BEFORE THE PUBLIC UTILITIES COMMISSION OF THE

STATE OF CALIFORNIA

In the Matter of the Application of SOUTHERN	)	Application No. ____________
CALIFORNIA EDISON COMPANY (U 338-E)	)	
for a Permit to Construct Electrical Facilities	)	
With Voltages Between 50 kV and 200 kV:	)	
Santa Barbara County Reliability Project	)	

PROPONENT'S ENVIRONMENTAL ASSESSMENT SANTA BARBARA COUNTY RELIABILITY PROJECT

APPENDICES

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Dated: **October 26, 2012**

Appendix A

CEQA Checklist

PROJECT DESCRIPTION AND BACKGROUND

Project Title

Santa Barbara County Reliability Project

Lead Agency Name and Address

California Public Utilities Commission
505 Van Ness Avenue
San Francisco, CA 94102-3298

Contact Person and Phone Number

Christine McLeod
Project Manager – Regulatory Affairs
(626) 302-3947

Project Location

The Project would be constructed in northwest Ventura County [generally northwest of the City of San Buenaventura (Ventura)], southeast Santa Barbara County and the City of Carpinteria. Portions of the Project would be located within the Los Padres National Forest. The Project includes work to be conducted at the following SCE-owned, existing substations: Carpinteria Substation, Casitas Substation, Getty Substation, Goleta Substation, Ortega Substation, Santa Barbara Substation, Santa Clara Substation, and Ventura Substation.

Project Sponsor's Name and Address

Southern California Edison
2244 Walnut Grove Avenue
Rosemead, CA 91770

General Plan Description

The California Public Utilities Commission (CPUC) has primary jurisdiction over the Project because it authorizes the construction, operation, and maintenance of public utility facilities. Although such projects are exempt from local land-use and zoning regulations and permitting, CPUC General Order (G.O.) 131-D Section XIV.B. states that "… local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the Commission's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters". SCE has considered local and state land use plans as part of the environmental review process as described in the PEA.

The General Plan land use designations for the substations where substantive work would be conducted are as follows:

	Substation Location	**Surrounding Land Uses**
Carpinteria Substation	Public Facility	Agriculture, Low Density Residential, Public Facility,
Casitas Substation	Existing Community	Existing Community, Open Space, Rural
Santa Clara Substation	Open Space	Agriculture

Zoning

The CPUC has primary jurisdiction over the Project as described above in the General Plan discussion. The zoning designations for the substations where substantive work would be conducted are as follows:

	Substation Location	**Surrounding Land Uses**
Carpinteria Substation	Public Utility District	Agriculture, Community Facility District, Planned Residential Development District
Casitas Substation	Rural Exclusive	City, Rural Exclusive, Urban Residential,
Santa Clara Substation	Open Space	Agricultural Exclusive

The majority of the 66 kV subtransmission lines and the telecommunication cable components of the Project are located in existing SCE rights-of-way on private lands; a short section of both the subtransmission line and telecommunications cable crosses lands within the Los Padres National Forest.

Description of Project

The purpose of the Project is to ensure the availability of safe and reliable electric service to help meet customer electrical demand in the Santa Barbara County (SB South Coast area) during emergency conditions while also enhancing operational flexibility. The SB South Coast area includes the cities of Goleta, Carpinteria, and Santa Barbara, and adjacent areas of unincorporated southern Santa Barbara County (Electrical Needs Area). The Project includes the following major components:

- Reconstructing existing 66 kV subtransmission facilities primarily within existing utility rights-of-way (ROW) between the existing Santa Clara Substation in Ventura County and the existing Carpinteria Substation located in Santa Barbara County

- Modify subtransmission, substation, or telecommunications equipment within the existing Carpinteria Substation, Casitas Substation, Getty Substation, Goleta Substation, Ortega Substation, Santa Barbara Substation, Santa Clara Substation, and Ventura Substation

- Installing fiber optic telecommunications equipment for the protection, monitoring and control of subtransmission and substation equipment

Surrounding Land Uses and Setting

The Santa Barbara County Reliability Project is located in unincorporated areas of Ventura County, unincorporated areas of Santa Barbara County, and the City of Carpinteria, with portions in the Los Padres National Forest. The Project is located within the foothills of the Santa Ynez Mountains, and crosses a variety of terrain, ranging from rugged mountain ridge to coastal plain. Surface waters in the vicinity of the Project include coastal streams, the Ventura River and tributaries, Carpinteria Creek and tributaries, and Lake Casitas. Agricultural and residential land uses occur in the vicinity of the Project. Agricultural uses in the area involve the production of a wide variety of crops including vegetables, fruits and nuts, flowers and ornamentals, field crops, and the raising of livestock. Within the vicinity of the Project, most agricultural operations are farms that cultivate avocado, lime, lemon, and other fruit trees and cattle ranches.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project. The impacts to these resources would be reduced to a less than significant level with the implementation of SCE's Applicant Proposed Measures as described in Chapter 4.

☒	Aesthetics	☒	Agriculture and Forestry	☒	Air Quality
☒	Biological Resources	☒	Cultural Resources	☒	Geology/Soils
☒	Greenhouse Gas Emissions	☒	Hazards and Hazardous Materials	☒	Hydrology/Water Quality
☐	Land Use/Planning	☐	Mineral Resources	☒	Noise
☐	Population/Housing	☒	Public Services	☐	Recreation
☒	Transportation/Traffic	☒	Utilities/Service Systems	☒	Mandatory Findings of Significance

CEQA Environmental Checklist

This checklist identifies physical, biological, social and economic factors that might be affected by the Project. In many cases, background studies performed in connection with the Project indicate no impacts. A NO IMPACT answer in the last column reflects this determination. Where there is a need for clarifying discussion, the discussion is included within the body of the environmental document itself (in this case, the Proponent's Environmental Assessment). The questions in this form are intended to encourage the thoughtful assessment of impacts and do not represent thresholds of significance.

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
I. AESTHETICS: Would the project:				
a) Have a substantial adverse effect on a scenic vista	☐	☐	☒	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐
II. AGRICULTURE AND FOREST RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☒	☐
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒
III. AIR QUALITY: Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☐	☒
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☒	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐
IV. BIOLOGICAL RESOURCES: Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☒	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	☐	☐	☒	☐
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☒	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☒	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒
V. CULTURAL RESOURCES: Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☒	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☒	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☒	☐
VI. GEOLOGY AND SOILS: Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒
VII. GREENHOUSE GAS EMISSIONS: Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐
VIII. HAZARDS AND HAZARDOUS MATERIALS: Would the project:				

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☒	☐

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
IX. HYDROLOGY AND WATER QUALITY: Would the project:				
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☒	☐
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☒	☐
e) Create or contribute to runoff water, which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
f) Otherwise substantially degrade water quality?	☐	☐	☐	☒
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☒	☐
j) Expose people or structures to a significant risk of loss, injury or death involving inundation by seiche, tsunami, or mudflow?	☐	☐	☒	☐

X. LAND USE AND PLANNING: Would the project:

a) Physically divide an established community?	☐	☐	☐	☒
b)Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

XI. MINERAL RESOURCES: Would the project:

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
XII. NOISE: Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
XIII. POPULATION AND HOUSING: Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
XIV. PUBLIC SERVICES: Would the project:				
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:	☐	☐	☒	☐
Fire protection?	☐	☐	☒	☐
Police protection?	☐	☐	☒	☐
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☒	☐
Other public facilities?	☐	☐	☒	☐
XV. RECREATION: Would the project:				
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
b) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒
XVI. TRANSPORTATION/TRAFFIC: Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☒	☐
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☒	☐
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☒	☐
f) Conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☒	☐

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
XVII. UTILITIES AND SERVICE SYSTEMS: Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☐	☒
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
XVIII. MANDATORY FINDINGS OF SIGNIFICANCE				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☐	☒	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☒	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

SOURCES AND EXPLANATIONS OF ANSWERS

Chapter 4 of the PEA provides detailed discussions for each resource area.

Appendix B

List of Preparers

Southern California Edison

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ARCADIS

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Michael Burrill, Senior Acoustical Scientist, BA Applied Physics with Emphasis on Theoretical Acoustics, University of California at San Diego, Member of the Acoustical Society of America (ASA); Member of the Institute of Noise Control Engineering (INCE)

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BioResource Consultants, Inc.

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Cogstone Resource Management

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Psomas

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Appendix C

Agency Consultation

SOUTHERN CALIFORNIA
EDISON
An EDISON INTERNATIONAL Company

Mr. Dave Singleton
Program Analyst
Native American Heritage Commission
915 Capitol Mall, Room 364
Sacramento, CA 95814

February 10, 2012

SUBJECT: Native American Consultation Regarding the Proposed Santa Barbara County Reliability Project, Ventura and Santa Barbara Counties, California.

Dear Mr. Singleton:

Southern California Edison (SCE) proposes to reconductor portions of the Santa Clara-Getty 66 kV, Santa Clara-Carpinteria 66 kV, and Santa Clara-Ojai-Santa Barbara 66 kV subtransmission lines, between Santa Clara Substation and Carpinteria Substation, in Ventura and Santa Barbara Counties. The reconductoring project consists of the removal of existing structures and electrical lines and the installation of new structures, electrical lines and fiber optic cable within SCE's existing transmission corridor. The location of the proposed project area is shown in the attached maps (Figure 1). SCE requests a review of the Sacred Lands File for the siting of the proposed Santa Barbara County Reliability Project (SBCRP).

The project area is depicted on the Saticoy, Ventura, Pitas Point, White Ledge Peak, and Carpinteria USGS 7.5 Minute Series Topographic Quadrangles. The project area is located on portions of Sections 18, 19, 20, 28 and 33, Township 3 North, Range 22 West, on portions of Sections 5, 7, 8, 9, 10, 11, 13 and 14, Township 3 North, Range 23 West, on portions of Sections 1, 2, 3 and 4, Township 3 North, Range 24 West, on portions of Sections 29, 31, 32, 33 and 34, Township 4 North, Range 24 West, and on portions of Sections 15, 16, 21, 23, 25, 27, 29, 35 and 36, Township 4 North, Range 25 West, San Bernardino Base Meridian (SBBM).

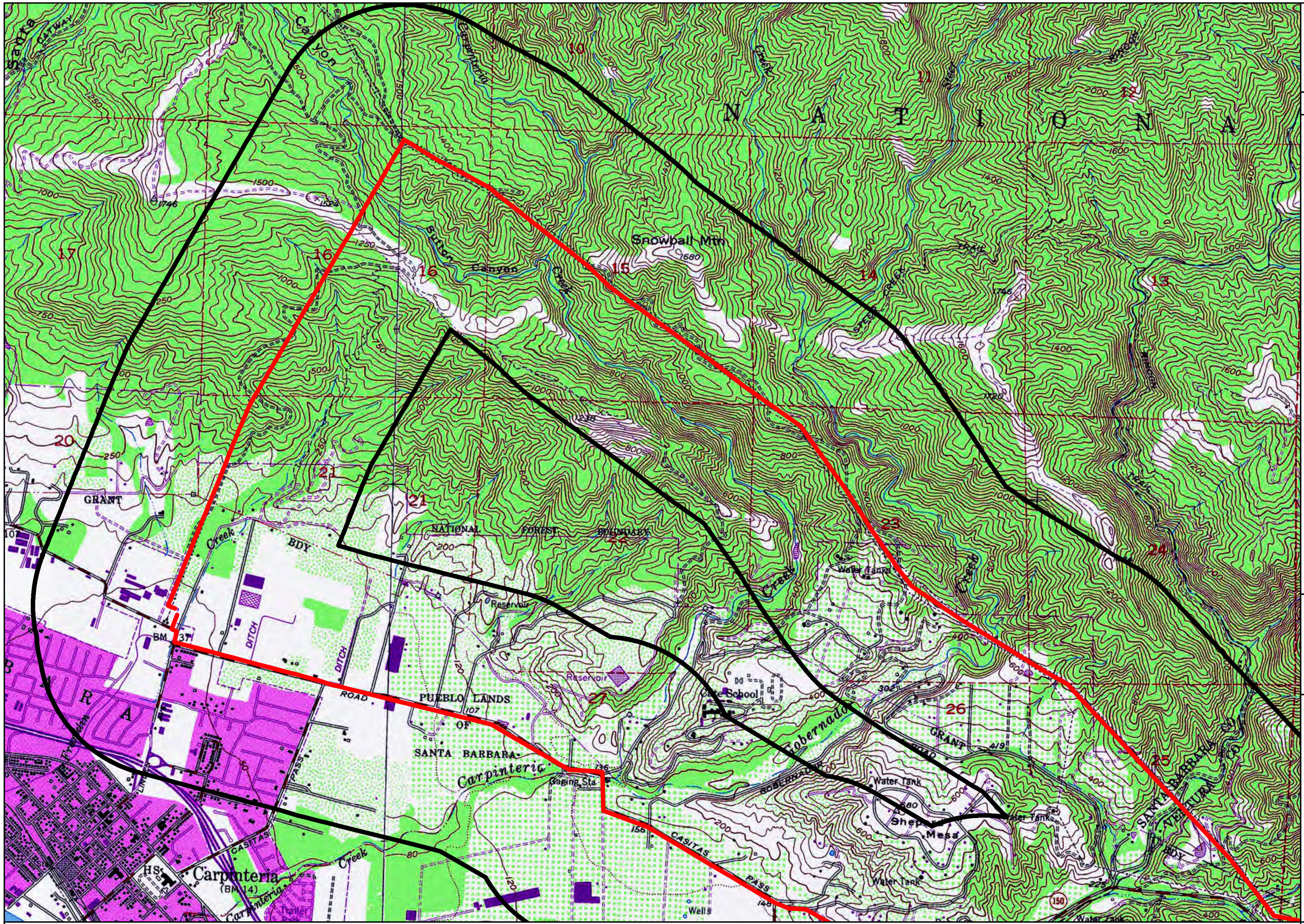
SCE would appreciate any information you may have regarding Native American cultural resources located in or near the proposed project location that could be affected by the proposed project. Any information concerning the identity, location, character, and traditional use of cultural places identified during consultation will be considered confidential.

If you have any questions, please feel free to contact me at (626) 404-6812, or via email at zachary.wilson@sce.com. Thank you for your assistance and participation in this project.

Sincerely,

Zach Wilson, MA, RPA
Consulting Archaeologist
Cogstone Resource Management
Supporting Corporate Environment, Health and Safety

Southern California Edison
1218 S. Fifth Avenue
Monrovia, CA 91016



Southern California Edison's
Santa Barbara County Reliability Project

Legend

- Project Route
- 1/2 Mile Buffer

Issued For: Native American Heritage Commission

Date: February 10, 2012

Original Scale: 1:24,000

Project Number: 306487

Index Map

Projection: NAD 83 UTM Zone 11

Contains Transmission Information Distribution limited to FERC Standards of Conduct

CONFIDENTIAL

Contains Critical Electric Infrastructure Information If any questions contact Corporate Security (27875) for handling/storage requirements.

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL℠ Company

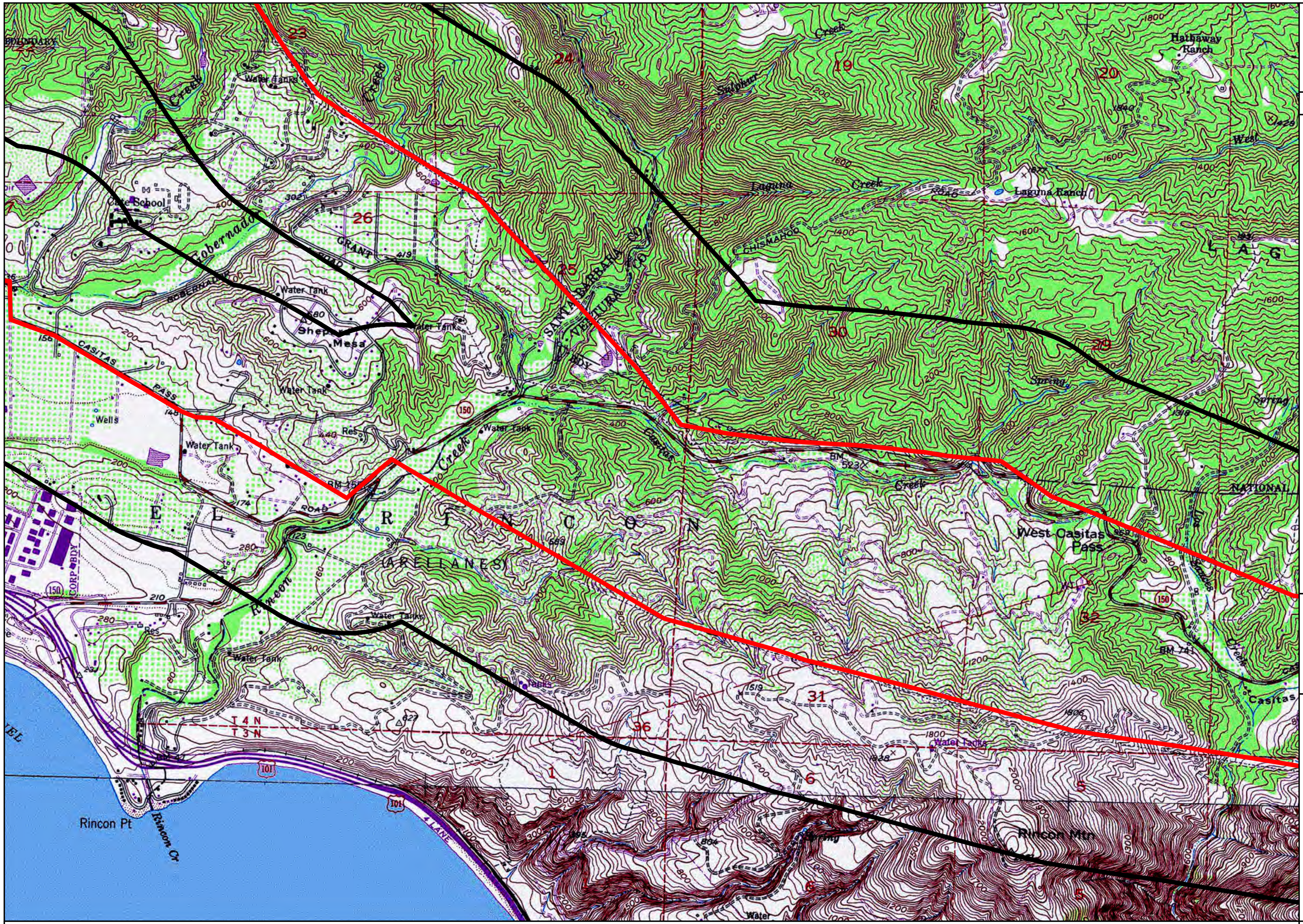
USGS 7.5 Minute Topographic Quad: White Ledge Peak and Carpinteria

0 0.25 0.5 0.75 1 Miles

Southern California Edison's
Santa Barbara County Reliability Project

Legend

Project Route
1/2 Mile Buffer



Issued For: Native American Heritage Commission

Date: February 10, 2012

Original Scale: 1:24,000

Project Number: 306487

Index Map

Projection: NAD 83 UTM Zone 11

N W E S

Contains Transmission Information Distribution limited to FERC Standards of Conduct

CONFIDENTIAL

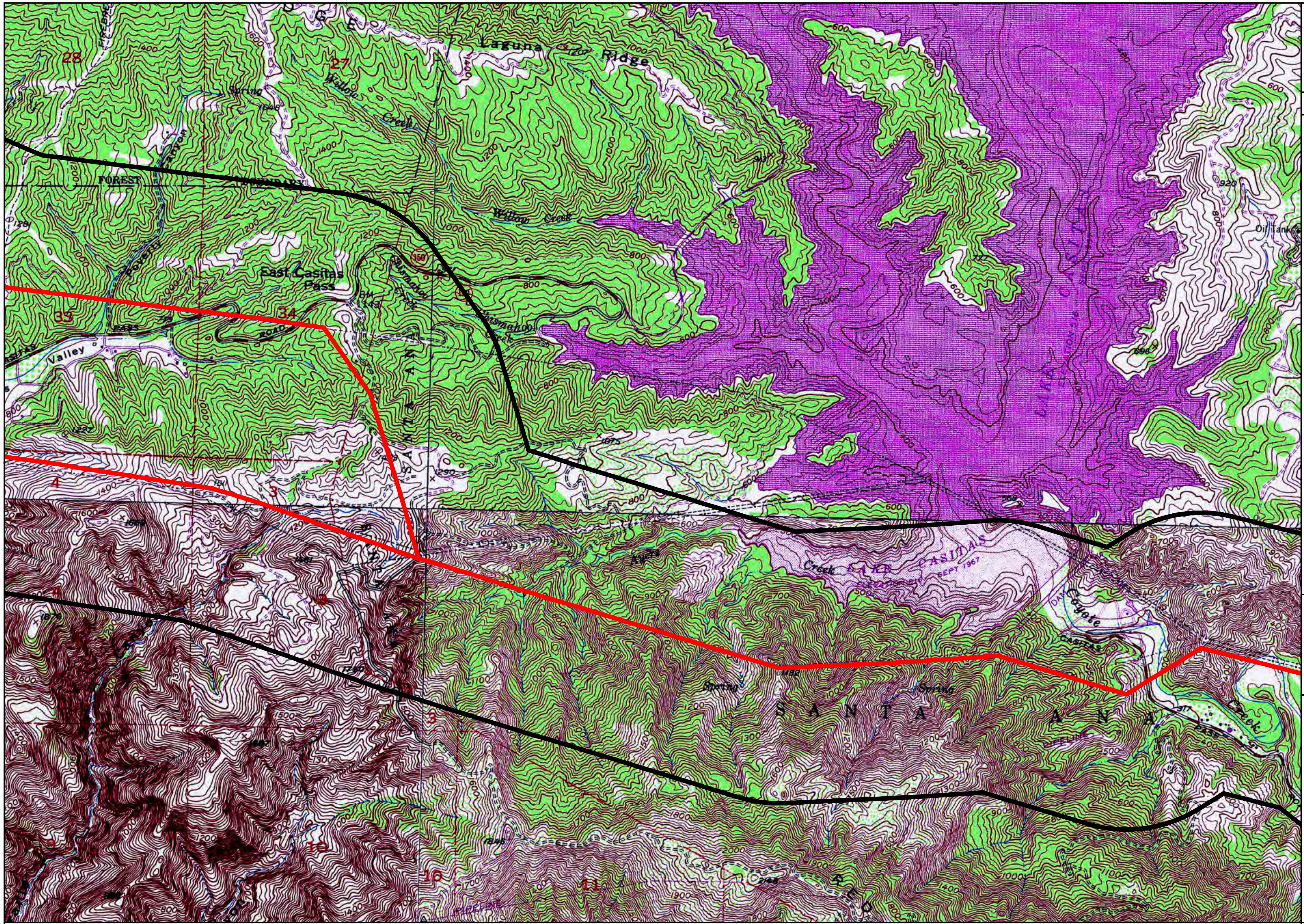
Contains Critical Electric Infrastructure Information If any questions contact Corporate Security (27875) for handling/storage requirements.

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL℠ Company

USGS 7.5 Minute Topographic Quad: White Ledge Peak

0 0.25 0.5 0.75 1 Miles

Thomas Bros. Maps®
A RAND McNALLY COMPANY



Southern California Edison's
Santa Barbara County Reliability Project

Legend

Project Route

1/2 Mile Buffer

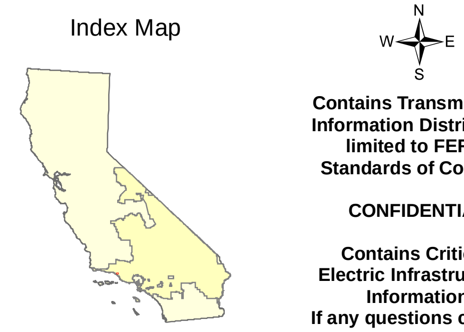
Issued For: Native American Heritage Commission

Date: February 10, 2012

Original Scale: 1:24,000

Project Number: 306487

Index Map



Projection: NAD 83 UTM Zone 11

Contains Transmission Information Distribution limited to FERC Standards of Conduct

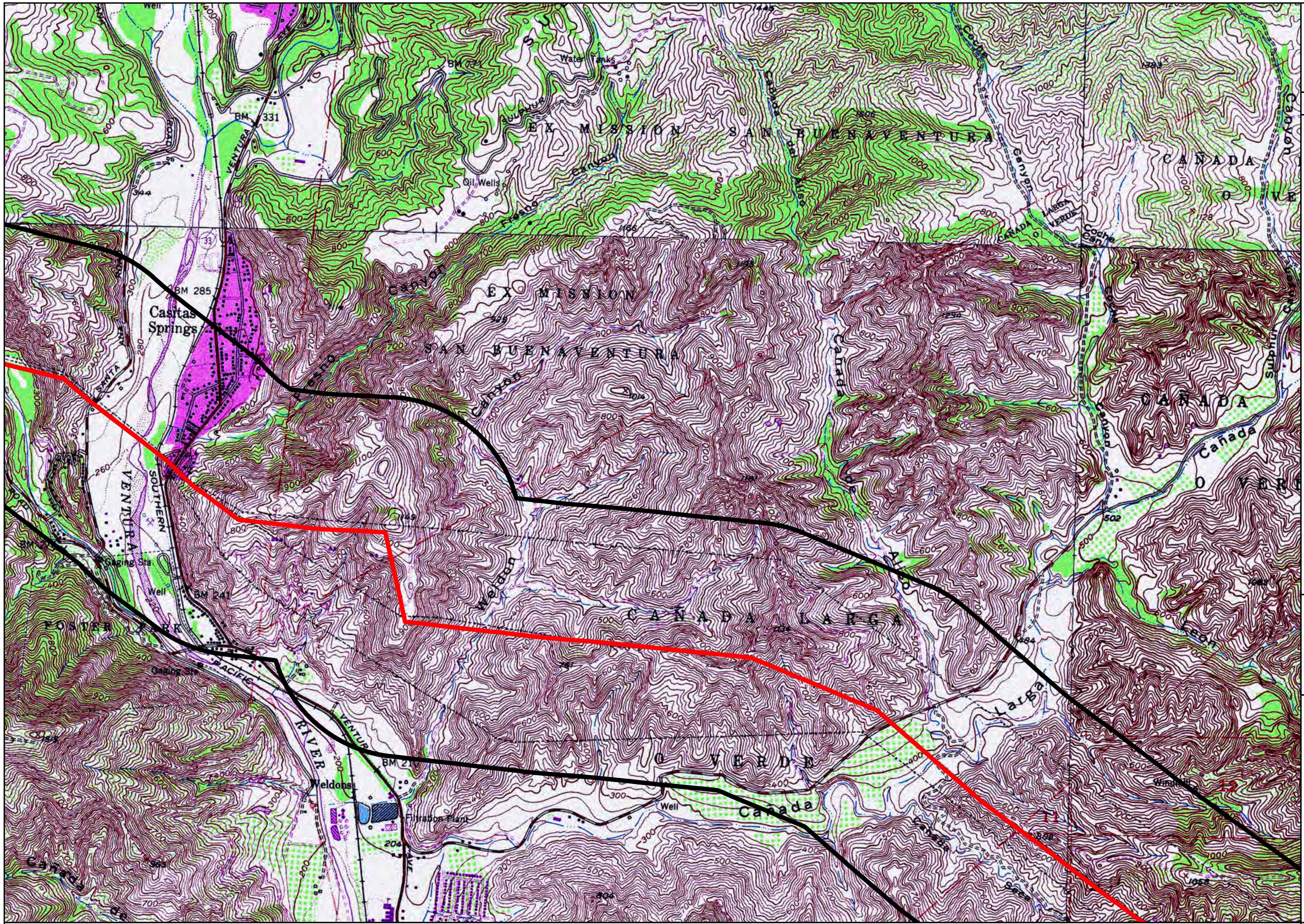
CONFIDENTIAL

Contains Critical Electric Infrastructure Information
If any questions contact Corporate Security (27875) for handling/storage requirements.

SOUTHERN CALIFORNIA
EDISON
An EDISON INTERNATIONAL℠ Company

USGS 7.5 Minute Topographic Quad: White Ledge Peak, Pitas Point and Ventura

0 0.25 0.5 0.75 1
Miles



Southern California Edison's
Santa Barbara County Reliability Project

Legend

Project Route

1/2 Mile Buffer

Issued For: Native American Heritage Commission

Date: February 10, 2012

Original Scale: 1:24,000

Project Number: 306487

Index Map

Projection: NAD 83 UTM Zone 11

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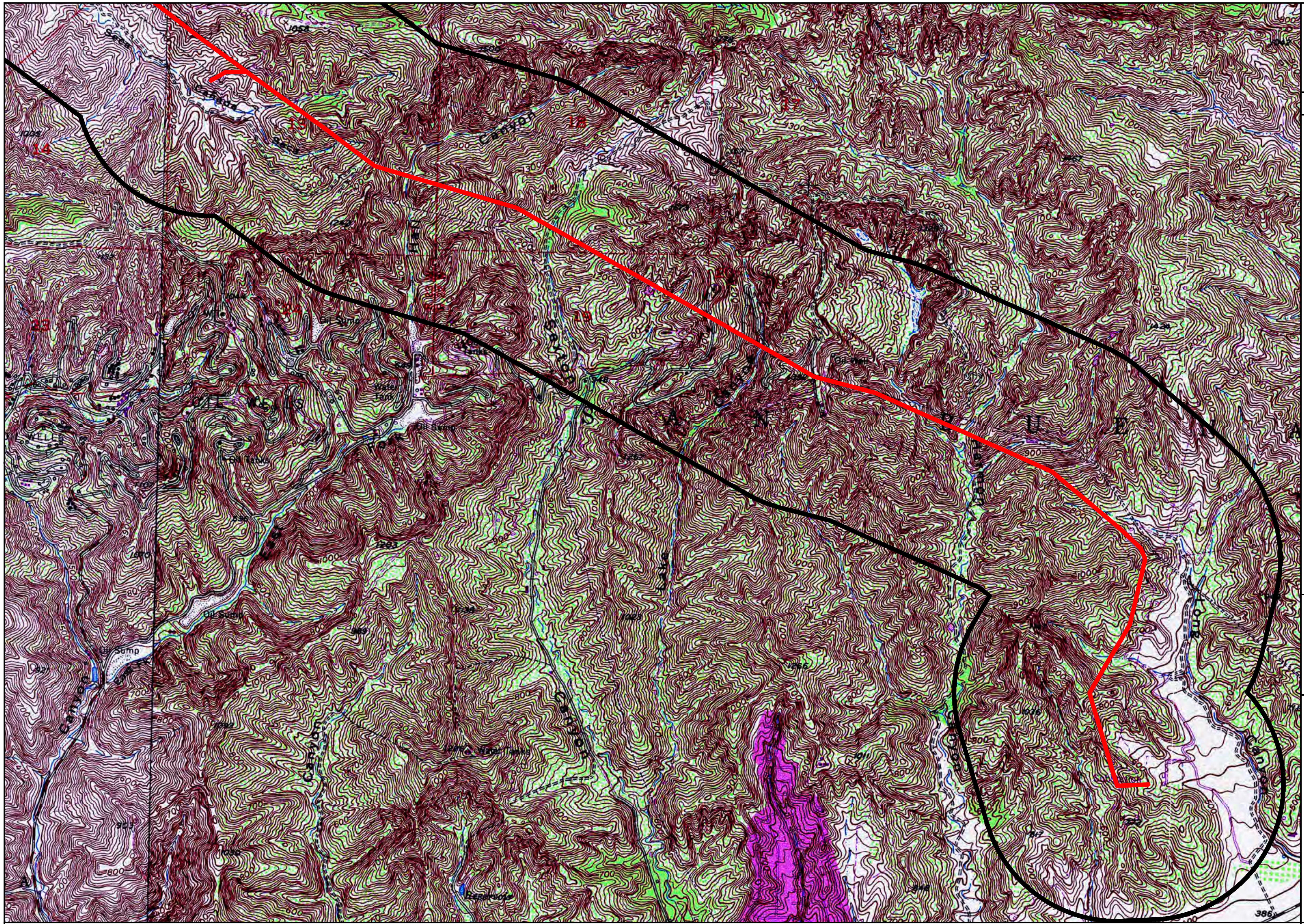
CONFIDENTIAL

Contains Critical Electric Infrastructure Information
If any questions contact Corporate Security (27875) for handling/storage requirements.

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL℠ Company

USGS 7.5 Minute Topographic Quad: Ventura and Saticoy

0 0.25 0.5 0.75 1 Miles



Southern California Edison's
Santa Barbara County Reliability Project

Legend

Project Route

1/2 Mile Buffer

Issued For: Native American Heritage Commission

Date: February 10, 2012

Original Scale: 1:24,000

Project Number: 306487

Index Map

Projection: NAD 83 UTM Zone 11

N W E S

Contains Transmission Information Distribution limited to FERC Standards of Conduct

CONFIDENTIAL

Contains Critical Electric Infrastructure Information If any questions contact Corporate Security (27875) for handling/storage requirements.

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

USGS 7.5 Minute Topographic Quad: Ventura and Saticoy

0 0.25 0.5 0.75 1 Miles

Thomas Bros. Maps
A RAND McNALLY COMPANY

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-4082
Fax (916) 657-5390
Web Site www.nahc.ca.gov

February 14, 2012

Zach Wilson
Southern California Edison
1218 S. Fifth Avenue
Monrovia, CA 91016

Sent by Fax: N/A
# of Pages: 4

RE: Santa Barbara County Reliability Project, Ventura and Santa Barbara County

Dear Mr. Wilson:

A record search of the sacred land file has failed to indicate the presence of Native American cultural resources in the immediate project area. The absence of specific site information in the sacred lands file does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Enclosed is a list of Native Americans individuals/organizations who may have knowledge of cultural resources in the project area. The Commission makes no recommendation or preference of a single individual, or group over another. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated, if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe or group. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any of these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact me at (916) 653-4040.

Sincerely,

Katy Sanchez

Katy Sanchez
Program Analyst

Native American Contact List
Ventura and Santa Barbara Counties
February 14, 2012

Ernestine DeSoto
1317 San Andres St., Apt A
Santa Barbara , CA 93101
(805) 962-3598
Chumash

Barbareno/Ventureno Band of Mission Indians
Julie Lynn Tumamait, Chairwoman
365 North Poli Ave
Ojai , CA 93023
jtumamait@sbcglobal.net
(805) 646-6214
Chumash

Beverly Salazar Folkes
1931 Shadybrook Drive
Thousand Oaks , CA 91362
folkes@msn.com
805 492-7255
(805) 558-1154 - cell
Chumash
Tataviam
Ferrnandeño

Patrick Tumamait
992 El Camino Corto
Ojai , CA 93023
(805) 640-0481
(805) 216-1253 Cell
Chumash

Owl Clan
Dr. Kote & Lin A-Lul'Koy Lotah
48825 Sapaque Road
Bradley , CA 93426
mupaka@gmail.com
(805) 472-9536
Chumash

San Luis Obispo County Chumash Council
Chief Mark Steven Vigil
1030 Ritchie Road
Grover Beach , CA 93433
cheifmvigil@fix.net
(805) 481-2461
(805) 474-4729 - Fax
Chumash

Santa Ynez Band of Mission Indians
Vincent Armenta, Chairperson
P.O. Box 517
Santa Ynez , CA 93460
varmenta@santaynezchumash.
(805) 688-7997
(805) 686-9578 Fax
Chumash

John Ruiz
1826 Stanwood Drive
Santa Barbara , CA 93103
(805) 965-8983
Chumash

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed Santa Barbara County Reliability Project; Ventura and Santa Barbara Counties.

Native American Contact List
Ventura and Santa Barbara Counties
February 14, 2012

Gilbert M. Unzueta Jr. 571 Citation Way Thousand Oaks , CA 91320 (805) 375-7229	Chumash	Randy Guzman - Folkes 6471 Cornell Circle Moorpark , CA 93021 **ndnRandy@yahoo.com** (805) 905-1675 - cell	Chumash Fernandeño Tataviam Shoshone Paiute Yaqui
Owl Clan Qun-tan Shup 48825 Sapaque Road Bradley , CA 93426 mupaka@gmail.com (805) 472-9536 phone/fax (805) 835-2382 - CELL	Chumash	Coastal Band of the Chumash Nation Vennise Miller, Chairperson P.O. Box 4464 Santa Barbara , CA 93140 805-305-5517	Chumash
Stephen William Miller 189 Cartagena Camarillo , CA 93010 (805) 484-2439	Chumash	Charles S. Parra P.O. Box 6612 Oxnard , CA 93031 (805) 340-3134 (Cell) (805) 488-0481 (Home)	Chumash
Santa Ynez Tribal Elders Council Adelina Alva-Padilla, Chair Woman P.O. Box 365 Santa Ynez , CA 93460 elders@santaynezchumash.org (805) 688-8446 (805) 693-1768 FAX	Chumash	Richard Angulo 2513 Laney Circle Denton , TX 76208	Chumash

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed Santa Barbara County Reliability Project; Ventura and Santa Barbara Counties.

Native American Contact List
Ventura and Santa Barbara Counties
February 14, 2012

Santa Ynez Band of Mission Indians
Tribal Administrator
P.O. Box 517 — Chumash
Santa Ynez , CA 93460
info@santaynezchumash.
(805) 688-7997
(805) 686-9578 Fax

Aylisha Diane Marie Garcia Napoleone
33054 Decker School Road — Chumash
Malibu , CA 90265
702-741-6935

Carol A. Pulido
165 Mountainview Street — Chumash
Oak View , CA 93022
805-649-2743 (Home)

Melissa M. Parra-Hernandez
119 North Balsam Street — Chumash
Oxnard , CA 93030
envyy36@yahoo.com
805-983-7964

Frank Arredondo
PO Box 161 — Chumash
Santa Barbara , Ca 93102
ksen_sku_mu@yahoo.com
805-617-6884
ksen_sku_mu@yahoo.com

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed Santa Barbara County Reliability Project; Ventura and Santa Barbara Counties.

SOUTHERN CALIFORNIA
EDISON
An EDISON INTERNATIONAL Company

Adelina Alva-Padilla
Chair Woman, Santa Ynez Tribal Elders Council
P.O. Box 365
Santa Ynez, CA 93460

February 27, 2012

SUBJECT: Native American Consultation Regarding the Santa Barbara County Reliability Project, Ventura and Santa Barbara Counties, California.

Dear Mrs. Alva-Padilla:

At the recommendation of the Native American Heritage Commission (NAHC), SCE requests your input regarding the identification of potential impacts to cultural resources, sacred lands or other heritage sites located within the Santa Barbara County Reliability Project (SBCRP). The project consists of the removal of existing structures and electrical lines, and the construction and installation of new structures, electrical lines and fiber optic cable. The location of the project route is shown in the attached map (Figure 1).

The project is located within a 33.5 mile segment of SCE's existing transmission corridor, between Santa Clara Substation and Carpinteria Substation. As shown on the attached map, the project area is depicted on the Saticoy, Ventura, Pitas Point, White Ledge Peak, and Carpinteria USGS 7.5 Minute Series Topographic Quadrangles.

SCE would appreciate any information you may have regarding Native American cultural resources located in or near the proposed project location. Any information concerning the location, identity, character and traditional use of cultural places identified during consultation will be considered confidential.

For project planning purposes SCE is requesting to receive any questions or concerns regarding this project no later than 30 days from the receipt of this letter.

If you have any questions, please feel free to call me at (626) 462-8669, or via email at natasha.tabares@sce.com.

Thank you for your assistance and participation.

Sincerely,

Natasha Tabares, MA, RPA
Archaeologist
Biological and Archaeological Resources Group
Corporate Environment, Health and Safety

Southern California Edison
1218 S. Fifth Avenue
Monrovia, CA 91016

SOUTHERN CALIFORNIA
EDISON
An EDISON INTERNATIONAL Company

Aylisha Diane Marie Garcia Napoleone
33054 Decker School Road
Malibu, CA 90265

February 27, 2012

SUBJECT: Native American Consultation Regarding the Santa Barbara County Reliability Project, Ventura and Santa Barbara Counties, California.

Dear Mrs. Napoleone:

At the recommendation of the Native American Heritage Commission (NAHC), SCE requests your input regarding the identification of potential impacts to cultural resources, sacred lands or other heritage sites located within the Santa Barbara County Reliability Project (SBCRP). The project consists of the removal of existing structures and electrical lines, and the construction and installation of new structures, electrical lines and fiber optic cable. The location of the project route is shown in the attached map (Figure 1).

The project is located within a 33.5 mile segment of SCE's existing transmission corridor, between Santa Clara Substation and Carpinteria Substation. As shown on the attached map, the project area is depicted on the Saticoy, Ventura, Pitas Point, White Ledge Peak, and Carpinteria USGS 7.5 Minute Series Topographic Quadrangles.

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For project planning purposes SCE is requesting to receive any questions or concerns regarding this project no later than 30 days from the receipt of this letter.

If you have any questions, please feel free to call me at (626) 462-8669, or via email at natasha.tabares@sce.com.

Thank you for your assistance and participation.

Sincerely,

Natasha Tabares, MA, RPA
Archaeologist
Biological and Archaeological Resources Group
Corporate Environment, Health and Safety

Southern California Edison
1218 S. Fifth Avenue
Monrovia, CA 91016

SOUTHERN CALIFORNIA
EDISON
An EDISON INTERNATIONAL Company

Mrs. Beverly Salazar Folkes
1931 Shadybrook Drive
Thousand Oaks, CA 91362

February 27, 2012

SUBJECT: Native American Consultation Regarding the Santa Barbara County Reliability Project, Ventura and Santa Barbara Counties, California.

Dear Mrs. Folkes:

At the recommendation of the Native American Heritage Commission (NAHC), SCE requests your input regarding the identification of potential impacts to cultural resources, sacred lands or other heritage sites located within the Santa Barbara County Reliability Project (SBCRP). The project consists of the removal of existing structures and electrical lines, and the construction and installation of new structures, electrical lines and fiber optic cable. The location of the project route is shown in the attached map (Figure 1).

The project is located within a 33.5 mile segment of SCE's existing transmission corridor, between Santa Clara Substation and Carpinteria Substation. As shown on the attached map, the project area is depicted on the Saticoy, Ventura, Pitas Point, White Ledge Peak, and Carpinteria USGS 7.5 Minute Series Topographic Quadrangles.

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For project planning purposes SCE is requesting to receive any questions or concerns regarding this project no later than 30 days from the receipt of this letter.

If you have any questions, please feel free to call me at (626) 462-8669, or via email at natasha.tabares@sce.com.

Thank you for your assistance and participation.

Sincerely,

Natasha T.

Natasha Tabares, MA, RPA
Archaeologist
Biological and Archaeological Resources Group
Corporate Environment, Health and Safety

Southern California Edison
1218 S. Fifth Avenue
Monrovia, CA 91016

SOUTHERN CALIFORNIA
EDISON
An EDISON INTERNATIONAL Company

Carol A. Pulido
165 Mountainview Street
Oak View, CA 93022

February 27, 2012

SUBJECT: Native American Consultation Regarding the Santa Barbara County Reliability Project, Ventura and Santa Barbara Counties, California.

Dear Mrs. Pulido:

At the recommendation of the Native American Heritage Commission (NAHC), SCE requests your input regarding the identification of potential impacts to cultural resources, sacred lands or other heritage sites located within the Santa Barbara County Reliability Project (SBCRP). The project consists of the removal of existing structures and electrical lines, and the construction and installation of new structures, electrical lines and fiber optic cable. The location of the project route is shown in the attached map (Figure 1).

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For project planning purposes SCE is requesting to receive any questions or concerns regarding this project no later than 30 days from the receipt of this letter.

If you have any questions, please feel free to call me at (626) 462-8669, or via email at natasha.tabares@sce.com.

Thank you for your assistance and participation.

Sincerely,

Natasha Tabares, MA, RPA
Archaeologist
Biological and Archaeological Resources Group
Corporate Environment, Health and Safety

Southern California Edison
1218 S. Fifth Avenue
Monrovia, CA 91016

SOUTHERN CALIFORNIA EDISON

An EDISON INTERNATIONAL Company

Charles S. Parra
P.O. Box 6612
Oxnard, CA 93031

February 27, 2012

SUBJECT: Native American Consultation Regarding the Santa Barbara County Reliability Project, Ventura and Santa Barbara Counties, California.

Dear Mr. Parra:

At the recommendation of the Native American Heritage Commission (NAHC), SCE requests your input regarding the identification of potential impacts to cultural resources, sacred lands or other heritage sites located within the Santa Barbara County Reliability Project (SBCRP). The project consists of the removal of existing structures and electrical lines, and the construction and installation of new structures, electrical lines and fiber optic cable. The location of the project route is shown in the attached map (Figure 1).

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For project planning purposes SCE is requesting to receive any questions or concerns regarding this project no later than 30 days from the receipt of this letter.

If you have any questions, please feel free to call me at (626) 462-8669, or via email at natasha.tabares@sce.com.

Thank you for your assistance and participation.

Sincerely,

Natasha Tabares, MA, RPA
Archaeologist
Biological and Archaeological Resources Group
Corporate Environment, Health and Safety

Southern California Edison
1218 S. Fifth Avenue
Monrovia, CA 91016

SOUTHERN CALIFORNIA EDISON

An EDISON INTERNATIONAL Company

Chief Mark Steven Vigil
San Luis Obispo County Chumash Council
1030 Ritchie Road
Grover Beach, CA 93433

February 27, 2012

SUBJECT: Native American Consultation Regarding the Santa Barbara County Reliability Project, Ventura and Santa Barbara Counties, California.

Dear Mr. Vigil:

At the recommendation of the Native American Heritage Commission (NAHC), SCE requests your input regarding the identification of potential impacts to cultural resources, sacred lands or other heritage sites located within the Santa Barbara County Reliability Project (SBCRP). The project consists of the removal of existing structures and electrical lines, and the construction and installation of new structures, electrical lines and fiber optic cable. The location of the project route is shown in the attached map (Figure 1).

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If you have any questions, please feel free to call me at (626) 462-8669, or via email at natasha.tabares@sce.com.

Thank you for your assistance and participation.

Sincerely,

Natasha T.

Natasha Tabares, MA, RPA
Archaeologist
Biological and Archaeological Resources Group
Corporate Environment, Health and Safety

Southern California Edison
1218 S. Fifth Avenue
Monrovia, CA 91016

SOUTHERN CALIFORNIA
EDISON
An EDISON INTERNATIONAL Company

Dr. Kote & Lin A-Lul'Koy Lotah
48825 Sapaque Road
Bradley, CA 93426

February 27, 2012

SUBJECT: Native American Consultation Regarding the Santa Barbara County Reliability Project, Ventura and Santa Barbara Counties, California.

Dear Dr. Kote & Lin A-Lul'Koy Lotah:

At the recommendation of the Native American Heritage Commission (NAHC), SCE requests your input regarding the identification of potential impacts to cultural resources, sacred lands or other heritage sites located within the Santa Barbara County Reliability Project (SBCRP). The project consists of the removal of existing structures and electrical lines, and the construction and installation of new structures, electrical lines and fiber optic cable. The location of the project route is shown in the attached map (Figure 1).

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If you have any questions, please feel free to call me at (626) 462-8669, or via email at natasha.tabares@sce.com.

Thank you for your assistance and participation.

Sincerely,

Natasha T.

Natasha Tabares, MA, RPA
Archaeologist
Biological and Archaeological Resources Group
Corporate Environment, Health and Safety

Southern California Edison
1218 S. Fifth Avenue
Monrovia, CA 91016

SOUTHERN CALIFORNIA
EDISON
An EDISON INTERNATIONAL Company

Mrs. Ernestine DeSoto
1317 San Andres St., Apt. A
Santa Barbara, CA 93101

February 27, 2012

SUBJECT: Native American Consultation Regarding the Santa Barbara County Reliability Project, Ventura and Santa Barbara Counties, California.

Dear Mrs. Soto:

At the recommendation of the Native American Heritage Commission (NAHC), SCE requests your input regarding the identification of potential impacts to cultural resources, sacred lands or other heritage sites located within the Santa Barbara County Reliability Project (SBCRP). The project consists of the removal of existing structures and electrical lines, and the construction and installation of new structures, electrical lines and fiber optic cable. The location of the project route is shown in the attached map (Figure 1).

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For project planning purposes SCE is requesting to receive any questions or concerns regarding this project no later than 30 days from the receipt of this letter.

If you have any questions, please feel free to call me at (626) 462-8669, or via email at natasha.tabares@sce.com.

Thank you for your assistance and participation.

Sincerely,

Natasha Tabares, MA, RPA
Archaeologist
Biological and Archaeological Resources Group
Corporate Environment, Health and Safety

Southern California Edison
1218 S. Fifth Avenue
Monrovia, CA 91016

SOUTHERN CALIFORNIA
EDISON
An EDISON INTERNATIONAL Company

Frank Arredondo
P.O. Box 161
Santa Barbara, CA 93102

February 27, 2012

SUBJECT: Native American Consultation Regarding the Santa Barbara County Reliability Project, Ventura and Santa Barbara Counties, California.

Dear Mr. Arredondo:

At the recommendation of the Native American Heritage Commission (NAHC), SCE requests your input regarding the identification of potential impacts to cultural resources, sacred lands or other heritage sites located within the Santa Barbara County Reliability Project (SBCRP). The project consists of the removal of existing structures and electrical lines, and the construction and installation of new structures, electrical lines and fiber optic cable. The location of the project route is shown in the attached map (Figure 1).

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If you have any questions, please feel free to call me at (626) 462-8669, or via email at natasha.tabares@sce.com.

Thank you for your assistance and participation.

Sincerely,

Natasha Tabares, MA, RPA
Archaeologist
Biological and Archaeological Resources Group
Corporate Environment, Health and Safety

Southern California Edison
1218 S. Fifth Avenue
Monrovia, CA 91016

SOUTHERN CALIFORNIA
EDISON
An EDISON INTERNATIONAL Company

Gilbert M. Unzueta Jr.
571 Citation Way
Thousand Oaks, CA 91320

February 27, 2012

SUBJECT: Native American Consultation Regarding the Santa Barbara County Reliability Project, Ventura and Santa Barbara Counties, California.

Dear Mr. Unzueta Jr.:

At the recommendation of the Native American Heritage Commission (NAHC), SCE requests your input regarding the identification of potential impacts to cultural resources, sacred lands or other heritage sites located within the Santa Barbara County Reliability Project (SBCRP). The project consists of the removal of existing structures and electrical lines, and the construction and installation of new structures, electrical lines and fiber optic cable. The location of the project route is shown in the attached map (Figure 1).

The project is located within a 33.5 mile segment of SCE's existing transmission corridor, between Santa Clara Substation and Carpinteria Substation. As shown on the attached map, the project area is depicted on the Saticoy, Ventura, Pitas Point, White Ledge Peak, and Carpinteria USGS 7.5 Minute Series Topographic Quadrangles.

SCE would appreciate any information you may have regarding Native American cultural resources located in or near the proposed project location. Any information concerning the location, identity, character and traditional use of cultural places identified during consultation will be considered confidential.

For project planning purposes SCE is requesting to receive any questions or concerns regarding this project no later than 30 days from the receipt of this letter.

If you have any questions, please feel free to call me at (626) 462-8669, or via email at natasha.tabares@sce.com.

Thank you for your assistance and participation.

Sincerely,

Natasha

Natasha Tabares, MA, RPA
Archaeologist
Biological and Archaeological Resources Group
Corporate Environment, Health and Safety

Southern California Edison
1218 S. Fifth Avenue
Monrovia, CA 91016

SOUTHERN CALIFORNIA
EDISON
An EDISON INTERNATIONAL Company

John Ruiz
1826 Stanwood Drive
Santa Barbara, CA 93103

February 27, 2012

SUBJECT: Native American Consultation Regarding the Santa Barbara County Reliability Project, Ventura and Santa Barbara Counties, California.

Dear Mr. Ruiz:

At the recommendation of the Native American Heritage Commission (NAHC), SCE requests your input regarding the identification of potential impacts to cultural resources, sacred lands or other heritage sites located within the Santa Barbara County Reliability Project (SBCRP). The project consists of the removal of existing structures and electrical lines, and the construction and installation of new structures, electrical lines and fiber optic cable. The location of the project route is shown in the attached map (Figure 1).

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Natasha Tabares, MA, RPA
Archaeologist
Biological and Archaeological Resources Group
Corporate Environment, Health and Safety

Southern California Edison
1218 S. Fifth Avenue
Monrovia, CA 91016

SOUTHERN CALIFORNIA
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Julie Lynn Tumamait
Chairwoman, Barbareno/Ventureno Band of Mission Indians
365 North Poli Avenue
Ojai, CA 93023

February 27, 2012

SUBJECT: Native American Consultation Regarding the Santa Barbara County Reliability Project, Ventura and Santa Barbara Counties, California.

Dear Mrs. Tumamait:

At the recommendation of the Native American Heritage Commission (NAHC), SCE requests your input regarding the identification of potential impacts to cultural resources, sacred lands or other heritage sites located within the Santa Barbara County Reliability Project (SBCRP). The project consists of the removal of existing structures and electrical lines, and the construction and installation of new structures, electrical lines and fiber optic cable. The location of the project route is shown in the attached map (Figure 1).

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Thank you for your assistance and participation.

Sincerely,

Natasha Tabares, MA, RPA
Archaeologist
Biological and Archaeological Resources Group
Corporate Environment, Health and Safety

Southern California Edison
1218 S. Fifth Avenue
Monrovia, CA 91016

SOUTHERN CALIFORNIA
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Melissa M. Parra-Hernandez
119 North Balsam Street
Oxnard, CA 93030

February 27, 2012

SUBJECT: Native American Consultation Regarding the Santa Barbara County Reliability Project, Ventura and Santa Barbara Counties, California.

Dear Mrs. Parra-Hernandez:

At the recommendation of the Native American Heritage Commission (NAHC), SCE requests your input regarding the identification of potential impacts to cultural resources, sacred lands or other heritage sites located within the Santa Barbara County Reliability Project (SBCRP). The project consists of the removal of existing structures and electrical lines, and the construction and installation of new structures, electrical lines and fiber optic cable. The location of the project route is shown in the attached map (Figure 1).

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Thank you for your assistance and participation.

Sincerely,

Natasha T.

Natasha Tabares, MA, RPA
Archaeologist
Biological and Archaeological Resources Group
Corporate Environment, Health and Safety

Southern California Edison
1218 S. Fifth Avenue
Monrovia, CA 91016

SOUTHERN CALIFORNIA
EDISON
An EDISON INTERNATIONAL Company

Patrick Tumamait
992 El Camino Corto
Ojai, CA 93023

February 27, 2012

SUBJECT: Native American Consultation Regarding the Santa Barbara County Reliability Project, Ventura and Santa Barbara Counties, California.

Dear Mr. Tumamait:

At the recommendation of the Native American Heritage Commission (NAHC), SCE requests your input regarding the identification of potential impacts to cultural resources, sacred lands or other heritage sites located within the Santa Barbara County Reliability Project (SBCRP). The project consists of the removal of existing structures and electrical lines, and the construction and installation of new structures, electrical lines and fiber optic cable. The location of the project route is shown in the attached map (Figure 1).

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Thank you for your assistance and participation.

Sincerely,

Natasha T.

Natasha Tabares, MA, RPA
Archaeologist
Biological and Archaeological Resources Group
Corporate Environment, Health and Safety

Southern California Edison
1218 S. Fifth Avenue
Monrovia, CA 91016

SOUTHERN CALIFORNIA
EDISON
An EDISON INTERNATIONAL Company

Qun-tan Shup
48825 Sapaque Road
Thousand Oaks, CA 93426

February 27, 2012

SUBJECT: Native American Consultation Regarding the Santa Barbara County Reliability Project, Ventura and Santa Barbara Counties, California.

Dear Qun-tan Shup:

At the recommendation of the Native American Heritage Commission (NAHC), SCE requests your input regarding the identification of potential impacts to cultural resources, sacred lands or other heritage sites located within the Santa Barbara County Reliability Project (SBCRP). The project consists of the removal of existing structures and electrical lines, and the construction and installation of new structures, electrical lines and fiber optic cable. The location of the project route is shown in the attached map (Figure 1).

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Thank you for your assistance and participation.

Sincerely,

Natasha T.

Natasha Tabares, MA, RPA
Archaeologist
Biological and Archaeological Resources Group
Corporate Environment, Health and Safety

Southern California Edison
1218 S. Fifth Avenue
Monrovia, CA 91016

SOUTHERN CALIFORNIA
EDISON
An EDISON INTERNATIONAL Company

Randy Guzman-Folkes
6741 Cornell Circle
Moorpark, CA 93021

February 27, 2012

SUBJECT: Native American Consultation Regarding the Santa Barbara County Reliability Project, Ventura and Santa Barbara Counties, California.

Dear Mr. Guzman-Folkes:

At the recommendation of the Native American Heritage Commission (NAHC), SCE requests your input regarding the identification of potential impacts to cultural resources, sacred lands or other heritage sites located within the Santa Barbara County Reliability Project (SBCRP). The project consists of the removal of existing structures and electrical lines, and the construction and installation of new structures, electrical lines and fiber optic cable. The location of the project route is shown in the attached map (Figure 1).

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Thank you for your assistance and participation.

Sincerely,

Natasha Tabares, MA, RPA
Archaeologist
Biological and Archaeological Resources Group
Corporate Environment, Health and Safety

Southern California Edison
1218 S. Fifth Avenue
Monrovia, CA 91016

SOUTHERN CALIFORNIA
EDISON
An EDISON INTERNATIONAL Company

Richard Angulo
2513 Laney Circle
Denton, TX 76208

February 27, 2012

SUBJECT: Native American Consultation Regarding the Santa Barbara County Reliability Project, Ventura and Santa Barbara Counties, California.

Dear Mr. Angulo:

At the recommendation of the Native American Heritage Commission (NAHC), SCE requests your input regarding the identification of potential impacts to cultural resources, sacred lands or other heritage sites located within the Santa Barbara County Reliability Project (SBCRP). The project consists of the removal of existing structures and electrical lines, and the construction and installation of new structures, electrical lines and fiber optic cable. The location of the project route is shown in the attached map (Figure 1).

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Thank you for your assistance and participation.

Sincerely,

Natasha T.

Natasha Tabares, MA, RPA
Archaeologist
Biological and Archaeological Resources Group
Corporate Environment, Health and Safety

Southern California Edison
1218 S. Fifth Avenue
Monrovia, CA 91016

SOUTHERN CALIFORNIA
EDISON
An EDISON INTERNATIONAL Company

Stephen William Miller
189 Cartagena
Camarillo, CA 93010

February 27, 2012

SUBJECT: Native American Consultation Regarding the Santa Barbara County Reliability Project, Ventura and Santa Barbara Counties, California.

Dear Mr. Miller:

At the recommendation of the Native American Heritage Commission (NAHC), SCE requests your input regarding the identification of potential impacts to cultural resources, sacred lands or other heritage sites located within the Santa Barbara County Reliability Project (SBCRP). The project consists of the removal of existing structures and electrical lines, and the construction and installation of new structures, electrical lines and fiber optic cable. The location of the project route is shown in the attached map (Figure 1).

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Thank you for your assistance and participation.

Sincerely,

Natasha Tabares, MA, RPA
Archaeologist
Biological and Archaeological Resources Group
Corporate Environment, Health and Safety

Southern California Edison
1218 S. Fifth Avenue
Monrovia, CA 91016

SOUTHERN CALIFORNIA
EDISON
An EDISON INTERNATIONAL Company

Tribal Administrator
Santa Ynez Band of Mission Indians
P.O. Box 517
Santa Ynez, CA 93460

February 27, 2012

SUBJECT: Native American Consultation Regarding the Santa Barbara County Reliability Project, Ventura and Santa Barbara Counties, California.

Dear Tribal Administrator:

At the recommendation of the Native American Heritage Commission (NAHC), SCE requests your input regarding the identification of potential impacts to cultural resources, sacred lands or other heritage sites located within the Santa Barbara County Reliability Project (SBCRP). The project consists of the removal of existing structures and electrical lines, and the construction and installation of new structures, electrical lines and fiber optic cable. The location of the project route is shown in the attached map (Figure 1).

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Thank you for your assistance and participation.

Sincerely,

Natasha Tabares, MA, RPA
Archaeologist
Biological and Archaeological Resources Group
Corporate Environment, Health and Safety

Southern California Edison
1218 S. Fifth Avenue
Monrovia, CA 91016

SOUTHERN CALIFORNIA
EDISON
An EDISON INTERNATIONAL Company

Vennise Miller
Chairperson, Coastal Band of the Chumash Nation
P.O. Box 4464
Santa Barbara, CA 93140

February 27, 2012

SUBJECT: Native American Consultation Regarding the Santa Barbara County Reliability Project, Ventura and Santa Barbara Counties, California.

Dear Vennise Miller:

At the recommendation of the Native American Heritage Commission (NAHC), SCE requests your input regarding the identification of potential impacts to cultural resources, sacred lands or other heritage sites located within the Santa Barbara County Reliability Project (SBCRP). The project consists of the removal of existing structures and electrical lines, and the construction and installation of new structures, electrical lines and fiber optic cable. The location of the project route is shown in the attached map (Figure 1).

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Thank you for your assistance and participation.

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Natasha Tabares, MA, RPA
Archaeologist
Biological and Archaeological Resources Group
Corporate Environment, Health and Safety

Southern California Edison
1218 S. Fifth Avenue
Monrovia, CA 91016

SOUTHERN CALIFORNIA
EDISON
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Vincent Armenta
Chairperson, Santa Ynez Band of Mission Indians
P.O. Box 517
Santa Ynez, CA 93460

February 27, 2012

SUBJECT: Native American Consultation Regarding the Santa Barbara County Reliability Project, Ventura and Santa Barbara Counties, California.

Dear Mr. Armenta:

At the recommendation of the Native American Heritage Commission (NAHC), SCE requests your input regarding the identification of potential impacts to cultural resources, sacred lands or other heritage sites located within the Santa Barbara County Reliability Project (SBCRP). The project consists of the removal of existing structures and electrical lines, and the construction and installation of new structures, electrical lines and fiber optic cable. The location of the project route is shown in the attached map (Figure 1).

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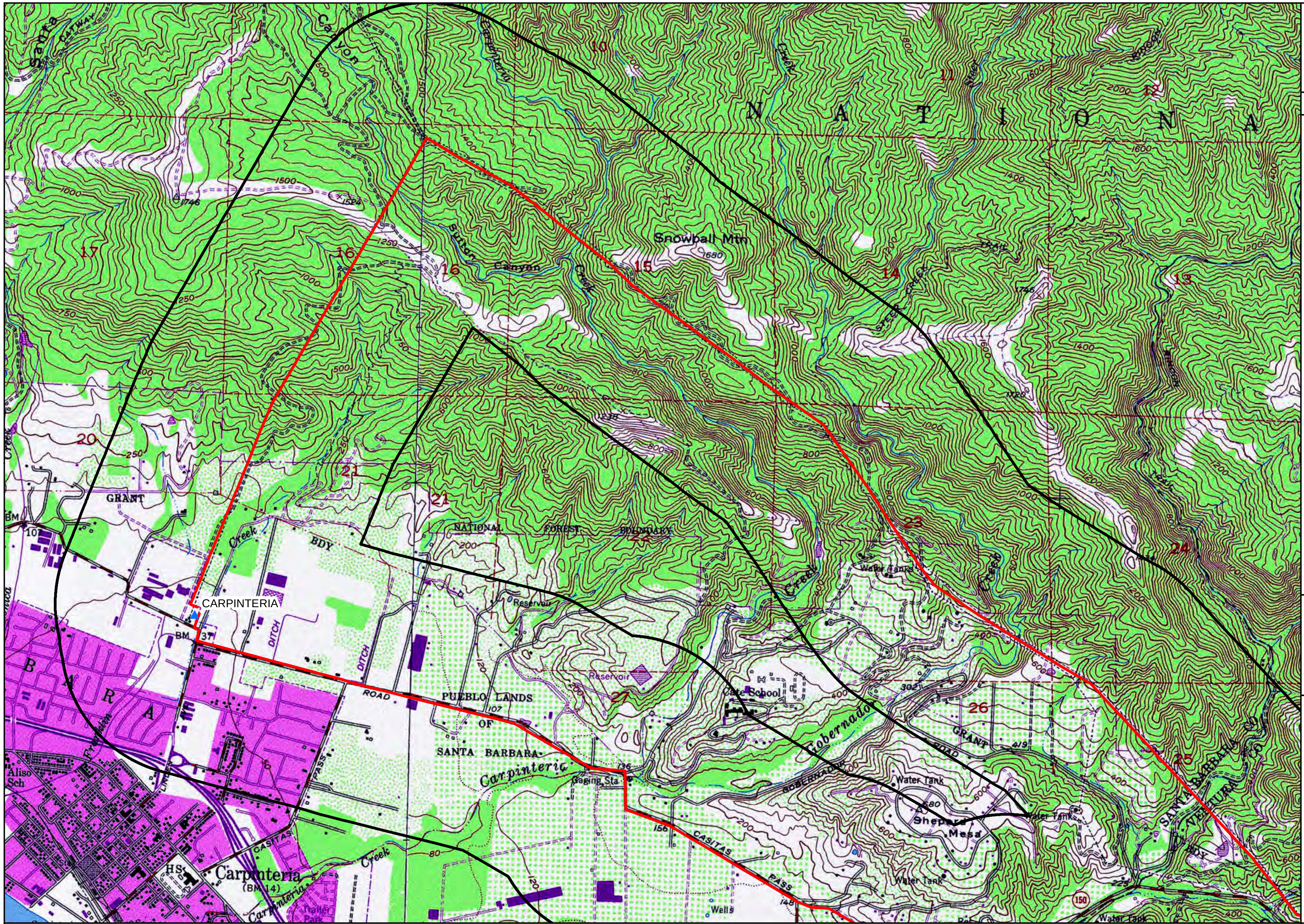
Biological and Archaeological Resources Group
Corporate Environment, Health and Safety

Southern California Edison
1218 S. Fifth Avenue
Monrovia, CA 91016



Southern California Edison's
Santa Barbara County Reliability Project

Legend

- Substation
- Project Route
- Project Boundary

Map 1 of 5

Date: February 27, 2012

Original Scale: 1:24,000

Index Map

Projection: NAD 83 UTM Zone 11

N W E S

Contains Transmission Information Distribution limited to FERC Standards of Conduct

CONFIDENTIAL

Contains Critical Electric Infrastructure Information If any questions contact Corporate Security (27875) for handling/storage requirements.

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL℠ Company

USGS 7.5 Minute Topographic Quad: Carpinteria and White Ledge Peak

0 0.25 0.5 0.75 1 Miles

Southern California Edison's
Santa Barbara County Reliability Project

Legend

- Substation
- **Project Route**
- **Project Boundary**

Map 2 of 5

Date: February 27, 2012

Original Scale: 1:24,000

Index Map

Projection: NAD 83 UTM Zone 11

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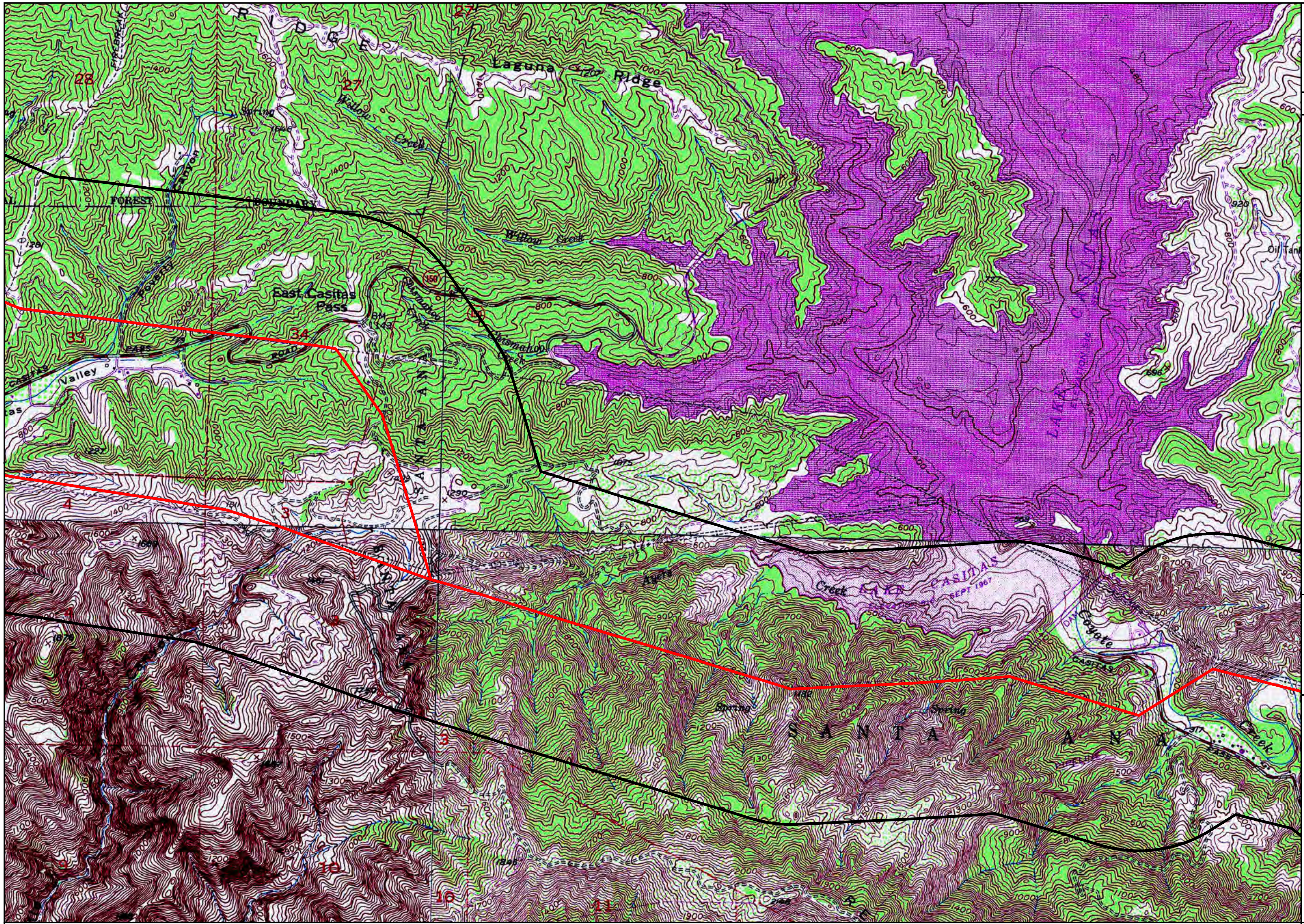
SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL℠ Company

USGS 7.5 Minute Topographic Quad: White Ledge Peak

0 0.25 0.5 0.75 1 Miles

Thomas Bros. Maps®
A RAND McNALLY COMPANY



Southern California Edison's
Santa Barbara County Reliability Project

Legend

- Substation
- **Project Route**
- **Project Boundary**

Map 3 of 5

Date: February 27, 2012

Original Scale: 1:24,000

Index Map

Projection: NAD 83 UTM Zone 11

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CONFIDENTIAL

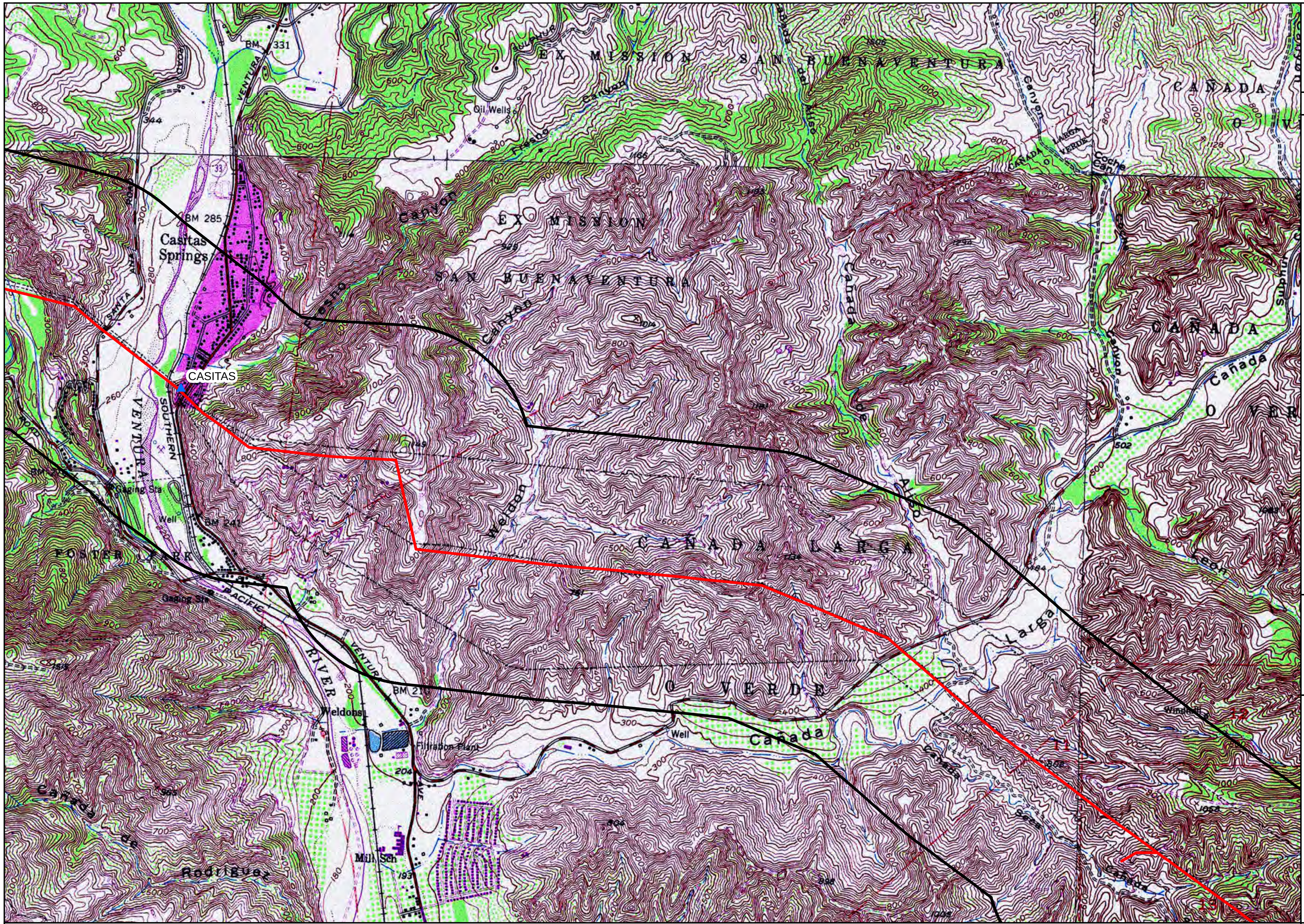
Contains Critical Electric Infrastructure Information
If any questions contact Corporate Security (27875) for handling/storage requirements.

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL℠ Company

USGS 7.5 Minute Topographic Quad: White Ledge Peak, Pitas Point and Ventura

0 0.25 0.5 0.75 1 Miles

Thomas Bros. Maps
A RAND McNALLY COMPANY



Southern California Edison's
Santa Barbara County Reliability Project

Legend

- Substation
- **Project Route**
- **Project Boundary**

Map 4 of 5
Date: February 27, 2012
Original Scale: 1:24,000

Index Map

Projection: NAD 83 UTM Zone 11

Contains Transmission Information Distribution limited to FERC Standards of Conduct

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Contains Critical Electric Infrastructure Information
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SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

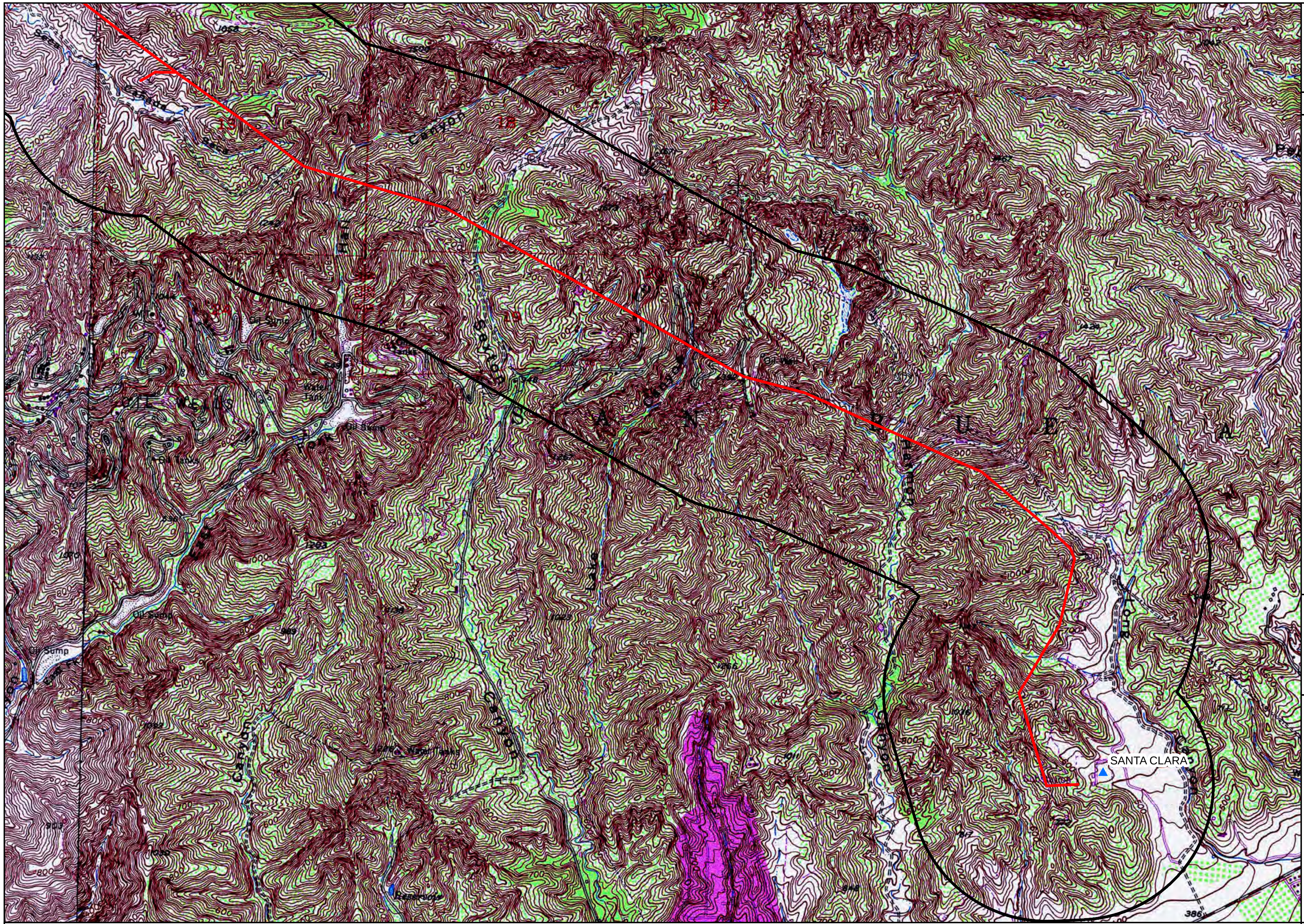
USGS 7.5 Minute Topographic Quad: Ventura and Saticoy

0 0.25 0.5 0.75 1 Miles

Thomas Bros. Maps
A RAND McNALLY COMPANY

Southern California Edison's
Santa Barbara County Reliability Project

Legend



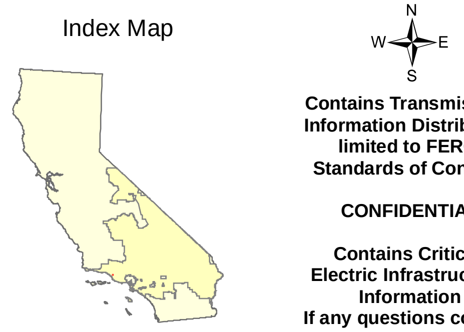
- ▲ Substation
- **Project Route**
- **Project Boundary**

Map 5 of 5

Date: February 27, 2012

Original Scale: 1:24,000

Index Map



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SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

USGS 7.5 Minute Topographic Quad: Ventura and Saticoy

0 0.25 0.5 0.75 1 Miles

Thomas Bros. Maps
A RAND McNALLY COMPANY

SOUTHERN CALIFORNIA
EDISON®
An EDISON INTERNATIONAL® Company

Steve Galbraith
United States Forest Archaeologist
Los Padres National Forest
6755 Hollister Avenue
Suite 150
Goleta, CA 93117

August 30, 2012

SUBJECT: Cultural Resources Study for the Proposed Southern California Edison Company's Santa Barbara County Reliability Project (Segment 4), Los Padres National Forest, Ventura and Santa Barbara Counties, California, IO#306487.

Dear Mr. Galbraith,

Southern California Edison (SCE) applied for and received Special Use Authorization to amend SBD-40178 in October, 2010. The amendment authorized SCE to replace three lattice towers (Tower numbers M7S-T3, M17-T6 and M18-T3) with Tubular Steel Poles (STP) within Los Padres National Forest and perform road maintenance activities. This replacement requires access to the sites and construction of graded pads needed for construction. Access to the towers would be accomplished by using existing unpaved access roads and newly constructed unpaved spur roads within SCE's existing right-of-way. Once the new poles and conductors have been installed, a telecommunications cable will be installed at the top of all poles, above the electrical conductors.

We are submitting one electronic copy of a report for your review and approval, entitled *Cultural Resources Study for the Proposed Southern California Edison Company's Santa Barbara County Reliability Project (Segment 4), Los Padres Forest, Ventura and Santa Barbara Counties, California*. The project was conducted under USDA Forest Service Special Use Permit No. SBD12010T, issued on July 9, 2012. Please do not hesitate to contact me via phone at (626) 462-8669 or via email at natasha.tabares@sce.com, if you have any questions.

Sincerely,

Natasha T.

Natasha Tabares MA, RPA
Archaeologist
Biological and Archaeological Resources Group
Southern California Edison
1218 South 5th Avenue
Monrovia, CA 91016

Enclosure: As stated

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FS-2700-32 (10/09)
OMB No. 0596-0082

U.S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE

PERMIT FOR ARCHAEOLOGICAL INVESTIGATIONS

Authority:
The Archaeological Resources Protection Act of 1979, 16 U.S.C. 470aa-mm
The Antiquities Act of 1906, 16 U.S.C. 431-433
The Organic Act of 1897, 16 U.S.C. 551

Application submitted by: AMEC Environment & Infrastructure, Inc. - Hubert Switalski, Senior Archaeologist, attached and made part of this permit for survey and recordation of Southern California Edison power pole replacement project site at: sec. 30, T4N., R24W., & sec. 25, T4N., 25W., SBBM.

TERMS AND CONDITIONS

I. GENERAL TERMS

A. AUTHORITY. This permit is issued pursuant to The Archaeological Resources Protection Act of 1979, 16 U.S.C. 470aa-mm, 36 CFR Part 251, Subpart B, 36 CFR Part 296, the Uniform Rules and Regulations of the Antiquities Act of 1906, 43 CFR Part 3, and applicable Forest Service policies and procedures and is subject to their provisions.

B. AUTHORIZED OFFICER. The authorized officer for this permit is the Forest Supervisor or a subordinate officer with delegated authority.

C. ANNUAL REVIEW. If this permit is issued for more than one year, it shall be reviewed annually by the authorized officer.

D. RENEWAL AND EXTENSION. This permit is not renewable. The holder may request an extension of this permit for a limited, specified period to complete activities authorized under this permit. Requests for an extension must be submitted in writing at least one month before expiration of this permit.

E. AMENDMENT. This permit may be amended in whole or in part by the Forest Service when, at the discretion of the authorized officer, such action is deemed necessary or desirable to incorporate new terms that may be required by law, regulation, the applicable land management plan, or projects and activities implementing a land management plan pursuant to 36 CFR Part 215. Any amendments to individuals named in or activities authorized by this permit that are needed by the holder must be approved by the authorized officer in writing.

F. COMPLIANCE WITH LAWS, REGULATIONS, AND OTHER LEGAL REQUIREMENTS. In exercising the privileges granted by this permit, the holder shall comply with all present and future federal laws and regulations and all present and future state, county, and municipal laws, regulations, and other legal requirements that apply to the permit area, to the extent they do not conflict with federal law, regulations, or policy. The Forest Service assumes no responsibility for enforcing laws, regulations, and other legal requirements that fall under the jurisdiction of other governmental entities.

G. NON-EXCLUSIVE USE. The use and occupancy authorized by this permit are not exclusive. The Forest Service reserves the right of access to the permit area, including a continuing right of physical entry to the permit area for inspection, monitoring, or any other purpose consistent with any right or obligation of the United States under any law or regulation. The holder shall allow the authorized officer or the authorized officer's representative full access to the permit area at any time the holder is in the field for purposes of examining the permit area and any recovered materials and related records. The Forest Service reserves the right to allow others to use the permit area in any way that is not inconsistent with the holder's rights and privileges under this permit, after consultation with all parties involved.

H. ASSIGNABILITY. This permit is not assignable or transferable.

II. OPERATIONS

A. OPERATING PLAN. The application corresponding to this permit is incorporated as the operating plan for this permit and is attached as Appendix A. The authorized officer may supplement the information contained in the application as appropriate or necessary.

B. REQUIRED PERMITS. The holder shall obtain all other permits required for conducting the activities authorized by this permit.

C. QUALIFIED INDIVIDUALS. Archaeological project design, literature review, development of regional historical contexts, site evaluation, conservation and protection measures, and recommendations for subsequent investigations shall be developed with direct involvement of an individual who meets the Secretary of the Interior's Standards for Archaeology and Historic Preservation. Fieldwork shall be overseen by an individual who meets the Secretary of the Interior's Standards for Archaeology and Historic Preservation.

D. CONDITION OF OPERATIONS. The holder shall maintain the authorized improvements and permit area to standards of repair, orderliness, neatness, sanitation, and safety acceptable to the authorized officer and consistent with other provisions of this permit. Standards are subject to periodic change by the authorized officer.

E. PROHIBITION ON USE OF MECHANIZED EQUIPMENT IN WILDERNESS AREAS. The holder shall not use mechanized equipment in wilderness areas and shall not use mechanized equipment in proposed or potential wilderness areas without prior written approval from the authorized officer.

F. PROHIBITION ON FLINT KNAPPING AND LITHIC REPLICATION EXPERIMENTS. The holder shall not conduct any flint knapping or lithic replication experiments at any archaeological site, aboriginal quarry source, or non-archaeological site that might be mistaken for an archaeological site as a result of such experiments.

G. PROHIBITION ON IMPEDING OR INTERFERING WITH OTHER USES. The holder shall perform the activities authorized by this permit so as not to impede or interfere with administrative or other authorized uses of National Forest System lands.

H. RESTRICTION ON MOTOR VEHICLE USE. The holder shall restrict motor vehicle use to designated roads, trails, and areas, unless specifically provided otherwise in the operating plan.

I. MINIMIZING GROUND DISTURBANCE. The holder shall keep ground disturbance to a minimum consistent with the nature and purpose of the authorized fieldwork.

J. RESOURCE PROTECTION. The holder shall conduct all activities so as to prevent or minimize scarring, erosion, littering, and pollution of National Forest System lands, water pollution, and damage to watersheds. In addition, the holder shall take precautions at all times to prevent wildfire. The holder may not burn debris without prior written approval from the authorized officer.

K. PREVENTION OF INJURY. The holder shall take precautions to protect livestock, wildlife, the public, and other users of National Forest System lands from accidental injury at any excavation site.

L. DESTRUCTION AND REMOVAL OF TREES. The holder shall not destroy or remove any trees on National Forest System lands without prior written approval from the authorized officer.

M. RESOURCE MANAGEMENT FACILITIES. The holder shall not disturb resource management facilities, such as fences, reservoirs, and other improvements, within the permit area without prior written approval from the authorized officer. Where disturbance of a resource management facility is necessary, the holder shall return it to its prior location and condition.

N. BACKFILLING. The holder shall backfill all subsurface test and excavation sites as soon as possible after recording the results and shall restore subsurface test and excavation sites as closely as possible to their original contour.

O. REMOVAL OF STAKES AND FLAGGING. The holder shall remove temporary stakes and flagging installed by the holder upon completion of fieldwork.

P. SITE RESTORATION. The holder shall restore all camp and work areas to their original condition before vacating the permit area. Refuse shall be carried out and deposited in disposal areas approved by the authorized officer.

Q. TITLE TO ARTIFACTS AND ASSOCIATED DOCUMENTATION. Archaeological and historical artifacts excavated or removed from National Forest System lands and any associated documentation shall remain the property of the United States.

R. NATIVE AMERICAN GRAVES PROTECTION AND REPATRIATION (NAGPRA). In accordance with 25 U.S.C. 3002 (d) and 43 CFR 10.4, if the holder inadvertently discovers human remains, funerary objects, sacred objects, or objects of cultural patrimony on National Forest System lands, the holder shall immediately cease work in the area of the discovery and shall make a reasonable effort to protect and secure the items. The holder shall immediately notify the authorized officer by telephone of the discovery and shall follow up with written confirmation of the discovery. The activity that resulted in the inadvertent discovery may not resume until 30 days after the authorized officer certifies receipt of the written confirmation, if resumption of the activity is otherwise lawful, or at any time if a binding written agreement has been executed between the Forest Service and the affiliated Indian tribes that adopts a recovery plan for the human remains and objects.

S. ADDITIONAL REQUIREMENTS. Prior to beginning any fieldwork under the authority of this permit, the holder shall contact the authorized officer responsible for administering the lands involved to obtain further instructions regarding current land and resource conditions.

III. REPORTING REQUIREMENTS

A. PRELIMINARY REPORT. The holder shall submit a preliminary report to the authorized officer within 2 weeks of completion of the first stage of fieldwork. The preliminary report shall enumerate what was done during the first stage of fieldwork, how it was done, by whom, where, and with what results, including maps, global positioning satellite data, an approved site form for each newly recorded archaeological site, and the holder's professional recommendations regarding resource significance, as appropriate. Depending on the scope, duration, and nature of the work, the authorized officer may require progress reports periodically for the duration of the authorized activities.

B. DRAFT FINAL REPORT. Within 4 weeks of completion of fieldwork, the holder shall submit an edited draft final report to the authorized officer for review to ensure conformance with applicable laws, regulations, policies, and procedures and the terms and conditions of this permit.

C. FINAL REPORT. The holder shall submit the original final report and at least two copies to the authorized officer within 4 months after completion of fieldwork.

D. BLANKET SURVEY CONSULTING PERMIT. If this is a multi-year survey consulting permit, at the end of each calendar year, the holder shall submit to the authorized officer a report enumerating all activities conducted under this permit.

E. DEPOSIT OF MATERIALS AND DOCUMENTS WITH A CURATORIAL FACILITY. Within 90 days of the date the final report is submitted to the authorized officer, the holder shall deposit all artifacts, samples, and collections and original or clear copies of all records, data, photographs, and other documents resulting from activities authorized by this permit with the curatorial facility named in block 12.

F. CATALOGUE AND EVALUATION OF DEPOSITED MATERIALS. The holder shall provide the authorized officer with a catalogue and evaluation of all materials deposited with the curatorial facility named in block 12, including the facility's accession or catalogue numbers, and confirmation, signed by an authorized curatorial facility official, that artifacts, samples, and collections were deposited with the approved curatorial facility. The confirmation shall include the date the materials were deposited and the type, number, and condition of the deposited materials.

G. CONFIDENTIALITY OF SENSITIVE RESOURCES. The holder agrees to keep the specific location of sensitive resources confidential. Sensitive resources include but are not limited to threatened, endangered, and rare species; archaeological sites; caves; fossil sites; minerals; commercially valuable resources; and traditional cultural properties.

H. CONFIDENTIALITY OF INFORMATION IDENTIFYING ARCHAEOLOGICAL SITES. Without the authorized officer's prior written approval, the holder shall not publish any locational or other information identifying archaeological sites that could compromise their protection and management by the federal government.

I. IDENTIFICATION OF FOREST SERVICE PERMIT. Any published article, paper, or book containing results of work conducted under this permit shall specify that the work was performed in the Los Padres National Forest under a Forest Service permit.

J. SUBMISSION OF WRITTEN MATERIALS. The holder shall submit a copy of any published or unpublished report, article, paper, or book resulting from the authorized activities (other than reports required by clauses III.A, B, and C) to the authorized officer and the appropriate official of the curatorial facility named in block 12. The holder shall submit tabular and spatial data to the authorized officer in the format specified in Appendix A.

IV. RIGHTS AND LIABILITIES

A. LEGAL EFFECT OF THE PERMIT. This permit, which is revocable and terminable, is not a contract or a lease, but rather a federal license. The benefits and requirements conferred by this authorization are reviewable solely under the procedures set forth in 36 CFR Part 251, Subpart C, and 5 U.S.C. 704. This permit does not constitute a contract for purposes of the Contract Disputes Act, 41 U.S.C. 601. The permit is not real property, does not convey any interest in real property, and may not be used as collateral for a loan.

B. VALID OUTSTANDING RIGHTS. This permit is subject to all valid outstanding rights. Valid outstanding rights include those derived from mining and mineral leasing laws of the United States. The United States is not liable to the holder for the exercise of any such right.

C. ABSENCE OF THIRD-PARTY BENEFICIARY RIGHTS. The signatories of this permit do not intend to confer any rights on any third party as a beneficiary under this permit.

D. DAMAGE TO UNITED STATES PROPERTY. The holder has an affirmative duty to protect from damage the land, property, and other interests of the United States. Damage includes but is not limited to fire suppression costs, and all costs and damages associated with or resulting from the release or threatened release of a hazardous material occurring during or as a result of activities of the holder or the holder's heirs, assigns, agents, employees, contractors, or lessees on, or related to, the lands, property, and other interests covered by this permit. For purposes of clause IV.F, "hazardous material" shall mean any hazardous substance, pollutant, contaminant, hazardous waste, oil, and/or petroleum product, as those terms are defined under any federal, state, or local laws or regulations.

E. INDEMNIFICATION. The holder shall indemnify, defend, and hold harmless the United States for any costs, damages, claims, liabilities, and judgments arising from past, present, and future acts or omissions of the holder in connection with the use and occupancy authorized by this permit. This indemnification and hold harmless provision includes but is not limited to acts and omissions of the holder or the holder's family, guests, invitees, heirs, assignees, agents, employees, contractors, or lessees in connection with the use and occupancy authorized by this permit which result in (1) violations of any laws and regulations which are now or which may become applicable; (2) judgments, claims, demands, penalties, or fees assessed against the United States; (3) costs, expenses, and damages incurred by the United States; or (4) the release or threatened release of any solid waste, hazardous waste, hazardous materials, pollutant, contaminant, oil in any form, or petroleum product into the environment. The authorized officer may prescribe terms that allow the holder to replace, repair, restore, or otherwise undertake necessary curative actions to mitigate damages in addition to or as an alternative to monetary indemnification.

F. CONTINUATION OF LIABLITY BEYOND EXPIRATION. The holder shall not be released from requirements of this permit until all outstanding obligations have been satisfied, regardless of whether the permit has expired.

V. PERMIT FEES

A. LAND USE FEE. The holder shall pay an annual land use fee of **$30.00** for the period from 07/01/2012 to 12/31/2012 and thereafter annually on N/A, in the amount of N/A.

B. MODIFICATION OF THE LAND USE FEE. The land use fee may be revised whenever necessary to reflect the market value of the authorized use or when the fee system used to calculate the land use fee is modified or replaced.

C. TERMINATION FOR NONPAYMENT. This permit shall terminate without the necessity of prior notice and opportunity to comply when any permit fee payment is 90 calendar days from the due date in arrears. The holder shall be responsible for the delinquent fees, as well as any other costs of restoring the site to its original condition, including hazardous waste cleanup.

VI. REVOCATION, SUSPENSION, AND TERMINATION

A. REVOCATION AND SUSPENSION. The authorized officer may revoke or suspend this permit in whole or in part:

1. For noncompliance with federal, state or local law.
2. For noncompliance with the terms and conditions of this permit.
3. For abandonment or other failure of the holder to exercise the privileges granted.
4. With the consent of the holder.
5. For specific and compelling reasons in the public interest.

Prior to revocation or suspension, other than immediate suspension under clause C, the authorized officer shall give the holder written notice of the grounds for revocation or suspension. In the case of revocation or suspension based on clause VI.A.1, 2, or 3, the authorized officer shall give the holder a reasonable period, not to exceed 90 days, to cure any noncompliance.

B. RELINQUISHMENT OF ARTIFACTS AND DOCUMENTS. Within 30 days of revocation or suspension of this permit, the holder shall deliver to the Forest Service all artifacts and originals of all photographs, negatives, catalogues, field notes, analysis sheets, reports in any stage of preparation, computer files, and any other records resulting from any activity conducted under this permit.

