest, west, and southwest are dirt roads associated with tower access.

The habitat surrounding the Site is comprised of oak woodland with fragments of Central maritime chaparral. To the northeast is a stand of large Eucalyptus trees (100+ feet tall). Weeds grow abundantly on the access roads and within vegetated areas. The most noxious of these are Eucalyptus (*Eucalyptus* sp.; including seedlings), pampas grass (*Cortaderia* sp.), and French broom (*Genista monspessulana*).

The proposed grading area totals 895 square feet and the overall LOD is 5,164 square feet (Figure 3). The habitat within the LOD which includes the grading and erosion control areas as well as the staging and stockpile areas is comprised mainly of Central maritime chaparral (Figure 2).

3 APPLICABLE REGULATIONS

No state or federally listed species have the potential to occur within the Site. Therefore provisions listed under the Federal Endangered Species Act and California Endangered Species Act are not applicable.

The oak woodland and eucalyptus stand surrounding the Site provide suitable nesting habitat for raptors and other birds protected by the Migratory Bird Treaty Act (MBTA) and the California Fish and Game Code. The MBTA of 1918 prohibits the harassing, possessing, killing, or trading of migratory birds. Most actions that result in the taking or permanent or temporary possession of protected species violates the MBTA. Raptors and their nests are protected under both the MBTA and Fish and Game Code Section 3503 which prohibits the killing, possession, or destruction of bird eggs or bird nests. Sections 3503.5 and 3513 prohibit the killing, possession, or destruction of all nesting birds (including passerines).

4 METHODS

A desktop review was conducted in preparation for the field reconnaissance survey. This included a review of findings from prior field surveys conducted at this location (AECOM 2012 and Arcadis 2015), a search of the California Natural Diversity Database (CNDDDB) within 5 miles of the Site, and a Google Earth review of the topography and vegetation canopy. A list of all special-status species with CNDDDB records occurring within the 5-mile radius of the Site and their potential to occur within the Site are presented in the table below.

Table 1: Special-Status Species within a 5-mile Radius

Species	Status Fed/State/Other	Habitat	Likelihood of Occurrence
<i>Arctostaphylos hookeri</i> ssp. <i>hookeri</i> Hooker's manzanita	--/--/1B.2	Chaparral, coastal scrub, closed-cone coniferous forest, cismontane woodland. Sandy soils. Blooming period January-June.	Present. 6 plants are present within the Limits of Disturbance in chaparral habitat.
<i>Arctostaphylos pajaroensis</i> Pajaro manzanita	--/--/1B.1	Chaparral, sandy soils. Blooming period December-March.	Present. Approximately 45 plants are present within the Limits of Disturbance in chaparral habitat.
<i>Centromadia parryi</i> ssp. <i>congdonii</i> Congdon's tarplant	--/--/1B.1	Valley and foothill grasslands. Blooming period May-October.	Low. Suitable grassland habitat is not present within the Limits of Disturbance.
<i>Chorizanthe pungens</i> var. <i>pungens</i> Monterey spineflower	FT/--/1B.2	Sandy soils in coastal dunes or more inland within chaparral or other habitats. Blooming period April-June.	Absent. While suitable sandy soils and chaparral habitat is present, this species has not been identified within the Limits of Disturbance during surveys conducted in 2012 and 2015.
<i>Cordylanthus rigidus</i> ssp. <i>littoralis</i> seaside bird's beak	--/SE/1B.1	Closed-cone coniferous forest, chaparral, cismontane woodland, coastal scrub, coastal dunes. Blooming period April-October.	Absent. While suitable chaparral habitat is present, no recent CNDDDB records occur within a 5-mile radius and no individuals were observed during surveys conducted in 2012 and 2015.
<i>Ericameria fasciculata</i> Eastwood's goldenbush	--/--/1B.1	Sandy openings in chaparral (maritime), coastal scrub, coastal dunes. Blooming period July-October.	Present. 21 plants are present within the Limits of Disturbance in chaparral habitat.
<i>Piperia yadonii</i> Yadon's rein orchid	FE/--/1B.1	On sandstone or sandy soils within chaparral, coastal bluff scrub	Absent. While suitable sandy soils and chaparral habitat is present, this species has not been identified within the Limits of