C. IMMEDIATE SUSPENSION. The authorized officer may immediately suspend this permit in whole or in part when necessary to protect public health or safety or the environment. The suspension decision shall be in writing. The holder may request an on-site review with the authorized officer's supervisor of the adverse conditions prompting the suspension. The authorized officer's supervisor shall grant this request within 48 hours. Following the on-site review, the authorized officer's supervisor shall promptly affirm, modify, or cancel the suspension.

D. APPEALS AND REMEDIES. Written decisions made by the authorized officer relating to administration of this permit are subject to appeal pursuant to 36 CFR Part 251, Subpart C, as amended. Revocation or suspension of this permit shall not give rise to any claim for damages by the holder against the Forest Service.

E. TERMINATION. This permit shall terminate when by its terms a fixed or agreed upon condition, event, or time occurs without any action by the authorized officer. Examples include but are not limited to expiration of the permit by its terms on a specified date. Termination of this permit is not subject to administrative appeal and shall not give rise to any claim for damages by the holder against the Forest Service.

VII. MISCELLANEOUS PROVISIONS

A. MEMBERS OF CONGRESS. No member of or delegate to Congress or Resident Commissioner shall benefit from this permit either directly or indirectly, except to the extent the authorized use provides a general benefit to a corporation.

B. SUPERIOR CLAUSES. If there is any conflict between any of the preceding clauses and any subsequent clauses or appendices, the preceding clauses shall control.

THIS PERMIT IS ACCEPTED SUBJECT TO ALL ITS TERMS AND CONDITIONS.

BEFORE ANY PERMIT IS ISSUED TO AN ENTITY, DOCUMENTATION MUST BE PROVIDED TO THE AUTHORIZED OFFICER OF THE AUTHORITY OF THE SIGNATORY FOR THE ENTITY TO BIND IT TO THE TERMS AND CONDITIONS OF THE PERMIT.

ACCEPTED:

6-27-12

AMEC Environment & Infrastructure, Inc. - Hubert Switalski, Senior Archaeologist PERSON SIGNING ON BEHALF OF HOLDER, IF HOLDER IS AN ENTITY	SIGNATURE	DATE

APPROVED:

Bruce Emmens - Acting District Ranger Santa Barbara Ranger District	SIGNATURE	DATE

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Auth ID: SBD401708
Contact ID: SCE,ROSEMEAD
Use Code: 643

FS-2700-23 (v. 10/09)
OMB No. 0596-0082

U.S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE
AMENDMENT
FOR
SPECIAL-USE AUTHORIZATION

Amendment#: 1

This amendment is attached to and made a part of the existing special use authorization for operation and maintenance needs not covered in the current permit issued to SOUTHERN CALIFORNIA EDISON CO. on 12/05/1958 which is hereby amended as follows:

Pole replacement and road maintenance at three transmission towers on the LPNF near the city of Carpentaria as detailed in bio report and made as attachment to this permit file.
Site 1 - Tower M7ST3 and access road T4N R24W Section 30 Ventura County
Site 2 - Tower M17T6 and access road T4N R25W Section 25 Ventura County
Site 3 - Tower M18T3 and access road T4N R25W Section 25 Santa Barbara County

This Amendment is accepted subject to the conditions set forth herein, and to conditions N/A to N/A attached hereto and made a part of this Amendment.

Mesert Ylm
Holder Southern California ~~Energy~~ Edison

MESSERET YILMA
Holder Agent -

11/23/10
Date

Douglas Dodge
Authorized Officer Douglas Dodge

Title Santa Barbara District Ranger

11/30/10
Date

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0596-0082. The time required to complete this information collection is estimated to average one (1) hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or part of an individual's income is derived from any public assistance. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at 202-720-2600 (voice and TDD).

To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, 1400 Independence Avenue, SW, Washington, DC 20250-9410 or call toll free (866) 632-9992 (voice). TDD users can contact USDA through local relay or the Federal relay at (800) 877-8339 (TDD) or (866) 377-8642 (relay voice). USDA is an equal opportunity provider and employer.

Appendix D

Public Involvement

SCE encourages communication and outreach to local communities, local businesses, elected and appointed officials, and other interested parties. SCE's goal is to ensure that it understands and addresses, where possible, issues of interest or potential concern regarding its proposed projects.

SCE conducted the following activities as part of the public involvement for the Santa Barbara County Reliability Project:

- Dissemination of Project information to the public by mail and website
- Outreach to the following target audiences:
  - Property owners within 300 feet of the Project area;
  - Elected officials and staff for the City of Carpinteria, and counties of Ventura and Santa Barbara.
  - Community and business organizations;
  - Other interested parties in the area.

Below is a detailed description of the public involvement activities that SCE conducted for the Project.

Project Information for the Public

Project Website

SCE created a website for the Project (www.sce.com/santabarbara). The website provides information about the Project, including a description and map and estimated timeline of activities. The website went live in September 2012.

Project Hotline

SCE created and continues to maintain an informational hotline for the Project where local residents can call with questions about the Project. 3.5" x 4" contact cards were created and distributed to inquiring members of the public by SCE employees and its contractors when conducting field work for the Project.

Public Outreach

Jurisdictional Briefings

SCE team members provided briefings to elected officials and staff in the counties of Santa Barbara and Ventura and the City of Carpinteria. SCE also provided briefings to neighboring jurisdictions, including the cities of Santa Barbara and Goleta.

SCE provided updates about the Project to the following entities/agencies:

- County of Santa Barbara
    - Planning Department staff
        - Anne Almy and Julie Harris (bi-monthly)
    - Board of Supervisors
        - 1st District Supervisor Salud Carbajal (Oct 2012)
        - 2nd District Supervisor Janet Wolf (Aug 2012/Oct 2012)
        - 3rd District Supervisor Doreen Farr (Aug 2012)
    - County Executive Officer Chandra Wallar (Oct 2012)
    - Santa Barbara County Parks Department
        - Claude Garciacelay (Aug 2012)
    - County Office of Emergency Services
        - Emergency Operations Chief Michael Harris (Jun 2012)
        - Emergency Manager Richard Abrams (Aug 2012)
    - Santa Barbara County Fire Department
        - Chief Michael Dyer (Jul 2012)

- City of Carpinteria
    - City Council and Staff
        - City Manager David Durflinger (Oct 2012)
        - Assistant City Manager Kevin Silk (Jun 2012)
        - Mayor Al Clark (Jul 2012/Oct 2012)
        - Councilmember Gregg Carty (Jul 2012)
        - Councilmember Brad Stein (Jul 2012)
        - Councilmember Joe Amerndariz (Jul 2012)
        - Councilmember Kathleen Reddington (Jul 2012)
        - Volunteer and Emergency Services Coordinator Julie Jeakle (Jun 2012)

- County of Ventura
    - Discretionary Permit Director Winston Wright (Jun 2012/Oct 2012)
    - Steve Offerman, District Director for Supervisor Steve Bennett, 3rd District (Oct 2012)

- City of Santa Barbara
    - City Administrator Jim Armstrong (Apr 2012)
    - Public Works Director Christine Andersen (Apr 2012)
    - Mayor Helene Schneider (Aug 2012)
    - Vice Mayor Grant House (Feb 2012)
    - Councilmember Cathy Murillo (Jan 2012)
    - Councilmember Frank Hotchkiss (Feb 2012)
    - Councilmember Randy Rowse (Dec 2011)
    - Councilmember Dale Francisco (Dec 2011)

- City of Goleta
    - City Manager Dan Singer (Apr 2012)
    - Public Works Director Robert Morgenstern (Mar 2012)
    - Mayor Margaret Connell (Aug 2012)
    - Mayor Pro-Tem Paula Perotte (Aug 2012)
    - Councilmember Roger Aceves (May 2012)
    - Councilmember Michael Bennett (Sep 2012)
    - Councilmember Edward Easton (May 2012)

<u>Outreach to Property Owners</u>

SCE identified and regularly communicated with multiple property owners along the Project route. Outreach included:

- Letter to property owners providing Project update in December 2011
- Weekly phone calls while environmental and land surveys were being conducted
- In person meetings to understand concerns and answer questions

SCE also mailed a courtesy letter in September 2012 to property owners within 300’ of Segments 3B and 4 (where construction activities had not yet begun), to provide general information about the Project and its current status.

<u>Outreach to Community and Business Organizations</u>

SCE also reached out to the following organizations:

- Friends of Franklin Trail
- Carpinteria Valley Chamber of Commerce, Lynda Lang, President/CEO
- Montecito Homeowners Association

Appendix E

Coastal Development Permit Applications

Getty Project
Segment 3A

CDP Application
filed in 2007.

SOUTHERN CALIFORNIA
EDISON
An EDISON INTERNATIONAL Company

Ms. Michelle Gibbs
Development Review Division
Planning and Development
County of Santa Barbara
123 East Anapamu Street
Santa Barbara, CA 93101-2058

August 3, 2007

Re: Case No. 05CDP-00000-00132, Application for Coastal Development Permit Requiring Public Hearing for Southern California Edison (SCE) Santa-Clara Getty 66 kV Power Line Rebuild

Dear Ms. Gibbs,

As requested, SCE is submitting the enclosed application for a Coastal Development Permit Requiring Public Hearing for as-built replacement of 85 poles. This application includes replacing 48 wood power poles with lightweight steel poles, replacing conductors for 34 wood power poles, and 3 steel poles. Please note, these 3 steel poles were replaced previously, and the replacement is not in conjunction with this project. This application, being filed at the request of the County of Santa Barbara Planning Commission, seeks approval for the replacement of these 48 poles.

The following items are included with this submittal for your evaluation:

- One (1) check payable to Planning & Development in the amount of $3,750.00
- Eight (8) copies of completed Coastal Development Permit-Hearing Application
- Eight (8) copies of the Fourteen (14) Sheets Site Plan reduced to 11" x 17"
- Two (2) copies of the shaded Topographic Map plotted on 11"X17"
- One (1) set of photos taken for forty-eight (48) wood poles were replaced with steel poles
- An Example of Copy of Grant of Easement
- One (1) Agreement to Pay Form.

If you have any questions or need additional information, please feel free to contact me via e-mail at wendy.miller@sce.com or call me at (626) 302-9543.

Sincerely,

Wendy Miller
SCE Environment, Health & Safety

Coastal Development Permit-Hearing Application Form

COUNTY OF SANTA BARBARA

Planning and Development www.sbcountyplanning.org

COASTAL DEVELOPMENT PERMIT REQUIRING A PUBLIC HEARING

A COASTAL DEVELOPMENT PERMIT REQUIRING A PUBLIC HEARING (CDH) necessary for major public works and energy projects and for development that is proposed within the "geographic appeals jurisdiction area" as shown on County maps. Approval of this type of Coastal Development Permit may be appealed to the Board of Supervisors and ultimately the Coastal Commission.

THIS PACKAGE CONTAINS

✓ SUBMITTAL REQUIREMENTS
✓ APPLICATION FORM

AND, IF ✓'D, ALSO CONTAINS

☐ **AGREEMENT FOR PAYMENT OF PROCESSING FEES** http://applications.sbcountyplanning.org/PDF/C/Agreement%20for%20Payment%20Modified%20%202003.pdf

☐ **PLAN AND MAP REQUIREMENTS** http://applications.sbcountyplanning.org/PDF/C/Site%20Map%20Requirements%20Form.pdf

☐ **AGRICULTURAL ACTIVITIES SUPPLEMENT** http://applications.sbcountyplanning.org/PDF/C/Ag%20Activities%20Supplement%20Form.pdf

☐ **GREENHOUSE SUPPLEMENT** http://applications.sbcountyplanning.org/PDF/C/Greenhouse%20Supplemental%20Questionnaire%20Form.pdf

☐ **HAZARDOUS WASTE AND MATERIALS INFORMATION FORM** http://applications.sbcountyplanning.org/PDF/C/Hazardous%20Waste%20Materials%20Supplement%20Form.pdf

South County Office
123 E. Anapamu Street
Santa Barbara, CA 93101
Phone: (805) 568-2000
Fax: (805) 568-2030

Energy Division
123 E. Anapamu Street
Santa Barbara, CA 93101
Phone: (805) 568-2040
Fax: (805) 568-2522

North County Office
624 W. Foster Road, Suite C
Santa Maria, CA 93455
Phone: (805) 934-6250
Fax: (805) 934-6258

Website: www.sbcountyplanning.org

SUBMITTAL REQUIREMENTS

___ 8 Copies of completed application form

___ 8 Copies of the Site Plan **FOLDED TO 8½" X 11"**
http://applications.sbcountyplanning.org/PDF/C/Site%20Map%20Requirements%20Form.pdf

___ 1 Copy of the Site Plan Reduced to 8½" x 11"

___ 8 Sets of floor plans and building elevations. **FOLDED TO 8½" X 11"**

___ 2 Copies of the shaded Topographic Map,
http://applications.sbcountyplanning.org/PDF/C/Site%20Map%20Requirements%20Form.pdf

___ 1 Set of photos taken from three vantage points:

- close-up
- mid-field
- entire project site.

NO BLACK & WHITE XEROX COPIES

Minimum requirements for submittal:

- mount the photos on heavy 8 1/2" x 11" paper
- orient the viewer by direction ("looking northwest from...")
- note any landmarks

___ 1 Check payable to Planning & Development.

___ 1 Source of water supply and Intent to Serve Letter from serving water district

___ 1 Legal description of the property taken from a title report, the County Recorder's office, or your recent deed.

___ 1 Agreement to Pay Form.
http://applications.sbcountyplanning.org/PDF/C/Agreement%20for%20Payment%20Modified%20%202003.pdf

NOTES:

1) If you had a pre-application meeting and submittals were recommended as a result of that meeting, your application may not be called complete until those items are also submitted.

PLANNING & DEVELOPMENT
PERMIT APPLICATION

SITE ADDRESS: Santa Clara Getty 66KV Transmission Line

ASSESSOR PARCEL NUMBER: N/A

PARCEL SIZE (acres/sq.ft.): Gross N/A Net N/A

COMPREHENSIVE/COASTAL PLAN DESIGNATION: N/A ZONING: Residential

Are there previous permits/applications? ☐ no ☒ yes numbers: Case No. 05CDP-00000-00132
(include permit# & lot # if tract)

Did you have a pre-application? ☐ no ☒ yes if yes, who was the planner? Michelle Gibbs

Are there previous environmental (CEQA) documents? ☒ no ☐ yes numbers: ____________

1. **Financially Responsible Person** Roger Schultz Phone: (626) 302-8135 FAX: (626) 302-8267
(For this project)
Mailing Address: 2131 Walnut Grove Ave., P.O. Box 800 (Street) Rosemead (City) CA (State) 91770 (Zip)

2. **Owner:** Southern California Edison (SCE) Phone: ____ FAX: ____
Mailing Address: 2244 Walnut Grove Ave., Rosemead, CA 91770 (Street City State Zip) E-mail: roger.schultz@sce.com

3. **Agent:** SCE Phone: ____ FAX: ____
Mailing Address: ____ (Street City State Zip) E-mail: ____

4. **Arch./Designer:** SCE Phone: ____ FAX: ____
Mailing Address: ____ (Street City State Zip) State/Reg Lic# ____

5. **Engineer/Surveyor:** Jeff Billingsley - Estimator Phone: (661) 294-1524 FAX: (661) 294-1578
Mailing Address: 25207 Rye Canyon Rd. Santa Clarita, CA 91380 (Street City State Zip) State/Reg Lic# N/A

6. **Contractor:** SCE Phone: ____ FAX: ____
Mailing Address: ____ (Street City State Zip) State/Reg Lic# ____

7. **Soils Lab:** N/A Phone: ____ Reg. ____
Mailing Address: ____ (Street City State Zip) State/Reg Lic# ____

PARCEL INFORMATION: (Check each that apply. Fill in all blanks or indicate "N/A")

1. **Existing Use**: ☐ Agric ☐ Residential ☐ Retail ☐ Office ☐ Indus ☐ Vacant ☒ Other
2. **Proposed Use**: ☐ Agric ☐ Residential ☐ Retail ☐ Office ☐ Indus ☒ Other
3. **Existing**: # of Buildings: N/A Gross Sq. Ft: N/A # Res. Units: N/A Age of Oldest Struct.:
4. **Proposed**: Project: Gross Sq. Ft.: N/A # Res. Units
5. **Grading (cu. yd.)**: Cut____ Fill ____ Import____ Export ____ Total: ____

Total area disturbed by grading (sq. ft. or acres): ____________

COUNTY USE ONLY

07CDH-00000-00025
Case
Super SCE Power Pole Replacements
Appli Ventura County Line to the
Projec Carpinteria Substation
Zonin

____ *Companion Case Number:* ____
____ *Submittal Date:* ____
____ *Receipt Number:* 8/7/07
____ *Accepted for Processing* ____
____ *Comp. Plan Designation* ____

For all questions below, attach additional sheets if necessary, referencing the section and question number. Please fill in every blank. Use "N/A" where question is not applicable.

II. PROJECT DESCRIPTION: Please use the space below or type on a separate sheet and attach to the front of your application a complete description of your request including the permit/decision requested, location, setting, and purpose of the project.

*EXAMPLE: We are requesting a major Conditional Use Permit for a church in the existing building at the corner of ____ and ____. The church would serve a congregation of ____, with services on ____ and ____, classes on ____ and ____ and would include a preschool which would operate on weekdays from 6:30 a.m. to 7:00 p.m. serving a maximum of 50 children ages ____ to ____. A playground is also proposed at the NE corner of the building site. No signs are proposed at this time. One tree will be removed at the SW corner to make room for improvements for parking. The parking area will consist of 100 spaces and will be screened with a landscaped berm. Include parking, grading, storm water drainage, trees fencing, walls, screening and any other details that help describe the project in full. If your project has the potential to impact storm water quality, describe measures that will be incorporated into the project description to minimize/eliminate the impacts.**

Please see the attached Project Description included in **Attachment 1.**

* Please refer to Surface and Storm Water Quality Guidelines in the County Environmental Thresholds and Guidelines Manual, also available at the Zoning Counter.

III. GRADING: Will there be any grading associated with the project? Y N

If yes, answer below. If no, go to ACCESS.

(NOTE: For proposed access drives over 12% grade, a clearance letter from the Fire Dept. will be required)

CUT __________ cubic yards AMOUNT TO BE EXPORTED __________ c.y.

FILL __________ c.y. AMOUNT TO BE IMPORTED __________ c.y.

MAXIMUM VERTICAL HEIGHT OF CUT SLOPES __________

MAXIMUM VERTICAL HEIGHT OF FILL SLOPES __________

MAXIMUM HEIGHT OF ANY PROPOSED RETAINING WALL(S) __________

TOTAL AREA DISTURBED BY GRADING (sq. ft. or acres) __________

What is the address of the pick-up/deposit site for any excess cut/fill?

____

Specify the proposed truck haul route to/from this location.

____

IV. ACCESS

A. Existing: Describe the existing access road(s) to the site. Include road widths, shoulders, and type of surface material.

All poles are accessed by Shepard Mesa Road or Highway 192.

B. Proposed: Described any proposed access to the proposed building site(s). Include road width, shoulders, and type of surface material proposed.

All poles are accessed by Shepard Mesa Road or Highway 192.

C. Does property front on a public street? Y N

Is access to be taken from this public street? Y N

Name of public street: Shepard Mesa Road and Highway 192.

D. Describe any proposed street improvements including paving, curbs and gutters, sidewalks, street trees, street-name signs, stop signs, street lighting, bus stops and fire hydrants.

N/A

E. Will the proposed access utilize an easement across neighboring property? Y* N

***Submit documentation that supports the applicant's use of this easement.**

Please see the attached copy of Grant of Easement for Shepard Mesa Area.

F. Describe proposed construction equipment access. All construction access (i.e. standard line trucks) will be, or was performed from existing access roads or within SCE's easement area.

V. DEVELOPMENT AND USE

A. Existing: Describe the existing structures and/or improvements on the site.

Use	Size (sq ft)	Height	# of Dwelling Units

Total eighty-five (85) structures (poles) on the project site were improved. Out of 85, 37 poles were only replaced with new conductor (Attachment 1, Table 1); the rest of 48 poles were replaced with light steel poles (Attachment 1, Table 2).

B. Proposed: Describe the proposed structures and/or improvements.

Use	Size (sq ft)	Height	# of Dwelling Units

Total eighty-five (85) structures (poles) on the project site were improved. Out of 85, 37 poles were only replaced with new conductor (Attachment 1, Table 1); the rest of 48 wood poles were replaced with light steel poles (Attachment 1, Table 2).

C. Will any structures be demolished or removed? ____ If so, please list them here as requested.

Current Use	Historic Use	Age	Rental Price (if rented)

48 wood poles in this project site were replaced with light steel poles (please see Attachment 1, Table 2). All the former and new pole numbers are both listed in Table 2.

D. Describe all other existing uses of the property.

Existing land use surrounding the SCE easement includes residential, agricultural, and vacant land. SCE easements preclude the presence of structures which may interfere with transmission line operations. Certain pre-existing structures may be allowed to remain within the easement, but these will not be disturbed by the project.

E. How will the project affect the existing uses of the property?

This project will not affect existing uses of the property, because the power poles replace old poles that have existed within the easement for many years.

F. Describe any other historic use(s) of the property. This may include agricultural (include crop type), commercial, or residential uses.

N/A – same as existing use

G. Provide a short description of the land uses surrounding the site.

The property in the area is generally residential, agricultural, vacant land, and State Highway 192.

North

South

East

West

H. STATISTICS: Mark each section with either the information requested or "n/a" if not applicable.

	EXISTING	**PROPOSED**	**TOTAL**
TOTAL BUILDING COVERAGE ON THE SITE, INCLUDING COVERED PARKING AND ACCESSORY STRUCTURES (sq. ft.)	n/a	n/a	n/a
STRUCTURES (sq. ft.)	n/a	n/a	n/a
ROADS/PARKING/WALKWAYS (sq. ft.)	n/a	n/a	n/a
OPEN SPACE (sq. ft.)	n/a	n/a	n/a
RECREATION (sq. ft.)	n/a	n/a	n/a
LANDSCAPING (sq. ft.)	n/a	n/a	n/a
UNPAVED TRAILS (sq. ft.)	n/a	n/a	n/a
AGRICULTURAL LANDS (sq. ft.)	n/a	n/a	n/a
POPULATION (#)	n/a	n/a	n/a
(employees/residents) DWELLING, HOTEL/MOTEL UNITS	n/a	n/a	n/a
MAX HEIGHT OF STRUCTURES (ft.)	74.5' *	74.5' *	74.5' *
*pole height is 65' min to 85' max. and 9' to 10.5' of total height is buried below ground level.			
WATER WELLS (#)	n/a	n/a	n/a
SEPTIC SYSTEMS (#)	n/a	n/a	n/a
PARKING (on-site)			
TOTAL # OF SPACES	n/a	n/a	n/a
# OF COVERED SPACES	n/a	n/a	n/a
# OF STANDARD SPACES	n/a	n/a	n/a
SIZE OF STANDARD SPACES	n/a	n/a	n/a
# OF HANDICAPPED SPACES	n/a	n/a	n/a
TOTAL AREA OF IMPERVIOUS SURFACES (SQ. FT./ACRES)	n/a	n/a	n/a

Estimate the cost of development, excluding land costs. $600,000.00

VI. SITE INFORMATION

A. Is this property under an Agricultural Preserve Contract? Y N

B. Describe the soil characteristics.

N/A

C. Describe any unstable soil areas on the site.

N/A

D. Name and describe any year round or seasonal creeks, ponds, drainage courses or other water bodies. How runoff is currently conveyed from the site?

N/A

E. Has there ever been flooding on the site? Y N

If yes, state the year and describe the effect on the project site.

F. Describe any proposed drainage and/or flood control measures. How will storm water be conveyed across and from the site? Where will storm water discharge?

N/A

G. Will the project require the removal of any trees? Y N

If so, please list them here as requested. Attach additional sheets as necessary.

Type	Diameter (at 4' height)	Height

Explain why it is necessary to remove these trees.

H. Describe the wildlife known to inhabit or frequent the site.

Please see attached Biological Resource Survey Report for Santa Clara-Getty 66kV Rebuild Project which was completed in October 2005 (**Attachment 2**).

I. Describe any noise sources that currently affect the site.

N/A

J. Are there any recorded prehistoric or historic archaeological sites on the property or on neighboring parcels? Y N Unknown

If yes, describe.

Please see attached Phase I Cultural Resource Investigation Report for Santa Clara-Getty 66 kV Transmission Line Reconducter Project, which was completed in November 2005 (**Attachment 3**).

K. Describe all third party property interests (such as easements, leases, licenses, rights-of-way, fee ownerships or water sharing agreements) affecting the project site, provision of public utilities to the site or drainage off the site.

SCE Grants of Easement across the subject properties, dated 1917 – 1960, allow permanent easement and access for SCE power lines, poles, including rights for pole and/or tower replacement, ingress, egress (see attached Grants of Easement).

L. Will any other agencies (such as CA Fish & Game, US Fish & Wildlife, Army Corp. of Engineers, Regional Water Quality Control Board) require permits for the project? If so, list them here.

N/A

M. Have you incorporated any measures into your project to mitigate or reduce potential environmental impacts? Yes If so, list them here. (Examples include tree preservation plans, creek restoration plans, and open space easements.)

Mitigation measures are identified in the attached Sensitive Resource Survey and incorporated into the project design and construction.

N. Describe measures that will be incorporated into the project design to address storm water quality (e.g., protect riparian corridors, reduce runoff, reduce directly connected impervious areas, eliminate pollutant sources, etc).*

N/A

* Refer to Best Management Practices handbooks such as "Start at the Source" by Bay Area Stormwater Management Agencies Association, 1999 and on the Internet at www.epa.gov/npdes/menuofbmps.htm. Also handouts at the counter developed by Project Clean Water.

VII. PARCEL VALIDITY

P&D will not accept an application for development on vacant, unimproved property without clear evidence that the property is a separate legal lot. Acceptable evidence of a separate legal lot include any of the following which show the subject property in it's current configuration: a recorded Parcel or Final Map, a recorded Certificate of Compliance or Conditional Certificate of Compliance, an approved Lot Line Adjustment, a recorded Reversion to Acreage, a recorded Voluntary Merger or an approved Lot Split Plat.

A. Type of evidence provided to demonstrate a separate, legal lot: N/A

Copy of evidence attached: ☐Yes ☐No

Reference number for evidence supplied: N/A

B. Date current property owner acquired the property: N/A

C. Date property was acquired in its present configuration: N/A

D. Does the applicant own adjacent property?

Address(es): N/A

E. Is this parcel part of property that the applicant previously subdivided?

Map Number: N/A Deed Number: N/A

VIII. PUBLIC/PRIVATE SERVICES

A. WATER:

Existing: N/A

1. If the property is currently served by a private well, submit the following for each well:
   a. Pumpage records (electrical meter or flow meter readings) for the past 10 years
   b. pump test data
   c. location of other wells within 500 feet
   d. water quality analysis
   e. drillers report (with construction details)
   f. copy of applicable well sharing agreement

2. Does the well serve other properties? Y N

   If yes, address(es):

3. If the property is currently served by a private or public water district, submit the following:
   a. Name: N/A
   b. District/Company meter records for the past 10 years.

Proposed:

4. Will the project require annexation to a public or private water company? Y N
   If yes, name: ______

5. Is a well proposed? Y N. If so, will it serve other properties? Y N
   If yes, address(es): ______

B. SEWAGE DISPOSAL:

1. Existing: Indicate if the property is currently served by the following:

	Yes/No	
a. septic system*	No	
b. drywell*	No	
c. public sewer district	No	If yes, name:______

*Submit engineering details on septic tanks and dry wells, as well as calculations for leach field size, where applicable.

2. Proposed: Indicate what sewage disposal services are proposed as part of this project?

a. septic system*	N/A	
b. drywell*	N/A	
c. public sewer district	N/A	District Name:______

*Submit percolation tests and/or drywell performance tests as applicable.

3. Will the project require annexation to any public sewer district? Y N
   Name: ______

C. FIRE PROTECTION

1. Is the project in a high fire hazard area? Circle one: Yes No

2. Fire protection is (will be) provided by the S.B County Fire Department.
   (Montecito, Summerland, S.B. County)

3. Is there an existing water main infrastructure in the vicinity? Circle one: Yes No

4. How far away is the nearest standard fire hydrant? N/A feet.

5. If not, is a new fire hydrant proposed? Circle one: Yes No
6. If a new hydrant is proposed, what is the longest driving distance from the proposed hydrant to the proposed building(s)? ______________ feet.
7. Will fire protection be provided by an on-site water storage tank? Circle one: Yes No

   Tank capacity: ___________ gallons
8. What is the driving distance from the water tank to the proposed structure(s)? __________ feet.
9. Is a fire sprinkler system proposed? Yes No Location ____________________________
10. Describe the access for fire trucks. Include width and height clearance for access and surface material.

    ____

    ____
11. Will hazardous materials be stored or used? Y/ N

    List any hazardous material which may be used or stored on the site.

    ____

D. UTILITIES:

1. For each of the following service improvements note whether it currently exists on the project site or will be required to accommodate the proposed development:

		Currently Exists	Required
______	Sewer	N/A	N/A
______	Water meter	N/A	N/A
______	Septic system	N/A	N/A
______	Water well	N/A	N/A
______	Power lines	Yes	Yes
______	Water storage tanks (size:__________)	N/A	N/A
______	Telephone lines	Yes	Yes
______	Storm drains	N/A	N/A
______	Other	N/A	N/A

Telephone or communication lines are strung under the SCE electric power line and attached to the SCE power poles. These communication lines are not required for the project, but do provide telecommunications services to customers through local telecommunications providers.

(**Note:** Staff may require information regarding the location, depth, and width of trenching)

E. SCHOOLS: For projects within existing or proposed residential zone districts, provide the names of the elementary, high and unified school districts serving the project site.

Elementary: N/A

High School: N/A

Unified School: N/A

Please include any other information you feel is relevant to this application.

CERTIFICATION OF ACCURACY AND COMPLETENESS Signatures must be completed for each line. If one or more of the parties are the same, please re-sign the applicable line.

Applicant's signature authorizes County staff to enter the property described above for the purposes of inspection.
I hereby declare under penalty of perjury that the information contained in this application and all attached materials are correct, true and complete. I acknowledge and agree that the County of Santa Barbara is relying on the accuracy of this information and my representations in order to process this application and that any permits issued by the County may be rescinded if it is determined that the information and materials submitted are not true and correct. I further acknowledge that I may be liable for any costs associated with rescission of such permits.

Print name and sign – Firm Date

Print name and sign - Preparer of this form Date

Print name and sign - Applicant Date

Print name and sign - Agent Date

Print name and sign - Landowner Date

Attachment 1

Project Description

Santa Clara-Getty 66 kV Line Power Poles Replacement

Introduction/Background

Southern California Edison (SCE) has replaced an existing 3.7-mile segment of a 66 kilovolt (kV) power line in Santa Barbara County, running from the Ventura County line to the Carpinteria Substation. The above effort included replacing 48 wood power poles with lightweight steel poles, replacing conductors for 34 wood power poles, and 3 steel poles. Please note, these 3 steel poles were replaced previously, and the replacement is not in conjunction with this project. The SCE Coastal Development Permit (CDP) application, being filed at the request of the County of Santa Barbara Planning Commission, seeks approval for the replacement of these 48 poles.

Project Purpose

This replacement of the 3.7-mile segment of power line was undertaken to provide "backup" capacity to insure continuity of service to the greater Santa Barbara County area using the 66,000 volt (66 kV) system in the event of a catastrophic failure of the 220,000 volt (220 kV) system that normally feeds the load within the county.

Under normal conditions, the load in Santa Barbara County is fed from the 220 kV Santa Clara Substation (near the north end of Wells Road in Saticoy, east of Ventura) using the Goleta-Santa Clara #1 and #2 220 kV lines from Santa Clara Substation to Goleta Substation (at the north end of Glenn Annie in Goleta). The 220 kV is transformed, or "stepped down" to 66 kV, and is then fed to several substations within the county. From those substations, the voltage is lowered again to a distribution voltage of either 4 kV, or 16 kV, and is again stepped down to secondary voltages in the field and then distributed to our customers. SCE does have customers that take service at 66 kV within the county, i.e. the desalination plant on Yanonnali, Onshore Substation which is adjacent to Sandpiper Golf Course in Isla Vista, and the Exxon refinery near El Capitan State Beach for example.

The Ventura area is served in much the same way, 220 kV to 66 kV to 16 kV to the customer from the Santa Clara Substation. The Santa Barbara and Ventura areas are split into separate systems, the Goleta system, and the Santa Clara system with the difference being the Santa Clara system is fed by two 220 kV systems to the east, and generation to the south and east, while the Goleta system is near the west end of SCE service territory and only has one feed at 220 kV from the Santa Clara Substation. While both the Goleta and Santa Clara systems operate independently, and below the 220 kV level , at a 66 kV or lower, there are points within the 66 kV system that can tie the two systems together in parallel in the event of a catastrophic failure on the 220 kV system so that the Santa Clara 66 kV system can provide power to the Goleta system until the 220 kV lines can be brought back on-line.

A study performed in 1998 determined that the capacity of the 66 kV system tie lines between the Goleta and Santa Clara systems would need to be increased to support the load in Santa Barbara County in the event of the loss of the 220 kV lines. SCE refers to that scenario as an N-2 condition (N = normal operation, -2 = the loss of two 220 kV lines feeding the county). In an N-2 condition affecting the 220 kV lines, the load in Santa Barbara would have to be fed solely by the 66kV system, and would be supported by the Santa Clara 66 kV system in Ventura. The nearest substation in Santa Barbara County to Santa Clara Substation is Carpinteria Substation located adjacent to Carpinteria High School, in Carpinteria. It was decided that replacing the existing conductor with a larger conductor, and replacing structures as needed along the existing routes between the two substations was preferred over acquiring rights for new routes and designing and/or constructing additional lines. The 66 kV power would then travel from the Santa Clara system to Carpinteria Substation within the Goleta system, and then in turn on to various substations throughout the Goleta system in the event of an emergency.

It should be noted that larger wire was installed not to serve an expanding customer base under normal conditions, but instead, was installed only to maintain service over SCE's entire service territory within the Goleta system during an N-2 condition emergency, so that continuity of service could be maintained while repairs were made to the 220 kV system.

The re-conductor from Carpinteria Substation east to the county line involved the removal of 19,322.5 circuit feet (3.66 miles) of existing 2/0 copper conductors (installed in 1932), which is .414 inches in diameter, and has a capacity of 405 amperes (amps). The 2/0 conductor was replaced with 954 stranded aluminum conductors (SAC) with a diameter of 1.124 inches, and a capacity of 1090 amps.

Prior to the re-conductor operation, a detailed analysis of the condition of the poles in the field was performed by SCE personnel. Structures and components found to be in need of replacement, due to one or more factors, such as woodpecker damage, abnormal wear due to local weather conditions, components reaching the end of their expected service life, etc., were identified. Of the total 85 poles within the 3.7-mile segment of power lines, 48 were identified and replaced because of the above listed deterioration factors.

Additionally, an engineering analysis was performed on the poles to determine whether any of the existing poles should be replaced with taller structures to accommodate the increased clearance needs of the new conductors which are heavier, and will sag more when ambient temperatures and load rise.

All of the insulators within the project were replaced with polymer units which will eliminate the need for periodic washing, thus eliminating the impact to both local traffic and residents along the route. The additional benefit of this replacement is that it will also greatly reduce, or eliminate any noise emanating from the existing insulators.

The details are listed below for all 85 poles within the project area:

Table 1: Poles with Conductor Replaced Only

#	*Sheet Number*	*Former Pole Number*	*New Pole Number*	*Notes*
1	2	4388667E 75'		New conductor only
2	3	106123E 70'		New conductor only
3	3	106125E 75'		New conductor only
4	3	1238750E 75'		New conductor only
5	3	1238749E 70'		New conductor only
6	4	1238747E 70'		New conductor only
7	4	1238746E 70'		New conductor only
8	4	4305745E 70'		New conductor only
9	4	4305746E 70'		New conductor only
10	4	4305747E 70'		New conductor only
11	4	4170614E 70'		New conductor only
12	4	1238740E 70'		New conductor only
13	4	1238739E 70'		New conductor only
14	4	2303869E 75'		New conductor only
15	5	4305748E 70'		New conductor only
16	5	106149E 70'		New conductor only
17	5	1324181E 70'		New conductor only
18	5	1324182E 70'		New conductor only
19	5	106152E 70'		New conductor only
20	6	1871704E 70'		New conductor only

#	Sheet Number	Former Pole Number	New Pole Number	Notes
21	6	106159E 70'		New conductor only
22	7	106164E 70'		New conductor only
23	7	1920989E 70'		New conductor only
24	7	1920986E 75'		New conductor only
25	7	1920987E 75'		New conductor only
26	8	1872161E 75'		New conductor only
27	9	2203868E 75'		New conductor only
28	9	106190E 70'		New conductor only
29	9	106194E 70'		New conductor only
30	9	106195E 70'		New conductor only
31	11	4170618E 85'		New conductor only
32	11	4141436E 80'		New conductor only
33	11	4141437E 75'		New conductor only
34	13	4093351E 75'		New conductor only
35	6	106160E 70'	4415693E 70'	New Conductor Only (re-frame, poly ins.) This pole was hit by a car on 12/04/03 and changed out then. Not related to this permit application.
36	7	106165E 70'	4423105E 70'	New Conductor Only (re-frame, poly ins.). This pole replaced 1/30/06 due to deterioration unrelated to this permit application.
37	7	4170617E 80'		New Conductor Only (re-frame, poly ins.). This pole replaced due to deterioration unrelated to this permit application.

Table 2: Wood Pole Replaced by Steel Pole

#	Sheet Number	Former Pole Number	New Pole Number	Notes
1	3	1235901E 70'	4435013E 70'	Pole replaced due to deterioration only
2	3	1920853E 75'	4435014E 75'	Pole replaced due to deterioration only
3	4	1238748E 70'	4435015E 75'	Pole replaced due to deterioration only. Existing pole had impaired phase clearance, would have been replaced W/5' taller regardless.
4	4	1238745E 70'	4435016E 70'	Pole replaced due to deterioration only
5	4	1238738E 70'	4435017E 70'	Pole replaced due to deterioration only
6	4	1823837E 70'	4435018E 75'	Replaced due to deterioration only. New pole 5' taller due to a "Widow Maker' having to be removed per Engineering Standards.
7	4	4093275E 80'	4435019E 80'	Pole replaced due to deterioration only
8	5	106144E 70'	4435020E 70'	Pole replaced due to deterioration only

#	*Sheet Number*	*Former Pole Number*	*New Pole Number*	*Notes*
9	5	106146E 70'	4539108E 70'	Pole replaced due to deterioration only
10	5	106154E 70'	4539109E 70'	Pole replaced due to deterioration only
11	6	106155E 70'	4435021E 70'	Pole replaced due to deterioration only
12	6	106157E 70'	4435022E70'	Pole replaced due to deterioration only
13	7	106162E 70'	4435023E 70'	Pole replaced due to deterioration only
14	7	106163E 70'	4435024E 70'	Pole replaced due to deterioration only
15	7	2115767E 75'	4435025E 75'	Pole replaced due to deterioration only
16	7	4170616E 80'	4435026E 80'	Pole replaced due to deterioration only
17	7	1665177E 80'	4435027E 80'	Pole replaced due to deterioration only
18	7	1723095E 80'	4435027 E 80'	Pole replaced due to deterioration only.
19	7	2295420E 80'	4435028E 80'	Pole replaced due to deterioration only
20	7	1723097E 75'	4435029E 75'	Pole replaced due to deterioration only
21	7	1920983E 75'	4435030E 75'	Pole replaced due to deterioration only
22	7	1920984E 75'	4435031E 75'	Pole replaced due to deterioration only
23	8	1920988E 70'	4435032E 70'	Pole replaced due to deterioration only
24	8	2116387E 70'	4435034E 70'	Pole replaced due to deterioration only
25	8	106187E 70'	4435035E 70'	Pole replaced due to deterioration only
26	9	2274919E 75'	4423667E 75'	Pole replaced due to deterioration only
27	9	106193E 70'	4435036E 70'	Pole replaced due to deterioration only
28	9	106197E 70'	4435037E 75'	Pole replaced due to deterioration only. This section of poles (six poles) increased to 75' due to line transitioning to 80', and then 85' pole on the east end of this section.
29	9	106199E 70'	4435038E 75'	Pole replaced due to deterioration only. This section of poles (six poles) increased to 75' due to line transitioning to 80', and then 85' pole on the east end of this section.
30	9	106201E 70'	4435039E 75'	Pole replaced due to deterioration only. This section of poles (six poles) increased to 75' due to line transitioning to 80', and then 85' pole on the east end of this section.

#	Sheet Number	Former Pole Number	New Pole Number	Notes
31	10	106202E 70'	4435040E 75'	Pole replaced due to deterioration only. This section of poles (six poles) increased to 75' due to line transitioning to 80', and then 85' pole on the east end of this section.
32	10	2115768E 70'	4435041E 75'	Pole replaced due to deterioration only. This section of poles (six poles) increased to 75' due to line transitioning to 80', and then 85' pole on the east end of this section.
33	10	2115838E 70'	4435042E 75'	Pole replaced due to deterioration only. This section of poles (six poles) increased to 75' due to line transitioning to 80', and then 85' pole on the east end of this section.
34	10	2115769E 80'	4435043E 80'	Pole replaced due to deterioration only
35	11	4141435E 85'	4435044E 85'	Pole replaced due to deterioration only
36	11	2115772E 70'	4435045E 70'	Pole replaced due to deterioration only
37	11	2295421E 70'	4435046E 75'	Pole replaced due to deterioration, and long spans (247 west, 417 east), 5' taller pole installed due to increased sag with new wire.
38	11	646784E 70'	4435047E 80'	Pole replaced due to deterioration, and long spans (417 west, 392 east), 10' taller pole installed due to increased sag with new wire.
39	11	646785E 70'	4435048E 80'	Pole replaced due to deterioration, and long spans (391 west, 239 east), 10' taller pole installed due to increased sag with new wire.
40	12	646786E 70'	4435049E 80'	The spans on either side of this pole shorten (239 west, 229 east). Pole kept at 10' taller for continuity of line.
41	12	646787E 70'	4435050E 75'	Pole replaced due to deterioration. Span to east long (292). Pole 10' taller for extra sag.
42	12	646788E 70'	4423851E 80'	Pole replaced due to deterioration. Span to west long (292). Pole 10' taller for extra sag.
43	13	646789E 70'	4423852E 80'	Pole replaced due to deterioration. Span to east long (375). Pole 10' taller for extra sag.
44	13	646790E 70'	4423853E 80'	Pole replaced due to deterioration, and long spans (375 west, 366 east), 10' taller pole installed due to increased sag with new wire.
45	13	2279207E 80'	4423854E 85'	Pole replaced due to deterioration. Span to south long (423). Pole 10' taller for extra sag.

#	*Sheet Number*	*Former Pole Number*	*New Pole Number*	*Notes*
46	13	787286E 65'	4423855E 70'	Pole replaced due to deterioration, and long spans (271 south, 286 north), 10' taller pole installed due to increased sag with new wire.
47	13	787285E 80'	4423856E 80'	Pole replaced due to deterioration only
48	13	787284E 60'	4425346E 65'	This pole replaced with an engineered steel pole due to increased tension and sag to the east. New pole is approximately 15' higher out of ground.

Alternatives

As requested by the County of Santa Barbara, SCE considered alternatives to this project that would avoid or substantially lessen aesthetic effects of the project.

Reconstruction of the existing Santa Clara-Getty 66 kV transmission line within a new easement in a different location would require the acquisition of a new easement, as well as construction activities and environmental impacts within an undisturbed area. Construction within a new easement would create new aesthetic impacts to different residents, while the existing route would still be required to maintain existing communication and distribution lines. A new route would also result in greater land use, biological, cultural resource, and other environmental impacts due to new disturbance. This alternative is considered not feasible and no alternative route is identified or proposed by SCE. The existing project is entirely within existing utility easements surrounded by residential, agricultural, vacant land, and State highways. Therefore, an alternative route will result in significantly greater environmental impacts than the existing route and has been eliminated from further consideration in this document.

In addition, an underground power transmission line was considered. Undergrounding this power line is not a feasible alternative because of the extremely high cost of installation and maintenance compared to the overhead line. Additionally, placing this line underground would result in significant loss of private use of land within the easement, significant additional biological impacts and potential cultural resource impacts. SCE's reconstructed line does not deviate from the previous alignment within existing easements. In summary, replacement of the existing power line within existing easements is the most cost efficient alternative with the least environmental impacts. Therefore, an underground alternative has been eliminated from further consideration in this document.

Environmental Impacts and Mitigation Measures

Determination of the proposed project's beneficial or adverse aesthetic effects is highly subjective. To aid this determination, Santa Barbara County has adopted Environmental Thresholds and Guidelines that help identify whether or not a project would create a significant impact on visual resources.

The project may be deemed to have a potentially significant effect if:

1. The project site has significant visual resources by virtue of surface waters, vegetation, elevation, slope or other natural or man-made features which are publicly visible, and it has the potential to degrade or significantly interfere with the public's enjoyment of the site's existing visual resources;

2. The project has a potential to impact visual resources of the Coastal Zone or other visually important area (e.g., mountainous area, public park, urban fringe, or scenic travel corridor); and the project has a potential to conflict with the policies set forth in the Local Coastal Plan (LCP), the Comprehensive Plan, or any applicable community plan to protect the identified views;

3. The project has a potential to create a significantly adverse aesthetic impact through obstruction of public views, incompatibility with surrounding uses, structures, or intensity of development, removal of significant amounts of vegetation, loss of important open space, substantial alteration of natural character, lack of adequate landscaping, or extensive grading visible from public areas.

Of the total 85 poles within the 3.7-mile segment of power lines, 48 were replaced with steel poles. Of those 48 poles, 19 poles were replaced with taller steel poles and the rest were replaced with the same height steel poles. While the new taller poles are visible, they do not result in a significant change to public views, as the new structures replaced poles that have been a part of the visual landscape of the area for many years. This visual change does not meet County or State criteria for a finding of significance as existing public views have not been substantially altered.

Sensitive Resource Survey Santa Clara-Getty 66kV Rebuild Project

For:

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Environment, Health & Safety
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October 2005

1.0 INTRODUCTION

Southern California Edison (SCE) is considering replacing or upgrading a portion of its Santa Clara-Getty 66 kV line. The poles scheduled for replacement follow a westerly course starting at intersection of SR150 and SR192 and ending at SCE's Carpinteria Substation.

This document describes the results of field surveys of the natural vegetation and special-status plant and wildlife species conducted in 1999-2000 for 85 poles located along Southern California Edison's (SCE) Santa Clara-Getty 66 kV transmission line. In addition, qualified BRC biologists revisited the sites for a reconnaissance-level assessment on October 30, 2005. This latter effort was mainly to determine if the general habitat at the sites had changed since the earlier, more detailed surveys completed in 1999-2000, which were intended to determine the potential and actual occurrence of any special-status plant and wildlife species at pole or tower sites that were then proposed for upgrading.

2.0 STUDY AREA

This survey is focused on 85 power poles/towers located along the Santa Clara-Getty 66 kV transmission line that starts at the intersection of SR150 and SR192 and runs west along SR192 to intersect the Santa Clara-Carpinteria 66 kV transmission line.

A detailed survey of this line was conducted in 1999-2000 to determine the presence of any special-status species or habitats at each of the transmission poles/towers along this circuit.

Biological resources, particularly special-status species and sensitive habitats, were surveyed within a 50-foot radius of each pole or tower. The pole numbers listed in this document are the ones recorded during the 1999-2000 surveys. Most pole numbers had changed as of October 30, 2005.

3.0 METHODS

The initial field surveys were completed between 17 May and 28 June 1999. A team of two qualified biologists (one botanist and one wildlife biologist) traveled to each of the 85 towers and conducted a reconnaissance level survey. In addition, a qualified BRC biologist revisited the sites on October 30, 2005.

To determine the presence (or absence) of most wildlife species requires intensive field sampling and observation. Since this was mainly a reconnaissance level survey, the approach was to determine the habitat types present relying on a standard vegetation classification system (Sawyer and Keeler-Wolf 1995) and to associate wildlife occurrence with the presence or absence of habitats that would predict the occurrence of individual wildlife species.

After an orientation meeting with SCE personnel familiar with the project study area, the fieldwork was scheduled and initiated. Traveling in a single off-road vehicle, the team drove SCE maintenance roads or public roads to reach the nearest point possible to each tower. Usually after a short hike, the base of each tower was inspected for a radius of approximately 50 feet. The focus of the surveys was to determine the presence or absence of sensitive plants and animals and to determine the habitat types present. The sensitive plant surveys completed in 1999-2000 were timed to include when there was a high probability of seeing flowering plants. The biologists used standardized field forms to record all observations. These data were later transferred into a computerized database using Microsoft Excel©.

3.1 Vegetation Mapping Protocols and Classification

Sawyer and Keeler-Wolf (1995) present the California Native Plant Society's (CNPS's) approach to hierarchical classification, in *A Manual of California Vegetation*, and it is the classification approach that is followed for the purposes of this report. Several (approximately 50%) of the plant communities observed during the field surveys are described as 'series' by Sawyer and Keeler-Wolf (1995). Their approach to hierarchical classification of vegetation forms a base line for the vegetation classification at the SCE tower sites, in which the most important units of conservation in any vegetative hierarchy are the floristically based series (or plant communities).

Floristic components of classification include the individual plant taxa that contribute to the vegetation occupying an area, and they form the different plant communities (or series). Although all plant communities observed during the field survey are not described by Sawyer and Keeler-Wolf (1995), the newly observed plant communities are easily classified and named according to the same hierarchical protocols described by them. The three terms (vegetation type, plant community, and plant association) used to describe the vegetation, its floristic components, and the characteristics of each term are described below.

A vegetation type is a broad vegetative unit that is not floristically based, but is defined by stand structure and physiognomic features that are characteristic of the general vegetation. Stand-structure is represented by *growth form* (i.e., trees form woodlands, shrubs form shrublands of either scrub or chaparral, and herbs/grasses form grasslands) and *habit* (i.e., woody, semi-woody, or herbaceous).

A plant community is a more defined vegetative unit that is characterized and named according to the vegetation's *dominant species*. More specifically, plant communities are defined by the one dominant plant taxon that contributes to the greatest percent ground cover and/or *canopy cover* (open, intermittent, or closed/continuous). This class is usually *floristically-based* (i.e. Purple Needlegrass Perennial Grassland), in which the plant community name specifies a dominant taxon; however, this class may not always be floristically based.

A plant community may also be classified according to more defined *habit* characteristics (i.e., annual [California Annual Grassland], biennial, or perennial; sclerophyll-leaved or soft-leaved; etc.), or can be classified into more descriptive units based on origin (Ruderal Grassland) or flower displays (Wildflower Field). These plant communities do not specify a dominant plant taxon in the name, but they are more defined grassland units, and for the purposes of this report, are considered plant communities.

Table 1 lists all plant communities observed making up the four vegetation types within the SCE survey area. Each community is an assigned class code used in the tables in Appendix D.

The plant association is a detailed vegetative unit that is always floristically based with either one dominant species, plus one or more important associate species, or two *co-dominant* species plus one or more associate species. Co-dominants are two plant taxa that are equally important contributors to the overall percent ground cover, in which neither species is dominant over the other.

Table 1. Plant communities observed and class codes.

Ruderal Grassland	GR	Commercial Buildings/Nursery	CN
Lemonadeberry Chaparral	CL	Poison Oak Scrub	SPO
Arroyo Willow Woodland	WAW	Agricultural Orchard	O
California Sycamore Woodland	WCS	Agricultural Row Crops	RC
Coast Live Oak Woodland	WLO	Residential Buildings	R
Southern California Black Walnut Woodland	WBW	Mixed Sage Scrub	SMS

3.2 Special-status Species

Special-status species are plants and animals that are either listed as *endangered* or *threatened* under the Federal or California Endangered Special Acts, listed as *rare* under the California Native Plant Protection Act, or *considered to be rare* (but not formally listed) by resource agencies, professional organizations (e.g. Audubon Society, California Native Plant Society (CNPS), The Wildlife Society), and the scientific community. For the purposes of this project, we selected the special-status species to be considered using the criteria listed in Table 2.

To determine which special-status species are likely to occur within a 50-foot radius of each tower along the Santa Clara-Getty transmission line, a literature survey (including Skinner and Pavlik [1994]) and a search of the California Department of Fish and Game's (CDFG) Natural Diversity Data Base (CNDDB), was conducted for known occurrences in the vicinity of the transmission line.

Table 2. Definitions of special-status species.

Plants & animals legally protected under the California and Federal Endangered Species Acts or under other regulations. Plants and animals considered sufficiently rare by the scientific community to qualify for such listing; or Plants and animals considered to be sensitive because they are unique, declining regionally or locally, or are at the extent of their natural range.	
Special-Status Plant Species	**Special-Status Animal Species**
• Plants listed or proposed for listing as threatened or endangered under the Federal Endangered Species Act (50 CFR 17.12 for listed plants and various notices in Federal Register for proposed species). • Plants that are Category 1 or 2 candidates for possible future listing as threatened or endangered under the Federal Endangered Species Act (55 CFR 6184, February 21, 1990). • Plants that meet the definitions of rare or endangered species under the CEQA (State CEQA Guidelines, Section 15380). • Plants considered by CNPS to be "rare, threatened, or endangered" in California (Lists 1B and 2 in Skinner & Pavlik [1994]). • Plants listed by CNPS as plants needing more information and plants of limited distribution (Lists 3 and 4 in Skinner and Pavlik [1994]). • Plants listed or proposed for listing by the State of California as threatened or endangered under the California Endangered Species Act (14 CCR 670.5). • Plants listed under the California Native Plant Protection Act (California Fish and Game Code 1900 et seq.). • Plants considered sensitive by other federal agencies (i.e., U.S. Forest Service, Bureau of Land Management) or state and local agencies or jurisdictions. • Plants considered sensitive or unique by the scientific community; occurs at natural range limits (State CEQA Guidelines, Appendix G).	• Animals listed/proposed for listing as threatened/endangered under the Federal Endangered Species Act (50 CFR 17.11 for listed animals and various notices in Federal Register for proposed species). • Animals that are Category 1 or 2 candidates for possible future listing as threatened or endangered under Federal Endangered Species Act (54 CFR 554). • Animals that meet the definitions of rare or endangered species under the CEQA (State CEQA Guidelines, Section 15380). • Animals listed or proposed for listing by the State of California as threatened and endangered under the California Endangered Species Act (14 CCR 670.5). • Animal species of special concern to the CDFG (Remsen [1978] for birds; Williams [1986] for mammals). • Animal species that are fully protected in California (California Fish & Game Code, Section 3511 [birds], 4700 [mammals], 5050 [reptiles, amphibians]).

Table 3 provides status, habitat requirements, distribution, and survey results for each special-status species, either observed in the vicinity of the tower sites or believed to occur at or near the towers, based on the presence of suitable habitat. The information provided, for each identified special-status species, includes: scientific and common (vernacular) names; species status, including Federal and state, CDFG's NDDB Element (Global and State) Ranking, and CNPS List and Rarity-Endangerment-Distribution (R-E-D) Code; a physical description; habitat requirements; species distribution; and survey results.

Listed species are those taxa that are formally listed as endangered or threatened by the federal government (e.g. U.S. Fish and Wildlife Service [USFWS]), pursuant to the federal Endangered Species Act or as endangered, threatened, or rare (for plants only) by the State of California (i.e. California Fish and Game Commission), pursuant to the California Endangered Species Act or the California Native Plant Protection Act.
The NDDB Element Ranking system (NDDB 1997b) provides a numeric global and state ranking system for all special-status species tracked by the NDDB. The global rank (G-

rank) is a reflection of the overall condition of an element (species or natural community) throughout its global range. The state ranking (S-rank) is assigned much the same way as the global rank, except state ranks in California often also contain a threat designation attached to the S-rank.

As described for the NDDB ranking, not all special-status species considered in this report are tracked by CNPS, nor are R-E-D codes given to them; therefore, we applied the rules described above to "rank" those special-status species lacking such rankings or codes. This applies to rare lichen taxa that may occur at the towers, for which CNPS has not yet developed or incorporated into its *Inventory of Rare and Endangered Vascular Plants of California* or developed and established by the California Lichen Society. Rarity G- and S-ranks devised for taxa of this report are followed by a "?", denoting tentative assignment.

The CNPS R-E-D Code is a three-numbered numeric ranking for three categories (Rarity-Endangerment-Distribution), which more accurately describes each plant's population levels. Each number-code is described in Appendix C, California Native Plant Society R-E-D Code, is specific for each category.

3.3 Tower Numbering Systems

Most of the towers surveyed along the SCE transmission line were number-and/or letter-coded by SCE; however, several towers, or wooden and steel poles, are either not numbered, out of sequence, or have duplicated numbers. If no original SCE tower number was available during the survey, a temporary consecutive tower number with a "?" was assigned, using SCE's tower numbering system.

The tower/pole numbers observed on October 30, 2005 were different from the pole numbers noted during the 1999-2000 survey; however, for easier tower accounting and inventorying for these surveys, a unique sequential numbering/letter-codes system was developed and used for all towers surveyed. The numbering system begins at No. 1., which represents the first tower that is located at the SR150 and SR 192 intersection, and ends at No. 85 which represents the last tower of the Santa Clara-Getty power line located at the Carpinteria Substation.

4.0 RESULTS

4.1 Vegetation Descriptions

This section provides a complete inventory of the three vegetative units (vegetation types, plant communities, and plant associations) observed at each tower along the SCE Santa Clara-Getty 66 kV transmission line. Generalized information on the vegetation's stand structure, species descriptions and requirements, site characteristics, and associate species contributing to the plant associations are provided in the following subsections. The natural vegetation in the study area contains four general vegetation types: grassland, coastal sage scrub, chaparral, and woodland. These ones observed at the 85 project sites are described below.

Poison Oak Scrub

Poison Oak Scrub is dominated by *Toxicodendron diversilobum*, a winter-deciduous poisonous shrub or vine with resinous leaves (becoming bright red in autumn), yellow-green flowers, and leathery creamy-white fruit. The toxic resin-covered leaves, stems, and fruit cause severe contact dermatitis. The widespread Poison Oak occurs in chaparral and oak woodlands of canyon slopes at elevations below 1,650 meters (Hickman 1993). It also commonly occurs along riparian corridor.

Ruderal Grassland

Ruderal Grassland is a plant community that is typically in early successional stages as a result of a severe human disturbance, or because the land is subject to recurrent natural disturbance. This plant community is dominated by annual and perennial, introduced/non-native, pioneering, herbaceous plants that readily colonize disturbed ground. The ability of exotic species to invade disturbed areas arises from their relationship to old-world ancestors that have co-existed with humans for millennia, and thus are more adapted to exploit disturbed land. Ruderal communities may provide a certain degree of erosion control for recently graded areas, but such communities are also a threat to the natural biodiversity because they continually distribute invasive, highly-competitive non-native propagules into otherwise native vegetation. However, if Ruderal Grassland is left undisturbed, it can undergo succession towards more stable, and less weedy, plant communities such as coastal sage or riparian scrub. (Zedler et al. 1997.)

Lemonadeberry Chaparral

Lemonadeberry Chaparral (Sumac Series according to Sawyer and Keeler-Wolf [1995]) is dominated by *Rhus integrifolia*, a large aromatic, evergreen, glandular shrub with leathery shinny-green leaves, white to pinkish petals, and glandular-hairy reddish fruit. Lemonadeberry grows on north-facing slopes of canyons at elevations below 900 meters (Hickman 1993). The sole or dominant plant taxon of this series may either be Laurel Sumac or *R. integrifolia*. These shrubs may occur together as shrub-canopy co-dominants; however, Lemonadeberry Chaparral was observed as the dominant species in the shrub canopy along the SCE transmission line. Lemonadeberry forms an intermittent to continuous canopy over a variety of scrub associates and a sparse grassy ground layer. This series occurs on steep upland slopes, with shallow coarse soils, and at elevations near sea level up to 400 meters. Sumac (/Lemonadeberry) Series is often overlooked by combining it with mixed chaparral; however, many characteristic chaparral genera (*Adenostoma*, *Arctostaphylos*, *Ceanothus*, *Quercus*) are absent from, or are uncommon in, Sumac Series.

Lemonadeberry Chaparral was observed at two towers. The Lemonadeberry Chaparral associations include several shrub canopy associates growing over scattered ground layer herbs typical of Coastal Sage Scrub communities. Lemonadeberry Chaparral co-dominants/important canopy associates include: Coyote Brush, Bigpod Ceanothus, Giant Wildrye, Chaparral Mallow, Laurel Sumac, Spiny Redberry, Purple Sage, and Blue Elderberry.

Arroyo Willow Woodland

Arroyo Willow Woodland (Arroyo Willow Series according to Sawyer and Keeler-Wolf [1995]) forms riparian habitat that is dominated by *Salix lasiolepis*. Arroyo Willow is a winter-deciduous shrub or small tree with shinny dark green leaves (lower surface white tomentose) (Hickman 1993). The NIWP (Reed 1988) lists Arroyo Willow with an FACW wetland indicator status (facultative wetland species usually found in wetlands). Arroyo Willow Series occurs in seasonally flooded or saturated freshwater wetland habitats, such as floodplains and low-gradient depositions along rivers and streams, and is abundant in marshes, meadows, and springs, at elevations below 1,800 meters. This woodland community forms a continuous canopy growing over a sparse shrub layer and variable ground layer (depending on canopy thickness).

Arroyo Willow Woodland was observed at one tower. The woodland observed at the tower consists of Arroyo Willow-Coyote Brush Woodland with Coyote Brush as a co-dominant. The tree canopy associates (including tree-like shrubs) contributing to the willow stands include: Toyon, Southern California Black Walnut, California Sycamore (*Platanus racemosa*), Coast Live Oak, Lemonadeberry, and Blue Elderberry.

The shrub stratum below the Arroyo Willow canopy consists of important associates including the special-status species Plummer Baccharis (*Baccharis plummerae* ssp. *plummerae*) and Fish Milkwort (*Polygala cornuta* ssp. *fishiae*), the shrub-like perennial grass Giant Wildrye, and scrub species such as Spiny Redberry, Fuschia-flowered Gooseberry, Purple Sage, and Poison Oak.

The herbaceous ground layer under Arroyo Willow includes a variety of native forbs such as Mugwort (*Artemisia douglasiana*), Morning-glory, Pipestem Clematis, Many-flowered Figwort, Hedge Nettle, Hoary Creek Nettle, and Western Verbena. The non-native ground layer contributors include: Black Mustard, Italian Thistle (*Carduus pycnocephalus*), Tocalote (*Centaurea melitensis*), Poison Hemlock (*Conium maculatum*), Summer Mustard, Sourclover (*Melilotus indica*), and Cape Ivy (*Senecio mikanioides*).

California Sycamore Woodland

California Sycamore Woodland (California Sycamore Series according to Sawyer and Keeler-Wolf [1995]) is dominated by the monoecious, wind-pollinated, broad-leaved winter-deciduous *Platanus racemosa*. This native tree has smooth pale bark and large, densely hairy, palmately lobed leaves, and it is a common tree occurring along streamsides and in canyons (Hickman 1993). The NIWP (Reed 1988) lists *P. racemosa* with a wetland indicator status of FACW, or a facultative wetland species.

California Sycamore Series grows in wetland soils, permanently saturated at depth, of freshwater riparian corridors, braided depositional channels of intermittent streams, gullies, springs, seeps, river banks, and terraces adjacent to floodplains subject to high-intensity seasonal flooding. This series also occurs on upland rocky canyon slopes, in alluvial, open cobbly, and rocky soils, at elevations below 2,400 meters. A shrubby thicket of evergreen and deciduous shrubs may grow below the 35-meter, widely spaced, sycamore canopy, and the ground layer is generally grassy.

California Sycamore Woodland was recorded at two towers, and a different plant association occupies each tower. The tree species co-dominating the California

Sycamore canopy are Coast Live Oak and Southern California Black Walnut, while Black Sage and Poison Oak grow as important understory shrubs to the tall emergent sycamores. Arroyo Willow is common in these riparian sycamore stands, and intergrading upland shrub species include: California Sagebrush, Coyote Brush, Birchleaf Mountain Mahogany, Californica Buckwheat, Chaparral Mallow, and Lemonadeberry.

Coast Live Oak Woodland

Coast Live Oak Woodland (Coast Live Oak Series according to Sawyer and Keeler-Wolf [1995]) is dominated by *Quercus agrifolia* var. *agrifolia*, a broad-leaved evergreen, wide-topped tree with furrowed dark gray bark and weakly spine-toothed, convex, dark green leaves (Hickman 1993). *Q. agrifolia* is the most widely distributed of the evergreen oaks, and is capable of achieving large size and old age (Zedler et al. 1997). This oak occurs in valleys and on slopes of riparian woodland fringes, scattered in grassland or Coastal Sage Scrub communities, as an element of Mixed Evergreen Forest, or as a contributor to other oak woodlands. Coast Live Oak, as a series, predominantly occurs on steep slopes and on raised stream banks or terraces. Coast Live Oak Woodland (Series) forms a continuous to open canopy (<30 meters tall), has an understory of occasional or common shrubs and an absent or herbaceous ground layer, and requires sandstone or shale-derived soils of elevations below 1,200 meters.

Coast Live Oak understory may include other typical Coastal Sage Scrub species: Coyote Brush, Plummer Baccharis, buckwheats (*Eriogonum cinereum*, *E. fasciculatum*), Toyon, Heart-leaved Bush Penstemon, Deerweed, Chaparral Mallow, Laurel Sumac, Bush Monkeyflower, Fish Milkwort, Hollyleaf Cherry (*Prunus ilicifolia*), Spiny Redberry, Fuschia-flowered Gooseberry, California Wild Rose (*Rosa californica*), California Blackberry (*Rubus ursinus*), Purple Sage, Blue Elderberry, Poison Oak, Canyon Sunflower, and Our Lord's Candle.

A ground layer consisting of annual grasses and several showy wildflowers also contribute to the oak woodland understory as well: Goldenstars, Lay-and-Collie Indian Paintbrush, Four-spotted Purple Clarkia, Blue Dicks, Lanceleaf Live Forever, Pacific Peavine (*Lathyrus vestitus*), Fleshy Lupine (*Lupinus succulentus*), Navarretia (*Navarretia jaredii*), California Buttercup, Hummingbird Sage, California Globe Mallow (*Sidalcea malvaeflora* ssp. *californica*), Blue-eyed Grass, Douglas Nightshade (*Solanum douglasii*), Hedge Nettle, Western Verbena, and Johnny Jump-up.

Southern California Black Walnut Woodland

Southern California Black Walnut Woodland (California Walnut Series according to Sawyer and Keeler-Wolf [1995]) is dominated by *Juglans californica* var. *californica*, a broad-leaved winter-deciduous, monoecious, tree that blooms from March to May. It has gray-brown bark, toothed leaflets, and spheric, leathery-husked, strong-smelling fruit (walnuts). *J. californica* is and uncommon endemic, ranging from coastal southern California from Santa Barbara County to Los Angeles County, found on canyon slopes at elevations between 50 and 900 meters (Hickman 1993). It is listed in the NIWP (Reed 1988) with a of FAC (facultative species) wetland indicator status. *J. californica* is a CNPS List 4 (limited distribution) and has an R-E-D (Rare-Endangerment-Distribution) code of 1-2-3 (Rare, but low potential for extinction-Endangered in a portion of its range-Endemic to California) (Skinner and Pavlik 1994). Southern California Black Walnut Woodland is a much fragmented, declining natural community, and it is threatened by urbanization and grazing, which inhibit natural reproduction (Skinner and Pavlik 1994).

California Walnut Series forms an open to closed canopy (<10 meters tall) growing over a common or infrequent shrub stratum and a sparse or grassy ground layer. This woodland requires deep, shale-derived, intermittently flooded/saturated soils of freshwater riparian corridors, floodplains, incised canyons, seeps, and stream or river banks at elevations between 150 and 900 meters.

Coast Live Oak may grow as a tree canopy co-dominant, while Greenbark Ceanothus and Chaparral Mallow may occur as dominant understory shrubs. The less dominant walnut understory shrubs may include: California Sagebrush, Coyote Brush, Hoary Ceanothus, Toyon, Giant Wildrye, Southern Honeysuckle, Deerweed, Fish Milkwort, Spiny Redberry, Fuschia-flowered Gooseberry, Purple Sage, and Poison Oak.

The ground layer consists of Goldenstars, Morning-glory, Miners Lettuce (*Claytonia perfoliata*), San Diego Bedstraw, Green Everlasting, Summer Mustard, Purple Needlegrass, Peony, Pacific Sanicle, Many-flowered Figwort, Blue-eyed Grass, Hedge Nettle, and Western Verbena.

Mixed Sage Scrub

Mixed Sage Scrub (Mixed Sage Series according to Sawyer and Keeler-Wolf [1995]) is the most typical Coastal Sage Scrub plant community. This upland plant community consists of a mixture of scrub species, including one to three species of sage (*Salvia* spp.). Three aromatic sages, typical of Coastal Sage Scrub or chaparral on dry south-facing slopes, are contributors of Mixed Sage Scrub (Hickman 1993): White Sage (*S. apiana*), with long tomentose stems, densely hairy-gray leaves, and white/lavender flowers (<1,500 meters); Purple Sage (*S. leucophylla*), with grayish, puckered, densely branched-hairy leaves, and rose-lavender flowers (between 50 and 800 meters); and, Black Sage (*S. mellifera*), with greenish, glandular-hairy, puckered leaves and white, pale blue/lavender flowers (<1,200 meters) (Sawyer and Keeler-Wolf 1995).

Mixed Sage Series consists of an equal representation of one to three sages and California Sagebrush, plus a mixture of typical Coastal Sage Scrub species, including California Bush Sunflower, California Buckwheat, Bush Monkeyflower, and prickly-pears (*Opuntia* spp.). Emergent shrubs of Laurel Sumac, Lemonadeberry, and Blue Elderberry may also be present. This series forms a continuous or intermittent canopy (<2 meters tall) over a variable ground layer, and grows on sandy, rocky, shallow soils of upland slopes at elevations below 1,200 meters. No single species or pair of species can dominate stands of this series; instead, three or more species must equally share commonness and cover.

4.2 Potential Special-status Vascular Plants -

The literature review and database searches identified 44 special-status species of plants known to occur in the general area where thebe towers/poles are located. Table 3 summarizes the literature and field survey results for special-status vascular plant species. It includes scientific names, whether or not they were observed, and the likelihood of occurrence within SCE boundaries if not directly observed. The timing of the field surveys was outside the preferred season to observe or detect some of the special-status species.

One special-status species, Southern California Black Walnut (Juglans californica var. californica), was observed growing within the 50-foot radius of two towers.

Table 3. Likelihood of occurrence of special-status vascular plants

Scientific Name	Common Name	Habitat Preference	Status Fed/State/CNPS	Occurrence Likelihood
Acanthomintha obovata ssp. cordata	Heart-leaved Thornmint	Chaparral, Woodland, Grassland	-/-/4 1-2-3	Unlikely
Antirrhinum ovatum	Oval-leaved Snapdragon	Chaparral, Woodland, Grassland	C3c/-/4 1-2-3	Unlikely
Aphanisma blitoides	Aphanisma	Coastal Sage Scrub	C2/-/1B 2-2-2	Low
Astragalus brauntonii	Braunton Milkvetch	Chaparral, Coastal Sage Scrub, Grassland	E/-/1B 3-2-3	Low
Atriplex pacifica	South Coast Saltscale	Coastal Sage Scrub	C2/-/1B 3-2-2	Low
Atriplex serenana var. davidsonii	Davidson Saltscale	Coastal Sage Scrub	-/-/1B 3-2-2	Low
Baccharis plummerae ssp. plummerae	Plummer Baccharis	Coastal Sage Scrub, Live Oak Woodland	-/-/4 1-1-3	Low
Boykinia rotundifolia	Round-leaved Boykinia	Chaparral, Riparian Woodland	-/-/4 1-1-3	Moderate
Calandrinia breweri	Brewer Calandrinia	Chaparral, Coastal Sage Scrub	-/-/4 1-2-2	Moderate
Calochortus catalinae	Catalina Mariposa Lily	Coastal Sage Scrub, Grassland	-/-/4 1-2-3	Moderate
Calochortus plummerae	Plummer Mariposa Lily	Coastal Sage Scrub, Grassland	C2/-/1B 2-2-3	Moderate
Calochortus weedii var. *vestus*	Late-flowered Mariposa Lily	Chaparral, Coastal Sage Scrub	C2/-/1B 2-2-3	Low
Cercocarpus betuloides var. *blancheae*	Island Mountain Mahogany	Chaparral	-/-/4 1-1-3	Low
Chorizanthe procumbens	Prostrate Spineflower	Chaparral, Woodland, Coastal Sage Scrub	-/-/4 1-2-2	Low
Convolvulus simulans	Small-flowered Morning-glory	Coastal Sage Scrub, Grassland	-/-/4 1-2-2	Low
Delphinium inopinum	Unexpected Larkspur	Upper Montane Coniferous Forest	C3c/-/1B 2-2-3	Unlikely
Dichondra occidentalis	Western Dichondra	Coastal Sage Scrub, Live Oak Woodland	C3c/-/4 1-2-1	Moderate
Eriophyllum jepsonii	Jepson Woolly Sunflower	Coastal Sage Scrub, Chaparral	-/-/4 1-1-3	Low
Fritillaria ojaiensis	Ojai Fritillary	Chaparral, Live Oak Woodland	C2/-/1B 3-2-3	Low
Galium cliftonsmithii	Santa Barbara Bedstraw	Coastal Sage Scrub, Live Oak Woodland	-/-/4 1-1-3	Possible
Hordeum intercedens	Vernal Barley	Vernal Pool, Grassland	-/-/3 ?-2-2	Unlikely
Hulsea vestita ssp.	San Gabriel Mountains	Coniferous Forest	-/-/4 1-1-3	Unlikely

gabrielensis	Sunflower			
Hulsea vestita ssp. *parryi*	Parry Sunflower	Chaparral, Coniferous Forest	-/-/4 1-1-3	Unlikely
Juglans californica var. *californica*	Southern California Black Walnut	Riparian Forest, Live Oak Woodland	-/-/4 1-2-3	Known
Juncus acutus ssp. *leopoldii*	Southwestern Spiny Rush	Alkaline Seep; Saltmarsh	-/-/4 1-2-1	Low
Lasthenia glabrata ssp. *coulteri*	Coulter's Goldfields	Grassland	C2/-/1B 2-3-2	Low
Layia heterotricha	Pale-yellow Layia	Woodland, Grassland	C2/-/1B 3-3-3	Low
Lepechinia fragrans	Fragrant Pitcher Sage	Chaparral	-/-/4 1-2-3	Moderate
Lessingia tenuis	Spring Lessingia	Lower Coniferous Forest	-/-/4 1-1-3	Unlikely
Lilium humboldtii ssp. *ocellatum*	Ocellated Humboldt Lily	Chaparral, Woodland	C2/-/4 1-2-3	Moderate
Lupinus elatus	Silky Lupine	Coniferous Forest	-/-/4 1-1-3	Unlikely
Mucronea californica	California Spineflower	Floodplain Washes	-/-/4 1-2-3	Unlikely
Orcuttia californica	California Orcutt Grass	Vernal Pool	E/E/1B 3-3-2	Unlikely
Oxytheca carophylloides	Chickweed Oxytheca	Lower Coniferous Forest	-/-/4 1-1-3	Unlikely
Oxytheca parishii var. *abramsii*	Abrams Oxytheca	Chaparral	-/-/1B 2-2-3	Low
Perideridia pringlei	Adobe Yampah	Coastal Sage Scrub, Chaparral	C3c/-/4 1-1-3	Low
Phacelia exilis	Transverse Range Phacelia	Coniferous Forests	-/-/4 1-1-3	Unlikely
Polygala cornuta var. *fishiae*	Fish Milkwort	Riparian Forest	-/-/4 1-1-2	Possible
Quercus dumosa	Nuttall Scrub Oak	Chaparral	C2/-/1B 2-3-2	Possible
Sagittaria sanfordii	Sanford Arrowhead	Marshes, Swamps	C2/-/1B 2-2-3	Unlikely
Senecio aphanactis	Rayless Ragwort	Coastal Sage Scrub	-/-/2 3-2-1	Moderate
Sidalcea neomexicana	Salt Spring Checkerbloom	Coastal Sage Scrub, Chaparral	-/-/2 2-2-1	Low
Suaeda taxifolia	Woolly Seablite	Coastal Bluff Scrub, Marshes, Swamps	-/-/4 1-2-1	Unlikely
Thermopsis californica var. *argentata*	Silvery False Lupine	Coniferous Forest, Juniper-Pinyon Woodland	-/-/4 1-1-3	Unlikely

4.3 Potential Special-status Wildlife

The special-status wildlife known or found in the study region, or in habitats similar to those found in the project area, are listed in Table 4.

Table 4. Occurrence of potential special-status wildlife.

Scientific Name	Common Name	Habitat Preference	Status Fed/State/CNPS	Occurrence Likelihood
AMPHIBIANS				
Taricha torosa torosa	Coast range newt	Vernal pools, Riparian woodlands	CSC	Low
Scaphiopus hammondi	Western spadefoot toad	Grassland with vernal pools	CSC	Low
Bufo microscapus californica	Southwestern arroyo toad	Washes, streams, sandy streambanks	FE	Low
REPTILES				
Phrynosoma coronatum	Coast horned lizard	Coastal Sage Scrub with friable soils	CSC	Low
Cnemiodophorus tigris multiscutatus	Coastal western whiptail	Coastal Sage Scrub	CSC	Low to Moderate
Aniella pulchra pulchra	California legless lizard	Live Oak Woodland	CSC	Low
Clemmys marmorata ssp. *pallida*	Southwestern pond turtle	Aquatic	CSC	Low
Salvadora hexalepis virgultea	Coastal patch-nosed snake	Open, rocky outcrops	CSC	Low
Thamnophis hammondi	Two-striped garter snake	Coastal lowlands	CSC	Low
BIRDS				
Accipiter cooperii	Cooper's hawk	Oak Woodland, Riparian	CSC (nesting)	Moderate
Accipiter striatus	Sharp-shinned hawk	Oak Woodland, Riparian	CSC (nesting)	Low
Elanus leucurus	White-tailed kite	Oak Woodland, grasslands,wetlands	CFP	Low
Circus cyanus	Northern harrier	Grasslands, Lowlands	CSC (nesting)	Low
Vireo belli pusillus	Least Bell's vireo	Riparian Forests	CE, FE	Low
Campylorhynchus brunneicapillus	Coastal cactus wren	Cactus scrub	CSC	Low
Dendroica petechia brewsteri	Yellow warbler	Riparian Forests	FSC, CSC	Low
Polioptila californica	California gnatcatcher	Coastal Sage Scrub	FT, CSC	Low
Lanius l. ludovicianus	Loggerhead shrike	Grasslands, Shrubland	CSC	Low
Aimophilia ruficeps canescens	Ashy rufous-crowned sparrow	Brush mixed with Grasslands on steep slopes	CSC	Low
MAMMALS				
Antrozous pallidus	Pallid bat	Caves, crevices, structures	CSC	Low
Plecotus townsendii pallescens	Pale big-eared bat	Caves, crevices, man-made structures	CSC	Low

Scientific Name	Common Name	Habitat Preference	Status Fed/State/CNPS	Occurrence Likelihood
Eumops perotis californicus	California mastiff bat	Rock crevices	CSC	Low
Neotoma lepida intermedia	San Diego desert woodrat	Cactus patches in Coastal Sage Scrub and Chapparal	CSC	High
Taxidea taxus	American badger	Grasslands, scrub habitats	CSC	Moderate

CE = California Endangered
CFP = Cal. Fully Protected
FT = Federal Threatened
FE = Federal Endangered
CSC = Cal. Species of Concern

No state or federally listed rare, threatened, or endangered wildlife species are known to occur or substantially utilize the habitats available in the project area.

The California gnatcatcher is a federally threatened species that may occur near the project area. One historical record (early 1900s) exists for this species in the South Mountain area near Santa Paula, which is more than 30-40 miles outside the project area. The nearest contemporary occurrence record of the California gnatcatcher was formerly thought to be on the Palos Verdes Peninsula in southernwestern Los Angeles County. However, one breeding pair was found recently in coastal sage scrub near the city of Moorpark, more than 30 miles away from this project's study area. Therefore, the project area remains outside the current known distribution for this species. Additionally, there is no coastal sage scrub habitat present in much of the project area which is not optimal for this species, which typically prefers relatively dense sagebrush that is mixed with prickly pear cactus.

At present, the U.S. Fish and Wildlife Service does not require intensive surveys for the species, using standardized protocols, north of the Santa Clara River (R. Farris, U.S. Fish and Wildlife Service Biologist, Ventura Field Office, pers. comm.) Therefore, this project is exempt from the existing federal requirements to conduct intensive surveys to determine the presence/absence of this listed species. No suitable habitat for this species occurs along the project route.

The Least Bell's vireo is listed as both a federal and a state endangered species, and the project area is within the species' breeding range. However, least Bell's vireos require relatively extensive and contiguous riparian forests with adjacent upland foraging areas for breeding. No towers are located directly in riparian habitat, although a few are adjacent, and no impacts to this species are expected from any tower modifications.
A number of raptor species known to utilize the habitats present in the project area are considered sensitive due to declining populations and habitat loss. Cooper's hawks are relatively common in the area and nest at locations within the project region. However, none were seen in the project area, nor were any nests observed immediately adjacent to the towers. No suitable habitat for this species occurs along the project route.

Sharp-shinned hawks and northern harriers are likely winter visitors to parts of the project area. The latter is a rare breeding species. White-tailed kites also breed in the region, generally in woodlands, near their grassland and wetland foraging areas. There is very limited suitable habitat for this species in the project area, and no impacts are expected in relation to the proposed project.

The coastal cactus wren is relatively common in the region where cactus scrub is available in large patches. No individuals or suitable habitat were observed in the project area. Yellow warblers have been recorded in the project area. However, this species requires extensive riparian forests for breeding, which would not be impacted by any proposed tower modifications.

Loggerhead shrikes frequent open habitats with sparse shrubs. Extensive losses of grasslands and breeding habitat have resulted in widespread population declines. The species has previously been suggested to forage in Sexton Canyon within the project area, and two individuals were recorded about 10-20 miles away from the project area during field surveys. Pre-construction and construction monitoring would determine if a nest site were present at a tower scheduled for rebuild. No significant impacts to this species are expected.

Ashy rufous-crowned sparrows prefer to nest on relatively steep slopes with sparse brush and intermixed with grassy areas. Coastal sage scrub is generally considered suitable breeding habitat. The western end of the project area contains some rocky open areas that are potential habitat for this species. While it is possible that this species occurs in the project area, no impacts would be expected.

Three bat species listed as sensitive may occur in the project vicinity. No significant impacts due to tower replacements are expected to any of the sensitive bat species that occur in the region.

The San Diego desert woodrat inhabits cactus patches and rocky areas in coastal sage scrub and open chaparral. No individuals of the species were observed during the survey. We made no effort (live trapping) to confirm which woodrat species was present.

American badgers are classified as a California Special Animal, preferring grasslands and open habitats, and feeding mostly on ground squirrels and pocket gophers. Badgers may be found in or near tower locations, but that this species is not expected to be impacted by the proposed project modifications.

Coast range newts occur in the project area in or near streams in hardwood forests as well as in coastal sage scrub, chaparral, and grassland habitats. This species would not be impacted since power lines in the project area span all wetland habitats.

The western spadefoot toad occupies grassland areas where shallow, temporary pools form after winter rains. It burrows into loose soil or uses existing rodent dens or other underground access. No tower sites were found within vernal pool habitat, and no impacts to this species would be expected from tower modifications. The southwestern arroyo toad is found near washes, streams, and along sandy banks with willows, cottonwoods, or sycamores. Tower lines span areas with habitat for this species, and no impacts are expected.

The coast horned lizard occupies grassland, brushland, woodland, and open coniferous forest in the region. The species' occurrence in the project area is considered limited. We observed few harvester ant colonies, which are prey for the species, and a general absence of friable soils. Therefore, it is possible this species may be found in the project area. No impacts from tower modifications are expected.
Coastal western whiptail lizards occur near the project area (e.g., Steckel Park), and may be found in the project area within the more open and drier portions of coastal sage scrub. No impacts of proposed modifications on this species are expected.

California legless lizards occur in the duff under oak groves. Since none of the transmission towers occur within oak groves, no impacts to this species are expected.

The southwestern pond turtle is a highly aquatic species and the two-striped garter snake is a semi-aquatic species. The transmission towers in the project area span wetland and riparian areas. Therefore no impacts to these species are expected.

The coastal patch-nosed snake prefers rocky areas, near grassland, chaparral, sagebrush, and desert scrub. The western end of the project area contains potential habitat for this species, but no impacts are expected from activities associated with transmission tower rebuilding.

5.0 DISCUSSION AND RECOMMENDATIONS

Of the 85 towers, only 8 towers contained natural vegetation of one or more plant communities. Seventy-nine towers lacked natural vegetation (of which most contained agricultural crops). Most of the poles/ towers along this transmission line are in developed (non-natural) areas. Developed land includes residential buildings, commercial buildings (church, community center, nurseries, and agricultural land (avocado, citrus and exotic fruit orchards and row-crops. These poles are predominantly in the immediate highway right-of-way where no or very few natural/native species are growing.

5.1 Wildlife Considerations

The Santa Clara-Getty 66kV Power Line Project is not expected to affect any sensitive wildlife species that may occur in the general region of the proposed project. There are no scientific occurrence records in or near the project area to indicate the presence of California gnatcatchers, a federally threatened species. Potential impacts to other sensitive wildlife species are avoided because the transmission towers avoid wetlands and riparian areas. This assumes that the construction will not require impacts of losses of these habitat types due to the building of new access roads, storage or staging areas, or other project activities that might disturb sensitive habitats.

Wherever possible, the construction effort will be contained to existing transmission tower pads, access roads, and other previously disturbed areas to minimize additional impacts to natural resources and sensitive species habitat. Based on our surveys, it appeared that new access roads would be needed only rarely, with some construction possibly involving removal/replacement using helicopters due to the rugged terrain or to minimize vegetation losses.

5.2 Sensitive Plant Considerations

The proposed project may affect one sensitive (special-status) plant species, Southern California Black Walnut *(Juglans californica* var. *californica*), which exists within the project area. SCE should avoid removing or damaging these trees to the fullest extent possible during construction.

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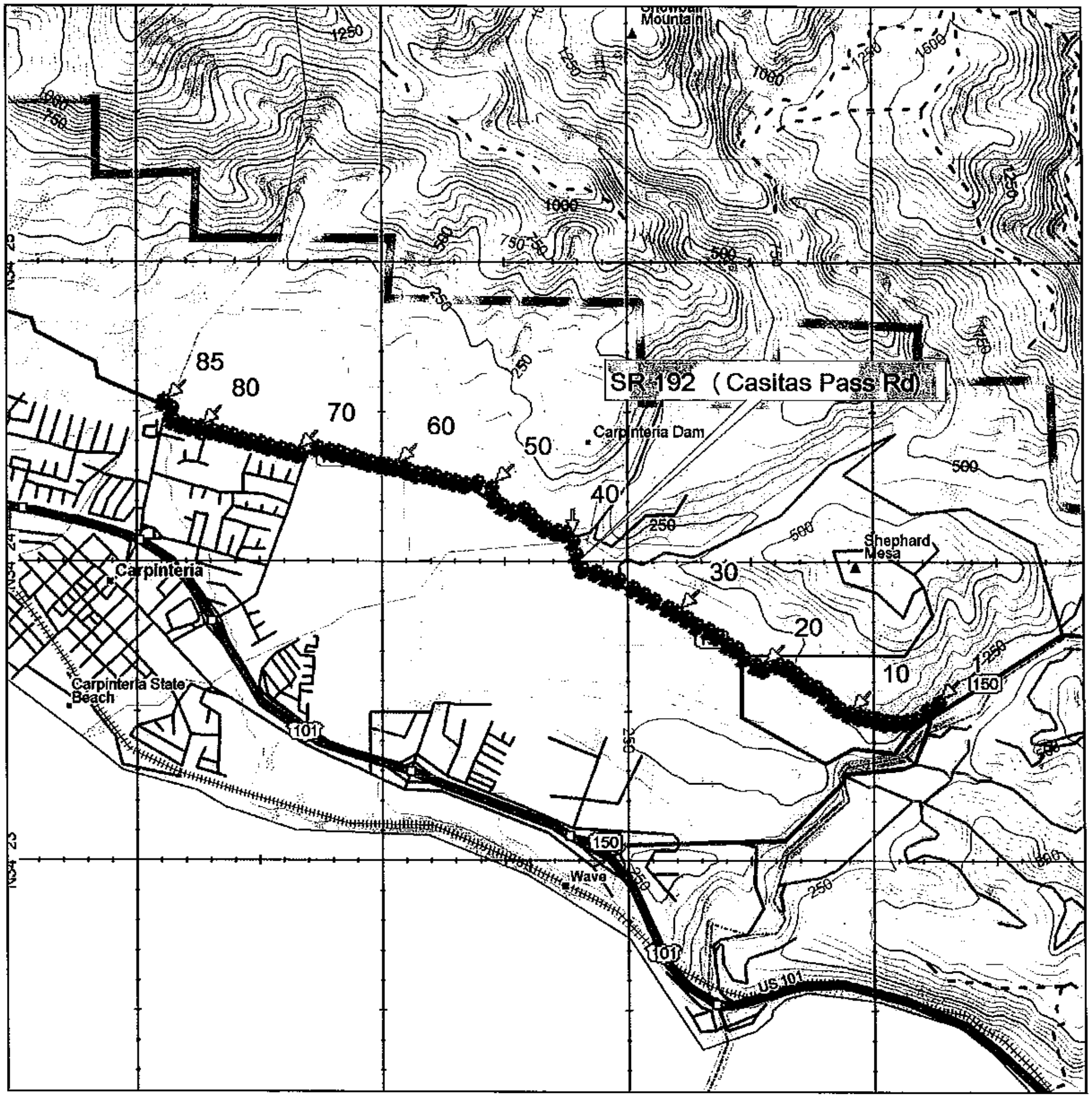
APPENDICES

APPENDIX A. MAP OF THE PROJECT AREA.



APPENDIX B. SENSITIVE PLANT DESCRIPTIONS

Southern California Black Walnut (*Juglans californica ssp. californica*)

STATUS		
Federal	**State / NDDB**	**CNPS** (Skinner and Pavlik 1994)
None	None / G3, S3.2	List 4: Plants of Limited Distribution R-E-D Code: 1-2-3

Southern California Black Walnut (*Juglans californica* S. Watson ssp. *californica*) is a small, broad-leaved, monoecious, winter-deciduous tree (15 meters tall) with one to five trunks. It has pinnately divided leaves with 11-19 lanceolate to ovate toothed leaflets (2-8 cm long). The wind pollinated, greenish flowers, blooming between March and May, have 4-lobed sepals arranged in pendulous clusters before the leaves emerge. This species produces spheric, leathery-husked, strong-smelling fruit (walnuts) 2-3 centimeters in diameter. *J. californica* ssp. *c.* is listed in the NIWP (Reed 1988) with an FAC wetland indicator status (facultative species that is equally likely to occur in wetlands and non-wetlands), and is a member of the walnut family (Juglandaceae). (Hickman 1993.)

Juglans californica var. *c.* is uncommon, but can be found on slopes and canyons at elevations between 50 and 900 meters, and it is often associated with riparian habitats (Hickman 1993). It ranges from the Santa Lucia Mountains (where they were cultivated), Santa Barbara County, and along the coastal portions of the Transverse Ranges, south to the northern Peninsular Ranges in northern San Diego County. Some reported occurrences of Southern California Black Walnut are along Santa Paula Creek at Sisar Creek and along the Lower Piru Creek. It is also known from the Santa Monica Mountains at Little Sycamore Canyon, and elsewhere in Ventura County (Magney and Burgess 1996). Southern California Black Walnut Forest (Holland 1986) is a much-fragmented, declining natural community, and it is threatened by urbanization and grazing, which inhibit natural reproduction. (Skinner and Pavlik 1994.)

This species grows on variable slope faces within the survey area, which are inhabited predominantly by Woodland and Coastal Sage Scrub types. Dominant species of woodlands (Coast Live Oak Woodland, Coast Live Oak-Southern California Black Walnut Woodland, and California Sycamore-Southern California Black Walnut Woodland), in which *J. californica* grows, include: Ceanothus (*Ceanothus* spp.), Toyon, California Sycamore, Coast Live Oak, Lemonadeberry, and Blue Elderberry. Dominant species contributing to the walnut tree understory include typical Coastal Sage Scrub (Mixed Sage Scrub) and chaparral species, such as California Sagebrush, Coyote Brush, Birchleaf Mountain Mahogany, California Buckwheat, Lemonadeberry, sages, and Poison Oak.

APPENDIX C, PART 1. NATURAL DIVERSITY DATA BASE ELEMENT RANKING SYSTEM.

Global Ranking (G)	
G1	<6 viable elements occurrences (populations for species), OR < 1,000 individuals, OR < 809.4 hectares (ha) (2,000 acres [ac]).
G2	6 to 20 element occurrences OR 809.4 to 4,047 ha (2,000 to 10,000 ac).
G3	21 to 100 element occurrences OR 3,000 to 10,000 individuals OR 4,047 to 20,235 ha (10,000 to 50,000 ac).
G4	Apparently secure; this rank is clearly lower than G3, but factors exist to cause some concern (i.e. there is some threat or somewhat narrow habitat).
G5	Population or stand demonstrably secure to ineradicable due to being commonly found in the world.
GH	All sites are **historic**; the element has not been seen for at least 20 years, but suitable habitat still exists.
GX	All sites are **extirpated;** this element is extinct in the wild.
GXC	Extinct in the wild; exists in cultivation.
G1Q	The element is very rare, but there is a taxonomic question associated with it.
Subspecies Level: Subspecies receive a **T-rank** attached to the G-rank. With the subspecies, the G-rank reflects the condition of the entire <u>species</u>, whereas the T-rank reflects the global situation of just the <u>subspecies</u> or <u>variety</u>. * For example: *Chorizanthe robusta* var. *hartwegii* is ranked G2T1. The G-rank refers to the whole species range (*Chorizanthe robusta*), whereas the T-rank refers only to the global condition of the variety (var. *hartwegii*).	
State Ranking (S)	
S1	Less than 6 element occurrences OR less than 1,000 individuals OR less than 809.4 ha (2,000 ac). S1.1 = very threatened S1.2 = threatened S1.3 = no current threats known
S2	6 to 20 element occurrences OR 3,000 individuals OR 809.4 to 4,047 ha (2,000 to 10,000 ac). S2.1 = very threatened S2.2 = threatened S2.3 = no current threats known..
S3	21 to 100 element occurrences OR 3,000 to 10,000 individuals OR 4,047 to 20,235 ha (10,000 to 50,000 ac). S3.1 = very threatened S3.2 = threatened S3.3 = no current threats known
S4	Apparently secure within California; this rank is clearly lower than S3 but factors exist to cause some concern (i.e., there is some threat, or somewhat narrow habitat). NO THREAT RANK.
S5	Demonstrably secure to ineradicable in California. NO THREAT RANK.
SH	All California sites are **historical**; the element has not been seen for at least 20 years, but suitable habitat still exists.
SX	All California sites are **extirpated;** this element is extinct in the wild.
Notes	
1. Other considerations used when ranking a species or natural community include the pattern of distribution of the element on the landscape, fragmentation of the population/stands, and historical extent as compared to its modern range. It is important to take an aerial view when ranking sensitive elements rather than simply counting element occurrences.	
2. Uncertainty about the rank of an element is expressed in two major ways: by expressing the rank as a range of values (e.g. S2S3 means the rank is somewhere between S2 and S3), and by adding a ? to the rank (e.g. S2?). This represents more certainty than S2S3, but less than S2. (Natural Diversity Data Base 1997.)	

APPENDIX C, PART 2. CALIFORNIA NATIVE PLANT SOCIETY R-E-D CODE

Rarity (R)	
1	Rare, but found in sufficient numbers and distributed widely enough that the potential for extinction is low at this time
2	Distributed in a limited number of occurrences, occasionally more if each occurrence is small
3	Distributed in one to several highly restricted occurrences, or present in such small numbers that it is seldom reported
Endangerment (E)	
1	Not endangered
2	Endangered in a portion of its range
3	Endangered throughout its range
Distribution (D)	
1	More or less widespread outside California
2	Rare outside California
3	Endemic to California

Source: Skinner and Pavlik 1994.

APPENDIX D. SUMMAY OF VEGETATION TYPES AND SPECIAL-STATUS SPECIES FOR EACH TOWER.

Tower Numbers		Vegetation[i]					Special-status Species	
Survey[ii]	SCE[iii]	Grassland	Scrub	Chaparral	Woodland	Develop	Plants[iv]	Animals[v]
1	8-6		SMS			O		
2	9-1					O		
3	D?			CL			*Jcc*	
4	E?			CL	WBW		*Jcc*	
5	3?					O		
6	4?					O		
7	5?					O		
8	6?					O		
9	7?					O		
10	8?					O		
11	9?					O		
12	10?	GR				O, R		
13	11?	GR				R		
14	12?	GR				R		
15	13?	GR				O, R		

Tower Numbers		Vegetation[i]					Special-status Species	
Survey[ii]	SCE[iii]	Grassland	Scrub	Chaparral	Woodland	Develop	Plants[iv]	Animals[v]
16	14?					R		
17	4141437		SPO			R		
18	4141436	GR				O, R		
19	3/SR192?				WCS			
20	4141435					RC		
21	2115769					RC		
22	2115838					RC		
23	2115768					RC		
24	106202					RC		
25	106201					O, R		
26	106199					O		
27	106197					O		
28	106195					CN		
29	106194					CN		
30	106193					O		
31	427491					O		
32	16/SR192?					O, R		
33	2303868					O, R		
34	106187					O, R		
35	2116387					O, R		
36	2116387					O, R		
37	192098					O, R		
38	192087					O, R		
39	1920986				WAW	R		
40	1920984				WLO			
41	25/SR192?					O		
42	1920989					O		
43	1723097				WCS			
44	2295420					CN		
45	1723095					CN		
46	1665177					CN		
47	4170613					O		
48	4170616					O		
49	2115767					O		
50	106165					O		
51	106164					O		
52	106163					O		
53	106162					O		
54	106160					O		
55	106159					O		
56	106157					O		
57	1871704					O		
58	106155					O		
59	106154					O		
60	106152					O, CN		
61	1524182					O, CN		
62	1324181					CN		
63	106149					CN		
64	4305748					CN		

Tower Numbers		Vegetation[i]					Special-status Species	
Survey[ii]	SCE[iii]	Grassland	Scrub	Chaparral	Woodland	Develop	Plants[iv]	Animals[v]
65	106146					CN		
66	1061--?					CN		
67	2303869					CN		
68	52/SR192?					O, CN		
69	1238737					O, CN		
70	54/SR192?					O, RC		
71	123874					O, RC, CN		
72	56/SR192?					CN		
73	4170614					RC, CN		
74	4305747					RC, CN		
75	4305746					RC, CN		
76	4305745					CN		
77	1238745					CN		
78	62/SR192?					R, CN		
79	1238747					R, CN		
80	64/SR192?					R, CN		
81	1238749					R, CN		
82	66/SR192?					R, CN		
83	106125					R, CN		
84	1920853					R, CN		
85	106123					CN		

[i] See Table1 for key to these vegetation and developed land codes.
[ii] Survey Tower Numbers are the codes assigned to each tower site, after the field work was completed, for line designation, tower sequencing, tower number duplication elimination, and vegetation inventory.
[iii] SCE Tower Numbers are either the original numbers/codes as encountered in the field, or, they are temporary codes (with a "?") assigned to towers with missing numbers for initial tower identification.
[iv] Key to Special-status Plants:

Bpp = *Baccharis plummerae* ssp. *plummerae* (Plummer Baccharis)
Cc = *Calochortus catalinae* (Catalina Mariposa Lily)
Jcc = *Juglans californica* var. *californica* (Southern California Black Walnut)
Pcf = *Polygala cornuta* var. *fishiae* (Fish Milkvetch)
Qd = *Quercus dumosa* (Nuttall Scrub Oak)

[v] Key to Special Status Wildlife:

GN= Polioptila californica (California gnatcatcher)

County of Santa Barbara
Planning and Development

John Baker, Director
Dianne Black, Director Development Services
John McInnes, Director Long Range Planning

September 4, 2007

Wendy Miller, Regulatory Coordinator
Southern California Edison (SCE)
2244 Walnut Grove Avenue
Rosemead, CA 91770

RE: Determination of Application Completeness
Santa-Clara Getty 66 kV Transmission Line As-Built Power Pole Replacement Project, Case No. 07CDH-00000-00025 (formerly case no. 05CDP-00000-00132), Foothill Road/Highway 192, Carpinteria

Dear Ms. Miller:

Thank you for the August 7, 2007 submittal for the Santa-Clara Getty 66 kV Transmission Line As-Built Power Pole Replacement project. We have reviewed your application and found it to be complete. Preliminary review of your project indicates that it would require preparation of a Negative Declaration pursuant to the California Environmental Quality Act (CEQA) and the Santa Barbara County Guidelines for Implementation of CEQA. We will begin an evaluation of the proposed project's consistency with applicable State and County regulations and conduct a more detailed analysis of its environmental impacts as necessary.

Assuming that the proposed project description does not change and we do not receive substantive public comments on the CEQA document that warrant recirculation, we anticipate that the project could go before the Zoning Administrator in January 2008. Should staff foresee changes to this schedule, we will notify you immediately.

Development Review
Building & Safety
Energy, Administration
123 E. Anapamu Street
Santa Barbara, CA 93101
Phone: (805) 568-2000
FAX: (805) 568-2030

Long Range Planning
30 E. Figueroa St, 2nd Floor
Santa Barbara, CA 93101
Phone: (805) 568-3380
FAX: (805) 568-2076

Building & Safety
185 West Hwy 246, Ste 101
Buellton, CA 93427
Phone: (805) 686-5020
FAX: (805) 686-5028

Development Review
Building & Safety
Agricultural Planning
624 W. Foster Road
Santa Maria, CA 93455
Phone: (805) 934-6250
FAX: (805) 934-6258

Our review is based on the following project description:

Southern California Edison (SCE) has replaced an existing 3.7-mile segment of a 66 kilovolt (kV) power line in Santa Barbara County, running from the Ventura County line to the Carpinteria Substation. The proposed project includes as-built (1) replacement of 51 wood power poles with lightweight steel poles and replacement of conductor (line) for all 51 poles and (2) replacement of only conductor for 34 additional wood power poles.

This replacement of the 3.7-mile segment of power line was undertaken to provide "backup" capacity to insure continuity of service to the greater Santa Barbara County area using the 66,000 volt (66 kV) system in the event of a catastrophic failure of the 220,000 volt (220 kV) system that normally feeds the load within the county.

The re-conductor from Carpinteria Substation east to the County line involved the removal of 19,322.5 circuit feet (3.66 miles) of existing 2/0 copper conductors (installed in 1932) which were 0.414 inches in diameter, and had a capacity of 405 amperes (amps). The 2/0 conductor was replaced with 954 stranded aluminum conductors with a diameter of 1.124 inches, and a capacity of 1090 amps. All of the insulators within the project were also replaced with polymer units.

Table 1 lists the poles which only underwent replacement of the conductor, whereas Table 2 lists the poles which underwent replacement of the pole and conductor.

Table 1
Power Poles with Conductor Replaced Only

#	Sheet Number	Former Pole Number	Former Pole Height (ft.)	New Pole Number	New Pole Height (ft.)	Notes
1	2	4388667E	75	N/A	N/A	New conductor only
2	3	106123E	70	N/A	N/A	New conductor only
3	3	106125E	75	N/A	N/A	New conductor only
4	3	1238750E	75	N/A	N/A	New conductor only
5	3	1238749E	70	N/A	N/A	New conductor only
6	4	1238747E	70	N/A	N/A	New conductor only
7	4	1238746E	70	N/A	N/A	New conductor only
8	4	4305745E	70	N/A	N/A	New conductor only
9	4	4305746E	70	N/A	N/A	New conductor only
10	4	4305747E	70	N/A	N/A	New conductor only
11	4	4170614E	70	N/A	N/A	New conductor only
12	4	1238740E	70	N/A	N/A	New conductor only
13	4	1238739E	70	N/A	N/A	New conductor only
14	4	2303869E	75	N/A	N/A	New conductor only
15	5	4305748E	70	N/A	N/A	New conductor only
16	5	106149E	70	N/A	N/A	New conductor only
17	5	1324181E	70	N/A	N/A	New conductor only
18	5	1324182E	70	N/A	N/A	New conductor only
19	5	106152E	70	N/A	N/A	New conductor only
20	6	1871704E	70	N/A	N/A	New conductor only
21	6	106159E	70	N/A	N/A	New conductor only
22	7	106164E	70	N/A	N/A	New conductor only
23	7	1920989E	70	N/A	N/A	New conductor only
24	7	1920986E	75	N/A	N/A	New conductor only
25	7	1920987E	75	N/A	N/A	New conductor only
26	8	1872161E	75	N/A	N/A	New conductor only
27	9	2203868E	75	N/A	N/A	New conductor only
28	9	106190E	70	N/A	N/A	New conductor only
29	9	106194E	70	N/A	N/A	New conductor only
30	9	106195E	70	N/A	N/A	New conductor only
31	11	4170618E	85	N/A	N/A	New conductor only
32	11	4141436E	80	N/A	N/A	New conductor only
33	11	4141437E	75	N/A	N/A	New conductor only
34	13	4093351E	75	N/A	N/A	New conductor only

NA Not applicable.

Table 2
Wood Poles Replaced with Steel Poles & Conductor Replaced

#	Sheet Number	Former Pole Number	Former Pole Height (ft.)	New Pole Number	New Pole Height (ft.)	Notes
1	3	1235901E	70	4435013E	70	Pole replaced due to deterioration only.
2	3	1920853E	75	4435014E	75	Pole replaced due to deterioration only.
3	4	1238748E	70	4435105E	75	Pole replaced due to deterioration only. Existing pole had impaired phase clearance, would have been replaced with 5-foot taller regardless.
4	4	1238745E	70	4435016E	70	Pole replaced due to deterioration only.
5	4	1238738E	70	4435017E	70	Pole replaced due to deterioration only.
6	4	1823837E	70	4435018E	75	Replaced due to deterioration only. New pole 5-feet taller due to a "widow maker" having to be removed per engineering standards.
7	4	4093275E	80	4435019E	80	Pole replaced due to deterioration only.
8	5	106144E	70	4435020E	70	Pole replaced due to deterioration only.
9	5	106146E	70	4439108E	70	Pole replaced due to deterioration only.
10	5	106154E	70	4439109E	70	Pole replaced due to deterioration only.
11	6	106155E	70	4435021E	70	Pole replaced due to deterioration only.
12	6	106157E	70	4435022E	70	Pole replaced due to deterioration only.
13	7	106162E	70	4435023E	70	Pole replaced due to deterioration only.
14	7	106163E	70	4435024E	70	Pole replaced due to deterioration only.
15	7	2115767E	75	4435025E	75	Pole replaced due to deterioration only.
16	7	4170616E	80	4435026E	80	Pole replaced due to deterioration only.
17	7	1665177E	80	4435027E	80	Pole replaced due to deterioration only.
18	7	1723095E	80	4435027E	80	Pole replaced due to deterioration only.
19	7	2295420E	80	4435028E	80	Pole replaced due to deterioration only.
20	7	1723097E	75	4435029E	75	Pole replaced due to deterioration only.
21	7	1920983E	75	4435030E	75	Pole replaced due to deterioration only.
22	7	1920984E	75	4435031E	75	Pole replaced due to deterioration only.
23	8	1920988E	70	4435032E	70	Pole replaced due to deterioration only.
24	8	2116387E	70	4435034E	70	Pole replaced due to deterioration only.
25	8	106187E	70	4435035E	70	Pole replaced due to deterioration only.
26	9	2274919E	75	4423667E	75	Pole replaced due to deterioration only.
27	9	106193E	70	4435036E	70	Pole replaced due to deterioration only.
28	9	106197E	70	4435037E	75	Pole replaced due to deterioration only. This section of poles (six poles) increased to 75 feet due to line transitioning to 80 feet, and then to a 85-foot pole on the east side of this section.
29	9	106199E	70	4435038E	75	Pole replaced due to deterioration only. This section of poles (six poles) increased to 75 feet due to line transitioning to 80 feet, and then to a 85

30	9	106201E	70	4435039E	75	Pole replaced due to deterioration only. This section of poles (six poles) increased to 75 feet due to line transitioning to 80 feet, and then to a 85
31	10	106202E	70	4435040E	75	Pole replaced due to deterioration only. This section of poles (six poles) increased to 75 feet due to line transitioning to 80 feet, and then to a 85
32	10	2115768E	70	4435041E	75	Pole replaced due to deterioration only. This section of poles (six poles) increased to 75 feet due to line transitioning to 80 feet, and then to a 85
33	10	2115838E	70	4435042E	75	Pole replaced due to deterioration only. This section of poles (six poles) increased to 75 feet due to line transitioning to 80 feet, and then to a 85
34	10	2115769E	80	4435043E	80	Pole replaced due to deterioration only.
35	11	4141435E	85	4435044E	85	Pole replaced due to deterioration only.
36	11	2115772E	70	4435045E	70	Pole replaced due to deterioration only.
37	11	2295421E	70	4435046E	75	Pole replaced due to deterioration and long spans (247 west, 417 east), 5-foot taller pole installed due to increased sag with new wire.
38	11	646784E	70	4435047E	80	Pole replaced due to deterioration and long spans (417 west, 392 east), 10-foot taller pole installed due to increased sag with new wire.
39	11	646785E	70	4435048E	80	Pole replaced due to deterioration and long spans (391 west, 239 east), 10-foot taller pole installed due to increased sag with new wire.
40	12	646786E	70	4435049E	80	The spans on either side of this pole shorten (239 west, 229 east). Pole kept at 10-feet taller for continuity of line.
41	12	646787E	70	4435050E	75	Pole replaced due to deterioration. Span to east long (292). Pole 10-feet taller for extra sag.
42	12	646788E	70	4423851E	80	Pole replaced due to deterioration. Span to west long (292). Pole 10-feet taller for extra sag.
43	13	646789E	70	4423852E	80	Pole replaced due to deterioration. Span to east long (375). Pole 10-feet taller for extra sag.
44	13	646790E	70	4423853E	80	Pole replaced due to deterioration and long spans (375 west, 366 east), 10-foot taller pole installed due to increased sag with new wire.
45	13	2279207E	80	4423854E	85	Pole replaced due to deterioration. Span to south long (423). Pole 10-feet taller for extra sag.
46	13	787286E	65	4423855E	70	Pole replaced due to deterioration and long spans (271 south, 286 north), 10-foot taller pole installed due to increased sag with new wire.

47	13	787285E	80	4423856E	80	Pole replaced due to deterioration only.
48	13	787284E	60	4425346E	65	This pole replaced with an engineered steel pole due to increased tension and sag to the east. New pole is approximately 15-feet higher out of the ground.
49	6	106160E	70	4415693E	70	New conductor replaced recently. This pole was hit by a car on 12/04/03 and changed out then.
50	7	106165E	70	4423105E	70	New conductor replaced recently. This pole was hit by a car on 01/30/06 and changed out then.
51	7	4170617E	80	N/A	80	New conductor replaced recently. This pole replaced due to deterioration.

NA Not applicable.

Please review this description carefully. If you believe the project description is incorrect or does not include components that you intend to include as part of the project, please contact us immediately. Further review of the project will be limited to this project description unless you provide us with corrections within five (5) days of receipt of this letter. We reserve the right to request additional information to clarify any changes or additions that are made to the project description in response to this letter, as our completeness determination is based upon the material provided with your application.

Project Cost Estimate

Based upon our preliminary review, we estimate that processing of your project will require approximately 73 planner hours. There are also fees for hearings and noticing for a total estimate of $13,800 to complete P&D's action on the application as submitted, including time spent to date. Please refer to the enclosed Project Cost Estimate Worksheet for additional detail on this estimate. If unforeseen circumstances arise and we feel the cost estimate may be exceeded, we will inform you. Any security deposit balance remaining at completion of case processing will be refunded.

Starting next month, you will receive a monthly invoice for all unpaid charges on your account. You will be required to pay the invoice within 25 days. Non-payment of an invoice will result in staff stopping work and possible denial of the project.

Advisory Information

Based on our preliminary review of your application, we offer the following advisory statements:

1. Effective January 1, 2007, all environmental documents prepared by the County must be sent to the Department of Fish and Game for review and comment. The Department of Fish and Game charges a filing fee pursuant to section 711.4 of the California Fish and Game Code. These fees shall be paid at the end of the environmental review process prior to filing the Notice of Determination. Furthermore, pursuant to Section 711.4(c)(3) of the Fish and Game Code:

   "...no project shall be operative, vested or final, nor shall local government permits for the project be valid until the filing fees required pursuant to this section are paid."

If you have any questions regarding this letter, please call me at (805) 568-3508.

Sincerely,

Michelle Gibbs

Michelle Gibbs
Development Review Division, South

encl.: Project Cost Estimate

cc: Case File
Anne Almy, Supervising Planner
Nino Mascolo, Senior Attorney, Southern California Edison, 2244 Walnut Grove Avenue, Rosemead, CA 91770
Roger Schultz, Southern California Edison, 2131 Walnut Grove Avenue, PO Box 800, Rosemead, CA 91770
Jane Brown, Public Affairs, Southern California Edison, 103 David Love Place, Santa Barbara, CA 93117
Jeff Billingsley, Estimator, Southern California Edison, 25207 Rye Canyon Road, Santa Clarita, CA 91380
Tony Fischer, Attorney, 2208 Anacapa Street, Santa Barbara, CA 93105
Records Management, P&D
Paul Jenzen, Environmental Health
Martin Johnson, County Fire
Dale Weber, Flood Control
Claude Garciacelay, Park Department

Jeff Thomas, Building & Safety
William Robertson, Public Works Transportation
Michael Emmons, Surveyor
Vijaya Jammalamadaka, APCD
Accounting, P&D

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PLANNING AND DEVELOPMENT
PROJECT COST ESTIMATE WORKSHEET

Case Name: Santa-Clara Getty Line	**Case No.(s): 07CDH-00000-00025**
Prepared by & Date: September 7, 2007	**Supervisor Approval & Date:** 9/21/07

PLANNER LABOR CHARGES

Project Review Task	Estimated P&D Staff Hours				Total Hours	Rate $/hr	Cost
	Dev Rev	P&D Specialist	Comp Planning	Permit Compliance			
1. Application Completeness Review	8	0	0	0	8	129	$1,032.00
2. Committee Meeting Attendance (e.g.,SDRC, BAR, Ag Pres., etc.)	1	0	0	0	1	129	$ 129.00
3. Prepare Exemption	0	0	0	0	0	129	$ 0.00
4. Prepare/Finalize Initial Study	32	0	0	0	32	129	$4,128.00
5. Prepare/Release Draft ND/ND Addendum	4	0	0	0	4	129	$ 516.00
6. Finalize ND or ND Addendum	2	0	0	0	2	129	$ 258.00
7. Prepare EIR Scope of Work, RFP and contracts	0	0	0	0	0	129	$ 0.00
8. Prepare Draft EIR, Supplement or Addendum[1]	0	0	0	0	0	129	$ 0.00
9. Prepare Final EIR, Supplement or Addendum	0	0	0	0	0	129	$ 0.00
10. Prepare ZA or PC Staff Report	16	0	0	0	16	129	$2,064.00
11. Prepare Board Staff Report	0	0	0	0	0	129	$ 0.00
12. Attend ZA or PC Hearing	2	0	0	0	2	129	$ 258.00
13. Attend Board Hearing	0	0	0	0	0	129	$ 0.00
14. Post Decision Case Closure	8	0	0	0	8	129	$1,032.00
15. Other :	0	0	0	0	0	129	$ 0.00
Subtotal Planner Labor	*73*	*0*	*0*	*0*	*73*		***$9,417.00***

Note to Applicant: The breakdown above is for estimation purposes based on the most complex CEQA review required. P&D will not adjust the calculation estimates based on overestimation of time for a single task. Your bills will reflect actual work completed. Your planner will advise you if unforeseen circumstances arise which may require additional costs.

NON-SALARY COSTS

Activity	Fee	Number	Cost
16. Board of Architectural Review (Discretionary Case)	$691	0	$ 0.00
17. Board of Architectural Review – Summerland, Toro Canyon	$916	1	$ 916.00
18. Board of Architectural Review – Montecito	$965	0	$ 0.00
19. Environmental Review Hearing	$450	0	$ 0.00
20. P&D Director Decision	$225	0	$ 0.00
21. Consent Agenda (Zoning Admin. or Planning Comm.)	$225	0	$ 0.00
22. Zoning Administrator Hearing (not consent)	$300	0	$ 0.00
23. Montecito Planning Commission Hearing	$300	0	$ 0.00
24. Planning Commission Hearing (Regular, not consent)	$1000	1	$1,000.00
25. CEQA Document Noticing	$225	1	$ 225.00
26. Continuance (Applicant Requested)	$150	0	$ 0.00
27. No Hearing – Case Closure Fee	$55	0	$ 0.00
Other Non-Salary Charges *(These costs may not be known at the time the estimate is initially prepared)*			
28. Planning Commission Hearing (Special)	Actual Cost		$0.00
29. Other County Department Charges (APCD, EHS, Public Works[2])	Actual Cost		$2,250.00
30. Special Studies/Consultant Reports (Bio, Arc, Geo, Noise, Ag)	Actual Cost		$0.00
31. EIR Consultant Costs	Actual Cost		$0.00
32. In-house EIR Printing	Actual Cost		$0.00
33. Hearing Stenographer	Actual Cost		$0.00
34. Newspaper Display Advertisement	Actual Cost		$0.00
35. Other:	Actual Cost		$0.00
		Subtotal Non-Salary Cost	***$4,391.00***

Subtotal Planner Labor Cost	*Subtotal Non-Salary Cost*	*Total Estimated Cost (Round to next $1,000)*
$9,417.00	***$4,391.00***	***$13,808.00*** ( )

[1] For in-house EIR preparation. If work not done by P&D this will reflect cost of managing the EIR consultant.

[2] cc: Linda Bishop, Accounting.

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SOUTHERN CALIFORNIA EDISON

Santa-Clara Getty 66 kV Power Line Rebuild
Segment 4

Application for Coastal Development Permit
Requiring Public Hearing

Prepared for
Santa Barbara County
Planning & Development

April, 2008

SOUTHERN CALIFORNIA
EDISON
An EDISON INTERNATIONAL® Company

Ms. Julie Harris
Development Review Division
Planning and Development
County of Santa Barbara
123 East Anapamu Street
Santa Barbara, CA 93101-2058

April 30, 2008

Re: Application for Coastal Development Permit Requiring Public Hearing for Southern California Edison (SCE) Santa-Clara Getty 66 kV Power Line Rebuild Segment 4

Dear Ms. Harris,

SCE is submitting the enclosed application for a Coastal Development Permit Requiring Public Hearing for the replacement of 1.95 miles of existing 66 kV transmission line within the Santa Barbara County Coastal Zone. This application includes replacing twenty (20) existing lattice steel towers with sixteen (16) new tubular steel poles. This application, being filed with the County of Santa Barbara Planning Commission, seeks approval for the replacement of the 20 lattice steel towers with the 16 tubular steel poles.

SCE has conducted an archaeological resource survey for this project corridor; the survey report is attached to the Project Description, which is a part of the Coastal Development Permit Application. Two structures of the 20 existing structures, 18-2 and 18-3, are located within the Los Padres National Forest. A Forest Service authorization is necessary to conduct an archaeological resource survey. Therefore, SCE is pursuing the permit and will forward the amended archaeological survey report to the County after the survey of these two poles is completed.

The following items are included with this submittal for your evaluation:

- One (1) check payable to Planning & Development in the amount of $3,750.00
- Eight (8) copies of the completed Coastal Development Permit-Hearing Application
- Eight (8) copies of the Site Plan reduced to 11" x 17"
- Two (2) copies of the shaded Topographic Map plotted on 11" x 17"
- One (1) set of photos taken of the existing twenty (20) structures that are proposed to be replaced with sixteen (16) tubular steel poles
- Preliminary Rights Analysis for Santa Clara-Carpenteria 66 kV T/L
- One (1) Agreement to Pay Form.

Once you have had a chance to review this project that SCE would like to have a meeting with you to go over it and answer any questions you may have. Please feel free to contact me via e-mail at wendy.miller@sce.com or call me at (626) 302-9543 if you have any questions or need additional information.

Sincerely,

Wendy Miller

Wendy Miller
SCE Environment, Health & Safety

Coastal Development Permit-Hearing Application Form

COUNTY OF SANTA BARBARA

Planning and Development www.sbcountyplanning.org

COASTAL DEVELOPMENT PERMIT REQUIRING A PUBLIC HEARING

A COASTAL DEVELOPMENT PERMIT REQUIRING A PUBLIC HEARING (CDH) necessary for major public works and energy projects and for development that is proposed within the "geographic appeals jurisdiction area" as shown on County maps. Approval of this type of Coastal Development Permit may be appealed to the Board of Supervisors and ultimately the Coastal Commission.

THIS PACKAGE CONTAINS

✓ SUBMITTAL REQUIREMENTS
✓ APPLICATION FORM

AND, IF ✓'D, ALSO CONTAINS

☐ AGREEMENT FOR PAYMENT OF PROCESSING FEES
http://applications.sbcountyplanning.org/PDF/C/Agreement%20for%20Payment%20Modified%20%202003.pdf
☐ PLAN AND MAP REQUIREMENTS http://applications.sbcountyplanning.org/PDF/C/Site%20Map%20Requirements%20Form.pdf
☐ AGRICULTURAL ACTIVITIES SUPPLEMENT
http://applications.sbcountyplanning.org/PDF/C/Ag%20Activities%20Supplement%20Form.pdf
☐ GREENHOUSE SUPPLEMENT
http://applications.sbcountyplanning.org/PDF/C/Greenhouse%20Supplemental%20Questionnaire%20Form.pdf
☐ HAZARDOUS WASTE AND MATERIALS INFORMATION FORM
http://applications.sbcountyplanning.org/PDF/C/Hazardous%20Waste%20Materials%20Supplement%20Form.pdf

South County Office
123 E. Anapamu Street
Santa Barbara, CA 93101
Phone: (805) 568-2000
Fax: (805) 568-2030

Energy Division
123 E. Anapamu Street
Santa Barbara, CA 93101
Phone: (805) 568-2040
Fax: (805) 568-2522

North County Office
624 W. Foster Road, Suite C
Santa Maria, CA 93455
Phone: (805) 934-6250
Fax: (805) 934-6258

Website: www.sbcountyplanning.org

SUBMITTAL REQUIREMENTS

____ 8 Copies of completed application form

____ 8 Copies of the Site Plan **FOLDED TO 8½" X 11"**
http://applications.sbcountyplanning.org/PDF/C/Site%20Map%20Requirements%20Form.pdf

____ 1 Copy of the Site Plan Reduced to 8½" x 11"

____ 8 Sets of floor plans and building elevations. **FOLDED TO 8½" X 11"**

____ 2 Copies of the shaded Topographic Map,
http://applications.sbcountyplanning.org/PDF/C/Site%20Map%20Requirements%20Form.pdf

____ 1 Set of photos taken from three vantage points:

- close-up
- mid-field
- entire project site.

NO BLACK & WHITE XEROX COPIES

Minimum requirements for submittal:

- mount the photos on heavy 8 1/2" x 11" paper
- orient the viewer by direction ("looking northwest from...")
- note any landmarks

____ 1 Check payable to Planning & Development.

____ 1 Source of water supply and Intent to Serve Letter from serving water district

____ 1 Legal description of the property taken from a title report, the County Recorder's office, or your recent deed.

____ 1 Agreement to Pay Form.
http://applications.sbcountyplanning.org/PDF/C/Agreement%20for%20Payment%20Modified%20%202003.pdf

NOTES:

1) If you had a pre-application meeting and submittals were recommended as a result of that meeting, your application may not be called complete until those items are also submitted.

PLANNING & DEVELOPMENT
PERMIT APPLICATION

SITE ADDRESS: Santa Clara Getty 66KV Transmission Line

ASSESSOR PARCEL NUMBER: N/A

PARCEL SIZE (acres/sq.ft.): Gross N/A Net N/A

COMPREHENSIVE/COASTAL PLAN DESIGNATION: N/A ZONING: Residential

Are there previous permits/applications? ☒no ☐ yes numbers:______ (include permit# & lot # if tract)

Did you have a pre-application? ☒ no ☐ yes if yes, who was the planner? ______

Are there previous environmental (CEQA) documents? ☒ no ☐yes numbers: ______

1. **Financially Responsible Person** Roger Schultz Phone: (626) 302-8135 FAX: (626) 302-8267
(For this project)
Mailing Address: 2131 Walnut Grove Ave., P.O. Box 800 (Street) Rosemead (City) CA (State) 91770 (Zip)

2. **Owner:** Southern California Edison (SCE) Phone:______ FAX:______
Mailing Address: 2244 Walnut Grove Ave., Rosemead, CA 91770 (Street City State Zip) E-mail: roger.schultz@sce.com

3. **Agent:** SCE Phone:______ FAX:______
Mailing Address:______ (Street City State Zip) E-mail:______

4. **Arch./Designer:** SCE Phone:______ FAX:______
Mailing Address:______ (Street City State Zip) State/Reg Lic# ______

5. **Engineer/Surveyor:** Jeff Billingsley - Transmission Design Manager Phone: (661) 294-1524 FAX: (661) 294-1578
Mailing Address: 25207 Rye Canyon Rd. Santa Clarita, (Street City) CA (State) 91380 (Zip) State/Reg Lic# N/A

6. **Contractor:** SCE Phone:______ FAX:______
Mailing Address:______ (Street City State Zip) State/Reg Lic# ______

7. **Soils Lab:** N/A Phone:______ Reg.______
Mailing Address:______ (Street City State Zip) State/Reg Lic# ______

PARCEL INFORMATION: (Check each that apply. Fill in all blanks or indicate "N/A")

1. **Existing Use:** ☐Agric ☐Residential ☐Retail ☐Office ☐Indus ☐ Vacant ☒ Other
2. **Proposed Use:** ☐Agric ☐Residential ☐Retail ☐Office ☐Indus ☒ Other
3. **Existing:** # of Buildings: N/A Gross Sq. Ft: N/A # Res. Units: N/A Age of Oldest Struct.:
4. **Proposed:** Project: Gross Sq. Ft.: N/A # Res. Units
5. **Grading (cu. yd.):** Cut 3,625 Fill ______ Import______ Export ______ Total: ______

Total area disturbed by grading (sq. ft. or acres): ______

COUNTY USE ONLY

*Case Number:*______ *Companion Case Number:*______
*Supervisorial District:*______ *Submittal Date:*______
*Applicable Zoning Ordinance:*______ *Receipt Number:*______
*Project Planner:*______ *Accepted for Processing*______
*Zoning Designation:*______ *Comp. Plan Designation*______

For all questions below, attach additional sheets if necessary, referencing the section and question number. Please fill in every blank. Use "N/A" where question is not applicable.

II. PROJECT DESCRIPTION: Please use the space below or type on a separate sheet and attach to the front of your application a complete description of your request including the permit/decision requested, location, setting, and purpose of the project.

Please see the attached Project Description included in **Attachment 1.**

III. GRADING: Will there be any grading associated with the project? Y N

If yes, answer below. If no, go to ACCESS.

(NOTE: For proposed access drives over 12% grade, a clearance letter from the Fire Dept. will be required)

CUT 3,625 cubic yards AMOUNT TO BE EXPORTED ________ c.y.

FILL ________ c.y. AMOUNT TO BE IMPORTED ________ c.y.

MAXIMUM VERTICAL HEIGHT OF CUT SLOPES ________

MAXIMUM VERTICAL HEIGHT OF FILL SLOPES ________

MAXIMUM HEIGHT OF ANY PROPOSED RETAINING WALL(S) ________

TOTAL AREA DISTURBED BY GRADING (sq. ft. or acres) ________

What is the address of the pick-up/deposit site for any excess cut/fill?

SCE will work with County staff to determine the appropriate deposit site for this project. Excess soil will be deposited outside of the Coastal Zone in an approved disposal site.

Specify the proposed truck haul route to/from this location.

SCE will determine and report the proposing truck haul route to County when the deposit site has been set up.

IV. ACCESS

A. Existing: Describe the existing access road(s) to the site. Include road widths, shoulders, and type of surface material.

All poles are accessed by Highway 150 or local streets.

B. Proposed: Described any proposed access to the proposed building site(s). Include road width, shoulders, and type of surface material proposed.

All poles are accessed by Highway 150, Casitas Pass Road or other local streets.

C. Does property front on a public street? Y N

Is access to be taken from this public street? Y N

Name of public street: Casitas Pass Road and Highway 150.

D. Describe any proposed street improvements including paving, curbs and gutters, sidewalks, street trees, street-name signs, stop signs, street lighting, bus stops and fire hydrants.

N/A

E. Will the proposed access utilize an easement across neighboring property? Y* N

***Submit documentation that supports the applicant's use of this easement.**

SCE owns in fee or has easements across all private land upon which the transmission line is located. For locations on city or county property, SCE facilities are generally authorized under franchise from the local government. For the facilities located on U.S. Forest Service property, SCE holds a Special Use Permit. Please see the attached example of a Grant of Easement that is representative of the rights we hold for the project area.

F. Describe proposed construction equipment access.
All construction access (i.e. standard line trucks) will be performed from existing access roads or within SCE's easement area.

V. DEVELOPMENT AND USE

A. Existing: Describe the existing structures and/or improvements on the site.

Use	Size (sq ft)	Height	# of Dwelling Units

Total twenty (20) lattice steel towers on the project site are proposed to be replaced within the coastal zone in Santa Barbara County. Please see the Table 1 and Table 2 in Attachment 1.

B. Proposed: Describe the proposed structures and/or improvements.

Use	Size (sq ft)	Height	# of Dwelling Units

Total sixteen (16) new tubular steel poles are proposed to be constructed within the coastal zone in Santa Barbara County. Please see Table 1 and Table 2 in Attachment 1.

C. Will any structures be demolished or removed? Y If so, please list them here as requested.

Current Use	Historic Use	Age	Rental Price (if rented)

Twenty (20) lattice steel poles within the costal zone in Santa Barbara County will be replaced with sixteen (16) new tubular steel poles (please see Attachment 1, Tables 1 and 2). All the former and new pole numbers are listed in the two tables.

D. Describe all other existing uses of the property.
Existing land use surrounding the SCE right-of-way includes residential, agricultural, vacant land and USFS land. SCE land entitlements preclude the presence of structures which may interfere with transmission line operations.

E. How will the project affect the existing uses of the property?
This project will not affect existing uses of the property, because the new tubular steel poles replace the lattice steel towers that have existed within the right-of-way for many years.

F. Describe any other historic use(s) of the property. This may include agricultural (include crop type), commercial, or residential uses.
N/A – same as existing use

G. Provide a short description of the land uses surrounding the site.
The property in the area is generally residential, agricultural, vacant land, USFS land or State Highway 150.
North ______
South ______
East ______
West ______

H. STATISTICS: Mark each section with either the information requested or "n/a" if not applicable.

	EXISTING	**PROPOSED**	**TOTAL**
TOTAL BUILDING COVERAGE ON THE SITE, INCLUDING COVERED PARKING AND ACCESSORY STRUCTURES (sq. ft.)	n/a	n/a	n/a
STRUCTURES (sq. ft.)	n/a	n/a	n/a
ROADS/PARKING/WALKWAYS (sq. ft.)	n/a	n/a	n/a
OPEN SPACE (sq. ft.)	n/a	n/a	n/a
RECREATION (sq. ft.)	n/a	n/a	n/a
LANDSCAPING (sq. ft.)	n/a	n/a	n/a
UNPAVED TRAILS (sq. ft.)	n/a	n/a	n/a
AGRICULTURAL LANDS (sq. ft.)	n/a	n/a	n/a
POPULATION (#)	n/a	n/a	n/a
(employees/residents) DWELLING, HOTEL/MOTEL UNITS	n/a	n/a	n/a
MAX HEIGHT OF STRUCTURES (ft.)	120'	140'	140'
WATER WELLS (#)	n/a	n/a	n/a
SEPTIC SYSTEMS (#)	n/a	n/a	n/a
PARKING (on-site)			
TOTAL # OF SPACES	n/a	n/a	n/a
# OF COVERED SPACES	n/a	n/a	n/a
# OF STANDARD SPACES	n/a	n/a	n/a
SIZE OF STANDARD SPACES	n/a	n/a	n/a
# OF HANDICAPPED SPACES	n/a	n/a	n/a

TOTAL AREA OF IMPERVIOUS SURFACES (SQ. FT./ACRES)	n/a	n/a	n/a

Estimate the cost of development, excluding land costs. $ 1,000,000.00

VI. SITE INFORMATION

A. Is this property under an Agricultural Preserve Contract? Y N

B. Describe the soil characteristics.

N/A

C. Describe any unstable soil areas on the site.

NONE

D. Name and describe any year round or seasonal creeks, ponds, drainage courses or other water bodies. How runoff is currently conveyed from the site?

NONE

E. Has there ever been flooding on the site? Y N

If yes, state the year and describe the effect on the project site.

F. Describe any proposed drainage and/or flood control measures. How will storm water be conveyed across and from the site? Where will storm water discharge?

N/A

G. Will the project require the removal of any trees? Y N

If so, please list them here as requested. Attach additional sheets as necessary.

Type	Diameter (at 4' height)	Height

Explain why it is necessary to remove these trees.

H. Describe the wildlife known to inhabit or frequent the site.

Please see attached Sensitive Species Survey Report for Santa Clara-Getty 66kV Rebuild Project which was completed in October 2007 **(Attachment A).**

I. Describe any noise sources that currently affect the site.

N/A

J. Are there any recorded prehistoric or historic archaeological sites on the property or on neighboring parcels? Y N Unknown

If yes, describe.

Please see attached Phase I Cultural Resource Investigation Report for Santa Clara-Getty 66 kV Transmission Line Re-conductor Project, which was completed in April 2006 (**Attachment C**). Structures 18-2 and 18-3 will be surveyed for cultural resources after approval is received from the Los Padres National Forest. In addition, the report will be submitted to the County afterwards.

K. Describe all third party property interests (such as easements, leases, licenses, rights-of-way, fee ownerships or water sharing agreements) affecting the project site, provision of public utilities to the site or drainage off the site.

L. Will any other agencies (such as CA Fish & Game, US Fish & Wildlife, Army Corp. of Engineers, Regional Water Quality Control Board) require permits for the project? If so, list them here.

Structures 18-2 and 18-3 are located within the Los Padres National Forest. Therefore, an approval is necessary to perform archaeological surveys of the tower locations prior to replacing the structures.

M. Have you incorporated any measures into your project to mitigate or reduce potential environmental impacts? Yes If so, list them here. (Examples include tree preservation plans, creek restoration plans, and open space easements.)

Mitigation measures are identified in the attached Sensitive Resource Survey and incorporated into the project design and construction.

N. Describe measures that will be incorporated into the project design to address storm water quality (e.g., protect riparian corridors, reduce runoff, reduce directly connected impervious areas, eliminate pollutant sources, etc).*

* Refer to Best Management Practices handbooks such as "Start at the Source" by Bay Area Stormwater Management Agencies Association, 1999 and on the Internet at www.epa.gov/npdes/menuofbmps.htm. Also handouts at the counter developed by Project Clean Water.

N/A

VII. PARCEL VALIDITY

P&D will not accept an application for development on vacant, unimproved property without clear evidence that the property is a separate legal lot. Acceptable evidence of a separate legal lot include any of the following which show the subject property in it's current configuration: a recorded Parcel or Final Map, a recorded Certificate of Compliance or Conditional Certificate of Compliance, an approved Lot Line Adjustment, a recorded Reversion to Acreage, a recorded Voluntary Merger or an approved Lot Split Plat.

A. Type of evidence provided to demonstrate a separate, legal lot: N/A

Copy of evidence attached: ☐Yes ☐No

Reference number for evidence supplied: N/A

B. Date current property owner acquired the property: N/A

C. Date property was acquired in its present configuration: N/A

D. Does the applicant own adjacent property?

Address(es): N/A

E. Is this parcel part of property that the applicant previously subdivided?

Map Number: N/A Deed Number: N/A

VIII. PUBLIC/PRIVATE SERVICES

A. WATER:

Existing: N/A

1. If the property is currently served by a private well, submit the following for each well:
   a. Pumpage records (electrical meter or flow meter readings) for the past 10 years
   b. pump test data
   c. location of other wells within 500 feet
   d. water quality analysis
   e. drillers report (with construction details)
   f. copy of applicable well sharing agreement

2. Does the well serve other properties? Y N

   If yes, address(es):

3. If the property is currently served by a private or public water district, submit the following:
   a. Name: N/A
   b. District/Company meter records for the past 10 years.

Proposed:

4. Will the project require annexation to a public or private water company? Y N

   If yes, name:

5. Is a well proposed? Y N If so, will it serve other properties? Y N

   If yes, address(es): ____________________

B. SEWAGE DISPOSAL:

1. Existing: Indicate if the property is <u>currently</u> served by the following:

	Yes/No	
a. septic system*	No	
b. drywell*	No	
c. public sewer district	No	If yes, name: ____________

*Submit engineering details on septic tanks and dry wells, as well as calculations for leach field size, where applicable.

2. Proposed: Indicate what sewage disposal services are <u>proposed</u> as part of this project?

a. septic system*	N/A	
b. drywell*	N/A	
c. public sewer district	N/A	District Name: ____________

*Submit percolation tests and/or drywell performance tests as applicable.

3. Will the project require annexation to any public sewer district? Y N

   Name: ____________________

C. FIRE PROTECTION

1. Is the project in a high fire hazard area? Circle one: Yes No
2. Fire protection is (will be) provided by the S.B County Fire Department.
   (Montecito, Summerland, S.B. County)
3. Is there an existing water main infrastructure in the vicinity? Circle one: Yes No
4. How far away is the nearest standard fire hydrant? N/A feet.
5. If not, is a new fire hydrant proposed? Circle one: Yes No
6. If a new hydrant is proposed, what is the longest driving distance from the proposed hydrant to the proposed building(s)? __________ feet.
7. Will fire protection be provided by an on-site water storage tank? Circle one: Yes No

   Tank capacity: ________ gallons
8. What is the driving distance from the water tank to the proposed structure(s)? ________ feet.

9. Is a fire sprinkler system proposed? Yes No Location ______________________

10. Describe the access for fire trucks. Include width and height clearance for access and surface material.

____

____

11. Will hazardous materials be stored or used? Y/ N

List any hazardous material which may be used or stored on the site.

____

D. UTILITIES:

1. For each of the following service improvements note whether it currently exists on the project site or will be required to accommodate the proposed development:

		Currently Exists	Required
_____	Sewer	N/A	N/A
_____	Water meter	N/A	N/A
_____	Septic system	N/A	N/A
_____	Water well	N/A	N/A
_____	Power lines	Yes	Yes
_____	Water storage tanks (size:__________)	N/A	N/A
_____	Telephone lines	N/A	N/A
_____	Storm drains	N/A	N/A
_____	Other	N/A	N/A

(**Note:** Staff may require information regarding the location, depth, and width of trenching)

E. SCHOOLS: For projects within existing or proposed residential zone districts, provide the names of the elementary, high and unified school districts serving the project site.

Elementary: N/A

High School: N/A

Unified School: N/A

Please include any other information you feel is relevant to this application.

CERTIFICATION OF ACCURACY AND COMPLETENESS Signatures must be completed for each line. If one or more of the parties are the same, please re-sign the applicable line.

Applicant's signature authorizes County staff to enter the property described above for the purposes of inspection.

I hereby declare under penalty of perjury that the information contained in this application and all attached materials ere correct, true and complete. I acknowledge and agree that the County of Santa Barbara is relying on the accuracy of this information and my representations in order to process this application and that any permits issued by the County may be rescinded if it is determined that the information and materials submitted are not true and correct. I further acknowledge that I may be liable for any costs associated with rescission of such permits.

Print name and sign – Firm Date

Print name and sign - Preparer of this form Date

Wendy Miller Wendy Miller 4/24/08

Print name and sign - Applicant Date

Print name and sign - Agent Date

Print name and sign - Landowner Date

Attachment 1

Project Description

Power Pole Replacement Santa Clara-Getty 66 kV Transmission Line Project

Introduction/Background

Southern California Edison (SCE) proposes to replace an existing 10.91-mile segment of a 66 kilovolt (kV) power line within Santa Barbara and Ventura Counties. Approximately 5.72-miles of this power line is located in Santa Barbara County and the remainder is in Ventura County. Within Santa Barbara County, 1.95 miles of this project is located within the coastal zone, and 3.77 miles is outside the coastal zone.

Within Santa Barbara County, SCE proposes to replace forty-one (41) existing lattice steel towers and nine (9) existing wood pole structures with forty (40) tubular steel poles. This work will include replacing approximately 26,500 circuit feet of conductor (2/0 copper, 4/0 copper and 653.9 ACSR) with larger diameter 954 ACSR conductor.

Out of the forty (40) proposed tubular steel poles in Santa Barbara County, twenty-four (24) are located outside the coastal zone and sixteen (16) are within the costal zone. SCE is filing this Coastal Development Permit (CDP) application at the request of the County of Santa Barbara's Planning Department to seek approval for the 16 replacement tubular steel poles within the coastal zone.

Project Purpose

Replacement of the 10.91-mile segment of power line would provide vital "backup" capacity to ensure continuity of service to the greater Santa Barbara County area using the 66,000 volt (66 kV) system in the event of a catastrophic failure of the 220,000 volt (220 kV) system that normally feeds the load within the county.

Under normal conditions, the load in Santa Barbara County is fed from the 220 kV Santa Clara Substation (near the north end of Wells Road in Saticoy, east of Ventura) using the Goleta-Santa Clara No. #1 and No. #2 220 kV lines from Santa Clara Substation to Goleta Substation (at the north end of Glen Annie in Goleta). The 220 kV power is transformed, or "stepped down" to 66 kV at the Goleta Substation, and is then fed to several substations within the County. From those substations, the voltage is lowered again to a distribution voltage of either 4 kV, or 16 kV, and is again stepped down to secondary voltages in the field and then distributed to our customers. SCE does have customers that take service at 66 kV within the County (i.e. the desalination plant on Yanonnali; Onshore Substation, which is adjacent to Sandpiper Golf Course in Isla Vista; and the Exxon refinery near El Capitan State Beach).

The Ventura area is served in much the same way from the Santa Clara Substation. The Santa Barbara and Ventura areas are split into separate systems; the Goleta system and the Santa Clara system. The difference between the two systems is that the Santa Clara system is fed by multiple lines to multiple systems and generation to the south and east. Whereas, the Goleta system located near the west end of SCE service territory, has only one feed - the 220 kV lines from the Santa Clara Substation. While both the Goleta and Santa Clara systems operate independently, there are connection points within the 66 kV system that tie the two systems together in the event of a catastrophic failure at Goleta Substation or of the two 220 kV lines feeding Goleta Substation. The Santa Clara 66 kV system, with this upgrade, would be capable of providing the majority of power to south Santa Barbara County SCE customers until the Goleta Substation or 220 kV lines are brought back on-line.

A study performed in 1998 determined that the capacity of the 66 kV system tie lines between the Goleta and Santa Clara systems needs to be increased to support the load in Santa Barbara County in the event of the loss of the 220 kV lines. SCE refers to that scenario as an N-2 condition (N = normal operation, -2 = the loss of two 220 kV lines feeding the county). In an N-2 condition affecting the 220 kV lines, the load in Santa Barbara would have to be fed solely by the 66kV system, and would be supplied by the Santa Clara 66 kV system in Ventura. The nearest substation in Santa Barbara County to Santa Clara Substation is the Carpinteria Substation. Replacing the existing 66 kV conductor between these two substations with a larger conductor would allow the 66 kV system to provide greater electrical support to the Santa Barbara area during an N-2 scenario. Consequently, installing a large, and heavier conductor, requires replacing the lattice structures with tubular steel poles as the lattice structures are not designed to support the larger conductor. Also, SCE determined that this proposed work along the existing routes between the two substations was preferred over acquiring additional right-of-ways for new routes and designing and/or constructing additional transmission lines into Santa Barbara County. Within the upgrade to the existing 66 kV system, additional power would then be available for transmission from the Santa Clara system to Carpinteria Substation, within the Goleta system, and then in turn on to various substations throughout the Goleta system in the event of an emergency.

It should be noted that the new conductor will not be installed to serve an expanding customer base under normal operating conditions, but to maintain service over SCE's entire service territory within the Goleta system during an N-2 condition emergency. This should enable SCE to provide power to more customers than is currently possible while repairs are being made to the 220 kV system.

SCE has broken the project route into three sections within Santa Barbara County. The project route passes through the Santa Barbara County coastal zone in two of those sections, with a third (middle) section being completely outside the coastal zone. One section within the coastal zone is just northwest of the county line, and the second section within the coastal zone is located where the power line comes south out of the mountains towards Carpinteria Substation.

The details are listed below for all forty-nine (49) existing structures and the forty (40) proposed structures within Santa Barbara County project area:

Table 1: Structure within Costal Zone

Item #	***Existing Structure Number***	***Existing Structure Height (ft.)***	***Construction #***	***Proposed Structure Number***	***Proposed Structure Height (ft.)***	***Notes***
			Section 1			
1	18-2	80	103	4452927	115	
2	18-3	80	104	4452928	130	Approximately 740 yd^3 soil will be cut to re-establish the access road.
3	18-4	80	105	4452929	120	Approximately 1,900 yd^3 soil will be cut to re-establish the access road.
4	18-5	80	105a			This tower will be eliminated.
5	19-1	80	106	4452930	135	Approximately 185 yd^3 soil will be cut/balance to re-establish the access road.
6	19-2	80	107	4452931	135	Approximately 800 yd^3 soil will be cut to re-establish the access road.
7	19-3	80	108	4452932	90	
8	19-4	57	109	4452933	90	
9	Wood Poles		109a			Two wood poles to be

Item #	Existing Structure Number	Existing Structure Height (ft.)	Construction #	Proposed Structure Number	Proposed Structure Height (ft.)	Notes
						eliminated east of and adjacent to this location.
10	19-5	55	110	4452934	90	
			Section 3			
11	0-7 (a)	70	133	4423650	85	
12	0-6	90	134	4423651	110	
13	0-5	85	135	4423652	110	
14	0-4	80	136	4423653	100	
15	0-3	65	137	4423654	75	
16/17	1526338 / 1526339	60 / 60	142	4423659	75	Two poles switches from separate wood poles combined onto one TSP.
18/19	1526340 / 1526337	60 / 50	141	4423658	85	Two poles switches from separate wood poles combined onto one TSP.
20	Getaway Lattice	60	138	4423655	95	No existing structure number.

Table 2: Structure Located Outside Costal Zone

Item #	Existing Structure Number	Existing Structure Height (ft.)	Construction #	Proposed Structure Number	Proposed Structure Height (ft.)	Notes
			Section 2			
1	10-5	45	111	4452935	95	
2	10-6	55	112	4452936	75	
3	11-1	45	113	4452937	125	
4	11-2	50	113a			This tower will be eliminated.
5	11-3	45	114	4452938	125	
6	11-4	50	114a			This tower will be eliminated.
			115	4452939	120	Between 11-4 and 11-5.
7	11-5	45	115a			This tower will be eliminated.
8	11-6	45	116	4452940	85	
9	11-7	45	117	4452941	70	
10	11-8	45	118	4452942	70	
11	11-9	45	119	4452943	70	
12	12-1	40	120	4452944	70	
13	12-2	55	121	4452945	110	
14	12-3	45	121a			This tower will be eliminated.
15	12-4	40	122	4452946	120	
16	12-5	45	123	4452947	95	
17	12-6	85	124	4452948	100	Line turns south from this pole.
18/19	1208732 / 1208733	50 / 60	139	4423656	100	This pole replaces a weed switch pole and wood barre corner (bear damaged).
20/21	1208734 /	65/70	140	4423657	70	Switch pole on Desal

Item #	Existing Structure Number	Existing Structure Height (ft.)	Construction #	Proposed Structure Number	Proposed Structure Height (ft.)	Notes
	12-SP6 (Lattice Pole)					Line. This pole replaces the lattice pole and adjacent wood pole.
22	1-6	85	125	4452950	125	
23	1-5	105	126	4423643	120	
24	1-4	85	127	4423644	85	
25	1-3	120	128	4423645	115	
26	1-2	129	129	4423646	80	
27	1-1	70	130	4423647	95	
28	0-8	75	131	4423648	75	
29	0-7	70	132	4423649	95	

Alternatives

As requested by the County of Santa Barbara, SCE considered alternatives that would avoid or substantially lessen any potential aesthetic impacts of the project.

Reconstruction within a new right of way:
Reconstruction of the existing Santa Clara-Getty 66 kV transmission line within a new right of way in a different location would require the acquisition of new easements, not to mention result in construction activities and environmental impacts throughout currently undisturbed area. Construction within a new right of way would create new aesthetic impacts in different areas, while the existing route would still be required to maintain existing communication and power lines. A new route would also result in greater land use, biological, cultural resource, and other environmental impacts due to new disturbances. The existing transmission line lies entirely within existing utility right of way on already disturbed land. Therefore, any alternative route outside of the existing utility right of way would result in significantly greater environmental impacts than the current proposed route and was eliminated from further consideration in this document.

Undergrounding:
In addition, undergrounding the transmission line was also considered. However, placing this line underground would result in more environmental impacts and orders of magnitude than the proposed project. Additionally, there are significant physical restrictions on undergrounding imposed by the topography of the area. The cost of installation of underground lines is cost prohibited due to the many slopes/grades and rocky areas in the project corridor. Therefore, an underground alternative was eliminated from further consideration.

Environmental Impacts and Mitigation Measures

According to the Biological Survey Report, the proposed project is not expected to impact any sensitive wildlife and plant species that may occur in the project area (Attachment A - Biological Survey Report). The project construction effort will be contained in an area adjacent to existing transmission tower pads, access roads, and other previously disturbed areas, thus the impact will be minimized.

Re-establishing access roads would be needed for only four structures located within the Coastal Zone. An explanation of the proposed grading at each site is attached with this application. (Attachment B – Proposed Grading Plan).

SCE will implement a biological resources monitoring program prior to and during construction. A qualified biologist will be assigned to flag sensitive biological resources for avoidance during construction and will work with construction managers to minimize habitat loss and disturbance to sensitive species.

A Phase I Cultural Resource Investigation and surface reconnaissance of the proposed project was conducted between October 22, 2005 and April 10, 2006. No cultural resources, either prehistoric or historical, were observed in the vicinity of, adjacent to, or along the immediate approach avenues employed at any of the project structures examined (Attachment C – Archaeological Survey Report). The proposed project will have no impact on cultural resources, and no additional studies are recommended at this time. However, in the event that cultural resources are encountered during any future earth disturbing activities, all work must halt at the location until the resources can be properly evaluated by a qualified archaeologist.

Sensitive Resource Survey Santa Clara-Getty 66kV Rebuild Project

For:

Southern California Edison
Environment, Health & Safety
Rosemead, CA

By:

BioResource Consultants
P.O. Box 1539
Ojai, California 93024

October 2005

1.0 INTRODUCTION

Southern California Edison (SCE) is considering replacing or upgrading a portion of its Santa Clara-Getty 66 kV line. The poles scheduled for replacement follow a westerly course starting at intersection of SR150 and SR192 and ending at SCE's Carpinteria Substation.

This document describes the results of field surveys of the natural vegetation and special-status plant and wildlife species conducted in 1999-2000 for 85 poles located along Southern California Edison's (SCE) Santa Clara-Getty 66 kV transmission line. In addition, qualified BRC biologists revisited the sites for a reconnaissance-level assessment on October 30, 2005. This latter effort was mainly to determine if the general habitat at the sites had changed since the earlier, more detailed surveys completed in 1999-2000, which were intended to determine the potential and actual occurrence of any special-status plant and wildlife species at pole or tower sites that were then proposed for upgrading.

2.0 STUDY AREA

This survey is focused on 85 power poles/towers located along the Santa Clara-Getty 66 kV transmission line that starts at the intersection of SR150 and SR192 and runs west along SR192 to intersect the Santa Clara-Carpinteria 66 kV transmission line.

A detailed survey of this line was conducted in 1999-2000 to determine the presence of any special-status species or habitats at each of the transmission poles/towers along this circuit.

Biological resources, particularly special-status species and sensitive habitats, were surveyed within a 50-foot radius of each pole or tower. The pole numbers listed in this document are the ones recorded during the 1999-2000 surveys. Most pole numbers had changed as of October 30, 2005.

3.0 METHODS

The initial field surveys were completed between 17 May and 28 June 1999. A team of two qualified biologists (one botanist and one wildlife biologist) traveled to each of the 85 towers and conducted a reconnaissance level survey. In addition, a qualified BRC biologist revisited the sites on October 30, 2005.

To determine the presence (or absence) of most wildlife species requires intensive field sampling and observation. Since this was mainly a reconnaissance level survey, the approach was to determine the habitat types present relying on a standard vegetation classification system (Sawyer and Keeler-Wolf 1995) and to associate wildlife occurrence with the presence or absence of habitats that would predict the occurrence of individual wildlife species.

After an orientation meeting with SCE personnel familiar with the project study area, the fieldwork was scheduled and initiated. Traveling in a single off-road vehicle, the team drove SCE maintenance roads or public roads to reach the nearest point possible to each tower. Usually after a short hike, the base of each tower was inspected for a radius of approximately 50 feet. The focus of the surveys was to determine the presence or absence of sensitive plants and animals and to determine the habitat types present. The sensitive plant surveys completed in 1999-2000 were timed to include when there was a high probability of seeing flowering plants. The biologists used standardized field forms to record all observations. These data were later transferred into a computerized database using Microsoft Excel©.

3.1 Vegetation Mapping Protocols and Classification

Sawyer and Keeler-Wolf (1995) present the California Native Plant Society's (CNPS's) approach to hierarchical classification, in *A Manual of California Vegetation*, and it is the classification approach that is followed for the purposes of this report. Several (approximately 50%) of the plant communities observed during the field surveys are described as 'series' by Sawyer and Keeler-Wolf (1995). Their approach to hierarchical classification of vegetation forms a base line for the vegetation classification at the SCE tower sites, in which the most important units of conservation in any vegetative hierarchy are the floristically based series (or plant communities).

Floristic components of classification include the individual plant taxa that contribute to the vegetation occupying an area, and they form the different plant communities (or series). Although all plant communities observed during the field survey are not described by Sawyer and Keeler-Wolf (1995), the newly observed plant communities are easily classified and named according to the same hierarchical protocols described by them. The three terms (vegetation type, plant community, and plant association) used to describe the vegetation, its floristic components, and the characteristics of each term are described below.

A vegetation type is a broad vegetative unit that is not floristically based, but is defined by stand structure and physiognomic features that are characteristic of the general vegetation. Stand-structure is represented by *growth form* (i.e., trees form woodlands, shrubs form shrublands of either scrub or chaparral, and herbs/grasses form grasslands) and *habit* (i.e., woody, semi-woody, or herbaceous).

A plant community is a more defined vegetative unit that is characterized and named according to the vegetation's *dominant species*. More specifically, plant communities are defined by the one dominant plant taxon that contributes to the greatest percent ground cover and/or *canopy cover* (open, intermittent, or closed/continuous). This class is usually *floristically-based* (i.e. Purple Needlegrass Perennial Grassland), in which the plant community name specifies a dominant taxon; however, this class may not always be floristically based.

A plant community may also be classified according to more defined *habit* characteristics (i.e., annual [California Annual Grassland], biennial, or perennial; sclerophyll-leaved or soft-leaved; etc.), or can be classified into more descriptive units based on origin (Ruderal Grassland) or flower displays (Wildflower Field). These plant communities do not specify a dominant plant taxon in the name, but they are more defined grassland units, and for the purposes of this report, are considered plant communities.

Table 1 lists all plant communities observed making up the four vegetation types within the SCE survey area. Each community is an assigned class code used in the tables in Appendix D.

The plant association is a detailed vegetative unit that is always floristically based with either one dominant species, plus one or more important associate species, or two *co-dominant* species plus one or more associate species. Co-dominants are two plant taxa that are equally important contributors to the overall percent ground cover, in which neither species is dominant over the other.

Table 1. Plant communities observed and class codes.

Ruderal Grassland	GR	Commercial Buildings/Nursery	CN
Lemonadeberry Chaparral	CL	Poison Oak Scrub	SPO
Arroyo Willow Woodland	WAW	Agricultural Orchard	O
California Sycamore Woodland	WCS	Agricultural Row Crops	RC
Coast Live Oak Woodland	WLO	Residential Buildings	R
Southern California Black Walnut Woodland	WBW	Mixed Sage Scrub	SMS

3.2 Special-status Species

Special-status species are plants and animals that are either listed as *endangered* or *threatened* under the Federal or California Endangered Special Acts, listed as *rare* under the California Native Plant Protection Act, or *considered to be rare* (but not formally listed) by resource agencies, professional organizations (e.g. Audubon Society, California Native Plant Society (CNPS), The Wildlife Society), and the scientific community. For the purposes of this project, we selected the special-status species to be considered using the criteria listed in Table 2.

To determine which special-status species are likely to occur within a 50-foot radius of each tower along the Santa Clara-Getty transmission line, a literature survey (including Skinner and Pavlik [1994]) and a search of the California Department of Fish and Game's (CDFG) Natural Diversity Data Base (CNDDB), was conducted for known occurrences in the vicinity of the transmission line.

Table 2. Definitions of special-status species.

Plants & animals legally protected under the California and Federal Endangered Species Acts or under other regulations.
Plants and animals considered sufficiently rare by the scientific community to qualify for such listing; or
Plants and animals considered to be sensitive because they are unique, declining regionally or locally, or are at the extent of their natural range.

Special-Status Plant Species	Special-Status Animal Species
• Plants listed or proposed for listing as threatened or endangered under the Federal Endangered Species Act (50 CFR 17.12 for listed plants and various notices in Federal Register for proposed species). • Plants that are Category 1 or 2 candidates for possible future listing as threatened or endangered under the Federal Endangered Species Act (55 CFR 6184, February 21, 1990). • Plants that meet the definitions of rare or endangered species under the CEQA (State CEQA Guidelines, Section 15380). • Plants considered by CNPS to be "rare, threatened, or endangered" in California (Lists 1B and 2 in Skinner & Pavlik [1994]). • Plants listed by CNPS as plants needing more information and plants of limited distribution (Lists 3 and 4 in Skinner and Pavlik [1994]). • Plants listed or proposed for listing by the State of California as threatened or endangered under the California Endangered Species Act (14 CCR 670.5). • Plants listed under the California Native Plant Protection Act (California Fish and Game Code 1900 et seq.). • Plants considered sensitive by other federal agencies (i.e., U.S. Forest Service, Bureau of Land Management) or state and local agencies or jurisdictions. • Plants considered sensitive or unique by the scientific community; occurs at natural range limits (State CEQA Guidelines, Appendix G).	• Animals listed/proposed for listing as threatened/endangered under the Federal Endangered Species Act (50 CFR 17.11 for listed animals and various notices in Federal Register for proposed species). • Animals that are Category 1 or 2 candidates for possible future listing as threatened or endangered under Federal Endangered Species Act (54 CFR 554). • Animals that meet the definitions of rare or endangered species under the CEQA (State CEQA Guidelines, Section 15380). • Animals listed or proposed for listing by the State of California as threatened and endangered under the California Endangered Species Act (14 CCR 670.5). • Animal species of special concern to the CDFG (Remsen [1978] for birds; Williams [1986] for mammals). • Animal species that are fully protected in California (California Fish & Game Code, Section 3511 [birds], 4700 [mammals], 5050 [reptiles, amphibians]).

Table 3 provides status, habitat requirements, distribution, and survey results for each special-status species, either observed in the vicinity of the tower sites or believed to occur at or near the towers, based on the presence of suitable habitat. The information provided, for each identified special-status species, includes: scientific and common (vernacular) names; species status, including Federal and state, CDFG's NDDB Element (Global and State) Ranking, and CNPS List and Rarity-Endangerment-Distribution (R-E-D) Code; a physical description; habitat requirements; species distribution; and survey results.

Listed species are those taxa that are formally listed as endangered or threatened by the federal government (e.g. U.S. Fish and Wildlife Service [USFWS]), pursuant to the federal Endangered Species Act or as endangered, threatened, or rare (for plants only) by the State of California (i.e. California Fish and Game Commission), pursuant to the California Endangered Species Act or the California Native Plant Protection Act.
The NDDB Element Ranking system (NDDB 1997b) provides a numeric global and state ranking system for all special-status species tracked by the NDDB. The global rank (G-

rank) is a reflection of the overall condition of an element (species or natural community) throughout its global range. The state ranking (S-rank) is assigned much the same way as the global rank, except state ranks in California often also contain a threat designation attached to the S-rank.

As described for the NDDB ranking, not all special-status species considered in this report are tracked by CNPS, nor are R-E-D codes given to them; therefore, we applied the rules described above to "rank" those special-status species lacking such rankings or codes. This applies to rare lichen taxa that may occur at the towers, for which CNPS has not yet developed or incorporated into its *Inventory of Rare and Endangered Vascular Plants of California* or developed and established by the California Lichen Society. Rarity G- and S-ranks devised for taxa of this report are followed by a "?", denoting tentative assignment.

The CNPS R-E-D Code is a three-numbered numeric ranking for three categories (Rarity-Endangerment-Distribution), which more accurately describes each plant's population levels. Each number-code is described in Appendix C, California Native Plant Society R-E-D Code, is specific for each category.

3.3 Tower Numbering Systems

Most of the towers surveyed along the SCE transmission line were number-and/or letter-coded by SCE; however, several towers, or wooden and steel poles, are either not numbered, out of sequence, or have duplicated numbers. If no original SCE tower number was available during the survey, a temporary consecutive tower number with a "?" was assigned, using SCE's tower numbering system.

The tower/pole numbers observed on October 30, 2005 were different from the pole numbers noted during the 1999-2000 survey; however, for easier tower accounting and inventorying for these surveys, a unique sequential numbering/letter-codes system was developed and used for all towers surveyed. The numbering system begins at No. 1., which represents the first tower that is located at the SR150 and SR 192 intersection, and ends at No. 85 which represents the last tower of the Santa Clara-Getty power line located at the Carpinteria Substation.

4.0 RESULTS

4.1 Vegetation Descriptions

This section provides a complete inventory of the three vegetative units (vegetation types, plant communities, and plant associations) observed at each tower along the SCE Santa Clara-Getty 66 kV transmission line. Generalized information on the vegetation's stand structure, species descriptions and requirements, site characteristics, and associate species contributing to the plant associations are provided in the following subsections. The natural vegetation in the study area contains four general vegetation types: grassland, coastal sage scrub, chaparral, and woodland. These ones observed at the 85 project sites are described below.

Poison Oak Scrub

Poison Oak Scrub is dominated by *Toxicodendron diversilobum*, a winter-deciduous poisonous shrub or vine with resinous leaves (becoming bright red in autumn), yellow-green flowers, and leathery creamy-white fruit. The toxic resin-covered leaves, stems, and fruit cause severe contact dermatitis. The widespread Poison Oak occurs in chaparral and oak woodlands of canyon slopes at elevations below 1,650 meters (Hickman 1993). It also commonly occurs along riparian corridor.

Ruderal Grassland

Ruderal Grassland is a plant community that is typically in early successional stages as a result of a severe human disturbance, or because the land is subject to recurrent natural disturbance. This plant community is dominated by annual and perennial, introduced/non-native, pioneering, herbaceous plants that readily colonize disturbed ground. The ability of exotic species to invade disturbed areas arises from their relationship to old-world ancestors that have co-existed with humans for millennia, and thus are more adapted to exploit disturbed land. Ruderal communities may provide a certain degree of erosion control for recently graded areas, but such communities are also a threat to the natural biodiversity because they continually distribute invasive, highly-competitive non-native propagules into otherwise native vegetation. However, if Ruderal Grassland is left undisturbed, it can undergo succession towards more stable, and less weedy, plant communities such as coastal sage or riparian scrub. (Zedler et al. 1997.)

Lemonadeberry Chaparral

Lemonadeberry Chaparral (Sumac Series according to Sawyer and Keeler-Wolf [1995]) is dominated by *Rhus integrifolia*, a large aromatic, evergreen, glandular shrub with leathery shinny-green leaves, white to pinkish petals, and glandular-hairy reddish fruit. Lemonadeberry grows on north-facing slopes of canyons at elevations below 900 meters (Hickman 1993). The sole or dominant plant taxon of this series may either be Laurel Sumac or *R. integrifolia*. These shrubs may occur together as shrub-canopy co-dominants; however, Lemonadeberry Chaparral was observed as the dominant species in the shrub canopy along the SCE transmission line. Lemonadeberry forms an intermittent to continuous canopy over a variety of scrub associates and a sparse grassy ground layer. This series occurs on steep upland slopes, with shallow coarse soils, and at elevations near sea level up to 400 meters. Sumac (/Lemonadeberry) Series is often overlooked by combining it with mixed chaparral; however, many characteristic chaparral genera (*Adenostoma*, *Arctostaphylos*, *Ceanothus*, *Quercus*) are absent from, or are uncommon in, Sumac Series.

Lemonadeberry Chaparral was observed at two towers. The Lemonadeberry Chaparral associations include several shrub canopy associates growing over scattered ground layer herbs typical of Coastal Sage Scrub communities. Lemonadeberry Chaparral co-dominants/important canopy associates include: Coyote Brush, Bigpod Ceanothus, Giant Wildrye, Chaparral Mallow, Laurel Sumac, Spiny Redberry, Purple Sage, and Blue Elderberry.

Arroyo Willow Woodland

Arroyo Willow Woodland (Arroyo Willow Series according to Sawyer and Keeler-Wolf [1995]) forms riparian habitat that is dominated by *Salix lasiolepis*. Arroyo Willow is a winter-deciduous shrub or small tree with shinny dark green leaves (lower surface white tomentose) (Hickman 1993). The NIWP (Reed 1988) lists Arroyo Willow with an FACW wetland indicator status (facultative wetland species usually found in wetlands). Arroyo Willow Series occurs in seasonally flooded or saturated freshwater wetland habitats, such as floodplains and low-gradient depositions along rivers and streams, and is abundant in marshes, meadows, and springs, at elevations below 1,800 meters. This woodland community forms a continuous canopy growing over a sparse shrub layer and variable ground layer (depending on canopy thickness).

Arroyo Willow Woodland was observed at one tower. The woodland observed at the tower consists of Arroyo Willow-Coyote Brush Woodland with Coyote Brush as a co-dominant. The tree canopy associates (including tree-like shrubs) contributing to the willow stands include: Toyon, Southern California Black Walnut, California Sycamore (*Platanus racemosa*), Coast Live Oak, Lemonadeberry, and Blue Elderberry.

The shrub stratum below the Arroyo Willow canopy consists of important associates including the special-status species Plummer Baccharis (*Baccharis plummerae* ssp. *plummerae*) and Fish Milkwort (*Polygala cornuta* ssp. *fishiae*), the shrub-like perennial grass Giant Wildrye, and scrub species such as Spiny Redberry, Fuschia-flowered Gooseberry, Purple Sage, and Poison Oak.

The herbaceous ground layer under Arroyo Willow includes a variety of native forbs such as Mugwort (*Artemisia douglasiana*), Morning-glory, Pipestem Clematis, Many-flowered Figwort, Hedge Nettle, Hoary Creek Nettle, and Western Verbena. The non-native ground layer contributors include: Black Mustard, Italian Thistle (*Carduus pycnocephalus*), Tocalote (*Centaurea melitensis*), Poison Hemlock (*Conium maculatum*), Summer Mustard, Sourclover (*Melilotus indica*), and Cape Ivy (*Senecio mikanioides*).

California Sycamore Woodland

California Sycamore Woodland (California Sycamore Series according to Sawyer and Keeler-Wolf [1995]) is dominated by the monoecious, wind-pollinated, broad-leaved winter-deciduous *Platanus racemosa*. This native tree has smooth pale bark and large, densely hairy, palmately lobed leaves, and it is a common tree occurring along streamsides and in canyons (Hickman 1993). The NIWP (Reed 1988) lists *P. racemosa* with a wetland indicator status of FACW, or a facultative wetland species.

California Sycamore Series grows in wetland soils, permanently saturated at depth, of freshwater riparian corridors, braided depositional channels of intermittent streams, gullies, springs, seeps, river banks, and terraces adjacent to floodplains subject to high-intensity seasonal flooding. This series also occurs on upland rocky canyon slopes, in alluvial, open cobbly, and rocky soils, at elevations below 2,400 meters. A shrubby thicket of evergreen and deciduous shrubs may grow below the 35-meter, widely spaced, sycamore canopy, and the ground layer is generally grassy.

California Sycamore Woodland was recorded at two towers, and a different plant association occupies each tower. The tree species co-dominating the California

Sycamore canopy are Coast Live Oak and Southern California Black Walnut, while Black Sage and Poison Oak grow as important understory shrubs to the tall emergent sycamores. Arroyo Willow is common in these riparian sycamore stands, and intergrading upland shrub species include: California Sagebrush, Coyote Brush, Birchleaf Mountain Mahogany, Californica Buckwheat, Chaparral Mallow, and Lemonadeberry.

Coast Live Oak Woodland

Coast Live Oak Woodland (Coast Live Oak Series according to Sawyer and Keeler-Wolf [1995]) is dominated by *Quercus agrifolia* var. *agrifolia*, a broad-leaved evergreen, wide-topped tree with furrowed dark gray bark and weakly spine-toothed, convex, dark green leaves (Hickman 1993). *Q. agrifolia* is the most widely distributed of the evergreen oaks, and is capable of achieving large size and old age (Zedler et al. 1997). This oak occurs in valleys and on slopes of riparian woodland fringes, scattered in grassland or Coastal Sage Scrub communities, as an element of Mixed Evergreen Forest, or as a contributor to other oak woodlands. Coast Live Oak, as a series, predominantly occurs on steep slopes and on raised stream banks or terraces. Coast Live Oak Woodland (Series) forms a continuous to open canopy (<30 meters tall), has an understory of occasional or common shrubs and an absent or herbaceous ground layer, and requires sandstone or shale-derived soils of elevations below 1,200 meters.

Coast Live Oak understory may include other typical Coastal Sage Scrub species: Coyote Brush, Plummer Baccharis, buckwheats (*Eriogonum cinereum*, *E. fasciculatum*), Toyon, Heart-leaved Bush Penstemon, Deerweed, Chaparral Mallow, Laurel Sumac, Bush Monkeyflower, Fish Milkwort, Hollyleaf Cherry (*Prunus ilicifolia*), Spiny Redberry, Fuschia-flowered Gooseberry, California Wild Rose (*Rosa californica*), California Blackberry (*Rubus ursinus*), Purple Sage, Blue Elderberry, Poison Oak, Canyon Sunflower, and Our Lord's Candle.

A ground layer consisting of annual grasses and several showy wildflowers also contribute to the oak woodland understory as well: Goldenstars, Lay-and-Collie Indian Paintbrush, Four-spotted Purple Clarkia, Blue Dicks, Lanceleaf Live Forever, Pacific Peavine (*Lathyrus vestitus*), Fleshy Lupine (*Lupinus succulentus*), Navarretia (*Navarretia jaredii*), California Buttercup, Hummingbird Sage, California Globe Mallow (*Sidalcea malvaeflora* ssp. *californica*), Blue-eyed Grass, Douglas Nightshade (*Solanum douglasii*), Hedge Nettle, Western Verbena, and Johnny Jump-up.

Southern California Black Walnut Woodland

Southern California Black Walnut Woodland (California Walnut Series according to Sawyer and Keeler-Wolf [1995]) is dominated by *Juglans californica* var. *californica*, a broad-leaved winter-deciduous, monoecious, tree that blooms from March to May. It has gray-brown bark, toothed leaflets, and spheric, leathery-husked, strong-smelling fruit (walnuts). *J. californica* is and uncommon endemic, ranging from coastal southern California from Santa Barbara County to Los Angeles County, found on canyon slopes at elevations between 50 and 900 meters (Hickman 1993). It is listed in the NIWP (Reed 1988) with a of FAC (facultative species) wetland indicator status. *J. californica* is a CNPS List 4 (limited distribution) and has an R-E-D (Rare-Endangerment-Distribution) code of 1-2-3 (Rare, but low potential for extinction-Endangered in a portion of its range-Endemic to California) (Skinner and Pavlik 1994). Southern California Black Walnut Woodland is a much fragmented, declining natural community, and it is threatened by urbanization and grazing, which inhibit natural reproduction (Skinner and Pavlik 1994).

California Walnut Series forms an open to closed canopy (<10 meters tall) growing over a common or infrequent shrub stratum and a sparse or grassy ground layer. This woodland requires deep, shale-derived, intermittently flooded/saturated soils of freshwater riparian corridors, floodplains, incised canyons, seeps, and stream or river banks at elevations between 150 and 900 meters.

Coast Live Oak may grow as a tree canopy co-dominant, while Greenbark Ceanothus and Chaparral Mallow may occur as dominant understory shrubs. The less dominant walnut understory shrubs may include: California Sagebrush, Coyote Brush, Hoary Ceanothus, Toyon, Giant Wildrye, Southern Honeysuckle, Deerweed, Fish Milkwort, Spiny Redberry, Fuschia-flowered Gooseberry, Purple Sage, and Poison Oak.

The ground layer consists of Goldenstars, Morning-glory, Miners Lettuce (*Claytonia perfoliata*), San Diego Bedstraw, Green Everlasting, Summer Mustard, Purple Needlegrass, Peony, Pacific Sanicle, Many-flowered Figwort, Blue-eyed Grass, Hedge Nettle, and Western Verbena.

Mixed Sage Scrub

Mixed Sage Scrub (Mixed Sage Series according to Sawyer and Keeler-Wolf [1995]) is the most typical Coastal Sage Scrub plant community. This upland plant community consists of a mixture of scrub species, including one to three species of sage (*Salvia* spp.). Three aromatic sages, typical of Coastal Sage Scrub or chaparral on dry south-facing slopes, are contributors of Mixed Sage Scrub (Hickman 1993): White Sage (*S. apiana*), with long tomentose stems, densely hairy-gray leaves, and white/lavender flowers (<1,500 meters); Purple Sage (*S. leucophylla*), with grayish, puckered, densely branched-hairy leaves, and rose-lavender flowers (between 50 and 800 meters); and, Black Sage (*S. mellifera*), with greenish, glandular-hairy, puckered leaves and white, pale blue/lavender flowers (<1,200 meters) (Sawyer and Keeler-Wolf 1995).

Mixed Sage Series consists of an equal representation of one to three sages and California Sagebrush, plus a mixture of typical Coastal Sage Scrub species, including California Bush Sunflower, California Buckwheat, Bush Monkeyflower, and prickly-pears (*Opuntia* spp.). Emergent shrubs of Laurel Sumac, Lemonadeberry, and Blue Elderberry may also be present. This series forms a continuous or intermittent canopy (<2 meters tall) over a variable ground layer, and grows on sandy, rocky, shallow soils of upland slopes at elevations below 1,200 meters. No single species or pair of species can dominate stands of this series; instead, three or more species must equally share commonness and cover.

4.2 Potential Special-status Vascular Plants -

The literature review and database searches identified 44 special-status species of plants known to occur in the general area where thebe towers/poles are located. Table 3 summarizes the literature and field survey results for special-status vascular plant species. It includes scientific names, whether or not they were observed, and the likelihood of occurrence within SCE boundaries if not directly observed. The timing of the field surveys was outside the preferred season to observe or detect some of the special-status species.

One special-status species, Southern California Black Walnut (Juglans californica var. californica), was observed growing within the 50-foot radius of two towers.

Table 3. Likelihood of occurrence of special-status vascular plants

Scientific Name	Common Name	Habitat Preference	Status Fed/State/CNPS	Occurrence Likelihood
Acanthomintha obovata ssp. cordata	Heart-leaved Thornmint	Chaparral, Woodland, Grassland	-/-/4 1-2-3	Unlikely
Antirrhinum ovatum	Oval-leaved Snapdragon	Chaparral, Woodland, Grassland	C3c/-/4 1-2-3	Unlikely
Aphanisma blitoides	Aphanisma	Coastal Sage Scrub	C2/-/1B 2-2-2	Low
Astragalus brauntonii	Braunton Milkvetch	Chaparral, Coastal Sage Scrub, Grassland	E/-/1B 3-2-3	Low
Atriplex pacifica	South Coast Saltscale	Coastal Sage Scrub	C2/-/1B 3-2-2	Low
Atriplex serenana var. davidsonii	Davidson Saltscale	Coastal Sage Scrub	-/-/1B 3-2-2	Low
Baccharis plummerae ssp. plummerae	Plummer Baccharis	Coastal Sage Scrub, Live Oak Woodland	-/-/4 1-1-3	Low
Boykinia rotundifolia	Round-leaved Boykinia	Chaparral, Riparian Woodland	-/-/4 1-1-3	Moderate
Calandrinia breweri	Brewer Calandrinia	Chaparral, Coastal Sage Scrub	-/-/4 1-2-2	Moderate
Calochortus catalinae	Catalina Mariposa Lily	Coastal Sage Scrub, Grassland	-/-/4 1-2-3	Moderate
Calochortus plummerae	Plummer Mariposa Lily	Coastal Sage Scrub, Grassland	C2/-/1B 2-2-3	Moderate
Calochortus weedii var. *vestus*	Late-flowered Mariposa Lily	Chaparral, Coastal Sage Scrub	C2/-/1B 2-2-3	Low
Cercocarpus betuloides var. *blancheae*	Island Mountain Mahogany	Chaparral	-/-/4 1-1-3	Low
Chorizanthe procumbens	Prostrate Spineflower	Chaparral, Woodland, Coastal Sage Scrub	-/-/4 1-2-2	Low
Convolvulus simulans	Small-flowered Morning-glory	Coastal Sage Scrub, Grassland	-/-/4 1-2-2	Low
Delphinium inopinum	Unexpected Larkspur	Upper Montane Coniferous Forest	C3c/-/1B 2-2-3	Unlikely
Dichondra occidentalis	Western Dichondra	Coastal Sage Scrub, Live Oak Woodland	C3c/-/4 1-2-1	Moderate
Eriophyllum jepsonii	Jepson Woolly Sunflower	Coastal Sage Scrub, Chaparral	-/-/4 1-1-3	Low
Fritillaria ojaiensis	Ojai Fritillary	Chaparral, Live Oak Woodland	C2/-/1B 3-2-3	Low
Galium cliftonsmithii	Santa Barbara Bedstraw	Coastal Sage Scrub, Live Oak Woodland	-/-/4 1-1-3	Possible
Hordeum intercedens	Vernal Barley	Vernal Pool, Grassland	-/-/3 ?-2-2	Unlikely
Hulsea vestita ssp.	San Gabriel Mountains	Coniferous Forest	-/-/4 1-1-3	Unlikely

gabrielensis	Sunflower			
Hulsea vestita ssp. *parryi*	Parry Sunflower	Chaparral, Coniferous Forest	-/-/4 1-1-3	Unlikely
Juglans californica var. *californica*	Southern California Black Walnut	Riparian Forest, Live Oak Woodland	-/-/4 1-2-3	Known
Juncus acutus ssp. *leopoldii*	Southwestern Spiny Rush	Alkaline Seep; Saltmarsh	-/-/4 1-2-1	Low
Lasthenia glabrata ssp. *coulteri*	Coulter's Goldfields	Grassland	C2/-/1B 2-3-2	Low
Layia heterotricha	Pale-yellow Layia	Woodland, Grassland	C2/-/1B 3-3-3	Low
Lepechinia fragrans	Fragrant Pitcher Sage	Chaparral	-/-/4 1-2-3	Moderate
Lessingia tenuis	Spring Lessingia	Lower Coniferous Forest	-/-/4 1-1-3	Unlikely
Lilium humboldtii ssp. *ocellatum*	Ocellated Humboldt Lily	Chaparral, Woodland	C2/-/4 1-2-3	Moderate
Lupinus elatus	Silky Lupine	Coniferous Forest	-/-/4 1-1-3	Unlikely
Mucronea californica	California Spineflower	Floodplain Washes	-/-/4 1-2-3	Unlikely
Orcuttia californica	California Orcutt Grass	Vernal Pool	E/E/1B 3-3-2	Unlikely
Oxytheca carophylloides	Chickweed Oxytheca	Lower Coniferous Forest	-/-/4 1-1-3	Unlikely
Oxytheca parishii var. *abramsii*	Abrams Oxytheca	Chaparral	-/-/1B 2-2-3	Low
Perideridia pringlei	Adobe Yampah	Coastal Sage Scrub, Chaparral	C3c/-/4 1-1-3	Low
Phacelia exilis	Transverse Range Phacelia	Coniferous Forests	-/-/4 1-1-3	Unlikely
Polygala cornuta var. *fishiae*	Fish Milkwort	Riparian Forest	-/-/4 1-1-2	Possible
Quercus dumosa	Nuttall Scrub Oak	Chaparral	C2/-/1B 2-3-2	Possible
Sagittaria sanfordii	Sanford Arrowhead	Marshes, Swamps	C2/-/1B 2-2-3	Unlikely
Senecio aphanactis	Rayless Ragwort	Coastal Sage Scrub	-/-/2 3-2-1	Moderate
Sidalcea neomexicana	Salt Spring Checkerbloom	Coastal Sage Scrub, Chaparral	-/-/2 2-2-1	Low
Suaeda taxifolia	Woolly Seablite	Coastal Bluff Scrub, Marshes, Swamps	-/-/4 1-2-1	Unlikely
Thermopsis californica var. *argentata*	Silvery False Lupine	Coniferous Forest, Juniper-Pinyon Woodland	-/-/4 1-1-3	Unlikely

4.3 Potential Special-status Wildlife

The special-status wildlife known or found in the study region, or in habitats similar to those found in the project area, are listed in Table 4.

Table 4. Occurrence of potential special-status wildlife.

Scientific Name	Common Name	Habitat Preference	Status Fed/State/CNPS	Occurrence Likelihood
AMPHIBIANS				
Taricha torosa torosa	Coast range newt	Vernal pools, Riparian woodlands	CSC	Low
Scaphiopus hammondi	Western spadefoot toad	Grassland with vernal pools	CSC	Low
Bufo microscapus californica	Southwestern arroyo toad	Washes, streams, sandy streambanks	FE	Low
REPTILES				
Phrynosoma coronatum	Coast horned lizard	Coastal Sage Scrub with friable soils	CSC	Low
Cnemiodophorus tigris multiscutatus	Coastal western whiptail	Coastal Sage Scrub	CSC	Low to Moderate
Aniella pulchra pulchra	California legless lizard	Live Oak Woodland	CSC	Low
Clemmys marmorata ssp. *pallida*	Southwestern pond turtle	Aquatic	CSC	Low
Salvadora hexalepis virgultea	Coastal patch-nosed snake	Open, rocky outcrops	CSC	Low
Thamnophis hammondi	Two-striped garter snake	Coastal lowlands	CSC	Low
BIRDS				
Accipiter cooperii	Cooper's hawk	Oak Woodland, Riparian	CSC (nesting)	Moderate
Accipiter striatus	Sharp-shinned hawk	Oak Woodland, Riparian	CSC (nesting)	Low
Elanus leucurus	White-tailed kite	Oak Woodland, grasslands,wetlands	CFP	Low
Circus cyanus	Northern harrier	Grasslands, Lowlands	CSC (nesting)	Low
Vireo belli pusillus	Least Bell's vireo	Riparian Forests	CE, FE	Low
Campylorhynchus brunneicapillus	Coastal cactus wren	Cactus scrub	CSC	Low
Dendroica petechia brewsteri	Yellow warbler	Riparian Forests	FSC, CSC	Low
Polioptila californica	California gnatcatcher	Coastal Sage Scrub	FT, CSC	Low
Lanius l. ludovicianus	Loggerhead shrike	Grasslands, Shrubland	CSC	Low
Aimophilia ruficeps canescens	Ashy rufous-crowned sparrow	Brush mixed with Grasslands on steep slopes	CSC	Low
MAMMALS				
Antrozous pallidus	Pallid bat	Caves, crevices, structures	CSC	Low
Plecotus townsendii pallescens	Pale big-eared bat	Caves, crevices, man-made structures	CSC	Low

Scientific Name	Common Name	Habitat Preference	Status Fed/State/CNPS	Occurrence Likelihood
Eumops perotis californicus	California mastiff bat	Rock crevices	CSC	Low
Neotoma lepida intermedia	San Diego desert woodrat	Cactus patches in Coastal Sage Scrub and Chapparal	CSC	High
Taxidea taxus	American badger	Grasslands, scrub habitats	CSC	Moderate

CE = California Endangered
CFP = Cal. Fully Protected
FT = Federal Threatened
FE = Federal Endangered
CSC = Cal. Species of Concern

No state or federally listed rare, threatened, or endangered wildlife species are known to occur or substantially utilize the habitats available in the project area.

The California gnatcatcher is a federally threatened species that may occur near the project area. One historical record (early 1900s) exists for this species in the South Mountain area near Santa Paula, which is more than 30-40 miles outside the project area. The nearest contemporary occurrence record of the California gnatcatcher was formerly thought to be on the Palos Verdes Peninsula in southernwestern Los Angeles County. However, one breeding pair was found recently in coastal sage scrub near the city of Moorpark, more than 30 miles away from this project's study area. Therefore, the project area remains outside the current known distribution for this species. Additionally, there is no coastal sage scrub habitat present in much of the project area which is not optimal for this species, which typically prefers relatively dense sagebrush that is mixed with prickly pear cactus.

At present, the U.S. Fish and Wildlife Service does not require intensive surveys for the species, using standardized protocols, north of the Santa Clara River (R. Farris, U.S. Fish and Wildlife Service Biologist, Ventura Field Office, pers. comm.) Therefore, this project is exempt from the existing federal requirements to conduct intensive surveys to determine the presence/absence of this listed species. No suitable habitat for this species occurs along the project route.

The Least Bell's vireo is listed as both a federal and a state endangered species, and the project area is within the species' breeding range. However, least Bell's vireos require relatively extensive and contiguous riparian forests with adjacent upland foraging areas for breeding. No towers are located directly in riparian habitat, although a few are adjacent, and no impacts to this species are expected from any tower modifications.
A number of raptor species known to utilize the habitats present in the project area are considered sensitive due to declining populations and habitat loss. Cooper's hawks are relatively common in the area and nest at locations within the project region. However, none were seen in the project area, nor were any nests observed immediately adjacent to the towers. No suitable habitat for this species occurs along the project route.

Sharp-shinned hawks and northern harriers are likely winter visitors to parts of the project area. The latter is a rare breeding species. White-tailed kites also breed in the region, generally in woodlands, near their grassland and wetland foraging areas. There is very limited suitable habitat for this species in the project area, and no impacts are expected in relation to the proposed project.

The coastal cactus wren is relatively common in the region where cactus scrub is available in large patches. No individuals or suitable habitat were observed in the project area. Yellow warblers have been recorded in the project area. However, this species requires extensive riparian forests for breeding, which would not be impacted by any proposed tower modifications.

Loggerhead shrikes frequent open habitats with sparse shrubs. Extensive losses of grasslands and breeding habitat have resulted in widespread population declines. The species has previously been suggested to forage in Sexton Canyon within the project area, and two individuals were recorded about 10-20 miles away from the project area during field surveys. Pre-construction and construction monitoring would determine if a nest site were present at a tower scheduled for rebuild. No significant impacts to this species are expected.

Ashy rufous-crowned sparrows prefer to nest on relatively steep slopes with sparse brush and intermixed with grassy areas. Coastal sage scrub is generally considered suitable breeding habitat. The western end of the project area contains some rocky open areas that are potential habitat for this species. While it is possible that this species occurs in the project area, no impacts would be expected.

Three bat species listed as sensitive may occur in the project vicinity. No significant impacts due to tower replacements are expected to any of the sensitive bat species that occur in the region.

The San Diego desert woodrat inhabits cactus patches and rocky areas in coastal sage scrub and open chaparral. No individuals of the species were observed during the survey. We made no effort (live trapping) to confirm which woodrat species was present.

American badgers are classified as a California Special Animal, preferring grasslands and open habitats, and feeding mostly on ground squirrels and pocket gophers. Badgers may be found in or near tower locations, but that this species is not expected to be impacted by the proposed project modifications.

Coast range newts occur in the project area in or near streams in hardwood forests as well as in coastal sage scrub, chaparral, and grassland habitats. This species would not be impacted since power lines in the project area span all wetland habitats.

The western spadefoot toad occupies grassland areas where shallow, temporary pools form after winter rains. It burrows into loose soil or uses existing rodent dens or other underground access. No tower sites were found within vernal pool habitat, and no impacts to this species would be expected from tower modifications. The southwestern arroyo toad is found near washes, streams, and along sandy banks with willows, cottonwoods, or sycamores. Tower lines span areas with habitat for this species, and no impacts are expected.

The coast horned lizard occupies grassland, brushland, woodland, and open coniferous forest in the region. The species' occurrence in the project area is considered limited. We observed few harvester ant colonies, which are prey for the species, and a general absence of friable soils. Therefore, it is possible this species may be found in the project area. No impacts from tower modifications are expected.
Coastal western whiptail lizards occur near the project area (e.g., Steckel Park), and may be found in the project area within the more open and drier portions of coastal sage scrub. No impacts of proposed modifications on this species are expected.

California legless lizards occur in the duff under oak groves. Since none of the transmission towers occur within oak groves, no impacts to this species are expected.

The southwestern pond turtle is a highly aquatic species and the two-striped garter snake is a semi-aquatic species. The transmission towers in the project area span wetland and riparian areas. Therefore no impacts to these species are expected.

The coastal patch-nosed snake prefers rocky areas, near grassland, chaparral, sagebrush, and desert scrub. The western end of the project area contains potential habitat for this species, but no impacts are expected from activities associated with transmission tower rebuilding.

5.0 DISCUSSION AND RECOMMENDATIONS

Of the 85 towers, only 8 towers contained natural vegetation of one or more plant communities. Seventy-nine towers lacked natural vegetation (of which most contained agricultural crops). Most of the poles/ towers along this transmission line are in developed (non-natural) areas. Developed land includes residential buildings, commercial buildings (church, community center, nurseries, and agricultural land (avocado, citrus and exotic fruit orchards and row-crops. These poles are predominantly in the immediate highway right-of-way where no or very few natural/native species are growing.

5.1 Wildlife Considerations

The Santa Clara-Getty 66kV Power Line Project is not expected to affect any sensitive wildlife species that may occur in the general region of the proposed project. There are no scientific occurrence records in or near the project area to indicate the presence of California gnatcatchers, a federally threatened species. Potential impacts to other sensitive wildlife species are avoided because the transmission towers avoid wetlands and riparian areas. This assumes that the construction will not require impacts of losses of these habitat types due to the building of new access roads, storage or staging areas, or other project activities that might disturb sensitive habitats.

Wherever possible, the construction effort will be contained to existing transmission tower pads, access roads, and other previously disturbed areas to minimize additional impacts to natural resources and sensitive species habitat. Based on our surveys, it appeared that new access roads would be needed only rarely, with some construction possibly involving removal/replacement using helicopters due to the rugged terrain or to minimize vegetation losses.

5.2 Sensitive Plant Considerations

The proposed project may affect one sensitive (special-status) plant species, Southern California Black Walnut *(Juglans californica* var. *californica*), which exists within the project area. SCE should avoid removing or damaging these trees to the fullest extent possible during construction.