Species	Status Fed/State/Other	Habitat	Likelihood of Occurrence
			Disturbance during surveys conducted in 2012 and 2015.
<i>Plagiobothrys chorisianus</i> var. <i>chorisianus</i> Choris' popcornflower	FT/--/1B.2	Chaparral, coastal scrub, wetland-riparian. Blooming period March-June	Absent. Typical habitat for this species in the vicinity includes mesic areas which are not present within the Limits of Disturbance and this species has not been identified during surveys conducted in 2012 and 2015.
<i>Trifolium hydrophilum</i> saline clover	--/--/1B.2	Marshes, swamps, valley and foothill grasslands, vernal pools. Blooming period April-June	Absent. No suitable habitat is present
<i>Ambystoma californiense</i> California tiger salamander	FT/ST	Need underground refuges, especially ground squirrel burrows, & vernal pools or other seasonal water sources for breeding	Low. No suitable perennial or seasonal water source for breeding is present within the vicinity of the Limits of Disturbance. No upland refugia habitat is present.
<i>Ambystoma macrodactylum croceum</i> Santa Cruz long-toed salamander	FE/FP	Wet meadows near sea level in a few restricted locales in Santa Cruz and Monterey counties.	Absent. No suitable habitat is present
<i>Charadrius nivosus nivosus</i> western snowy plover	FT/SSC	Sandy beaches, salt pond levees & shores of large alkali lakes.	Absent. No suitable habitat is present
<i>Elanus leucurus</i> white-tailed kite	--/FP/BLM-S	Coastal or valley areas with abundant prey base (typically rodents). Nests in a variety of trees or tall shrubs. Habitats may include grasslands, agricultural areas, and wetlands including freshwater and salt marshes.	Low. Marginal nesting and foraging habitat is present within the vicinity of the Limits of Disturbance.
<i>Rallus longirostris obsoletus</i>	FE/SE, FP	Salt and/or brackish marshes.	Absent. No suitable habitat is present

Species	Status Fed/State/Other	Habitat	Likelihood of Occurrence															
Ridgway's (=California clapper) rail																		
<i>Riparia riparia</i> bank swallow	--/ST	Colonial nester; nests primarily in riparian and other lowland habitats	Absent. No suitable habitat is present															
<i>Vireo bellii pusillus</i> least Bell's vireo	FE/SE	Summer resident of Southern California in low riparian in vicinity of water or in dry river bottoms; below 2000 ft.	Absent. No suitable habitat is present															
<i>Eucyclogobius newberryi</i> tidewater goby	FE/SSC	Brackish water habitats	Absent. No suitable habitat is present															
<i>Rana draytonii</i> California red- legged frog	FT/SSC	Lowlands & foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation.	Absent. No suitable habitat is present															
<i>Spirinchus thaleichthys</i> longfin smelt	FC/SE	Found in open waters of estuaries, mostly in middle or bottom of water column.	Absent. No suitable habitat is present															
<p>Data sources: CDFW (2016), CNPS (2016).</p> <p>Species Status Codes:</p> <table> <tr> <td>Federal:</td> <td>State:</td> <td>Other (CNPS):</td> </tr> <tr> <td>FC – Candidate</td> <td>FP – Fully Protected</td> <td>1B.1 – Seriously Threatened in California; Rare, Threatened, Endangered in California and Elsewhere (CNPS)</td> </tr> <tr> <td>FD – Delisted</td> <td>SE – Endangered</td> <td>1B.2 – Moderately Threatened in California; Rare, Threatened, Endangered in California and Elsewhere (CNPS)</td> </tr> <tr> <td>FE – Endangered</td> <td>ST – Threatened</td> <td></td> </tr> <tr> <td>FT – Threatened</td> <td>SSC – Species of Special Concern</td> <td></td> </tr> </table>				Federal:	State:	Other (CNPS):	FC – Candidate	FP – Fully Protected	1B.1 – Seriously Threatened in California; Rare, Threatened, Endangered in California and Elsewhere (CNPS)	FD – Delisted	SE – Endangered	1B.2 – Moderately Threatened in California; Rare, Threatened, Endangered in California and Elsewhere (CNPS)	FE – Endangered	ST – Threatened		FT – Threatened	SSC – Species of Special Concern	
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The review of past surveys indicated the presence of Hooker's manzanita (*Arctostaphylos hookeri*), Pajaro manzanita (*Arctostaphylos pajaroensis*), and Eastwood's goldenbush (*Ericameria fasciculata*) observed on July 26, 2012 and June 3, 2015.