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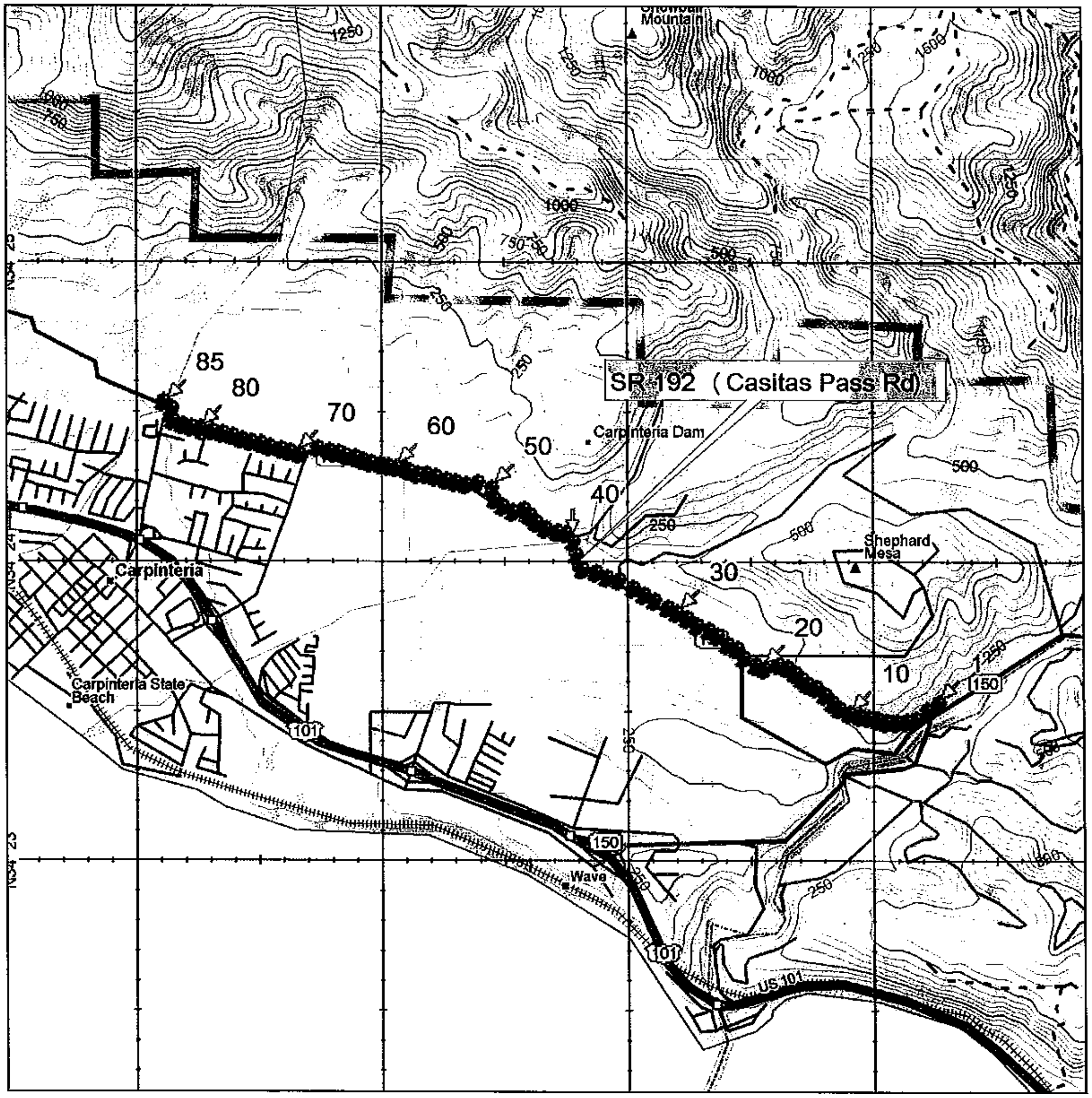
APPENDICES

APPENDIX A. MAP OF THE PROJECT AREA.



APPENDIX B. SENSITIVE PLANT DESCRIPTIONS

Southern California Black Walnut (*Juglans californica ssp. californica*)

STATUS		
Federal	**State / NDDB**	**CNPS** (Skinner and Pavlik 1994)
None	None / G3, S3.2	List 4: Plants of Limited Distribution R-E-D Code: 1-2-3

Southern California Black Walnut (*Juglans californica* S. Watson ssp. *californica*) is a small, broad-leaved, monoecious, winter-deciduous tree (15 meters tall) with one to five trunks. It has pinnately divided leaves with 11-19 lanceolate to ovate toothed leaflets (2-8 cm long). The wind pollinated, greenish flowers, blooming between March and May, have 4-lobed sepals arranged in pendulous clusters before the leaves emerge. This species produces spheric, leathery-husked, strong-smelling fruit (walnuts) 2-3 centimeters in diameter. *J. californica* ssp. *c.* is listed in the NIWP (Reed 1988) with an FAC wetland indicator status (facultative species that is equally likely to occur in wetlands and non-wetlands), and is a member of the walnut family (Juglandaceae). (Hickman 1993.)

Juglans californica var. *c.* is uncommon, but can be found on slopes and canyons at elevations between 50 and 900 meters, and it is often associated with riparian habitats (Hickman 1993). It ranges from the Santa Lucia Mountains (where they were cultivated), Santa Barbara County, and along the coastal portions of the Transverse Ranges, south to the northern Peninsular Ranges in northern San Diego County. Some reported occurrences of Southern California Black Walnut are along Santa Paula Creek at Sisar Creek and along the Lower Piru Creek. It is also known from the Santa Monica Mountains at Little Sycamore Canyon, and elsewhere in Ventura County (Magney and Burgess 1996). Southern California Black Walnut Forest (Holland 1986) is a much-fragmented, declining natural community, and it is threatened by urbanization and grazing, which inhibit natural reproduction. (Skinner and Pavlik 1994.)

This species grows on variable slope faces within the survey area, which are inhabited predominantly by Woodland and Coastal Sage Scrub types. Dominant species of woodlands (Coast Live Oak Woodland, Coast Live Oak-Southern California Black Walnut Woodland, and California Sycamore-Southern California Black Walnut Woodland), in which *J. californica* grows, include: Ceanothus (*Ceanothus* spp.), Toyon, California Sycamore, Coast Live Oak, Lemonadeberry, and Blue Elderberry. Dominant species contributing to the walnut tree understory include typical Coastal Sage Scrub (Mixed Sage Scrub) and chaparral species, such as California Sagebrush, Coyote Brush, Birchleaf Mountain Mahogany, California Buckwheat, Lemonadeberry, sages, and Poison Oak.

APPENDIX C, PART 1. NATURAL DIVERSITY DATA BASE ELEMENT RANKING SYSTEM.

Global Ranking (G)	
G1	<6 viable elements occurrences (populations for species), OR < 1,000 individuals, OR < 809.4 hectares (ha) (2,000 acres [ac]).
G2	6 to 20 element occurrences OR 809.4 to 4,047 ha (2,000 to 10,000 ac).
G3	21 to 100 element occurrences OR 3,000 to 10,000 individuals OR 4,047 to 20,235 ha (10,000 to 50,000 ac).
G4	Apparently secure; this rank is clearly lower than G3, but factors exist to cause some concern (i.e. there is some threat or somewhat narrow habitat).
G5	Population or stand demonstrably secure to ineradicable due to being commonly found in the world.
GH	All sites are **historic**; the element has not been seen for at least 20 years, but suitable habitat still exists.
GX	All sites are **extirpated;** this element is extinct in the wild.
GXC	Extinct in the wild; exists in cultivation.
G1Q	The element is very rare, but there is a taxonomic question associated with it.
Subspecies Level: Subspecies receive a **T-rank** attached to the G-rank. With the subspecies, the G-rank reflects the condition of the entire species, whereas the T-rank reflects the global situation of just the subspecies or variety. * For example: *Chorizanthe robusta* var. *hartwegii* is ranked G2T1. The G-rank refers to the whole species range (*Chorizanthe robusta*), whereas the T-rank refers only to the global condition of the variety (var. *hartwegii*).	
State Ranking (S)	
S1	Less than 6 element occurrences OR less than 1,000 individuals OR less than 809.4 ha (2,000 ac). S1.1 = very threatened S1.2 = threatened S1.3 = no current threats known
S2	6 to 20 element occurrences OR 3,000 individuals OR 809.4 to 4,047 ha (2,000 to 10,000 ac). S2.1 = very threatened S2.2 = threatened S2.3 = no current threats known..
S3	21 to 100 element occurrences OR 3,000 to 10,000 individuals OR 4,047 to 20,235 ha (10,000 to 50,000 ac). S3.1 = very threatened S3.2 = threatened S3.3 = no current threats known
S4	Apparently secure within California; this rank is clearly lower than S3 but factors exist to cause some concern (i.e., there is some threat, or somewhat narrow habitat). NO THREAT RANK.
S5	Demonstrably secure to ineradicable in California. NO THREAT RANK.
SH	All California sites are **historical**; the element has not been seen for at least 20 years, but suitable habitat still exists.
SX	All California sites are **extirpated;** this element is extinct in the wild.
Notes	
1. Other considerations used when ranking a species or natural community include the pattern of distribution of the element on the landscape, fragmentation of the population/stands, and historical extent as compared to its modern range. It is important to take an aerial view when ranking sensitive elements rather than simply counting element occurrences.	
2. Uncertainty about the rank of an element is expressed in two major ways: by expressing the rank as a range of values (e.g. S2S3 means the rank is somewhere between S2 and S3), and by adding a ? to the rank (e.g. S2?). This represents more certainty than S2S3, but less than S2. (Natural Diversity Data Base 1997.)	

APPENDIX C, PART 2. CALIFORNIA NATIVE PLANT SOCIETY R-E-D CODE

Rarity (R)	
1	Rare, but found in sufficient numbers and distributed widely enough that the potential for extinction is low at this time
2	Distributed in a limited number of occurrences, occasionally more if each occurrence is small
3	Distributed in one to several highly restricted occurrences, or present in such small numbers that it is seldom reported
Endangerment (E)	
1	Not endangered
2	Endangered in a portion of its range
3	Endangered throughout its range
Distribution (D)	
1	More or less widespread outside California
2	Rare outside California
3	Endemic to California

Source: Skinner and Pavlik 1994.

APPENDIX D. SUMMAY OF VEGETATION TYPES AND SPECIAL-STATUS SPECIES FOR EACH TOWER.

Tower Numbers		Vegetation[i]					Special-status Species	
Survey[ii]	SCE[iii]	Grassland	Scrub	Chaparral	Woodland	Develop	Plants[iv]	Animals[v]
1	8-6		SMS			O		
2	9-1					O		
3	D?			CL			*Jcc*	
4	E?			CL	WBW		*Jcc*	
5	3?					O		
6	4?					O		
7	5?					O		
8	6?					O		
9	7?					O		
10	8?					O		
11	9?					O		
12	10?	GR				O, R		
13	11?	GR				R		
14	12?	GR				R		
15	13?	GR				O, R		

Tower Numbers		Vegetation[i]					Special-status Species	
Survey[ii]	SCE[iii]	Grassland	Scrub	Chaparral	Woodland	Develop	Plants[iv]	Animals[v]
16	14?					R		
17	4141437		SPO			R		
18	4141436	GR				O, R		
19	3/SR192?				WCS			
20	4141435					RC		
21	2115769					RC		
22	2115838					RC		
23	2115768					RC		
24	106202					RC		
25	106201					O, R		
26	106199					O		
27	106197					O		
28	106195					CN		
29	106194					CN		
30	106193					O		
31	427491					O		
32	16/SR192?					O, R		
33	2303868					O, R		
34	106187					O, R		
35	2116387					O, R		
36	2116387					O, R		
37	192098					O, R		
38	192087					O, R		
39	1920986				WAW	R		
40	1920984				WLO			
41	25/SR192?					O		
42	1920989					O		
43	1723097				WCS			
44	2295420					CN		
45	1723095					CN		
46	1665177					CN		
47	4170613					O		
48	4170616					O		
49	2115767					O		
50	106165					O		
51	106164					O		
52	106163					O		
53	106162					O		
54	106160					O		
55	106159					O		
56	106157					O		
57	1871704					O		
58	106155					O		
59	106154					O		
60	106152					O, CN		
61	1524182					O, CN		
62	1324181					CN		
63	106149					CN		
64	4305748					CN		

Tower Numbers		Vegetation[i]					Special-status Species	
Survey[ii]	SCE[iii]	Grassland	Scrub	Chaparral	Woodland	Develop	Plants[iv]	Animals[v]
65	106146					CN		
66	1061--?					CN		
67	2303869					CN		
68	52/SR192?					O, CN		
69	1238737					O, CN		
70	54/SR192?					O, RC		
71	123874					O, RC, CN		
72	56/SR192?					CN		
73	4170614					RC, CN		
74	4305747					RC, CN		
75	4305746					RC, CN		
76	4305745					CN		
77	1238745					CN		
78	62/SR192?					R, CN		
79	1238747					R, CN		
80	64/SR192?					R, CN		
81	1238749					R, CN		
82	66/SR192?					R, CN		
83	106125					R, CN		
84	1920853					R, CN		
85	106123					CN		

[i] See Table1 for key to these vegetation and developed land codes.

[ii] Survey Tower Numbers are the codes assigned to each tower site, after the field work was completed, for line designation, tower sequencing, tower number duplication elimination, and vegetation inventory.

[iii] SCE Tower Numbers are either the original numbers/codes as encountered in the field, or, they are temporary codes (with a "?") assigned to towers with missing numbers for initial tower identification.

[iv] Key to Special-status Plants:

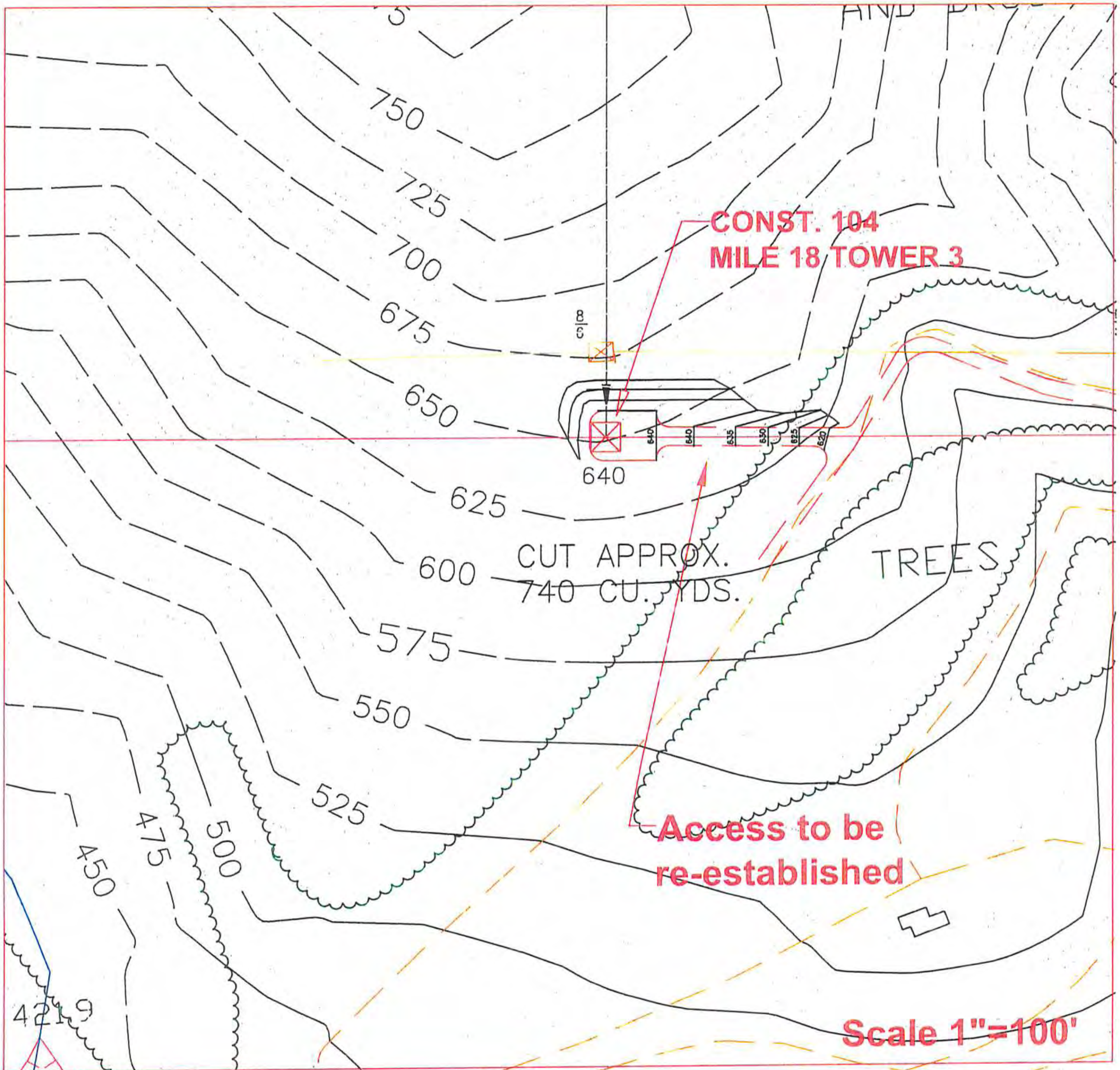
Bpp = Baccharis plummerae ssp. *plummerae* (Plummer Baccharis)
Cc = Calochortus catalinae (Catalina Mariposa Lily)
Jcc = Juglans californica var. *californica* (Southern California Black Walnut)
Pcf= Polygala cornuta var. *fishiae* (Fish Milkvetch)
Qd = Quercus dumosa (Nuttall Scrub Oak)

[v] Key to Special Status Wildlife:

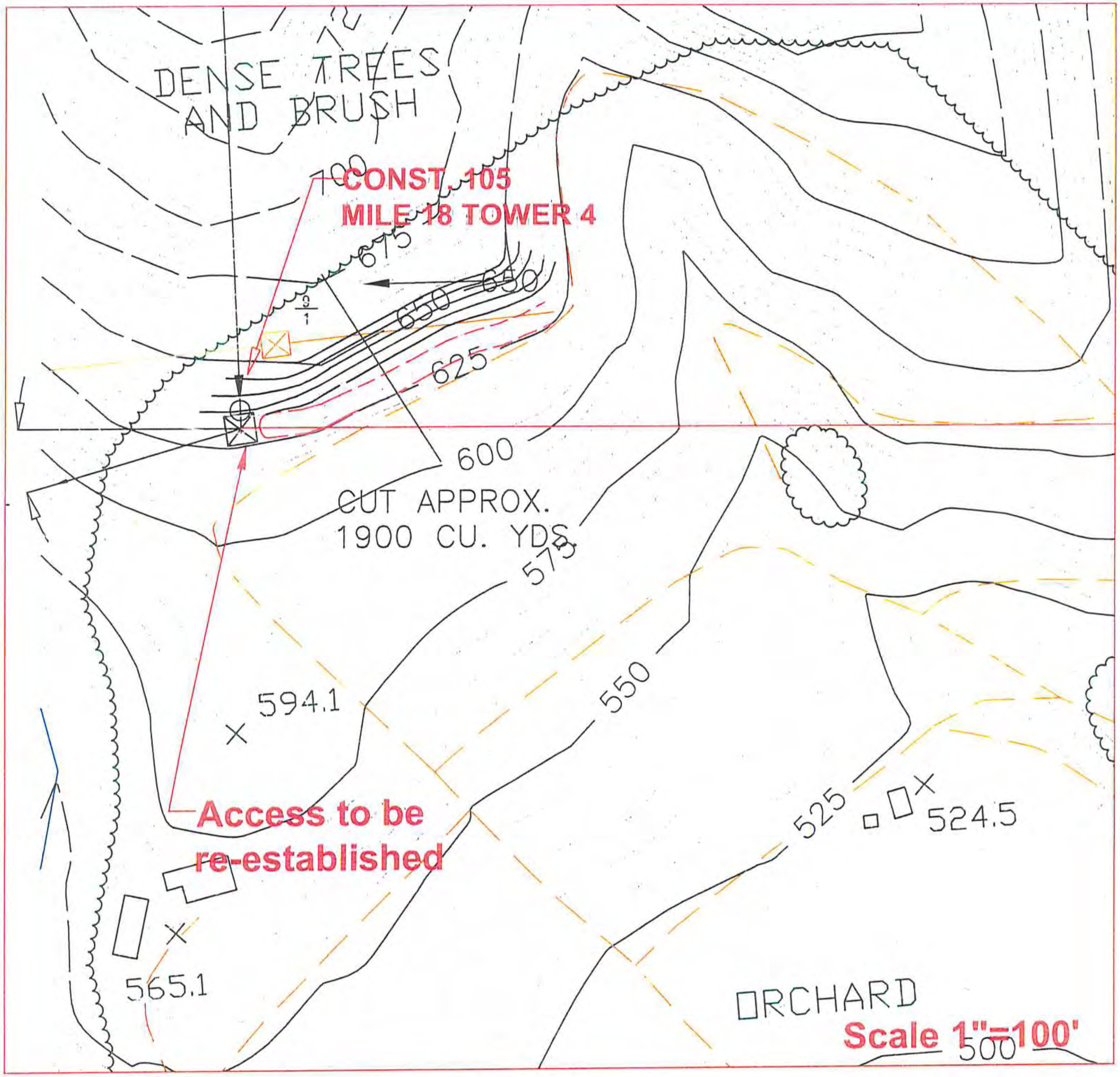
GN= Polioptila californica (California gnatcatcher)

ATTACHMENT B

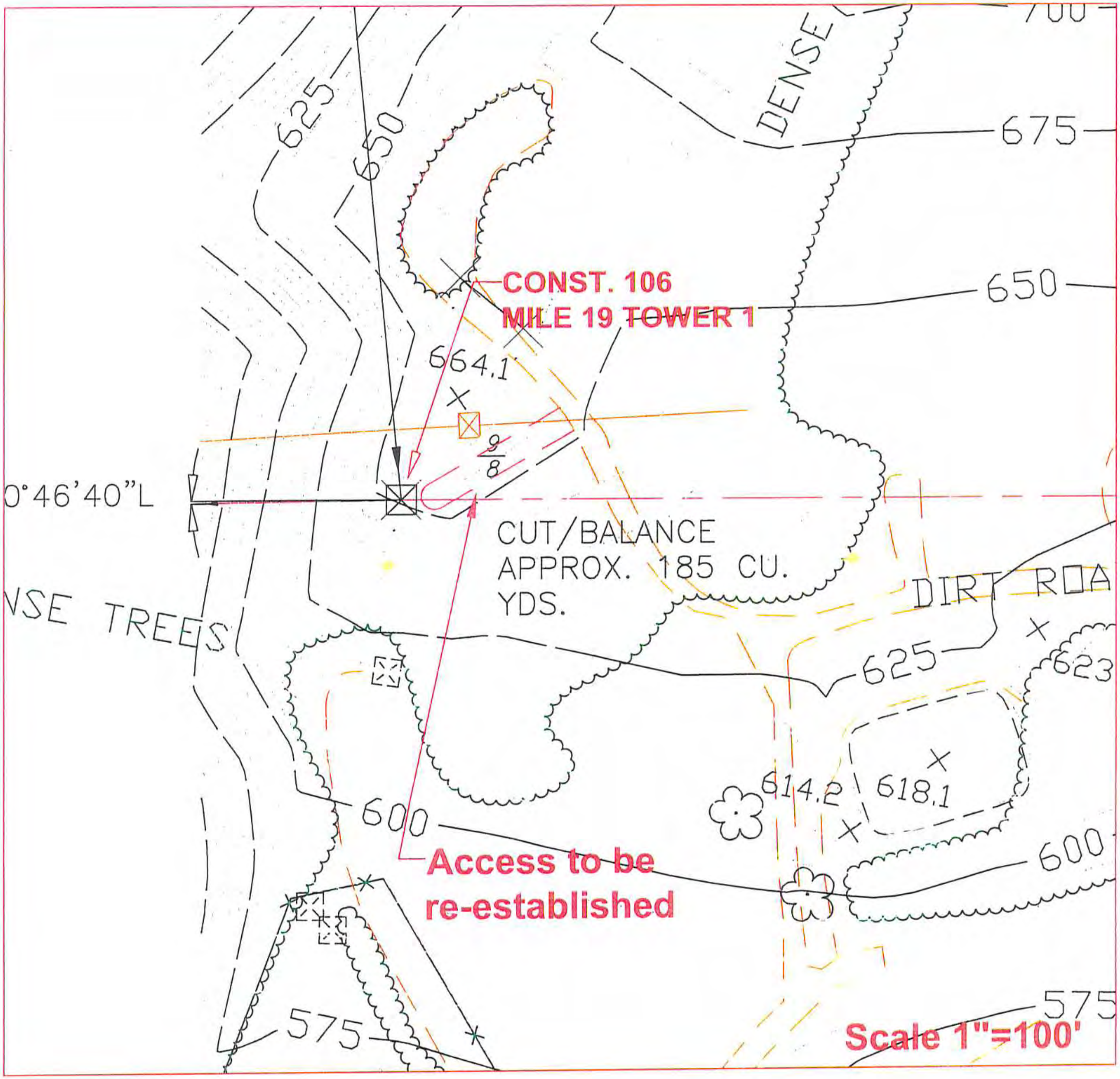
PROPOSED GRADING PLAN



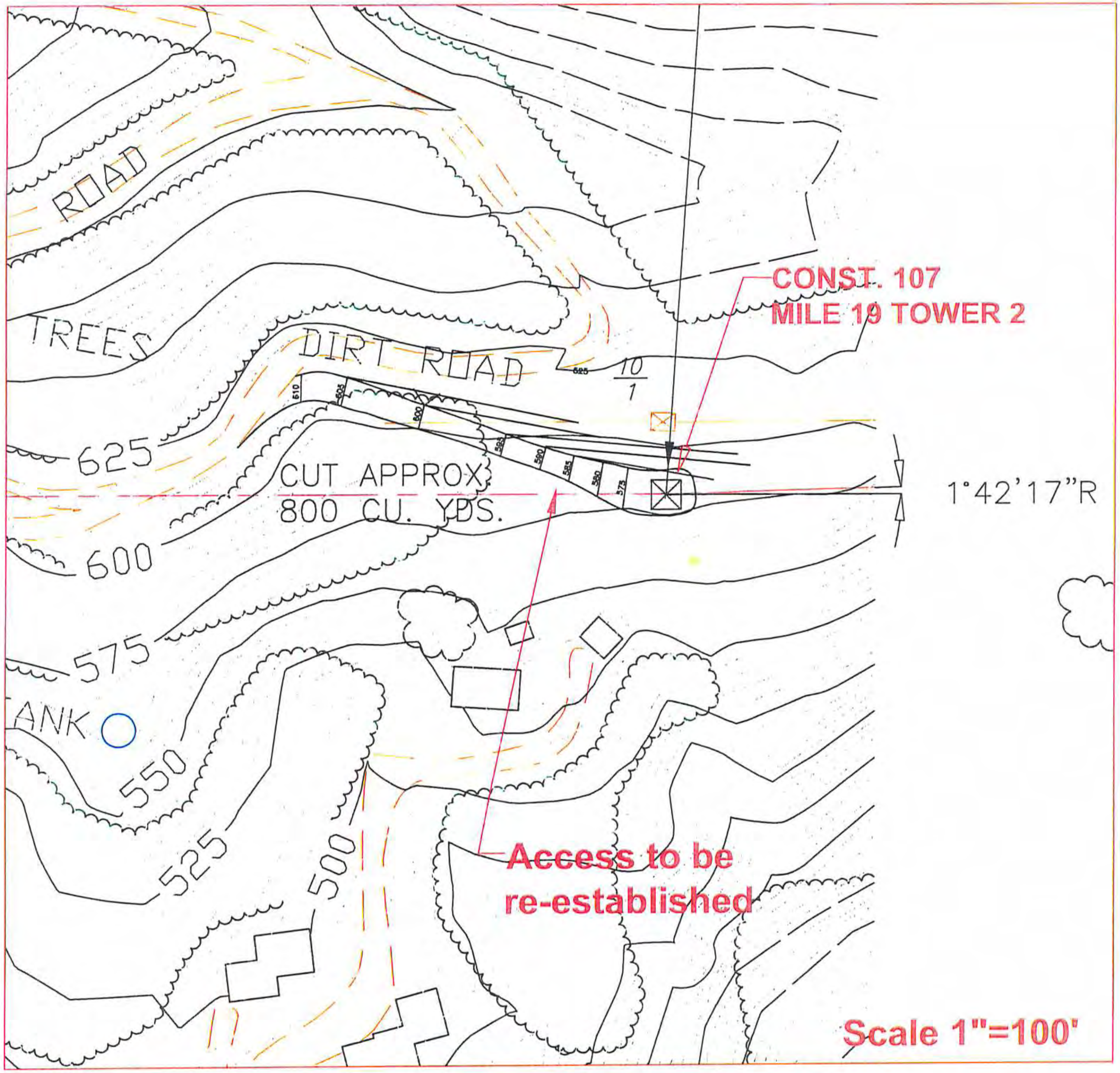
CONST. 104
MILE 18 TOWER 3
750
725
700
675
650
640
625
600
CUT APPROX.
740 CU. YDS.
TREES
575
550
525
500
475
450
421.9
Access to be
re-established
Scale 1"=100'



DENSE TREES
AND BRUSH
CONST. 105
MILE 18 TOWER 4
675
650
650
625
600
CUT APPROX.
1900 CU. YDS.
575
550
594.1
525
524.5
Access to be
re-established
565.1
ORCHARD
Scale 1"=100'
500



CONST. 106
MILE 19 TOWER 1
664.1
9
8
0°46'40"L
CUT/BALANCE
APPROX. 185 CU.
YDS.
DENSE
NSE TREES
DIRT ROA
675
650
625
600
575
700
623
614.2
618.1
Access to be
re-established
Scale 1"=100'


CONST. 107
MILE 19 TOWER 2
ROAD
TREES
DIRT ROAD
10
1
625
600
575
550
525
500
ANK
CUT APPROX.
800 CU. YDS.
1°42'17"R
Access to be
re-established
Scale 1"=100'

County of Santa Barbara
Planning and Development

John Baker, Director
Dianne Black, Director Development Services
John McInnes, Director Long Range Planning

December 18, 2008

Via Certified Mail

Ms. Xinling Ouyang
Southern California Edison
2244 Walnut Grove Ave.
Rosemead, CA 91770

RE: Determination of Application Completeness
Case No. 08CDH-00000-00026, APN 004-004-023 SCE
Santa Clara-Getty 66 kV Segment 4 Transmission Lines & Poles Replacement

Dear Ms. Ouyang:

Thank you for the December 2, 2008 re-submittal for Southern California Edison's (SCE) Santa Clara-Getty 66kV Segment 4 Transmission Line Rebuild project. We have reviewed your application and found it to be complete. We will immediately begin review of your project to determine whether it is subject to environmental review under the California Environmental Quality Act (CEQA) and the Santa Barbara County Guidelines for Implementation of CEQA. We will also begin an evaluation of the proposed project's consistency with applicable State and County regulations and conduct a more detailed analysis of its environmental impacts as necessary. Depending on the type of environmental document to be prepared, review of the proposed project should be completed within six months of today's date.

Our review is based on the following project description:

Southern California Edison proposes to replace an existing segment of a 66,000 volt (66 kilovolt (kV)) power transmission line - a portion of the line known as the Santa Clara-Getty 66 kV Segment 4 Transmission Line. Within Santa Barbara County, the project would entail the replacement of approximately 5.72 miles of line and 49 towers and poles; however, only that portion within the Coastal Zone is subject to County permits. Within the Coastal Zone, the project proposes to replace 1.95 miles of existing 2/0 copper, 4/0 copper and 653.9 ACSR conductor (also known as transmission line) with larger diameter 954 ACSR conductor. In the Coastal Zone, the project would replace 14 existing steel lattice towers with 13 steel tubular poles (see Table 1 and overall site plan for details). Two wood poles would be removed. The Santa Clara-Getty 66 kV Segment 4 Transmission Line provides backup electrical capacity to the South Coast Santa Barbara County area in the event of catastrophic failure of the 220,000 volt (220 kV) system that provides the normal power supply to the South Coast.

Table 1 – Tower Replacement Details (Refer to site plan for location)

Item #	*Existing Structure Number*	*Existing Structure Height (ft.)*	*Construction Number*	*Proposed Structure Number*	*Proposed Structure Height (ft.)*	*Notes/Grading Rd.=Re-establish road Fdn.=Foundation hole*
			Section 1			
1	18-2	80	103	4452927	115	Fdn. = 22 cu. yd.
2	18-3	80	104	4452928	130	Rd. = 400 cu. yd. Fdn. = 31.4 cu. yd.
3	18-4	80	105	4452929	120	Rd. = 120 cu. yd. Fdn. = 54 cu. yd.
4	18-5	80	105a			This tower will be eliminated
5	19-1	80	106	4452930	135	Rd. = 280 cu. yd. Fdn. = 27.8 cu. yd.
6	19-2	80	107	4452931	135	Rd. = 1,700 cu. yd. Fdn. = 31.4 cu. yd.
7	19-3	80	108	4452932	90	Fdn. = 32.8 cu. yd.
8	19-4	80	109	4452933	90	Fdn. = 15 cu. yd.
9	Wood Poles	57	109a			Two wood poles to be eliminated east of and adjacent to this location
10	19-5	55	110	4452934	90	Fdn. = 38.5 cu. yd.
			Section 3			
11	0-7(a)	70	133	4423650	85	Fdn. = 18.8 cu. yd.
12	0-6	90	134	4423651	110	Fdn. = 25.8 cu. yd.
13	0-5	85	135	4423652	110	Fdn. = 25.2 cu. yd.
14	0-4	80	136	4423653	100	Fdn. = 15.7 cu. yd.
15	0-3	60	137	4423654	75	Fdn. = 36.3 cu. yd.

Approximately 1.9 acres of native vegetation clearance (primarily chaparral with some oak woodland) and 0.25 acres of avocado orchard removal would occur to re-establish spur road access to four of the existing towers and to clear each area for removal of the existing towers and installation of the new poles. The project is located in two portions of the Coastal Zone of the Carpinteria Valley. Section 1 (Items 1-10) is located near the northeast boundary of the Coastal Zone of the Carpinteria Valley, northeast of Gobernador Canyon Road. Section 3 (Items 11-15) is located north of Foothill Road and adjacent to Carpinteria High School.

The project is locate on property identified by APN 004-004-028 (adjacent to the high school and owned by Southern California Edison), and on the following parcels within Edison's easements, identifies as: APNs 155-200-056, 155-200-026, 055-200-032, 155-200-051, 155-200-043, 155-200-070, 155-200-086, 155-200-022, 001-050-003, 001-050-011, 155-200-067, and 155-180-063.

The proposal would require approximately 2,500 cubic yards of grading for the four spur roads, to be balanced within each grading area, and approximately 374.7 cubic yards of grading to excavate the foundations for the new poles. Within the agricultural and undeveloped areas (Section 1), excess cut for the foundations will be spread across the lands immediately adjacent to each new pole. Within the urban area near the Carpinteria substation (Section 3) excess cut will be exported.

Please review this description carefully. If you believe the project description is incorrect or does not include components that you intend to include as part of the project, please contact us immediately. Further review of the project will be limited to this project description unless you provide us with corrections within five (5) days of receipt of this letter (during the week of January 5, 2009 is acceptable given the County furlough during the holidays). We reserve the right to request additional information to clarify any changes or additions that are made to the project description in response to this letter, as our completeness determination is based upon the material provided with your application.

Please provide one set of reduced copies (8.5 x 11) of the current plans to assist in project review.

Project Cost and Processing Time Estimate

Based upon our additional review, we have revised our estimate for processing of your project. Due to the additional time necessary to review the application for completeness, including peer review and site visit by P&D's staff biologist, we now estimate that the project will require approximately 144 planner hours. There are also fees for hearings and noticing for a total estimate of $21,000, including time spent to date. Please refer to the enclosed Project Cost Estimate Worksheet for additional detail on this estimate. If unforeseen circumstances arise and we feel the cost estimate may be exceeded, we will inform you. Any security deposit balance remaining at completion of case processing will be refunded.

Based on the required process steps for this project outlined in the attached cost estimate, we expect to schedule the project for hearing before the Zoning Administrator on or about June 15, 2009. This tentative hearing date depends upon the course of case processing. Any delays in environmental review or required plan revisions may cause the tentative hearing date to shift. If we determine that the length of processing or hearing date will change, we will advise you accordingly.

Advisory Information

The advisory statements from P&D's August 13 and October 30, 2008 letters remain relevant and please be advised of the following:

1. Please be advised that a grading permit will be required after completion of the permitting process for the Coastal Development Permit. As noted in a phone call with Geetha Shan, following our November 5, 2008 site visit Grading Inspector Tony Bohnett consulted with his supervisor and confirmed that a grading permit will be required. The grading permit process may begin once we the CDP has been approved and issued.

2. Please be advised that the proposed spur access road to Pole 19-1 passes through an area of oak woodland, some of it recovering from past disturbance. Please consider some alternative locations for this access in order to disturb or remove fewer oak trees. On the site visit, P&D staff noted that a more southerly point of access would result in the removal of fewer oaks. Please consider this alternative particularly if it can be accommodated within existing SCE easements. ***Also, Melissa commented about they should avoid oaks and scrub oaks – she didn't note any other sensitive plants. Are we going to need an arborist report? Should we have someone check the chaparral for scrub oak?***

3. Please be advised that for the purposes of compliance with the California Environmental Quality Act, P&D may request additional information if required to adequate conduct the analysis. In particular, staff's peer review of the submitted biological resources report will be conducted to determine if it provides adequate information to allow staff to proceed with analysis of potential impacts to biological resources. If additional information is required, staff will inform you once the peer review is completed and within 30 days of finding the application complete.

4. Please be advised that P&D's staff biologist has recommended that the project should avoid Coast Live Oak trees and within the chaparral, scrub oaks in particular. Additional site visits may be necessary during environmental review to determine whether there would any potentially significant impacts to these species.

If you have questions regarding this letter or any changes requested, please contact me. Also, please be aware that substantial revisions to submitted information may affect the estimate of time, cost and level of review for your project.

If you have any questions regarding this letter, please call me at (805) 568-3518.

Sincerely,

Julie L. Harris

JULIE L. HARRIS, Planner III
Development Review South Division

encl.: Revised Project Cost Estimate

cc: Case File 08CDH-00000-00026 (to planner with enclosure)
June Pujo, Supervising Planner, P&D (with enclosure)
Accounting, P&D (with enclosure)

(without enclosure)
Ms. Geetha Shan, Southern California Edison, 2244 Walnut Grove Ave. Rosemead, CA 91770
Ms. Wendy Miller, Southern California Edison, 2244 Walnut Grove Ave. Rosemead, CA 91770
Mr. Roger Schultz, Southern California Edison, 2131 Walnut Grove Ave. Rosemead, CA 91770
Records Management, P&D
Melissa Mooney, Planner III/Biologist, P&D
Tony Bohnett, Building & Safety, P&D
Martin Johnson, County Fire
Ed Foster, Carpinteria-Summerland Fire Protection District
Claude Garciacelay, Park Department
Stephanie Stark, Agricultural Planning

PLANNING AND DEVELOPMENT
PROJECT COST ESTIMATE WORKSHEET

Case Name: Sce Lines/Poles Replacement	**Case No.(s): 08CDH-00000-00026**
Prepared by & Date: Julie Harris, 12/18/2008	**Supervisor Approval & Date:**

PLANNER LABOR CHARGES

Project Review Task	Estimated P&D Staff Hours				Total Hours	Rate $/hr	Cost
	Dev Rev	P&D Specialist	Comp Planning	Permit Compliance			
1. Application Completeness Review	48	12	0	0	60	134.54	$8,072.40
2. Committee Meeting Attendance (e.g.,SDRC, BAR, Ag Pres., etc.)	3	0	0	0	3	134.54	$ 403.62
3. Prepare Exemption	0	0	0	0	0	134.54	$ 0.00
4. Prepare/Finalize Initial Study	40	10	0	1	51	134.54	$6,861.54
5. Prepare/Release Draft ND/ND Addendum	0	0	0	0	0	134.54	$ 0.00
6. Finalize ND or ND Addendum	0	0	0	0	0	134.54	$ 0.00
7. Prepare EIR Scope of Work, RFP and contracts TBD	0	0	0	0	0	134.54	$ 0.00
8. Prepare Draft EIR, Supplement or Addendum[1]	0	0	0	0	0	134.54	$ 0.00
9. Prepare Final EIR, Supplement or Addendum	0	0	0	0	0	134.54	$ 0.00
10. Prepare ZA or PC Staff Report	20	0	0	0	20	134.54	$2,690.80
11. Prepare Board Staff Report	0	0	0	0	0	134.54	$ 0.00
12. Attend ZA or PC Hearing	2	0	0	0	2	134.54	$ 269.08
13. Attend Board Hearing	0	0	0	0	0	134.54	$ 0.00
14. Post Decision Case Closure	8	0	0	0	8	134.54	$1,076.32
15. Other :	0	0	0	0	0	134.54	$ 0.00
Subtotal Planner Labor	***121***	***22***	***0***	***1***	***144***		***$19,373.76***

Note to Applicant: The breakdown above is for estimation purposes based on the most complex CEQA review required. P&D will not adjust the calculation estimates based on overestimation of time for a single task. Your bills will reflect actual work completed. Your planner will advise you if unforeseen circumstances arise which may require additional costs.

NON-SALARY COSTS

Activity	Fee	Number	Cost
16. Board of Architectural Review (Discretionary Case)	$720	1	$ 720.00
17. Board of Architectural Review – Summerland, Toro Canyon	$954	0	$ 0.00
18. Board of Architectural Review – Montecito	$1006	0	$ 0.00
19. Environmental Review Hearing	$469	0	$ 0.00
20. P&D Director Decision	$234	0	$ 0.00
21. Consent Agenda (Zoning Admin. or Planning Comm.)	$234	0	$ 0.00
22. Zoning Administrator Hearing (not consent)	$313	1	$ 313.00
23. Montecito Planning Commission Hearing	$313	0	$ 0.00
24. Planning Commission Hearing (Regular, not consent)	$1042	0	$ 0.00
25. CEQA Document Noticing	$234	1	$ 234.00
26. Continuance (Applicant Requested)	$156	0	$ 0.00
27. No Hearing – Case Closure Fee	$57	0	$ 0.00
Other Non-Salary Charges ***(These costs may not be known at the time the estimate is initially prepared)***			
28. Planning Commission Hearing (Special)	Actual Cost		$0.00
29. Other County Department Charges (APCD, EHS, Public Works[2])	Actual Cost		$0.00
30. Special Studies/Consultant Reports (Bio, Arc, Geo, Noise, Ag)	Actual Cost		$0.00
31. EIR Consultant Costs	Actual Cost		$0.00
32. In-house EIR Printing	Actual Cost		$0.00
33. Hearing Stenographer	Actual Cost		$0.00
34. Newspaper Display Advertisement	Actual Cost		$0.00
35. Other:	Actual Cost		$0.00
		Subtotal Non-Salary Cost	***$1,267.00***

Subtotal Planner Labor Cost	***Subtotal Non-Salary Cost***	***Total Estimated Cost*** ***(Round to next $1,000)***
$19,373.76	***$1,267.00***	***$20,640.76*** ***($21,000.00)***

[1] For in-house EIR preparation. If work not done by P&D this will reflect cost of managing the EIR consultant.

[2] cc: Linda Bishop, Accounting.

G:\group\P&D\Protos\Dev Rev\Forms\Project Cost Estimate.doc

Appendix F

Air Calculations

PhaseNum	PhaseName	PhaseType	PhaseStartDate	PhaseEndDate	NumDaysWeek	NumDays	PhaseDescription
1	Survey	Site Preparation	2014/01/01	2014/01/23	5	17	Phase 01
2	Material Staging Yards	Site Preparation	2014/01/24	2015/08/17	5	407	Phase 02
3	Tree Trimming	Site Preparation	2014/01/24	2014/02/12	5	14	Phase 03
4	R/W Clearing	Grading	2014/02/13	2014/03/12	5	20	Phase 04
5	Roads and Landing Work	Grading	2014/03/13	2014/05/20	5	49	Phase 05
6	Guard Structure Installation	Building Construction	2014/03/13	2014/03/28	5	12	Phase 06
7	Remove Existing Conductor	Trenching	2014/05/01	2014/06/13	5	32	Phase 07
8	Install TSP foundation	Building Construction	2014/05/07	2015/01/09	5	178	Phase 11
9	TSP Haul	Site Preparation	2014/05/10	2014/07/11	5	45	Phase 12
10	Install Conductor	Site Preparation	2014/05/12	2014/07/10	5	44	Phase 18
11	TSP Assembly	Site Preparation	2014/05/14	2014/09/15	5	89	Phase 13
12	TSP Erection	Site Preparation	2014/05/17	2014/09/18	5	89	Phase 14
13	LST Removal	Site Preparation	2014/06/14	2015/05/01	5	230	Phase 08
14	LST Foundation Removal	Demolition	2014/06/21	2014/10/22	5	88	Phase 09
15	Wood Pole Removal	Site Preparation	2014/06/27	2014/07/02	5	4	Phase 10
16	LWS Pole Haul	Site Preparation	2015/05/21	2015/05/26	5	4	Phase 15
17	LWS Pole Assembly	Site Preparation	2015/05/27	2015/06/01	5	4	Phase 16
18	Instal LWS Pole	Site Preparation	2015/06/02	2015/06/05	5	4	Phase 17
19	Install PRGW&FRC	Site Preparation	2015/06/06	2015/07/06	5	21	Phase 19
20	Guard Structure Removal	Demolition	2015/07/07	2015/07/17	5	9	Phase 20
21	Duct Bank Installation	Site Preparation	2015/07/18	2015/07/22	5	3	Phase 21
22	UG Cable Installation	Site Preparation	2015/07/23	2015/07/23	5	1	Phase 22
23	Restoration	Site Preparation	2015/07/24	2015/08/17	5	17	Phase 23

tblOffRoadEquipment

PhaseName	OffRoadEquipmentType	OffRoad Equipment Unit Amount	Usage Hours	Horse Power	Load Factor
Material Staging Yards	Cranes	1	2	350	0.43
Material Staging Yards	Forklifts	1	6	125	0.3
Material Staging Yards	Off-Highway Trucks	1	4	300	0.57
Material Staging Yards	Off-Highway Trucks	1	8	300	0.57
Material Staging Yards	Off-Highway Trucks	1	2	400	0.57
Tree Trimming	Off-Highway Trucks	1	8	380	0.57
Tree Trimming	Off-Highway Trucks	1	8	300	0.57
Tree Trimming	Other General Industrial Equipment	1	4	50	0.62
R/W Clearing	Graders	1	6	250	0.61
R/W Clearing	Off-Highway Trucks	1	4	450	0.57
R/W Clearing	Off-Highway Trucks	1	8	300	0.57
R/W Clearing	Off-Highway Trucks	1	8	300	0.57
R/W Clearing	Tractors/Loaders/Backhoes	1	6	125	0.55
R/W Clearing	Tractors/Loaders/Backhoes	1	6	150	0.55
Roads and Landing Work	Cranes	1	2	350	0.43
Roads and Landing Work	Excavators	1	4	250	0.57
Roads and Landing Work	Forklifts	1	6	125	0.3
Roads and Landing Work	Graders	1	6	250	0.61
Roads and Landing Work	Off-Highway Trucks	1	4	450	0.57
Roads and Landing Work	Off-Highway Trucks	1	2	400	0.57
Roads and Landing Work	Off-Highway Trucks	2	8	300	0.57
Roads and Landing Work	Other Construction Equipment	1	8	110	0.62
Roads and Landing Work	Other General Industrial Equipment	1	8	50	0.51
Roads and Landing Work	Plate Compactors	1	6	100	0.43
Roads and Landing Work	Tractors/Loaders/Backhoes	1	4	125	0.55
Roads and Landing Work	Tractors/Loaders/Backhoes	1	4	150	0.55
Guard Structure Installation	Air Compressors	1	4	60	0.48
Guard Structure Installation	Bore/Drill Rigs	1	4	210	0.75
Guard Structure Installation	Cranes	1	6	350	0.43
Guard Structure Installation	Off-Highway Trucks	1	4	250	0.57
Guard Structure Installation	Off-Highway Trucks	1	8	400	0.57
Guard Structure Installation	Off-Highway Trucks	1	8	300	0.57
Remove Existing Conductor	Cranes	2	8	350	0.43
Remove Existing Conductor	Off-Highway Trucks	4	8	250	0.57
Remove Existing Conductor	Off-Highway Trucks	1	1	350	0.57
Remove Existing Conductor	Off-Highway Trucks	2	4	450	0.57
Remove Existing Conductor	Off-Highway Trucks	4	4	300	0.57
Remove Existing Conductor	Off-Highway Trucks	2	4	300	0.57
Remove Existing Conductor	Other Construction Equipment	1	6	350	0.62
Remove Existing Conductor	Other Construction Equipment	1	6	300	0.62
Install TSP foundation	Bore/Drill Rigs	1	6	125	0.75
Install TSP foundation	Cement and Mortar Mixers	3	2	350	0.56
Install TSP foundation	Cranes	1	4	350	0.43
Install TSP foundation	Off-Highway Trucks	1	4	350	0.57
Install TSP foundation	Off-Highway Trucks	1	8	300	0.57
Install TSP foundation	Tractors/Loaders/Backhoes	1	6	125	0.55
TSP Haul	Cranes	1	6	350	0.43
TSP Haul	Cranes	1	2	350	0.43

TSP Haul	Forklifts	1	6	125	0.3
TSP Haul	Graders	1	8	162	0.61
TSP Haul	Off-Highway Trucks	1	8	400	0.57
TSP Haul	Off-Highway Trucks	1	2	400	0.57
TSP Haul	Tractors/Loaders/Backhoes	1	8	75	0.55
Install Conductor	Cranes	2	8	350	0.43
Install Conductor	Off-Highway Trucks	4	8	250	0.57
Install Conductor	Off-Highway Trucks	1	2	350	0.57
Install Conductor	Off-Highway Trucks	2	6	350	0.57
Install Conductor	Off-Highway Trucks	1	6	350	0.57
Install Conductor	Off-Highway Trucks	2	4	450	0.57
Install Conductor	Off-Highway Trucks	4	8	300	0.57
Install Conductor	Off-Highway Trucks	2	8	300	0.57
Install Conductor	Other Construction Equipment	1	6	300	0.62
Install Conductor	Other Construction Equipment	1	6	350	0.62
Install Conductor	Tractors/Loaders/Backhoes	1	2	125	0.55
TSP Assembly	Air Compressors	1	6	60	0.48
TSP Assembly	Cranes	1	8	350	0.43
TSP Assembly	Off-Highway Trucks	2	4	300	0.57
TSP Erection	Air Compressors	1	4	60	0.48
TSP Erection	Cranes	1	8	350	0.43
TSP Erection	Off-Highway Trucks	2	4	300	0.57
LST Removal	Air Compressors	1	8	60	0.48
LST Removal	Cranes	1	6	215	0.43
LST Removal	Cranes	1	6	350	0.43
LST Removal	Off-Highway Trucks	1	4	400	0.57
LST Foundation Removal	Air Compressors	1	8	60	0.48
LST Foundation Removal	Excavators	1	4	250	0.57
LST Foundation Removal	Off-Highway Trucks	1	6	350	0.57
LST Foundation Removal	Tractors/Loaders/Backhoes	1	6	125	0.55
Wood Pole Removal	Air Compressors	1	5	60	0.48
Wood Pole Removal	Cranes	1	9	350	0.43
Wood Pole Removal	Off-Highway Trucks	1	9	250	0.57
Wood Pole Removal	Off-Highway Trucks	2	9	300	0.57
Wood Pole Removal	Off-Highway Trucks	1	9	400	0.57
LWS Pole Haul	Cranes	1	6	350	0.43
LWS Pole Haul	Off-Highway Trucks	1	8	400	0.57
LWS Pole Assembly	Air Compressors	1	4	60	0.48
LWS Pole Assembly	Cranes	1	8	350	0.43
LWS Pole Assembly	Cranes	1	2	350	0.43
LWS Pole Assembly	Forklifts	1	6	125	0.3
LWS Pole Assembly	Graders	1	8	162	0.61
LWS Pole Assembly	Off-Highway Trucks	1	2	400	0.57
LWS Pole Assembly	Tractors/Loaders/Backhoes	1	8	75	0.55
Instal LWS Pole	Bore/Drill Rigs	1	4	210	0.75
Instal LWS Pole	Cranes	1	6	350	0.43
Instal LWS Pole	Forklifts	1	6	125	0.3
Instal LWS Pole	Off-Highway Trucks	1	6	250	0.57
Instal LWS Pole	Off-Highway Trucks	1	8	400	0.57
Install PRGW&FRC	Cranes	1	8	350	0.43
Install PRGW&FRC	Off-Highway Trucks	4	8	250	0.57
Install PRGW&FRC	Off-Highway Trucks	1	2	350	0.57

Install PRGW&FRC	Off-Highway Trucks	2	6	350	0.57
Install PRGW&FRC	Off-Highway Trucks	1	6	350	0.57
Install PRGW&FRC	Off-Highway Trucks	2	4	450	0.57
Install PRGW&FRC	Off-Highway Trucks	3	8	300	0.57
Install PRGW&FRC	Off-Highway Trucks	2	8	300	0.57
Install PRGW&FRC	Other Construction Equipment	1	6	300	0.62
Install PRGW&FRC	Other Construction Equipment	1	6	350	0.62
Install PRGW&FRC	Tractors/Loaders/Backhoes	1	2	125	0.55
Guard Structure Removal	Air Compressors	1	4	60	0.48
Guard Structure Removal	Cranes	1	6	350	0.43
Guard Structure Removal	Off-Highway Trucks	1	4	250	0.57
Guard Structure Removal	Off-Highway Trucks	1	8	400	0.57
Duct Bank Installation	Air Compressors	1	4	60	0.48
Duct Bank Installation	Cement and Mortar Mixers	3	2	350	0.56
Duct Bank Installation	Off-Highway Trucks	2	4	300	0.57
Duct Bank Installation	Off-Highway Trucks	2	6	350	0.57
Duct Bank Installation	Off-Highway Trucks	1	6	275	0.57
Duct Bank Installation	Off-Highway Trucks	1	8	300	0.57
Duct Bank Installation	Off-Highway Trucks	1	4	450	0.57
Duct Bank Installation	Tractors/Loaders/Backhoes	1	6	125	0.55
UG Cable Installation	Cranes	1	6	350	0.43
UG Cable Installation	Graders	1	8	162	0.61
UG Cable Installation	Off-Highway Trucks	1	6	250	0.57
UG Cable Installation	Off-Highway Trucks	2	6	350	0.57
UG Cable Installation	Off-Highway Trucks	1	6	350	0.57
UG Cable Installation	Other Construction Equipment	1	6	300	0.62
UG Cable Installation	Tractors/Loaders/Backhoes	1	8	75	0.55
Restoration	Graders	1	6	250	0.61
Restoration	Off-Highway Trucks	1	8	300	0.57
Restoration	Off-Highway Trucks	1	4	459	0.57
Restoration	Plate Compactors	1	4	100	0.43
Restoration	Plate Compactors	1	4	100	0.43
Restoration	Tractors/Loaders/Backhoes	1	4	125	0.55

PhaseName	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Survey	4	2	0	10.8	40	20	LD_Mix	MHDT	HHDT
Material Staging Yards	4	0	0	10.8	7.3	20	LD_Mix	MHDT	HHDT
Tree Trimming	3	0	0	10.8	7.3	20	LD_Mix	MHDT	HHDT
R/W Clearing	5	0	0	10.8	80	20	LD_Mix	MHDT	HHDT
Roads and Landing Work	5	1	0	10.8	80	20	LD_Mix	MHDT	HHDT
Guard Structure Installation	6	2	0	10.8	40	20	LD_Mix	MHDT	HHDT
Remove Existing Conductor	20	2	0	10.8	40	20	LD_Mix	MHDT	HHDT
Install TSP foundation	6	1	0	10.8	80	20	LD_Mix	MHDT	HHDT
TSP Haul	4	1	0	10.8	80	20	LD_Mix	MHDT	HHDT
Install Conductor	20	3	0	10.8	40	20	LD_Mix	MHDT	HHDT
TSP Assembly	8	1	0	10.8	80	20	LD_Mix	MHDT	HHDT
TSP Erection	8	4	0	10.8	40	20	LD_Mix	MHDT	HHDT
LST Removal	8	2	0	10.8	40	20	LD_Mix	MHDT	HHDT
LST Foundation Removal	4	0	0	10.8	7.3	20	LD_Mix	MHDT	HHDT
Wood Pole Removal	6	2	0	10.8	40	20	LD_Mix	MHDT	HHDT
LWS Pole Haul	4	1	0	10.8	80	20	LD_Mix	MHDT	HHDT
LWS Pole Assembly	8	4	0	10.8	40	20	LD_Mix	MHDT	HHDT
Instal LWS Pole	6	1	0	10.8	80	20	LD_Mix	MHDT	HHDT
Install PRGW&FRC	20	0	0	10.8	7.3	20	LD_Mix	MHDT	HHDT
Guard Structure Removal	6	2	59	10.8	40	20	LD_Mix	MHDT	HHDT
Duct Bank Installation	6	0	0	10.8	7.3	20	LD_Mix	MHDT	HHDT
UG Cable Installation	8	0	0	10.8	7.3	20	LD_Mix	MHDT	HHDT
Restoration	7	2	0	10.8	40	20	LD_Mix	MHDT	HHDT

CalEEMod Version: CalEEMod.2011.1.1

Date: 5/29/2012

Santa Barbara Reliability County Project

Ventura County, Annual

1.0 Project

1.1 Land Usage

Land Uses	Size	Metric
User Defined Industrial	0	User Defined Unit

1.2 Other Project Characteristics

Urbanization Urban

Climate Zone 8

Wind Speed (m/s) 2.6

Precipitation Freq (Days) 31

Utility Comp Southern California Edison

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Year	tons/yr								MT/yr			
2014	2.44	19.26	0.18	0.73	0.91	0.01	0.73	0.74	2,877.63	0.19	0.00	2,881.72
2015	0.79	5.80	0.06	0.22	0.28	0.00	0.22	0.22	982.57	0.06	0.00	983.90
Total	**3.23**	**25.06**	**0.24**	**0.95**	**1.19**	**0.01**	**0.95**	**0.96**	**3,860.20**	**0.25**	**0.00**	**3,865.62**

3.0 Construction Detail

3.1 Mitigation Measures Construction

3.2 Survey - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00

Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	3.64	0.00	0.00	3.64
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.56	0.00	0.00	0.56
Total	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**4.20**	**0.00**	**0.00**	**4.20**

3.3 Material Staging Yards - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.36	2.81		0.10	0.10		0.10	0.10	420.21	0.03	0.00	420.81
Total	**0.36**	**2.81**	**0.00**	**0.10**	**0.10**	**0.00**	**0.10**	**0.10**	**420.21**	**0.03**	**0.00**	**420.81**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.01	0.01	0.03	0.00	0.03	0.00	0.00	0.00	18.17	0.00	0.00	18.19
Total	**0.01**	**0.01**	**0.03**	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**	**18.17**	**0.00**	**0.00**	**18.19**

3.3 Material Staging Yards - 2015

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.29	2.12		0.08	0.08		0.08	0.08	356.49	0.02	0.00	356.97
Total	**0.29**	**2.12**	**0.00**	**0.08**	**0.08**	**0.00**	**0.08**	**0.08**	**356.49**	**0.02**	**0.00**	**356.97**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category					tons/yr					MT/yr		
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.01	0.01	0.02	0.00	0.02	0.00	0.00	0.00	15.06	0.00	0.00	15.08
Total	**0.01**	**0.01**	**0.02**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**15.06**	**0.00**	**0.00**	**15.08**

3.4 Tree Trimming - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category					tons/yr					MT/yr		
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.02	0.17		0.01	0.01		0.01	0.01	25.63	0.00	0.00	25.67
Total	**0.02**	**0.17**	**0.00**	**0.01**	**0.01**	**0.00**	**0.01**	**0.01**	**25.63**	**0.00**	**0.00**	**25.67**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category					tons/yr					MT/yr		
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.75	0.00	0.00	0.75
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.75**	**0.00**	**0.00**	**0.75**

3.5 R/W Clearing - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category					tons/yr					MT/yr		
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.06	0.44		0.02	0.02		0.02	0.02	63.40	0.00	0.00	63.49
Total	**0.06**	**0.44**	**0.00**	**0.02**	**0.02**	**0.00**	**0.02**	**0.02**	**63.40**	**0.00**	**0.00**	**63.49**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category					tons/yr					MT/yr		
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Vendor	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	2.14	0.00	0.00	2.14
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.07	0.00	0.00	2.07
Total	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**4.21**	**0.00**	**0.00**	**4.21**

3.6 Roads and Landing Work - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Fugitive Dust			0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.21	1.52		0.07	0.07		0.07	0.07	210.93	0.02	0.00	211.28
Total	**0.21**	**1.52**	**0.01**	**0.07**	**0.08**	**0.00**	**0.07**	**0.07**	**210.93**	**0.02**	**0.00**	**211.28**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	5.24	0.00	0.00	5.25
Worker	0.01	0.00	0.01	0.00	0.01	0.00	0.00	0.00	7.70	0.00	0.00	7.71
Total	**0.01**	**0.02**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**12.94**	**0.00**	**0.00**	**12.96**

3.7 Remove Existing Conductor - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Off-Road	0.23	1.95		0.07	0.07		0.07	0.07	285.93	0.02	0.00	286.32
Total	**0.23**	**1.95**		**0.07**	**0.07**		**0.07**	**0.07**	**285.93**	**0.02**	**0.00**	**286.32**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	3.43	0.00	0.00	3.43
Worker	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	6.62	0.00	0.00	6.63
Total	**0.00**	**0.01**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**10.05**	**0.00**	**0.00**	**10.06**

3.8 Install TSP foundation - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category					tons/yr					MT/yr		
Off-Road	0.31	2.51		0.10	0.10		0.10	0.10	378.18	0.02	0.00	378.70
Total	**0.31**	**2.51**		**0.10**	**0.10**		**0.10**	**0.10**	**378.18**	**0.02**	**0.00**	**378.70**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category					tons/yr					MT/yr		
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	9.53	0.00	0.00	9.53
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**9.53**	**0.00**	**0.00**	**9.53**

3.9 TSP Haul - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category					tons/yr					MT/yr		
Fugitive Dust			0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.12	0.93		0.04	0.04		0.04	0.04	123.36	0.01	0.00	123.56
Total	**0.12**	**0.93**	**0.01**	**0.04**	**0.05**	**0.00**	**0.04**	**0.04**	**123.36**	**0.01**	**0.00**	**123.56**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category					tons/yr					MT/yr		
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	4.82	0.00	0.00	4.82
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.35	0.00	0.00	3.35
Total	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**8.17**	**0.00**	**0.00**	**8.17**

3.10 TSP Assembly - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e

Category	tons/yr								MT/yr			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.13	1.02		0.04	0.04		0.04	0.04	138.66	0.01	0.00	138.88
Total	**0.13**	**1.02**	**0.00**	**0.04**	**0.04**	**0.00**	**0.04**	**0.04**	**138.66**	**0.01**	**0.00**	**138.88**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	4.76	0.00	0.00	4.76
Worker	0.01	0.00	0.01	0.00	0.01	0.00	0.00	0.00	7.36	0.00	0.00	7.37
Total	**0.01**	**0.02**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**12.12**	**0.00**	**0.00**	**12.13**

3.11 TSP Erection - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.12	0.99		0.04	0.04		0.04	0.04	135.75	0.01	0.00	135.96
Total	**0.12**	**0.99**	**0.00**	**0.04**	**0.04**	**0.00**	**0.04**	**0.04**	**135.75**	**0.01**	**0.00**	**135.96**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.01	0.08	0.01	0.00	0.01	0.00	0.00	0.00	19.05	0.00	0.00	19.06
Worker	0.01	0.01	0.01	0.00	0.01	0.00	0.00	0.00	8.47	0.00	0.00	8.48
Total	**0.02**	**0.09**	**0.02**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**27.52**	**0.00**	**0.00**	**27.54**

3.12 Install Conductor - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.51	4.20		0.15	0.15		0.15	0.15	630.92	0.04	0.00	631.78
Total	**0.51**	**4.20**	**0.00**	**0.15**	**0.15**	**0.00**	**0.15**	**0.15**	**630.92**	**0.04**	**0.00**	**631.78**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	7.07	0.00	0.00	7.07
Worker	0.01	0.01	0.02	0.00	0.02	0.00	0.00	0.00	11.83	0.00	0.00	11.84
Total	**0.01**	**0.04**	**0.02**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**18.90**	**0.00**	**0.00**	**18.91**

3.13 LST Removal - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.25	2.07		0.09	0.09		0.09	0.09	262.71	0.02	0.00	263.13
Total	**0.25**	**2.07**	**0.00**	**0.09**	**0.09**	**0.00**	**0.09**	**0.09**	**262.71**	**0.02**	**0.00**	**263.13**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.01	0.08	0.01	0.00	0.01	0.00	0.00	0.00	19.05	0.00	0.00	19.06
Worker	0.01	0.01	0.02	0.00	0.02	0.00	0.00	0.00	16.93	0.00	0.00	16.95
Total	**0.02**	**0.09**	**0.03**	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**	**35.98**	**0.00**	**0.00**	**36.01**

3.13 LST Removal - 2015

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.07	0.55		0.02	0.02		0.02	0.02	76.75	0.01	0.00	76.86
Total	**0.07**	**0.55**	**0.00**	**0.02**	**0.02**	**0.00**	**0.02**	**0.02**	**76.75**	**0.01**	**0.00**	**76.86**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category					tons/yr						MT/yr	
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	5.57	0.00	0.00	5.57
Worker	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	4.83	0.00	0.00	4.84
Total	**0.00**	**0.02**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**10.40**	**0.00**	**0.00**	**10.41**

3.14 Guard Structure Installation - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category					tons/yr						MT/yr	
Off-Road	0.03	0.24		0.01	0.01		0.01	0.01	36.85	0.00	0.00	36.90
Total	**0.03**	**0.24**		**0.01**	**0.01**		**0.01**	**0.01**	**36.85**	**0.00**	**0.00**	**36.90**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category					tons/yr						MT/yr	
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	2.57	0.00	0.00	2.57
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**2.57**	**0.00**	**0.00**	**2.57**

3.15 LST Foundation Removal - 2015

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category					tons/yr						MT/yr	
Off-Road	0.11	0.78		0.04	0.04		0.04	0.04	120.38	0.01	0.00	120.56
Total	**0.11**	**0.78**		**0.04**	**0.04**		**0.04**	**0.04**	**120.38**	**0.01**	**0.00**	**120.56**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category					tons/yr						MT/yr	
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Worker	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	5.34	0.00	0.00	5.34
Total	**0.00**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**5.34**	**0.00**	**0.00**	**5.34**

3.16 Wood Pole Removal - 2015

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.01	0.11		0.00	0.00		0.00	0.00	17.96	0.00	0.00	17.99
Total	**0.01**	**0.11**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**17.96**	**0.00**	**0.00**	**17.99**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.86	0.00	0.00	0.86
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.40	0.00	0.00	0.40
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.26**	**0.00**	**0.00**	**1.26**

3.17 LWS Pole Haul - 2015

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.01	0.04		0.00	0.00		0.00	0.00	6.19	0.00	0.00	6.20
Total	**0.01**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**6.19**	**0.00**	**0.00**	**6.20**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.43	0.00	0.00	0.43
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.29
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.72**	**0.00**	**0.00**	**0.72**

3.18 LWS Pole Assembly - 2015

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.01	0.06		0.00	0.00		0.00	0.00	7.77	0.00	0.00	7.78
Total	**0.01**	**0.06**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**7.77**	**0.00**	**0.00**	**7.78**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.86	0.00	0.00	0.86
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.29
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.15**	**0.00**	**0.00**	**1.15**

3.19 Instal LWS Pole - 2015

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.01	0.06		0.00	0.00		0.00	0.00	10.07	0.00	0.00	10.09
Total	**0.01**	**0.06**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**10.07**	**0.00**	**0.00**	**10.09**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.43	0.00	0.00	0.43
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.37	0.00	0.00	0.37
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.80**	**0.00**	**0.00**	**0.80**

3.20 Install PRGW&FRC - 2015

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.21	1.59		0.06	0.06		0.06	0.06	270.46	0.02	0.00	270.81
Total	**0.21**	**1.59**	**0.00**	**0.06**	**0.06**	**0.00**	**0.06**	**0.06**	**270.46**	**0.02**	**0.00**	**270.81**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	5.09	0.00	0.00	5.10
Total	**0.00**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**5.09**	**0.00**	**0.00**	**5.10**

3.21 Guard Structure Removal - 2015

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.01	0.11		0.00	0.00		0.00	0.00	17.43	0.00	0.00	17.46
Total	**0.01**	**0.11**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**17.43**	**0.00**	**0.00**	**17.46**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	1.93	0.00	0.00	1.93
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.56	0.00	0.00	1.57
Total	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**3.49**	**0.00**	**0.00**	**3.50**

3.22 Duct Bank Installation - 2015

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.01	0.08		0.00	0.00		0.00	0.00	12.98	0.00	0.00	13.00
Total	**0.01**	**0.08**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**12.98**	**0.00**	**0.00**	**13.00**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.40	0.00	0.00	0.40
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.40**	**0.00**	**0.00**	**0.40**

3.23 UG Cable Installation - 2015

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.00	0.03		0.00	0.00		0.00	0.00	4.31	0.00	0.00	4.31
Total	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**4.31**	**0.00**	**0.00**	**4.31**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.08
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.08**	**0.00**	**0.00**	**0.08**

3.24 Restoration - 2015

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.03	0.22		0.01	0.01		0.01	0.01	34.78	0.00	0.00	34.83
Total	**0.03**	**0.22**	**0.00**	**0.01**	**0.01**	**0.00**	**0.01**	**0.01**	**34.78**	**0.00**	**0.00**	**34.83**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	1.82	0.00	0.00	1.82
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.37	0.00	0.00	1.38
Total	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**3.19**	**0.00**	**0.00**	**3.20**

CalEEMod Version: CalEEMod.2011.1.1

Date: 5/29/2012

Santa Barbara Reliability County Project

Ventura County, Summer

1.0 Project

1.1 Land Usage

Land Uses	Size	Metric
User Defined Industrial	0	User Defined Unit

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Utility Company**	Southern California Edison
Climate Zone	8	**Precipitation Freq (Days)**	31		

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CH4	N2O	CO2e
Year	lb/day								lb/day		
2014	65.59	521.13	4.69	19.36	24.05	0.15	19.36	19.51	5.78	0.00	86,276.55
2015	22.89	172.16	1.53	6.05	7.07	0.04	6.05	6.09	2.03	0.00	32,977.65
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

3.0 Construction Detail

3.1 Mitigation Measures Construction

3.2 Survey - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CH4	N2O	CO2e
Category	lb/day								lb/day		
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00			0.00

Off-Road	0.00	0.00		0.00	0.00		0.00	0.00	0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CH4	N2O	CO2e
Category	lb/day								lb/day		
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
Vendor	0.11	1.80	0.19	0.04	0.24	0.01	0.04	0.05	0.00		471.97
Worker	0.05	0.04	0.10	0.00	0.11	0.00	0.00	0.01	0.00		77.33
Total	**0.16**	**1.84**	**0.29**	**0.04**	**0.35**	**0.01**	**0.04**	**0.06**	**0.00**		**549.30**

3.3 Material Staging Yards - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CH4	N2O	CO2e
Category	lb/day								lb/day		
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00			0.00
Off-Road	2.95	23.03		0.86	0.86		0.86	0.86	0.26		3,803.23
Total	**2.95**	**23.03**	**0.00**	**0.86**	**0.86**	**0.00**	**0.86**	**0.86**	**0.26**		**3,803.23**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CH4	N2O	CO2e
Category	lb/day								lb/day		
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
Worker	0.10	0.09	0.23	0.01	0.24	0.01	0.01	0.01	0.01		173.99
Total	**0.10**	**0.09**	**0.23**	**0.01**	**0.24**	**0.01**	**0.01**	**0.01**	**0.01**		**173.99**

3.3 Material Staging Yards - 2015

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CH4	N2O	CO2e
Category	lb/day								lb/day		
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00			0.00

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CH4	N2O	CO2e
Off-Road	2.79	20.51		0.76	0.76		0.76	0.76	0.25		3,802.94
Total	**2.79**	**20.51**	**0.00**	**0.76**	**0.76**	**0.00**	**0.76**	**0.76**	**0.25**		**3,802.94**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CH4	N2O	CO2e
Category	lb/day								lb/day		
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
Worker	0.10	0.08	0.23	0.01	0.24	0.01	0.01	0.01	0.01		170.04
Total	**0.10**	**0.08**	**0.23**	**0.01**	**0.24**	**0.01**	**0.01**	**0.01**	**0.01**		**170.04**

3.4 Tree Trimming - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CH4	N2O	CO2e
Category	lb/day								lb/day		
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00			0.00
Off-Road	3.56	24.25		0.95	0.95		0.95	0.95	0.31		4,043.21
Total	**3.56**	**24.25**	**0.00**	**0.95**	**0.95**	**0.00**	**0.95**	**0.95**	**0.31**		**4,043.21**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CH4	N2O	CO2e
Category	lb/day								lb/day		
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
Worker	0.07	0.07	0.17	0.00	0.17	0.01	0.00	0.01	0.01		125.66
Total	**0.07**	**0.07**	**0.17**	**0.00**	**0.17**	**0.01**	**0.00**	**0.01**	**0.01**		**125.66**

3.5 R/W Clearing - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CH4	N2O	CO2e
Category	lb/day								lb/day		
Fugitive Dust			0.40	0.00	0.40	0.00	0.00	0.00			0.00

Off-Road	5.54	44.14		1.70	1.70		1.70	1.70	0.49		7,000.59
Total	**5.54**	**44.14**	**0.40**	**1.70**	**2.10**	**0.00**	**1.70**	**1.70**	**0.49**		**7,000.59**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CH4	N2O	CO2e
Category	lb/day								lb/day		
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
Vendor	0.06	0.90	0.10	0.02	0.12	0.00	0.02	0.03	0.00		235.99
Worker	0.14	0.13	0.33	0.01	0.33	0.01	0.01	0.02	0.01		241.65
Total	**0.20**	**1.03**	**0.43**	**0.03**	**0.45**	**0.01**	**0.03**	**0.05**	**0.01**		**477.64**

3.6 Roads and Landing Work - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CH4	N2O	CO2e
Category	lb/day								lb/day		
Fugitive Dust			0.40	0.00	0.40	0.00	0.00	0.00			0.00
Off-Road	8.51	62.07		2.70	2.70		2.70	2.70	0.76		9,508.53
Total	**8.51**	**62.07**	**0.40**	**2.70**	**3.10**	**0.00**	**2.70**	**2.70**	**0.76**		**9,508.53**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CH4	N2O	CO2e
Category	lb/day								lb/day		
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
Vendor	0.06	0.90	0.10	0.02	0.12	0.00	0.02	0.03	0.00		235.99
Worker	0.22	0.19	0.50	0.01	0.51	0.02	0.01	0.03	0.02		367.31
Total	**0.28**	**1.09**	**0.60**	**0.03**	**0.63**	**0.02**	**0.03**	**0.06**	**0.02**		**603.30**

3.7 Remove Existing Conductor - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CH4	N2O	CO2e
Category	lb/day								lb/day		
Off-Road	14.67	122.18		4.21	4.21		4.21	4.21	1.29		19,731.39
Total	**14.67**	**122.18**		**4.21**	**4.21**		**4.21**	**4.21**	**1.29**		**19,731.39**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CH4	N2O	CO2e
Category					lb/day					lb/day	
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
Vendor	0.06	0.90	0.10	0.02	0.12	0.00	0.02	0.03	0.00		236.05
Worker	0.29	0.25	0.65	0.02	0.67	0.02	0.02	0.04	0.03		483.30
Total	**0.35**	**1.15**	**0.75**	**0.04**	**0.79**	**0.02**	**0.04**	**0.07**	**0.03**		**719.35**

3.8 Install TSP foundation - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CH4	N2O	CO2e
Category					lb/day					lb/day	
Off-Road	3.48	28.21		1.08	1.08		1.08	1.08	0.31		4,691.70
Total	**3.48**	**28.21**		**1.08**	**1.08**		**1.08**	**1.08**	**0.31**		**4,691.70**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CH4	N2O	CO2e
Category					lb/day					lb/day	
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
Vendor	0.03	0.45	0.05	0.01	0.06	0.00	0.01	0.01	0.00		118.02
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
Total	**0.03**	**0.45**	**0.05**	**0.01**	**0.06**	**0.00**	**0.01**	**0.01**	**0.00**		**118.02**

3.9 TSP Haul - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CH4	N2O	CO2e
Category					lb/day					lb/day	
Fugitive Dust			0.53	0.00	0.53	0.00	0.00	0.00			0.00
Off-Road	5.26	41.29		1.82	1.82		1.82	1.82	0.47		6,055.14
Total	**5.26**	**41.29**	**0.53**	**1.82**	**2.35**	**0.00**	**1.82**	**1.82**	**0.47**		**6,055.14**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CH4	N2O	CO2e
Category					lb/day					lb/day	
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
Vendor	0.06	0.90	0.10	0.02	0.12	0.00	0.02	0.03	0.00		235.99
Worker	0.10	0.09	0.23	0.01	0.24	0.01	0.01	0.01	0.01		173.99
Total	**0.16**	**0.99**	**0.33**	**0.03**	**0.36**	**0.01**	**0.03**	**0.04**	**0.01**		**409.98**

3.10 TSP Assembly - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CH4	N2O	CO2e
Category					lb/day					lb/day	
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00			0.00
Off-Road	2.87	23.02		0.94	0.94		0.94	0.94	0.25		3,441.10
Total	**2.87**	**23.02**	**0.00**	**0.94**	**0.94**	**0.00**	**0.94**	**0.94**	**0.25**		**3,441.10**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CH4	N2O	CO2e
Category					lb/day					lb/day	
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
Vendor	0.03	0.45	0.05	0.01	0.06	0.00	0.01	0.01	0.00		118.02
Worker	0.12	0.10	0.26	0.01	0.27	0.01	0.01	0.02	0.01		193.32
Total	**0.15**	**0.55**	**0.31**	**0.02**	**0.33**	**0.01**	**0.02**	**0.03**	**0.01**		**311.34**

3.11 TSP Erection - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CH4	N2O	CO2e
Category					lb/day					lb/day	
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00			0.00
Off-Road	2.76	22.31		0.87	0.87		0.87	0.87	0.24		3,368.78
Total	**2.76**	**22.31**	**0.00**	**0.87**	**0.87**	**0.00**	**0.87**	**0.87**	**0.24**		**3,368.78**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CH4	N2O	CO2e
Category	lb/day								lb/day		
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
Vendor	0.12	1.80	0.19	0.04	0.24	0.01	0.04	0.05	0.00		472.10
Worker	0.13	0.12	0.30	0.01	0.31	0.01	0.01	0.02	0.01		222.32
Total	**0.25**	**1.92**	**0.49**	**0.05**	**0.55**	**0.02**	**0.05**	**0.07**	**0.01**		**694.42**

3.12 Install Conductor - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CH4	N2O	CO2e
Category	lb/day								lb/day		
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00			0.00
Off-Road	23.33	191.10		6.65	6.65		6.65	6.65	2.06		31,663.94
Total	**23.33**	**191.10**	**0.00**	**6.65**	**6.65**	**0.00**	**6.65**	**6.65**	**2.06**		**31,663.94**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CH4	N2O	CO2e
Category	lb/day								lb/day		
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
Vendor	0.09	1.35	0.15	0.03	0.18	0.01	0.03	0.04	0.00		354.07
Worker	0.37	0.33	0.85	0.02	0.87	0.03	0.02	0.05	0.03		628.29
Total	**0.46**	**1.68**	**1.00**	**0.05**	**1.05**	**0.04**	**0.05**	**0.09**	**0.03**		**982.36**

3.13 LST Removal - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CH4	N2O	CO2e
Category	lb/day								lb/day		
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00			0.00
Off-Road	2.85	23.30		0.98	0.98		0.98	0.98	0.25		3,259.94
Total	**2.85**	**23.30**	**0.00**	**0.98**	**0.98**	**0.00**	**0.98**	**0.98**	**0.25**		**3,259.94**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CH4	N2O	CO2e
Category	lb/day								lb/day		
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
Vendor	0.06	0.90	0.10	0.02	0.12	0.00	0.02	0.03	0.00		236.05
Worker	0.13	0.12	0.30	0.01	0.31	0.01	0.01	0.02	0.01		222.32
Total	**0.19**	**1.02**	**0.40**	**0.03**	**0.43**	**0.01**	**0.03**	**0.05**	**0.01**		**458.37**

3.13 LST Removal - 2015

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CH4	N2O	CO2e
Category	lb/day								lb/day		
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00			0.00
Off-Road	2.68	21.11		0.88	0.88		0.88	0.88	0.24		3,259.65
Total	**2.68**	**21.11**	**0.00**	**0.88**	**0.88**	**0.00**	**0.88**	**0.88**	**0.24**		**3,259.65**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CH4	N2O	CO2e
Category	lb/day								lb/day		
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
Vendor	0.05	0.80	0.10	0.02	0.12	0.00	0.02	0.02	0.00		236.26
Worker	0.12	0.10	0.30	0.01	0.31	0.01	0.01	0.02	0.01		217.28
Total	**0.17**	**0.90**	**0.40**	**0.03**	**0.43**	**0.01**	**0.03**	**0.04**	**0.01**		**453.54**

3.14 Guard Structure Installation - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CH4	N2O	CO2e
Category	lb/day								lb/day		
Off-Road	5.06	40.27		1.48	1.48		1.48	1.48	0.45		6,781.53
Total	**5.06**	**40.27**		**1.48**	**1.48**		**1.48**	**1.48**	**0.45**		**6,781.53**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CH4	N2O	CO2e
Category	lb/day								lb/day		
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
Vendor	0.11	1.80	0.19	0.04	0.24	0.01	0.04	0.05	0.00		471.97
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
Total	**0.11**	**1.80**	**0.19**	**0.04**	**0.24**	**0.01**	**0.04**	**0.05**	**0.00**		**471.97**

3.15 LST Foundation Removal - 2015

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CH4	N2O	CO2e
Category	lb/day								lb/day		
Off-Road	2.43	17.67		0.81	0.81		0.81	0.81	0.22		3,021.11
Total	**2.43**	**17.67**		**0.81**	**0.81**		**0.81**	**0.81**	**0.22**		**3,021.11**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CH4	N2O	CO2e
Category	lb/day								lb/day		
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
Worker	0.08	0.07	0.20	0.00	0.20	0.01	0.00	0.01	0.01		141.70
Total	**0.08**	**0.07**	**0.20**	**0.00**	**0.20**	**0.01**	**0.00**	**0.01**	**0.01**		**141.70**

3.16 Wood Pole Removal - 2015

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CH4	N2O	CO2e
Category	lb/day								lb/day		
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00			0.00
Off-Road	7.39	55.63		2.04	2.04		2.04	2.04	0.65		9,916.21
Total	**7.39**	**55.63**	**0.00**	**2.04**	**2.04**	**0.00**	**2.04**	**2.04**	**0.65**		**9,916.21**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CH4	N2O	CO2e
Category				lb/day						lb/day	
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
Vendor	0.10	1.60	0.19	0.04	0.24	0.01	0.04	0.05	0.00		472.41
Worker	0.13	0.11	0.33	0.01	0.33	0.01	0.01	0.02	0.01		236.17
Total	**0.23**	**1.71**	**0.52**	**0.05**	**0.57**	**0.02**	**0.05**	**0.07**	**0.01**		**708.58**

3.17 LWS Pole Haul - 2015

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CH4	N2O	CO2e
Category				lb/day						lb/day	
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00			0.00
Off-Road	2.51	19.29		0.69	0.69		0.69	0.69	0.22		3,418.15
Total	**2.51**	**19.29**	**0.00**	**0.69**	**0.69**	**0.00**	**0.69**	**0.69**	**0.22**		**3,418.15**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CH4	N2O	CO2e
Category				lb/day						lb/day	
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
Vendor	0.05	0.80	0.10	0.02	0.12	0.00	0.02	0.02	0.00		236.20
Worker	0.10	0.08	0.23	0.01	0.24	0.01	0.01	0.01	0.01		170.04
Total	**0.15**	**0.88**	**0.33**	**0.03**	**0.36**	**0.01**	**0.03**	**0.03**	**0.01**		**406.24**

3.18 LWS Pole Assembly - 2015

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CH4	N2O	CO2e
Category				lb/day						lb/day	
Fugitive Dust			0.53	0.00	0.53	0.00	0.00	0.00			0.00
Off-Road	3.81	29.06		1.41	1.41		1.41	1.41	0.34		4,290.27
Total	**3.81**	**29.06**	**0.53**	**1.41**	**1.94**	**0.00**	**1.41**	**1.41**	**0.34**		**4,290.27**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CH4	N2O	CO2e
Category					lb/day					lb/day	
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
Vendor	0.11	1.61	0.19	0.04	0.24	0.01	0.04	0.05	0.00		472.53
Worker	0.10	0.08	0.23	0.01	0.24	0.01	0.01	0.01	0.01		170.04
Total	**0.21**	**1.69**	**0.42**	**0.05**	**0.48**	**0.02**	**0.05**	**0.06**	**0.01**		**642.57**

3.19 Instal LWS Pole - 2015

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CH4	N2O	CO2e
Category					lb/day					lb/day	
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00			0.00
Off-Road	3.84	29.36		1.05	1.05		1.05	1.05	0.34		5,561.10
Total	**3.84**	**29.36**	**0.00**	**1.05**	**1.05**	**0.00**	**1.05**	**1.05**	**0.34**		**5,561.10**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CH4	N2O	CO2e
Category					lb/day					lb/day	
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
Vendor	0.05	0.80	0.10	0.02	0.12	0.00	0.02	0.02	0.00		236.20
Worker	0.12	0.10	0.30	0.01	0.31	0.01	0.01	0.02	0.01		217.28
Total	**0.17**	**0.90**	**0.40**	**0.03**	**0.43**	**0.01**	**0.03**	**0.04**	**0.01**		**453.48**

3.20 Install PRGW&FRC - 2015

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CH4	N2O	CO2e
Category					lb/day					lb/day	
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00			0.00
Off-Road	19.69	151.29		5.26	5.26		5.26	5.26	1.74		28,437.86
Total	**19.69**	**151.29**	**0.00**	**5.26**	**5.26**	**0.00**	**5.26**	**5.26**	**1.74**		**28,437.86**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CH4	N2O	CO2e
Category	lb/day								lb/day		
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
Worker	0.32	0.27	0.78	0.02	0.80	0.03	0.02	0.05	0.03		566.81
Total	**0.32**	**0.27**	**0.78**	**0.02**	**0.80**	**0.03**	**0.02**	**0.05**	**0.03**		**566.81**

3.21 Guard Structure Removal - 2015

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CH4	N2O	CO2e
Category	lb/day								lb/day		
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00			0.00
Off-Road	3.26	24.81		0.94	0.94		0.94	0.94	0.29		4,277.23
Total	**3.26**	**24.81**	**0.00**	**0.94**	**0.94**	**0.00**	**0.94**	**0.94**	**0.29**		**4,277.23**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CH4	N2O	CO2e
Category	lb/day								lb/day		
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
Vendor	0.10	1.60	0.19	0.04	0.24	0.01	0.04	0.05	0.00		472.41
Worker	0.23	0.20	0.56	0.01	0.58	0.02	0.01	0.04	0.02		406.21
Total	**0.33**	**1.80**	**0.75**	**0.05**	**0.82**	**0.03**	**0.05**	**0.09**	**0.02**		**878.62**

3.22 Duct Bank Installation - 2015

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CH4	N2O	CO2e
Category	lb/day								lb/day		
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00			0.00
Off-Road	7.02	50.75		1.92	1.92		1.92	1.92	0.62		9,556.51
Total	**7.02**	**50.75**	**0.00**	**1.92**	**1.92**	**0.00**	**1.92**	**1.92**	**0.62**		**9,556.51**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CH4	N2O	CO2e
Category	lb/day								lb/day		
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
Worker	0.18	0.15	0.43	0.01	0.44	0.02	0.01	0.03	0.02		311.75
Total	**0.18**	**0.15**	**0.43**	**0.01**	**0.44**	**0.02**	**0.01**	**0.03**	**0.02**		**311.75**

3.23 UG Cable Installation - 2015

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CH4	N2O	CO2e
Category	lb/day								lb/day		
Fugitive Dust			0.53	0.00	0.53	0.00	0.00	0.00			0.00
Off-Road	7.12	54.32		2.18	2.18		2.18	2.18	0.63		9,508.38
Total	**7.12**	**54.32**	**0.53**	**2.18**	**2.71**	**0.00**	**2.18**	**2.18**	**0.63**		**9,508.38**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CH4	N2O	CO2e
Category	lb/day								lb/day		
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
Worker	0.11	0.09	0.26	0.01	0.27	0.01	0.01	0.02	0.01		188.94
Total	**0.11**	**0.09**	**0.26**	**0.01**	**0.27**	**0.01**	**0.01**	**0.02**	**0.01**		**188.94**

3.24 Restoration - 2015

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CH4	N2O	CO2e
Category	lb/day								lb/day		
Fugitive Dust			0.40	0.00	0.40	0.00	0.00	0.00			0.00
Off-Road	3.34	25.59		0.94	0.94		0.94	0.94	0.30		4,518.12
Total	**3.34**	**25.59**	**0.40**	**0.94**	**1.34**	**0.00**	**0.94**	**0.94**	**0.30**		**4,518.12**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CH4	N2O	CO2e
Category	lb/day								lb/day		
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
Vendor	0.05	0.80	0.10	0.02	0.12	0.00	0.02	0.02	0.00		236.26
Worker	0.11	0.09	0.26	0.01	0.27	0.01	0.01	0.02	0.01		188.94
Total	**0.16**	**0.89**	**0.36**	**0.03**	**0.39**	**0.01**	**0.03**	**0.04**	**0.01**		**425.20**

CalEEMod Version: CalEEMod.2011.1.1

Date: 5/29/2012

Santa Barbara Reliability County Project

Ventura County, Winter

1.0 Project

1.1 Land Usage

Land Uses	Size	Metric
User Defined Industrial	0	User Defined Unit

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Utility Company**	Southern California Edison
Climate Zone	8	**Precipitation Freq (Days)**	31		

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Year	lb/day								lb/day			
2014	65.81	521.74	4.69	19.36	24.05	0.15	19.36	19.51	0.00	5.77	0.00	86,126.28
2015	22.95	172.22	1.53	6.05	7.07	0.04	6.05	6.09	0.00	2.02	0.00	32,928.17
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

3.0 Construction Detail

3.1 Mitigation Measures

3.2 Survey - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category					lb/day					lb/day		
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.12	1.91	0.19	0.04	0.24	0.01	0.04	0.05		0.00		471.97
Worker	0.05	0.05	0.10	0.00	0.11	0.00	0.00	0.01		0.00		72.15
Total	**0.17**	**1.96**	**0.29**	**0.04**	**0.35**	**0.01**	**0.04**	**0.06**		**0.00**		**544.12**

3.3 Material Staging Yards - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category					lb/day					lb/day		
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	2.95	23.03		0.86	0.86		0.86	0.86		0.26		3,803.23
Total	**2.95**	**23.03**	**0.00**	**0.86**	**0.86**	**0.00**	**0.86**	**0.86**		**0.26**		**3,803.23**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category					lb/day					lb/day		
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.12	0.10	0.23	0.01	0.24	0.01	0.01	0.01		0.01		162.33
Total	**0.12**	**0.10**	**0.23**	**0.01**	**0.24**	**0.01**	**0.01**	**0.01**		**0.01**		**162.33**

3.3 Material Staging Yards - 2015

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category					lb/day					lb/day		
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	2.79	20.51		0.76	0.76		0.76	0.76		0.25		3,802.94
Total	**2.79**	**20.51**	**0.00**	**0.76**	**0.76**	**0.00**	**0.76**	**0.76**		**0.25**		**3,802.94**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.11	0.09	0.23	0.01	0.24	0.01	0.01	0.01		0.01		158.62
Total	**0.11**	**0.09**	**0.23**	**0.01**	**0.24**	**0.01**	**0.01**	**0.01**		**0.01**		**158.62**

3.4 Tree Trimming - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	3.56	24.25		0.95	0.95		0.95	0.95		0.31		4,043.21
Total	**3.56**	**24.25**	**0.00**	**0.95**	**0.95**	**0.00**	**0.95**	**0.95**		**0.31**		**4,043.21**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.09	0.08	0.17	0.00	0.17	0.01	0.00	0.01		0.01		117.24
Total	**0.09**	**0.08**	**0.17**	**0.00**	**0.17**	**0.01**	**0.00**	**0.01**		**0.01**		**117.24**

3.5 R/W Clearing - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Fugitive Dust			0.40	0.00	0.40	0.00	0.00	0.00				0.00
Off-Road	5.54	44.14		1.70	1.70		1.70	1.70		0.49		7,000.59
Total	**5.54**	**44.14**	**0.40**	**1.70**	**2.10**	**0.00**	**1.70**	**1.70**		**0.49**		**7,000.59**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.06	0.96	0.10	0.02	0.12	0.00	0.02	0.03		0.00		235.99
Worker	0.17	0.15	0.33	0.01	0.33	0.01	0.01	0.02		0.01		225.46
Total	**0.23**	**1.11**	**0.43**	**0.03**	**0.45**	**0.01**	**0.03**	**0.05**		**0.01**		**461.45**

3.6 Roads and Landing Work - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Fugitive Dust			0.40	0.00	0.40	0.00	0.00	0.00				0.00
Off-Road	8.51	62.07		2.70	2.70		2.70	2.70		0.76		9,508.53
Total	**8.51**	**62.07**	**0.40**	**2.70**	**3.10**	**0.00**	**2.70**	**2.70**		**0.76**		**9,508.53**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.06	0.96	0.10	0.02	0.12	0.00	0.02	0.03		0.00		235.99
Worker	0.25	0.22	0.50	0.01	0.51	0.02	0.01	0.03		0.02		342.69
Total	**0.31**	**1.18**	**0.60**	**0.03**	**0.63**	**0.02**	**0.03**	**0.06**		**0.02**		**578.68**

3.7 Remove Existing Conductor - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Off-Road	14.67	122.18		4.21	4.21		4.21	4.21		1.29		19,731.39
Total	**14.67**	**122.18**		**4.21**	**4.21**		**4.21**	**4.21**		**1.29**		**19,731.39**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.06	0.96	0.10	0.02	0.12	0.00	0.02	0.03		0.00		236.05
Worker	0.33	0.29	0.65	0.02	0.67	0.02	0.02	0.04		0.02		450.91
Total	**0.39**	**1.25**	**0.75**	**0.04**	**0.79**	**0.02**	**0.04**	**0.07**		**0.02**		**686.96**

3.8 Install TSP foundation - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Off-Road	3.48	28.21		1.08	1.08		1.08	1.08		0.31		4,691.70
Total	**3.48**	**28.21**		**1.08**	**1.08**		**1.08**	**1.08**		**0.31**		**4,691.70**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.03	0.48	0.05	0.01	0.06	0.00	0.01	0.01		0.00		118.02
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Total	**0.03**	**0.48**	**0.05**	**0.01**	**0.06**	**0.00**	**0.01**	**0.01**		**0.00**		**118.02**

3.9 TSP Haul - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Fugitive Dust			0.53	0.00	0.53	0.00	0.00	0.00				0.00
Off-Road	5.26	41.29		1.82	1.82		1.82	1.82		0.47		6,055.14
Total	**5.26**	**41.29**	**0.53**	**1.82**	**2.35**	**0.00**	**1.82**	**1.82**		**0.47**		**6,055.14**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.06	0.96	0.10	0.02	0.12	0.00	0.02	0.03		0.00		235.99
Worker	0.12	0.10	0.23	0.01	0.24	0.01	0.01	0.01		0.01		162.33
Total	**0.18**	**1.06**	**0.33**	**0.03**	**0.36**	**0.01**	**0.03**	**0.04**		**0.01**		**398.32**

3.10 TSP Assembly - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	2.87	23.02		0.94	0.94		0.94	0.94		0.25		3,441.10
Total	**2.87**	**23.02**	**0.00**	**0.94**	**0.94**	**0.00**	**0.94**	**0.94**		**0.25**		**3,441.10**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.03	0.48	0.05	0.01	0.06	0.00	0.01	0.01		0.00		118.02
Worker	0.13	0.12	0.26	0.01	0.27	0.01	0.01	0.02		0.01		180.36
Total	**0.16**	**0.60**	**0.31**	**0.02**	**0.33**	**0.01**	**0.02**	**0.03**		**0.01**		**298.38**

3.11 TSP Erection - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	2.76	22.31		0.87	0.87		0.87	0.87		0.24		3,368.78
Total	**2.76**	**22.31**	**0.00**	**0.87**	**0.87**	**0.00**	**0.87**	**0.87**		**0.24**		**3,368.78**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.12	1.92	0.19	0.04	0.24	0.01	0.04	0.05		0.00		472.10
Worker	0.15	0.13	0.30	0.01	0.31	0.01	0.01	0.02		0.01		207.42
Total	**0.27**	**2.05**	**0.49**	**0.05**	**0.55**	**0.02**	**0.05**	**0.07**		**0.01**		**679.52**

3.12 Install Conductor - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e

Category					lb/day						lb/day	
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	23.33	191.10		6.65	6.65		6.65	6.65		2.06		31,663.94
Total	**23.33**	**191.10**	**0.00**	**6.65**	**6.65**	**0.00**	**6.65**	**6.65**		**2.06**		**31,663.94**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category					lb/day						lb/day	
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.09	1.44	0.15	0.03	0.18	0.01	0.03	0.04		0.00		354.07
Worker	0.43	0.38	0.85	0.02	0.87	0.03	0.02	0.05		0.03		586.19
Total	**0.52**	**1.82**	**1.00**	**0.05**	**1.05**	**0.04**	**0.05**	**0.09**		**0.03**		**940.26**