Prior to the field reconnaissance survey, reference monitoring was conducted at the former Fort Ord (approximately 14 miles south) on April 14, 2016 in which Monterey spineflower (*Chorizanthe pungens* var. *pungens*) was observed flowering. In addition, seaside birds-beak (*Cordylanthus rigidus* ssp. *littoralis*) was identifiable and *Piperia* species were observable.

Span 004/024 to 004/025 is accessed from 67 Tucker Road, Prunedale, California. The field reconnaissance survey conducted on April 18, 2016, involved walking throughout the Site, the access roads, and surrounding habitat to visually identify, quantify, and record polygons of special-status species present as well as document existing conditions and habitat types. The Site was visited at the peak of the spring flowering season when plant identification is optimal.

5 SPECIAL-STATUS PLANT FINDINGS

A survey for special-status plant species was conducted on April 18, 2016. Hooker's manzanita, Pajaro manzanita, and Eastwood's goldenbush were observed (Figure 3; Table 2). There were other special-status species that were recorded in the CNDDDB search within five-miles (Figure 2) of the Site and were not observed at or near the proposed excavation area are. Plants identified in CNDDDB and have suitable habitat within the Site but are not present include Monterey spineflower (*Chorizanthe pungens* var. *pungens*), and Yadon's rein orchid (*Piperia yadonii*).

Hooker's Manzanita has a CNPS Rare Plant Threat Rank of 1B.2, a plant of limited distribution that is fairly endangered in California. Hooker's manzanita was observed growing in the south corner of the LOD. No plants were observed in the grading area and six plants were counted in the LOD.

Pajaro Manzanita has a CNPS Rare Plant Threat Rank of 1B.1, a plant of limited distribution that is seriously endangered in California. Pajaro manzanita was observed growing throughout much of the LOD (Figure 3) and beyond. A total of seven plants were counted within the grading area and 45 plants were counted in the LOD.

Eastwood's goldenbush (*Ericameria fasciculata*) has a CNPS Rare Plant Threat Rank of 1B.1, a plant of limited distribution that is seriously endangered in California. Large, old individuals of Eastwood's goldenbush were observed growing in the middle of the LOD. A total of 13 plants were counted within the grading area and 21 plants were counted within the LOD.

Table 2. Special-Status Plant Species in Grading Area and Limits of Disturbance

Scientific Name	Common Name	No. of plants within LOD	Sq. feet of plant cover with LOD	No. of plants within Grading Area	Sq. feet of plant cover within Grading Area
<i>Arctostaphylos hookeri</i> ssp. <i>hookeri</i>	Hooker's manzanita	6	283	0	0
<i>Arctostaphylos pajaroensis</i>	Pajaro manzanita	45	2,132	7	565
<i>Ericameria fasciculata</i>	Eastwood's goldenbush	21	426	13	253
Summary		72	2,841	20	818

6 CENTRAL MARITIME CHAPARRAL

The plant community present within the Site is Central Maritime Chaparral, a special-status plant community. More specifically Pajaro manzanita chaparral (*Arctostaphylos pajaroensis*) Alliance (global and stake rank: G1 S1). Hooker's manzanita (*Arctostaphylos hookeri* ssp. *hookeri*) and brittle leaf manzanita (*Arctostaphylos crustacea*) also grow within the Site. The Central Maritime Chaparral habitat around the grading area encompasses approximately one acre and is surrounded by non-native trees, oak woodland forest, cleared private land, dirt roads, and agriculture.

Additional native species observed within the LOD include: deer weed (*Acmispon glaber*), monkey flower (*Mimulus aurantiacus*), coyote brush (*Baccharis pilularis*), wedge-leaved horkelia (*Horkelia cuneata* var. *cuneata*), coffeeberry (*Frangula californica*), coast live oak (*Quercus agrifolia*), chamise (*Adenostoma fasciculatum*), bracken fern (*Pteridium aquilinum*), common yarrow (*Achillea millifolium*), and rush rose (*Crocanthemum scoparium*).

7 WILDLIFE FINDINGS

Suitable nesting bird habitat is present throughout the Site. During the April 18, 2016 survey a red-tailed hawk (*Buteo jamaicensis*) was observed perched on tower 04/024. No nests or nest material were observed within or in the vicinity of the Site. California towhees (*Melospiza crissalis*) were observed foraging and an American crow (*Corvus brachyrhynchos*) was observed in the area.