3.13 LST Removal - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category					lb/day						lb/day	
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	2.85	23.30		0.98	0.98		0.98	0.98		0.25		3,259.94
Total	**2.85**	**23.30**	**0.00**	**0.98**	**0.98**	**0.00**	**0.98**	**0.98**		**0.25**		**3,259.94**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category					lb/day						lb/day	
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.06	0.96	0.10	0.02	0.12	0.00	0.02	0.03		0.00		236.05
Worker	0.15	0.13	0.30	0.01	0.31	0.01	0.01	0.02		0.01		207.42
Total	**0.21**	**1.09**	**0.40**	**0.03**	**0.43**	**0.01**	**0.03**	**0.05**		**0.01**		**443.47**

3.13 LST Removal - 2015

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category					lb/day						lb/day	
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	2.68	21.11		0.88	0.88		0.88	0.88		0.24		3,259.65

Total	**2.68**	**21.11**	**0.00**	**0.88**	**0.88**	**0.00**	**0.88**	**0.88**		**0.24**		**3,259.65**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.06	0.85	0.10	0.02	0.12	0.00	0.02	0.02		0.00		236.26
Worker	0.14	0.12	0.30	0.01	0.31	0.01	0.01	0.02		0.01		202.69
Total	**0.20**	**0.97**	**0.40**	**0.03**	**0.43**	**0.01**	**0.03**	**0.04**		**0.01**		**438.95**

3.14 Guard Structure Installation - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Off-Road	5.06	40.27		1.48	1.48		1.48	1.48		0.45		6,781.53
Total	**5.06**	**40.27**		**1.48**	**1.48**		**1.48**	**1.48**		**0.45**		**6,781.53**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.12	1.91	0.19	0.04	0.24	0.01	0.04	0.05		0.00		471.97
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Total	**0.12**	**1.91**	**0.19**	**0.04**	**0.24**	**0.01**	**0.04**	**0.05**		**0.00**		**471.97**

3.15 LST Foundation Removal - 2015

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Off-Road	2.43	17.67		0.81	0.81		0.81	0.81		0.22		3,021.11
Total	**2.43**	**17.67**		**0.81**	**0.81**		**0.81**	**0.81**		**0.22**		**3,021.11**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category					lb/day					lb/day		
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.09	0.08	0.20	0.00	0.20	0.01	0.00	0.01		0.01		132.19
Total	**0.09**	**0.08**	**0.20**	**0.00**	**0.20**	**0.01**	**0.00**	**0.01**		**0.01**		**132.19**

3.16 Wood Pole Removal - 2015

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category					lb/day					lb/day		
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	7.39	55.63		2.04	2.04		2.04	2.04		0.65		9,916.21
Total	**7.39**	**55.63**	**0.00**	**2.04**	**2.04**	**0.00**	**2.04**	**2.04**		**0.65**		**9,916.21**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category					lb/day					lb/day		
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.11	1.71	0.19	0.04	0.24	0.01	0.04	0.05		0.00		472.41
Worker	0.15	0.13	0.33	0.01	0.33	0.01	0.01	0.02		0.01		220.31
Total	**0.26**	**1.84**	**0.52**	**0.05**	**0.57**	**0.02**	**0.05**	**0.07**		**0.01**		**692.72**

3.17 LWS Pole Haul - 2015

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category					lb/day					lb/day		
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	2.51	19.29		0.69	0.69		0.69	0.69		0.22		3,418.15
Total	**2.51**	**19.29**	**0.00**	**0.69**	**0.69**	**0.00**	**0.69**	**0.69**		**0.22**		**3,418.15**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category					lb/day					lb/day		

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.06	0.85	0.10	0.02	0.12	0.00	0.02	0.02		0.00		236.20
Worker	0.11	0.09	0.23	0.01	0.24	0.01	0.01	0.01		0.01		158.62
Total	**0.17**	**0.94**	**0.33**	**0.03**	**0.36**	**0.01**	**0.03**	**0.03**		**0.01**		**394.82**

3.18 LWS Pole Assembly - 2015

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Fugitive Dust			0.53	0.00	0.53	0.00	0.00	0.00				0.00
Off-Road	3.81	29.06		1.41	1.41		1.41	1.41		0.34		4,290.27
Total	**3.81**	**29.06**	**0.53**	**1.41**	**1.94**	**0.00**	**1.41**	**1.41**		**0.34**		**4,290.27**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.11	1.71	0.19	0.04	0.24	0.01	0.04	0.05		0.00		472.53
Worker	0.11	0.09	0.23	0.01	0.24	0.01	0.01	0.01		0.01		158.62
Total	**0.22**	**1.80**	**0.42**	**0.05**	**0.48**	**0.02**	**0.05**	**0.06**		**0.01**		**631.15**

3.19 Instal LWS Pole - 2015

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	3.84	29.36		1.05	1.05		1.05	1.05		0.34		5,561.10
Total	**3.84**	**29.36**	**0.00**	**1.05**	**1.05**	**0.00**	**1.05**	**1.05**		**0.34**		**5,561.10**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.06	0.85	0.10	0.02	0.12	0.00	0.02	0.02		0.00		236.20
Worker	0.14	0.12	0.30	0.01	0.31	0.01	0.01	0.02		0.01		202.69

Total	**0.20**	**0.97**	**0.40**	**0.03**	**0.43**	**0.01**	**0.03**	**0.04**		**0.01**		**438.89**

3.20 Install PRGW&FRC - 2015

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category					lb/day					lb/day		
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	19.69	151.29		5.26	5.26		5.26	5.26		1.74		28,437.86
Total	**19.69**	**151.29**	**0.00**	**5.26**	**5.26**	**0.00**	**5.26**	**5.26**		**1.74**		**28,437.86**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category					lb/day					lb/day		
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.37	0.32	0.78	0.02	0.80	0.03	0.02	0.05		0.03		528.75
Total	**0.37**	**0.32**	**0.78**	**0.02**	**0.80**	**0.03**	**0.02**	**0.05**		**0.03**		**528.75**

3.21 Guard Structure Removal - 2015

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category					lb/day					lb/day		
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	3.26	24.81		0.94	0.94		0.94	0.94		0.29		4,277.23
Total	**3.26**	**24.81**	**0.00**	**0.94**	**0.94**	**0.00**	**0.94**	**0.94**		**0.29**		**4,277.23**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category					lb/day					lb/day		
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.11	1.71	0.19	0.04	0.24	0.01	0.04	0.05		0.00		472.41
Worker	0.26	0.23	0.56	0.01	0.58	0.02	0.01	0.04		0.02		378.93
Total	**0.37**	**1.94**	**0.75**	**0.05**	**0.82**	**0.03**	**0.05**	**0.09**		**0.02**		**851.34**

3.22 Duct Bank Installation - 2015

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	7.02	50.75		1.92	1.92		1.92	1.92		0.62		9,556.51
Total	**7.02**	**50.75**	**0.00**	**1.92**	**1.92**	**0.00**	**1.92**	**1.92**		**0.62**		**9,556.51**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.20	0.17	0.43	0.01	0.44	0.02	0.01	0.03		0.01		290.81
Total	**0.20**	**0.17**	**0.43**	**0.01**	**0.44**	**0.02**	**0.01**	**0.03**		**0.01**		**290.81**

3.23 UG Cable Installation - 2015

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Fugitive Dust			0.53	0.00	0.53	0.00	0.00	0.00				0.00
Off-Road	7.12	54.32		2.18	2.18		2.18	2.18		0.63		9,508.38
Total	**7.12**	**54.32**	**0.53**	**2.18**	**2.71**	**0.00**	**2.18**	**2.18**		**0.63**		**9,508.38**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.12	0.11	0.26	0.01	0.27	0.01	0.01	0.02		0.01		176.25
Total	**0.12**	**0.11**	**0.26**	**0.01**	**0.27**	**0.01**	**0.01**	**0.02**		**0.01**		**176.25**

3.24 Restoration - 2015

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Fugitive Dust			0.40	0.00	0.40	0.00	0.00	0.00				0.00
Off-Road	3.34	25.59		0.94	0.94		0.94	0.94		0.30		4,518.12
Total	**3.34**	**25.59**	**0.40**	**0.94**	**1.34**	**0.00**	**0.94**	**0.94**		**0.30**		**4,518.12**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.06	0.85	0.10	0.02	0.12	0.00	0.02	0.02		0.00		236.26
Worker	0.12	0.11	0.26	0.01	0.27	0.01	0.01	0.02		0.01		176.25
Total	**0.18**	**0.96**	**0.36**	**0.03**	**0.39**	**0.01**	**0.03**	**0.04**		**0.01**		**412.51**

tblConstructionPhase

PhaseNum	PhaseName	PhaseType	PhaseStartDate	PhaseEndDate	NumDaysV	NumDays	PhaseDescription
1	Carpinteria Civil	Trenching	2014/01/01	2014/01/14	5	10	
2	Santa Clara Civil	Trenching	2014/01/01	2014/01/20	5	14	
3	Carpinteria Electrical	Site Preparation	2014/01/15	2014/07/01	5	120	
4	Santa Clara Electrical	Site Preparation	2014/01/21	2014/04/28	5	70	
5	Casitas Civil	Trenching	2014/03/01	2014/03/14	5	10	
6	Casitas Electrical	Site Preparation	2014/03/15	2014/05/23	5	50	
7	Santa Clara Maintenance	Site Preparation	2014/04/29	2014/08/04	5	70	
8	Casitas Maintenace	Site Preparation	2014/05/24	2014/08/01	5	50	
9	Carpinteria Maintenance	Site Preparation	2014/07/02	2014/10/21	5	80	
10	Casitas Test	Site Preparation	2014/08/02	2014/10/10	5	50	
11	Santa Clara Test	Site Preparation	2014/08/05	2014/11/10	5	70	
12	Carpinteria Test	Site Preparation	2014/10/22	2015/03/10	5	100	
13	Golita Electrical	Site Preparation	2014/11/11	2014/12/15	5	25	
14	Santa Barbara Electrical	Site Preparation	2014/12/10	2015/01/13	5	25	
15	Golita Test	Site Preparation	2014/12/16	2015/01/19	5	25	
16	Santa Barbara Test	Site Preparation	2015/01/14	2015/02/17	5	25	
17	Ortega Electrical	Site Preparation	2015/01/20	2015/02/02	5	10	
18	Ortega Test	Site Preparation	2015/02/03	2015/02/16	5	10	

tblOffRoadEquipment

PhaseName	OffRoadEquipmentType	OffRoad Equipment Unit Amount	Usage Hours	Horse Power	Load Factor
Carpinteria Civil	Bore/Drill Rigs	1	6	305	0.75
Carpinteria Civil	Cranes	1	4	180	0.43
Carpinteria Civil	Forklifts	1	2	75	0.3
Carpinteria Civil	Off-Highway Trucks	2	2	180	0.57
Carpinteria Civil	Off-Highway Trucks	1	6	180	0.57
Carpinteria Civil	Tractors/Loaders/Backhoes	1	6	85	0.55
Carpinteria Civil	Tractors/Loaders/Backhoes	1	6	75	0.55
Santa Clara Civil	Forklifts	1	2	75	0.3
Santa Clara Civil	Off-Highway Trucks	1	2	180	0.57
Santa Clara Civil	Off-Highway Trucks	1	6	180	0.57
Santa Clara Civil	Tractors/Loaders/Backhoes	1	6	85	0.55
Carpinteria Electrical	Aerial Lifts	2	6	75	0.46
Carpinteria Electrical	Cranes	1	4	180	0.43
Carpinteria Electrical	Cranes	1	6	250	0.57
Carpinteria Electrical	Forklifts	1	2	75	0.3
Carpinteria Electrical	Off-Highway Trucks	1	2	180	0.57
Carpinteria Electrical	Off-Highway Trucks	1	2	180	0.57
Carpinteria Electrical	Off-Highway Trucks	2	2	180	0.57
Santa Clara Electrical	Aerial Lifts	2	6	75	0.46
Santa Clara Electrical	Cranes	1	6	180	0.43
Santa Clara Electrical	Forklifts	1	2	75	0.3
Santa Clara Electrical	Off-Highway Trucks	1	2	180	0.57
Santa Clara Electrical	Off-Highway Trucks	2	2	180	0.57
Casitas Civil	Bore/Drill Rigs	1	6	305	0.75
Casitas Civil	Cranes	1	4	180	0.43
Casitas Civil	Forklifts	1	2	75	0.3
Casitas Civil	Off-Highway Trucks	2	2	180	0.57
Casitas Civil	Off-Highway Trucks	1	6	180	0.57
Casitas Civil	Tractors/Loaders/Backhoes	1	6	85	0.55
Casitas Civil	Tractors/Loaders/Backhoes	1	6	75	0.55
Casitas Electrical	Aerial Lifts	2	6	75	0.46
Casitas Electrical	Cranes	1	4	180	0.43
Casitas Electrical	Forklifts	1	2	75	0.3
Casitas Electrical	Off-Highway Trucks	1	2	180	0.57
Casitas Electrical	Off-Highway Trucks	1	2	180	0.57
Casitas Electrical	Off-Highway Trucks	2	2	180	0.57
Santa Clara Maintenance	Off-Highway Trucks	1	6	180	0.57
Casitas Maintenace	Graders	1	8	162	0.61
Casitas Maintenace	Tractors/Loaders/Backhoes	1	8	75	0.55
Carpinteria Maintenance	Off-Highway Trucks	1	6	180	0.57
Casitas Test	Off-Highway Trucks	1	2	180	0.57
Santa Clara Test	Off-Highway Trucks	1	2	180	0.57
Carpinteria Test	Off-Highway Trucks	1	2	180	0.57
Golita Electrical	Off-Highway Trucks	1	2	180	0.57
Santa Barbara Electrical	Off-Highway Trucks	1	2	180	0.57
Golita Test	Off-Highway Trucks	1	2	180	0.57
Santa Barbara Test	Off-Highway Trucks	1	2	180	0.57
Ortega Electrical	Off-Highway Trucks	1	2	180	0.57

Ortega Test	Off-Highway Trucks	1	2	180	0.57

tblTripsAndVMT

PhaseName	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Carpinteria Civil	10	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT
Santa Clara Civil	4	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT
Carpinteria Electrical	11	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT
Santa Clara Electrical	7	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT
Casitas Civil	9	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT
Casitas Electrical	8	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT
Santa Clara Maintenance	2	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT
Casitas Maintenace	5	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT
Carpinteria Maintenance	2	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT
Casitas Test	1	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT
Santa Clara Test	1	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT
Carpinteria Test	1	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT
Golita Electrical	2	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT
Santa Barbara Electrical	2	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT
Golita Test	2	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT
Santa Barbara Test	2	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT
Ortega Electrical	2	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT
Ortega Test	2	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT

CalEEMod Version: CalEEMod.2011.1.1

Date: 5/29/2012

Santa Barbara Reliability County Project

Ventura County, Annual

1.0 Project

1.1 Land Usage

Land Uses	Size	Metric
User Defined Industrial	0	User Defined Unit

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Utility Comp**	Southern California Edison
Climate Zone	8	**Precipitation Freq (Days)**	31		

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Year	tons/yr								MT/yr			
2014	0.44	3.51	0.03	0.16	0.19	0.00	0.16	0.16	443.00	0.04	0.00	443.75
2015	0.01	0.09	0.00	0.00	0.00	0.00	0.00	0.00	14.25	0.00	0.00	14.27
Total	**0.45**	**3.60**	**0.03**	**0.16**	**0.19**	**0.00**	**0.16**	**0.16**	**457.25**	**0.04**	**0.00**	**458.02**

3.0 Construction Detail

3.1 Mitigation Measures Construction

3.2 Carpinteria Civil - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Off-Road	0.01	0.11		0.01	0.01		0.01	0.01	18.62	0.00	0.00	18.65
Total	**0.01**	**0.11**		**0.01**	**0.01**		**0.01**	**0.01**	**18.62**	**0.00**	**0.00**	**18.65**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.41	0.00	0.00	0.41
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.41**	**0.00**	**0.00**	**0.41**

3.3 Santa Clara Civil - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Off-Road	0.01	0.07		0.00	0.00		0.00	0.00	9.11	0.00	0.00	9.12
Total	**0.01**	**0.07**		**0.00**	**0.00**		**0.00**	**0.00**	**9.11**	**0.00**	**0.00**	**9.12**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.00	0.00	0.23
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.23**	**0.00**	**0.00**	**0.23**

3.4 Carpinteria Electrical - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.17	1.43		0.06	0.06		0.06	0.06	166.50	0.01	0.00	166.79
Total	**0.17**	**1.43**	**0.00**	**0.06**	**0.06**	**0.00**	**0.06**	**0.06**	**166.50**	**0.01**	**0.00**	**166.79**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e

Category	tons/yr								MT/yr			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	5.46	0.00	0.00	5.47
Total	**0.00**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**5.46**	**0.00**	**0.00**	**5.47**

3.5 Santa Clara Electrical - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.07	0.53		0.03	0.03		0.03	0.03	61.15	0.01	0.00	61.26
Total	**0.07**	**0.53**	**0.00**	**0.03**	**0.03**	**0.00**	**0.03**	**0.03**	**61.15**	**0.01**	**0.00**	**61.26**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.03	0.00	0.00	2.03
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**2.03**	**0.00**	**0.00**	**2.03**

3.6 Casitas Civil - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Off-Road	0.01	0.11		0.01	0.01		0.01	0.01	18.62	0.00	0.00	18.65
Total	**0.01**	**0.11**		**0.01**	**0.01**		**0.01**	**0.01**	**18.62**	**0.00**	**0.00**	**18.65**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.37	0.00	0.00	0.37

Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.37	0.00	0.00	0.37

3.7 Casitas Electrical - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.05	0.38		0.02	0.02		0.02	0.02	45.11	0.00	0.00	45.19
Total	**0.05**	**0.38**	**0.00**	**0.02**	**0.02**	**0.00**	**0.02**	**0.02**	**45.11**	**0.00**	**0.00**	**45.19**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.65	0.00	0.00	1.66
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.65**	**0.00**	**0.00**	**1.66**

3.8 Santa Clara Maintenance - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.02	0.18		0.01	0.01		0.01	0.01	24.46	0.00	0.00	24.50
Total	**0.02**	**0.18**	**0.00**	**0.01**	**0.01**	**0.00**	**0.01**	**0.01**	**24.46**	**0.00**	**0.00**	**24.50**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.58
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.58**	**0.00**	**0.00**	**0.58**

3.9 Casitas Maintenace - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Fugitive Dust			0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.04	0.29		0.02	0.02		0.02	0.02	31.80	0.00	0.00	31.87
Total	**0.04**	**0.29**	**0.01**	**0.02**	**0.03**	**0.00**	**0.02**	**0.02**	**31.80**	**0.00**	**0.00**	**31.87**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.03	0.00	0.00	1.04
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.03**	**0.00**	**0.00**	**1.04**

3.10 Carpinteria Maintenance - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.02	0.20		0.01	0.01		0.01	0.01	27.95	0.00	0.00	28.00
Total	**0.02**	**0.20**	**0.00**	**0.01**	**0.01**	**0.00**	**0.01**	**0.01**	**27.95**	**0.00**	**0.00**	**28.00**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.66	0.00	0.00	0.66
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.66**	**0.00**	**0.00**	**0.66**

3.11 Casitas Test - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.01	0.04		0.00	0.00		0.00	0.00	5.82	0.00	0.00	5.83
Total	**0.01**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**5.82**	**0.00**	**0.00**	**5.83**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.00	0.00	0.21
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.21**	**0.00**	**0.00**	**0.21**

3.12 Santa Clara Test - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.01	0.06		0.00	0.00		0.00	0.00	8.15	0.00	0.00	8.17
Total	**0.01**	**0.06**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**8.15**	**0.00**	**0.00**	**8.17**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.29
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.29**	**0.00**	**0.00**	**0.29**

3.13 Carpinteria Test - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.01	0.04		0.00	0.00		0.00	0.00	5.94	0.00	0.00	5.95
Total	**0.01**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**5.94**	**0.00**	**0.00**	**5.95**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.00	0.00	0.21
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.21**	**0.00**	**0.00**	**0.21**

3.13 Carpinteria Test - 2015

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.00	0.04		0.00	0.00		0.00	0.00	5.71	0.00	0.00	5.72
Total	**0.00**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**5.71**	**0.00**	**0.00**	**5.72**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.00	0.00	0.20
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.20**	**0.00**	**0.00**	**0.20**

3.14 Golita Electrical - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.00	0.02		0.00	0.00		0.00	0.00	2.91	0.00	0.00	2.92
Total	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**2.91**	**0.00**	**0.00**	**2.92**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.00	0.00	0.21
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.21**	**0.00**	**0.00**	**0.21**

3.15 Santa Barbara Electrical - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.00	0.01		0.00	0.00		0.00	0.00	1.86	0.00	0.00	1.87
Total	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.86**	**0.00**	**0.00**	**1.87**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.00	0.13
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.13**	**0.00**	**0.00**	**0.13**

3.15 Santa Barbara Electrical - 2015

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.00	0.01		0.00	0.00		0.00	0.00	1.05	0.00	0.00	1.05
Total	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.05**	**0.00**	**0.00**	**1.05**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.07
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.07**	**0.00**	**0.00**	**0.07**

3.16 Golita Test - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.00	0.01		0.00	0.00		0.00	0.00	1.40	0.00	0.00	1.40
Total	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.40**	**0.00**	**0.00**	**1.40**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.10
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.10**	**0.00**	**0.00**	**0.10**

3.16 Golita Test - 2015

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.00	0.01		0.00	0.00		0.00	0.00	1.51	0.00	0.00	1.52
Total	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.51**	**0.00**	**0.00**	**1.52**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.00	0.11
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.11**	**0.00**	**0.00**	**0.11**

3.17 Santa Barbara Test - 2015

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.00	0.02		0.00	0.00		0.00	0.00	2.91	0.00	0.00	2.92
Total	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**2.91**	**0.00**	**0.00**	**2.92**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.00	0.00	0.20
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.20**	**0.00**	**0.00**	**0.20**

3.18 Ortega Electrical - 2015

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.00	0.01		0.00	0.00		0.00	0.00	1.16	0.00	0.00	1.17
Total	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.16**	**0.00**	**0.00**	**1.17**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.08

Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.08

3.19 Ortega Test - 2015

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.00	0.01		0.00	0.00		0.00	0.00	1.16	0.00	0.00	1.17
Total	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.16**	**0.00**	**0.00**	**1.17**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.08
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.08**	**0.00**	**0.00**	**0.08**

CalEEMod Version: CalEEMod.2011.1.1

Date: 5/29/2012

Santa Barbara Reliability County Project

Ventura County, Summer

1.0 Project

1.1 Land Usage

Land Uses	Size	Metric
User Defined Industrial	0	User Defined Unit

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Utility Comp**	Southern California Edison
Climate Zone	8	**Precipitation Freq (Days)**	31		

1.3 User Entered Comments

Trips and VMT - Client information

Construction Phase - site specific schedule

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Year	lb/day								lb/day			
2014	7.76	61.81	0.77	2.80	3.15	0.01	2.80	2.81	0.00	0.69	0.00	9,368.39
2015	0.61	4.57	0.07	0.15	0.22	0.00	0.15	0.15	0.00	0.05	0.00	818.88
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

3.0 Construction Detail

3.2 Carpinteria Civil - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Off-Road	2.90	22.80		1.02	1.02		1.02	1.02		0.26		4,112.45
Total	**2.90**	**22.80**		**1.02**	**1.02**		**1.02**	**1.02**		**0.26**		**4,112.45**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category					lb/day					lb/day		
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.06	0.05	0.13	0.00	0.13	0.00	0.00	0.01		0.01		96.66
Total	**0.06**	**0.05**	**0.13**	**0.00**	**0.13**	**0.00**	**0.00**	**0.01**		**0.01**		**96.66**

3.3 Santa Clara Civil - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category					lb/day					lb/day		
Off-Road	1.32	10.16		0.49	0.49		0.49	0.49		0.12		1,437.32
Total	**1.32**	**10.16**		**0.49**	**0.49**		**0.49**	**0.49**		**0.12**		**1,437.32**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category					lb/day					lb/day		
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.02	0.02	0.05	0.00	0.05	0.00	0.00	0.00		0.00		38.66
Total	**0.02**	**0.02**	**0.05**	**0.00**	**0.05**	**0.00**	**0.00**	**0.00**		**0.00**		**38.66**

3.4 Carpinteria Electrical - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category					lb/day					lb/day		
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	2.84	23.84		1.04	1.04		1.04	1.04		0.25		3,065.04
Total	**2.84**	**23.84**	**0.00**	**1.04**	**1.04**	**0.00**	**1.04**	**1.04**		**0.25**		**3,065.04**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category					lb/day					lb/day		
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.06	0.06	0.14	0.00	0.15	0.01	0.00	0.01		0.01		106.33
Total	**0.06**	**0.06**	**0.14**	**0.00**	**0.15**	**0.01**	**0.00**	**0.01**		**0.01**		**106.33**

3.5 Santa Clara Electrical - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category					lb/day					lb/day		
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	1.87	15.03		0.73	0.73		0.73	0.73		0.17		1,929.92
Total	**1.87**	**15.03**	**0.00**	**0.73**	**0.73**	**0.00**	**0.73**	**0.73**		**0.17**		**1,929.92**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category					lb/day					lb/day		
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.04	0.04	0.09	0.00	0.09	0.00	0.00	0.01		0.00		67.66
Total	**0.04**	**0.04**	**0.09**	**0.00**	**0.09**	**0.00**	**0.00**	**0.01**		**0.00**		**67.66**

3.6 Casitas Civil - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category					lb/day					lb/day		
Off-Road	2.90	22.80		1.02	1.02		1.02	1.02		0.26		4,112.45
Total	**2.90**	**22.80**		**1.02**	**1.02**		**1.02**	**1.02**		**0.26**		**4,112.45**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category					lb/day					lb/day		
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.05	0.05	0.12	0.00	0.12	0.00	0.00	0.01		0.00		86.99
Total	**0.05**	**0.05**	**0.12**	**0.00**	**0.12**	**0.00**	**0.00**	**0.01**		**0.00**		**86.99**

3.7 Casitas Electrical - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category					lb/day					lb/day		
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	1.90	15.17		0.74	0.74		0.74	0.74		0.17		1,993.07
Total	**1.90**	**15.17**	**0.00**	**0.74**	**0.74**	**0.00**	**0.74**	**0.74**		**0.17**		**1,993.07**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category					lb/day					lb/day		
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.05	0.04	0.10	0.00	0.11	0.00	0.00	0.01		0.00		77.33
Total	**0.05**	**0.04**	**0.10**	**0.00**	**0.11**	**0.00**	**0.00**	**0.01**		**0.00**		**77.33**

3.8 Santa Clara Maintenance - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category					lb/day					lb/day		
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	0.61	5.11		0.17	0.17		0.17	0.17		0.05		771.71
Total	**0.61**	**5.11**	**0.00**	**0.17**	**0.17**	**0.00**	**0.17**	**0.17**		**0.05**		**771.71**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category					lb/day					lb/day		
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.01	0.01	0.03	0.00	0.03	0.00	0.00	0.00		0.00		19.33
Total	**0.01**	**0.01**	**0.03**	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**		**0.00**		**19.33**

3.9 Casitas Maintenace - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category					lb/day					lb/day		
Fugitive Dust			0.53	0.00	0.53	0.00	0.00	0.00				0.00
Off-Road	1.61	11.79		0.73	0.73		0.73	0.73		0.14		1,405.68
Total	**1.61**	**11.79**	**0.53**	**0.73**	**1.26**	**0.00**	**0.73**	**0.73**		**0.14**		**1,405.68**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category					lb/day					lb/day		
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.03	0.03	0.07	0.00	0.07	0.00	0.00	0.00		0.00		48.33
Total	**0.03**	**0.03**	**0.07**	**0.00**	**0.07**	**0.00**	**0.00**	**0.00**		**0.00**		**48.33**

3.10 Carpinteria Maintenance - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category					lb/day					lb/day		
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	0.61	5.11		0.17	0.17		0.17	0.17		0.05		771.71
Total	**0.61**	**5.11**	**0.00**	**0.17**	**0.17**	**0.00**	**0.17**	**0.17**		**0.05**		**771.71**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category					lb/day					lb/day		
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.01	0.01	0.03	0.00	0.03	0.00	0.00	0.00		0.00		19.33
Total	**0.01**	**0.01**	**0.03**	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**		**0.00**		**19.33**

3.11 Casitas Test - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	0.20	1.70		0.06	0.06		0.06	0.06		0.02		257.24
Total	**0.20**	**1.70**	**0.00**	**0.06**	**0.06**	**0.00**	**0.06**	**0.06**		**0.02**		**257.24**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.01	0.01	0.01	0.00	0.01	0.00	0.00	0.00		0.00		9.67
Total	**0.01**	**0.01**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**		**0.00**		**9.67**

3.12 Santa Clara Test - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	0.20	1.70		0.06	0.06		0.06	0.06		0.02		257.24
Total	**0.20**	**1.70**	**0.00**	**0.06**	**0.06**	**0.00**	**0.06**	**0.06**		**0.02**		**257.24**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.01	0.01	0.01	0.00	0.01	0.00	0.00	0.00		0.00		9.67
Total	**0.01**	**0.01**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**		**0.00**		**9.67**

3.13 Carpinteria Test - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e

Category	lb/day								lb/day			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	0.20	1.70		0.06	0.06		0.06	0.06		0.02		257.24
Total	**0.20**	**1.70**	**0.00**	**0.06**	**0.06**	**0.00**	**0.06**	**0.06**		**0.02**		**257.24**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.01	0.01	0.01	0.00	0.01	0.00	0.00	0.00		0.00		9.67
Total	**0.01**	**0.01**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**		**0.00**		**9.67**

3.13 Carpinteria Test - 2015

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	0.19	1.51		0.05	0.05		0.05	0.05		0.02		257.22
Total	**0.19**	**1.51**	**0.00**	**0.05**	**0.05**	**0.00**	**0.05**	**0.05**		**0.02**		**257.22**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.01	0.00	0.01	0.00	0.01	0.00	0.00	0.00		0.00		9.45
Total	**0.01**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**		**0.00**		**9.45**

3.14 Golita Electrical - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	0.20	1.70		0.06	0.06		0.06	0.06		0.02		257.24

Total	**0.20**	**1.70**	**0.00**	**0.06**	**0.06**	**0.00**	**0.06**	**0.06**		**0.02**		**257.24**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.01	0.01	0.03	0.00	0.03	0.00	0.00	0.00		0.00		19.33
Total	**0.01**	**0.01**	**0.03**	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**		**0.00**		**19.33**

3.15 Santa Barbara Electrical - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	0.20	1.70		0.06	0.06		0.06	0.06		0.02		257.24
Total	**0.20**	**1.70**	**0.00**	**0.06**	**0.06**	**0.00**	**0.06**	**0.06**		**0.02**		**257.24**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.01	0.01	0.03	0.00	0.03	0.00	0.00	0.00		0.00		19.33
Total	**0.01**	**0.01**	**0.03**	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**		**0.00**		**19.33**

3.15 Santa Barbara Electrical - 2015

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	0.19	1.51		0.05	0.05		0.05	0.05		0.02		257.22
Total	**0.19**	**1.51**	**0.00**	**0.05**	**0.05**	**0.00**	**0.05**	**0.05**		**0.02**		**257.22**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category				lb/day						lb/day		
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.01	0.01	0.03	0.00	0.03	0.00	0.00	0.00		0.00		18.89
Total	**0.01**	**0.01**	**0.03**	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**		**0.00**		**18.89**

3.16 Golita Test - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category				lb/day						lb/day		
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	0.20	1.70		0.06	0.06		0.06	0.06		0.02		257.24
Total	**0.20**	**1.70**	**0.00**	**0.06**	**0.06**	**0.00**	**0.06**	**0.06**		**0.02**		**257.24**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category				lb/day						lb/day		
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.01	0.01	0.03	0.00	0.03	0.00	0.00	0.00		0.00		19.33
Total	**0.01**	**0.01**	**0.03**	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**		**0.00**		**19.33**

3.16 Golita Test - 2015

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category				lb/day						lb/day		
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	0.19	1.51		0.05	0.05		0.05	0.05		0.02		257.22
Total	**0.19**	**1.51**	**0.00**	**0.05**	**0.05**	**0.00**	**0.05**	**0.05**		**0.02**		**257.22**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e

Category	lb/day								lb/day			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.01	0.01	0.03	0.00	0.03	0.00	0.00	0.00		0.00		18.89
Total	**0.01**	**0.01**	**0.03**	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**		**0.00**		**18.89**

3.17 Santa Barbara Test - 2015

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	0.19	1.51		0.05	0.05		0.05	0.05		0.02		257.22
Total	**0.19**	**1.51**	**0.00**	**0.05**	**0.05**	**0.00**	**0.05**	**0.05**		**0.02**		**257.22**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.01	0.01	0.03	0.00	0.03	0.00	0.00	0.00		0.00		18.89
Total	**0.01**	**0.01**	**0.03**	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**		**0.00**		**18.89**

3.18 Ortega Electrical - 2015

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	0.19	1.51		0.05	0.05		0.05	0.05		0.02		257.22
Total	**0.19**	**1.51**	**0.00**	**0.05**	**0.05**	**0.00**	**0.05**	**0.05**		**0.02**		**257.22**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00

Worker	0.01	0.01	0.03	0.00	0.03	0.00	0.00	0.00		0.00		18.89
Total	**0.01**	**0.01**	**0.03**	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**		**0.00**		**18.89**

3.19 Ortega Test - 2015

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	0.19	1.51		0.05	0.05		0.05	0.05		0.02		257.22
Total	**0.19**	**1.51**	**0.00**	**0.05**	**0.05**	**0.00**	**0.05**	**0.05**		**0.02**		**257.22**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.01	0.01	0.03	0.00	0.03	0.00	0.00	0.00		0.00		18.89
Total	**0.01**	**0.01**	**0.03**	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**		**0.00**		**18.89**

CalEEMod Version: CalEEMod.2011.1.1

Date: 5/29/2012

Santa Barbara Reliability County Project

Ventura County, Winter

1.0 Project

1.1 Land Usage

Land Uses	Size	Metric
User Defined Industrial	0	User Defined Unit

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Utility Company**	Southern California Edison
Climate Zone	8	**Precipitation Freq (Days)**	31		

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Year	lb/day								lb/day			
2014	7.79	61.84	0.77	2.80	3.15	0.01	2.80	2.81	0.00	0.69	0.00	9,350.91
2015	0.61	4.57	0.07	0.15	0.22	0.00	0.15	0.15	0.00	0.05	0.00	815.71
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

3.0 Construction Detail

3.2 Carpinteria Civil - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Off-Road	2.90	22.80		1.02	1.02		1.02	1.02		0.26		4,112.45
Total	**2.90**	**22.80**		**1.02**	**1.02**		**1.02**	**1.02**		**0.26**		**4,112.45**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.07	0.06	0.13	0.00	0.13	0.00	0.00	0.01		0.00		90.18
Total	**0.07**	**0.06**	**0.13**	**0.00**	**0.13**	**0.00**	**0.00**	**0.01**		**0.00**		**90.18**

3.3 Santa Clara Civil - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Off-Road	1.32	10.16		0.49	0.49		0.49	0.49		0.12		1,437.32
Total	**1.32**	**10.16**		**0.49**	**0.49**		**0.49**	**0.49**		**0.12**		**1,437.32**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.03	0.02	0.05	0.00	0.05	0.00	0.00	0.00		0.00		36.07
Total	**0.03**	**0.02**	**0.05**	**0.00**	**0.05**	**0.00**	**0.00**	**0.00**		**0.00**		**36.07**

3.4 Carpinteria Electrical - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	2.84	23.84		1.04	1.04		1.04	1.04		0.25		3,065.04
Total	**2.84**	**23.84**	**0.00**	**1.04**	**1.04**	**0.00**	**1.04**	**1.04**		**0.25**		**3,065.04**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.07	0.06	0.14	0.00	0.15	0.01	0.00	0.01		0.01		99.20
Total	**0.07**	**0.06**	**0.14**	**0.00**	**0.15**	**0.01**	**0.00**	**0.01**		**0.01**		**99.20**

3.5 Santa Clara Electrical - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category					lb/day					lb/day		
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	1.87	15.03		0.73	0.73		0.73	0.73		0.17		1,929.92
Total	**1.87**	**15.03**	**0.00**	**0.73**	**0.73**	**0.00**	**0.73**	**0.73**		**0.17**		**1,929.92**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category					lb/day					lb/day		
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.05	0.04	0.09	0.00	0.09	0.00	0.00	0.01		0.00		63.13
Total	**0.05**	**0.04**	**0.09**	**0.00**	**0.09**	**0.00**	**0.00**	**0.01**		**0.00**		**63.13**

3.6 Casitas Civil - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category					lb/day					lb/day		
Off-Road	2.90	22.80		1.02	1.02		1.02	1.02		0.26		4,112.45
Total	**2.90**	**22.80**		**1.02**	**1.02**		**1.02**	**1.02**		**0.26**		**4,112.45**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category					lb/day					lb/day		
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.06	0.05	0.12	0.00	0.12	0.00	0.00	0.01		0.00		81.16
Total	**0.06**	**0.05**	**0.12**	**0.00**	**0.12**	**0.00**	**0.00**	**0.01**		**0.00**		**81.16**

3.7 Casitas Electrical - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category					lb/day					lb/day		
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	1.90	15.17		0.74	0.74		0.74	0.74		0.17		1,993.07
Total	**1.90**	**15.17**	**0.00**	**0.74**	**0.74**	**0.00**	**0.74**	**0.74**		**0.17**		**1,993.07**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category					lb/day					lb/day		
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.05	0.05	0.10	0.00	0.11	0.00	0.00	0.01		0.00		72.15
Total	**0.05**	**0.05**	**0.10**	**0.00**	**0.11**	**0.00**	**0.00**	**0.01**		**0.00**		**72.15**

3.8 Santa Clara Maintenance - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category					lb/day					lb/day		
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	0.61	5.11		0.17	0.17		0.17	0.17		0.05		771.71
Total	**0.61**	**5.11**	**0.00**	**0.17**	**0.17**	**0.00**	**0.17**	**0.17**		**0.05**		**771.71**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category					lb/day					lb/day		
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.01	0.01	0.03	0.00	0.03	0.00	0.00	0.00		0.00		18.04
Total	**0.01**	**0.01**	**0.03**	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**		**0.00**		**18.04**

3.9 Casitas Maintenace - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Fugitive Dust			0.53	0.00	0.53	0.00	0.00	0.00				0.00
Off-Road	1.61	11.79		0.73	0.73		0.73	0.73		0.14		1,405.68
Total	**1.61**	**11.79**	**0.53**	**0.73**	**1.26**	**0.00**	**0.73**	**0.73**		**0.14**		**1,405.68**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.03	0.03	0.07	0.00	0.07	0.00	0.00	0.00		0.00		45.09
Total	**0.03**	**0.03**	**0.07**	**0.00**	**0.07**	**0.00**	**0.00**	**0.00**		**0.00**		**45.09**

3.10 Carpinteria Maintenance - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	0.61	5.11		0.17	0.17		0.17	0.17		0.05		771.71
Total	**0.61**	**5.11**	**0.00**	**0.17**	**0.17**	**0.00**	**0.17**	**0.17**		**0.05**		**771.71**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.01	0.01	0.03	0.00	0.03	0.00	0.00	0.00		0.00		18.04
Total	**0.01**	**0.01**	**0.03**	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**		**0.00**		**18.04**

3.11 Casitas Test - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e

Category	lb/day								lb/day			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	0.20	1.70		0.06	0.06		0.06	0.06		0.02		257.24
Total	**0.20**	**1.70**	**0.00**	**0.06**	**0.06**	**0.00**	**0.06**	**0.06**		**0.02**		**257.24**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.01	0.01	0.01	0.00	0.01	0.00	0.00	0.00		0.00		9.02
Total	**0.01**	**0.01**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**		**0.00**		**9.02**

3.12 Santa Clara Test - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	0.20	1.70		0.06	0.06		0.06	0.06		0.02		257.24
Total	**0.20**	**1.70**	**0.00**	**0.06**	**0.06**	**0.00**	**0.06**	**0.06**		**0.02**		**257.24**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.01	0.01	0.01	0.00	0.01	0.00	0.00	0.00		0.00		9.02
Total	**0.01**	**0.01**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**		**0.00**		**9.02**

3.13 Carpinteria Test - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	0.20	1.70		0.06	0.06		0.06	0.06		0.02		257.24

Total	0.20	1.70	0.00	0.06	0.06	0.00	0.06	0.06		0.02		257.24

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.01	0.01	0.01	0.00	0.01	0.00	0.00	0.00		0.00		9.02
Total	**0.01**	**0.01**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**		**0.00**		**9.02**

3.13 Carpinteria Test - 2015

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	0.19	1.51		0.05	0.05		0.05	0.05		0.02		257.22
Total	**0.19**	**1.51**	**0.00**	**0.05**	**0.05**	**0.00**	**0.05**	**0.05**		**0.02**		**257.22**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.01	0.01	0.01	0.00	0.01	0.00	0.00	0.00		0.00		8.81
Total	**0.01**	**0.01**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**		**0.00**		**8.81**

3.14 Golita Electrical - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	0.20	1.70		0.06	0.06		0.06	0.06		0.02		257.24
Total	**0.20**	**1.70**	**0.00**	**0.06**	**0.06**	**0.00**	**0.06**	**0.06**		**0.02**		**257.24**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.01	0.01	0.03	0.00	0.03	0.00	0.00	0.00		0.00		18.04
Total	**0.01**	**0.01**	**0.03**	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**		**0.00**		**18.04**

3.15 Santa Barbara Electrical - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	0.20	1.70		0.06	0.06		0.06	0.06		0.02		257.24
Total	**0.20**	**1.70**	**0.00**	**0.06**	**0.06**	**0.00**	**0.06**	**0.06**		**0.02**		**257.24**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.01	0.01	0.03	0.00	0.03	0.00	0.00	0.00		0.00		18.04
Total	**0.01**	**0.01**	**0.03**	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**		**0.00**		**18.04**

3.15 Santa Barbara Electrical - 2015

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	0.19	1.51		0.05	0.05		0.05	0.05		0.02		257.22
Total	**0.19**	**1.51**	**0.00**	**0.05**	**0.05**	**0.00**	**0.05**	**0.05**		**0.02**		**257.22**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e

Category	lb/day								lb/day		
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.01	0.01	0.03	0.00	0.03	0.00	0.00	0.00		0.00		17.62
Total	**0.01**	**0.01**	**0.03**	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**		**0.00**		**17.62**

3.16 Golita Test - 2014

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	0.20	1.70		0.06	0.06		0.06	0.06		0.02		257.24
Total	**0.20**	**1.70**	**0.00**	**0.06**	**0.06**	**0.00**	**0.06**	**0.06**		**0.02**		**257.24**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.01	0.01	0.03	0.00	0.03	0.00	0.00	0.00		0.00		18.04
Total	**0.01**	**0.01**	**0.03**	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**		**0.00**		**18.04**

3.16 Golita Test - 2015

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	0.19	1.51		0.05	0.05		0.05	0.05		0.02		257.22
Total	**0.19**	**1.51**	**0.00**	**0.05**	**0.05**	**0.00**	**0.05**	**0.05**		**0.02**		**257.22**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00

Worker	0.01	0.01	0.03	0.00	0.03	0.00	0.00	0.00		0.00		17.62
Total	**0.01**	**0.01**	**0.03**	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**		**0.00**		**17.62**

3.17 Santa Barbara Test - 2015

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	0.19	1.51		0.05	0.05		0.05	0.05		0.02		257.22
Total	**0.19**	**1.51**	**0.00**	**0.05**	**0.05**	**0.00**	**0.05**	**0.05**		**0.02**		**257.22**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.01	0.01	0.03	0.00	0.03	0.00	0.00	0.00		0.00		17.62
Total	**0.01**	**0.01**	**0.03**	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**		**0.00**		**17.62**

3.18 Ortega Electrical - 2015

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	0.19	1.51		0.05	0.05		0.05	0.05		0.02		257.22
Total	**0.19**	**1.51**	**0.00**	**0.05**	**0.05**	**0.00**	**0.05**	**0.05**		**0.02**		**257.22**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.01	0.01	0.03	0.00	0.03	0.00	0.00	0.00		0.00		17.62
Total	**0.01**	**0.01**	**0.03**	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**		**0.00**		**17.62**

3.19 Ortega Test - 2015

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	0.19	1.51		0.05	0.05		0.05	0.05		0.02		257.22
Total	**0.19**	**1.51**	**0.00**	**0.05**	**0.05**	**0.00**	**0.05**	**0.05**		**0.02**		**257.22**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.01	0.01	0.03	0.00	0.03	0.00	0.00	0.00		0.00		17.62
Total	**0.01**	**0.01**	**0.03**	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**		**0.00**		**17.62**

PhaseNum	PhaseName	PhaseType	PhaseStartDate	PhaseEndDate	NumDaysV	NumDays	PhaseDescription
1	Survey	Site Preparation	1999/01/02	1999/01/08	5	5	Phase 01
2	Material Staging Yards	Site Preparation	1999/01/09	1999/04/07	5	63	Phase 02
3	Tree Trimming	Site Preparation	1999/01/09	1999/01/11	5	1	Phase 03
4	Roads and Landing Work	Grading	1999/01/12	1999/01/13	5	2	Phase 04
5	Install TSP foundation	Building Construction	1999/01/12	1999/01/14	5	3	Phase 05
6	TSP Haul	Site Preparation	1999/01/13	1999/01/13	5	1	Phase 06
7	TSP Assembly	Site Preparation	1999/01/13	1999/01/13	5	1	Phase 07
8	TSP Erection	Site Preparation	1999/01/13	1999/01/13	5	1	Phase 08
9	LWS Pole Haul	Site Preparation	1999/01/15	1999/02/02	5	13	Phase 09
10	LWS Pole Assembly	Site Preparation	1999/01/15	1999/02/03	5	14	Phase 10
11	Instal LWS Pole	Site Preparation	1999/01/16	1999/02/04	5	14	Phase 11
12	Transfer Conductor	Site Preparation	1999/02/05	1999/03/02	5	18	Phase 12
13	Wood Pole Removal	Site Preparation	1999/03/03	1999/03/11	5	7	Phase 13
14	Install Conductor	Site Preparation	1999/03/12	1999/04/01	5	15	Phase 14
15	Restoration	Site Preparation	1999/04/02	1999/04/07	5	4	Phase 15

PhaseName	OffRoadEquipmentType	OffRoadEq	UsageHoui	HorsePowe	LoadFactor
Survey	Graders	1	0	162	0.61
Survey	Tractors/Loaders/Backhoes	1	0	75	0.55
Material Staging Yards	Cranes	1	2	350	0.43
Material Staging Yards	Forklifts	1	6	125	0.3
Material Staging Yards	Graders	1	0	162	0.61
Material Staging Yards	Off-Highway Trucks	1	4	300	0.57
Material Staging Yards	Off-Highway Trucks	1	8	300	0.57
Material Staging Yards	Off-Highway Trucks	1	2	400	0.57
Material Staging Yards	Tractors/Loaders/Backhoes	1	0	75	0.55
Tree Trimming	Graders	1	0	162	0.61
Tree Trimming	Off-Highway Trucks	1	8	380	0.57
Tree Trimming	Off-Highway Trucks	1	8	300	0.57
Tree Trimming	Other General Industrial Equipment	1	4	50	0.51
Tree Trimming	Tractors/Loaders/Backhoes	1	0	75	0.55
Roads and Landing Work	Concrete/Industrial Saws	1	0	81	0.73
Roads and Landing Work	Excavators	1	4	250	0.57
Roads and Landing Work	Graders	1	6	250	0.61
Roads and Landing Work	Off-Highway Trucks	2	8	300	0.57
Roads and Landing Work	Off-Highway Trucks	2	8	300	0.57
Roads and Landing Work	Off-Highway Trucks	1	4	450	0.57
Roads and Landing Work	Other General Industrial Equipment	1	8	50	0.51
Roads and Landing Work	Other General Industrial Equipment	1	8	110	0.51
Roads and Landing Work	Plate Compactors	1	6	100	0.43
Roads and Landing Work	Rubber Tired Dozers	1	0	358	0.59
Roads and Landing Work	Tractors/Loaders/Backhoes	2	0	75	0.55
Roads and Landing Work	Tractors/Loaders/Backhoes	2	0	75	0.55
Roads and Landing Work	Tractors/Loaders/Backhoes	1	4	125	0.55
Install TSP foundation	Aerial Lifts	1	6	210	0.57
Install TSP foundation	Cement and Mortar Mixers	3	2	350	0.56
Install TSP foundation	Cranes	1	0	208	0.43
Install TSP foundation	Cranes	1	0	208	0.43
Install TSP foundation	Forklifts	2	0	149	0.3
Install TSP foundation	Off-Highway Trucks	1	4	350	0.57
Install TSP foundation	Off-Highway Trucks	1	8	300	0.57
Install TSP foundation	Off-Highway Trucks	1	4	350	0.57
Install TSP foundation	Tractors/Loaders/Backhoes	2	0	75	0.55
Install TSP foundation	Tractors/Loaders/Backhoes	1	6	125	0.55
TSP Haul	Cranes	1	6	350	0.43
TSP Haul	Graders	1	0	162	0.61
TSP Haul	Off-Highway Trucks	1	8	400	0.57
TSP Haul	Tractors/Loaders/Backhoes	1	0	75	0.55
TSP Assembly	Air Compressors	1	6	60	0.48
TSP Assembly	Cranes	1	8	350	0.43
TSP Assembly	Graders	1	0	162	0.61
TSP Assembly	Off-Highway Trucks	2	4	300	0.57
TSP Assembly	Tractors/Loaders/Backhoes	1	0	75	0.55
TSP Erection	Air Compressors	1	4	60	0.48
TSP Erection	Cranes	1	8	350	0.43
TSP Erection	Graders	1	0	162	0.61
TSP Erection	Off-Highway Trucks	2	4	300	0.57
TSP Erection	Tractors/Loaders/Backhoes	1	0	75	0.55
LWS Pole Haul	Cranes	1	6	350	0.43
LWS Pole Haul	Graders	1	0	162	0.61
LWS Pole Haul	Off-Highway Trucks	1	8	400	0.57
LWS Pole Haul	Tractors/Loaders/Backhoes	1	0	75	0.55
LWS Pole Assembly	Air Compressors	1	6	60	0.48

LWS Pole Assembly	Cranes	1	8	350	0.43
LWS Pole Assembly	Graders	1	0	162	0.61
LWS Pole Assembly	Tractors/Loaders/Backhoes	1	0	75	0.55
Instal LWS Pole	Aerial Lifts	1	6	250	0.46
Instal LWS Pole	Bore/Drill Rigs	1	4	210	0.75
Instal LWS Pole	Cranes	1	6	350	0.43
Instal LWS Pole	Graders	1	0	162	0.61
Instal LWS Pole	Off-Highway Trucks	1	8	400	0.57
Instal LWS Pole	Tractors/Loaders/Backhoes	1	0	75	0.55
Instal LWS Pole	Tractors/Loaders/Backhoes	1	8	125	0.55
Transfer Conductor	Aerial Lifts	4	8	250	0.46
Transfer Conductor	Cranes	2	8	350	0.43
Transfer Conductor	Graders	1	0	162	0.61
Transfer Conductor	Off-Highway Trucks	4	4	300	0.46
Transfer Conductor	Off-Highway Trucks	2	4	300	0.57
Transfer Conductor	Off-Highway Trucks	1	6	350	0.57
Transfer Conductor	Off-Highway Trucks	2	6	350	0.57
Transfer Conductor	Off-Highway Trucks	2	4	450	0.57
Transfer Conductor	Other Construction Equipment	1	6	350	0.62
Transfer Conductor	Other Construction Equipment	1	6	300	0.62
Transfer Conductor	Tractors/Loaders/Backhoes	1	0	75	0.55
Wood Pole Removal	Aerial Lifts	1	9	250	0.46
Wood Pole Removal	Air Compressors	1	5	60	0.48
Wood Pole Removal	Cranes	1	9	350	0.43
Wood Pole Removal	Graders	1	0	162	0.61
Wood Pole Removal	Off-Highway Trucks	2	9	300	0.57
Wood Pole Removal	Off-Highway Trucks	1	9	400	0.57
Wood Pole Removal	Tractors/Loaders/Backhoes	1	0	75	0.55
Install Conductor					
Install Conductor	Aerial Lifts	4	8	250	0.46
Install Conductor	Cranes	2	8	350	0.43
Install Conductor	Graders	1	0	162	0.61
Install Conductor	Off-Highway Trucks	4	4	300	0.57
Install Conductor	Off-Highway Trucks	1	2	350	0.57
Install Conductor	Off-Highway Trucks	2	8	300	0.57
Install Conductor	Off-Highway Trucks	2	6	350	0.57
Install Conductor	Off-Highway Trucks	1	6	350	0.57
Install Conductor	Off-Highway Trucks	2	4	450	0.57
Install Conductor	Other Construction Equipment	1	6	300	0.62
Install Conductor	Other Construction Equipment	1	6	350	0.62
Install Conductor	Tractors/Loaders/Backhoes	1	0	75	0.55
Install Conductor	Tractors/Loaders/Backhoes	1	2	125	0.55
Restoration	Graders	1	0	162	0.61
Restoration	Graders	1	6	250	0.61
Restoration	Off-Highway Trucks	1	8	300	0.57
Restoration	Off-Highway Trucks	1	4	450	0.57
Restoration	Plate Compactors	1	4	100	0.43
Restoration	Tractors/Loaders/Backhoes	1	0	75	0.55
Restoration	Tractors/Loaders/Backhoes	1	4	125	0.55

PhaseName	WorkerTripNumber	VendorTripNumber	HaulingTripNumber	WorkerTripLength	VendorTripLength	HaulingTripLength	WorkerVeh	VendorVeh	HaulingVehicleClass
Survey	5	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT
Material Staging Yards	18	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT
Tree Trimming	13	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT
Roads and Landing Work	43	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT
Install TSP foundation	0	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT
TSP Haul	10	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT
TSP Assembly	15	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT
TSP Erection	15	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT
LWS Pole Haul	10	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT
LWS Pole Assembly	10	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT
Instal LWS Pole	18	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT
Transfer Conductor	53	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT
Wood Pole Removal	20	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT
Install Conductor	58	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT
Restoration	18	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT

CalEEMod Version: CalEEMod.2011.1.1

Date: 6/5/2012

Santa Barbara Reliability County Project

Ventura County, Annual

1.0 Project

1.1 Land Usage

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Utility Company**	Southern California Edison
Climate Zone	8	**Precipitation Freq (Days)**	31		

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Year	tons/yr								MT/yr			
1999	1.74	14.34	0.00	0.95	0.95	0.00	0.95	0.95	511.19	0.14	0.00	514.18
Total	**1.74**	**14.34**	**0.00**	**0.95**	**0.95**	**0.00**	**0.95**	**0.95**	**511.19**	**0.14**	**0.00**	**514.18**

3.0 Construction Detail

3.2 Survey - 1999

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.3 Material Staging Yards - 1999

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.37	3.03		0.20	0.20		0.20	0.20	108.50	0.03	0.00	109.12
Total	**0.37**	**3.03**	**0.00**	**0.20**	**0.20**	**0.00**	**0.20**	**0.20**	**108.50**	**0.03**	**0.00**	**109.12**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.4 Tree Trimming - 1999

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.01	0.05		0.00	0.00		0.00	0.00	1.82	0.00	0.00	1.83
Total	**0.01**	**0.05**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.82**	**0.00**	**0.00**	**1.83**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.5 Roads and Landing Work - 1999

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.04	0.28		0.02	0.02		0.02	0.02	10.12	0.00	0.00	10.18

Total	**0.04**	**0.28**	**0.00**	**0.02**	**0.02**	**0.00**	**0.02**	**0.02**	**10.12**	**0.00**	**0.00**	**10.18**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.6 Install TSP foundation - 1999

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Off-Road	0.02	0.16		0.01	0.01		0.01	0.01	5.75	0.00	0.00	5.78
Total	**0.02**	**0.16**		**0.01**	**0.01**		**0.01**	**0.01**	**5.75**	**0.00**	**0.00**	**5.78**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.7 TSP Haul - 1999

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.01	0.04		0.00	0.00		0.00	0.00	1.55	0.00	0.00	1.56
Total	**0.01**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.55**	**0.00**	**0.00**	**1.56**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.8 TSP Assembly - 1999

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.01	0.04		0.00	0.00		0.00	0.00	1.56	0.00	0.00	1.57
Total	**0.01**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.56**	**0.00**	**0.00**	**1.57**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.9 TSP Erection - 1999

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.01	0.04		0.00	0.00		0.00	0.00	1.53	0.00	0.00	1.53
Total	**0.01**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.53**	**0.00**	**0.00**	**1.53**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.10 LWS Pole Haul - 1999

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.07	0.57		0.04	0.04		0.04	0.04	20.12	0.01	0.00	20.24
Total	**0.07**	**0.57**	**0.00**	**0.04**	**0.04**	**0.00**	**0.04**	**0.04**	**20.12**	**0.01**	**0.00**	**20.24**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.11 LWS Pole Assembly - 1999

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.04	0.31		0.02	0.02		0.02	0.02	10.94	0.00	0.00	11.01
Total	**0.04**	**0.31**	**0.00**	**0.02**	**0.02**	**0.00**	**0.02**	**0.02**	**10.94**	**0.00**	**0.00**	**11.01**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.12 Instal LWS Pole - 1999

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.10	0.85		0.06	0.06		0.06	0.06	31.05	0.01	0.00	31.22
Total	**0.10**	**0.85**	**0.00**	**0.06**	**0.06**	**0.00**	**0.06**	**0.06**	**31.05**	**0.01**	**0.00**	**31.22**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.13 Transfer Conductor - 1999

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.49	4.04		0.27	0.27		0.27	0.27	143.50	0.04	0.00	144.34
Total	**0.49**	**4.04**	**0.00**	**0.27**	**0.27**	**0.00**	**0.27**	**0.27**	**143.50**	**0.04**	**0.00**	**144.34**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.14 Wood Pole Removal - 1999

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.09	0.74		0.05	0.05		0.05	0.05	26.34	0.01	0.00	26.49
Total	**0.09**	**0.74**	**0.00**	**0.05**	**0.05**	**0.00**	**0.05**	**0.05**	**26.34**	**0.01**	**0.00**	**26.49**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.15 Install Conductor - 1999

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.48	3.95		0.26	0.26		0.26	0.26	140.30	0.04	0.00	141.11
Total	**0.48**	**3.95**	**0.00**	**0.26**	**0.26**	**0.00**	**0.26**	**0.26**	**140.30**	**0.04**	**0.00**	**141.11**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.16 Restoration - 1999

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.03	0.23		0.02	0.02		0.02	0.02	8.14	0.00	0.00	8.18
Total	**0.03**	**0.23**	**0.00**	**0.02**	**0.02**	**0.00**	**0.02**	**0.02**	**8.14**	**0.00**	**0.00**	**8.18**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	tons/yr								MT/yr			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

CalEEMod Version: CalEEMod.2011.1.1

Date: 6/5/2012

Santa Barbara Reliability County Project

Ventura County, Summer

1.0 Project

1.1 Land Usage

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Utility Comp**	Southern California Edison
Climate Zone	8	**Precipitation Freq (Days)**	31		

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Year	lb/day								lb/day			
1999	93.35	746.91	0.53	50.45	50.45	0.00	50.45	50.45	0.00	8.39	0.00	29,567.41
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

3.0 Construction Detail

3.2 Survey - 1999

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Fugitive Dust			0.53	0.00	0.53	0.00	0.00	0.00				0.00
Off-Road	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.53**	**0.00**	**0.53**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.00	0.00	0.06	0.00	0.06	0.00	0.00	0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.06**	**0.00**	**0.06**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**

3.3 Material Staging Yards - 1999

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	11.65	96.26		6.36	6.36		6.36	6.36		1.05		3,819.76
Total	**11.65**	**96.26**	**0.00**	**6.36**	**6.36**	**0.00**	**6.36**	**6.36**		**1.05**		**3,819.76**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.00	0.00	0.23	0.00	0.23	0.00	0.00	0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.23**	**0.00**	**0.23**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**

3.4 Tree Trimming - 1999

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Fugitive Dust			0.53	0.00	0.53	0.00	0.00	0.00				0.00
Off-Road	13.08	100.81		6.83	6.83		6.83	6.83		1.18		4,033.77
Total	**13.08**	**100.81**	**0.53**	**6.83**	**7.36**	**0.00**	**6.83**	**6.83**		**1.18**		**4,033.77**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.00	0.00	0.16	0.00	0.16	0.00	0.00	0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.16**	**0.00**	**0.16**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**

3.5 Roads and Landing Work - 1999

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			

Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	36.60	281.19		19.48	19.48		19.48	19.48		3.29		11,223.12
Total	**36.60**	**281.19**	**0.00**	**19.48**	**19.48**	**0.00**	**19.48**	**19.48**		**3.29**		**11,223.12**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.00	0.00	0.54	0.00	0.54	0.00	0.00	0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.54**	**0.00**	**0.54**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**

3.6 Install TSP foundation - 1999

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Off-Road	13.06	107.40		7.15	7.15		7.15	7.15		1.18		4,251.16
Total	**13.06**	**107.40**		**7.15**	**7.15**		**7.15**	**7.15**		**1.18**		**4,251.16**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**

3.7 TSP Haul - 1999

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	10.60	87.52		5.78	5.78		5.78	5.78		0.95		3,433.50
Total	**10.60**	**87.52**	**0.00**	**5.78**	**5.78**	**0.00**	**5.78**	**5.78**		**0.95**		**3,433.50**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.00	0.00	0.13	0.00	0.13	0.00	0.00	0.00		0.00		0.00

Total	**0.00**	**0.00**	**0.13**	**0.00**	**0.13**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**

3.8 TSP Assembly - 1999

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	10.86	88.18		5.92	5.92		5.92	5.92		0.98		3,456.25
Total	**10.86**	**88.18**	**0.00**	**5.92**	**5.92**	**0.00**	**5.92**	**5.92**		**0.98**		**3,456.25**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.00	0.00	0.19	0.00	0.19	0.00	0.00	0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.19**	**0.00**	**0.19**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**

3.9 TSP Erection - 1999

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	10.58	86.36		5.77	5.77		5.77	5.77		0.95		3,383.63
Total	**10.58**	**86.36**	**0.00**	**5.77**	**5.77**	**0.00**	**5.77**	**5.77**		**0.95**		**3,383.63**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.00	0.00	0.19	0.00	0.19	0.00	0.00	0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.19**	**0.00**	**0.19**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**

3.10 LWS Pole Haul - 1999

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	10.60	87.52		5.78	5.78		5.78	5.78		0.95		3,433.50

Total	**10.60**	**87.52**	**0.00**	**5.78**	**5.78**	**0.00**	**5.78**	**5.78**		**0.95**		**3,433.50**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.00	0.00	0.13	0.00	0.13	0.00	0.00	0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.13**	**0.00**	**0.13**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**

3.11 LWS Pole Assembly - 1999

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	5.56	44.49		3.03	3.03		3.03	3.03		0.50		1,733.88
Total	**5.56**	**44.49**	**0.00**	**3.03**	**3.03**	**0.00**	**3.03**	**3.03**		**0.50**		**1,733.88**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.00	0.00	0.13	0.00	0.13	0.00	0.00	0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.13**	**0.00**	**0.13**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**

3.12 Instal LWS Pole - 1999

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	14.69	121.67		8.00	8.00		8.00	8.00		1.32		4,918.26
Total	**14.69**	**121.67**	**0.00**	**8.00**	**8.00**	**0.00**	**8.00**	**8.00**		**1.32**		**4,918.26**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.00	0.00	0.23	0.00	0.23	0.00	0.00	0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.23**	**0.00**	**0.23**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**

3.13 Transfer Conductor - 1999

Unmitigated Construction On-Site

Category	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
	lb/day								lb/day			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	54.29	448.81		29.54	29.54		29.54	29.54		4.88		17,683.15
Total	**54.29**	**448.81**	**0.00**	**29.54**	**29.54**	**0.00**	**29.54**	**29.54**		**4.88**		**17,683.15**

Unmitigated Construction Off-Site

Category	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
	lb/day								lb/day			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.00	0.00	0.67	0.00	0.67	0.00	0.00	0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.67**	**0.00**	**0.67**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**

3.14 Wood Pole Removal - 1999

Unmitigated Construction On-Site

Category	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
	lb/day								lb/day			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	25.87	212.29		14.11	14.11		14.11	14.11		2.33		8,345.96
Total	**25.87**	**212.29**	**0.00**	**14.11**	**14.11**	**0.00**	**14.11**	**14.11**		**2.33**		**8,345.96**

Unmitigated Construction Off-Site

Category	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
	lb/day								lb/day			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.00	0.00	0.25	0.00	0.25	0.00	0.00	0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.25**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**

3.15 Install Conductor - 1999

Unmitigated Construction On-Site

Category	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
	lb/day								lb/day			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	63.70	526.34		34.69	34.69		34.69	34.69		5.73		20,745.78
Total	**63.70**	**526.34**	**0.00**	**34.69**	**34.69**	**0.00**	**34.69**	**34.69**		**5.73**		**20,745.78**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.00	0.00	0.73	0.00	0.73	0.00	0.00	0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.73**	**0.00**	**0.73**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**

3.16 Restoration - 1999

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	13.77	112.84		7.55	7.55		7.55	7.55		1.24		4,512.24
Total	**13.77**	**112.84**	**0.00**	**7.55**	**7.55**	**0.00**	**7.55**	**7.55**		**1.24**		**4,512.24**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.00	0.00	0.23	0.00	0.23	0.00	0.00	0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.23**	**0.00**	**0.23**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**

CalEEMod Version: CalEEMod.2011.1.1

Date: 6/5/2012

Santa Barbara Reliability County Project

Ventura County, Winter

1.0 Project

1.1 Land Usage

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Utility Comp**	Southern California Edison
Climate Zone	8	**Precipitation Freq (Days)**	31		

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Year	lb/day								lb/day			
1999	93.35	746.91	0.53	50.45	50.45	0.00	50.45	50.45	0.00	8.39	0.00	29,567.41
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

3.0 Construction Detail

3.2 Survey - 1999

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Fugitive Dust			0.53	0.00	0.53	0.00	0.00	0.00				0.00
Off-Road	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.53**	**0.00**	**0.53**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00

Category	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Worker	0.00	0.00	0.06	0.00	0.06	0.00	0.00	0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.06**	**0.00**	**0.06**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**

3.3 Material Staging Yards - 1999

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category				lb/day						lb/day		
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	11.65	96.26		6.36	6.36		6.36	6.36		1.05		3,819.76
Total	**11.65**	**96.26**	**0.00**	**6.36**	**6.36**	**0.00**	**6.36**	**6.36**		**1.05**		**3,819.76**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category				lb/day						lb/day		
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.00	0.00	0.23	0.00	0.23	0.00	0.00	0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.23**	**0.00**	**0.23**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**

3.4 Tree Trimming - 1999

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category				lb/day						lb/day		
Fugitive Dust			0.53	0.00	0.53	0.00	0.00	0.00				0.00
Off-Road	13.08	100.81		6.83	6.83		6.83	6.83		1.18		4,033.77
Total	**13.08**	**100.81**	**0.53**	**6.83**	**7.36**	**0.00**	**6.83**	**6.83**		**1.18**		**4,033.77**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category				lb/day						lb/day		
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.00	0.00	0.16	0.00	0.16	0.00	0.00	0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.16**	**0.00**	**0.16**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**

3.5 Roads and Landing Work - 1999

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category				lb/day						lb/day		
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Off-Road	36.60	281.19		19.48	19.48		19.48	19.48		3.29		11,223.12
Total	**36.60**	**281.19**	**0.00**	**19.48**	**19.48**	**0.00**	**19.48**	**19.48**		**3.29**		**11,223.12**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.00	0.00	0.54	0.00	0.54	0.00	0.00	0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.54**	**0.00**	**0.54**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**

3.6 Install TSP foundation - 1999

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Off-Road	13.06	107.40		7.15	7.15		7.15	7.15		1.18		4,251.16
Total	**13.06**	**107.40**		**7.15**	**7.15**		**7.15**	**7.15**		**1.18**		**4,251.16**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**

3.7 TSP Haul - 1999

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	10.60	87.52		5.78	5.78		5.78	5.78		0.95		3,433.50
Total	**10.60**	**87.52**	**0.00**	**5.78**	**5.78**	**0.00**	**5.78**	**5.78**		**0.95**		**3,433.50**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.00	0.00	0.13	0.00	0.13	0.00	0.00	0.00		0.00		0.00

Total	0.00	0.00	0.13	0.00	0.13	0.00	0.00	0.00		0.00		0.00

3.8 TSP Assembly - 1999

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	10.86	88.18		5.92	5.92		5.92	5.92		0.98		3,456.25
Total	**10.86**	**88.18**	**0.00**	**5.92**	**5.92**	**0.00**	**5.92**	**5.92**		**0.98**		**3,456.25**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.00	0.00	0.19	0.00	0.19	0.00	0.00	0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.19**	**0.00**	**0.19**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**

3.9 TSP Erection - 1999

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	10.58	86.36		5.77	5.77		5.77	5.77		0.95		3,383.63
Total	**10.58**	**86.36**	**0.00**	**5.77**	**5.77**	**0.00**	**5.77**	**5.77**		**0.95**		**3,383.63**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.00	0.00	0.19	0.00	0.19	0.00	0.00	0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.19**	**0.00**	**0.19**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**

3.10 LWS Pole Haul - 1999

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	10.60	87.52		5.78	5.78		5.78	5.78		0.95		3,433.50

Total	10.60	87.52	0.00	5.78	5.78	0.00	5.78	5.78		0.95		3,433.50

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.00	0.00	0.13	0.00	0.13	0.00	0.00	0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.13**	**0.00**	**0.13**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**

3.11 LWS Pole Assembly - 1999

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	5.56	44.49		3.03	3.03		3.03	3.03		0.50		1,733.88
Total	**5.56**	**44.49**	**0.00**	**3.03**	**3.03**	**0.00**	**3.03**	**3.03**		**0.50**		**1,733.88**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.00	0.00	0.13	0.00	0.13	0.00	0.00	0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.13**	**0.00**	**0.13**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**

3.12 Instal LWS Pole - 1999

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	14.69	121.67		8.00	8.00		8.00	8.00		1.32		4,918.26
Total	**14.69**	**121.67**	**0.00**	**8.00**	**8.00**	**0.00**	**8.00**	**8.00**		**1.32**		**4,918.26**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.00	0.00	0.23	0.00	0.23	0.00	0.00	0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.23**	**0.00**	**0.23**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**

3.13 Transfer Conductor - 1999

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category					lb/day					lb/day		
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	54.29	448.81		29.54	29.54		29.54	29.54		4.88		17,683.15
Total	**54.29**	**448.81**	**0.00**	**29.54**	**29.54**	**0.00**	**29.54**	**29.54**		**4.88**		**17,683.15**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category					lb/day					lb/day		
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.00	0.00	0.67	0.00	0.67	0.00	0.00	0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.67**	**0.00**	**0.67**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**

3.14 Wood Pole Removal - 1999

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category					lb/day					lb/day		
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	25.87	212.29		14.11	14.11		14.11	14.11		2.33		8,345.96
Total	**25.87**	**212.29**	**0.00**	**14.11**	**14.11**	**0.00**	**14.11**	**14.11**		**2.33**		**8,345.96**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category					lb/day					lb/day		
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.00	0.00	0.25	0.00	0.25	0.00	0.00	0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.25**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**

3.15 Install Conductor - 1999

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category					lb/day					lb/day		
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	63.70	526.34		34.69	34.69		34.69	34.69		5.73		20,745.78
Total	**63.70**	**526.34**	**0.00**	**34.69**	**34.69**	**0.00**	**34.69**	**34.69**		**5.73**		**20,745.78**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.00	0.00	0.73	0.00	0.73	0.00	0.00	0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.73**	**0.00**	**0.73**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**

3.16 Restoration - 1999

Unmitigated Construction On-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Fugitive Dust			0.00	0.00	0.00	0.00	0.00	0.00				0.00
Off-Road	13.77	112.84		7.55	7.55		7.55	7.55		1.24		4,512.24
Total	**13.77**	**112.84**	**0.00**	**7.55**	**7.55**	**0.00**	**7.55**	**7.55**		**1.24**		**4,512.24**

Unmitigated Construction Off-Site

	ROG	NOx	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Total CO2	CH4	N2O	CO2e
Category	lb/day								lb/day			
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Worker	0.00	0.00	0.23	0.00	0.23	0.00	0.00	0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.23**	**0.00**	**0.23**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**

Operational GHG Emissions

Substation	Equipment	Quantity	SF6 content (lbs)	Rate of leakage (per year)	Total SF6 emisisons (lbs/yr)	SF6 Emissions (MT/yr)	SF6 GWP	CO2e (MT/yr)
Carpinteria	1200 amp circuit breaker	5	30	0.50%	0.75	3.41E-04	22,800	7.77
Casitas								0
Santa Clara								0
							TOTAL	7.77

Note:
Potential SF6 emission reductions from the removal of seven existing SF6-containing circuit breakers (5 at Carpinteria and 2 at Santa Clara) were not accounted for based on the uncertainty of the SF6 content and leakage rate of the existing circuit breakers. This approach is considered to be a conservative approach.

Appendix G

Aesthetics/Visual Resources Study

Visual Resources Technical Study

Santa Clara-Getty 66 kV Transmission Project

Santa Barbara County, California

August 2009

Prepared for
Southern California Edison
by
Environmental Vision

Contents

Figures

Appendices

I. Introduction

This report evaluates the visual impact associated with the Southern California Edison (SCE) Santa Clara-Getty 66 kV Transmission Project. The purpose of this document is to describe the visual resources in the project area and to assess the visual impacts that occurred as a result of the project's construction and operation. For purposes of this study visual or aesthetic resources are generally defined as both the natural and built features of the landscape that can be seen and that contribute to the public's experience and appreciation of the environment. Visual resource or aesthetic impacts are generally defined in terms of a project's physical characteristics, potential visibility, and the extent to which its presence will alter the perceived visual character and quality of the environment.

In brief, the project involved reconductoring of approximately 3.7 miles of overhead transmission line in southeastern Santa Barbara County. Currently in operation, the project entailed replacing overhead copper conductors with aluminum conductors within an existing transmission line corridor. In addition, new steel poles replaced some of the existing wood poles located along the route. Most replacement poles are generally the same height as the original poles. Project construction did not require the removal of any mature trees..

The physical characteristics of the project are described in Section III. A systematic description of the project's visual resources setting including summary of public policies pertaining to visual quality in the project area is provided in Section IV. A detailed listing of these public policies is also provided in Appendix B. Section V presents an evaluation of visual impacts associated with the project. A general project location map and project route map are included as Figure 2. All figures referenced in this report may be found following Section VI, References.

Because the project involved incremental and relatively minor modifications to existing facilities, the changes in the appearance of the project corridor that resulted from the project did not substantially alter the existing visual character or quality of the project site and surrounding area. In some cases, the project resulted in a minor improvement in the project area's visual character.

II. Methodology

The analysis of potential visual effects associated with the project is based on review of technical data including pre-project photographs, project maps and descriptive pole information provided by SCE, aerial and ground level photographs of the project area, and local planning documents. Field observations were conducted in July 2009 for the purpose of photographing visual conditions in the project area and identifying potentially affected sensitive viewing locations.

This visual study employs assessment methods based, in part, on the U.S. Department of Transportation Federal Highway Administration and other accepted visual analysis techniques as summarized by Smardon et al. (1986). This study also addresses the California Environmental Quality Act (CEQA) Guidelines for visual impact analysis as well as Santa Barbara County's guidelines for implementing CEQA. Included are systematic documentation of the visual setting and an evaluation of visual changes associated with the project. A set of 16 photographs showing representative public views of the project area is included to provide a sense of post-project visual conditions.

The impact analysis is based partially on the Federal Highway Administration methodology for determining visual resource change and assessing viewer response to that change. Central to this assessment is an evaluation of representative views from which the project will be visible to the public. In order to document the visual change that occurred, pre-project and project photographs from two locations are presented for comparative purposes. A photograph showing a comparison between a project pole and a pre-project pole taken at a location where both currently exist is also included. This set of photographs provide a clear image of the location, scale, and visual appearance of the proposed project components as compared with pre-project conditions.

The visual impact assessment includes an evaluation of the changes to the existing visual resources that resulted from construction and operation of the project. Factors considered in determining the extent and implications of the visual changes include the specific changes in the affected visual environment's composition and character; the relative numbers of viewers, and their activities with respect to potential sensitivity to change in the aesthetic qualities of the environment. Particular consideration was given to effects on landscapes visible in the foreground from public roadways and residential areas.

III. Project Characteristics

The SCE Santa Clara-Getty 66 kV Transmission Project involved replacing an existing 66 kV transmission line. The approximately 3.7-mile-long transmission line runs from the edge of the Ventura County line west to the existing Carpinteria Substation in southeastern Santa Barbara County. The project route traverses an area occupied by land uses that ranges from rural agriculture to suburban residential. The project follows an existing transmission corridor and is entirely within the existing SCE right-of-way. Project construction did not involve the removal of any trees.

Along the project's entire 3.7-mile length, new aluminum conductors replaced copper-wire conductors that were originally installed in 1932. The original copper conductors were 0.414 inches in diameter, whereas replacement conductors are 1.125 inches in diameter.

The project route includes a total of 85 poles. Of these structures, the project replaced 51 wood poles with wood or lightweight steel poles. Only conductors were replaced on the other 34 original poles. Seventeen of the replacement poles are 5 to 10 feet taller, whereas 34 replacement poles are the same height as the original poles. The above-ground height of both the original and replacement poles ranges between approximately 52 to 75 feet. Many of the original poles were replaced because of deterioration or damage. Appendix A includes a complete list of poles and the project modifications including changes in pole material and height.

IV. Visual Setting

A. Regional and Local Landscape Setting

The Santa Clara-Getty project corridor is located in northeastern Santa Barbara County near and within the City of Carpinteria. Figure 1 shows the project in its regional landscape context. The project runs along the coastal plain between the Santa Barbara Channel of the Pacific Ocean and the base of the Santa Ynez Mountains. Part of the Transverse Range, the Santa Ynez Mountains run east-west reaching elevations over 4000 feet. To the north and east of the project, topography rises toward the mountains, providing a visual backdrop to many views. To the south across the channel, lie the Channel Islands.

Along the Santa Barbara Channel, the coastal plain is up to 3 miles wide and approximately 25 miles long, allowing for a broad, relatively level area for development. Further to the east of Carpinteria and to the west of the City of Goleta, the mountains drop steeply toward the ocean. Settlement is much sparser in the mountains to the north where much of the area is under the Los Padres National Forest jurisdiction. (See Figure 1 for a map of the project's regional context.)

The project route occupies a landscape corridor that is characterized by orchards, greenhouses, and low-density residential development. The route is generally sparsely settled, but the western portion passes near residential development situated at the northern edge of suburban Carpinteria, a town of with a population of approximately 14,000 residents (U.S. Census 2009).

Project elevations range from approximately 200 to 135 feet above sea level, and the land along the route gently slopes to the south (USGS 1988). The project crosses Carpinteria Creek and runs near Rincon Creek and Gobernador Creek.

The 3.7-mile-long project route follows an existing transmission line that originates at the Ventura County border near the intersection of State Route 150/Rincon Road and State Route 192/Casitas Pass Road. Figure 2 delineates the project route location. It runs west crossing State Route 150 then southwest for 0.2 mile approximately paralleling State Route 192. It then runs northwest across the hillside below Shepard Mesa Road meeting Casitas Pass Road at Shepard Mesa Road. Then for approximately 2.6 miles the project runs west and generally parallel to Casitas Pass Road/Foothill Road, finally terminating at the existing Carpinteria Substation on Foothill Road.

B. Project Viewshed

The project viewshed is generally defined as the area from which the project is visible. Views of the existing and replacement poles situated along the project route are available from a variety of locations within the vicinity, including some places along public roadways, open space facilities, and some residences. At many locations, however, topography and vegetation partially or completely screen views of the project.

Viewing distance is a key factor within a project viewshed. For reference, it may be noted that visual details generally become apparent to the viewer when they are seen in the foreground, at distances of 0.25 to 0.5 mile or less (Smardon 1986). For purposes of the SCE Santa Clara – Getty 66 kV Transmission Line Project visual analysis, the primary focus considered is this foreground viewshed area, where visual details are apparent, and up to approximately one-half mile from the proposed project area, where change could be noticeable.

A set of 16 photographs, presented as Figures 3a through 3d illustrate representative post-project visual conditions along the project route. The photos document the character of the existing landscape found within the project viewshed. Figure 2 shows the photo viewpoint locations.

C. Visual Character along the Project Route

The following paragraphs summarize the existing visual character and conditions found along the project route. For purposes of this description, the route is divided into four general landscape areas. The photographs presented in Figure 3 demonstrate that the existing transmission facilities including existing wood utility poles, overhead conductors, and a substation are established landscape features found within the project area. These transmission structures are visible to the public from a variety of residential and roadway locations and can be seen in foreground, middleground, and/or distant views within the vicinity. Other vertical elements in the landscape include light standards and utility poles. As demonstrated by the photos, the poles are generally most noticeable when seen at close range when they appear in the foreground against a combination of landscape and sky in the backdrop (from distances of about 250 or less).

Crossing State Route 150 (Photos 1 through 4)

The project begins just east of State Route 150 on the border between Santa Barbara and Ventura County. Photos 1 through 4 portray views of the project in this area. Poles are visible on the hillside to the west of State Route 150 along a limited portion of the roadway—approximately 0.5 mile heading east and less than 0.25 mile heading west. In this location, State Route 150 is located in a canyon lined with mature vegetation. In views from the road, the transmission line generally cannot be seen, except where conductors appear when the route crosses the roadway. The bases of poles on the hillside to the west are largely screened by mature trees. Photos 1 through 3, taken from State Route 150, show that although the upper parts of poles are visible against the sky, mature vegetation largely screens views of lower portions of the poles. Photo 4 includes an electrical distribution line supported by wood poles that follows the roadway. In this view, the top of two project poles appear in the distance above the trees, against the sky.

Shepard Mesa Area (Photos 5 through 8)

After running parallel to State Route 150, the project route turns to the northeast and follows the lower slopes of Shepard Mesa, a landform located east of Carpinteria. Given the rolling topography in this area and depending on the vantage point, the project appears against a combination of landscape and sky. Where it appears in the distance against a landscape backdrop as shown in Photo 5, the project is barely visible. When seen against the sky, as in Photo 6, poles and conductors are visible. In this area, where the project does not run adjacent to roadways, it is not particularly visible from public viewpoints. However it is partially visible from a cluster of rural homes on Shepard Mesa. As shown in Photo 5, from portions of State Route 192/Las Casitas Road, views of the project are partially screened by existing topography and vegetation including mature trees and orchards. The project lies approximately 800 feet away from the Photo 5 viewpoint. Photo 7 depicts the project along the western end of Shepard Mesa Road where it returns to parallel the roadway. Photo 8 taken from State Route 192/Las Casitas Road south of Shepard Mesa Road shows the project where it returns to run alongside the roadway. The project is approximately 850 feet away from the Photo 8 viewpoint.

State Route 192/Casistas Pass Road (Photos 7 and 9 through 12)

The project returns to parallel public roadways on Shepard Mesa Road just east of State Route 192/Casitas Pass Road. It then runs along State Route 192 for the rest of the route. The rural setting in this area includes fields, orchards, greenhouses, and an occasional residence. In general, dense orchards and mature trees border the roadway, partially screening open views of the mountains to the north.

Photos 9 through 12 show that along State Route 192, the transmission line runs parallel to a wood pole utility line. Photo 9 indicates that some of the original poles remain along side replacement poles and support other utilities.

At Lillingston Canyon Road, the route crosses Carpinteria Creek. Just west of this, the route crosses from the north to the south side of the roadway. Along State Route 192, the new poles run adjacent to an existing wood pole distribution line. To the west of Lillingston Road on the south side of the State Route 192 is Lions Park, a small park managed by the Lions Club.

State Route 192/Foothill Road. (Photos 12 through 16)

Photos 12 through 16 portray views of the project along State Route 192/Foothill Road. At the intersection with State Route 224, Casitas Pass Road turns south and State Route 192 becomes Foothill Road. This roughly marks the point where the project route enters the City of Carpinteria. At this location, the route crosses the roadway and continues along the north side of Foothill Road. Along this section of the route, as shown in photos 12 and 13, the poles carry both a transmission circuit and a 16 kV distribution circuit, and many of these poles include wood cross arms.

The project route also passes adjacent to El Carro Park, a city park with sports fields, picnic facilities, and a children's playground (City of Carpinteria website 2009). The park includes a parking area that is situated adjacent to Foothill Road. Mature trees generally screen views of the project from the interior of the park.

For the last 0.3 mile, the route passes near a residential neighborhood located off of Foothill Road Near the edge of Carpinteria (Photo 13). On the south side of road are residences and to the north are greenhouses and open fields. More distant views of the project are available from some roadways within this neighborhood. Photo 16, taken from approximately 800 feet away, is a view from this residential area.

At the intersection of Foothill Road with Linden Avenue, the route crosses Foothill and then again crosses Foothill to connect into the Carpinteria substation, a facility enclosed by walls. Within the substation, only conductors were replaced. Photos 14 and 15, taken from nearby public roadways and the adjacent high school show taller components of the existing substation and adjacent poles visible above the substation walls.

D. Potentially Affected Viewers

Accepted visual assessment methods, including those adopted by FHWA and other federal agencies, establish sensitivity levels as a measure of public concern for changes to scenic quality. Viewer sensitivity, one of the criteria for evaluating visual impact significance, is generally divided into high, moderate and low categories. The factors considered in assigning a sensitivity level include viewer activity, view duration, viewing distance, adjacent land use, and special management or planning designation. Research on the subject suggests that certain activities tend to heighten viewer awareness of visual and scenic resources, while others tend to be distracting (U.S. Dept of Transportation 1986, p. 63). For example, recreational activities tend to favor attention to scenery while working at a construction site does not.

The project viewshed includes several types of viewer groups: motorists traveling on local and regional roadways, recreational users of private and public facilities, pedestrians and cyclists, and residents. These groups may at times overlap, but for the purposes of this discussion they are described separately.

Motorists represent the largest of the three affected viewer groups. Included in this group are motorists traveling on State Route 192, State Route 150, and roadways and streets in the area. Motorists in the project area include a variety of roadway travelers including both local and regional travelers who are familiar with the visual setting and travelers using State Route

150 on a less regular basis for purposes such as traveling between the coast and areas to the northeast in the Santa Ynez Mountains including the Lake Casitas Recreation Area and the City of Ojai. Motorists may include commuters and drivers of commercial vehicles. The view duration for this group is relatively short - estimated at less than a minute to less than 10 minutes depending on the route of travel. Viewer sensitivity is considered low to moderate.

Recreational users represent a relatively small number of potentially affected viewers including users of Lions Park and El Carro Park located along State Route 192. Views of the project from both facilities are partially screened by mature trees. View duration for this group could range from several minutes to several hours, and viewer sensitivity is considered moderate to high.

Pedestrians and cyclists on State Route 192 and other local roadways comprise a third group of potentially affected viewers. During site reconnaissance, cyclists were observed, and State Route 192 and State Route150 along the project route are part of the bicycle course of the Santa Barbara Triathlon, an event held in late August (Santa Barbara Triathlon website 2009). Although few pedestrians were observed along the project route, they may be more present toward the suburban, western end of the route. View duration of this group could range from several minutes to several hours, and viewer sensitivity is considered moderate.

The fourth viewer group includes people who reside along the project corridor. This relatively small viewer group is comprised of both rural residents and residents of the suburban areas of Carpinteria. Residential views tend to be long in duration, and the sensitivity of this viewer group is considered moderate to high.

E. Relevant Plans and Policies

The following documents contain plans and policies related to visual quality for the project area:

- California Department of Transportation: Scenic Highway Program;
- Santa Barbara County General Plan, Scenic Highways Element;
- California Coastal Act/Santa Barbara Coastal Land Use Plan; and
- City of Carpinteria General Plan.

Appendix B: Aesthetics Plans and Policies includes a discussion of these policies for informational purposes. As outlined in the appendix, the project’s construction and operation do not conflict with any environmental plans, policies, or regulations pertaining to aesthetics adopted by local agencies.

V. Impacts

A. Significance Criteria

To determine the significance of the anticipated visual changes, the project's effects were evaluated in light of the direction provided in the County of Santa Barbara's Environmental Thresholds and Guidance Manual (Santa Barbara County 2008a, pp. 149-150). Santa Barbara County identifies the following questions to address visual impact criteria in the CEQA Guidelines
Appendix G:

- 1a. Does the project site have significant visual resources by virtue of surface waters, vegetation elevation, slope, or other natural or man-made features which are publicly visible?
- 1b. If so, does the proposed project have the potential to degrade or significantly interfere with the public's enjoyment of the site's existing visual resources?
- 2a. Does the project have the potential to impact visual resources of the Coastal Zone or other visually important area (i.e. mountainous area, public park, urban fringe, or scenic travel corridor)?
- 2b. If so, does the project have the potential to conflict with the policies set forth in the Coastal Land Use Plan, the Comprehensive Plan or any applicable community plan to protect the identified views?
- 3. Does the project have the potential to create a significantly adverse aesthetic impact through obstruction of public views, incompatibility with surrounding uses, structures, or intensity of development, removal of significant amounts of vegetation, loss of important open space, substantial alteration of natural character, lack of adequate landscaping, or extensive grading visible from public areas?

This analysis also addresses two additional considerations. Appendix G of the CEQA Guidelines indicates that a project will have a significant effect on the environment if it will:

- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway;
- Create a new source of substantial light or glare, which will adversely affect day or nighttime views in the area.

In evaluating these criteria and determining significance level the factors considered include 1) the extent of project visibility from sensitive viewing locations such as residential areas, public open space, and/or designated scenic routes; 2) the degree to which the various project elements will contrast with or be integrated into the existing landscape; 3) the extent of change in the landscape's composition and character; and 4) the number and sensitivity of viewers. Project conformance with public policies regarding visual quality was also taken into account.

Impact significance is characterized according to the Santa Barbara County's impact classification system (Santa Barbara County 2008b, p. 20):

> **a. Class I Impacts.** Significant unavoidable adverse impacts for which the decisionmaker must adopt a statement of Overriding Consideration.
>
> **b. Class II Impacts.** Significant environmental impacts that can be feasibly mitigated or avoided for which the decisionmaker must adopt Findings and recommended mitigation measures.
>
> **c. Class III Impacts.** Adverse impacts found not to be significant for which the decisionmaker does not have to adopt Findings under CEQA.
>
> **d. Class IV Impacts.** Impacts beneficial to the environment.

B. Visual Changes

As part of the project visual resources analysis of the SCE Santa Clara-Getty 66 kV Transmission project, three sets of comparative photographs comparing pre-project and project conditions are presented to portray the visual change that has occurred. Pre-project photographs, taken prior to project construction, are presented as the "A" image on Figures 4 and 5. Photographs taken in July 2009 are the "B" images that show the project on these figures. The photographs illustrate representative visual change associated with project modifications that are seen by the public within the project area. The comparative vantage point locations are listed below and delineated on Figure 2:

- Figure 4: Shepard Mesa Road (VP 7);
- Figure 5: SR 192/Casitas Pass Road (VP 10); and
- Figure 6: SR 192/Casitas Pass road (near VP 10).

All of the changes associated with the project occurred within an existing SCE right-of-way which was previously occupied by existing transmission structures. The project resulted in modifications to some of these existing structures. Representative visual changes associated with these modifications are described below.

Shepard Mesa Road

Figure 4 presents both a pre-project photograph and a project photograph taken from Shepard Mesa Road east of Casitas Pass Road. Photo A, the pre-project view, shows a wood pole with double arms and insulators supporting the conductors. The lower portion of the pole is partially screened by mature roadway vegetation, and the top portion of the pole appears against the sky. In Photo B, the project photograph, a wood pole remains in the same location. Similar to the pre-project structures, mature trees screen the lower portion of the pole.

A comparison between the two photos shows that the three single post insulators supporting the overhead lines replaced three double arms and insulators. The wood pole was not replaced. The material, scale, and overall appearance of the pre-project and project-modified poles are largely similar. The number of overhead conductors is the same, and although the conductor diameter increased, the lines appear quite similar. Because the three upper replacement insulators are smaller than the cross arms, the new pole has a less cluttered appearance.

SR 192/Casitas Pass Road

Figure 5 includes pre-project and project photographs taken from Casitas Pass Road/State Route 192 west of Shepard Mesa Road. In Photo A, the pre-project view, the original wood poles appear prominently along the right (south) side of the roadway. On the left (north) side of the road is a communication line supported by smaller wood poles. The pre-project poles are unscreened by vegetation or topography and their dark color contrasts with the backdrop of landscape and sky. The transmission line and insulators are suspended from three wood cross arms braced on the pole. Below this are distribution and communication lines.

Photo B, the project view, shows the replacement steel pole is a similar height to the original wood pole. The transmission line is supported on a set of post insulators extending from the left side of the pole. As with the original pole configuration, two wood cross arms support the distribution and communication lines below this. This close range view, taken almost directly below the transmission line, shows that the replacement conductors appear slightly more noticeable than the original conductors. At further distances, the conductors are typically less visible and less noticeable.

A comparison of the Figure 5 photographs A and B indicates that the replacement steel pole is similar in overall scale to the original pole; however the new pole appears somewhat more slender. The lighter color is also somewhat less prominent, particularly when it appears against the sky. In addition, three post insulators replace the wood cross arms and insulators. In this respect, Figure 5 can be said to demonstrate that the project has a beneficial visual effect associated with reducing the visual clutter seen in the view and reducing the poles' visual prominence.

Pole Comparison

Figure 6, a photograph taken on Casitas Pass Road near photo viewpoint 10, shows a location where an original wood pole remains after the upper portion of the pole was removed (topped) and left to support distribution and communication lines. The steel replacement pole is on the left of the original wood pole. This photo effectively portrays a visual comparison of the base portions of the two poles. The Figure 6 photo demonstrates that the bases are of a similar scale and that the new pole is slightly smaller in diameter than the original pole. The lighter color of the steel pole also appears less prominently against the open field and sky backdrop.

C. Visual Impacts Assessment

The following evaluation addresses the visual impact assessment criteria established in the CEQA Guidelines and the County of Santa Barbara's Environmental Thresholds and Guidance Manual.

C.1. Does the project site have significant visual resources by virtue of surface waters, vegetation elevation, slope, or other natural or man-made features which are publicly visible? If so, does the proposed project have the potential to degrade or significantly interfere with the public's enjoyment of the site's existing visual resources?
(Class III Impact: Adverse impact found not to be significant.)

The project area is sparsely populated, and in general, local roadways are not heavily traveled. All of the changes affected by the project occurred within the existing SCE right-of-way, a disturbed area that was previously occupied by existing transmission structures. Section IV.C and Figure 3 of this report provide a description of the project corridor's existing visual resources and aesthetic character. Section V.B. documents the visual change brought about by the project. In most cases, replacement poles are located near or in the same position as original poles. Construction of the project did not require removal of existing trees or alteration of significant topographic features.

The project resulted in the same total number of poles (85) as under pre-project conditions. Of the 51 replacement poles, sixteen of the replacement poles are 5 to 10 feet taller and one is 15 feet taller than the originals. However as shown in Figure 5, the lighter color of the steel poles makes them appear less prominently against the sky and lighter landscape backdrops than the original poles. To varying degrees, these subtle changes are visible to the public from limited locations along local roadways and along State Route 150. Because affected motorists' views are generally brief in duration and because the visual effect is minor and incremental, the overall visual effect is not substantial. Portions of the project will also be visible from a limited number of residences. From the majority of these residences, existing vegetation provides partial or substantial screening.

No Mitigation Required

C.2. Does the project have the potential to impact visual resources of the Coastal Zone or other visually important area (i.e. mountainous area, public park, urban fringe, or scenic travel corridor)? If so, does the project have the potential to conflict with the policies set forth in the Coastal Land Use Plan (LCP), the Comprehensive Plan or any applicable community plan to protect the identified views?
(Class III Impact: Adverse impact found not to be significant.)

The project lies within the Coastal Land Use Plan Area (Santa Barbara County 2009a). Pertinent visual resource policies listed in Appendix B include several LCP policies which apply to the siting of transmission lines within this zone. The project did not involve the installation of a new transmission line, therefore some of these do not apply. With respect to policies addressing the design of transmission facilities, because of the slightly smaller diameter of poles, simplified conductor arm arrangement, and lighter color when seen against sky backdrop, the design and appearance of the new steel replacement poles improves the project's visual compatibility with the surroundings.

No Mitigation Required

C.3. Does the project have the potential to create a significantly adverse aesthetic impact through obstruction of public views, incompatibility with surrounding uses, structures, or intensity of development, removal of significant amounts of vegetation, loss of important

open space, substantial alteration of natural character, lack of adequate landscaping, or extensive grading visible from public areas?
(Class III Impact: Adverse impact found not to be significant.)

As shown in the Figure 4 and 5 pole comparative photographs, the pre-project and post-project vegetation is generally the same. For the most part, replacement poles were sited in the same locations as the original poles, and no grading or vegetation removal was required. As described in Section V.B., the project did not result in loss of any open space or a significant alteration of the character of public views. The project did not result in obstruction of public views. Sixteen replacement poles are 5 to 10 feet taller and one is 15 feet taller than the original poles; however, as shown in the comparison photographs, many replacement poles are smaller in diameter and have a less cluttered appearance than the original poles. The lighter color of the steel poles also reduces the visual prominence of the project.

Appendix G of the CEQA Guidelines also asks if a project will have a substantial adverse effect on a scenic vista. For purposes of this analysis, a scenic vista is defined as a distant public view along or through an opening or corridor that is valued for its scenic quality. While there are scenic views from portions of Casitas Pass Road near Shepard Mesa, as shown in Photo 5 on Figure 3b, the project appears in the distance from this road and is barely visible against the landscape backdrop. Therefore the proposed project would not have an adverse effect on a scenic vista. Based on the evaluation of changes to the existing landscape setting described previously in Section V.B, the proposed project would result in relatively minor visual effects on views from a limited area in the vicinity of the project route.

No Mitigation Required

C.4. Would the project damage scenic resources within a State Scenic Highway?
(Class III Impact: Adverse impact found not to be significant.)

California's Scenic Highway Program was created by the Legislature in 1963. Its purpose is to preserve and protect scenic highway corridors from change that would diminish the aesthetic value of lands adjacent to highways. The State Scenic Highway System includes highways that are either eligible for designation as scenic highways or have been designated as such. However, state legislation is required to designate a highway.

The project route crosses Highway 150. In the Santa Barbara County General Plan, Highway 150 is noted as an eligible state scenic highway, but one that is not adopted as such by the county. Therefore, there are no state or county designated scenic highways found within the project area, and the project has not affected these scenic resources. Because the project involved minor incremental visual change, it did not substantially affect views from Highway 150.

No Mitigation Required

C.5 Would the project create a substantial new source of light or glare which will adversely affect day or nighttime views in the area?
(Class III Impact: Adverse impact found not to be significant.)

The project replaced conductors along a 3.7 mile line and a portion of the poles. No new lighting was installed as part of the project. The steel replacement poles are a neutral gray in color and have a non-reflective finish. For these reasons, the project did not result in a substantial new source of light or glare.

No Mitigation Required

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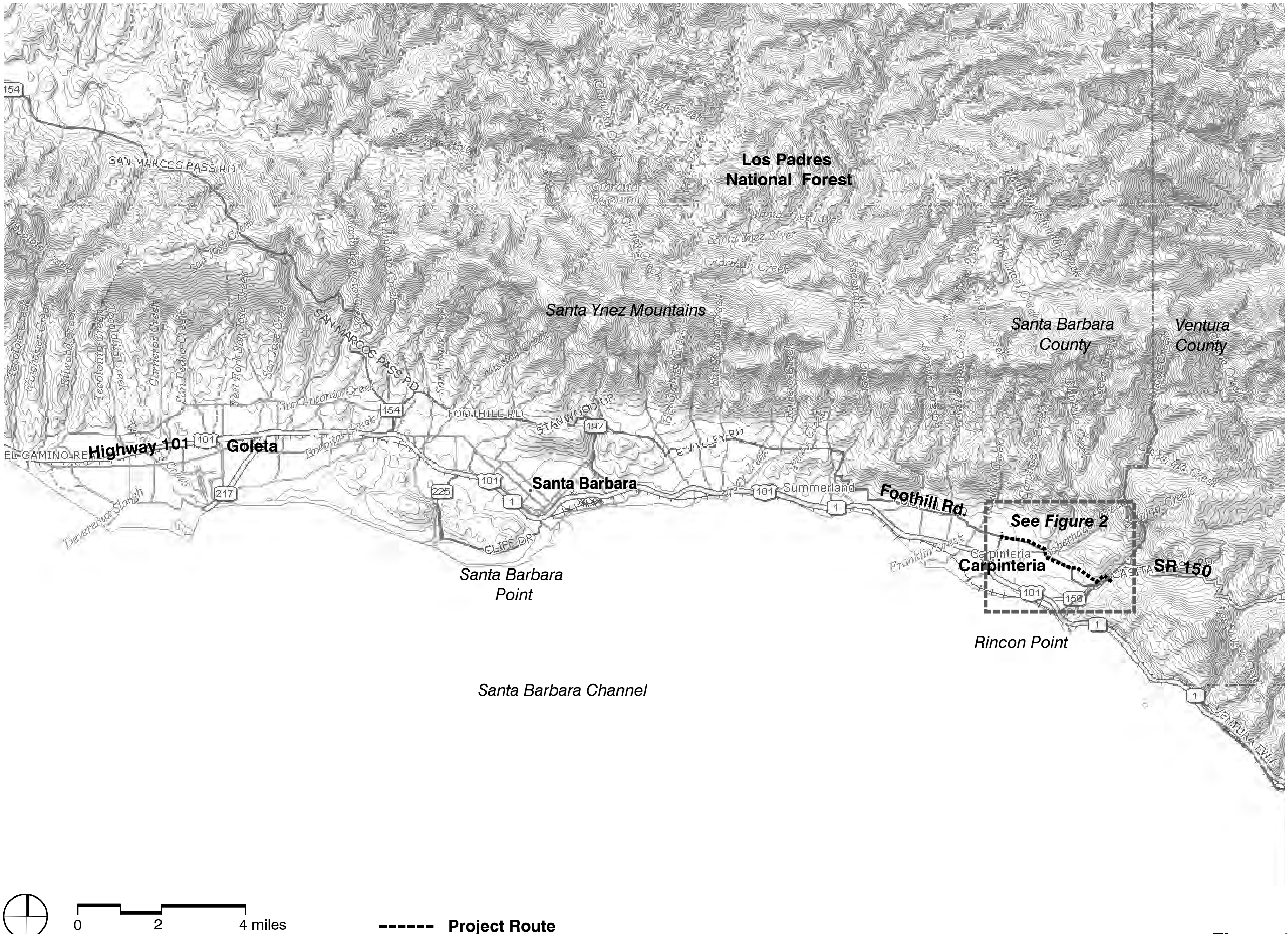
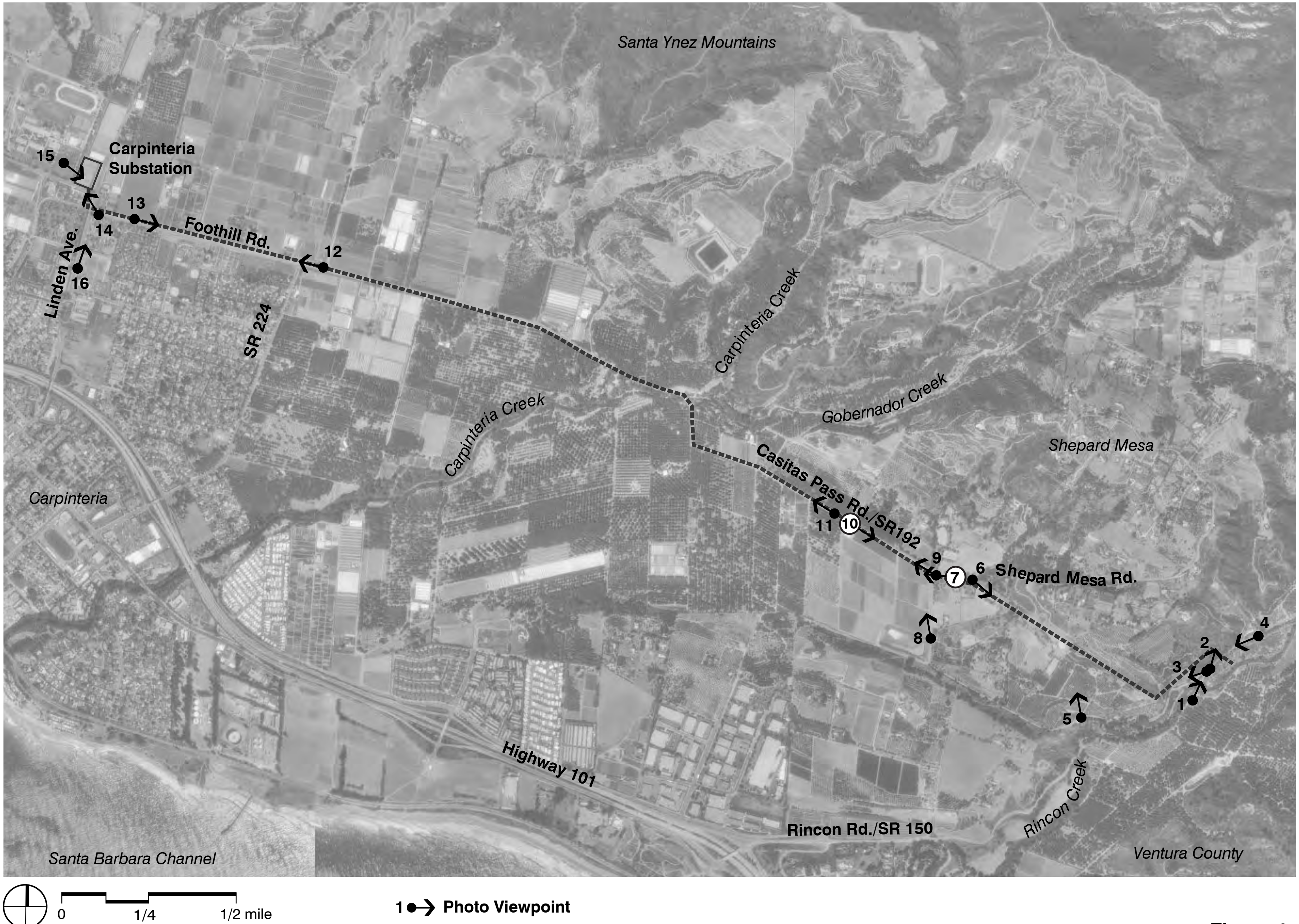


Figure 1
Regional Landscape Context
Santa Clara-Getty 66 kV Transmission Line Project

ENVIRONMENTAL VISION
081209



1 Photo Viewpoint

7 Comparative Photo Viewpoint

ENVIRONMENTAL VISION
081209

Figure 2
Photo Viewpoint Locations
Santa Clara-Getty 66 kV Transmission Line Project

1. State Route 150 at Rincon Creek crossing looking north

2. State Route 150 north of Las Casitas Road looking north

3. State Route 150 at Las Casitas Road looking west

4. State Route 150 north of Las Casitas Road looking southwest

Figure 3a
Photographs of Project Route and Surrounding Area
Santa Clara-Getty 66 kV Transmission Line Project

ENVIRONMENTAL VISION
081209

5. State Route 192/Casitas Pass Road looking north


6. Shepard Mesa Road looking east


7. Shepard Mesa Road near Casitas Pass Road looking southwest*


8. Casitas Pass Road south of Shepard Mesa Road looking north

* Location of Comparative Photograph

Figure 3b
Photographs of Project Route and Surrounding Area
Santa Clara-Getty 66 kV Transmission Line Project

ENVIRONMENTAL VISION
081209

9. Casitas Pass Road near Shepard Mesa Road looking west

10. State Route 192/Casitas Pass Road looking east*

11. State Route 192/Casitas Pass Road looking west

12. State Route 192/Casitas Pass Road near Foothill Road looking west

* Location of Comparative Photograph

Figure 3c
Photographs of Project Route and Surrounding Area
Santa Clara-Getty 66 kV Transmission Line Project

ENVIRONMENTAL VISION
081209

13. Foothill Road near Linden Avenue looking east

14. Foothill Road near Linden Avenue looking north toward substation

15. Parking lot at Carpinteria High School looking east toward substation

16. Linden Avenue at St. Joseph Church looking north

Figure 3d
Photographs of Project Route and Surrounding Area
Santa Clara-Getty 66 kV Transmission Line Project

ENVIRONMENTAL VISION
081209

A. Pre-project view from Shepard Mesa Road - VP 7
(Source: Southern California Edison)

B. Project view (Source: Environmental Vision)

* Refer to Figure 2 for viewpoint locations

ENVIRONMENTAL VISION
081209

Figure 4
Comparative Before and After Photographs
Santa Clara-Getty 66 kV Transmission Line Project

A. Pre-project view from Casitas Pass Road - VP 10
(Source: Southern California Edison)

B. Project view (Source: Environmental Vision)

* Refer to Figure 2 for viewpoint locations

Figure 5
Comparative Before and After Photographs
Santa Clara-Getty 66 kV Transmission Line Project

ENVIRONMENTAL VISION
081209

Steel pole and adjacent wood pole on Casitas Pass Road (near VP 10)

* Refer to Figure 2 for viewpoint locations

ENVIRONMENTAL VISION
081209

Figure 6
Comparative Pole Photograph
Santa Clara-Getty 66 kV Transmission Line Project

Appendix A:

Table 1: Wood poles with Conductor Replacement Only

Pole Number	Pole Height (ft.)*
4388667E	75
106123E	70
106125E	75
1238750E	75
1238749E	70
1238747E	70
1238746E	70
4305745E	70
4305746E	70
4305747E	70
4170614E	70
1238740E	70
1238739E	70
2303869E	75
4305748E	70
106149E	70
1324181E	70
1324182E	70
106152E	70
1871704E	70
106159E	70
106164E	70
1920989E	70
1920986E	75
1920987E	75
1872161E	75
2203868E	75
106190E	70
106194E	70
106195E	70
4170618E	85
4141436E	80
4141437E	75
4093351E	75

* Total pole length including below-ground portion

SOURCE: Southern California Edison

Table 2: Wood Poles with Steel Pole and Conductor Replacement

Former Pole Number	Former Pole Height (ft.) *	New Pole Number	New Pole Height (ft.) *
1235901E	70	4435013E	70
1920853E	75	4435014E	75
1238748E	70	4435105E	75
1238745E	70	4435016E	70
1238738E	70	4435017E	70
1823837E	70	4435018E	75
4093275E	80	4435019E	80
106144E	70	4435020E	70
106146E	70	4439108E	70
106154E	70	4439109E	70
106155E	70	4435021E	70
106157E	70	4435022E	70
106162E	70	4435023E	70
106163E	70	4435024E	70
2115767E	75	4435025E	75
4170616E	80	4435026E	80
1665177E	80	4435027E	80
1723095E	80	4435027E	80
2295420E	80	4435028E	80
1723097E	75	4435029E	75
1920983E	75	4435030E	75
1920984E	75	4435031E	75
1920988E	70	4435032E	70
2116387E	70	4435034E	70
106187E	70	4435035E	70
2274919E	75	4423667E	75
106193E	70	4435036E	70
106197E	70	4435037E	75
106199E	70	4435038E	75
106201E	70	4435039E	75
106202E	70	4435040E	75
2115768E	70	4435041E	75
2115838E	70	4435042E	75
2115769E	80	4435043E	80
4141435E	85	4435044E	85
2115772E	70	4435045E	70
2295421E	70	4435046E	75
646784E	70	4435047E	80
646785E	70	4435048E	80
646786E	70	4435049E	80
646787E	70	4435050E	75
646788E	70	4423851E	80
646789E	70	4423852E	80
646790E	70	4423853E	80
2279207E	80	4423854E	85
787286E	65	4423855E	70
787285E	80	4423856E	80
787284E	60	4425346E	65 **
106160E	70	4415693E	70
106165E	70	4423105E	70
4170617E	80	N/A	80

* Total pole length including below-ground portion
** Height above ground

SOURCE: Southern California Edison

Appendix B: Aesthetics Plans and Policies

The following public documents include plans and policies related to visual quality for the jurisdictions crossed by the project route. As noted in italics below each policy discussion, the construction and operation of the project does not conflict with any environmental plans, policies, or regulations adopted by agencies with jurisdiction over local aesthetic regulations.

Documents Reviewed

The following is a list of documents that were reviewed for this analysis:

- California Department of Transportation: Scenic Highway Program;
- Santa Barbara County General Plan;
- California Coastal Act/Santa Barbara County Local Coastal Plan (LCP); and
- Carpinteria General Plan.

California Department of Transportation: Scenic Highway Program

California's Scenic Highway Program was created by the Legislature in 1963. Its purpose is to preserve and protect scenic highway corridors from change that would diminish the aesthetic value of lands adjacent to highways. The State Scenic Highway System includes highways that are either eligible for designation as scenic highways or have been designated as such. The status of a state scenic highway changes from "eligible" to "officially designated" when the local jurisdiction adopts a scenic corridor protection program, applies to CalTrans for scenic highway approval, and receives from CalTrans the designation. A city or county may propose adding routes with outstanding scenic elements to the list of eligible highways. However, state legislation is required to designate a highway.

Highway 154 is the nearest designated state scenic highway in Santa Barbara County. It is located approximately 15 miles from the project route. Near the project area in Santa Barbara County, Highway 101 and State Route 150 are eligible state scenic highways. Highway 101 is located approximately 0.75 miles from the project route. Due to intervening topography, the project lies outside the Highway 101 viewshed. The project crosses State Route 150. Because the project involved minor incremental visual change, it did not substantially affect views from Highway 150.

Santa Barbara County General Plan, Scenic Highways Element

The Scenic Highways Element of the Santa Barbara County General Plan, adopted in 1975 recognizes State Route 150 as an eligible state scenic highway. However, the county has not implemented this designation (Santa Barbara County 2009b, Figure GP – 23).

The project does not lie within the viewshed of any county designated scenic roadways. Please refer also to the discussion under V.C.4.

Coastal Act/Santa Barbara Coastal Land Use Plan.
The 1976 Coastal Act establishes the California Coastal Commission's jurisdiction over the state's coastal zone, generally defined as the land and water area "extending inland 1,000 yards from the mean high tide line of the sea." The Coastal Act provides for protection of coastal visual resources, stating as follows:

> The scenic and visual qualities of coastal areas will be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural land forms, to be visually compatible with surrounding areas, and where feasible to restore and enhance visual quality in visually degraded areas… (Section 30251).

Santa Barbara County has an approved Local Coastal Program (LCP) for the region and the project lies within the jurisdiction of the Santa Barbara Local Coastal Plan. (California Coastal Commission 2009 and Santa Barbara County 2009a). The following policies from the LCP pertain to visual resources in the project area.

Visual Resources: Industrial and energy facilities, particularly when sited within view corridors, may represent major impacts on scenic and visual resources. Electric transmission lines, for example, have long-term effects on visual resources. Some impacts can be mitigated through proper siting, screening, undergrounding, and landscaping. Abandonment of an industrial or energy facility must include removal of above ground equipment to reduce impacts on visual resources. (Santa Barbara County 2009a, p. 59)

Policies
Policy 6-20: Transmission line rights-of-way shall be routed to minimize impacts on the viewshed in the coastal zone, especially in scenic rural areas, and to avoid locations which are on or near habitat, recreational, or archaeological resources, whenever feasible. Scarring, grading, or other vegetative removal shall be repaired, and the affected areas revegetated with plants similar to those in the area to the extent safety and economic considerations allow.

The project involved minor modification to an existing facility and did not result in any scarring, grading, or significant vegetation removal.

Policy 6-21: In important scenic areas, where above-ground transmission line placement would unavoidably affect views, undergrounding shall be required where it is technically and economically feasible unless it can be shown that other alternatives are less environmentally damaging. When above-ground facilities are necessary, design and color of the support towers shall be compatible with the surroundings to the extent safety and economic considerations allow (Santa Barbara County 2009a, p. 75).

The above ground project components include minor modifications to existing facilities that do not substantially affect the character or quality of existing views in the project area. In some cases, the use of neutral gray-colored steel replacement poles with a simpler cross arm design has decreased the project's visibility.

City of Carpinteria General Plan

The western portion of the route is at the edge of the city limits and sphere of influence of Carpinteria, and briefly travels within the city limits. Area zoned for low density residential and recreation (El Carro Park) and utilities.

The plan mostly contains policies focusing on preserving views of the ocean from Carpinteria Bluffs, areas near the water and Highway 101 (City of Carpinteria 2003).

The project does not affect views of the ocean from Carpinteria Bluffs, Highway 101 or other areas.

Appendix H

Biological Resources Study

BIOLOGICAL TECHNICAL REPORT FOR THE SANTA BARBARA COUNTY RELIABILITY PROJECT VENTURA AND SANTA BARBARA COUNTIES, CALIFORNIA

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June 2012

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Appendices

1.0 INTRODUCTION

This report documents and describes the existing conditions and biological resources in the area of the Santa Barbara County Reliability Project (hereafter referred to as the "Project"), and identifies potential impacts to biological resources that may result from implementation and construction of the Project.

1.1 Project Description

In 1998, the Southern California Edison Company (SCE) initiated the Project to increase reliability by reinforcing its existing 66 kilovolt (kV) sub-transmission system in northwestern Ventura County and southeastern Santa Barbara County to meet the electrical demands of the south coast of Santa Barbara County during emergency conditions while also enhancing operational flexibility.

The Project has been divided into six geographically-defined Segments (Segments 1, 2, 3A, 3B, and 4, and the Getty Tap) and at three substations (Carpinteria Substation, Casitas Substation, and Santa Clara Substation) (Figure 1).

Segment 1 begins at Santa Clara Substation off Foothill Road in unincorporated Ventura County. From that origin, it heads north along western Long Canyon; turns northwest at Harmon Canyon in the Ventura Hills; traverses Lake, Sexton, and Hall Canyons; then runs west along northern Cañada Seca and crosses Cañada Larga to Casitas Substation, which lies between SR-33 and the Ventura River. Segment 2 extends west from Casitas Substation along the south side of Lake Casitas, to the 'Y' near East Casitas Pass. Segment 3B heads west from the 'Y' through Casitas Valley along the south side of SR-150, crossing over Madranio Canyon, along Rincon Mountain, and through Rincon Valley. At the Santa Barbara/Ventura County line near the intersection of SR-150 and SR-192, Segment 3B becomes Segment 3A and continues to the west into the Shepard Mesa and Gobernador rural residential areas, then west along SR-192 to Carpinteria Substation. Segment 4 heads west from the 'Y' along the north side of SR-150, runs northwest along the ridgetop of Sutton Canyon, and then turns south to Carpinteria Substation. The 'Getty Tap,' is located approximately in the middle of Segment 1.

The Project includes the following physical elements:

- Reconstruct existing 66 kilovolt (kV) subtransmission facilities within existing utility rights-of-way (ROW) between the existing Santa Clara Substation in Ventura County and the existing Carpinteria Substation in Santa Barbara County.
- Install marker balls on overhead wire where determined to be necessary.
- Modify utility equipment within the existing Carpinteria Substation, Casitas Substation, Getty Substation, Goleta Substation, Ortega Substation, Santa Barbara Substation, and Santa Clara Substation.
- Install telecommunications facilities to connect the Project to SCE's existing telecommunications system for the protection, monitoring and control of subtransmission and substation equipment. Install new telecommunications facilities along Segments 1, 2, and 4

- and at Carpinteria Substation, Casitas Substation, Santa Clara Substation, and Ventura Substation[1].
- Transfer distribution lines (and third-party infrastructure as necessary) to subtransmission structures along Segment 3A.
- Remove subtransmission infrastructure in Segments 1 and 2.

1.2 Environmental Setting

The Project lies north and west of US-101, between one and six miles from the coastline. Elevations vary through the Project Area from 31 feet above sea level (ASL) near the Carpinteria Substation, which lies in the coastal plain, to 1,500 feet ASL along Segment 4 in the foothills of the western Transverse Ranges, to more than 1,800 feet ASL along portions of Segment 3B near Rincon Peak.

The Project crosses the headwaters of multiple small streams and creeks that flow through agricultural and urban areas before reaching the ocean, and is located in lower gradient reaches of the Santa Clara River and Ventura River watersheds, including Cañada Larga, which is tributary to the Ventura River. While groundwater and surface water sources have been extensively developed for domestic and agricultural uses throughout the area, these riparian corridors contrast sharply with an otherwise dry landscape. Landslides are prone to occur in areas of steep, unstable terrain, and the area has a history of large and sometimes devastating wildland fire events, with “Sundowner” and “Santa Ana” winds contributing to fast-moving and destructive fires (USFS 2005).

The majority of the Project is located on private lands, while three tower sites and associated access and spur roads in Segment 4 are located within the Santa Barbara Front, a geographical unit of lands under the jurisdiction of the Los Padres National Forest owned by the U.S. Forest Service (USFS). Land uses in the immediate vicinity of the Project Area are dominated by agriculture (cattle grazing and orchards) and “open-space” areas covered by native vegetation communities, with low-density residential development and commercial areas (nurseries and row crops) scattered through Segments 3A, 3B, and 4.

Temperatures in the area average 50 to 71° F, with an average annual temperature of 60° F. Average rainfall ranges from 15.4 to 17.7 inches. The east-west orientation of the mountains, combined with the distinct Mediterranean/marine climate, results in a unique botanic zone and mix of species. Predominately north- or south-facing slopes are dominated by alternating bands of sedimentary rock formations, with oak woodlands at lower elevations. Conifers exist in small patches along ridgetops and on north-facing slopes. Noxious weed infestations, including black mustard (*Brassica nigra*), tocalote (*Centaurea melitensis*), Cape ivy (*Delairea odorata*), and ruderal species and escaped cultivars occur throughout the vicinity of the Project, especially along road and trail corridors.

[1] The Project also includes additional telecommunications-related work at Getty Substation, Goleta Substation, Ortega Substation, Santa Barbara Substations, and Ventura Substation; this work would be conducted exclusively within the MEERs or on substation property, and thus would have no impact to biological resources. Therefore, this work is not addressed further in this Section.

Figure 1. Project Location

1.3 Regulatory Setting

1.3.1 Federal Regulations

Endangered Species Act (16 United States Code [U.S.C.] § 1531 et seq.)

The Endangered Species Act of 1973 (ESA) provides for the protection of plant and animal species listed by the federal government as "Endangered" or "Threatened", and "the ecosystems upon which they depend." An "Endangered" species is one that is "in danger of extinction" throughout all or a significant portion of its range. A "Threatened" species is one that is "likely to become endangered" within the foreseeable future. Pursuant to Section 9 of the ESA, it is unlawful for any person to "take" a federally listed species. "Take," as defined by the ESA, "means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." This can also include the modification of a species' habitat. For plants, this statute governs removing, possessing, maliciously damaging, or destroying any listed plant on federal land, and removing, cutting, digging up, damaging, or destroying any listed plant on non-federal land in knowing violation of state law (16 U.S.C. § 1538(c)).

When non-federal entities such as states, counties, local governments, and private landowners wish to conduct an otherwise lawful activity that might incidentally, but not intentionally, "take" a listed species, an incidental take permit (ESA § 10(a)(1)(B)) must first be obtained following formal consultation with the USFWS, through the development of a habitat conservation plan (HCP).

Migratory Bird Treaty Act (16 U.S.C. §§ 703 - 712)

The Migratory Bird Treaty Act of 1918 (MBTA) protects species of native, non-game, migratory birds. Specific provisions in the statute include a federal prohibition, except as allowed under specific conditions, to

> "pursue, hunt, take, capture, kill, attempt to take, capture or kill, possess, offer for sale, sell, offer to purchase, purchase, deliver for shipment, ship, cause to be shipped, deliver for transportation, transport, cause to be transported, carry, or cause to be carried by any means whatever, receive for shipment, transportation or carriage, or export, at any time, or in any manner, any migratory bird, included in the terms of this Convention . . . for the protection of migratory birds . . . or any part, nest, or egg of any such bird." (16 U.S.C. § 703).

Bald and Golden Eagle Protection Act (16 U.S.C. § 668)

The Bald and Golden Eagle Protection Act of 1940 (BGEPA) provides for the protection of bald and golden eagles. The BGEPA establishes criminal penalties for persons who "take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle ... [or any golden eagle], alive or dead, or any part, nest, or egg thereof." The BGEPA defines "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb."

National Forest Management Act (16 U.S.C. § 1600)

The National Forest Management Act of 1976 requires National Forests to maintain viable populations of "native and desired non-native vertebrate species . . . well distributed in the planning area."

U.S. Department of Agriculture Environmental Compliance Fish and Wildlife Policy (Departmental Regulation 9500-4)

The Secretary of Agriculture's Policy on Fish and Wildlife directs the Forest Service to "manage habitats for all native and desired nonnative plants, fish and wildlife species to maintain viable populations of each species; identify and recover threatened and endangered plant and animal species" and to avoid actions "which may cause species to become threatened or endangered."

Forest Service Manual

The Forest Service Manual (FSM) contains legal authorities, objectives, policies, responsibilities, instructions, and guidance for the planning and execution of programs and activities within and related to National Forests. FSM Chapter 2670 directs the USFS to "develop/implement management practices to ensure that species do not become threatened or endangered because of Forest Service actions," and to "avoid or minimize impacts to species whose viability has been identified as a concern." If impacts cannot be avoided, the USFS "can allow or disallow the impact, but the decision must not result in loss of species viability or create a significant trend towards federal listing." FSM Chapter 2672.4 specifies that a Biological Evaluation (BE) be prepared to determine if a project may affect any USFS or USFWS listed species. In addition to protections to federally listed species, FSM Chapter 2672.11 delegates to each Regional Forester the authority to designate "Sensitive" species, which are defined as

> "Those plant and animal species identified by a Regional Forester for which population viability is a concern, as evidenced by: a. Significant current or predicted downward trends in population numbers or density, or b. Significant current or predicted downward trends in habitat capability that would reduce a species' existing distribution."

Land Management Plan: Southern California National Forests

The Land and Resource Management Plans (Plans) established by USFS for the southern California national forests describe the strategic direction at the broad program-level for managing the land and its resources over the next 10 to 15 years.

As stated in the Los Padres National Forest Strategy, the objective of USFS threatened, endangered, proposed, candidate and sensitive species management is to, "manage habitat to move listed species toward recovery and de-listing" and to, "prevent listing of proposed and sensitive species." For management of species of concern, the primary objective is to, "maintain and improve habitat for fish, wildlife, and plants, including those with the following designations: game species, harvest species, management indicator species and watch list species."

The Los Padres National Forest Strategy includes specific measures to meet the six goals of the USFS National Strategic Plan. These goals include: Goal 1- Reduce the risk from catastrophic wildland fire, Goal 2 - Reduce the impacts from invasive species, Goal 3 - Provide outdoor recreation opportunities, Goal 4 - Help meet energy resource needs, Goal 5 - Improve watershed conditions, and Goal 6 - Mission related work in addition to that which supports the agency's goals.

Clean Water Act of 1972

Enacted in 1972, the federal Clean Water Act (CWA) and subsequent amendments outline the basic protocol for regulating discharges of pollutants to waters of the U.S. It is the primary federal law applicable to water quality of the nation's surface waters, including lakes, rivers, and coastal wetlands. Enforced by the U.S. Environmental Protection Agency (USEPA), it was enacted "… to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." The CWA authorizes states to adopt water quality standards and includes programs addressing both point and non-point pollution sources. The CWA also established the established the National Pollutant Discharge Elimination System (NPDES), and provides the USEPA the authority to implement pollution control programs, such as setting wastewater standards for industry and water quality standards for surface waters (see below for a discussion of the NPDES program).

In California, programs and regulatory authority under the CWA have been delegated by USEPA to the State Water Resources Control Board (SWRCB) and its nine Regional Water Quality Control Boards (RWQCBs). Under Section 402 of the CWA, a discharge of pollutants to navigable waters is prohibited unless the discharge complies with an NPDES permit.

The SWRCB and RWQCBs have also developed numeric and narrative water quality criteria to protect beneficial uses of State waters and waterways. Beneficial uses in the Project area include water supply, groundwater recharge, aquatic habitat, wildlife habitat, and recreation.

Section 401 – Water Quality Certification

Section 401 of the CWA specifies that, for any activity that may result in a discharge into waters of the U.S., the SWRCB or applicable RWQCB must certify that the discharge will comply with State water quality standards, including beneficial uses (23 CCR 3830, et seq.). Under California's policy of no net loss of wetlands, the SWRCB and RWQCBs require mitigation for dredge and fill impacts to wetlands and waterways (see Section 4.4, Biological Resources). Dredge and fill activities in wetlands and waterways that impact waters of the U.S. will require a federal Section 404 permit from the U.S. Army Corps of Engineers (USACE). These permits trigger the requirement to obtain a Section 401 certification, which must be obtained prior to issuance of a Section 404 permit.

Section 404 – Permitting for Dredge and Fill Activities in Wetlands and Waters of the U.S.

The USACE is responsible for issuing permits under CWA Section 404 for placement of fill or dredged material in waters of the U.S. and jurisdictional wetlands. Waters of the U.S. refers to oceans, bays, rivers, streams (including non-perennial streams with a defined bed and bank), lakes, ponds, and seasonal and perennial wetlands.

Project proponents must obtain a permit from the USACE for all discharges of fill or dredged material before proceeding with a proposed activity. The USACE may issue either an individual permit or a general permit. General permits are preauthorized at the regional or national level and are issued to cover activities expected to result in only minimal adverse environmental effects (i.e., LA District Regional General Permit No. 63 for Repair and Protection Activities in Emergency Situations). Nationwide Permits (NWP) are a type of general permit issued to cover activities that the USACE has determined to have minimal adverse effects, such as routine maintenance (i.e., Nationwide Permit 3) or utility line activities (i.e., Nationwide Permit 12). Each NWP specifies particular conditions that must implemented by the permittee.

1.3.2 State Regulations

California Coastal Act of 1976 (California Public Resources Code § 30000 et seq.)

The California Coastal Act establishes public access requirements and development restrictions within the coastal zone, an area that extends off the California coast to the state's outer limit of jurisdiction, and inland generally 1,000 yards from the mean high tide or to the first major ridgeline paralleling the sea, whichever is less (with certain exceptions). In Ventura and Santa Barbara Counties, the coastal zone generally follows the 1,000-yard limit with several exceptions. Most of the Carpinteria Valley is included within the coastal zone due to "important habitat, recreational, and agricultural resources" (Coastal Land Use Plan, Santa Barbara County 2009). Portions of Segments 3A and 4 are located within the expanded coastal zone of the Carpinteria Valley.

Sections 30231, 30233, and 30236 of the Act limit impacts to streams, wetlands, and their biological resources, through providing for minimization of wastewater discharges and runoff, minimization of alteration of natural streams, and maintaining the actual vegetation buffer areas, among other things. Upland habitats in the coastal zone are protected under Section 30240, which limits impacts to designated Environmentally Sensitive Habitat Areas (ESHAs). The California Coastal Act specifically calls for protection of "environmentally sensitive habitat areas" or ESHAs, which includes wetlands and riparian areas.

California Fish and Game Code Sections 1600-1616, Lake and Streambed Alteration Program

If a project includes alteration of the bed, banks or channel of a stream, or the adjacent riparian vegetation, then a Streambed Alteration Agreement (SAA) may be required from CDFG. California Fish and Game Code (CFG) Sections 1600-1616, regulate activities that could alter the flow, bed, banks, channel or associated riparian areas of a river, stream or lake—all considered "waters of the state." The law requires any person, state or local governmental agency or public utility to notify CDFG before beginning an activity that will substantially modify a river, stream or lake.

California Endangered Species Act (California Fish and Game Code § 2050, et seq.)

The California Endangered Species Act (CESA) generally parallels the provisions of the federal ESA, and states that "all native species of fishes, amphibians, reptiles, birds, mammals, invertebrates, and plants, and their habitats, threatened with extinction and those experiencing a significant decline which, if not halted, would lead to a threatened or endangered designation, will be protected or preserved." The California Department of Fish Game (CDFG) administers the CESA and has committed itself to work with all interested persons, agencies and organizations to protect and preserve such sensitive resources and their habitats.

Under the CESA, "Endangered" is defined as "a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant which is in serious danger of becoming extinct throughout all, or a significant portion, of its range;" and "Threatened" is defined as "a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of the special protection and management efforts." "Take" is defined as "to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill" an individual of a species, but the definition does not include "harm" or "harass," as the federal ESA does. As a result, the threshold for a take under the CESA is higher than that under the federal ESA.

Consistent with the CESA, CDFG has established lists of endangered, threatened, and candidate species that may or may not also be included on a federal ESA list. Pursuant to CFG Section 2081, CESA allows for incidental take permits to otherwise lawful development projects that could result in the take of a state-listed Threatened or Endangered species. The application for an incidental take permit under Section 2081(b) has a number of requirements including the preparation of a conservation plan, generally referred to as a Habitat Conservation Plan. CESA emphasizes early consultation to avoid potential impacts to rare, endangered, and threatened species and to develop appropriate mitigation planning to offset project-caused losses of listed species.

Native Plant Protection Act (California Fish and Game Code §§ 1900 - 1913, § 2062 and § 2067)

The Native Plant Protection Act (NPPA) identifies the types of plant species eligible for State listing. Eligible species include those identified on California Native Plant Society (CNPS) Rare Plant Ranks (RPR) 1A, 1B, and 2 meet the definitions of Sections 1901, Chapter 10 (Native Plant Protection Act) or Sections 2062 and 2067 (CESA) of the CFG Code. Plants with CNPS listings 3 and 4 do not explicitly qualify for legal protection, but can be addressed in CEQA documents depending on the circumstances and opinion of the biologist conducting the assessment.RPR definitions are as follows:

1A: Plants presumed to be extinct because they have not been seen or collected in the wild in California for many years. This rank includes plants that are both presumed extinct in California, as well as those plants that are presumed extirpated in California. A plant is extinct in California if it no longer occurs in or outside of California. A plant that is extirpated from California has been eliminated from California, but may still occur elsewhere in its range.

1B: Plants that are rare throughout their range with the majority of them endemic to California. Most of the plants of RPR 1B have declined significantly over the last century.

2: Plants that are rare throughout their range in California, but are common beyond the boundaries of California. RPR 2 recognizes the importance of protecting the geographic range of widespread species (CNPS 2010).

3: A review list for plants for which there is inadequate information to assign them to one of the other lists or to reject them.

4: A watch list for plants that are of limited distribution or infrequent throughout a broader area in California and their vulnerability or susceptibility to threat appears relatively low at this time.

California Fish and Game Code Sections 3500-3516, and 3800

CFG Code 3513 furthers the intent of the MBTA by prohibiting any take or possession of birds in California that are designated by the MBTA as migratory nongame birds, except as allowed by Federal rules and regulations promulgated pursuant to the MBTA. In addition, CFG Code Sections 3503, 3503.5, 3511, and 3800 further protect nesting birds and their parts, including passerine birds, raptors, and state "fully protected" birds. These regulations protect almost all native nesting birds, not just special status birds.

California Fish and Game Code Sections 3511, 4700, 5050, and 5515

CFG Code Sections 3511, 4700, 5050, and 5515 for the protection of bird, mammal, reptile, amphibian, and fish species that are identified as "fully protected." Fully protected animals may not be harmed, taken, or possessed. The classification of "Fully Protected" was the State's initial effort to identify and provide additional protection to those animals that were rare or faced possible extinction. Lists were created for fish, amphibians and reptiles, birds and mammals. Most of the species on these lists have subsequently been listed under the state and/or federal endangered species acts; white-tailed kite, golden eagle, trumpeter swan, northern elephant seal and ring-tailed cat are the exceptions. The white-tailed kite and the golden eagle are tracked in the CNDDB; the trumpeter swan, northern elephant seal and ring-tailed cat are not.

California Department of Fish and Game Staff Report on Burrowing Owl Mitigation (2012)

This document provides CDFG's comprehensive conservation and mitigation strategy for burrowing owls. CDFG determined that reversing declining population and range trends for burrowing owls will require implementation of more effective conservation actions, including developing more rigorous burrowing owl survey methods; working to improve the adequacy of impacts assessments; developing clear and effective avoidance and minimization measures; and developing mitigation measures to ensure impacts to the species are effectively addressed at the project, local, and/or regional level. The 2012 Staff Report takes into account the California Burrowing Owl Consortium's Survey Protocol and Mitigation Guidelines (CBOC 1993, 1997) and supersedes the survey, avoidance, minimization and mitigation recommendations in the earlier 1995 Staff Report.

California Public Resources Code Sections 4292 and 4293

Section 4292 directs the owner, controller, operator, or maintainer of electrical transmission lines in mountainous land, or forest-covered land, brush-covered land, or grass-covered land to maintain around and adjacent to any pole or tower which supports a switch, fuse, transformer, lightning arrester, line junction, or dead end or corner pole, a firebreak which consists of a clearing of not less than 10 feet in each direction from the outer circumference of such pole or tower, and to maintain a clearance of 4 feet from any line which is operating at 2,400 or more volts, but less than 72,000 volts.

California Public Utilities Commission, General Order 95, Rule 35, Vegetation Management

Rule 35 mandates that certain vegetation management activities be performed in order to establish necessary and reasonable clearances, and establishes minimum clearances between line conductors and vegetation that under normal conditions shall be maintained. These requirements apply to all overhead electrical supply and communication facilities that are covered by this General Order, including facilities on lands owned and maintained by California state and local agencies.

1.3.3 Local Regulations

Santa Barbara County Coastal Land Use Plan

The purposes of the Santa Barbara County Coastal Land Use Plan (CLUP) include protection of coastal resources and providing greater access and recreational opportunities for the public's enjoyment while allowing for orderly and well-planned urban development and the siting of coastal-dependent and coastal-related industry. The CLUP incorporates, to the maximum possible extent, local plans and policies that are consistent with the California Coastal Act. All electric transmission lines proposed for the Coastal Zone are "developments" under the Coastal Act, thus the County of Santa Barbara has permit review over them.

The CLUP additionally identifies Native Plants as one of 13 Environmentally Sensitive Habitat Areas. Policies 9-35 and 9-36 encourage native oak preservation and require developments to preserve areas of significant amounts of native vegetation, respectively. The CLUP also identifies Streams and identifies Policies 9-37 to 9-43 to preserve riparian vegetation and habitat for dependent species, as well as measures to protect water quality.

County of Santa Barbara Deciduous Oak Tree Protection and Regeneration Ordinance (Santa Barbara County Code, Chapter 35, § 35-901 et seq.)

The County of Santa Barbara Deciduous Oak Tree Protection and Regeneration Ordinance protects deciduous oak trees four inches or greater in diameter at breast height outside of the Coastal Zone and urban boundaries. The regulations contained in this ordinance apply to all property in the County unincorporated area located outside the coastal zone and urban boundary lines. The ordinance generally provides that a public utility may remove protected oak trees within a utility or other public easement if it obtains a permit, and such removal shall not count against thresholds set forth in the ordinance regarding protected oak tree removals. The ordinance also establishes standards for mitigation that may accompany the issuance of a permit.

County of Santa Barbara Coastal Zoning Ordinance (Santa Barbara County Code, Chapter 35, §140 et seq.)

This ordinance requires a Coastal Development Permit for the removal of any tree within the Coastal Zone that is six inches or more in diameter measured four feet above the ground and six feet or more in height that meet the following criteria:

- trees located in a County street right-of-way
- trees located within 50 feet of any major or minor stream except when such trees are removed for agricultural purposes
- oak trees; or
- trees used as a habitat by monarch butterflies.

Ventura County Tree Protection Regulations (Ventura County Non-Coastal Zoning Ordinance §8107-25)

Ventura County has stated that trees contribute significantly to the County's unique aesthetic, biological, cultural, and historical environment as well as its air quality. The County has expressed the intent to encourage the responsible management of these resources by employing public education and recognized conservation techniques to achieve an optimal cover of healthy trees of diverse ages and species while practically reconciling conflicting demands for alternative uses. Protected trees include all oaks and sycamores 9.5" in circumference or larger (measured 4.5' above ground), trees of any species with a historical designation, trees of any species 90" in circumference or larger, and most native trees in the Scenic Resources Protection Zone with a circumference greater than 9.5". If pruning (beyond specified limits), removal, trenching, excavation, or other encroachment into the protected zone (5' outside the canopy's edge and a minimum of 15' from the trunk), tree alteration, felling, or removal is part of a project that is not exempt per the regulations, the Project would obtain the applicable permit, and must adhere to the detailed mitigation measures contained therein.

2.0 METHODOLOGY

Prior to conducting surveys, standard database searches were conducted and previous surveys in the area were reviewed to obtain a list of federal and state listed resources, including sensitive plants and animals in the region. The results of these preliminary database searches provided a basis for addressing the appropriate special-status resources in the footprint of existing infrastructure (i.e., substations, access roads, and crane pads), proposed additional workspace (spur roads, temporary and permanent drill and crane pads, pulling and stringing sites), and immediate surroundings (hereafter referred to in this section as the Project Area). The biological resources assessment included general biological surveys, raptor surveys and habitat suitability assessments for special-status plant and wildlife species within the Project Area and a 500-foot buffer on either side of the alignment (hereafter referred to in this section as the Survey Area). Focused biological surveys for special-status plant and wildlife species were conducted in the spring of 2012.

2.1 Literature and Database Review

Information about documented special-status plant and animal species, and habitats known to occur within the vicinity of the Project, was obtained from the California Natural Diversity Database (CNDDB; CDFG 2003). The CNDDB search included U.S. Geological Survey (USGS) 7.5-minute quadrangles Carpinteria, Matilija, Pitas Point, Saticoy, Ventura, and White Ledge Peak as well as the eleven surrounding quadrangles: Camarillo, Hildreth Peak, Lion Canyon, Little Pine Mountain, Ojai, Old Man Mountain, Oxnard, Santa Paula, Santa Paula Peak, Santa Barbara, and Wheeler Springs.

Additional literature and databases referenced include: California Native Plant Society's *Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2010); *The Jepson Manual: Higher Plants of California* (Baldwin 2012); *A Manual of California Vegetation* (Sawyer et al. 2009); *The CalFlora Database* (CalFlora 2000); *The Sibley Field Guide to Birds of Western North America* (Sibley 2003); the *eBird* website (Cornell Lab of Ornithology and National Audubon Society, Inc. 2012); the *California Fish Species* website (University of California 2012); the *California Herps: A Guide to the Amphibians and Reptiles of California* website (California Herps 2012); the *USFWS Critical Habitat Portal* website (USFWS 2012); *Fish Species of Special Concern* (Moyle et al. 1995), and *California Wildlife Habitat Relationships* software (CDFG 2005).

Based on the results of searches of the CNDDB and the USFWS Critical Habitat Portal website, the following species recovery plans, 5-year reviews, and other pertinent recovery status sources were reviewed to better understand the current species population trends within the Project vicinity:

- Endangered and Threatened Species; Designation of Critical Habitat for Seven Evolutionarily Significant Units of Pacific Salmon and Steelhead in California (NMFS 2005)
- Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the Least Bell's Vireo (USFWS 1994)
- Endangered and Threatened Wildlife and Plants; Revised Designation of Critical Habitat for the Coastal California Gnatcatcher (USFWS 2007)
- Coastal California gnatcatcher (*Polioptila californica californica*) 5-year Review: Summary and Evaluation (USFWS 2010)

In addition, SCE previously conducted a preliminary survey of Segments 1, 2, 3A, and 4 in May and June 1999, to identify vegetation types and to determine the potential for special-status plant and wildlife species. A follow-up survey of Segment 3A occurred in October 2005 to document any changes to the general habitat since the 1999 survey. Additional surveys of Segments 1 and 4 were conducted in September 2007 to document changes since previous surveys, and to survey additional sites not included in initial surveys. A survey of three poles on U.S. Forest Service land in Segment 4 occurred in December 2008 and January 2009 and a survey of the access route and western portions of Segment 4 occurred during a survey of an adjacent line in May and June 2009. These survey reports provided a baseline of information specific to the Project Area and guidance for the field surveys.

2.2 Survey Methods

Biological reconnaissance surveys in the Survey Area were conducted in February and March 2012 to describe and map the vegetation present in the Project Area and to evaluate the potential of the habitats to support special-status plant and wildlife species.

Vegetation was mapped in the field using aerial photographs to delineate the extent of each vegetation community within the Survey Area. Plant species were identified in the field or collected for subsequent identification using keys in Hickman (1993) or Baldwin (2012). Nomenclature generally follows Sawyer et al. (2009) for vegetation types and communities, and

Calflora (2012), Baldwin (2012) and current scientific data (e.g., scientific journals) for individual plant species.

Surveys for wildlife species included searching for and identifying species' diagnostic signs including audible calls, prints, scat, nests, skeletal remains, and burrows, and habitat features (rock or debris piles, cavities, and rock outcrops) that may attract and/or support special-status species. Additionally, surveys included searching for raptors and identifying their nests. All species observed were recorded in field notes. Taxonomy and nomenclature for wildlife generally follows Collins and Taggert (2009) for amphibians and reptiles, American Ornithologists Union (AOU 1998) for birds, and Baker et al. (2003) for mammals.

Focused biological surveys for special-status plant species within the Project Area were completed in the spring of 2012. These surveys were conducted during the appropriate blooming season for target special-status plant species with a known presence, or "Moderate" or "High" potential to be present in the Project Area, and it included an area within 100 feet (a 200-foot wide corridor) of the alignment in locations that provide suitable habitat. Individuals or populations of special-status plant species were photographed and recorded using a global positioning system (GPS) unit. Results of the focused plant surveys are presented in Appendix D of this Biological Technical Report.

Focused biological surveys for burrowing owl in areas with suitable habitat were conducted in the spring of 2012 and followed the California Department of Fish and Game Staff Report on Burrowing Owl Mitigation (CDFG 2012b). Additional raptor surveys were expanded to include an area within one mile of the Project Area. These surveys were conducted during the appropriate nesting season for target species. Individuals or nests of special-status bird species were photographed and recorded using GPS. Results of the burrowing owl surveys are included in Appendix C of this Biological Technical Report.

Special-Status Plants and Wildlife

Plants or wildlife may be considered to have special status due to declining populations, vulnerability to habitat change, restricted distributions, or insufficient knowledge of the species biological status. Species are considered to be special-status if they meet one or more of the criteria detailed in Section 1.3 above. Special status plant and animal species known to occur, or with the potential to occur are listed in Tables 1 and 2, and occurrences documented in CNDDB are shown in Figure 2.

Using information from the various listed sources and floral and faunal surveys of the area, the potential for special-status species to occur within the Project Area was assessed as present, high, moderate, low, or none based on the following criteria:

- **Present:** The species was observed in the Project Area during field surveys, or documented from the site during previous surveys.
- **High:** CNDDB or other documented occurrences have been recorded within 1.0 mile of the Project and suitable habitat is present (suitable nesting or roosting habitat for bird and bat species). Individuals were not observed during field surveys; however, the species could be present or otherwise impacted by the Project.

- **Moderate:** CNDDB or other documented occurrences have been recorded within 5 miles of the Project Area and suitable habitat is present (suitable nesting or roosting habitat or high quality foraging areas for bird and bat species). Individuals were not observed during field surveys; however, the species could be present or otherwise impacted by the Project.
- **Low:** Suitable or marginal habitat may occur in the Project Area but; no CNDDB records of the species have been recorded within recent years; records of the species within 5 miles of the Project are suspected to be now extirpated or potentially misidentified with other species; or individuals were not observed during field surveys and are not anticipated to be present. For bird and bat species, this category may be used for species that are documented, but likely to be only transient through the area during foraging or migratory movements, no suitable nesting or roosting habitat is present.
- **None:** A number of plant and wildlife species identified in the literature review were determined to have no potential to occur within the Project Area because the Project Area does not contain suitable habitat, is located out of the species' known geographic range, or is located out of the species' known elevational range limits.

Table 1. Special-Status Plant Species Known to Occur, or with the Potential to Occur in the Project Area.

Common Name	Scientific Name	Habitat Preference	Blooming Period	Status	Likelihood to Occur Within Project Area	Known or Potential Occurrence Determination
PLANTS						
Abrams' oxytheca	*Acanthoscyphus parishii var. abramsii*	Found in shale to sandy soils within chaparral communities, from 3,750 to 6,750 feet ASL.	June-August	FSS, 1B.2	None	Outside of elevational and known geographic range.
Hoover's bent grass	*Agrostis hooveri*	Found in sandy soils in chaparral, cismontane woodland, valley and foothill grassland communities from 200 to 1,970 feet ASL.	June	FSS, 1B.2	Low	Outside of known geographic range. Potential suitable habitat in Project area.
oval-leaved snapdragon	*Antirrhinum ovatum*	Found in chaparral, valley and foothill grassland communities from 650 to – 3,300 feet ASL.	May-November	4.2	Low	Outside of known geographic range. Potential suitable habitat in Project area.
aphanisma	*Aphanisma blitoides*	Found on bluffs and slopes near the ocean in sandy or clay soils in coastal bluff scrub, coastal dune, and coastal scrub communities from 1 to 1,000 feet ASL.	April-May	FSS, 1B.2	None	No habitat present. Outside of known geographic range.
Braunton's milkvetch	*Astragalus brauntonii*	Found in chaparral, coastal sage scrub, and valley and foothill grassland communities from 15 to 2,100 feet ASL.	March-July	**FE**, 1B.1	Low	Outside of known geographic range. Potential suitable habitat in Project area.
Miles' milk-vetch	*Astragalus didymocarpus var. milesianus*	Found in clay soils in coastal scrub from 65 to 300 feet ASL.	March-June	FSS, 1B.2	Low	Outside of known geographic range. Potential suitable habitat in Project area.
Ventura marsh milk-vetch	*Astragalus pycnostachyus var. lanosissimus*	Found within reach of high tide or protected by barrier beaches, more rarely near seeps on sandy bluffs in coastal salt marsh communities from 1 to 115 feet ASL.	July-October	**FE**, **SE**, 1B.1	None	No habitat present. Outside of known geographic range.
Coulter's saltbush	*Atriplex coulteri*	Found on ocean bluffs, ridgetops, as well as alkaline low places within coastal bluff scrub, coastal dune, coastal scrub, and valley and foothill grassland communities from 35 to 1,450 feet ASL.	March-October	1B.2	Low	Potential suitable habitat in Project Area. No known occurrences within 10 miles of Project Area.
Davidson's saltscale	*Atriplex serenana var. davidsonii*	Found in alkaline soils in coastal bluff scrub, coastal scrub, and wetland and riparian communities from 20 to 820 feet ASL.	April-October	1B.2	**Moderate**	Within known species range. Potential suitable habitat in coastal scrub communities of Project Area.

Common Name	Scientific Name	Habitat Preference	Blooming Period	Status	Likelihood to Occur Within Project Area	Known or Potential Occurrence Determination
Plummer's baccharis	*Baccharis plummerae plummerae*	Found in open shrub-grassland associations in coastal scrub or oak woodlands from 300 to 1,250 feet ASL.	August-October	FSS, 1B.2	**Present**	Documented from Sutton Canyon north of the Carpinteria Substation, at sites between Construction 79-102 and 124-126 in Segment 4, between Construction 59-64 in 3B, and at sites in Segments 1 and 2.
Brewer's calandrinia	*Calandrinia breweri*	Found in burned or disturbed areas of chaparral, and coastal sage scrub communities from 35 to 4,000 feet ASL.	March-June	4.2	**Moderate**	Within known species range. Potential suitable habitat in chaparral and coastal sage scrub communities.
Catalina mariposa lily	*Calochortus catalinae*	Found in coastal sage scrub, chaparral, and valley and foothill grassland communities from 50 to 2,300 feet ASL.	February-May	4.2	**Present**	Documented from Sutton Canyon north of the Carpinteria Substation, between Construction 124 and 140 in Segment 4, and sites along Segments 1, 2, and 3B.
late-flowered mariposa lily	*Calochortus fimbriatus*	Found in dry, open coastal woodlands, and chaparral on serpentine soils from 885 to 6,275 feet ASL.	June-August	FSS, 1B.2	**High**	Documented in Segment 4 (CNDDB Occ# 8), exact location unknown. Suitable habitat in woodland and chaparral communities
Palmer's mariposa lily	*Calochortus palmeri var. palmeri*	Found in vernally moist places, meadows and seeps in chaparral, coniferous and yellow-pine forest from 1,975 to 7,365 feet ASL.	May-July	1B.2	Low	On edge of elevational and geographic range, but some potentially suitable habit exists in Segments 3B and 4.
Plummer's mariposa lily	*Calochortus plummerae*	Occurs on rocky and sandy sites, usually of granitic or alluvial material in coastal scrub, chaparral, valley and foothill grassland, cismontane woodland, and lower montane coniferous forest communities from 300 to 5,300 feet ASL. Can be very common after fire.	May-August	FSS, 1B.2	**Moderate**	On edge of geographical range. Suitable habitat exists in coastal scrub, chaparral, and grassland communities of the Project Area.
Santa Barbara morning glory	*Calystegia sepium binghamiae*	Found in chaparral, and cismontane woodland communities from 200 to 1,650 feet ASL.	April-June	1B.1	**Moderate**	Within species range, suitable habitat in chapparal communities of the Project Area.

Common Name	Scientific Name	Habitat Preference	Blooming Period	Status	Likelihood to Occur Within Project Area	Known or Potential Occurrence Determination
southern tarplant	*Centromadia parryi australis*	Found in disturbed sites near the coast at marsh edges, or alkaline soils of valley and foothill grassland.	June-November	1B.1	Low	Suitable habitat exists within grasslands of the Project Area. No occurrences are know from the Project vicinity.
Orcutt's pincushion	*Chaenactis glabriuscula* var. *orcuttiana*	Found on sandy sites in coastal bluff scrub, and coastal dunes from sea level to 350 feet ASL.	January-August	1B.1	None	No suitable habitat.
salt marsh bird's beak	*Chloropyron maritimum* ssp. *maritimum*	Limited to the higher zones of salt marsh habitat and coastal dunes from sea level to 100 feet ASL.	May-October	**FE**, **SE**, 1B.2	None	No suitable habitat.
Blakley's spineflower	*Chorizanthe blakleyi*	Found in chaparral communities from 2,000 to 5,250 feet ASL.	April-June	FSS, 1B.3	None	Outside of known geographic range, and on edge of elevational range.
small-flowered morning glory	*Convolvulus simulans*	Found in serpentine soils of chaparral, coastal sage scrub, and grassland communities from 100 to 2,500 feet ASL.	March-June	4.2	**Moderate**	Suitable habitat within scrub and grassland communities. Recorded north of Lake Casitas, ~4 miles from Project Area.
dune larkspur	*Delphinium parryi blochmaniae*	Found on rocky areas or dunes within chaparral, or coastal dunes from 100 to 1,250 feet ASL.	April-May	1B.2	Low	Potentially suitable habitat in chaparral communities. Not known from the Project vicinity.
Mt. Pinos larkspur	*Delphinium parryi purpureum*	Found within chaparral, Mojavean Desert scrub, pinyon and juniper woodland communities from 3,300 to 8,500 feet ASL.	May-June	FSS, 4.3	None	Outside of elevational range.
umbrella larkspur	*Delphinium umbraculorum*	Found in mesic sites of cismontane woodlands from 1,300 to 5,250 feet ASL.	May-June	FSS, 1B.3	Low	Potential habitat in woodland communities. Not known from the Project vicinity.
western dichondra	*Dichondra occidentalis*	Found in coastal sage scrub, chaparral, or live oak woodland communities from150 to 1,650 feet ASL.	March-May	4.2	**Moderate**	Suitable habitat in sage scrub and woodland communities. Not known from the Project vicinity.
Blochman's dudleya	*Dudleya blochmaniae* ssp. *blochmaniae*	Found on open, rocky slopes; often in shallow clays over serpentine or in rocky areas with little soil; in coastal scrub, coastal bluff scrub, and valley and foothill grasslands from sea level to 150 feet ASL.	April-June	1B.1	None	Outside of elevational and geographical range.

Common Name	Scientific Name	Habitat Preference	Blooming Period	Status	Likelihood to Occur Within Project Area	Known or Potential Occurrence Determination
Verity's dudleya	*Dudleya verity*	Found on volcanic rock outcrops in the Santa Monica Mountains from 200 to 400 feet ASL.	May-June	1B.2	None	Outside of elevational and geographical range.
Conejo buckwheat	*Eriogonum crocatum*	Found on Conejo volcanic outcrops and rocky sites in chaparral, coastal scrub, and valley and foothill grassland communities from 150 to 1,900 feet ASL.	April-July	SR, 1B.2	None	Outside of geographic range.
Ojai fritillary	*Fritillaria ojaiensis*	Found on rocky sites, or shale talus in broadleaved upland forest (mesic), chaparral, and lower montane coniferous forest communities from 1,000 to 2,200 feet ASL.	March-May	FSS, 1B.2	Low	Little potential habitat in project area. Documented ~2.2 miles north of Segment 4.
mesa horkelia	*Horkelia cuneata puberula*	Found on sandy or gravelly sites in chaparral, cismontane woodland, and coastal scrub communities from 230 to 2,650 feet ASL.	February-September	FSS, 1B.1	**Moderate**	Suitable habitat in chaparral, and scrub communities.
California satintail	*Imperata brevifolia*	Found on mesic sites, alkali seeps and riparian areas in coastal scrub, chaparral, riparian scrub, and Mojavean scrub communities from sea level to 1,650 feet ASL.	September-May	2.1	Low	Little potential suitable habitat present in Project Area. Not documented in Project vicinity.
California black walnut	*Juglans californica var. californica*	Found in riparian forest, and coast live oak woodland communities from 150 to 3,000 feet ASL.	March-August	4.2	**Present**	Found in riparian and upland communities in all segments.
Coulter's goldfields	*Lasthenia glabrata* ssp. *coulteri*	Found on alkaline soils in playas, and sinks in coastal salt marshes, valley and foothill grassland, and vernal pools communities from sea level to 4,600 feet ASL.	February-June	1B.1	Low	Known from project vicinity, but little potential suitable habitat present in Project Area.
pale-yellow layia	*Layia heterotricha*	Found in alkaline or clay soils in open areas of cismontane woodland, pinyon-juniper woodland, and valley and foothill grassland communities from 890 to 4,500 feet ASL.	March-June	FSS, 1B.1	Low	Outside of known geographic range, suitable habitat may be present in woodland or grassland communities.
ocellated Humboldt lily	*Lilium humboldtii* ssp. *ocellatum*	Found in chaparral, coastal sage scrub, and riparian woodland communities from 100 to 5,900 feet ASL.	March-August	4.2	**Present**	Documented within Sutton Canyon. Potential habitat within moist drainages throughout chaparral, woodland and scrub communities.

Common Name	Scientific Name	Habitat Preference	Blooming Period	Status	Likelihood to Occur Within Project Area	Known or Potential Occurrence Determination
Santa Barbara honeysuckle	*Lonicera subspicata* var. *subspicata*	Found in chaparral, cismontane woodland, and coastal scrub communities from 115 to 3,300 feet ASL.	May-February	1B.2, FSS	**Present**	Documented along the access road in Sutton Canyon, between Construction 124 and 126 in Segment 4.
Carmel Valley malacothrix	*Malacothrix saxatilis* var. *arachnoidea*	Found on rock outcrops or steep rocky road cuts in chapparal and coastal scrub from 80 to 4,000 feet ASL.	March-December	1B.2	**Moderate**	Suitable habitat in chaparral communities. Documented in Project vicinity.
Gambel's water cress	*Nasturtium gambelii*	Found in freshwater and brackish marshes, swamps, margins of lakes, and along streams; in or just above the water level from sea level to 4,300 feet ASL.	April-October	**FE**, **ST**, 1B.1	None	No suitable habitat. Not known from Project vicinity.
Ojai navarretia	*Navarretia ojaiensis*	Found in openings in chaparral, coastal scrub, and valley and foothill grassland communities from 900 to 2,050 feet ASL.	May-July	1B.1	**Moderate**	Suitable habitat in chaparral, scrub and grassland communities. Documented in Project vicinity.
chaparral nolina	*Nolina cismontana*	Found primarily on sandstone and shale substrates, also known from gabbro, in chaparral, and coastal scrub communities from 450 to 4,200 feet ASL.	May-July	FSS, 1B.2	Low	Little suitable habitat within Project Area. Documented in Project vicinity.
California Orcutt grass	*Orcuttia californica*	Found in association with vernal pools.	April-August	**FE**, **SE**, 1B.1	None	No suitable habitat.
adobe yampah	*Perideridia pringlei*	Found in coastal sage scrub, foothill woodland, and chaparral communities from1,000 to 3,500 feet ASL.	April-July	4.3	Low	On edge of geographic range, little suitable habitat present in Project Area.
Fish's milkwort	*Polygala cornuta* var. *fishiae*	Usually occurs in wetland, but occasionally found in non-wetland within chaparral, foothill woodland, and riparian forest communities from 300 to 3,500 feet ASL.	May-August	4.3	**Present**	Documented near 12 tower sites in Segments 1 and 2, between Construction 59-64 in Segment 3, and at Construction 101 in Segment 4.
Nuttall's scrub oak	*Quercus dumosa*	Generally found on sandy soils, or clay loam in closed-cone coniferous forest, chaparral, and coastal scrub, in coastal areas from 50 to 1,300 feet ASL.	February-August	FSS, 1B.1	**Present**	Documented near Construction 121, 122, 123, 124, 125, 126, 127, 128, 139, and 140 in Segment 4.
Hoffmann's bitter gooseberry	*Ribes amarum* var. *hoffmannii*	Found in chaparral, and riparian woodland communities from 500 to 3,900 feet ASL.	March-April	3	**Present**	Documented near Construction 124 and 125, and may occur elsewhere in Segment 4.

Common Name	Scientific Name	Habitat Preference	Blooming Period	Status	Likelihood to Occur Within Project Area	Known or Potential Occurrence Determination
Sanford's arrowhead	*Sagittaria sanfordii*	Found in standing or slow-moving freshwater ponds, marshes, and ditches from sea level to 2,000 feet ASL.	May-October	1B.2	None	No suitable habitat.
Hoffman's sanicle	*Sanicula hoffmannii*	Generally found in clay or serpentine soils of chaparral and pine woodland habitats below 1650 feet elevation.	March-May	4.3	**Present**	Documented between Construction 64-66 on Segment 3B and between Construction 131 and 132 on Segment 4 and may occur in other roadside locations on Segments 3B and 4.
chaparral ragwort	*Senecio aphanactis*	Found on drying alkaline flats in cismontane woodland, and coastal scrub communities from 65 to 1,900 feet ASL.	January-April	2.2	Low	Little suitable habitat within Project Area. No occurrences documented in Project vicinity.
Cuesta Pass checkerbloom	*Sidalcea hickmanii anomala*	Found in rocky, serpentine soils of chaparral and closed-cone coniferous forest communities from 2,000 to 2,600 feet ASL.	May-June	FSS, 1B.2	None	Outside of geographical and elevational range.
salt spring checkerbloom	*Sidalcea neomexicana*	Found in alkali springs, playas, and brackish marshes in chaparral, coastal scrub, lower montane coniferous forest, and Mojavean desert scrub from sea level to 5,000 feet ASL.	March-June	2.2	None	No suitable habitat, not documented in Project vicinity.
southern jewel-flower	*Streptanthus campestris*	Found in open, and rocky areas in chaparral, lower montane coniferous forest, and pinyon-juniper woodland communities from sea level to 9,000 feet ASL.	April-July	1B.3	None	No suitable habitat.
Sonoran maiden fern	*Thelypteris puberula* var. *sonorensis*	Found along streams, meadows and seepage areas from 150 to 1,800 feet ASL.	January-September	FSS, 2.2	Low	Little suitable habitat. Documented from Project vicinity.
Santa Ynez false lupine	*Thermopsis macrophylla*	Found in open areas such as fuel breaks, after burns, and on sandstone within chaparral and woodland communities from 1,370 to 6,890 feet ASL.	April-June	FSS, SR, 1B.3	**Moderate**	Potential habitat in chaparral communities, known from Project vicinity.

Key:
FE = Federally listed as Endangered
FSS = Forest Service Sensitive
SE = State-listed as Endangered

ST = State-listed as Threatened
SR = State Rare

California Native Plant Society System:
1A = Presumed extinct in California
1B = Rare or Endangered in California and elsewhere
2 = Rare or Endangered in California, more common elsewhere
3 = Plants for which we need more information - Review list
4 = Plants of limited distribution - Watch list
.1 = Seriously endangered in California (over 80% of occurrences threatened)
.2 = Fairly endangered in California (20-80% occurrences threatened)
.3 = Not very endangered in California (<20% of occurrences threatened or no current threats known)

Table 2. Special-Status Animal Species Known to Occur or with the Potential to Occur Within the Project Area.

Common Name	Scientific Name	Habitat Preference	Status	Likelihood to Occur Within Project Area	Known or Potential Occurrence Determination
INVERTEBRATES					
monarch butterfly	*Danaus plexippus*	Winter roosts found in wind-protected groves of eucalyptus, Monterrey pine, and cypress with sources of water and nectar nearby. Winter roosts are protected by CDFG.	CDFG	*Species* **Present** *Roosts* Low Potential	Found throughout the project site, no winter roost sites were observed or documented from the Project Area.
FISH					
Santa Ana sucker	*Catostomus santaanae*	Habitat generalists but prefer gravel/ rubble/ boulder river bottoms, with cool, clear flowing water, and algae.	**FT**, CSC	None	Outside of geographic range.
tidewater goby	*Eucyclogobius newberryi*	Brackish water of shallow lagoons and lower stream reaches. They need fairly still but not stagnant water and high oxygen levels.	**FE**, CSC	None	No suitable habitat.
unarmored threespine stickleback	*Gasterosteus aculeatus williamsoni*	Weedy pools, backwaters, and among emergent vegetation at the stream edge in small southern California streams.	**FE**, **SE**, CFP	None	No suitable habitat.
arroyo chub	*Gila orcuttii*	Slow-water stream sections with mud or sand bottoms. They feed heavily on aquatic vegetation and associated invertebrates.	FSS, CSC	**Present**	Documented in Cañada Larga. Suitable habitat within Los Sauces Creek.
southern California steelhead DPS	*Oncorhynchus mykiss irideus*	Streams with cool, clear running water, often with a developed canopy, bank vegetation or undercut banks. Spawning gravels and low levels of siltation are essential for reproduction.	**FE**, CSC	Low	Within range and Critical Habitat, poor quality habitat in Cañada Larga.
AMPHIBIANS					
arroyo toad	*Anaxyrus californicus*	Rivers with sandy banks, willows, cottonwoods, and sycamores; loose, gravelly areas of streams in drier parts of range.	**FE**, FSS, CSC	None	Outside of known geographic range.
foothill yellow-legged frog	*Rana boylii*	Partly-shaded, shallow streams and riffles with a rocky substrate in a variety of habitats.	FSS, CSC	None	Outside of known geographic range.
California red-legged frog	*Rana draytonii*	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation.	**FT**, FSS, CSC	Low	No suitable habitat. CNDDB Occurrence 811 ~1 mile to the northwest.

Common Name	Scientific Name	Habitat Preference	Status	Likelihood to Occur Within Project Area	Known or Potential Occurrence Determination
western spadefoot	*Spea hammondii*	Occurs primarily in grassland, scrub, and chaparral habitats, but can be found in valley-foothill hardwood woodlands. Vernal pools are essential for breeding and egg-laying.	CSC	None	No vernal pools in Project Area.
Coast Range newt	*Taricha torosa*	Lives in terrestrial habitats and riparian woodlands, and will migrate to breed in ponds, reservoirs, vernal pools, and slow moving streams.	CSC	Low	Minimal suitable habitat in Project Area. Documented ~3 miles northeast of Project.
REPTILES					
California legless lizard	*Aniella pulchra pulchra*	Sandy or loose loamy soils with moisture content under sparse vegetation in live oak woodland.	FSS, CSC	**Moderate**	Suitable habitat in woodland areas.
western pond turtle	*Emys marmorata*	A thoroughly aquatic turtle of ponds marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation. Suitable upland habitat and basking areas are needed.	FSS, CSC	Low	Low quality habitat in Cañada Larga, and Los Sauces Creek, but documented in Ventura River.
coast horned lizard	*Phrynosoma blainvillii*	Uses a wide variety of habitats, including coastal sage scrub. Most common along sandy washes with friable soils and scattered low bushes.	FSS, CSC	**Moderate**	Suitable habitat throughout project area.
coastal patch-nosed snake	*Salvadora hexalepis virgultea*	Brushy or shrubby vegetation in coastal southern California. Require small mammal burrows for refuge and overwintering sites.	CSC	Low	Low quality habitat. Not documented in Project vicinity.
two-striped garter snake	*Thamnophis hammondii*	Highly aquatic, found in or near permanent fresh water, often along streams with rocky beds and riparian growth.	FSS, CSC	**Moderate**	Potential habitat in Cañada Larga, and Los Sauces Creek.
south coast garter snake	*Thamnophis sirtalis ssp.*	Marsh and upland habitats near permanent water with good strips of riparian vegetation in the southern California coastal plain, from sea level to about 2,800 feet ASL.	CSC	**Moderate**	Potential habitat in Cañada Larga, and Los Sauces Creek.

Common Name	Scientific Name	Habitat Preference	Status	Likelihood to Occur Within Project Area	Known or Potential Occurrence Determination
BIRDS					
Cooper's hawk	*Accipiter cooperii*	Nest sites mainly in riparian growths of deciduous trees in oak woodlands and riparian communities, in canyon bottoms and on river flood-plains.	MBTA, CWL	**Present**	Observed in Cañada Larga, and along SR 150 in Project Area.
northern goshawk	*Accipiter gentilis*	Within coniferous forests, usually nests on north slopes, near water. Red fir, lodgepole pine, and aspens are typical nest trees.	FSS, MBTA, CSC	None	Outside of geographic range.
sharp-shinned hawk	*Accipiter striatus*	Ponderosa pine, black oak, riparian deciduous, Mixed Conifer Forrest and Jeffrey pine habitats. Prefers riparian areas.	MBTA, CWL	**Moderate**	Suitable habitat in riparian woodlands. Documented winter visitor in Project vicinity.
tri-colored blackbird	*Agelaius tricolor*	Requires open water, protected nesting substrate, and foraging area with insect prey within a few kilometers of the colony.	MBTA, CSC	Low	No suitable nesting habitat, potential presence during foraging. Documented in Cañada Larga.
golden eagle	*Aquila chrysaetos*	Uses rolling foothills and mountain terrain, wide arid plateaus deeply cut by streams and canyons, open mountain slopes, and cliffs and rock outcrops.	BGEPA, MBTA, CFP, CWL	**Present**	Observed in Segment 4, documented in Cañada Larga. No nesting habitat in Project Area.
burrowing owl	*Athene cunicularia*	Open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably the California ground squirrel.	MBTA, CSC	**Moderate**	Suitable breeding and foraging habitat in Cañada Larga, and near Segment 3B/4 split. Documented winter visitor in Cañada Larga..
Swainson's hawk	*Buteo swainsoni*	Breeds in grasslands with scattered trees, Juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands with fields that support suitable rodent populations.	**FT**, FSS, MBTA	Low	Potential habitat. Not documented in Project vicinity.
coastal cactus wren	*Campylorhynchus brunneicapillus*	Southern California coastal sage scrub with large *Opuntia sp.* cactus for nesting.	MBTA, CSC	Low	Low quality habitat, on edge of documented range.
western snowy plover	*Charadrius alexandrinus nivosus*	Sandy beaches, salt pond levees and shores of large alkali lakes.	**FT**, MBTA, CSC	None	No suitable habitat.
northern harrier	*Circus cyaneus*	Coastal salt and fresh-water marsh. Nest and forage in grasslands, from salt grass in desert sink to mountain cienegas.	MBTA, CSC	**Present**	Observed in Cañada Larga. Suitable foraging habitat in open grasslands.

Common Name	Scientific Name	Habitat Preference	Status	Likelihood to Occur Within Project Area	Known or Potential Occurrence Determination
western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	Riparian forest nester, along the broad, lower flood-bottoms of larger river systems.	**FC**, **SE**, MBTA	None	No suitable habitat.
white-tailed kite	*Elanus leucurus*	Rolling foothills and valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland.	MBTA, CSC	**Present**	Observed south of Shephard's Mesa, and is documented in Cañada Larga and the Project vicinity.
peregrine falcon	*Falco perigrinus anatum*	Breeding sites located on cliffs. Forages far afield, even to marshlands and ocean shores.	FSS, MBTA, CFP,	**Moderate**	Suitable foraging habitat in Project Area. Documented in Cañada Larga and the Project vicinity.
California condor	*Gymnogyps californianus*	Require vast expanses of open savannah, grasslands, and foothill chaparral in mountain ranges of moderate altitude.	**FE**, MBTA **,** **SE**	None	No suitable habitat.
yellow-breasted chat	*Icteria virens*	Inhabits low, dense riparian thickets of willow, blackberry, wild grape, and nests within 10 feet of the ground.	MBTA, CSC	Low	No suitable nesting habitat in Project Area. Documented from Cañada Larga.
loggerhead shrike	*Lanius ludovicianus ludovicianus*	Broken woodlands, savannah, Pinyon Juniper, Joshua tree, and riparian woodlands, desert oases scrub and washes.	MBTA, CSC	**Present**	Observed on Segment 1 and near Construction 133.
song sparrow	*Melospiza melodia*	Require a source of water, moderately dense vegetation, plenty of light, and exposed ground or leaf litter for foraging.	MIS, MBTA	**Moderate**	Suitable habitat, and documented in Cañada Larga and Rincon Creek.
Belding's savannah sparrow	*Passerculus sandwichensis beldingi*	Inhabits coastal salt marshes, from Santa Barbara south through San Diego County. Nests in *Salicornia* on and about margins of tidal flats.	MBTA, **SE**	None	No suitable habitat.
California gnatcatcher	*Polioptila californica californica*	Obligate, permanent resident of coastal sage scrub in arid washes, on mesas and slopes below 2,500 feet ASL in Southern California.	**FT**, MBTA, CSC	Low	Potentially suitable habitat in sage scrub. Outside of current species range.
bank swallow	*Riparia riparia*	Colonial nester; nests primarily in riparian and other lowland habitats west of the desert. Requires vertical banks/cliffs with fine-textured/sandy soils near streams, rivers, lakes, ocean to dig nesting hole.	MBTA**,** **ST**	None	No suitable habitat.

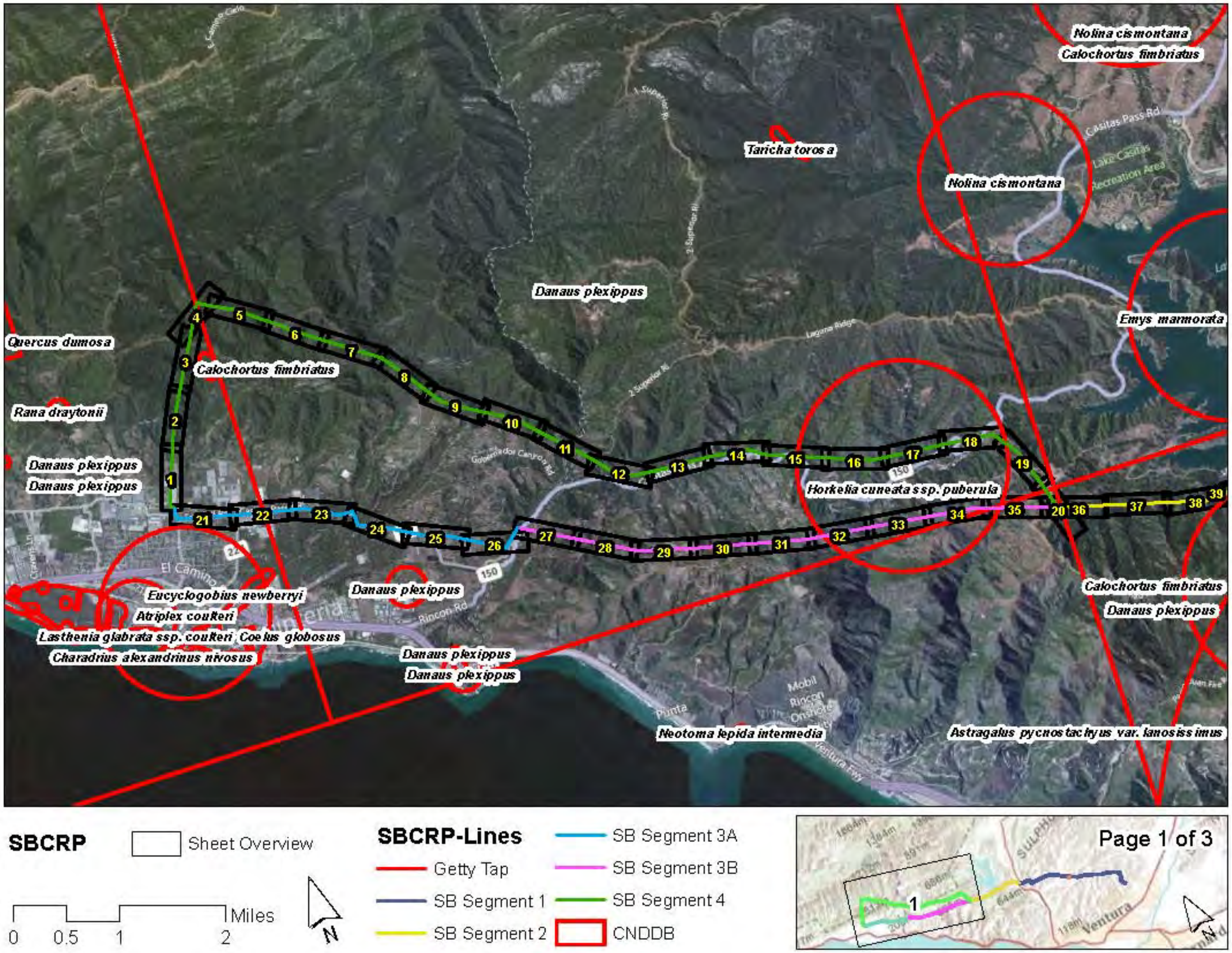
Common Name	Scientific Name	Habitat Preference	Status	Likelihood to Occur Within Project Area	Known or Potential Occurrence Determination
yellow warbler	*Setophaga petechia*	Riparian forests with riparian plant associations. Prefers willows, cottonwoods, aspens, sycamores, and alders for nesting and foraging.	MBTA, CSC	Low	Low quality nesting habitat. Potential foraging habitat in riparian areas. Documented from Project vicinity.
California least tern	*Sternula antillarum brownii*	Colonial breeder on bare or sparsely vegetated, flat substrates: sand beaches, alkali flats, landfills, or paved areas.	**FE**, **SE**, MBTA	None	No suitable habitat.
California spotted owl	*Strix occidentalis occidentalis*	Mixed conifer forest, often with an understory of black oaks and other deciduous hardwoods, with a canopy closure > 40%.	FSS, CSC, MBTA	None	No suitable habitat.
least Bell's vireo	*Vireo belli pusillus*	Summer resident of southern California in low riparian in vicinity of water or in dry river bottoms; below 2,000 feet ASL.	**FE**, **SE**, MBTA	Low	No quality breeding habitat, poor quality foraging habitat in Project Area. Documented in Cañada Larga.
MAMMALS					
pallid bat	*Antrozous pallidus*	Deserts, grasslands, shrublands, woodlands, and forests. Most common in open, dry habitats with rocky areas for roosting. Breeds in caves, crevices, and structures.	FSS, CSC	**Moderate**	Foraging habitat in Project Area.
ringtail	*Bassariscus astutus*	Rocky desert and riparian areas.	FP	**High**	Known from Project vicinity. Suitable habitat in riparian areas.
Dulzura pocket mouse	*Chaetodipus californicus femoralis*	Variety of habitats including coastal scrub, chaparral, and grassland.	CSC	None	Outside of known species range.
Mexican long-tongued bat	*Choeronycteris mexicana*	Feeds on nectar and pollen of night-blooming succulents. Roosts in relatively well-lit caves, and in and around buildings.	CSC	None	No suitable habitat.
Townsend's big-eared bat	*Corynorhinus townsendii*	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. Breeds in caves, crevices, and man-made structures.	FSS, CSC	Low	Foraging habitat in Project Area.

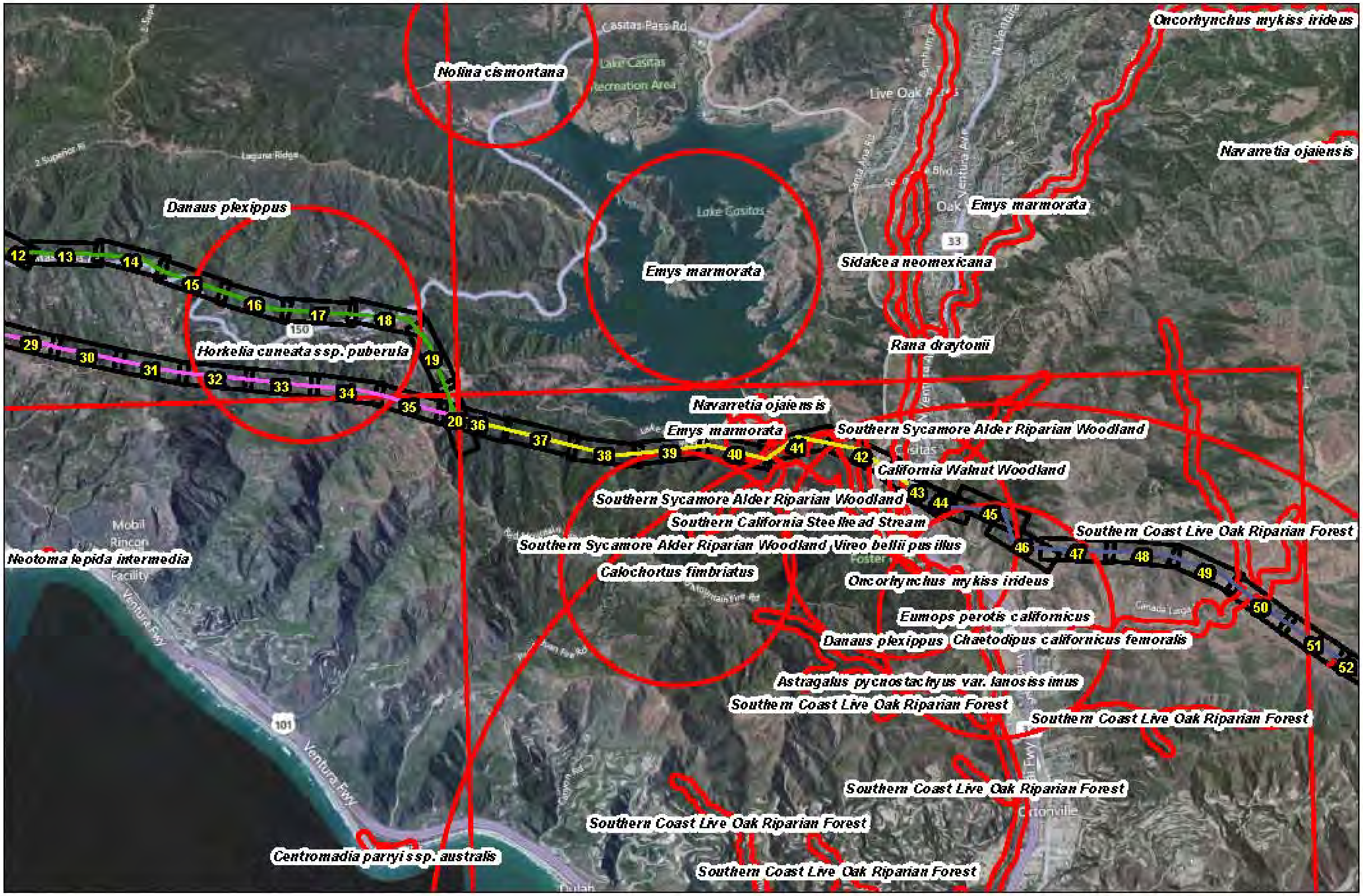
Common Name	Scientific Name	Habitat Preference	Status	Likelihood to Occur Within Project Area	Known or Potential Occurrence Determination
Western mastiff bat	*Eumops perotis californicus*	Many open, semi-arid to arid habitats, including Mixed Conifer and deciduous Woodlands, Coastal Scrub, Grasslands, Chaparral, etc. Roosts in crevices in cliff faces, high buildings, trees and tunnels.	CSC	Low	Foraging habitat in Project Area.
western red bat	*Lasiurus blossevillii*	Prefers habitat edges and mosaics with trees that are protected from above and open below with open areas for foraging.	FSS, CSC	Low	Foraging habitat in Project Area.
San Diego desert woodrat	*Neotoma lepida intermedia*	Cactus patches in coastal sage scrub and chaparral. They are particularly abundant in rock outcrops and rocky cliffs and slopes.	CSC	**Moderate**	Suitable habitat present. Known from Project vicinity.
big free-tailed bat	*Nyctinomops macrotis*	Low-lying arid areas in Southern California. Need high cliffs or rocky outcrops for roosting sites. Feeds principally on large moths.	CSC	None	No suitable habitat.
mule deer	*Odocoileus hemionus*	Various shrubs in summer and winter. Prefer tender new growth. Forbs and grasses are important in spring, brushy areas and tree thickets. Moderately dense shrublands and forests, dense herbaceous stands.	MIS	**Present**	Found throughout the project area.
mountain lion	*Puma concolor*	Dense thickets in brush or trees. Caves and other natural cavities within thickets are used for denning. Male home ranges are generally at least 15 square miles, with females utilizing smaller areas about 3 to12 square miles.	MIS	**Present**	Documented from Segment 1.
American badger	*Taxidea taxus*	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food and open, uncultivated ground. Grasslands, and scrub habitats.	CSC	**High**	Documented from Segment 1 vicinity. Suitable habitat in in Cañada Larga, and near Segment 3B/4 split.

Key:
BGEPA = Protected under the Bald and Golden Eagle Protection Act
CDFG = Special protection by CDFG
CFP = CDFG Fully Protected
CSC = CDFG Species of Concern
CWL = CDFG Watch List
FC = Federal Candidate for listing

FE = Federal Endangered
FSS = Forest Service Sensitive Species
FT = Federal Threatened
MBTA = Protected under the Migratory Bird Treaty Act
MIS = USFS Management Indicator Species
SE = State of California Endangered

Figure 2. CNDDB Documented Listed Plant and Animal Species in the Project Vicinity (3 pages).





SBCRP Sheet Overview

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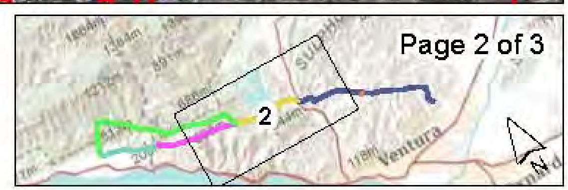

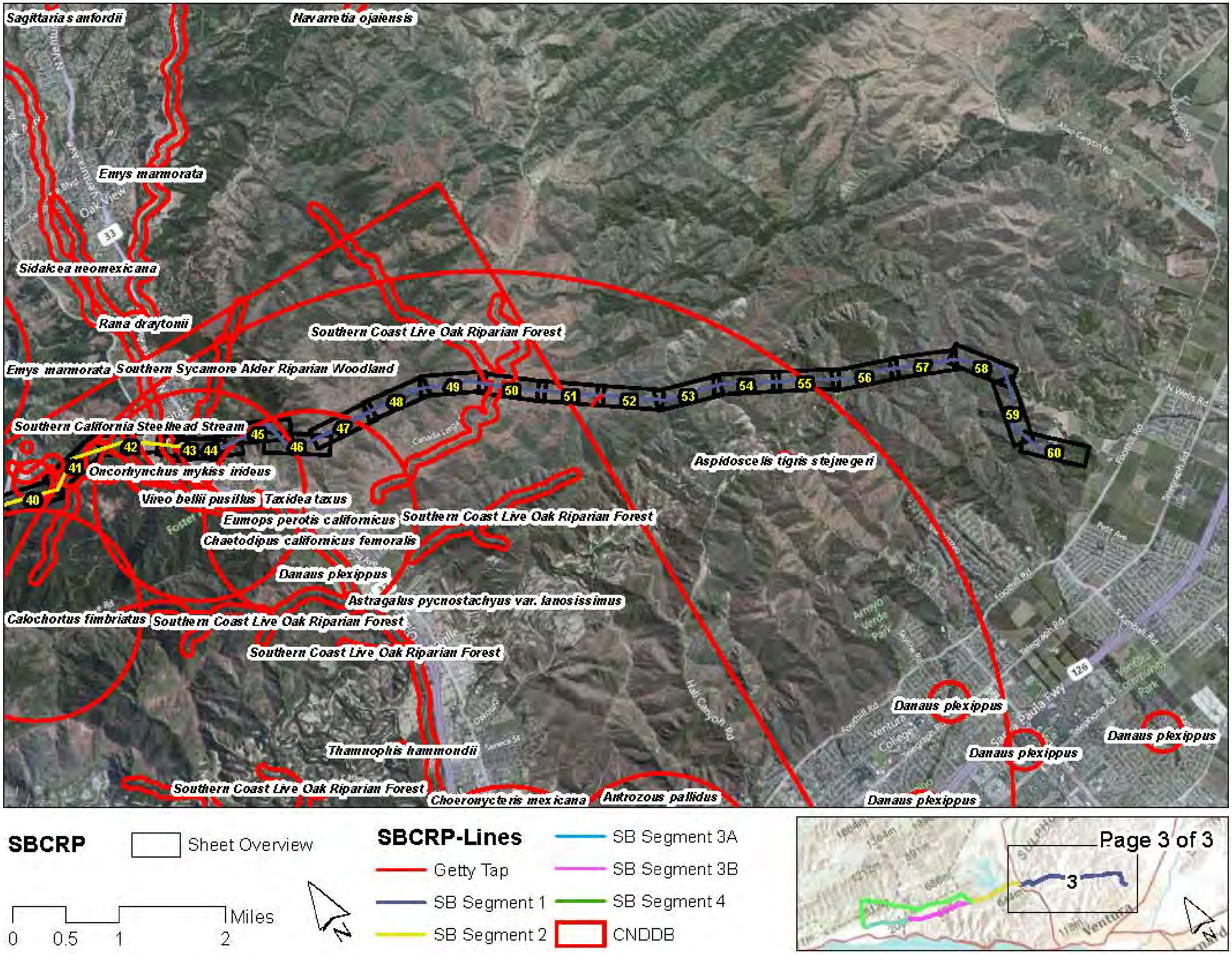
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Navarretia ojaiensis
Emys marmorata
Sidalcea neomexicana
Rana draytonii
Southern Coast Live Oak Riparian Forest
Emys marmorata
Southern Sycamore Alder Riparian Woodland
Southern California Steelhead Stream
Oncorhynchus mykiss irideus
Vireo bellii pusillus
Taxidea taxus
Eumops perotis californicus
Southern Coast Live Oak Riparian Forest
Chaetodipus californicus femoralis
Danaus plexippus
Astragalus pycnostachyus var. lanosissimus
Calochortus fimbriatus
Southern Coast Live Oak Riparian Forest
Southern Coast Live Oak Riparian Forest
Aspidoscelis tigris stejnegeri
Thamnophis hammondii
Southern Coast Live Oak Riparian Forest
Choeronycteris mexicana
Antrozous pallidus
Danaus plexippus
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Page 3 of 3
3

3.0 RESULTS

3.1 Vegetation Communities

Based on the reconnaissance-level survey of the entire Project Area, 19 plant communities, characterized and named according to the vegetation's dominant species, were identified within the Chaparral, Grassland, Coastal Sage Scrub, Woodland, and Non-Native vegetation types (Table 3, Appendix A). Characteristics and composition of dominant species within each Type and Community are described below. A full list of plant species observed in the Project Area is provided in Appendix B.

Table 3. Vegetation Types and Communities Found Within the Project Area.