The Site does not offer suitable habitat for special-status wildlife species identified within the five-mile CNDDDB search (Figure 4). No burrows were noted within the Site. California red-legged frogs have been documented in the vicinity (CDFW 2016) however none were observed during the survey. The closest stream is approximately 600 feet to the north and 225 feet down a steep slope. California red-legged frogs

are not expected to occur within the Site and impacts from grading activities are not anticipated to affect this species.

No special-status wildlife was observed during the reconnaissance survey and habitat within the Site is not suitable to support those identified in the CNDDDB record search.

8 MINIMIZATION MEASURES

The following proposed measures, when implemented during project activity, will minimize impacts to special-status species and will assist with revegetation by native species.

- To minimize impacts to special-status plant species, grading will be accessed from the southwest where there is a preexisting eroded slope. All Hooker's manzanita plants will be avoided this way.
- After grading, the eroded slope will be stabilized to avoid further slope failure and subsequent impacts to plants around the graded area.
- Where feasible, the special-status shrubs will be salvaged and replanted within the Limits of Disturbance.
- The project footprint will be minimized to the maximum extent feasible and avoid unnecessary disturbance to native vegetation.
- Preconstruction surveys for Pajaro manzanita, Hooker's manzanita and Eastwood's ericameria will be conducted within the Limits of Disturbance and plants will be flagged to assist crews with avoidance when possible
- The top 6 inches of topsoil will be removed and stockpiled on plastic sheets to avoid weed seed introduction. After grading activities are complete, the topsoil will be replaced across the disturbed area with special care to avoid over-compacting.

9 REFERENCES

AECOM 2012. Field Report. NERC Alert Project: Moss Landing-Metcalf 500 kV Transmission Line. AECOM. July 26, 2012.

Arcadis 2015. Survey of Potential Sensitive Plant Resources, Moss Landing-Metcalf 500kV Transmission Line. Arcadis. June 3, 2015.

CDFW 2010. California Department of Fish and Wildlife. 2010. *State Natural Communities List*. September 2010. <http://www.dfg.ca.gov/biogeodata/vegcamp/>

CDFW 2016. California Department of Fish and Wildlife. 2016. California Natural Diversity Database RareFind Version 5. Sacramento, California.