Plant Community Name	Class Code	Segment (s) of Occurrence	Acreage within Survey Area
Chaparral Types	**C**		**1305**
Greenbark Ceanothus Chaparral	CGC	3B	50
Toyon Chaparral	CT	2, 3A, 3B, 4	123
Lemonadeberry Chaparral	CL	2, 4	236
Mixed Ceanothus Chaparral	CMC	3B, 4	896
Grassland Types	**G**		**1235**
California Annual Grassland	GCA	4, 3A, 3B	1229
Ruderal Grassland	GR	All	6
Coastal Sage Scrub Types	**S**		**2790**
California Sagebrush Scrub	SCS	2, 3A, 4	221
Chaparral Mallow Scrub	SCM	4	110
Coyote Brush Scrub	SCB	3A, 3B, 4	97
Purple Sage Scrub	SPS	2, 3A, 3B, 4	2284
Mulefat Scrub	SMF	2, 3A	78
Woodland Types	**W**		**849**
Coast Live Oak Woodland	WLO	2, 3B, 3A, 4	808
Arroyo Willow Woodland	WAW	2, 3A, 3B, 4	27
Southern California Black Walnut Woodland	WCBW	3B, 4	5
Scrub Oak Woodland	WSO	4	9
Non-Native Types	**N**		**2450**
Agriculture	NAG	All	2211
Ruderal/Disturbed	NRD	All	103
Cape Ivy Infestation	NCI	4	40
Developed	ND	3A, 4	96

3.1.1 Chaparral Types

Chaparral is a type of shrubland dominated by evergreen shrubs. Many shrubs typical of Coastal Sage Scrub also grow intermixed as associates with chaparral species. Chaparral typically occurs on moderate to steep south-facing slopes with dry, rocky, shallow soils. It is more abundant at higher elevations where temperatures are lower and moisture supplies are more ample. Chaparral within the Project Area consists of four different plant communities: Greenbark Ceanothus Chaparral, Mixed Ceanothus Chaparral, Toyon Chaparral, and Lemonadeberry Chaparral.

Greenbark Ceanothus Chaparral

Greenbark ceanothus (*Ceanothus spinosus*) occurs in the coastal mountains of California from San Luis Obispo County south to Baja California, including the Santa Ana, Sierra Nevada, and Santa Monica Mountains. Greenbark Ceanothus Chaparral (CGC) stands are prominent on concave, north-facing slopes, though they may also occur on ocean-facing slopes. Soils are developed primarily from hard sandstone, and they are extensively drained. CGC communities can be found at elevation ranges from 1,000 to 3,300 feet ASL. Canopy is intermittent to continuous, while the herbaceous layer is sparse to intermittent to diverse and well developed in mature stands. Within the Project Area the dominant or co-dominant species in the shrub canopy are bigpod ceanothus (*C. megacarpus* var. *megacarpus*), toyon (*Heteromeles arbutifolia*), and sugar bush (*Rhus ovata*).

Toyon Chaparral

Toyon is one of the most widely distributed shrubs in foothills and low mountains in cismontane California. Toyon Chaparral (CT) stands occur on gradual slopes, to steep, rocky canyons, and steep, north-facing slopes. Soils are generally loams. CT communities are found at elevation ranges from 165 to 3,165 feet ASL. Plants are variable in size and growth habit, being low and dense in exposed places, becoming open and rangy, or tree like, in protected areas with long intervals between fires. Canopy ranges from open to continuous, and is often two-tiered, with an intermittent herbaceous layer. Within the Project Area, the dominant or co-dominant species in the shrub canopy include hoary-leaved ceanothus (*Ceanothus crassifolius*), greenbark ceanothus, and birch-leaf mountain mahogany (*Cercocarpus betuloides*), while southern California black walnut (*Juglans californica californica*), and coast live oak (*Quercus agrifolia*) trees may be present in areas with sparse cover.

Lemonadeberry Chaparral

Lemonadeberry (*Rhus integrifolia*) grows on north-facing slopes of canyons at elevations below 3,000 feet ASL. Lemonadeberry Chaparral (CL) communities occur on steep upland slopes, with shallow coarse soils, at elevations from near sea level to 1,300 feet ASL. Canopy is intermittent to continuous over a variety of scrub associates with a sparse, grassy ground layer. Within the Project Area, dominant or co-dominant species in the shrub canopy include coyote brush (*Baccharis pilularis*), bigpod ceanothus, giant wild rye (*Leymus condensatus*), chaparral mallow (*Malacothamnus fasciculatus*), laurel sumac (*Rhus laurina*), and blue elderberry (*Sambucus Mexicana*).

Mixed Ceanothus Chaparral

Mixed Ceanothus Chaparral (CMC) forms a variable canopy dominated by two or three species of *Ceanothus,* with an herbaceous groundlayer in canopy openings. The species of *Ceanothus* contributing to CMC are bigpod ceanothus, hoary-leaved ceanothus, and greenbark ceanothus. Within the Project Area, dominant or co-dominant species in the shrub canopy include, toyon, Nuttall's scrub oak (*Quercus dumosa*), lemonadeberry, and purple sage (*Salvia leucophylla*), with Collie Indian paintbrush (*Castilleja affinis affinis*), and San Diego bedstraw (*Galium nuttallii nuttallii*) growing in the ground layer.

3.1.2 Grassland Types

Grassland types consist predominantly of low herbaceous and grassy vegetation that forms a continuous ground cover on open hillsides, or as understory patches below emergent shrubs, shrublands, and woodlands. Many native flowering herb/bulb species (wildflowers), as well as naturalized annual forbs and invasive exotics, are important contributors to grassland. Grasslands typically grow in well-developed, deeper, fine-textured soils on gentle slopes and flats, coastal terraces, and in disturbed sandy sites. Areas dominated by grasses are often in early succession, and, over time tend to revert to shrublands, or even woodlands, if burning and disturbance frequencies are minimal. Grasslands within the Project Area consist of two different plant communities: California Annual Grassland and Ruderal Grassland.

California Annual Grassland

California Annual Grassland (GCA) is dominated by a mix of native and non-native annual grasses (genera including *Avena*, *Bromus*, *Hordeum*, *Lolium*, and *Vulpia*) and herbs. This series occurs on all topographic locations, especially gradual slopes consisting of deep soils, at elevations between sea level and 4,000 feet ASL. Species composition varies among stands, with the major factors determining composition including fall temperatures, precipitation, light intensity (which can be affected by shading from plants and litter), and micro-topography variations. Floristic richness of GCA communities is also affected to a high degree by land use activity. Therefore, the fine-scale variation in temporal and spatial structure found in this series suggests that recognition of several species-dominant series is not particularly useful.

Most of the non-native grasses found in the Project Area are Mediterranean in origin, germinate in the fall or early winter with the first rains, and are protected from unseasonal germination by a preference for cool temperatures. Although the introduced annual grass species have irreversibly invaded the once native (perennial) grass stands, they are often referred to as "naturalized", and are often considered important GCA contributors. Common dominant plants in these associations include slender wild oat (*Avena barbata*), wild oat (*Avena fatua*), ripgut grass (*Bromus diandrus*), as well as emergent California sagebrush (*Artemisia californica*) and laurel sumac shrubs. Other characteristic grass species typical of GCA communities include: soft chess (*B. hordeaceus*), foxtail chess (*B. madritensis madritensis*), red brome (*B. madritensis rubens*), summer barley (*Hordeum murinum glaucum*), Italian ryegrass (*Lolium multiflorum*), and slender fescue (*Vulpia bromoides*). The associate ground layer includes many native herb and bulb species, as well as naturalized annual forbs, including: rancher's fire (*Amsinckia menziesii* var. *intermedia*), black mustard, summer mustard (*Hirschfeldia incana*), forget-me-nots (*Myosotis arvensis*), blue dicks (*Dichelostemma capitatum*), red-stem filaree (*Erodium cicutarium*), green everlasting (*Gnaphalium californicum*), lupines (*Lupinus* sp.), curly dock (*Rumex crispus*), blue-eyed grass (*Sisyrinchium bellum*), and western verbena (*Verbena lasiostachys*).

Ruderal Grassland

Ruderal Grassland (GR) is a plant community that is typically in early successional stages due to severe human disturbance, or because the land is subject to recurrent natural disturbance. This series occurs on all topographic locations, at all elevations. GR communities are dominated by annual and perennial, non-native, pioneering, herbaceous plants that readily colonize disturbed ground. Ruderal communities may provide a certain degree of erosion control for recently graded areas, but such communities are also a threat to the native plant communities because they continually distribute invasive, highly-competitive non-native propagules into otherwise native vegetation. However, if GR communities are left undisturbed, they may undergo succession towards a more stable, and less weedy, plant community such as California Annual Grassland and Coastal Sage Scrub.

Several of the ruderal grassland associations include emergent native shrubs and plants that, at one time, likely dominated the vegetation, including California sagebrush, coyote brush, cliff-aster (*Malacothrix saxatilis*), white sage (*Salvia apiana*), and purple sage. These native species compete with ruderal/invasive forbs, including: black mustard, poison hemlock (*Conium maculatum*), summer mustard, white horehound (*Marrubium vulgare*), tocalote, wild radish (*Raphinus sativus*), fennel (*Foeniculum vulgare*), and milk thistle (*Silybum marianum*).

3.1.3 Coastal Sage Scrub Types

Coastal Sage Scrub is a type of shrubland that is dominated by drought-deciduous, low-growing shrubs and sub-shrubs that are often soft-leaved and grayish-green in color. Scrub plant size is relative to the water supply present and available onsite; however, these semi-woody plants are generally low-growing because high temperatures and drying winds can cause severe moisture stress. Coastal Sage Scrub is common in California generally along the coastward slopes of the Transverse, Central Coast, and Peninsular Ranges, and is adapted to the Mediterranean climate. Coastal Sage Scrub forms a continuous to open canopy; it occupies dry, gentle to steep, more or less rocky slopes with shallow or heavy soils; and, generally at lower elevations. Coastal Sage Scrub within the Project Area consists of five different plant communities: California Sagebrush Scrub, Chaparral Mallow Scrub, Coyote Brush Scrub, Purple Sage Scrub and Mulefat Scrub.

California Sagebrush Scrub

California sagebrush is a typical shrub of Coastal Sage Scrub and chaparral types of xeric foothills, especially near the coast, at elevations below 2,625 feet ASL. California Sagebrush Scrub (SCS) associations occur on steep, south-facing slopes, and less frequently in flooded, low-gradient alluvial floodplain deposits. Within the Project Area, SCS forms a continuous to intermittent canopy, with co-dominant species in the shrub canopy that include coyote brush (*Baccharis pilularis*), purple sage, lemonadeberry, and deerweed (*Acmispon glaber*) growing over a variable ground layer. Several other canopy contributors are present within the Project Area SCS communities, including: California bush sunflower (*Encelia californica*), chaparral mallow, black sage (*Salvia mellifera*), and poison oak (*Toxicodendron diversilobum*). The ground layer generally consisted of GCA association grasses and forbs.

Chaparral Mallow Scrub

Chaparral mallow occurs in scrub and chaparral types at elevations below 1,975 feet ASL. Chaparral Mallow Scrub (SCM) occurs primarily along road edges, existing pole pads, and other previously disturbed areas, potentially succeeding fires in the area. Within the Project Area, SCM forms an intermittent to closed canopy over a variable ground layer, with co-dominant species in the shrub canopy that include: California sagebrush, coyote brush, California bush sunflower and giant wild rye. Other species observed growing within SCM associations include: lemonadeberry, and blue elderberry.

Coyote Brush Scrub

Coyote brush occurs in scrub and oak woodland communities, on stabilized dunes of coastal bars, river mouths, coastline spits, coastal bluffs, open slopes, and ecotonal areas with grasslands from sea level to 3,300 feet ASL. Within the Project Area, Coyote Brush Scrub (SCB) forms a continuous or intermittent canopy (less than two meters tall) growing over a variable ground layer, with co-dominant species in the shrub canopy that include: purple sage, bigpod ceanothus, greenbark ceanothus, lemonadeberry and blue elderberry.

Purple Sage Scrub

Purple sage is often found in association with California sagebrush, and similarly a typical shrub of Coastal Sage Scrub and chaparral types of xeric foothills, especially near the coast, at elevations from 165 to 3,000 feet ASL. Purple Sage Scrub (SPS) is found on steep north-facing slopes in colluvial-derived, rocky soils. Within the Project Area, SPS typically forms a continuous to intermittent canopy over a variable ground layer. Communities range from being solely dominated by purple sage to being co-dominant scrub with Coyote brush. Several other canopy contributors are present within the Project Area SPS communities, including: California sagebrush, California bush sunflower, greenbark ceanothus, birchleaf mountain mahogany, toyon, lemonadeberry, and blue elderberry.

Mulefat Scrub

Mulefat (*Baccharis salicifolia*) is generally found along wetlands or streambanks between sea level and 1,500 feet ASL. Within the project area, Mulefat Scrub (SMS) occurs intermittently in flooded habitats within canyon bottoms and ephemeral and intermittent stream. Other canopy contributors within the Project Area SMS communities include: arroyo willow and blue elderberry.

3.1.4 Woodland Types

Woodlands are vegetation types dominated by woody trees and tall tree-like shrubs, forming an open to closed canopy growing over a scattered variety of low-growing shrubs and a grassy ground layer. Some woodland communities may not contain a shrub stratum, and may only form a tall canopy over annual or perennial grasslands. The understory of woodland is directly related to the density of the woodland canopy and its percent canopy cover. Permanent shade created by dense woodlands typically inhibits the growth of stratified canopy layers. Woodland within the Project Area consists of four different plant communities: The Coast Live Oak Woodland, Scrub Oak Woodland, Arroyo Willow Woodland, and California Black Walnut Woodland.

Coast Live Oak Woodland

Coast live oak is the most widely distributed of the evergreen oaks, and is capable of achieving large size and old age. Coast live oak occurs in valleys and on slopes of riparian woodland fringes, scattered in grassland or Coastal Sage Scrub communities, as an element of Mixed Evergreen Forest, or as a contributor to other oak woodlands. The Coast Live Oak Woodland (WLO) series predominantly occurs on steep slopes and on raised stream banks or terraces, where it forms a continuous to open canopy (less than 100 feet tall), with an understory of occasional or common shrubs and an absent or herbaceous ground layer. WLO requires sandstone or shale-derived soils of elevations below 4,000 feet ASL. Within the Project Area, co-dominant species in the shrub canopy include: greenbark ceanothus, toyon, and southern California black walnut, and dominant understory shrubs include: California sagebrush, bigpod ceanothus, and birchleaf mountain mahogany. Several other common understory species include: coyote brush, buckwheat (*Eriogonum cinereum*, *E. fasciculatum*), toyon, laurel sumac, hollyleaf cherry (*Prunus ilicifolia*), California wild rose (*Rosa californica*), California blackberry (*Rubus ursinus*), purple sage, blue elderberry, poison oak, annual grasses and several showy wildflowers.

Scrub Oak Woodland

Nuttall's scrub oak (*Quercus dumosa*) is an evergreen shrub growing to 10 feet in height in sandy soils. Scrub Oak Woodland (SOW) is dominated by scrub oak and coast live oak and found from sea level to 5,000 feet ASL, generally along the coast. Understory species are similar in character to the Coast Live Oak Woodland. Within the Project Area, co-dominant species in the shrub canopy include: greenbark ceanothus, toyon, bigpod ceanothus, and birchleaf mountain mahogany.

Arroyo Willow Woodland

Arroyo willow (*Salix lasiolepis*) grows on seasonally or intermittently flooded sites, at elevations from sea level to 7,100 feet ASL. Habitat includes stream banks and benches, slope seeps, and stringers along drainages. Plants are typically shrubby and multi-branched along coastal creeks, at lower and middle elevations, and in parts of the Sacramento-San Joaquin River delta. The US Fish and Wildlife Service (USFWS) Wetland Inventory (Reed 1988) recognizes arroyo willow as a facultative wetland plant, or one with a 67-99% chance of growing within a wetland. Some plants in the California stands are sufficiently tall to be trees. Within the Project Area, the Arroyo Willow Woodland (WAW) community is composed of arroyo willows forming on open to continuous canopy less than 30 feet tall, with a variable herbaceous layer. Co-dominant species in the shrub or tree canopy layer include: coyote brush, mulefat, California sycamore (*Platanus racemosa*), black cottonwood (*Populus trichocarpa*), and Fremont cottonwood (*Populus fremontii*).

California Black Walnut Woodland

California black walnut trees are typically found along riparian corridors and hillslopes, at elevations from 500 to 3,000 feet ASL. The USFWS Wetland Inventory (Reed 1998) lists California black walnut as a facultative plant, or one that is equally likely to be found within wetland or upland areas. Within the Project Area, the California Black Walnut Woodland (WCBW) community forms an open to continuous canopy less than 50 feet tall, with a sparse to intermittent or grassy herbaceous layer. WCBW occurs in isolated areas, with riparian vegetation co-dominated by California black walnut and coast live oak.

3.1.5 Non-Native Types

Non-native type assemblages are areas that have been planted with orchards or crops, are extensively grazed by cattle, or communities dominated by non-native or ruderal species. These areas are often monocultures, or assemblages dominated with escaped cultivars and ruderal non-native species.

Agricultural

Agricultural (AG) lands are areas that have been planted with orchard, crops, are extensively grazed by cattle, or communities dominated by non-native or ruderal species. These areas are often monocultures with a sparse understory, often with ruderal or grassland species. Species grown in the area include avocado (*Persea americana*), orange (*Citrus x sinensis*), lemon (*Citrus x limon*), walnut (*Juglans sp.*), cherimoya (*Annona cherimola*), guava (*Psidium sp.*), passion fruit (*Passiflora sp.*), and dragonfruit (*Hylocereus sp.*).

Ruderal/Disturbed

Ruderal/Disturbed (NRD) communities within the Project Area include areas dominated by non-native weedy and invasive species, including black mustard, summer mustard, forget-me-nots, red-stem filaree, curly dock, wild oats, and brome grasses (*Bromus sp.*). The ruderal community is found primarily along road edges, around structures, edges of agriculture fields, and cleared areas including existing SCE pole or tower pads.

Cape Ivy Infestation

Cape Ivy Infestation (NCI) includes large patches of Woodland, Coastal Sage Scrub, and Chaparral that are being overtaken by a blanket of Cape ivy. Cape ivy is a perennial vine and exists in many coastal forests the length of California. Within the Project Area it occurs primarily within the Coast Live Oak Woodland and Coastal Sage Scrub community types. In these areas, Cape ivy is forming a solid cover over native shrubs and trees. This blocks light, smothering and killing the native vegetation beneath. The weight of the ivy on weak and dying trees eventually causes them to fall. The blanket of ivy also prohibits the regeneration of most species, leaving a monoculture stand of ivy.

Developed

Developed areas are areas that have been developed with the construction of manmade structures or cleared paved or graded surfaces, generally lacking of native plant assemblages. Vegetation that does exist is predominately landscaped with non-native, ornamental species.

3.2 Plant Species

A full list of plant species observed in the Project Area is provided in Appendix B. A total of 279 species have been identified including 201 native, 78 non-native species, including 9 CNPS Ranked plant species.

3.3 Wildlife Species

A full list of wildlife species observed in the Project Area is provided in Appendix B. A total of 79 species have been identified including 1 insect, 2 amphibian, 4 reptile, 58 bird, and 14 mammal species, including 7 special-status species. Additional wildlife are likely to be observed during the focused survey. A full list of species observed in the Project Area is provided in Appendix B.

Aquatic habitat in the Project Area for fish species is limited to Cañada Larga, Los Sauces Creek, and Rincon Creek. An unidentified small fish species was observed in a deeper pool within Cañada Larga. No other fish species were observed during initial surveys.

Reptile and amphibian species observed include: coastal whiptail (*Aspidoscelis tigris stejnegeri*), gopher snake (*Pituophis catenifer*), California treefrog (*Pseudacris cadaverina*), Baja California treefrog (*Pseudacris hypochondriaca hypochondriaca*), western fence lizard (*Sceloporus occidentalis occidentalis*), and side-blotched lizard (*Uta stansburiana elegans*).

Common bird species observed include: Cooper's hawk (*Accipiter cooperii*), oak titmouse (*Baeolophus inornatus*), red-tailed hawk (*Buteo jamaicensis*), red-shouldered hawk (*B. lineatus*), California quail (*Callipepla californica*), Anna's hummingbird (*Calypte anna*), lesser goldfinch (*Carduelis psaltria*), American goldfinch (*Carduelis tristis*), house finch (*Carpodacus mexicanus*), turkey vulture (*Cathartes aura*), rock pigeon (*Columba livia*), American crow (*Corvus brachyrhynchos*), common raven (*Corvus corax*), American kestrel (*Falco sparverius*), acorn woodpecker (*Melanerpes formicivorus*), California towhee (*Melozone crissalis*), northern mockingbird (*Mimus polyglottos*), brown-headed cowbird (*Molothrus ater*), house sparrow (*Passer domesticus*), bushtit (*Psaltriparus minimus*), black phoebe (*Sayornis nigricans*), western meadowlark (*Sturnella neglecta*), European starling (*Sturnus vulgaris*), California thrasher (*Toxostoma redivivum*), western kingbird (*Tyrannus verticalis*), and mourning dove (*Zenaida macroura*).

Common mammals, or their sign, observed within the Project Area include: coyote (*Canis latrans*), dusky-footed woodrat (*Neotoma fuscipes*), mule deer (*Odocoileus hemionus*), California ground squirrel (*Otospermophilus beecheyi*), raccoon (*Procyon lotor*), western gray squirrel (*Sciurus griseus*), wild pig (*Sus scrofa*), desert cottontail (*Sylvilagus audubonii*), brush rabbit (*Sylvilagus bachmani*), black bear (*Ursus americanus*), and various domestic animals.

3.4 Wildlife Movement and Urban/Wildland Interface

The Ventura County General Plan, Santa Barbara Coastal Land Use Plan, California Coastal Act, and the USFS specifically identify wildlife migration corridors as significant biological resources. Protecting habitat connectivity is critical to the success of special-status species and other biological resource protections.

On a geographic scale, the Project is located in the Pacific Flyway, a major north-south avian migratory corridor that extends along the west coast from Alaska to Patagonia, and provides suitable foraging habitat for many resident and migratory avian species. The Pacific Flyway links breeding grounds in the north to more southerly wintering areas and is therefore utilized by many bird species during migration. As part of the Pacific Flyway, the coastal beaches, Carpinteria Salt Marsh, estuaries, and Coast Range Mountains provide high-quality resting and foraging areas for numerous bird species during the migratory seasons.

More locally, the Ventura River system (located in the vicinity of Segments 1 and 2) and the Carpinteria Creek system (located in the vicinity of Segment 4) are known migratory corridors and spawning areas for the southern California steelhead Distinct Population Segment (DPS). Because the segments of these drainages that are directly crossed by the Project are seasonal, these reaches would only potentially be used by this species in the winter and spring when water is flowing. These river systems and associated riparian corridors also function as wildlife movement corridors and habitat for a range of bird, reptile, and mammal species.

The majority of the Project occurs within a land use matrix of primarily agricultural, open-space, and commercial/residential areas. Open-space areas dominated by native vegetation associations may serve as corridors around areas cleared for agriculture and residential uses, connecting larger contiguous areas of habitat.

3.5 Special-Status Biological Resources

3.5.1 Special-Status Vegetation Communities

Resource agencies generally consider vegetation types to have special-status if they support concentrations of special-status plant or wildlife species, are of relatively limited distribution, or offer particular value to wildlife. While some special-status vegetation types are not afforded legal protection unless they support protected species, others may be protected by an ordinance, code, or regulation under which conformance typically requires a permit or other discretionary action prior to impacting the vegetation.

CDFG considers California Black Walnut Woodland a special-status plant community based upon rankings established by NatureServe. The woodland is ranked G2 and S2, implying these communities are “Imperiled” and are “at high risk of extinction or elimination due to very restricted range, very few populations, steep declines, or other factors,” making them vulnerable to extirpation on a global and local scale (NatureServe 2010). California Black Walnut Woodlands are found only in isolated areas of Segments 3B and 4, composing and area of about 5 acres, or less than 0.06% of the Survey Area (Table 1, Appendix A).

The California Coastal Act specifically calls for protection of “environmentally sensitive habitat areas” or ESHAs, which includes wetlands and riparian areas. The Project Area spans and crosses areas of Rincon and Carpinteria Creeks in Segments 3A and 4 that are within the coastal zone, however, the project will utilize existing crossings of these riparian areas, and no impacts to these ESHAs is expected.

3.5.2 Protected Trees

Ventura County tree protection regulations protect oaks, sycamores, ash, elderberry, walnut, and heritage trees that may be impacted in Segment 3B within Ventura County. Oak trees in Santa Barbara County are protected by various ordinances that cover the Coastal Zone, non-coastal rural areas, and USFS lands. Oak trees may be impacted in each of these jurisdictions within Segment 4.

3.5.3 Jurisdictional Areas

The Project Area utilizes multiple existing crossings of reaches of the Ventura River (Segment 1 and 2), Rincon Creek (Segments 3B and 4), and Carpinteria Creek (Segments 3A and 3B) that fall under the jurisdiction of the USACE and/or the CDFG. The Project may affect potentially jurisdictional waters in Segments 1 and 4 including Cañada Larga, Carpinteria Creek near its confluence with Sutton Canyon Creek, and three small dry drainages that are tributaries to Carpinteria Creek (Table 4, Figure 3).

3.5.4 Critical Habitat

Portions of the Project cross drainages that are within Southern California steelhead (*Oncorhynchus mykiss irideus*) Critical Habitat Ventura River Hydrologic Unit 4402 and South Coast Hydrologic Unit 3315 (Table 4).

Table 4. Potentially Jurisdictional Areas Occurring in the Project Area

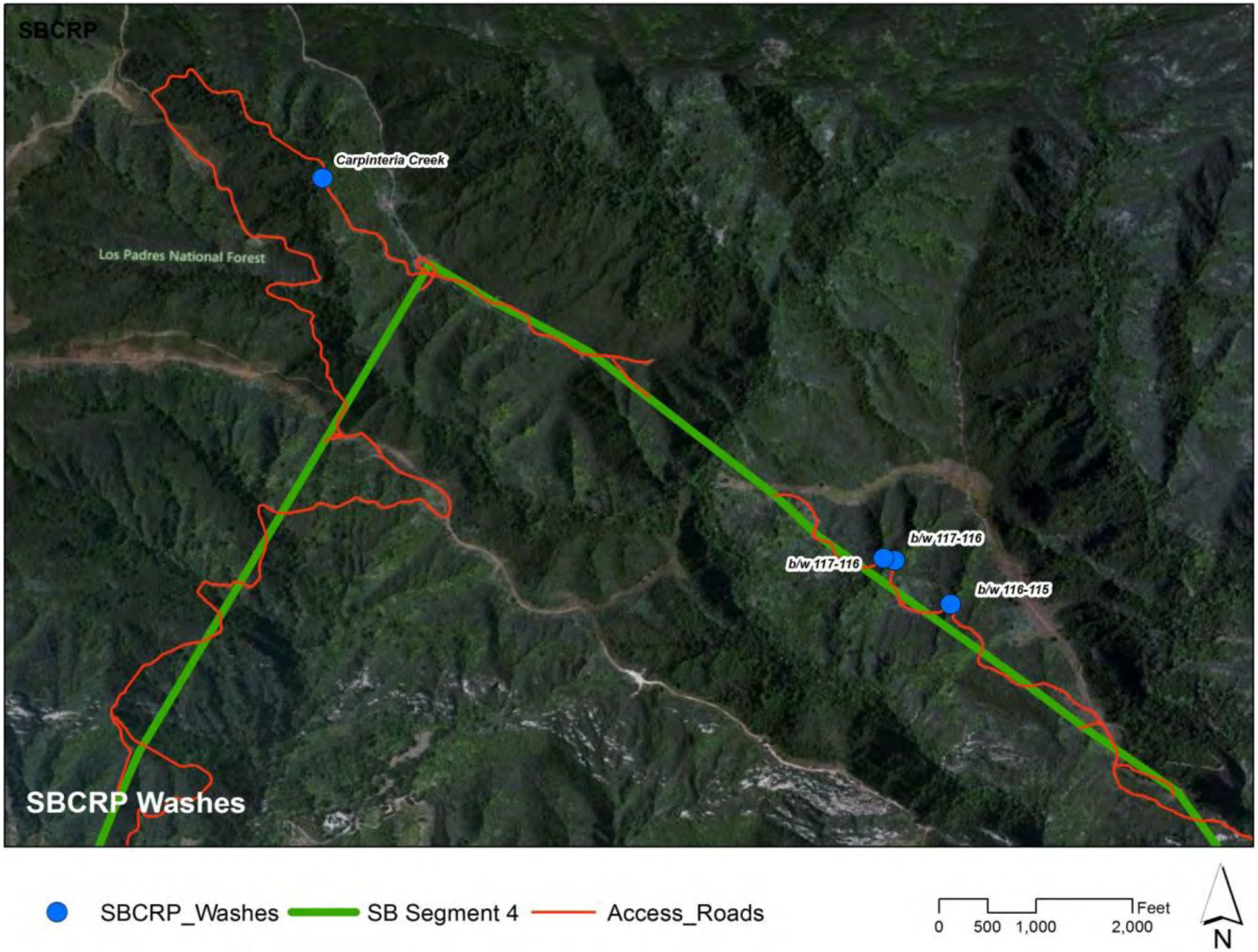
Water and Location	Areas potentially under the jurisdiction of:			Southern California Steelhead Critical Habitat
	USACE	CDFG	RWQCB	
Cañada Larga, Segment 1, access to the Getty Tap	X	X	X	Subunit 440210
Carpinteria Creek, Segment 4, near the Confluence of Sutton Canyon Creek, access to Construction 120 to 125	X	X	X	Subunit 331534
Three small, dry, unnamed drainages, Segment 4, between Construction 115 and 117		X	X	

3.5.5 Special-Status Plants

Special-status plant species documented to occur in the Project vicinity are listed in Table 1, along with their habitat suitability and an indication of their known presence, or assessment of their potential to occur, within the Project Area. Many special-status plant species known to occur within the Project Area were not encountered during the reconnaissance surveys because the surveys occurred outside of the window to properly identify many of the annual species. Focused plant surveys for Segments 3B and 4 are scheduled for the spring of 2012.

Based upon survey results, documented occurrences, lack of suitable habitat, and geographic and elevational ranges of species, no federal or state listed threatened or endangered plant species are documented in the Project Area, or are likely to be found in the Project Area. Three listed plant species (CNPS RPRs 1 and 2) are documented to occur in the Project Area: Plummer's baccharis (*Baccharis plummerae plummerae*), Santa Barbara honeysuckle (*Lonicera subspicata* var. *subspicata*), and Nuttall's scrub oak (*Quercus dumosa*).

Figure 3. Potentially Jurisdictional Areas within the Project Area (2 pages).




SBCRP
Canada Larga Rd
Canada Larga
Canada Larga Rd
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Based on geographic ranges and the presence of suitable habitat within the Project Area, eight additional RPR 1 and 2 species have a "High" or "Moderate" potential to occur in the Project Area: Davidson's saltscale (*Atriplex serenana var. davidsonii*), late-flowered mariposa lily (*Calochortus fimbriatus*), Plummer's mariposa-lily (*Calochortus plummerae*), Santa Barbara morning glory (*Calystegia sepium binghamiae*), mesa horkelia (*Horkelia cuneata puberula*), Carmel Valley malacothrix (*Malacothrix saxatilis* var. *arachnoidea*), Ojai navarretia (*Navarretia ojaiensis*), and Santa Ynez false lupine (*Thermopsis macrophylla*). Seven additional species tracked by CNPS (RPRs 3 and 4) are also documented to occur in the Project Area, while three others have potential to occur (Figure 1). Additional discussion of the special-status plant species documented to occur or potentially occurring in the Project Area, including their natural history and habitat suitability within the Project Area, are provided in Section 4.

3.5.6 Special-Status Wildlife

Special-status animal species with the potential to occur in the Project Area are listed in Table 2, along with their habitat suitability and an indication of their known presence, or assessment of their potential to occur, within the Project Area. Additional wildlife surveys for burrowing owl and nesting raptors in Segments 3B and 4 are scheduled for the spring of 2012.

Based upon survey results, documented occurrences, lack of suitable habitat, and geographic and elevational ranges of species, no federal or state listed threatened or endangered wildlife species are documented in the Project Area, or are likely to be found in the Project Area. Six special-status wildlife species are documented to occur in the Project Area: Arroyo chub (*Gila orcuttii*), Cooper's hawk (*Accipiter cooperii*), golden eagle (*Aquila chrysaetos*), northern harrier (*Circus cyaneus*), white-tailed kite (*Elanus leucurus*), and loggerhead shrike (*Lanius ludovicianus ludovicianus*). Based on geographic ranges and the presence of suitable habitat within the Project Area, 11 additional special-status wildlife species have a "High" or "Moderate" potential to occur in the Project Area: American badger (*Taxidea taxus*), ringtail (*Bassariscus astutus*), California legless lizard (*Aniella pulchra pulchra*), coast horned lizard (*Phrynosoma blainvillii*), two-striped garter snake (*Thamnophis hammondii*), south coast garter snake (*Thamnophis sirtalis ssp*.), sharp-shinned hawk (*Accipiter striatus*), burrowing owl (*Athene cunicularia*), peregrine falcon (*Falco perigrinus*), pallid bat (*Antrozus pallidus*), and San Diego desert woodrat (*Neotoma lepida intermedia*).

Monarch butterfly (*Danaus plexippus*) was observed throughout the Project Area. Monarch butterflies are not listed by the USFWS or CDFG, and individual monarch butterflies are not considered a sensitive resource; however, CDFG does consider monarch butterfly winter roosting sites a sensitive resource. No protected roosting areas are documented within the Project Area, and no roosting was observed within trees during surveys of the Survey Area.

Mule deer (*Odocoileus hemionus*), mountain lion (*Puma concolor*), and song sparrow (*Melospiza melodia*) are Management Indicator Species (MIS) when on USFS lands. Deer were observed throughout the Project Area; a dead mountain lion was found in the area of Segment 1 in 2011; and song sparrow is documented throughout the Project Area. All three species could be present on USFS lands within the Project Area.

Suitable bird nesting habitat is present throughout the Project Area and along the access routes. Nesting birds are protected under the Migratory Bird Treaty Act and the California Department of Fish and Game Code and could be impacted by project activities. Raptor nests were observed in existing lattice towers at Construction 60, 61, 84a (lattice tower 4-5), and 90 which will be removed, and in eucalyptus trees near Construction 62. No nesting behavior was observed during preliminary surveys, however, Segments 3B and 4 will be surveyed for nesting raptors in the spring of 2012.

Additional discussion of the special-status wildlife species potentially occurring in the Project Area including their natural history and habitat suitability are provided in Section 4.

4.0 DISCUSSION

4.1 Special-Status Vegetation Communities

Small areas of California Black Walnut Woodland, considered sensitive by CDFG, are found in Segments 3B and 4. No new access roads or pads are planned within the walnut woodlands, though individual walnut trees may be impacted by trimming or removal along existing access roads or pads, much of which is not expected to be greater than what normally occurs during regular maintenance of access roads. Because impacts to individual trees will be minimal or temporary, and likely mitigated by permits and ordinance, no significant impacts are expected to the woodland community.

4.2 Protected Trees

Though final engineering plans for access routes and pads are still in the design phase, several species of trees protected under local tree ordinance, including oaks, walnut, and sycamore, and heritage trees can reasonably be expected to be impacted from construction activities at 15 Construction Sites, and along portions of the existing access routes in Segments 3B and 4. Several species along existing roadways will require trimming, much of which is not expected to be greater than what normally occurs during regular maintenance of access roads. Impacts to trees will be avoided when practicable; however, many trees will be significantly impacted from extensive trimming, encroachment within the drip-line during grading, or need to be removed all together for the purposes of this Project. These impacts are adverse and will require appropriate permitting and mitigation from various jurisdictions.

4.3 Jurisdictional Areas

Riparian habitats that may fall under the jurisdiction of CDFG are found in Segments 1 and 4. No new roadways will be established through riparian corridors for this Project; however, SCE is proposing upgrades at several channel crossings, including Carpinteria Creek, to make them passable with larger equipment, or to reestablish existing SCE ROW access. Though plans for these sites are still in the design stage, it can reasonably be assumed that some vegetation will need to be removed at these locations. Many of these impacts are expected to be temporary as plants grow and become reestablished in disturbed areas. No formal delineation of these drainages has been performed, however, an initial assessment of these drainages indicates several sites may be considered Waters of the State, and another may additionally be considered Waters of the U.S. As such, a Streambed Alteration Agreement (SAA) will be required from CDFG for work in these drainages. Any native vegetation removed will be mitigated as required by the SAA.

4.4 Critical Habitat

Portions of the Project cross drainages that are within steelhead Critical Habitat. Coyote Creek (Subunit 440220) is within the Ventura River Hydrologic Unit 4402. Carpinteria Creek (Subunit 331534) is within the South Coast Hydrologic Unit 3315. No work is expected in any perennial reach of these streams that would impact Critical Habitat, though a wet-crossing of Cañada Larga (Subunit 440210) may be used.

Monitoring stations above and below the crossing of Cañada Larga indicate this section of stream to be ephemeral with high levels of turbidity and bacteria (Stream Team 2005). The seasonality of this reach, poor water quality, and the lack of suitable breeding habitat for steelhead indicate that this species not likely to be found at the site (Entrix and Woodward Clyde 1997).

4.5 Wildlife Movement and Urban/Wildland Interface

Construction activities may cause animals to be temporarily displaced from using active construction sites, and may affect wildlife movement corridors. These impacts are expected to be isolated and temporary, and therefore locally adverse, but minor.

4.6 Special-Status Plants

Three listed plant species are documented to occur in Segments 3B and 4, and eight additional species have a “High” or “Moderate” potential to occur in the Project Area. Additional RPR 3 and 4 plants are also documented to occur, or have potential to occur in the Project Area. Impacts are not expected at a population level for any species, however, some individuals of these species may be adversely impacted during grading access roads, tower pads, or other workspace. Much of the potential impacts are not expected to be greater than what normally occurs during regular maintenance of the existing access roads and pads, though some new access spur roads and tower pads will be developed. Weeds that may out-compete native species may be more likely to spread and colonize disturbed areas following construction causing indirect impacts to special-status plant populations.

4.6.1 Special-Status Species Plant Descriptions and Occurrence

Information provided in the following plant species descriptions was compiled from CalFlora (2012), CNPS (2012), Hickman et al. (1993), and Baldwin (2012).

Plummer's Baccharis (*Baccharis plummerae plummerae*)

STATUS		
Federal	**State / NDDB**	**CNPS** (CNPS 2001)
None	None / G3G4, S3.2	Rank 4.3: Uncommon in California

Plummer's baccharis is a small, broad-leaved winter-deciduous shrub (<2 meters tall) with fine-curled, hair-covered, wand-like stems and 20 to 45-mm, oblanceolate, toothed, 3-veined (prominent), sessile leaves. The flowers, generally blooming between August and October, are arranged in paniculate heads with a bell-shaped involucre, and are not particularly showy. The flower heads are either staminate (5-6.5 mm long) or pistillate (6-8.5 mm long). Plummer's Baccharis is a member of the sunflower family (Asteraceae). Plummer's baccharis typically occurs on rocky, well-drained, north-facing slopes in coastal sage scrub and oak woodland plant communities. It ranges from southern coastal Santa Barbara County to coastal Los Angeles County, and Santa Cruz and Anacapa Islands, from 300 to 1,250 feet ASL.

Plummer's baccharis was documented during surveys along the access road in Sutton Canyon north of the Carpinteria Substation, and at Construction 79, 80, 84, and 102 in Segment 4, and sites in Segments 1 and 2, and suspected to occur in Segment 3B, pending verification during focused plant surveys.

Catalina Mariposa Lily (*Calochortus catalinae*)

STATUS		
Federal	**State / NDDB**	**CNPS** (CNPS 2001)
None	None / G3, S3.2	Rank 4.2: Uncommon in California

Catalina mariposa lily is a perennial herb that re-sprouts annually from a small bulb. The stems are 20-40 cm long, generally branched above. The basal strap-shaped leaves are 10-30 cm long and usually wither before anthesis (flowering). The inflorescence consists of 1 to 4 bowl-shaped flowers with subtending, opposite bracts 2-10 cm long. Sepals are white with purple spots near the base (20-30 mm long). Petals are nearly glabrous, white, tinged lilac, and purple-spotted near the base (20-50 mm long). The inside of the petals have oblong and densely branched-hairy nectaries. Catalina mariposa lily blooms between March and May. The fruit (capsules) are erect, two to five cm long, and not angled as in other Mariposa lilies. *C. catalinae* is a member of the lily family (Liliaceae). Catalina mariposa lily grows in heavy soils of open grassland, chaparral, and Coastal Sage Scrub communities, at elevations below 2,300 feet ASL. It ranges from San Luis Obispo County to San Diego County, and on Santa Rosa, Santa Cruz, and Santa Catalina Islands.

Catalina mariposa lily was documented during surveys along the access road in Sutton Canyon north of the Carpinteria Substation, along access roads and pads near Construction 126, 127, 128, 139, and 140 in Segment 4, and sites along Segments 1 and 2.

Southern California Black Walnut (*Juglans californica californica*)

STATUS		
Federal	**State / NDDB**	**CNPS** (CNPS 2001)
None	None / G3, S3.2	Rank 4.2: Uncommon in California

Southern California Black Walnut is a small, broad-leaved, monoecious, winter-deciduous tree (15 meters tall) with one to five trunks. It has pinnately divided leaves with 11-19 lanceolate to ovate toothed leaflets (two to eight cm long). The wind pollinated, greenish flowers, blooming between March and May, have four-lobed sepals arranged in pendulous clusters before the leaves emerge. This species produces spheric, leathery-husked, strong-smelling fruit (walnuts) two to three centimeters in diameter. *J. californica californica* is listed in the NIWP with an FAC wetland indicator status (facultative species that is equally likely to occur in wetlands and non-wetlands). *Juglans californica californica* is uncommon, but can be found on slopes and canyons at elevations between 50 and 900 meters, and it is often associated with riparian habitats. It ranges from the Santa Lucia Mountains (where they were cultivated), Santa Barbara County, and along the coastal portions of the Transverse Ranges, south to the northern Peninsular Ranges in northern San Diego County. Southern California Black Walnut Forest is a much-fragmented, declining natural community, and it is threatened by urbanization and grazing, which inhibit natural reproduction.

California black walnut is found along numerous drainages and uplands in all Segments of the Project Area.

Ocellated Humboldt Lily (*Lilium humboldtii ocellatum*)

STATUS		
Federal	**State / NDDB**	**CNPS** (CNPS 2001)
None	None / G4T3, S3.2	Rank 4.2: Uncommon in California

Ocellated Humboldt lily is a perennial bulbiferous herb (<3.1 meters). Bulb scales are often purple at the tip, obscurely two to five segmented. Flowers are perianth yellow or light orange, with spots margined in lighter red, blooming between March and August. Ocellated Humboldt lily can be found in chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, and riparian woodland at elevations between 100 and 5,900 feet ASL. It ranges among Los Angeles, Orange, Riverside, Santa Barbara, San Bernardino, San Diego, San Luis Obispo, and Ventura Counties. It also exists on Anacapa, Santa Cruz, and and Santa Rosa Islands. *L. humboldtii ocellatum* is threatened by development and horticultural collecting on the mainland, and by feral herbivores on Santa Cruz and Santa Rosa Islands.

Ocellated Humboldt lily was documented in a drainage during surveys along the access road in Sutton Canyon north of the Carpinteria Substation.

Santa Barbara Honeysuckle (*Lonicera subspicata* var. *subspicata*)

STATUS		
Federal	**State / NDDB**	**CNPS** (CNPS 2001)
None	None / G5T2, S2.2	Rank 1B.2: rare, threatened, or endangered in California and elsewhere

Santa Barbara Honeysuckle is perennial evergreen shrub. Stems are generally twining or reclining (9-24 dm); herbage glabrous to puberulent. Leaves are one to four centimeters, narrowly elliptic, and three times longer than wide. *L. subspicata* var. *subspicata* blooms between May and February. Habitats include chaparral, cismontane woodland, and coastal scrub. It ranges among Los Angeles County, Santa Barbara County, and Santa Catalina Island at elevations below 3,300 feet ASL. This species is threatened by development, road construction, and vehicles.

Santa Barbara honeysuckle was documented during surveys along the access road in Sutton Canyon north of the Carpinteria Substation, and along access roads and pads near Construction 124 and 125 in Segment 4.

Fish's Milkwort (Polygala cornuta var. fishiae)

STATUS		
Federal	**State / NDDB**	**CNPS** (CNPS 2001)
None	None / G5T4, S3.3	Rank 4.3: Uncommon in California

Fish's milkwort is a small, broad-leaved, winter-deciduous, 25 cm-tall shrub, growing from rhizomes, that often form dense thickets up to 2 meters wide. The stems are decumbent to erect (6-25 dm long) and covered with leaves that are less than two times as long as wide. The flowers, blooming May through August, are somewhat peaflower-shaped, 7-11 mm long, and pale with dark pink buds. Fish's milkwort can be found on exposed slopes growing in chaparral, oak woodland, and riparian woodland habitats at elevations between 300 and 3,500 feet ASL. It ranges from Santa Barbara County, in the Outer South Coast Ranges south through the Transverse Ranges to the northern Peninsular Ranges in northern San Diego County.

Fish's milkwort was documented during surveys near 12 tower sites in Segments 1 and 2, and at Construction 101 in Segment 4, and suspected to occur in Segment 3B, pending verification during focused plant surveys.

Nuttall's Scrub Oak (*Quercus dumosa*)

STATUS		
Federal	**State / NDDB**	**CNPS** (CNPS 2001)
C2	None / G2, S1.1	Rank 1B.1: Plants considered to be rare, threatened, or endangered

Nuttall's scrub oak is a broad-leaved evergreen shrub (1-3 m tall) with sparsely short-hairy, dark reddish-brown slender twigs (becoming glabrous) and oblong/elliptic, obtuse-tipped to abruptly pointed, and toothed-margined leaves (1-2.5 cm long). The upper leaf surface is slightly shiny-green, and the lower is finely tomentose, becoming glabrous, dull pale green. The fruit (acorn) has a cup that is 8-15 mm wide, 5-8 mm deep, and bowl-shaped with tubercled scales, and has a nut that is 15-25 mm long, slender, ovoid, tapered-tipped, and glabrous-shelled (inside). *Q. dumosa* blooms from February to August. *Q. dumosa* grows predominantly in sandy, clay-loam, and sandstone soils of chaparral and Coastal Sage Scrub habitats near the coast. It is known to occur along the South Coast in Orange, Santa Barbara, and San Diego Counties, and Baja, California at elevations below 1,300 feet ASL. Nuttall's scrub oak hybridizes with scrub oak (*Q. berberidifolia*), which is the widespread scrub type oak from much of cismontane California, previously called *Q. dumosa*, is now *Q. berberidifolia*. Nuttall's scrub oak is primarily threatened by development.

Nuttall's scrub oak was documented during surveys near Construction 121, 122, 123, 124, 125, 126, 127, 128, 139, and 140 in Segment 4.

Hoffmann's Bitter Gooseberry (*Ribes amarum* var. *hoffmannii*)

STATUS		
Federal	**State / NDDB**	**CNPS** (CNPS 2001)
C2	None / G4, T2T3, S2S3	Rank 1B.1: Plants considered to be rare, threatened, or endangered

Hoffmann's bitter gooseberry is a perennial deciduous scrub (<2 m tall). Stems have three nodal spines. Leaves are 2-4 cm and glandular-hairy. Inflorescences possess one to three flowers. Flowers are longer than wide with reflexed, purple sepals (2-4 mm) and white petals with margins curled inward. Fruit is 15-20 mm and purple with stiff bristles. *R. amarum* var. *hoffmannii* blooms between March and April. Hoffmann's bitter gooseberry is found in chaparral and riparian woodland at elevations between 500 to 3,900 feet ASL. Hoffmann's bitter gooseberry ranges among Santa Barbara, San Diego, and Ventura Counties. It has also been found in the Sierra Nevada Foothills, Tehachapi Mountains, and San Francisco Bay Area.

Hoffman's bitter gooseberry was documented during surveys near Construction 124 and 125 in Segment 4.

Late-Flowered Mariposa Lily (*Calochortus fimbriatus*)

STATUS		
Federal	**State / NDDB**	**CNPS** (CNPS 2001)
None	None / G3G4, S2.2	Rank 1B.2: rare, threatened, or endangered in CA and elsewhere

Late-flowered mariposa lily is a bulbiferous herb with a fibrous coat. Stems are generally 30-90 cm long, generally branched, with no bulblets. The basal shaped leaves are 20-40 cm long, usually wither before anthesis; and are cauline reduced upward and inrolled. The inflorescence consists of one to eight perianth widely bell-shaped flowers; sepals 20-30 mm, narrowly lanceolate and long tapered. Fruit is erect, four to five cm, linear, angled, and tip acuminate. Late Flowered Mariposa Lily blooms between June and August. Late-flowered mariposa lily grows in chaparral, cismontane woodland, and coastal woodland communities, often in serpentinite at elevations between 885 and 6,275 feet ASL. It ranges in San Luis Obispo, Santa Barbara, Ventura, Kern, and Los Angeles Counties. *C. fimbriatus* is threatened by grazing, development, road maintenance, and fire suppression.

Late-flowered mariposa has a "High" potential to occur in the Project Area. A CNDDB occurrence for late-flowered mariposa lily is documented near Construction 126, 127, and 128 in Segment 4.

Davidson's Saltscale (*Atriplex serenana var. davidsonii*)

STATUS		
Federal	**State / NDDB**	**CNPS** (CNPS 2001)
None	None / G5T2?,S2?	Rank 1B.2: rare, threatened, or endangered in CA and elsewhere

Davidson's saltscale is an annual herb (<1 m tall). Branches are decumbent to ascending, sparsely scaly, with flexible tips. Leaves are elliptic to lanceolate and 5-50 mm long. Flowers are a spike of 1 to many panicles, bearing a round to obovate fruit 2-3.5 mm long. Davidson's saltscale is found in sage scrub and wetland or riparian areas from 20 to 820 feet ASL. Davidson's saltscale ranges from Santa Barbara to San Diego Counties along the coast.

Davidson's saltscale has a "Moderate" potential to occur in scrub or riparian communities within the Project Area, and has been documented by CNPS in Ojai and Santa Barbara (CalFlora 2012).

Brewer's Calandria (*Calandrinia breweri*)

STATUS		
Federal	**State / NDDB**	**CNPS** (CNPS 2001)
None	None / G4, S3.2?	Rank 4.2: limited distribution, fairly threatened in California

Brewer's calandrinia is an annual herb 3-45 cm tall. It has several to many stems with simple alternate leaves. Flowers are a raceme with two glabrous sepals, and generally 5 petals (3-5 mm) and 3-6 stamens. The fruit is an elliptical seed 10-15 mm long. Flowers bloom from March to June. Brewer's calandrinia is found in burned and disturbed sites with sandy to loamy soils within chaparral, and sage scrub communities below 4,000 feet ASL. Brewer's calandrinia ranges along most of coastal California, with some occurrences along the Sierra Nevadas.

Brewer's calandrinia has a "Moderate" potential to occur within chaparral and sage scrub communities within the Project Area, and has been documented by CNPS at numerous locations within 4 miles north of the Project (CalFlora 2012).

Plummer's Mariposa Lily (*Calochortus plummerae*)

STATUS		
Federal	**State / NDDB**	**CNPS** (CNPS 2001)
FSS	None / G3G3	Rank 1B.2: rare, threatened, or endangered in CA and elsewhere

Plummer's mariposa lily is a bulbiferous herb with a fibrous coat. Stems are generally 30-60 cm long, generally branched, with no bulblets. The basal shaped leaves are 20-40 cm long, usually wither before anthesis; and cauline reduced upward and inrolled. The inflorescence consists of two to six perianth widely bell-shaped flowers; sepals 30-50 mm, narrowly lanceolate and long tapered. Fruit is erect, four to eight cm, linear, angled, and tip acuminate. Plummer's mariposa lily blooms between May and August. Plummer's mariposa lily grows in coastal scrub, chaparral, valley and foothill grasslands, cismontane woodland, and lower montane coniferous forests, often in rocky and sandy sites of granitic or alluvial material at elevations between 300 and 5,300 feet ASL. It ranges in San Luis Obispo, Ventura, Los Angeles, Orange, Riverside and San Bernardino Counties. *C. plummerae* is threatened by grazing, development, road maintenance, and fire suppression.

Plummer's mariposa lily has a "Moderate" potential to be found in coastal scrub, chaparral, and grassland communities of the Project Area.

Santa Barbara Morning Glory (*Calystegia sepium binghamiae*)

STATUS		
Federal	**State / NDDB**	**CNPS** (CNPS 2001)
None	None	Rank 1B.1: rare, threatened, or endangered in CA and elsewhere

Santa Barbara morning glory is a perennial climbing, twining or trailing sub-shrub with a glabrous to hairy stem. Leaves are lobed and spreading to entire and obscurely two-lobed. The inflorescence consists of a white corolla 44 mm long with 8-12 mm bracts, and 4-8 mm wide sepals. Santa Barbara morning glory blooms from April to June. Santa Barbara morning glory grows in coastal marshes, or riparian areas of chaparral, and cismontane woodland communities from sea level to 1,650 feet ASL. Santa Barbara morning glory was considered extinct since 1999, but a population was rediscovered in Chino in 2011.

Santa Barbara morning glory has a "Moderate" potential to occur within the low elevation riparian areas of Segments 3B and 4 in the Project Area. Historic occurrences are documented in the Project vicinity (CalFlora 2012).

Small-Flowered Morning Glory (*Convolvulus simulans*)

STATUS		
Federal	**State / NDDB**	**CNPS** (CNPS 2001)
None	None / G3,S3.2	Rank 4.2: limited distribution, fairly threatened in California

Small-flowered morning glory is an annual herb with a tufted or diffusely branched stem, 10-40 cm tall. Leaves are entire and oblanceolate to 6 cm long. The inflorescence consists of a 3-4 mm calyx with a 0.6 cm pink bell-shaped corolla. Small-flowered morning glory blooms from March to July. Small-flowered morning glory grows in clay and serpentine soils of chaparral, coastal scrub and grassland communities from 100 to 2,500 feet ASL. It ranges from the Sierra Nevada Foothills and coastal ranges from San Francisco to southern California.

Small-flowered morning glory has a “Moderate” potential to occur within scrub and grassland communities of the Project Area, and is documented by CNPS north of Lake Casitas, ~4 miles from Project Area (CalFlora 2012).

Western Dichondra (*Dichondra occidentalis*)

STATUS		
Federal	**State / NDDB**	**CNPS** (CNPS 2001)
None	None / G4, S3.2	Rank 4.2: limited distribution, fairly threatened in California

Western dichondra is a low, creeping perennial with dense hairs. Leaves are a petiole 2.5-6 cm and generally glabrous. The inflorescence is a 3-3.5 mm red to purple corolla, blooming from March to May. Western dichondra is found among rocks and shrubs in coastal scrub, chaparral, and oak woodlands from sea level to 1,650 feet ASL. The species ranges in coastal counties from San Luis Obispo to San Diego Counties.

Small-flowered morning glory has a “Moderate” potential to occur within scrub and woodland communities of the Project Area, but is not documented in the Project vicinity.

Mesa Horkelia (*Horkelia cuneata puberula*)

STATUS		
Federal	**State / NDDB**	**CNPS** (CNPS 2001)
FSS	None / G4T2, S2.1	Rank 1B.1: rare, threatened, or endangered in CA and elsewhere

Mesa horkelia is a low, matted perennial herb 20-70 cm. Leaves are stipulate or basally lobed, glabrous to hairy, and resinous smelling. The flower has five white 4-6 mm petals, 10 stamens and 30-60 pistils in the center of the flower. The hypanthium is cup-like, flat bottomed, often forming a tube. The fruit is an achene. Mesa horkelia blooms from February to September. Mesa horkelia is found in dry sandy soils of coastal chaparral, cismontane woodland, and scrub communities between 200 and 2,650 feet ASL. The species ranges from the outer southern coastal ranges and coastal areas from San Luis Obispo to San Diego Counties.

Mesa horkelia has a “Moderate” potential to occur within scrub and chaparral communities of the Project Area, but is not documented in the Project vicinity.

Carmel Valley Malcothrix (*Malacothrix saxatilis var. arachnoidea*)

STATUS		
Federal	**State / NDDB**	**CNPS** (CNPS 2001)
None	None / G5T2, S2.2	Rank 1B.2: rare, threatened, or endangered in CA and elsewhere

Carmel Valley malacothrix is a perennial growing to 2 m tall. Leaves are simple, lanceolate with entire margins. Flowers are arranged in corymbs of many-petaled white florets, blooming from March to December. The fruit is an achene. Carmel Valley malacothrix is found in rocky open areas and shale outcrops in coastal scrub and chaparral communities from 80 to 4,000 feet ASL. The species ranges from coastal areas from Monterrey to Santa Barbara Counties.

Carmel Valley malacothrix has a "Moderate" potential to occur within scrub and chaparral communities of the Project Area, and is documented by CNPS north of the Project Area (CalFlora 2012).

Ojai Navarretia (*Navarretia ojaiensis*)

STATUS		
Federal	**State / NDDB**	**CNPS** (CNPS 2001)
None	None / G1S1	Rank 1B.1: rare, threatened, or endangered in CA and elsewhere

Ojai navarretia is an annual 4-33 cm high, with spreading ascending branches. Leaves are 2-pinnate-lobed, many-toothed, and glandular-hairy. The inflorescence is a strap-shaped calyx with a 6-11 mm white corolla with a purple spot at the base, blooming from May to July. The fruit is a capsule. Ojai navarretia is found in clay soils in chaparral, coastal scrub, and grassland communities from 900 to 2,050 feet ASL. The species ranges in Ventura and Los Angeles Counties.

Ojai navarretia has a "Moderate" potential to occur in chaparral, coastal scrub, and grassland communities within the Project Area, and has been documented by CNPS in Ojai, north of Segment 4 (Calflora 2012).

Santa Ynez False Lupine (*Thermopsis macrophylla*)

STATUS		
Federal	**State / NDDB**	**CNPS** (CNPS 2001)
FSS	SR / G1, S1.3	Rank 1B.3: rare, threatened, or endangered in CA and elsewhere

Santa Ynez false lupine is an un-armed, hairy, perennial herb 120-250 cm tall. Leaves are dense hairy clusters of leaflets 4-10 cm long. The inflorescence is a raceme with persistent bracts, with a 5-lobed calyx (upper two lobes fused) 25-60 cm, blooming from April to June. The fruit is a legume. Santa Ynez false lupine is found in open areas such as fuel breaks, after burns, and on sandstone within chaparral and woodland communities from sea level to 6,890 feet ASL. The species ranges through the coastal ranges throughout the state.

Santa Ynez false lupine has a “Moderate” potential to occur in chaparral, and woodland communities within the Project Area, and has been documented by CNPS in the Project vicinity (CalFlora 2012).

4.7 Special-Status Wildlife Species

Five special-status wildlife species are documented to occur in the Project Area: Cooper’s hawk, golden eagle, northern harrier, white-tailed kite, and loggerhead shrike. Thirteen additional special-status wildlife species have a “High” or “Moderate” potential to occur in the Project Area. Minimal amounts of habitat for these species may be impacted temporarily due to vegetation trimming or removal, or lost in the few areas where a new pad or access will be cleared, however, the Project would not have a substantial adverse effect either directly or through habitat modifications on any special-status animal species.

Activities such as grading, vegetation trimming or removal, and general project noise or vibration could result in construction-related impacts to nesting birds/raptors, including potential disruption of nesting activity, or destruction of active nests. Construction disturbance during the breeding season (February 1 – August 31) that results in the incidental loss of fertile eggs or nestlings, or otherwise leads to nest abandonment is considered take by USFWS under the Migratory Bird Treaty Act, as well as by CDFG under the California Fish and Game Codes 3503, 3503.5, and 3513.

4.7.1 Special-Status Animal Species Descriptions and Occurrence

Information provided in the following animal species descriptions was compiled from CDFG (2012a), California Herps (2012), and UC Davis (2012).

Monarch Butterfly (*Danaus plexippus*)

STATUS	
Federal	**State / NDDB**
None	Winter roost trees are protected by CDFG

The monarch butterfly is a milkweed butterfly (subfamily Danainae), in the family Nymphalidae. It is perhaps the best known of all North American butterflies. Its wings feature an easily recognizable orange and black pattern, with a wingspan of 8.9–10.2 cm. The Viceroy butterfly has a similar size, color, and pattern, but can be distinguished by an extra black stripe across the hind wing. Female monarchs have darker veins on their wings, and the males have a spot called the "androconium" in the center of each hind wing from which pheromones are released. Males are also slightly larger. The monarch is famous for its southward migration and northward return in summer from Canada to Mexico and Baja California which spans the life of three to four generations of the butterfly.

Monarch butterflies were observed throughout the Project Area. Monarchs are not listed by the USFWS or CDFG, and individual monarch butterflies are not considered a sensitive resource; however, CDFG does consider monarch butterfly winter roosting sites a sensitive resource. A few clusters of eucalyptus (*Eucalyptus sp.*) and pine (*Pinus sp.*) that may provide suitable winter roosting are found in the Project vicinity, however Project activities are not expected to impact any of these tree species or any documented roosting sites.

Cooper's Hawk (*Accipiter cooperii*)

STATUS	
Federal	**State / NDDB**
MBTA	CWL

Cooper's hawk is a breeding resident throughout most of the wooded portion of the state. It breeds in southern Sierra Nevada foothills, New York Mountains, Owens Valley, and other local areas in southern California. Cooper's hawk ranges from sea level to above 9,000 ft. Dense stands of live oak, riparian deciduous, or other forest habitats near water are used most frequently by the species and they are seldom found in areas without dense tree stands, or patchy woodland habitat. Cooper's hawk catches small birds, especially young during nesting season, and small mammals, but will also take reptiles and amphibians. They breed from March through August, with peak activity May through July. A single-brood with a clutch size of 2-6, usually 4-5, is incubated by the female for 35-65 days while the male provides food.

Cooper's hawk was observed in oak woodland adjacent to the Cañada Larga drainage in Segment 1, and in the woodlands along SR 150 in the vicinity of Segment 3B. It is well documented throughout the region (eBird 2012). Oak woodlands and riparian areas of the Project Area provide suitable foraging and nesting habitat.

Golden Eagle (*Aquila chrysaetos*)

STATUS	
Federal	**State / NDDB**
BGEPA, MBTA	CFP, CWL

Golden eagle is an uncommon permanent resident and migrant throughout California; perhaps more common in southern California than in the north. Eagles range from sea level up to 11,500 ft. Habitat typically includes rolling foothills, mountain areas, sage-juniper flats, and desert. Golden eagles eat mostly lagomorphs and rodents, but will also take other mammals, birds, reptiles, and some carrion. Secluded cliffs with overhanging ledges and large trees are used for cover and nesting. Golden eagles build large platform nest, often 10 feet across and 3 feet high, of sticks, twigs, and greenery. They breed from late January through August, with the peak in March through July. A clutch size of 1-3 eggs, usually 2, is laid early February to mid-May. Incubation lasts 43-45 days, and the nestling period usually 65-70 days.

A golden eagle was observed flying in the foothills north of the Carpinteria Substation. Other records of the species exist in Cañada Larga (eBird 2012). Portions of the Project Area provide suitable hunting and roosting habitat, but poor quality nesting habitat.

Northern Harrier (*Circus cyanus*)

STATUS	
Federal	**State / NDDB**
MBTA	CSC

Northern harrier occurs from coastal salt marshes and annual grassland up to lodgepole pine and alpine meadow habitats, as high as 10,000 ft., and breeds from sea level to 5,700 feet ASL in California. They frequent meadows, grasslands, open rangelands, desert sinks, fresh and saltwater emergent wetlands, and are seldom found in wooded areas. Northern harrier is a permanent resident of the northeastern plateau and coastal areas, but less common resident of the Central Valley. They are a widespread winter resident and migrant in suitable habitat. The breeding population is much reduced, especially in the southern coastal district; destruction of wetland habitat, native grassland, and moist meadows, and burning and plowing of nesting areas during early stages of breeding cycle, are major reasons for the decline. Northern harrier feeds mostly on voles and other small mammals, birds, frogs, small reptiles, crustaceans, insects, and, rarely on fish. Harriers nest on the ground in shrubby vegetation, usually at marsh edges. Nests are built of a large mound of sticks on wet areas, and a smaller cup of grasses on dry sites. They breed from April to September, with the peak activity June through July. A single-brooded clutch averages 5 eggs, but can range from range from 3 to 12. The female incubates while the male provides food. The nestling period lasts about 53 days.

A northern harrier was observed flying in the fields in Cañada Larga in Segment 1. Additional records of the species are known from Cañada Larga and coastal lands of Carpinteria near Segment 3A (eBird 2012). Additional agricultural lands of the Project Area may provide suitable hunting and roosting habitat.

White-Tailed Kite (*Elanus leucurus*)

STATUS	
Federal	**State / NDDB**
MBTA	CFP

White-tailed kite is a common to uncommon, yearlong resident in coastal and valley lowlands; rarely found away from agricultural areas. Kites inhabit herbaceous and open stages of most habitats mostly in cismontane California, and forage in undisturbed, open grasslands, meadows, farmlands and emergent wetlands. They prey mostly on voles and other small, diurnal mammals, occasionally on birds, insects, reptiles, and amphibians. White-tailed kite uses trees with dense canopies for cover. Kites make a nest of loosely piled sticks and twigs lined with grass, straw, or rootlets, placed near the top of dense oak, willow, or other tree stand; usually 20 to100 ft above ground. They breed from February to October, with the peak from May to August. An average clutch of 4-5 eggs, with a range of 3-6, is incubated by the female for about 28 days. Young fledge in 35-40 days. During the incubation and nestling period, the male feeds the female and supplies her with food to feed the young.

White-tailed kite was observed in the area south of Shephard Mesa near Segment 3A, and is commonly seen near the Carpinteria Bluffs Preserve South of Segment 3A. Multiple records for the species are documented in Cañada Larga in Segment 1 (eBird 2012). Additional agricultural lands within the Project Area may provide suitable hunting and roosting habitat.

Loggerhead Shrike (*Lanius ludovicianus ludovicianus*)

STATUS	
Federal	**State / NDDB**
MBTA	CSC

Loggerhead shrike is a common resident and winter visitor in lowlands and foothills throughout California. They prefer open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches. The highest density occurs in open-canopied valley foothill hardwood, valley foothill hardwood-conifer, valley foothill riparian, pinyon-juniper, juniper, desert riparian, and Joshua tree habitats, and they occur only rarely in heavily urbanized areas. Shrikes eat mostly large insects, but will also take small birds, mammals, amphibians, reptiles, fish, carrion, and various other invertebrates. Loggerhead shrikes build nests on stable branches in densely-foliaged shrubs or trees, usually well-concealed at a height of 1.3 to 50 ft above ground, occasionally higher. In California, shrikes lay eggs from March into May, and young become independent in July or August. A monogamous, solitary nester, they lay a clutch of 4-8 eggs, and incubation lasts 14-15 days.

The species has previously been recorded on Segment 1 and near Construction 133 in Segment 4 during field surveys. Numerous records for the species are documented in Cañada Larga in Segment 1 (eBird 2012). Additional portions of the Project Area may provide suitable hunting, roosting, and nesting habitat.

Mule Deer (*Odocoileus hemionus*)

STATUS	
Federal	**State / NDDB**
USFS MIS	None

Mule deer are an MIS species when located on USFS lands. Mule deer are used by the ANF as an indicator of healthy diverse habitats. Mule deer were selected as an MIS for forest health related to vegetation management, roads and associated recreation management. The desired condition for mule deer is that habitat functions are maintained or improved, including primary feeding areas, winter ranges, breeding areas, birthing areas, rearing areas, migration corridors, and landscape linkages. Mule deer prefer edge habitat and vegetation ecotones, especially where openings and cover are interspersed with sources of water. These provide mosaics of vegetation with interspersions of dense shrub or trees (for hiding cover from disturbance and predation, and thermal cover during the winter and summer) among herbaceous and riparian areas (foraging habitat). Mule deer browse forbs, grasses, and shrubs. New shrub growth is preferred to mature shrubs, since it provides a more easily digestible nutrient source. Acorns (mast) are an important part of the fall diet. Mule deer are affected by roads, human interactions, and management activities that modify vegetation diversity and age class mosaics.

Mule deer and their sign were found throughout all Segments of the Project Area with native vegetation types. USFS lands within the Project Area may provide suitable foraging habitat, but would not provide adequate cover for hiding protection, or use as birthing areas.

Mountain Lion (*Puma concolor*)

STATUS	
Federal	**State / NDDB**
USFS MIS	None

Mountain lion are an MIS species when located on USFS lands. Mountain lion are used by the ANF as an indicator of healthy diverse habitats. The objectives for mountain lion are that there are functional landscape linkages and that the species is well-distributed. Mountain lions have large home ranges and require extensive areas of riparian vegetation and brushy stages of various habitats, with interspersions of irregular terrain, rocky outcrops, and tree/brush edges. Deer represent approximately 60 to 80 percent of mountain lion diet, thus mountain lions can be found wherever deer are found.

A mountain lion was observed (dead) along SR 33 in 2011, within ~0.5 mile of the Project alignment. Though portions of the Project Area provide all habitat components for the life cycle of mountain lion, USFS lands within the area provide only low-quality habitat for this species.

Arroyo Chub (*Gila orcutti*)

STATUS	
Federal	**State / NDDB**
FSS	CSC

Arroyo chub are native to the streams and rivers of the Los Angeles plain in southern California, including the Los Angeles, San Gabriel, San Luis Rey, Santa Ana, and Santa Margarita Rivers, and Malibu and San Juan Creeks. They have been extirpated from much of their native range, but have been introduced to streams along the coast as far north as Chorro Creek in San Luis Obispo County. Arroyo chub are not native to the Ventura River system, but are still protected by CDFG. Arroyo chub are small fish that can reach lengths of 120 mm SL but typical adult lengths are 70-100 mm. Males can be distinguished from females by their larger fins and, when breeding, by the prominent patch of tubercles on the upper surface of the pectoral fins. Both sexes have chunky bodies, fairly large eyes, and small mouths. Body color is silver or grey to olive-green dorsally, white ventrally, and there usually is a dull gray lateral band. Arroyo chubs are found in slow-moving or backwater sections of warm to cool streams with mud or sand substrates and depths typically greater than 40 cm. They feed on plants such as algae and water fern (Azolla), and on invertebrates such as insects and mollusks. Arroyo chubs breed more or less continuously from February through August, although most spawning takes place in June and July.

Arroyo chub have been documented within Cañada Larga in Segment 1; they were found in large pools upstream and downstream from the existing crossing and original crossing proposed to be re-established.

Ringtail (*Bassariscus astutus*)

STATUS	
Federal	**State / NDDB**
None	CFP

Ringtail is a widely distributed, common to uncommon permanent resident, occuring in various riparian habitats, and in brush stands of most forest and shrub habitats, at low to middle elevations. They are not usually found more than 0.6 mi from permanent water. Ringtail are primarily carnivorous, eating mainly rodents (woodrats and mice) and rabbits, but they will also take substantial amounts of birds and eggs, reptiles, invertebrates, fruits, nuts, and some carrion. Ringtail forage on the ground, among rocks, and in trees, and nest in rock recesses, hollow trees, logs, snags, abandoned burrows, or woodrat nests. One litter per year, with an average of 3 young are often born in May and June. Females may drive males away 3-4 days prior to giving birth.

There is a “High” potential for ringtail to use portions of the Project Area in and around riparian areas for foraging, and potential denning. An SCE crew indicated seeing a ringtail (dead) in the vicinity of the Casitas Substation.

American Badger (*Taxidea taxus*)

STATUS	
Federal	**State / NDDB**
None	CSC

American badger is an uncommon, permanent resident found throughout most of the state, except in the northern North Coast area. Badger is most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Badgers are carnivorous and eat fossorial rodents, rats, mice, chipmunks, and especially ground squirrels and pocket gophers. They also eat some reptiles, insects, earthworms, eggs, birds, and carrion. Young are born in burrows dug in relatively dry, often sandy, soil, usually in areas with sparse overstory cover. Badgers mate in summer and early fall, and an average litter of 2-3 is born usually in March and April.

There is a “High” potential for badger to use portions of Cañada Larga in Segment 1, and near the Segment 3B/4 split that may provide suitable foraging and denning habitat. A CNDDB occurrence for a badger (dead) in the vicinity of the Casitas Substation was recorded in 2008.

California Legless Lizard (*Aniella pulchra pulchra*)

STATUS	
Federal	**State / NDDB**
FSS	CSC

California legless lizard is a secretive fossorial lizard that is common in the Coast Ranges from Contra Costa Countys to the Mexican border, from near sea level to about 6,000 ft. California legless lizard is found in coastal dune, woodland, chaparral, and coastal scrub types with friable soils and duff layers. This lizard usually forages at the base of shrubs or other vegetation either on the surface or just below it in leaf litter or sandy soil. Legless lizards eat insect larvae, small adult insects, and spiders. The reproductive season begins with mating activities in late spring or early summer. The gestation period is about 4 months. Live young are born in September, October, or even November. Litter size ranges from one to four but two is common.

There is a "Moderate" potential for California legless lizard to occur in woodland, chaparral, or scrub communities of the Project Area. A CNDDB occurrence for legless lizard is documented five miles southwest of Segment 1 in Ventura.

Coast Horned Lizard (*Phrynosoma blainvillii*)

STATUS	
Federal	**State / NDDB**
FSS	CSC

The coast horned lizard is uncommon to common in valley-foothill hardwood, conifer and riparian habitats, as well as in pine-cypress, juniper and annual grassland habitats throughout the central and southern California coast from sea level to 6,000 ft in the mountains of southern California. Horned lizards forage on the ground in open areas, usually between shrubs and often near ant hills. Small beetles are taken in large numbers when especially abundant, and other insects are taken as food items, including wasps, grasshoppers, flies, and caterpillars. This species relies on camouflage for protection and often hesitates to move at the approach of a predator. Horned lizards often bask in the early morning on the ground or on elevated objects such as low boulders or rocks. Predators and extreme heat are avoided by horned lizards by burrowing into loose soil. Periods of inactivity and winter hibernation are spent burrowed into the soil under surface objects such as logs or rocks, in mammal burrows, or in crevices.

Little is known about habitat requirements for breeding and egg-laying. Males may use elevated "viewing platforms" such as cow dung to locate females during the reproductive season. Eggs are apparently laid in nests constructed by females in loose soil.

There is a "Moderate" potential for coast horned lizard to use more open areas of various communities throughout the Project Area. CNDDB occurrences for coast horned lizard are documented surrounding the Project vicinity.

Two-Striped Garter Snake (*Thamnophis hammondii*)

STATUS	
Federal	**State / NDDB**
FSS	CSC

The two-striped garter snake is distributed from the southeastern slope of the Diablo Range and the Salinas Valley south along the South Coast and Transverse ranges to the Mexican border, and on Santa Catalina Island. Historically common, it is associated with permanent or semi-permanent bodies of water in a variety of habitats from sea level to 8,000 feet ASL. Highly aquatic, two-striped garter snakes forage primarily in and along streams taking fishes, especially trout and sculpins and their eggs, and amphibians and amphibian larvae. Small mammals and invertebrates such as leeches and earthworms are also taken. The preferred nocturnal retreats of this active diurnal snake are thought to be holes, especially mammal burrows, crevices, and surface objects. During the day this garter snake often basks on streamside rocks or on densely vegetated stream banks. When disturbed it usually retreats rapidly to water. In milder areas mammal burrows and surface objects such as rocks and rotting logs serve as winter refuges.

Courtship and mating normally occur soon after spring emergence. Young are born alive in the late summer, usually in secluded sites such as under the loose bark of rotting logs or in dense vegetation near pond or stream margins.

There is a "Moderate" potential for two-striped garter snake to occur in riparian communities throughout the Project Area.

South Coast Garter Snake (*Thamnophis sirtalis ssp.*)

STATUS	
Federal	**State / NDDB**
None	CSC

South coast garter snake is distributed along the Coast and Transverse ranges to the Mexican border. It utilizes a wide variety of habitats including forests, mixed woodlands, grassland, chaparral, and farmlands, often near ponds, marshes, or streams. Highly aquatic, south coast garter snakes forage primarily in and along streams taking fishes, birds and their eggs, amphibians and amphibian larvae. Small mammals and invertebrates such as leeches and earthworms are also taken. The preferred nocturnal retreats of this active diurnal snake are thought to be holes, especially mammal burrows, crevices, and surface objects. During the day this garter snake often basks on streamside rocks or on densely vegetated stream banks. When disturbed it usually retreats rapidly to water. In milder areas mammal burrows and surface objects such as rocks and rotting logs serve as winter refuges. Courtship and mating normally occur soon after spring emergence. Young are born alive spring to fall, usually in secluded sites such as under the loose bark of rotting logs or in dense vegetation near pond or stream margins.

There is a "Moderate" potential for south coast garter snake to occur in riparian communities throughout the Project Area.

Burrowing Owl (*Athene cunicularia*)

STATUS	
Federal	**State / NDDB**
MBTA	CSC

Burrowing owl is a yearlong resident of open, dry grassland and desert habitats, and in grass, forb and open shrub stages of pinyon-juniper and ponderosa pine forests as high as 5,300 feet ASL. Burrowing owl eats mostly insects, but will also take small mammals, reptiles, birds, and carrion. Owls hunt from a perch, hovering, and hopping after prey on ground. Burrowing owls use rodent or other burrows for roosting and nesting cover. Burrowing owl usually nests in old burrows of ground squirrel, or other small mammals, but may dig their own burrow in soft or friable soil. The nest chamber is lined with excrement, pellets, debris, grass, and feathers; though is sometimes unlined. Pipes, culverts, buildings and nest boxes are used where burrows are scarce. Breeding occurs from March through August, with the peak in April and May. Clutch size is 2-10, with an average of 5-6 eggs. Young emerge from the burrow about 2 weeks after hatching, and fly by about 4 weeks. Burrowing owls are semicolonial, and probably the most gregarious owl in North America.

There is a "Moderate" potential for burrowing owl to utilize portions of the Project Area. Suitable breeding and foraging habitat is present in ground squirrel communities in Cañada Larga in Segment 1, and near the Segment 3B/4 split. Burrowing owl is a documented winter visitor in Cañada Larga (eBird 2012).

Peregrine Falcon (*Falco perigrinus anatum*)

STATUS	
Federal	**State / NDDB**
FSS, MBTA	CFP

The peregrine falcon is a medium to large falcon with males measuring 36-49 cm and females measuring 45-58 cm in total length. Adults have bluish-grey upperparts and whitish, grayish, or buffy with a variable amount of blackish spotting and barring on underparts. Undersides of the wings and tail are barred pale gray and black. A variable-width, blackish facial stripe extends down from the eyes across the malar. This stripe is usually offset by pale auriculars or "cheek". Peregrine falcons feed on a variety of birds and will occasionally take mammals, insects, and fish. They typically feed on highly mobile, flocking, and colonial nesting birds, such as shorebirds, waterfowl, doves, and pigeons. Many breeding pairs in California remain at or in the vicinity of the nesting grounds year-round, while others migrate locally to more favorable winter foraging habitats. Peregrine falcons nest almost exclusively on protected ledges of high cliffs, primarily in woodland, forest, and coastal habitats. Nest sites usually provide a panoramic view of open country, are near water, and are associated with a local abundance of passerine, waterfowl, or shorebird prey. The breeding season of the American peregrine falcon generally extends from early March to late August. A month or two after courtship begins, females normally lay four eggs (range of 3–5). In southern California, the first egg is usually laid mid- to late February. Both sexes incubate eggs and incubation typically takes 29-33 days. Fledging occurs in late May to early June when the young are 35-42 days old. Juveniles become independent 6-15 weeks after fledging.

There is a "Moderate" potential for peregrine to utilize portions of the Project Area. Suitable foraging habitat is present in more open areas of the Project Area, but no suitable nesting habitat is present.

Song Sparrow (*Melospiza melodia*)

STATUS	
Federal	**State / NDDB**
MIS, MBTA	None

Song sparrow is a common resident of most of California, but avoids higher mountains and occurs only locally in southern deserts. In winter, most leave montane habitats and are more abundant and widespread then in lowlands and deserts. During all seasons, they prefer riparian, fresh or saline emergent wetland, and wet meadow habitats. Seeds are the most important foods in the annual diet, but insects, spiders, other small invertebrates, make up almost half of diet in nesting season. Berries and other small fruits are minor foods, and they regularly take crustaceans and mollusks along the coast. Song sparrow usually forages on the ground or in low vegetation, and under cover of dense thickets or wetland vegetation where they glean from the ground or low plants and often scratch in the litter. They require low, dense vegetation for protective cover, usually near water. A monogamous, solitary nester, song sparrow breeds in riparian thickets of willows, other shrubs, vines, tall herbs, and in fresh or saline emergent vegetation. They build nests on the ground, or in shrubs, thickets, emergent vegetation, and small trees, usually within 4 feet of ground, usually near water, or in other moist site. Nesting season usually begins in April, when the female lays a clutch size of 3 or 4, and are often double-brooded, sometimes triple-brooded. Incubation lasts 12 to 14 days. Altricial young are tended by both parents, and leave the nest at about 10 days and become independent about 25 days later.

There is a “Moderate” potential for song sparrow to utilize suitable nesting and foraging habitat in the riparian areas of the Project Area, and they have been documented in Cañada Larga and Rincon Creek (eBird 2012).

Pallid Bat (*Antrozuos pallidus*)

STATUS	
Federal	**State / NDDB**
FSS	CSC

The pallid bat is a locally common species of low elevations in California. A yearlong resident in most of the range, it occurs throughout California except for the high Sierra Nevada and the northwestern corner of the state. They inhabit a wide variety of habitats 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. Pallid bat takes a wide variety of insects and arachnids, including beetles, orthopterans, homopterans, moths, spiders, scorpions, solpugids, and Jerusalem crickets. The stout skull and dentition of this species allows it to take large, hard-shelled prey. Pallid bat forages over open ground, in slow and maneuverable flight with frequent dips, swoops, and short glides. Many prey are taken on the ground, though gleaning is frequently used, and a few prey are taken aerially. Day roosts are in caves, crevices, mines, and occasionally in hollow trees and buildings, while night roosts may be in more open sites, such as porches and open buildings. Few hibernation sites are known, but they probably use 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 bat mates from late October to February, and fertilization is delayed. Gestation is 53 to 71 days, and young are born from April to July, mostly from May to June. The average litter is 2, but females reproducing for the first time usually have 1 young. The altricial young are weaned in 7 wk, and are observed flying in July and August. Females nurse only their own young. Females and juveniles forage together after weaning.

There is a “Moderate” potential for pallid bat to forage in more open areas of the Project Area, and they may utilize trees or other substrate for day roosts. No maternity colony habitat is present within the area.

San Diego Desert Woodrat (*Neotoma lepida intermedia*)

STATUS	
Federal	**State / NDDB**
None	CSC

San Diego desert woodrat inhabits virtually all of southern California, with it's rrange extending northward along the coast to Monterey County, and along the Coast Range to San Francisco Bay. In southeastern California, it is found throughout the Mojave Desert and the Tehachapi and San Bernardino Mountains. Common to abundant in rocky areas within Joshua tree, pinyon-juniper, mixed and chamise-redshank chaparral, sagebrush, and most desert habitats, but also found in a variety of other habitats from sea level to 8,500 feet ASL. San Diego desert woodrat eats buds, fruits, seeds, bark, leaves, and young shoots of many plant species, and in coastal scrub, it prefers live oak, chamise, and buckwheat as food plants. Houses are constructed with twigs, sticks, cactus parts, and rocks, depending on availability of building materials. Desert woodrats are particularly abundant in rock outcrops and rocky cliffs and slopes, with the "house" usually being built against a rock crevice, at the base of creosote or cactus, or in the lower branches of trees. Rock crevices appear preferred where available, but woodrats generally adapt to virtually any situation. Houses are used for nesting, food caching, and predator escape. Solitary nests of dried vegetation, usually fibrous grass parts or shredded stems, are located within the stick house. San Diego desert woodrat breeds from October to May, depending on the habitat. Gestation lasts 30-36 days for an average litter size of 2.7 (range 1-5). Weaning occurs at 27 to 40 days.

There is a “Moderate” potential for San Diego desert woodrat to utilize portions of the Project Area. Middens of dusky-footed woodrat, a closely related species, are found throughout scrub, chaparral and woodland areas of the Project Area indicating it may be suitable habitat. The species is documented 1 to 2 miles southwest of Segment 3A.