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FIGURES



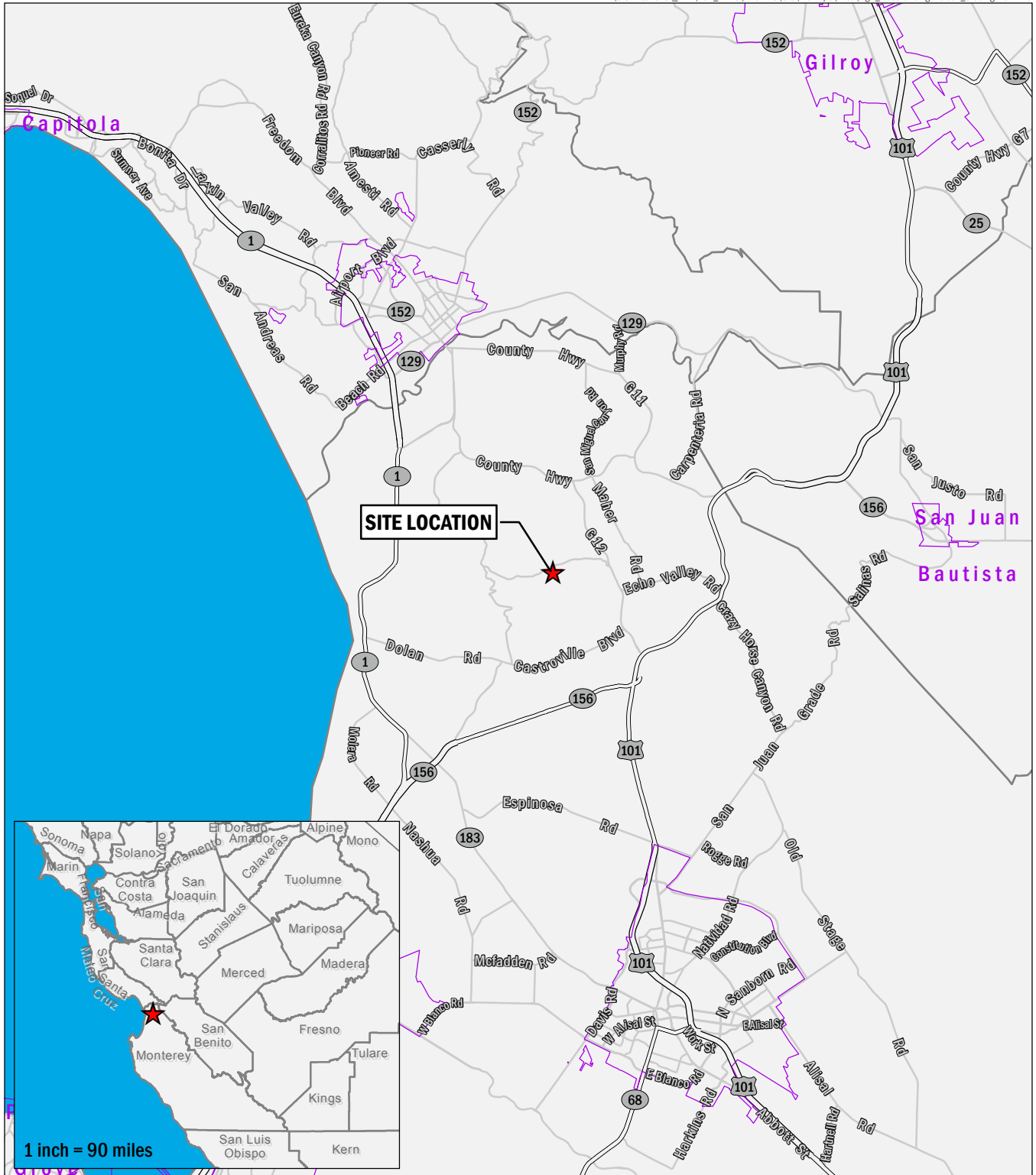






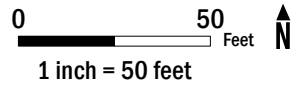
Figure 1
Site Vicinity

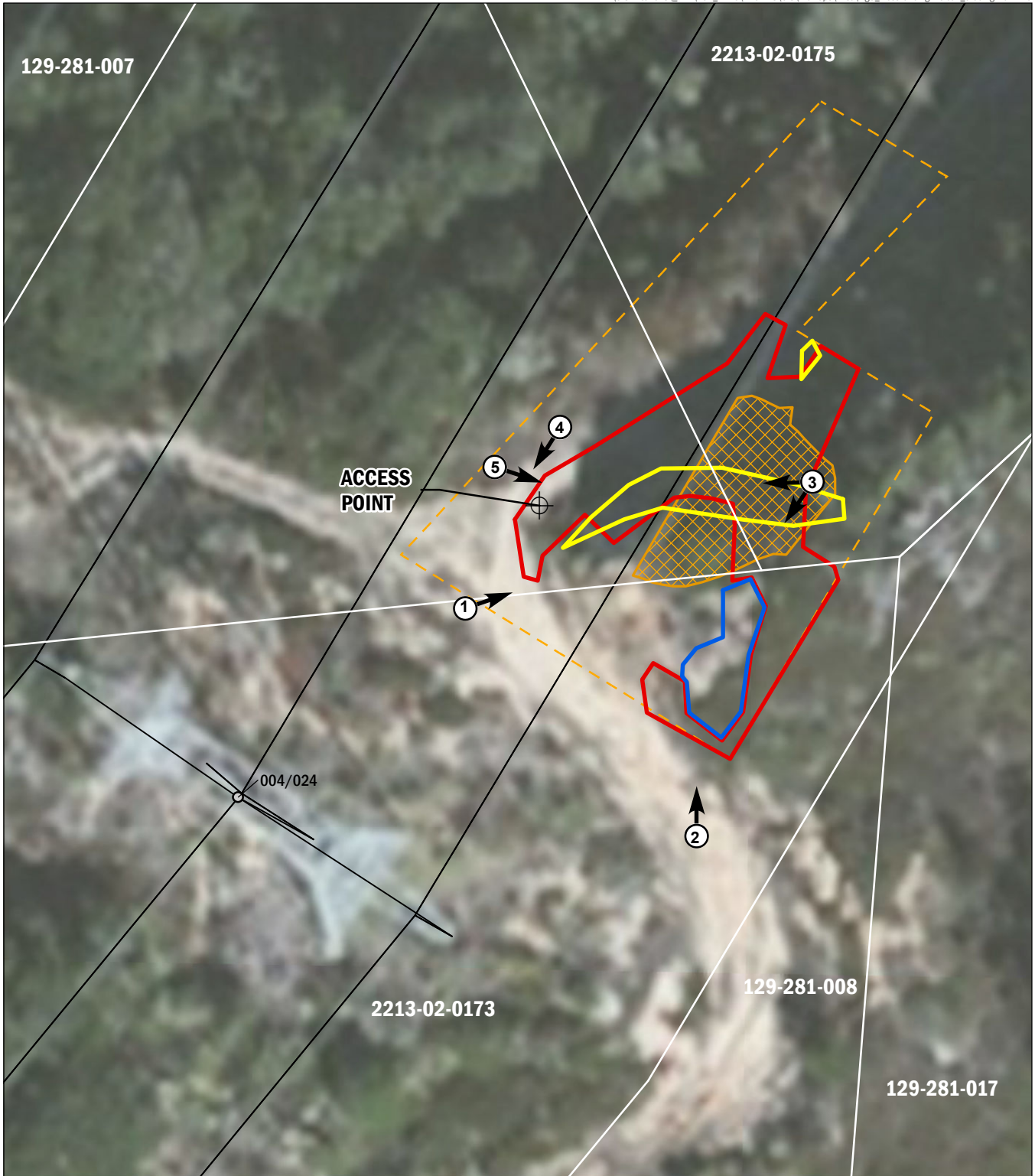
0 3.5 Miles
1 inch = 3.5 miles



-  Central maritime chaparral
-  Dirt Access Road
-  Limits of Disturbance
-  Property Line - Labeled with APN

Moss Landing-Metcalf 500kV





① Photo Location (appendix A)

Special Status Species Survey

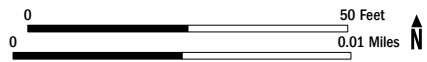
- Eastwood's goldenbush (*Ericameria fasciculata*)
- Hooker's manzanita (*Arctostaphylos hookeri*)
- Pajaro manzanita (*Arctostaphylos pajaroenensis*)

Grading Area

- Grading Area
- Limits of Disturbance

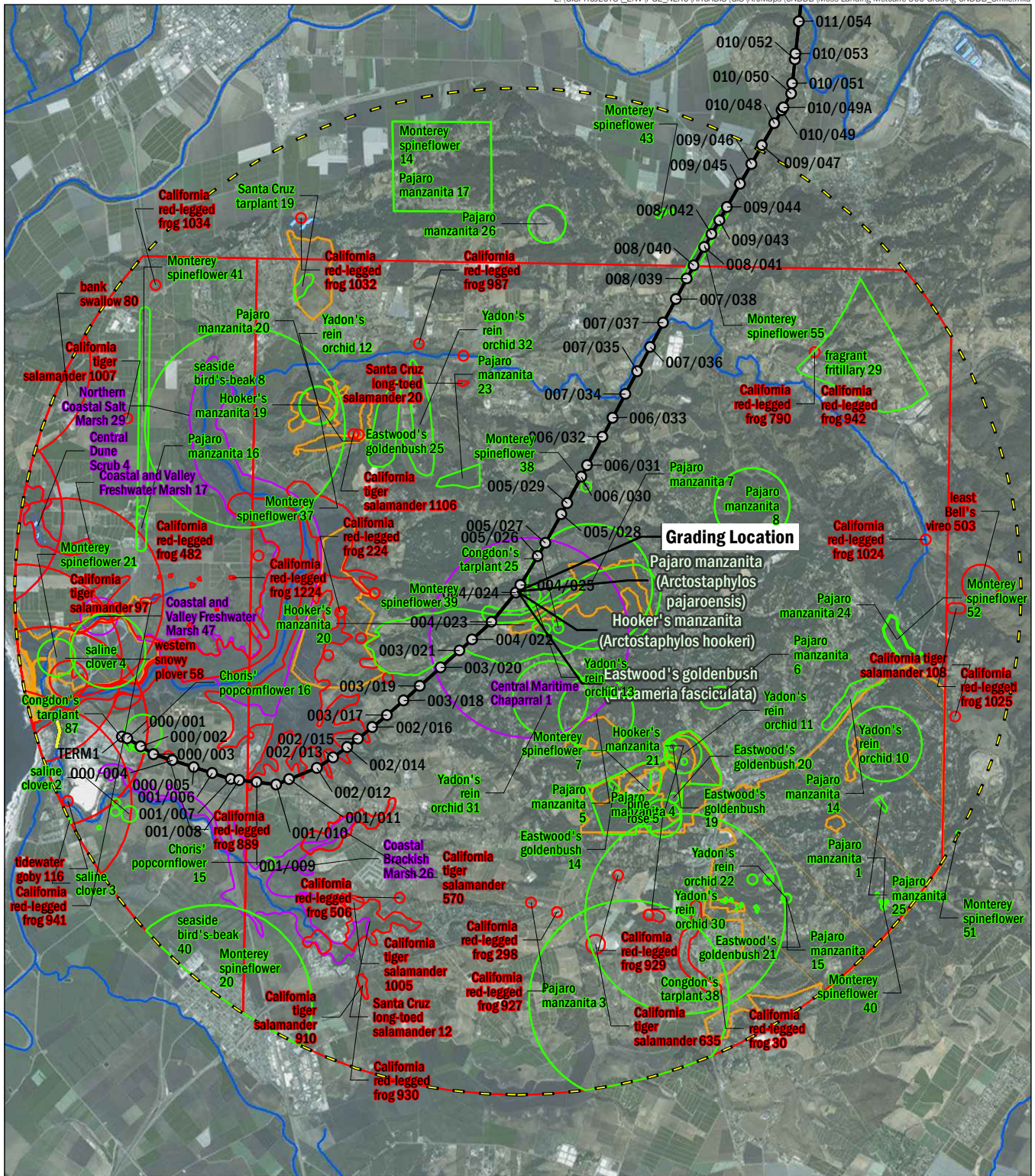
Property Line - Labeled with APN

Access Point



DATA SOURCE: Esri Imagery
PROJECTION: NAD 1983 California Teale Albers

CIRCUIT	NOTE
Moss Landing-Metcalf 500kV (Monterey County)	Biological Assessment for Towers 004/024-004/025 Span Proposed Grading



CNDDB Occurrences

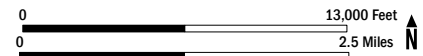
- Plants
- Animal
- Terrestrial Community
- Aquatic Community

USFWS and NMFS Designated Critical Habitat

- Critical Habitat Line
- Critical Habitat Area
- Grading Area**
- Grading Area
- Limits of Disturbance

Biological Field Observations

- Point
- Line
- Polygon



DATA SOURCE
California Department of Fish and Game, California Natural Diversity Database (CNDDDB), Esri Imagery

PROJECTION
NAD 1983 California Teale Albers

CIRCUIT	STRUCTURE
Moss Landing-Metcalf 500kV	Grading Area


Figure 4: CNDDDB & CRITICAL HABITAT OCCURRENCES


Within 5 mile radius of PG&E NERC Program


APPENDIX A


Photographic Log





Client Name: Pacific Gas & Electric		Location: Monterey County, California		Project No. PGE11000.0001
Tower 004/024	Date: 4/18/2016			
Photo: 1				
Description: Proposed grading area above erosion feature. Tower 004/025 in background.				

Client Name: Pacific Gas & Electric		Location: Monterey County, California		Project No. PGE11000.0001
Tower 004/024	Date: 4/18/2016			
Photo: 2				
Description: Looking north at proposed grading site.				

Client Name: Pacific Gas & Electric		Location: Monterey County, California		Project No. PGE11000.0001
Tower 004/024	Date: 4/18/2016			
Photo: 3 west				
Description: Proposed grading area in foreground. Tower 004/024 in background.				

Client Name: Pacific Gas & Electric		Location: Monterey County, California		Project No. PGE11000.0001
Tower 004/024	Date: 4/18/2016			
Photo: 3 south				
Description: Hooker's manzanita in lower left of frame.				

Client Name: Pacific Gas & Electric		Location: Monterey County, California		Project No. PGE11000.0001
Tower 004/024	Date: 4/18/2016			
Photo: 4				
Description: Tower 004/024 in background.				

Client Name: Pacific Gas & Electric		Location: Monterey County, California		Project No. PGE11000.0001
Tower 004/024	Date: 4/18/2016			
Photo: 5				
Description: Proposed grading area location on top of small knoll in middle of frame.				

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A decorative graphic consisting of three thin orange lines. One line is horizontal, extending across the bottom of the page. Two other lines are diagonal, starting from the bottom left and extending towards the top right, crossing the horizontal line.