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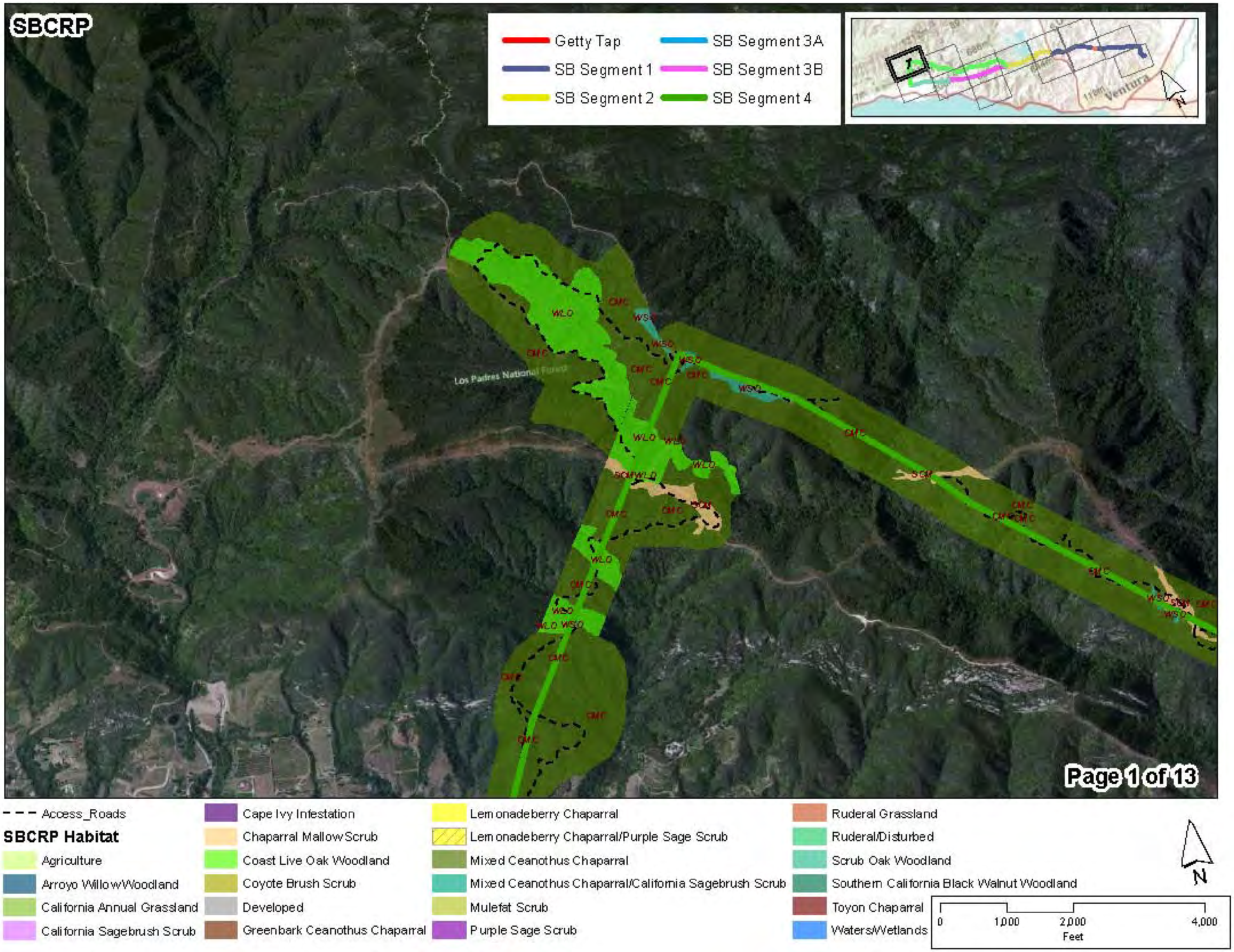
APPENDIX A:

Vegetation Community Maps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Getty Tap
SB Segment 1
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SB Segment 3A
SB Segment 3B
SB Segment 4
Ventura
Los Padres National Forest
Page 1 of 13
Access_Roads
SBCRP Habitat
Agriculture
Arroyo Willow Woodland
California Annual Grassland
California Sagebrush Scrub
Cape Ivy Infestation
Chaparral Mallow Scrub
Coast Live Oak Woodland
Coyote Brush Scrub
Developed
Greenbark Ceanothus Chaparral
Lemonadeberry Chaparral
Lemonadeberry Chaparral/Purple Sage Scrub
Mixed Ceanothus Chaparral
Mixed Ceanothus Chaparral/California Sagebrush Scrub
Mulefat Scrub
Purple Sage Scrub
Ruderal Grassland
Ruderal/Disturbed
Scrub Oak Woodland
Southern California Black Walnut Woodland
Toyon Chaparral
Waters/Wetlands
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2,000
4,000
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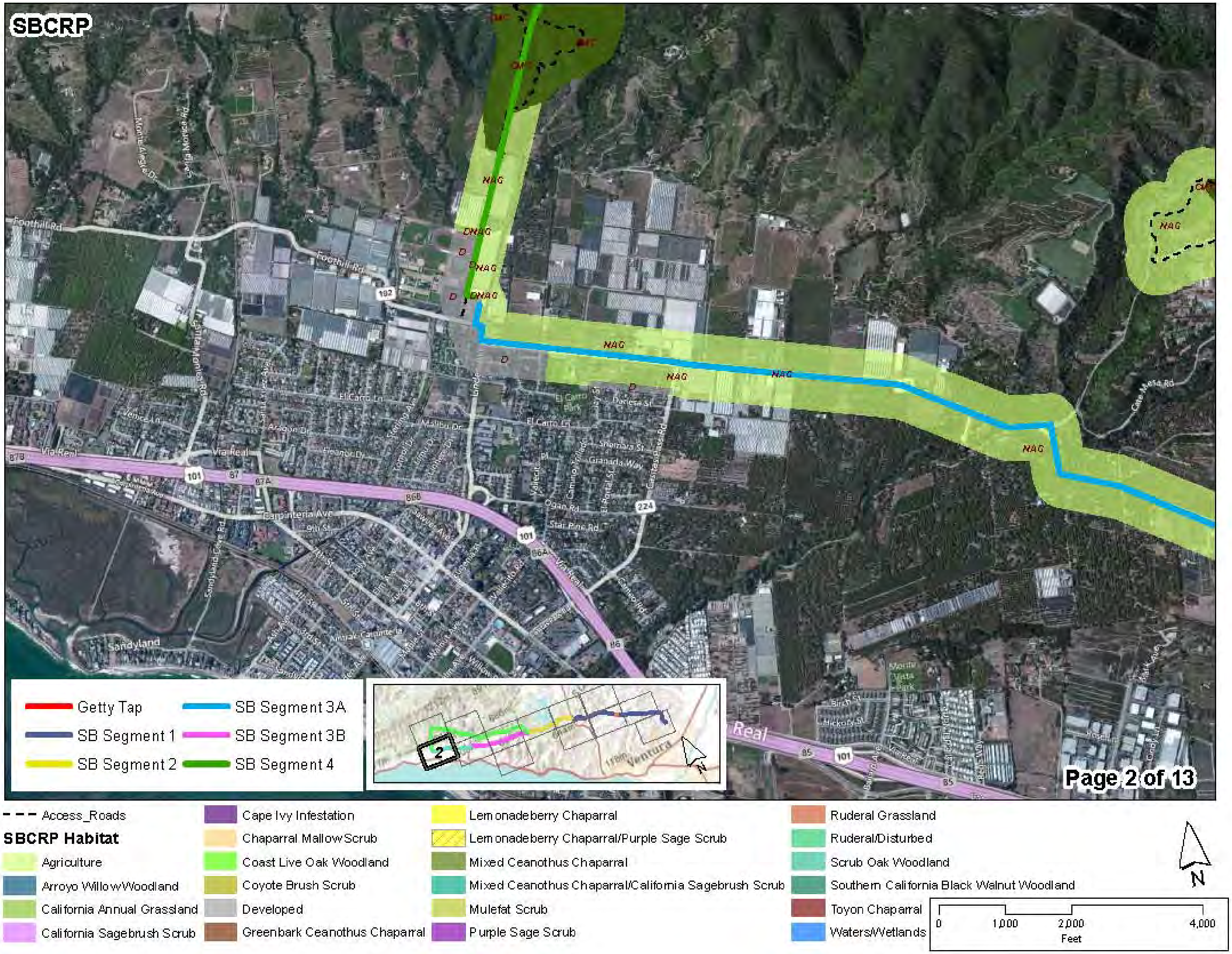
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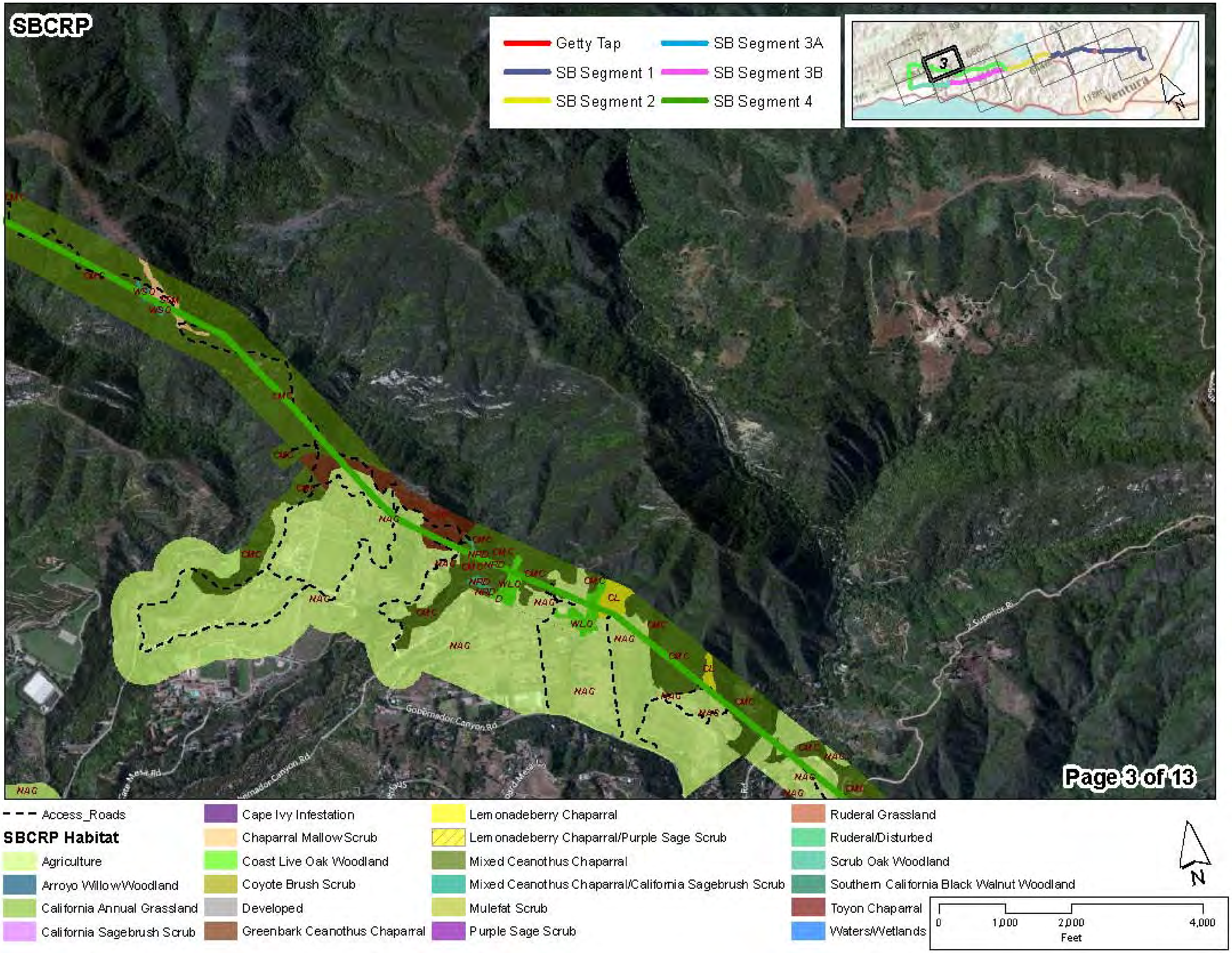
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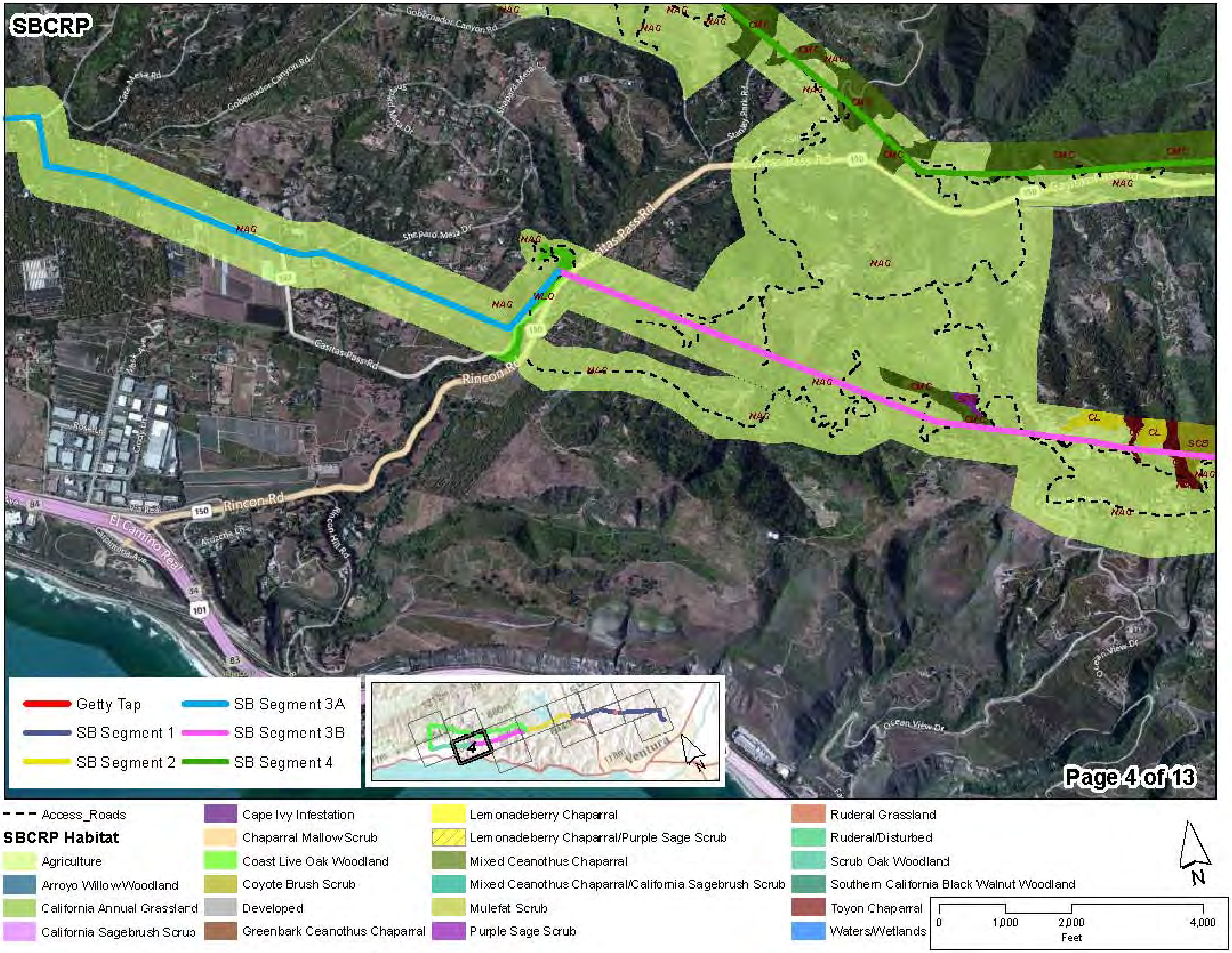
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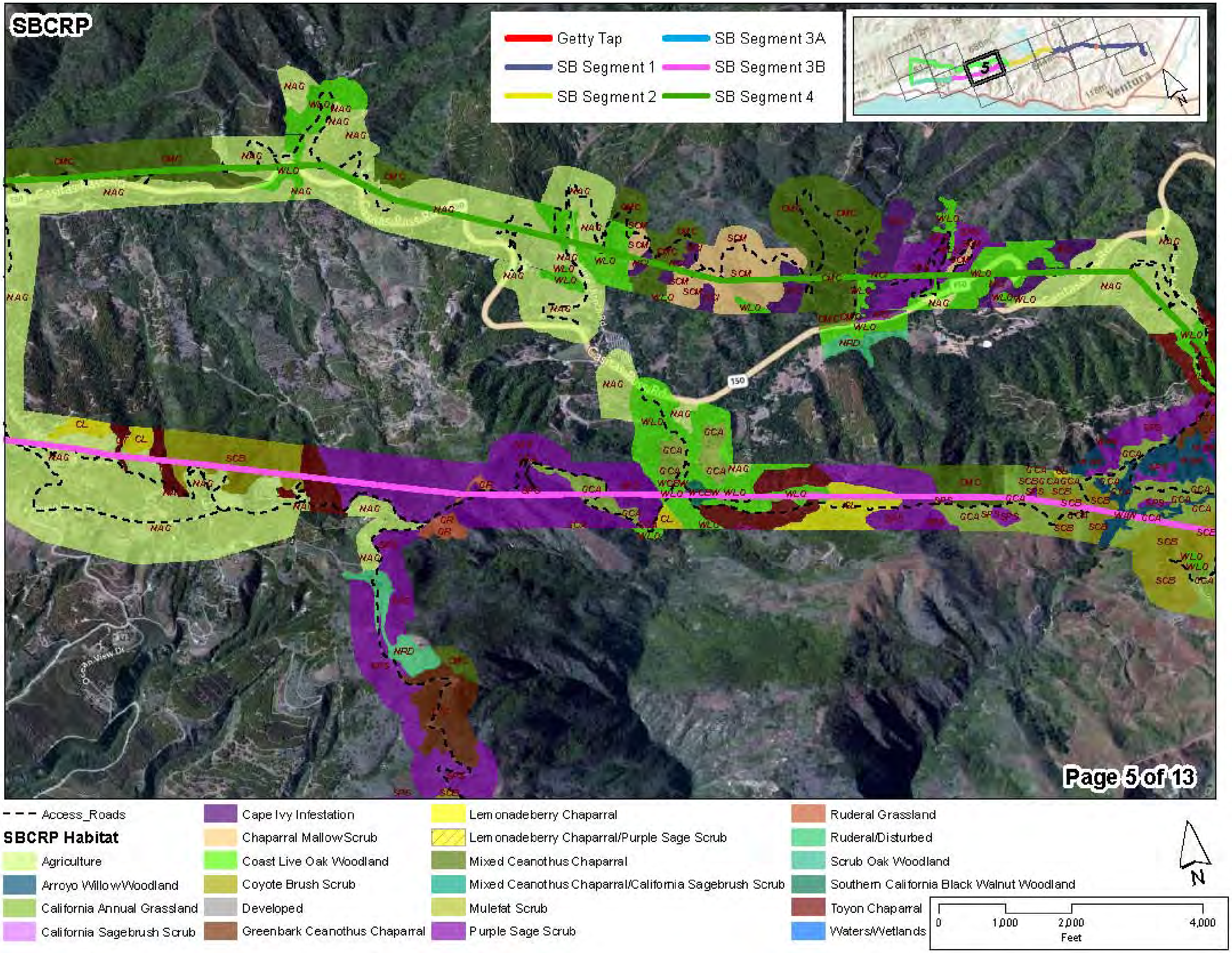

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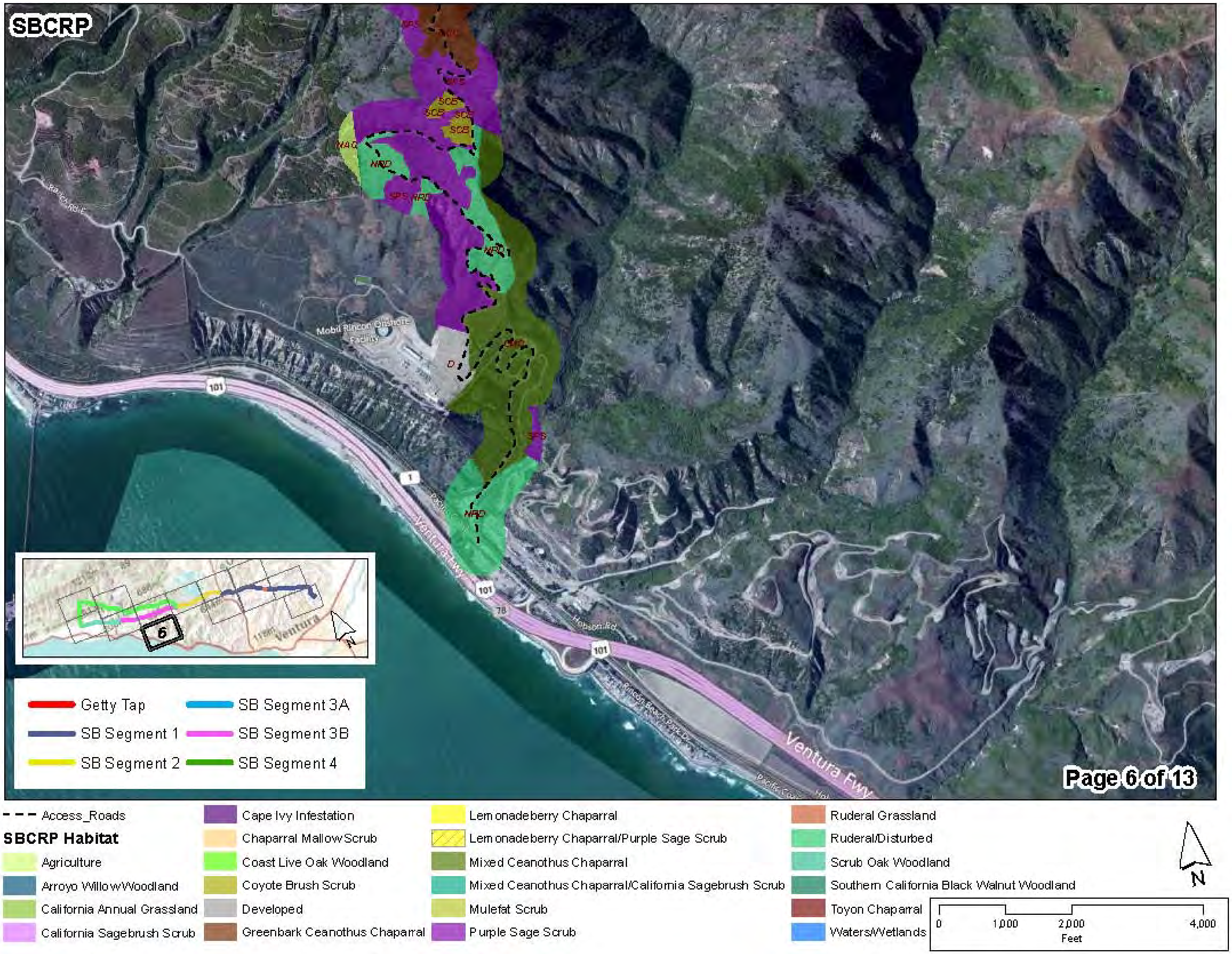
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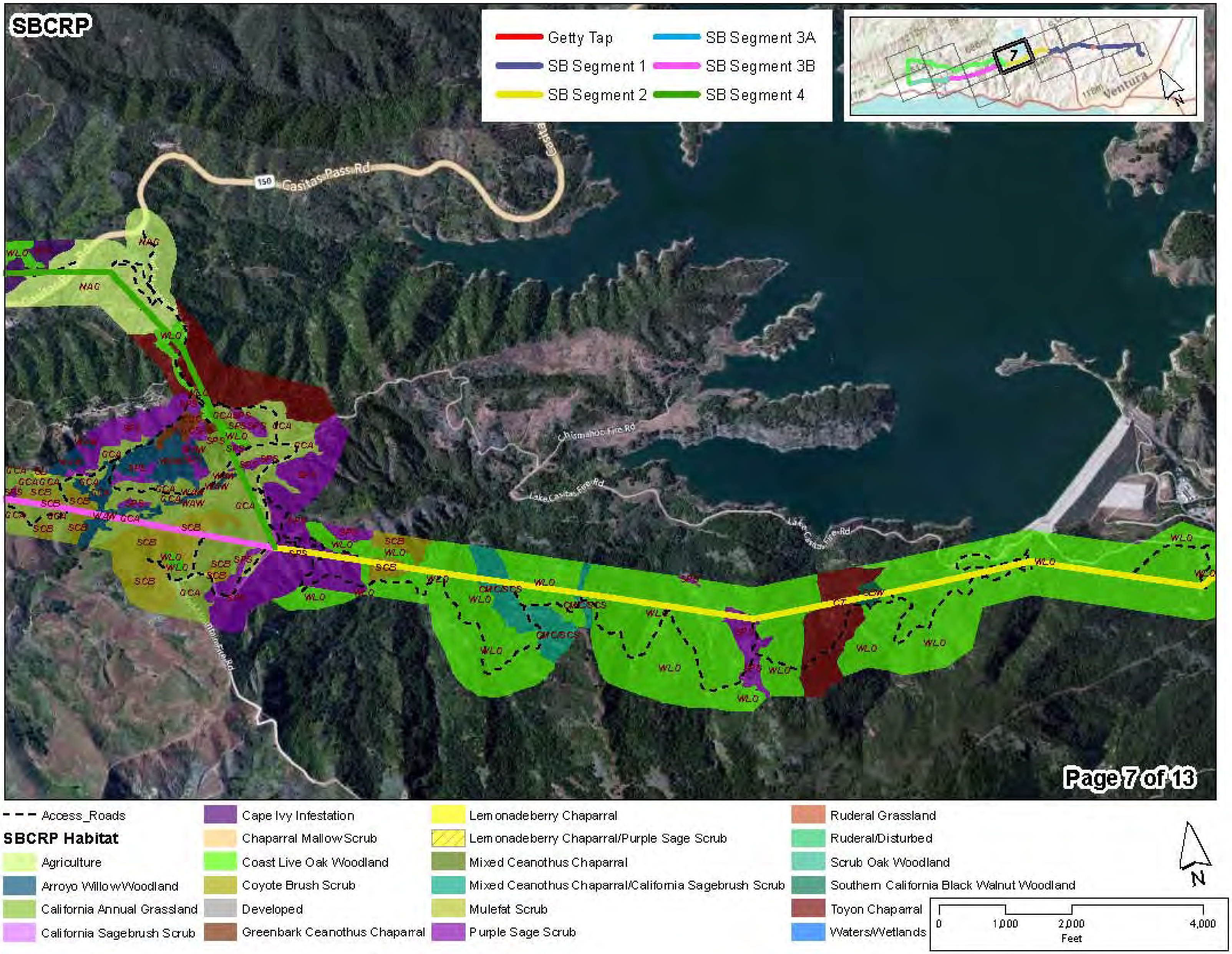

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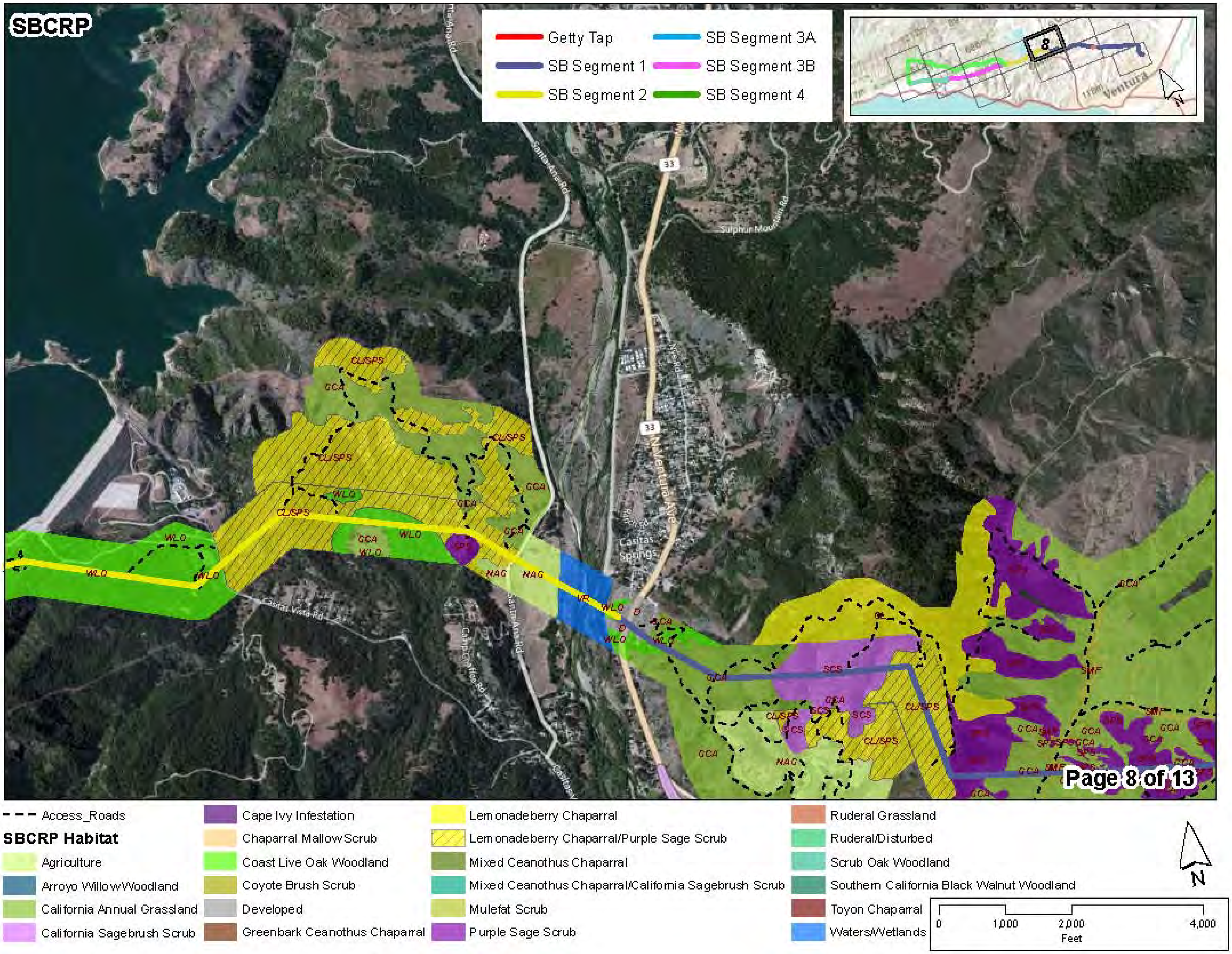
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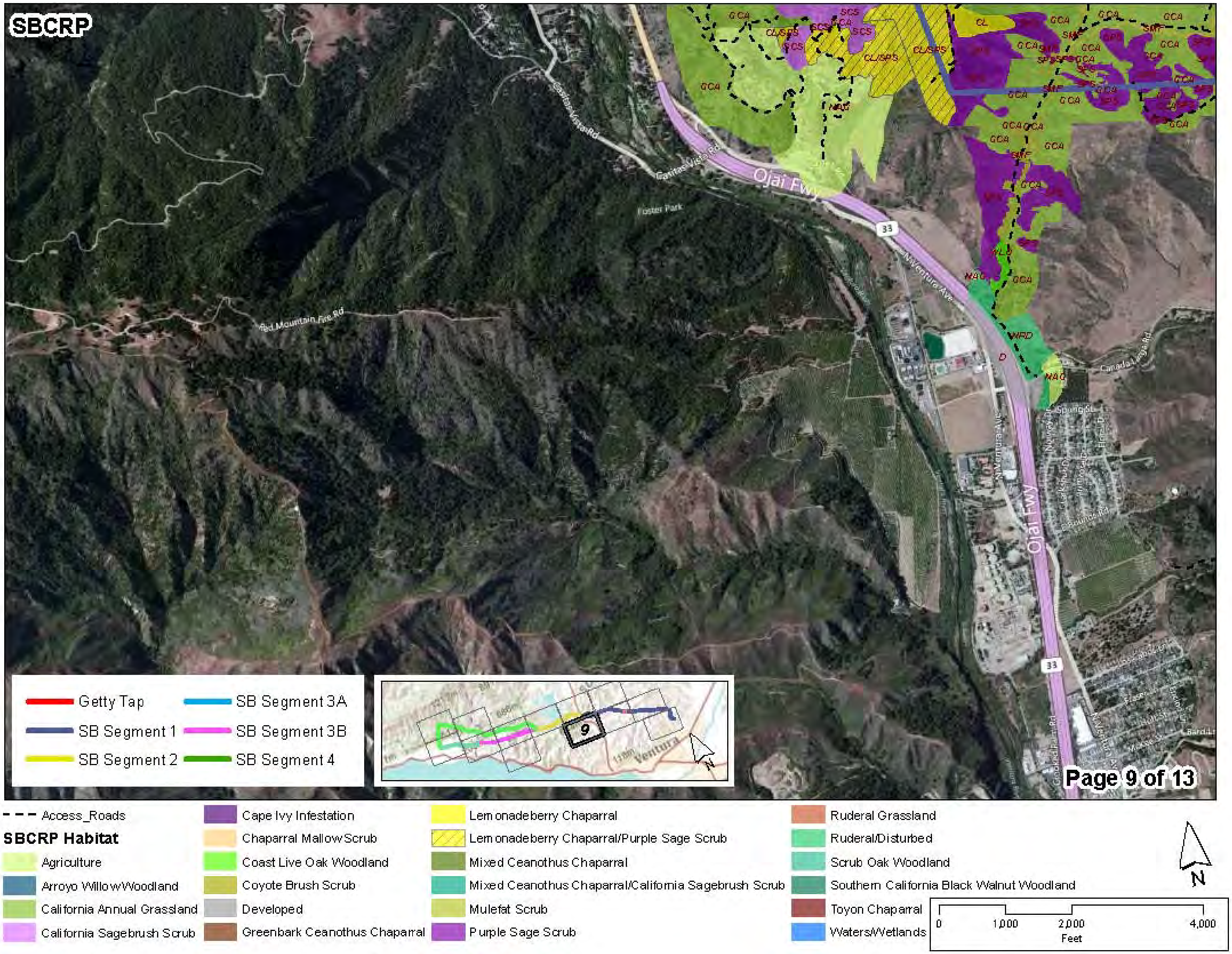
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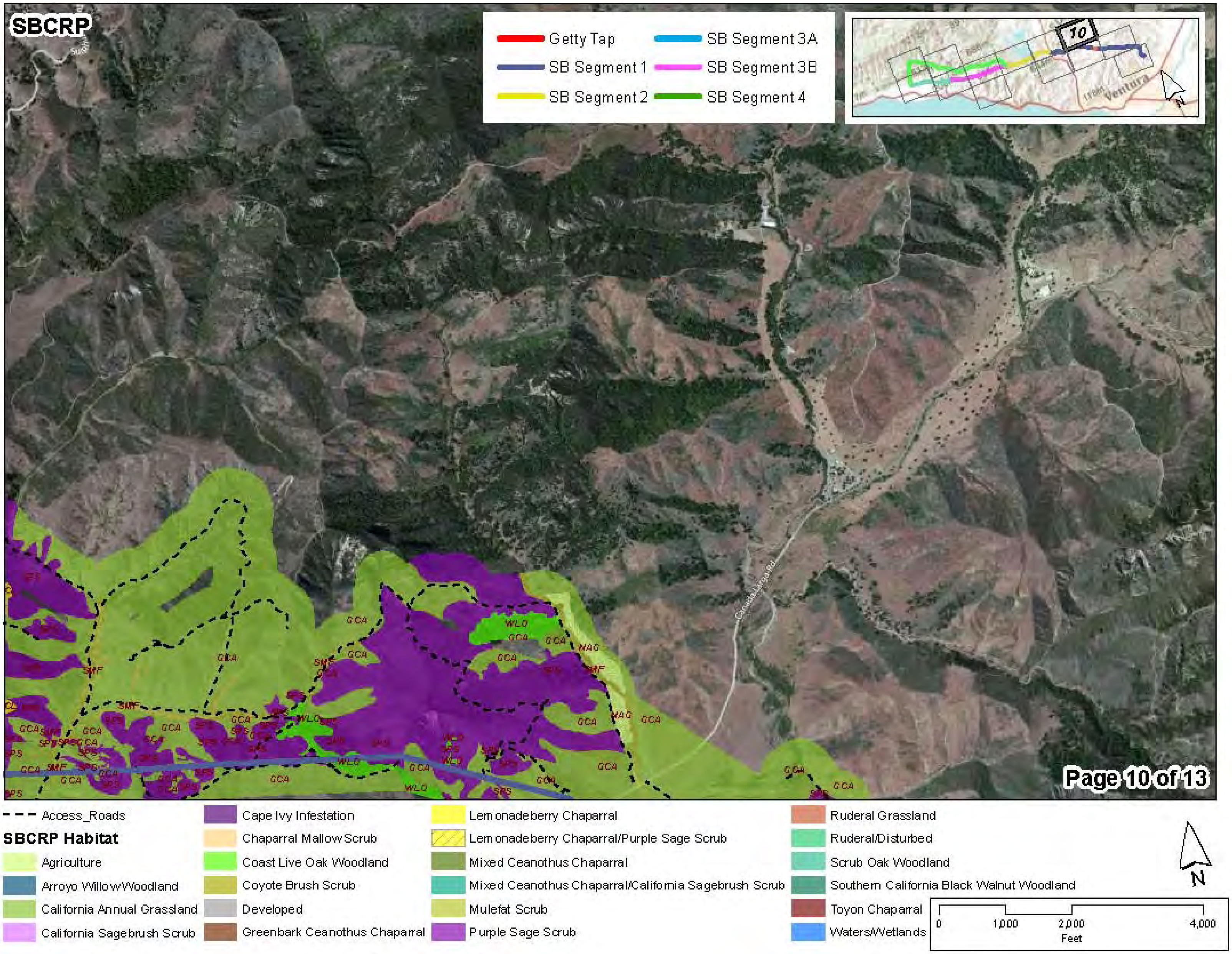

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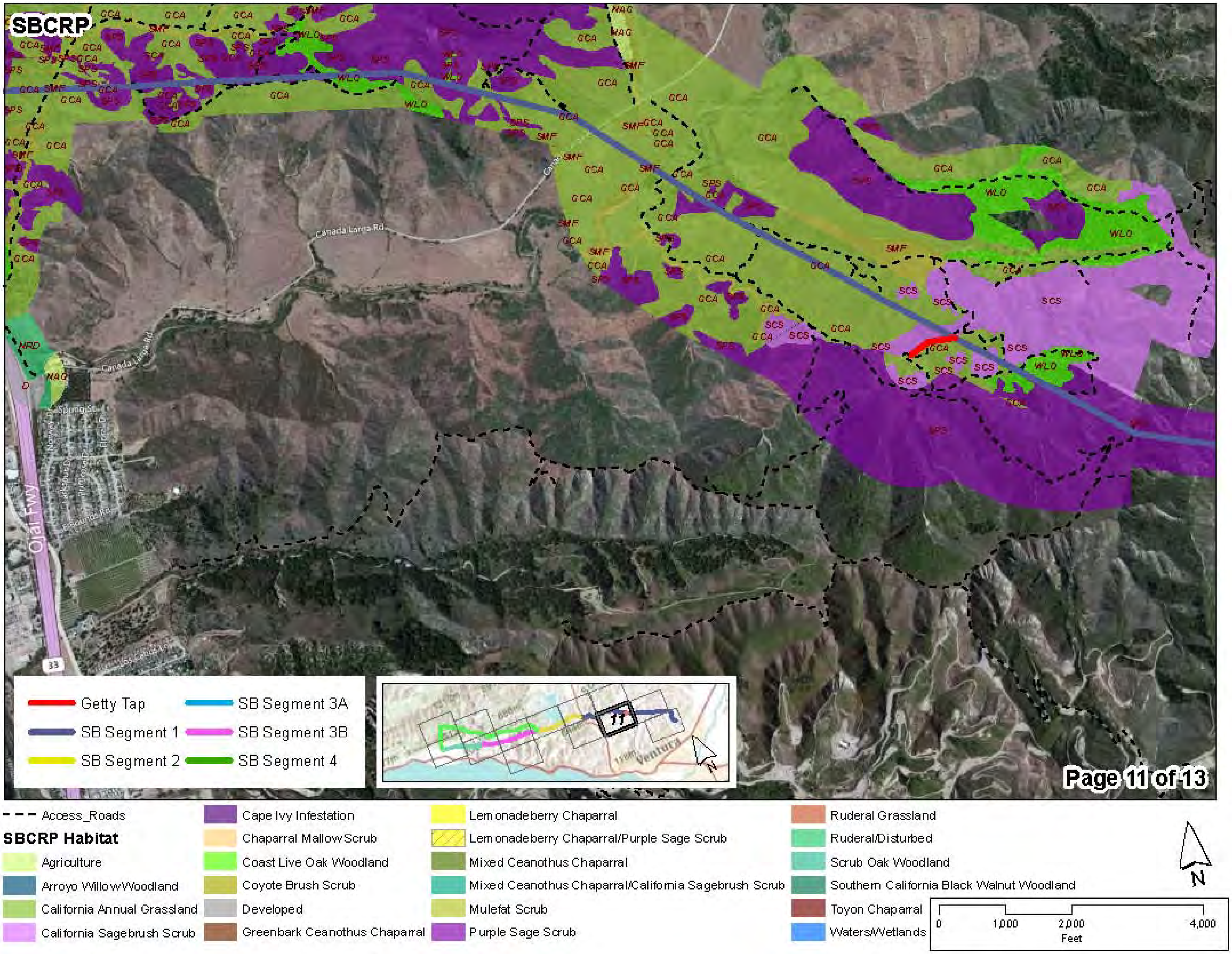
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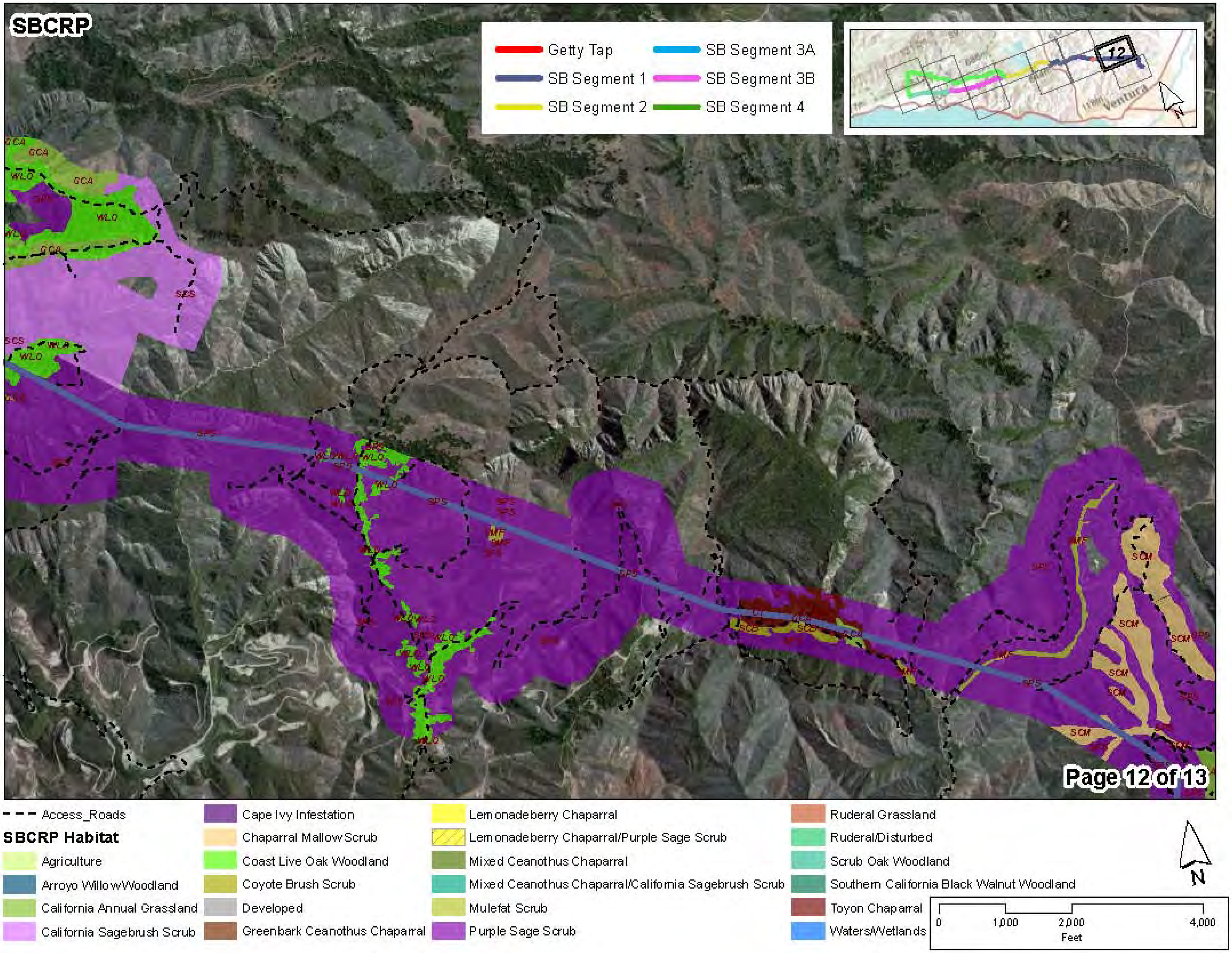
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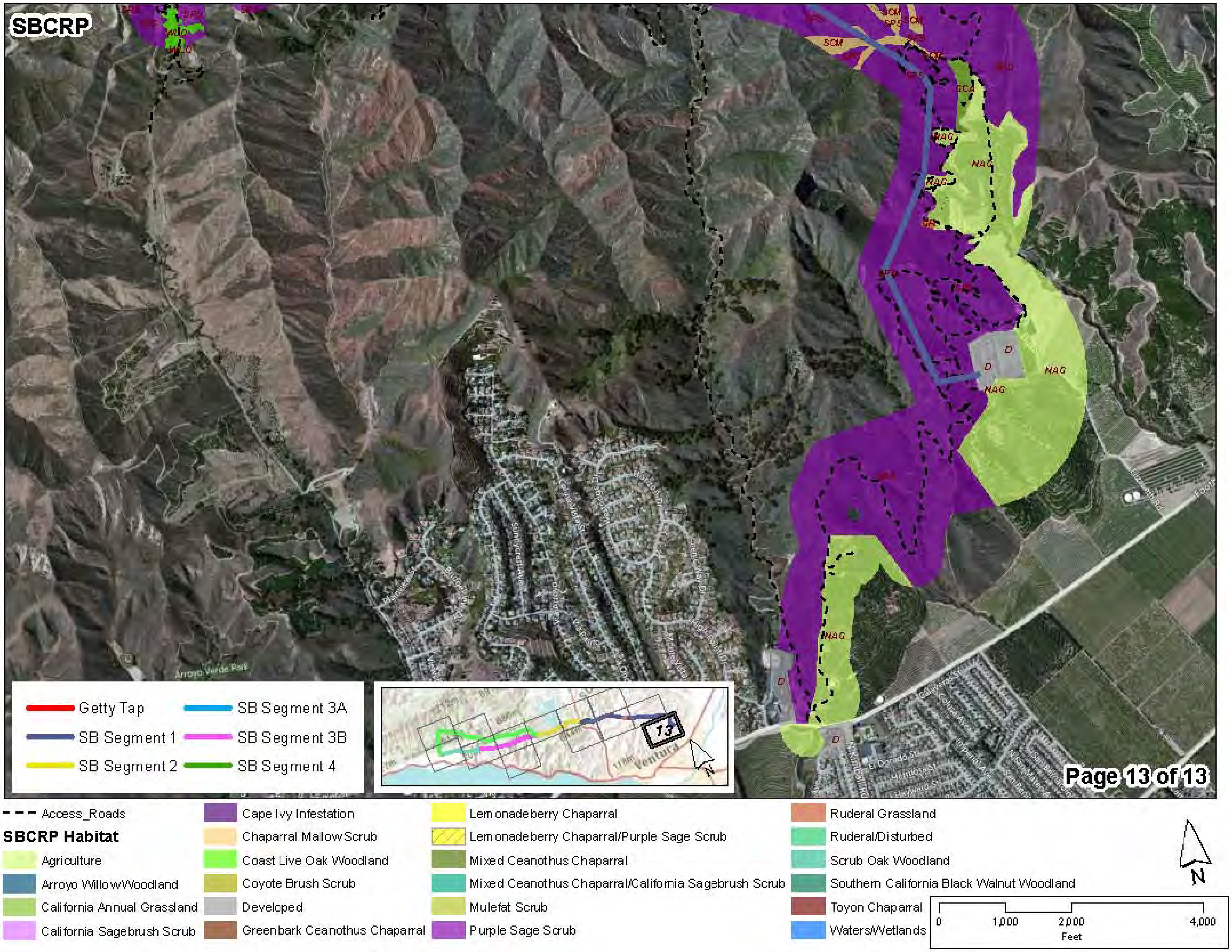

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APPENDIX B:

Plant and Wildlife Species Compendiums

Plant Species Observed During Botanical Surveys Along Project Alignment. An asterisk indicates taxa not native to California, bold indicates a special-status species.

Common Name	Scientific Name
white yarrow	*Achillea millefolium* var. *millefolium*
deerweed	*Acmispon glaber* var. *glaber*
hosackia	*Acmispon maritimus* var. *maritimus*
chamise	*Adenostoma fasciculatum*
California maiden-hair	*Adiantum jordanii*
mountain dandelion	*Agoseris heterophylla*
colonial bentgrass	*Agrostis capillaris**
bentgrass	*Agrostis viridis**
Carolina foxtail	*Alopecurus carolinianus*
ragweed, western ambrosia	*Ambrosia psilostachya* var. *californica*
scarlet pimpernel	*Anagallis arvensis**
cherimoya	*Annona cherimola**
Santa Ynez Mountains manzanita	*Arctostaphylos glandulosa mollis*
bigberry manzanita	*Arctostaphylos glauca*
California sagebrush	*Artemisia californica*
mugwort	*Artemisia douglasiana*
big sagebrush	*Artemisia tridentata tridentata*
narrowleaf milkweed	*Asclepias fascicularis*
freckled milkvetch	*Astragalus lentiginosus* var.
antisell three-pod milkvetch	*Astragalus trichopodus* var. *phoxus*
Brewer’s big saltbush	*Atriplex lentiformis breweri*
Australian saltbush	*Atriplex semibaccata**
slender wild oats	*Avena barbata**
wild oats	*Avena fatua**
coyote brush	*Baccharis pilularis*
Plummer's baccharis	***Baccharis plummerae plummerae***
mulefat	*Baccharis salicifolia salicifolia*
goldenstars	*Bloomeria crocea crocea*
shortfoot brachypodium	*Brachypodium distachyon**
black mustard	*Brassica nigra**
California brickellbush	*Brickellia californica*
California brome	*Bromus carinatus*

Common Name	Scientific Name
ripgut brome	*Bromus diandrus**
soft chess	*Bromus hordeaceus**
woodland brome	*Bromus laevipes*
foxtail chess	*Bromus madritensis madritensis**
red brome	*Bromus madritensis rubens**
fairy lantern	*Calochortus albus*
Catalina mariposa lily	***Calochortus catalinae***
late-flowered mariposa lily	***Calochotus fimbriatus***
coast morning-glory	*Calystegia macrostegia cyclostegia*
western morning glory	*Calystegia occidentalis*
Italian thistle	*Carduus pycnocephalus**
sea fig	*Carpobrotus chilensis**
Hottentot fig	*Carpobrotus edulis**
coast paintbrush	*Castilleja affinis affinis*
hoaryleaf ceanothus	*Ceanothus crassifolius*
buckbrush	*Ceanothus cuneatus* var. *cuneatus*
chapparal whitethorn	*Ceanothus leucodermis*
bigpod ceanothus	*Ceanothus megacarpus* var. *megacarpus*
hoary ceanothus	*Ceanothus oliganthus*
greenbark ceanothus	*Ceanothus spinosus*
blueblossom	*Ceanothus thyrsiflorus* var. *thyrsiflorus*
tocalote	*Centaurea melitensis**
birchleaf mountain mahogany	*Cercocarpus betuloides* var. *betuloides*
rattlesnake spurge	*Chamaesyce albomarginata*
Mexican tea	*Chenopodium ambrosioides**
California goosefoot, soaproot	*Chenopodium californicum*
common soaproot, wavyleaf soap plant	*Chlorogalum pomeridianum* var. *pomeridianum*
red thistle	*Cirsium occidentale* var. *venustum*
bull thistle	*Cirsium vulgare**
lemon	*Citrus x limon**
orange	*Citrus x sinensis**
four-spotted purple clarkia	*Clarkia purpurea quadrivulnera*
elegant clarkia	*Clarkia unguiculata*
miners kettuce	*Claytonia perfoliata*

Common Name	Scientific Name
chaparral clematis	*Clematis lasiantha*
virgin’s bower	*Clematis ligusticifolia*
yerba buena	*Clinopodium douglasii*
poison hemlock	*Conium maculatum**
sandaster	*Corethrogyne filaginifolia*
Pampas grass	*Cortedaria selloana**
beaked hawksbeard	*Crepis vesicaria taraxacifolia**
popcorn flower	*Cryptantha spp.*
dodder	*Cuscuta sp.*
Bermuda grass	*Cynodon dactylon**
Spanish broom	*Cytisus multiflorus**
Cape ivy	*Dalairea odorata**
jimson weed	*Datura wrightii*
Queen Anne's lace	*Daucus carota**
rattlesnake weed	*Daucus pusillus*
clustered tarplant	*Deinandra fasciculata*
western tansymustard	*Descurainia pinnata*
blue dicks	*Dichelostemma capitatum capitatum*
shooting star	*Dodecatheon clevlandii*
coastal wood fern	*Dryopteris arguta*
lance leaved live forever	*Dudleya lanceolata*
giant wild-rye	*Elymus condensatus*
woodland wild rye	*Elymus glaucus glaucus*
wheat grass	*Elymus stebbinsii*
creeping wild rye	*Elymus triticoides*
devils thorn	*Emex spinosa**
California bush sunflower	*Encelia californica*
California fuschia, zauschneria	*Epilobium canum canum*
broad-leaved California fuchsia	*Epilobium canum latifolium*
dove weed	*Eremocarpus setigerus*
flax-leaved horseweed	*Erigeron bonariensis**
horseweed	*Erigeron canadensis*
slender fleabane	*Erigeron foliosus* var. *foliosus*
coastal buckwheat	*Eriogonum cinereum*

Common Name	Scientific Name
leafy California buckwheat	*Eriogonum fasciculatum* var. *foliolosum*
naked buckwheat	*Eriogonum nudum*
golden yarrow	*Eriophyllum confertiflorum* var. *confertiflorum*
longbeak stork's bill	*Erodium botyrs**
redstem filaree	*Erodium cicutarium**
whitestem filaree	*Erodium moschatum**
western wallflower	*Erysimum capitatum* var. *capitatum*
California poppy	*Eschscholzia californica*
Tasmanian blue gum eucalyptus	*Eucalyptus globulus globulus**
eucrypta	*Eucrypta chrysanthemifolia*
petty spurge	*Euphorbia peplus**
western goldenrod	*Euthamia occidentalis*
slender fescue	*Festuca bromoides**
Italian rye	*Festuca perennis**
California filago	*Filago californica*
fennel	*Foeniculum vulgare**
wild strawberry	*Fragaria vesca*
alkali heath	*Frankenia salina*
California flowering ash	*Fraxinus dipetala*
California flannel bush	*Fremontodendron californicum californicum*
chaparral bedstraw	*Galium angustifolium angustifolium*
common bedstraw	*Galium aparine*
San Diego bedstraw	*Galium nuttallii nuttallii*
Carolina geranium	*Geranium carlinianum*
cutleaf geranium	*Geranium dissectum**
green everlasting	*Gnaphalium californicum*
sawtooth goldenbush	*Hazardia squarrosa* var. *obtusa*
peak rush-rose	*Helianthemum scoparium*
common sunflower	*Helianthus annuus*
bristly ox-tongue	*Helminthotheca echioides**
chapparal yucca	*Hesperoyucca whipplei*
toyon	*Heteromeles arbutifolia*
telegraphweed	*Heterotheca grandiflora*
hawkweed	*Hieracium argutum*

Common Name	Scientific Name
wild mustard	*Hirschfeldia incana**
low barley	*Hordeum depressum*
Mediterranean barley	*Hordeum marinum gussoneanum**
summer barley	*Hordeum murinum glaucum**
dragonfruit	*Hylocereus sp.*
coast goldenbush	*Isocoma menziesii* var. *menziesii*
Southern California black walnut	***Juglans californica* var. *californica***
spreading rush	*Juncus patens*
heart-leaved bush penstemon	*Keckiella cordifolia*
northern blue stemmed keckiella	*Keckiella ternata* var. *septentrionalis*
prickly wild lettuce	*Lactuca serriola**
goldentop	*Lamarckia aurea**
Pacific peavine	*Lathyrus vestitus laetiflorus*
Pacific peavine	*Lathyrus vestitus vestitus*
duckweed	*Lemna sp.*
cudweed aster	*Lessingia filaginifolia*
ocellated Humboldt lily	***Lilium humboldtii ocellatum***
prickly phlox	*Linanthus californicus*
California cottonrose	*Logfia filaginoides*
Italian ryegrass	*Lolium multiflorum**
chapparal honeysuckle	*Lonicera interrupta*
southern honeysuckle	*Lonicera subspicata* var. *denudata*
Santa Barbara honeysuckle	***Lonicera subspicata* var. *subspicata***
bajada lupine	*Lupinus concinnus*
long-leaved bush lupine	*Lupinus longifolius*
sky lupine	*Lupinus nanus*
fleshy lupine	*Lupinus succulentus*
slender tarplant	*Madia gracilis*
chaparral mallow	*Malacothamnus fasciculatus*
cliff aster	*Malacothrix saxatilis* var. *implicata*
cliff-aster	*Malacothrix saxatilis* var. *saxatilis*
tenuated cliff-aster	*Malacothrix saxatilis* var. *tenuifolia*
laurel sumac	*Malosma laurina*
cheeseweed	*Malva parviflora**

Common Name	Scientific Name
California man-root	*Marah fabaceus* var. *agrestis*
horehound	*Marrubium vulgare**
rayless chamomile	*Matricaria discoidea**
burclover	*Medicago polymorpha**
California melic	*Melica imperfecta*
white sweetclover	*Melilotus albus**
sourclover	*Melilotus indicus**
sticky monkeyflower	*Mimulus aurantiacus* var. *aurantiacus*
scarlet monkeyflower	*Mimulus cardinalis*
California wishbone bush	*Mirabilis californica*
California four o'clock	*Mirabilis leavis* var. *crassifolia*
watercress	*Nasturtium officinale*
navarretia	*Navarretia jaredii*
tree tobacco	*Nicotiana glauca**
coast prickly pear	*Opuntia littoralis*
radishroot woodsorrel	*Oxalis albicans*
California peony	*Paeonia californica*
passionfruit	*Passiflora sp. **
coffee fern	*Pellaea andromedifolia*
fountaingrass	*Pennisetum setaceum**
goldenback fern	*Pentagramma triangularis*
avocado	*Persea americana**
phacelia	*Phacelia affinis*
short lobed phacelia	*Phacelia brachyloba*
caterpillar phacelia	*Phacelia cicutaria*
ciliate phacelia	*Phacelia ciliata* var. *ciliata*
parry phacelia	*Phacelia parryi*
canary grass	*Phalaris minor**
fiesta flower	*Pholistoma auritum* var. *auritum*
Pacific mistletoe	*Phoradendron serotinum tomentosum*
smilo grass	*Piptatherum miliaceum**
California plantain	*Plantago erecta*
common plantain	*Plantago major**
western sycamore	*Platanus racemosa*

Common Name	Scientific Name
Annual Bluegrass	*Poa annua**
Fish's milkwort	***Polygala cornuta var. fishiae***
smartweed	*Polygonum lapathafoilum*
California polypody	*Polypodium califonicum*
rabbitsfoot grass	*Polypogon monspeliensis**
rabbitsfoot grass	*Polypogon monspeliensis**
water bentgrass	*Polypogon viridis**
sword fern	*Polystichum munitum*
black cottonwood	*Populus balsamifera trichocarpa*
hollyleaf cherry	*Prunus ilicifolia*
California cudweed, ladies' tobacco	*Pseudognaphalium californicum*
guava	*Psidium sp. **
western brackenfern	*Pteridium aquilinum*
coast live oak	*Quercus agrifolia* var. *agrifolia*
scrub oak	*Quercus berberidifolia*
Nuttall's scrub oak	***Quercus dumosa***
California chicory	*Rafinesquia californica*
California buttercup	*Ranunculus californicus*
wild radish	*Raphanus sativus**
redberry	*Rhamnus crocea*
spiny redberry	*Rhamnus crocea*
hollyleaf redberry	*Rhamnus ilicifolia*
skunk bush	*Rhus aromatica*
lemonade berry	*Rhus integrifolia*
sugarbush	*Rhus ovata*
Hoffmann's bitter gooseberry	***Ribes amarum* var. *hoffmannii***
chaparral currant	*Ribes malvaceum* var. *malvaceum*
fucshia-flowered gooseberry	*Ribes speciosum*
California wildrose	*Rosa californica*
Pacific blackberry	*Rubus ursinus*
curly dock	*Rumex crispus**
sandbar willow	*Salix exigua*
arroyo willow	*Salix lasiolepis*
tumbleweed	*Salsola tragus**

Common Name	Scientific Name
white sage	*Salvia apiana*
chia	*Salvia columbariae*
purple sage	*Salvia leucophylla*
black sage	*Salvia mellifera*
hummingbird sage	*Salvia spathacea*
blue elderberry	*Sambucus nigra caerulea*
sanicle	*Sanicula arguta*
poison sanicle	*Sanicula bipinnata*
Pacific sanicle	*Sanicula crassicaulis*
Hoffman's snakeroot	***Sanicula hoffmannii***
Peruvian pepper tree	*Schinus molle**
Arabian grass	*Schismus arabicus**
California figwort, bee plant	*Scrophularia californica*
Cape ivy	*Senecio mikanioides**
common groundsel	*Senecio vulgaris**
California globe mallow	*Sidalcea malvaeflora californica*
windmill pink	*Silene gallica**
cardinal catchfly	*Silene laciniata laciniata*
milkthistle	*Silybum marianum**
western blue-eyed-grass	*Sisyrinchium bellum*
white nightshade	*Solanum americanum*
Douglas' nightshade	*Solanum douglasii*
chaparral nightshade	*Solanum xantii* var. *xantii*
spiny sowthistle	*Sonchus asper asper**
common sowthistle	*Sonchus oleraceus**
hedge nettle	*Stachys bullata*
chicoryleaf wirelettuce	*Stephanomeria cichoriacea*
tall wirelettuce	*Stephanomeria virgata*
purple needle grass	*Stipa pulchra*
bird-of-paradise	*Strelitzia reginae*
creeping snowberry	*Symphoricarpos mollis*
meadow-rue	*Thalictrum fendleri*
common dandelion	*Toraxacum officinale**
rattlesnake plant	*Torilis nodosa**

Common Name	Scientific Name
western poison oak	*Toxicodendron diversilobum*
California bay laurel	*Umbellularia californica*
giant creek nettle	*Urtica dioica holosericea*
canyon sunflower	*Venegasia carpesioides*
western verbena	*Verbena lasiostachys*
western vervain, western verbena	*Verbena lasiostacys* var. *lasiostachys*
spring vetch	*Vicia sativa**
hairy vetch	*Vicia villosa varia*
Johnny jump-up	*Viola pedunculata*
cocklebur	*Xanthium sturmarium*

Animal Species Observed During Surveys Along Project Alignment.
Bold indicates a special-status species.

Common Name	Scientific Name
INSECTS	
Monarch	***Danaus plexippus***
AMPHIBIANS	
California treefrog	*Pseudacris cadaverina*
Baja California treefrog	*Pseudacris hypochondriaca hypochondriaca*
REPTILES	
coastal whiptail	*Aspidoscelis tigris stejnegeri*
gopher snake	*Pituophis catenifer*
northwestern fence lizard	*Sceloporus occidentalis occidentalis*
western side-blotched lizard	*Uta stansburiana elegans*
BIRDS	
Cooper's hawk	***Accipiter cooperii***
red-winged blackbird	*Agelaius phoeniceus*
mallard	*Anas platyrhynchos*
golden eagle	***Aquila chrysaetos***
great blue heron	*Ardea herodias*
oak titmouse	*Baeolophus inornatus*
cedar waxwing	*Bombycilla cedrorum*
Canada goose	*Branta canadensis*
red-tailed hawk	*Buteo jamaicensis*
red-shouldered hawk	*Buteo lineatus*
California quail	*Callipepla californica*
Anna's hummingbird	*Calypte anna*
lesser goldfinch	*Carduelis psaltria*
American goldfinch	*Carduelis tristis*
house finch	*Carpodacus mexicanus*
turkey vulture	*Cathartes aura*
canyon wren	*Catherpes mexicanus*
wrentit	*Chamaea fasciata*
killdeer	*Charadrius vociferus*
northern harrier	***Circus cyaneus***
northern flicker	*Colaptes auratus*
rock pigeon	*Columba livia*
American crow	*Corvus brachyrhynchos*
common raven	*Corvus corax*
yellow-rumped warbler	*Dendroica coronata*
snowy egret	*Egretta thula*
white-tailed kite	***Elanus leucurus***

Common Name	Scientific Name
Brewer's blackbird	*Euphagus cyanocephalus*
American kestrel	*Falco sparverius*
greater roadrunner	*Geococcyx californianus*
common yellowthroat	*Geothlypis trichas*
dark-eyed junco	*Junco hyemalis*
loggerhead shrike	***Lanius ludovicianus***
acorn woodpecker	*Melanerpes formicivorus*
California towhee	*Melozone crissalis*
northern mockingbird	*Mimus polyglottos*
brown-headed cowbird	*Molothrus ater*
orange-crowned warbler	*Oreothlypis celata*
house sparrow	*Passer domesticus*
band-tailed pigeon	*Patagioenas fasciata*
downy woodpecker	*Picoides pubescens*
spotted towhee	*Pipilo maculatus*
black-capped chickadee	*Poecile atricapillus*
bushtit	*Psaltriparus minimus*
ruby-crowned kinglet	*Regulus calendula*
black phoebe	*Sayornis nigricans*
Say's phoebe	*Sayornis saya*
western bluebird	*Sialia mexicana*
western meadowlark	*Sturnella neglecta*
European starling	*Sturnus vulgaris*
Bewick's wren	*Thryomanes bewickii*
California thrasher	*Toxostoma redivivum*
American robin	*Turdus migratorius*
western kingbird	*Tyrannus verticalis*
Cassin's kingbird	*Tyrannus vociferans*
mourning dove	*Zenaida macroura*
MAMMALS	
coyote	*Canis latrans*
Virginia opossum	*Didelphis virginiana*
bobcat	*Lynx rufous*
striped skunk	*Mephitis mephitis*
dusky-footed woodrat	*Neotoma fuscipes*
California ground squirrel	*Otospermophilus beecheyi*
raccoon	*Procyon lotor*
western gray squirrel	*Sciurus griseus*
wild pig	*Sus scrofa*
desert cottontail	*Sylvilagus audubonii*
brush rabbit	*Sylvilagus bachmani*

Common Name	Scientific Name
American black bear	*Ursus americanus*
mule deer	***Odocoileus hemionus***
mountain lion	***Puma concolor***

APPENDIX C:

Burrowing Owl and Nesting Raptor Survey Report

1.0 INTRODUCTION

This report presents the results of a breeding season survey for the burrowing owl (*Athene cunicularia*) and nesting raptors within Segments 3B and 4, and the Getty Tap portion of Segment 1 of the Santa Barbara County Reliability Project, and identifies potential impacts to these biological resources that may result from implementation and construction of the Project.

1.1 Project Description

In 1998, the Southern California Edison Company (SCE) initiated the Project to increase reliability by reinforcing its existing 66 kilovolt (kV) sub-transmission system in northwestern Ventura County and southeastern Santa Barbara County to meet the electrical demands of the south coast of Santa Barbara County during emergency conditions while also enhancing operational flexibility.

The Project has been divided into six geographically-defined Segments (Segments 1, 2, 3A, 3B, and 4, and the Getty Tap) and at three substations (Carpinteria Substation, Casitas Substation, and Santa Clara Substation) (Figure 1).

Segment 1 begins at Santa Clara Substation off Foothill Road in unincorporated Ventura County. From that origin, it heads north along western Long Canyon; turns northwest at Harmon Canyon in the Ventura Hills; traverses Lake, Sexton, and Hall Canyons; then runs west along northern Cañada Seca and crosses Cañada Larga to Casitas Substation, which lies between SR-33 and the Ventura River. Segment 2 extends west from Casitas Substation along the south side of Lake Casitas, to the ‘Y’ near East Casitas Pass. Segment 3B heads west from the ‘Y’ through Casitas Valley along the south side of SR-150, crossing over Madranio Canyon, along Rincon Mountain, and through Rincon Valley. At the Santa Barbara/Ventura County line near the intersection of SR-150 and SR-192, Segment 3B becomes Segment 3A and continues to the west into the Shepard Mesa and Gobernador rural residential areas, then west along SR-192 to Carpinteria Substation. Segment 4 heads west from the ‘Y’ along the north side of SR-150, runs northwest along the ridgetop of Sutton Canyon, and then turns south to Carpinteria Substation. The ‘Getty Tap,’ is located approximately in the middle of Segment 1.

The Project includes the following physical elements:

- Reconstruct existing 66 kilovolt (kV) subtransmission facilities within existing utility rights-of-way (ROW) between the existing Santa Clara Substation in Ventura County and the existing Carpinteria Substation in Santa Barbara County.
- Install marker balls on overhead wire where determined to be necessary.
- Modify utility equipment within the existing Carpinteria Substation, Casitas Substation, Getty Substation, Goleta Substation, Ortega Substation, Santa Barbara Substation, and Santa Clara Substation.
- Install telecommunications facilities to connect the Project to SCE’s existing telecommunications system for the protection, monitoring and control of subtransmission and substation equipment. Install new telecommunications facilities along Segments 1, 2, and 4

and at Carpinteria Substation, Casitas Substation, Santa Clara Substation, and Ventura Substation[1].
- Transfer distribution lines (and third-party infrastructure as necessary) to subtransmission structures along Segment 3A.
- Remove subtransmission infrastructure in Segments 1 and 2.

1.2 Environmental Setting

The Project lies north and west of US-101, between one and six miles from the coastline. Elevations vary through the Project Area from 31 feet above sea level (ASL) near the Carpinteria Substation, which lies in the coastal plain, to 1,500 feet ASL along Segment 4 in the foothills of the western Transverse Ranges, to more than 1,800 feet ASL along portions of Segment 3B near Rincon Peak.

The Project crosses the headwaters of multiple small streams and creeks that flow through agricultural and urban areas before reaching the ocean, and is located in lower gradient reaches of the Santa Clara River and Ventura River watersheds, including Cañada Larga, which is tributary to the Ventura River. While groundwater and surface water sources have been extensively developed for domestic and agricultural uses throughout the area, these riparian corridors contrast sharply with an otherwise dry landscape. Landslides are prone to occur in areas of steep, unstable terrain, and the area has a history of large and sometimes devastating wildland fire events, with "Sundowner" and "Santa Ana" winds contributing to fast-moving and destructive fires (USFS 2005).

The majority of the Project is located on private lands, while three tower sites and associated access and spur roads in Segment 4 are located within the Santa Barbara Front, a geographical unit of lands under the jurisdiction of the Los Padres National Forest owned by the U.S. Forest Service (USFS). Land uses in the immediate vicinity of the Project Area are dominated by agriculture (cattle grazing and orchards) and "open-space" areas covered by native vegetation communities, with low-density residential development and commercial areas (nurseries and row crops) scattered through Segments 3A, 3B, and 4.

Temperatures in the area average 50 to 71° F, with an average annual temperature of 60° F. Average rainfall ranges from 15.4 to 17.7 inches. The east-west orientation of the mountains, combined with the distinct Mediterranean/marine climate, results in a unique botanic zone and mix of species. Predominately north- or south-facing slopes are dominated by alternating bands of sedimentary rock formations, with oak woodlands at lower elevations. Conifers exist in small patches along ridgetops and on north-facing slopes. Noxious weed infestations, including black mustard (*Brassica nigra*), tocalote (*Centaurea melitensis*), Cape ivy (*Delairea odorata*), and ruderal species and escaped cultivars occur throughout the vicinity of the Project, especially along road and trail corridors.

[1] The Project also includes additional telecommunications-related work at Getty Substation, Goleta Substation, Ortega Substation, Santa Barbara Substations, and Ventura Substation; this work would be conducted exclusively within the MEERs or on substation property, and thus would have no impact to biological resources. Therefore, this work is not addressed further in this report.

Figure 1. Project Location

1.3 Regulatory Setting

Raptor species, depending on their legal status, may be protected under various federal and state laws and regulations that include: The Endangered Species Act of 1973, The Migratory Bird Treaty Act of 1918, The Bald and Golden Eagle Protection Act of 1940, The California Endangered Species Act, and California Fish and Game Code Sections 3500-3516, and 3800, 4700, 5050, and 5515. These laws aim to protect special-status and non-game species by protecting individual birds, bird nests and eggs. These laws, regulations, and codes are detailed in the Biological Technical Report (BioResource Consultants 2012).

Additionally, CDFG has recently provided the *California Department of Fish and Game Staff Report on Burrowing Owl Mitigation* (2012) to provide a comprehensive conservation and mitigation strategy for burrowing owls. CDFG determined that reversing declining population and range trends for burrowing owls will require implementation of more effective conservation actions, including developing more rigorous burrowing owl survey methods; working to improve the adequacy of impacts assessments; developing clear and effective avoidance and minimization measures; and developing mitigation measures to ensure impacts to the species are effectively addressed at the project, local, and/or regional level. The 2012 Staff Report takes into account the California Burrowing Owl Consortium's Survey Protocol and Mitigation Guidelines (CBOC 1993, 1997) and supersedes the survey, avoidance, minimization and mitigation recommendations in the earlier 1995 Staff Report.

2.0 METHODOLOGY

Prior to conducting surveys, standard database searches were conducted and previous surveys in the area were reviewed to obtain a list of federal and state listed raptor species in the region. The results of these preliminary database searches provided a basis for addressing the appropriate special-status species in the footprint of existing infrastructure (i.e., substations, access roads, and crane pads), proposed additional workspace (spur roads, temporary and permanent drill and crane pads, pulling and stringing sites), and immediate surroundings (hereafter referred to in this section as the Project Area).

2.1 Literature and Database Review

Information about documented special-status raptor species was obtained from the California Natural Diversity Database (CNDDB; CDFG 2003). The CNDDB search included U.S. Geological Survey (USGS) 7.5-minute quadrangles Carpinteria, Matilija, Pitas Point, Saticoy, Ventura, and White Ledge Peak as well as the eleven surrounding quadrangles: Camarillo, Hildreth Peak, Lion Canyon, Little Pine Mountain, Ojai, Old Man Mountain, Oxnard, Santa Paula, Santa Paula Peak, Santa Barbara, and Wheeler Springs.

Additional literature and databases referenced include: *The Sibley Field Guide to Birds of Western North America* (Sibley 2003); the *eBird* website (Cornell Lab of Ornithology and National Audubon Society, Inc. 2012); and *California Wildlife Habitat Relationships* software (CDFG 2005).

2.2 Survey Methods

Biological reconnaissance surveys in the Survey Area were conducted in February and March 2012 to describe and map the vegetation present in the Project Area and to evaluate the potential of the habitats to support special-status plant and wildlife species. These surveys included searching for and identifying raptor nests, and habitat features that may attract and/or support burrowing owls.

2.2.1 Nesting Raptor Survey

Several inactive raptor nests were identified during the February and March reconnaissance surveys, however, only preliminary courtship displays by raptor pairs were observed, and no active nests or nest fidelity were noted at this time. To determine the presence of active raptor nesting in Segments 3B, 4, and the Getty Tap portion of Segment 1, a focused nesting raptor survey within one mile of the Project alignment was conducted in May 2012. A general survey of these Segments was conducted to look for newly constructed nests, nests that had not been detected in the reconnaissance survey, or raptors and their behaviors that might indicate a nest not visually detectable. An additional visit was made to all nests that were documented during the reconnaissance survey to determine their use during the 2012 nesting season.

2.2.2 Burrowing Owl Survey

Potentially suitable habitat for burrowing owl was noted in Segment 1 and near the Segment 3B/4 split during the February and March reconnaissance surveys. Documented winter occurrences for burrowing owl in Cañada Larga near the Getty Tap portion of Segment 1 were found during the database search (eBird 2012). A follow-up habitat assessment for burrowing owl was conducted on April 24 and 25 to determine the suitability of the area for burrowing owl, and the extent of suitable habitat in the Segment 1 and Segment 3B/4 areas respectively. The habitat assessment was conducted by walking the project area and an approximate 500-foot buffer, to visually inspect the project area and assess its potential for burrowing owls.

Because suitable habitat for burrowing owl was determined to be present at each location, focused breeding season (March 1 - August 31) surveys were conducted in the spring of 2012 in areas with suitable habitat and followed the *California Department of Fish and Game Staff Report on Burrowing Owl Mitigation* (CDFG 2012b).

Four survey visits occurred in which line transects were walked in all areas that were identified as having suitable habitat to look for burrowing owls or their sign (tracks, molted feathers, cast pellets, prey remains, egg shell fragments, owl white wash, nest burrow decoration materials). Transects were spaced less than 20 meters apart, and the area was scanned regularly with binoculars, at least every 100 meters. Surveys were conducted in the morning hours between civil twilight and 10:00 AM, and did not occur during periods of high wind (>20 km/hr), precipitation, or dense fog.

3.0 RESULTS

3.1 Nesting Raptor Surveys

A total of eight raptor species have been observed in the Project vicinity, including four special-status species: Cooper's hawk (*Accipiter cooperii*), golden eagle (*Aquila chrysaetos*), northern harrier (*Circus cyaneus*), and white-tailed kite (*Elanus leucurus*) (Table 1). Three additional special-status raptor species have a "High" or "Moderate" potential to occur in the Project Area: sharp-shinned hawk (*Accipiter striatus*), burrowing owl (*Athene cunicularia*), and peregrine falcon (*Falco perigrinus*).

Table 1. Raptor Species Observed Within the Project Area.
Species in bold have special status.

Common Name	Scientific Name
Cooper's hawk	***Accipiter cooperii***
golden eagle	***Aquila chrysaetos***
red-tailed hawk	*Buteo jamaicensis*
red-shouldered hawk	*Buteo lineatus*
turkey vulture	*Cathartes aura*
northern harrier	***Circus cyaneus***
white-tailed kite	***Elanus leucurus***
American kestrel	*Falco sparverius*

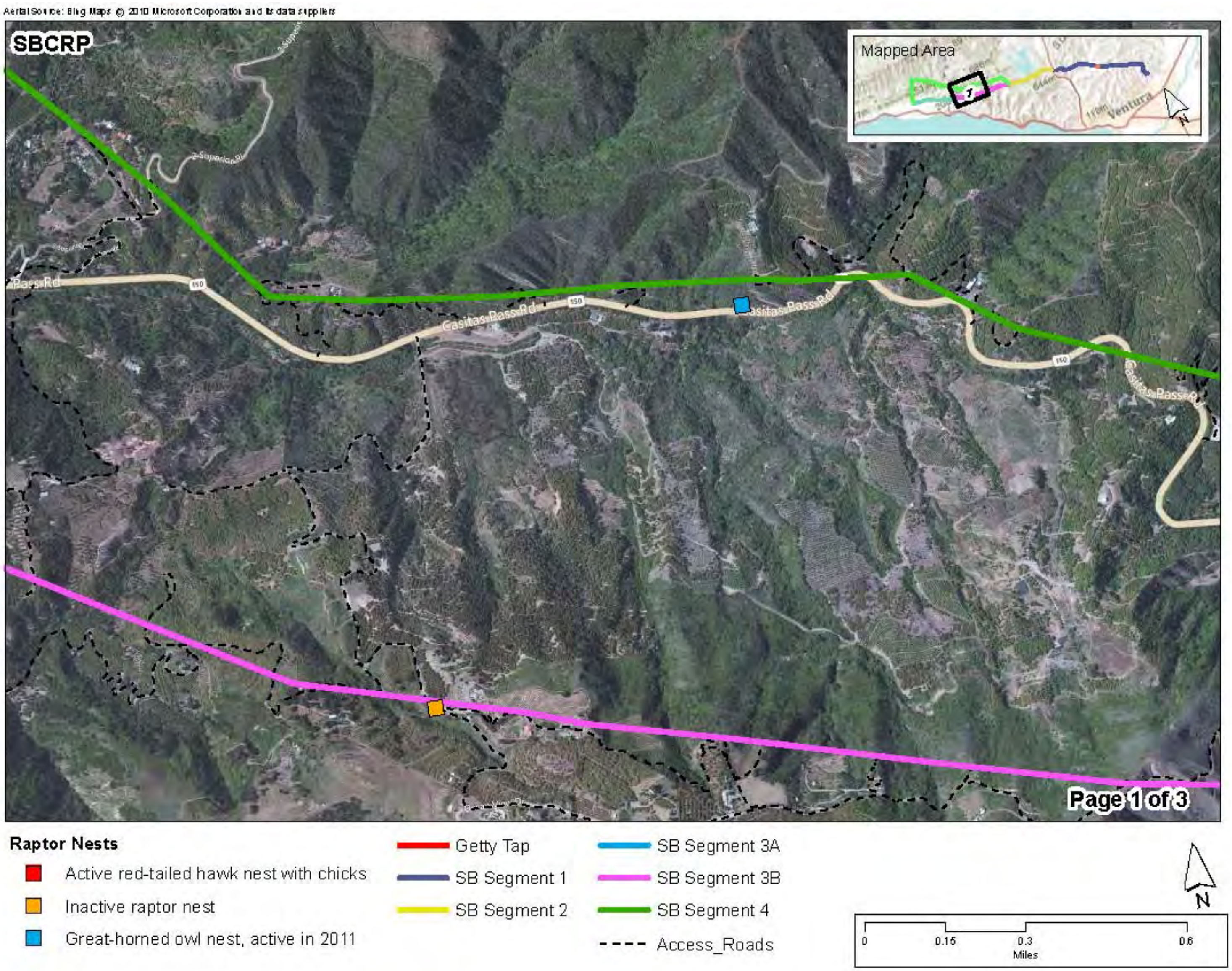
Suitable raptor nesting habitat is present throughout the Project Area and along the access routes. Eight raptor nests within Segments 3B and 4, and the Getty Tap portion of Segment 1 were observed. Five nests were found in existing lattice towers at Construction 60, 61, 70a, 84a, and 90 which will be removed as part of the Project, while the remaining three nests were found in a eucalyptus tree near Construction 62, a cliff wall near Construction 101, and in a lattice tower on a parallel circuit along the access road to the Getty Tap (Table 2, Figure 2, Photos 1-6). Seven of the eight nests found were consistent in size, shape, material, and location with those built by red-tailed hawk. Red-tailed hawk (*Buteo jamaicensis*) was the most common raptor observed during surveys. The remaining nest, within the pocket of the cliff wall, was observed in the spring of 2011 to be actively used by a pair of great-horned owl.

No nesting behavior was observed during the reconnaissance surveys in February and March 2012, though pairs of red-tailed hawks were observed in courtship displays in the vicinity. During the May 2012 raptor survey, three of the seven nests were actively used by red-tailed hawk, and hatchlings were observed in each.

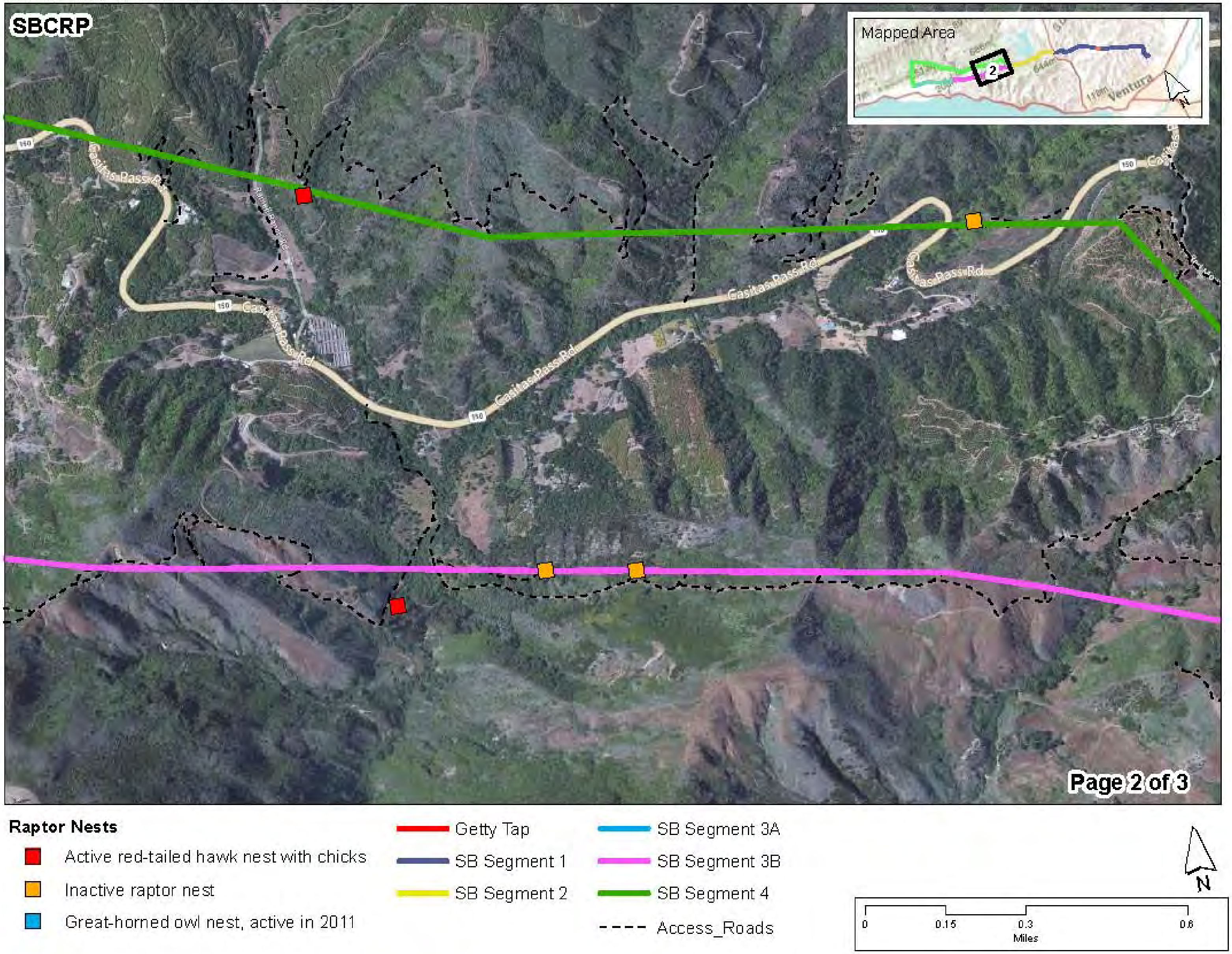
Table 2. Raptor Nests Observed Within Segments 3B and 4, and the Getty Tap portion of Segment 1 of the Project Area. Nests in bold were active during 2012 Raptor Survey.

Construction #	Segment	Location	UTM NAD 83	Species
60	3B	Existing lattice tower M5-T3	279331E, 3806558N	Likely a red-tailed hawk nest (Photo 1)
61	3B	Existing lattice tower M5-T4	279062E, 3806597N	Likely a red-tailed hawk nest, may be used by common raven as raven feathers were found at base of pole (Photo 2)
Between 61 and 62	**3B**	**In eucalyptus tree**	**278607E, 3806560N**	**Active red-tailed hawk nest with chicks (Photo 3)**
70a	3B	Existing lattice tower M7-T6	275703E, 3807338N	Likely a red-tailed hawk nest (no photo)
84a	4	Existing lattice tower M4-T5	280483E, 3807441N	Likely a red-tailed hawk nest (Photo 4)
90	**4**	**Existing lattice tower M6-T1**	**278511E, 3807813N**	**Active red-tailed hawk with chicks (Photo 5)**
SR-150 near Construction 101	4	In cliff wall cavity ~300' sw of Construction 101	276785E, 3808394N	Great-horned owl nest, active in 2011 (Photo 6)
Access Road to the Getty Tap	**1**	**In lattice tower on non-project line ~450' from access road**	**292983E, 3802886N**	**Active red-tailed hawk nest with chicks** (no photo)

Figure 2. Raptor Nest Locations (3 pages).



Aerial Source: Bing Maps © 2010 Microsoft Corporation and its data suppliers



Aerial Source: Bing Maps © 2010 Microsoft Corporation and its data suppliers

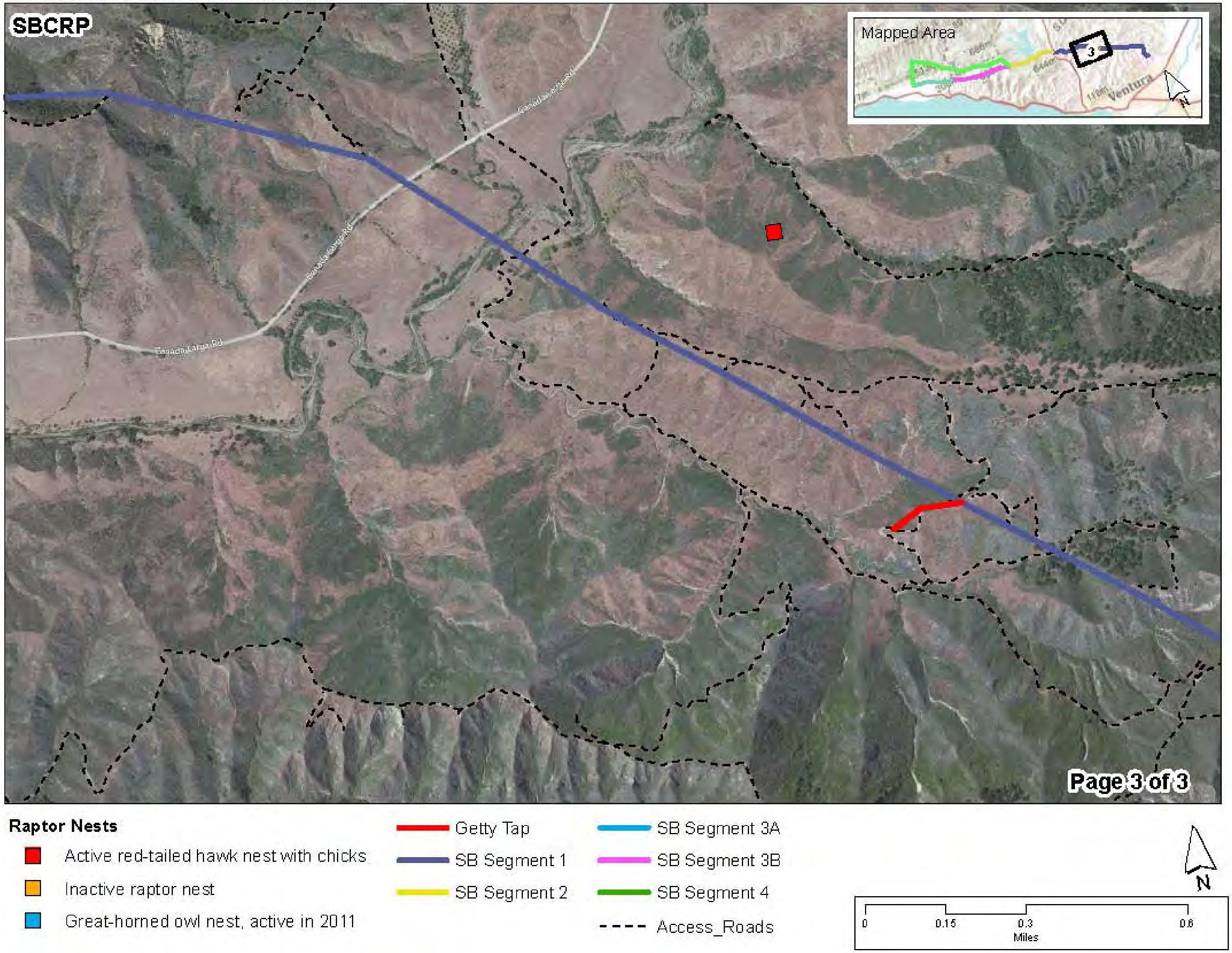


Photo 1. Red-tailed hawk perched near inactive nest on existing lattice tower M5-T3 at Construction 60.

Photo 2. Inactive red-tailed hawk nest on existing lattice tower M5-T4 at Construction 61.

Photo 3. Active red-tailed hawk nest with two chicks in eucalyptus tree between Construction 61 and 62.

Photo 4. Inactive red-tailed hawk nest on existing lattice tower M4-T5 to be removed as Construction 84a.

Photo 5. Active red-tailed hawk nest on existing lattice tower M6-T1 at Construction 90.

Photo 6. Great-horned owl nest, active in spring 2011, in pocket of the cliff wall ~300' sw of Const. 101.

3.2 Burrowing Owl Surveys

3.2.1 Segment 1 – Getty Tap

Habitat

Potential burrowing owl habitat in the Getty Tap area of Segment 1 consists of two disjunct areas that provide requisite burrows created by California ground squirrel (*Spermophilus beechyi*) (Figure 3). The first area is a thin band (~15 feet wide) of burrows that extend east from the Project access road, along the south side of Cañada Larga Road. Burrowing activity is also present on the slopes just north of Cañada Larga Road. The second area is a larger polygon within the floodplain on the south side of the Cañada Larga drainage, along the existing SCE access road that will not be used for the Project (Photos 7 and 8). The southern-most portion of this area extends into a smaller valley. This area may have a steeper slope than areas more commonly used by burrowing owl, but the remaining constituents of habitat (ground-squirrel burrows, short grasses, etc) are present (Photo 9). Farther up the canyon there is evidence of historic ground-squirrel activity, however, without active construction and maintenance by the squirrels, burrows in this area have collapsed due to cattle trampling and or weathering of the softer soils (Figure 3).

Both areas are located within a rural valley bottom characterized by level to gentle topography and well-drained soils. Vegetation in the area is a California Annual Grassland community dominated by a mix of native and non-native annual grasses (genera including *Avena, Bromus, Hordeum, Lolium, and Vulpia*) and herbs, with non-native species such as black mustard (*Brassica nigra*), tocalote (*Centaurea melitensis*), and thistle (*Cirsium sp.*). Vegetation throughout the area is kept short by cattle grazing and ground squirrel activity, and areas adjacent to the burrow complexes would provide suitable foraging habitat. The Cañada Larga drainage, though indicated as an intermittent stream, provides water for most of the year. Fence-posts and other substrate provide perching opportunities throughout the area.

Survey Results

Due to limitations in gaining property owner permission to access the area, and the project timeline, methods detailed in the *California Department of Fish and Game Staff Report on Burrowing Owl Mitigation* were adhered to as practicable, but the recommended date of the first survey (between February 15 and April 15), and recommended spacing between survey visits (at least three weeks apart) were not fully met. Four transect survey visits occurred on April 24, May 15 and 29, and June 15 2012 in suitable burrowing owl habitat near the access to the Getty Tap area of Segment 1 (Table 4). No owls or sign were detected during any of the site visits.

Wildlife observed during the surveys includes: California ground squirrel, wild boar (*Sus scrofa*), western scrub-jay (*Aphelocoma californica*), red-tailed hawk (*Buteo jamaicensis*), California quail (*Callipepla californica*), lesser goldfinch (*Carduelis psaltria*), house finch (*Carpodacus mexicanus*), turkey vulture (*Cathartes aura*), killdeer (*Charadrius vociferus*), northern flicker (*Colaptes aura*), Brewer's blackbird (*Euphagus cyanocephalus*), American kestrel (*Falco sparverius*), greater roadrunner (*Geococcyx californianus*), acorn woodpecker (*Melanerpes formicivorus*), song sparrow (*Melospiza melodia*), California towhee (*Melozone crissalis*), northern mockingbird (*Mimus polyglottos*), ash-throated flycatcher (*Myiarchus cinerascens*), band-tailed pigeon (*Patagionas fasciata*), phainopepla (*Phainopepla nitens*), bank swallow (*Riparia riparia*), western meadowlark (*Sturnella neglecta*), European starling (*Sturnus vulgaris*), violet-green swallow (*Tachycineta thalassina*), western kingbird (*Tyrannus verticalis*), and mourning dove (*Zenaida macroura*).

Table 3. Burrowing owl surveys for Segment 1- Getty Tap

Survey Date/Time	Weather	Surveyor(s)	Results
4/24/2012 0736-0955	Overcast, calm, 63-65°	C. Schade	No owls or owl sign observed
5/15/2012 0745-0952	Sunny, clear, calm, 64-68°	C. Schade T. Rhaintre S. Jones	No owls or owl sign observed
5/29/2012 1000-1100	Sunny, clear, calm, 75-78°	S. Jones C. Villasenor	No owls or owl sign observed
6/15/2012 0900-1015	Overcast, calm, 62-64°	C. Schade	No owls or owl sign observed

Figure 3. Potential Burrowing Owl Habitat in the Getty Tap Area of Segment 1.

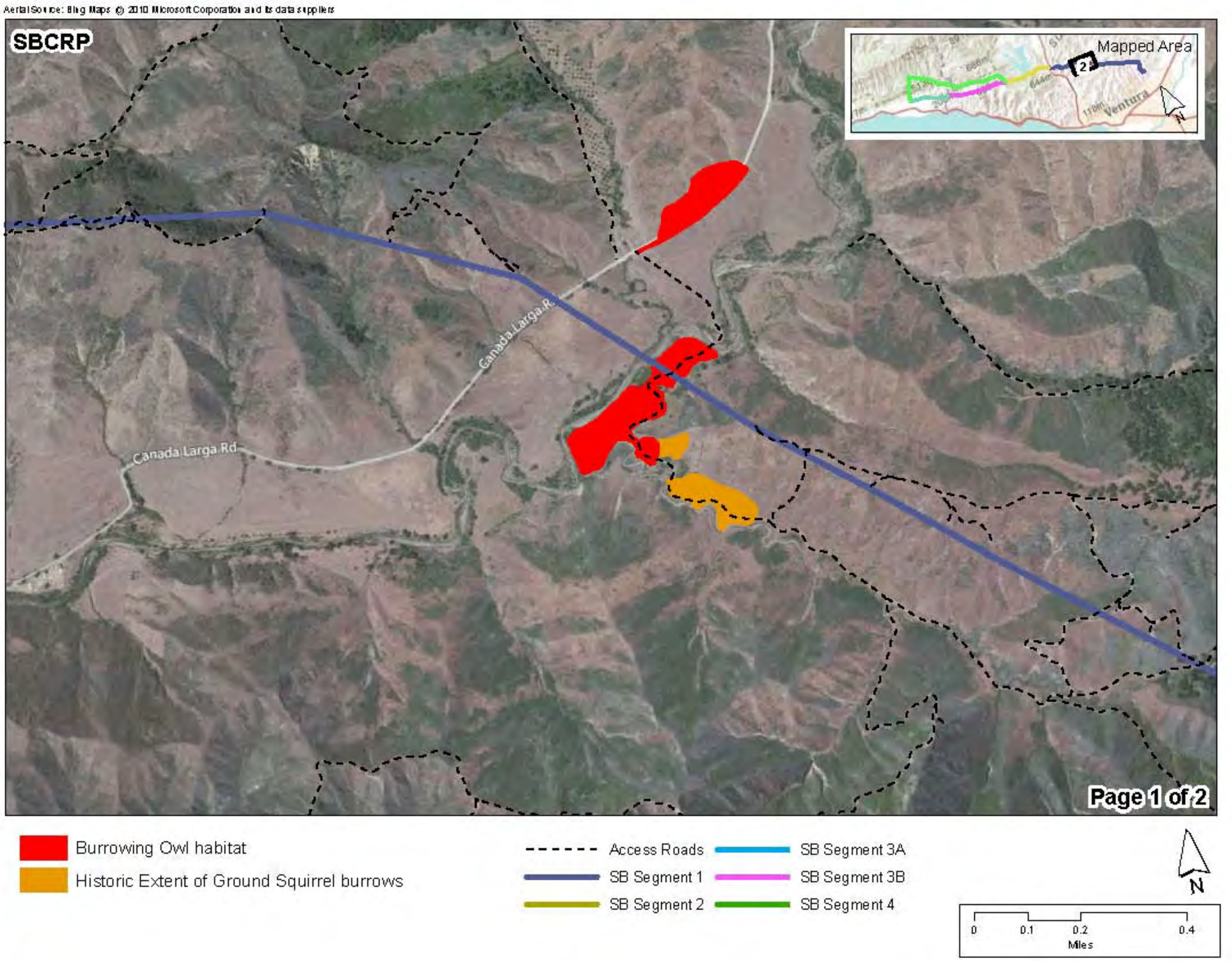


Photo 7. Looking southwest across ground squirrel complex/burrowing owl habitat of the main polygon. The existing access road to the Getty Tap is on the left.

Photo 8. Active ground squirrel burrow in the survey area.

Photo 9. Burrowing owl habitat in the southern-most portion of the main polygon. Slope may be greater than commonly used by burrowing owl, but remaining habitat constituents are present.

3.2.2 Segment 3B/4 Split

Habitat

Potential burrowing owl habitat in the area of the Segment 3B/4 split consists of a contiguous area along the Project access road that provides requisite burrows created by California ground squirrel (Figure 4). An adjacent area extending to the south shows evidence of historic ground-squirrel activity, however, without active construction and maintenance by the squirrels, burrows in this area have collapsed due to cattle trampling and or weathering of the softer soils, and from the use of ground disturbing equipment by the landowner.

This burrow habitat is located within a rural area characterized by gentle topography and well-drained soils (Photos 10-12). Vegetation in the area is a California Annual Grassland community dominated by a mix of native and non-native annual grasses and herbs, with non-native species such as black mustard, tocalote, and thistle. Vegetation throughout the area is kept short by cattle grazing and ground squirrel activity, and areas adjacent to the burrow complexes would provide suitable foraging habitat. A cattle tank provides water year-round in the immediate area. Fence-posts and other substrate provide perching opportunities throughout the area.

Survey Results

Due to limitations in gaining property owner permission to access the area, and the project timeline, methods detailed in the *California Department of Fish and Game Staff Report on Burrowing Owl Mitigation* were adhered to as practicable, but the recommended date of the first survey (between February 15 and April 15), and recommended spacing between survey visits (at least three weeks apart) were not fully met. Four transect survey visits occurred on April 25, May 16 and 31, and June 14 2012 in suitable burrowing owl habitat in the area of the Segment 3B/4 split (Table 5). No owls or sign were detected during any of the site visits.

Wildlife observed during the surveys includes: coyote (*Canis latrans*), red-tailed hawk, California quail, turkey vulture, killdeer, hooded oriole (*Icterus cucullatus*), California towhee, phainopepla, western bluebird (*Sialia mexicana*), western meadowlark (*Sturnella neglecta*), northern mockingbird, mourning dove.

Table 4. Burrowing owl surveys for Segment 3B/4

Survey Date/Time	Weather	Surveyor(s)	Results
4/25/2012 0820-1100	Mostly cloudy, calm, 63°	C. Schade	No owls or owl sign observed
5/16/2012 0906-0936	Sunny, clear, calm, 71°	C. Schade S. Jones	No owls or owl sign observed
5/31/2012 0830-0900	Sunny, clear, calm, 69°	C. Schade	No owls or owl sign observed
6/14/2012 0915-0945	Overcast, calm, 64°	C. Schade A. Baczyk T. Rhaintre	No owls or owl sign observed

Figure 4. Potential Burrowing Owl Habitat in the Area of the Segment 3B/4 Split.

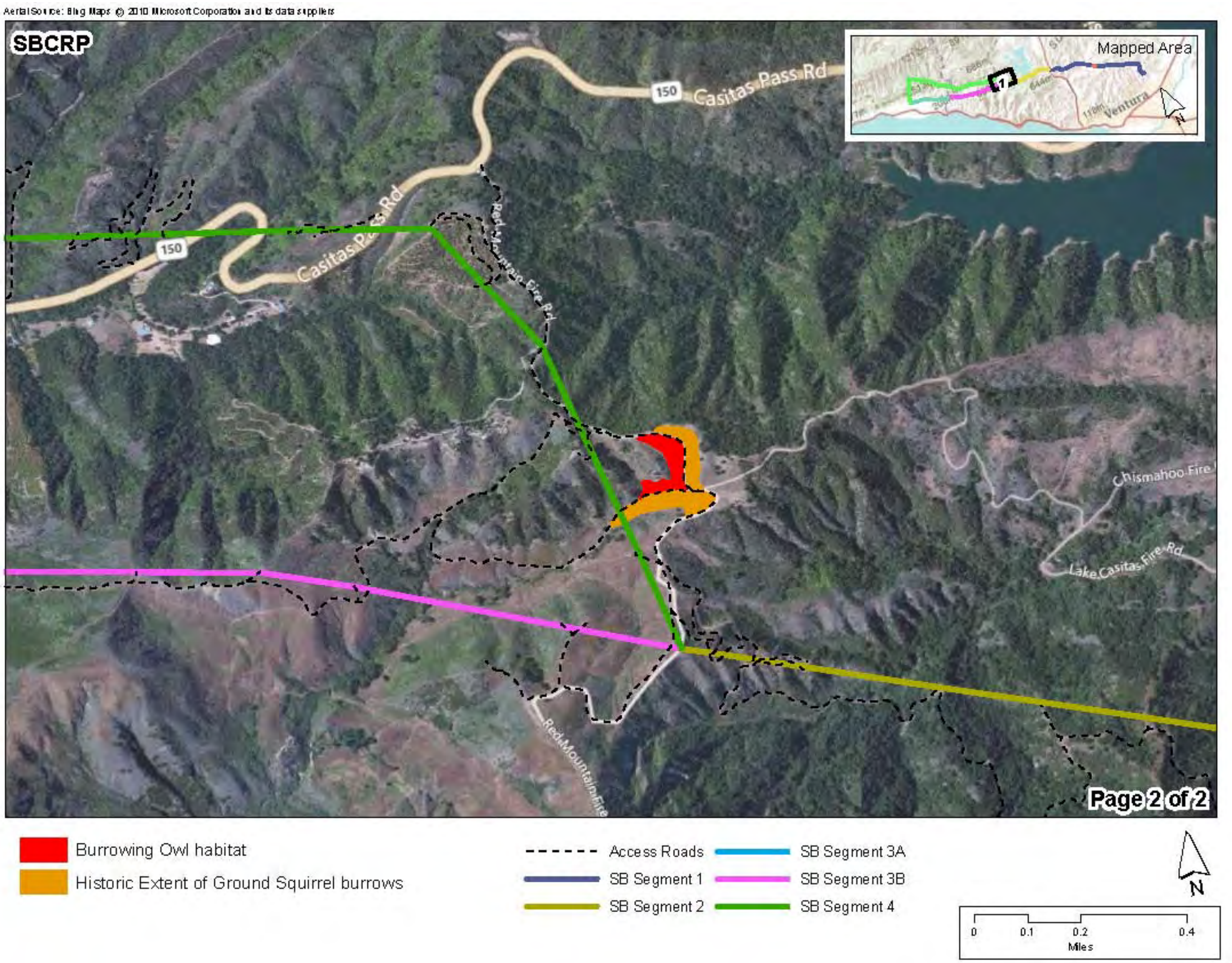


Photo 10. Looking north at ground squirrel complex/burrowing owl habitat near Segment 3B/4 split. Roadways in the upper right and middle of the photo will both be used by the Project. Cattle tank is slightly visible behind the tree in the lower right foreground.

Photo 11. Looking south across ground squirrel complex/burrowing owl habitat near Segment 3B/4 split.

Photo 12. Active ground squirrel burrows in the survey area.

4.0 DISCUSSION

4.1 Nesting Raptors

Four special-status raptor species are documented to occur in the Project Area: Cooper's hawk, golden eagle, northern harrier, and white-tailed kite. No nests of any of these species was found during any of the survey periods, and none are documented in the Project Area. No suitable eagle nesting structures or substrate are found within the Project vicinity, and eagles are not expected to nest within the Project vicinity.

Three of the eight nests found during surveys were actively being used by red-tailed hawk during the May 2012 survey. Great horned owls (*Bubo virginianus*) breed earlier than most raptor species in North America, often in late January or early February. Therefore, the Great-horned owl nest located near Construction 101 in 2011 may have been active this year, but fledged young before the May 2012 survey.

Great horned owls do not build their own nests, and often use nests built by red-tailed hawks. Red-tailed hawks often construct a new nest within a few hundred meters of the previous years nest if it is already occupied by an owl. The red-tailed hawks may return to an old nest in subsequent years if it is not occupied. The three nests in close proximity at Construction 60, 61, and 62 may all be nests from the same pair actively nesting in the eucalyptus during the May 2012 survey. This pair, or pairs of great horned owl, may return to use either of the two currently inactive nests in lattice towers M5-T3 and M5-T4 in future breeding seasons.

Activities such as grading, vegetation trimming or removal, and general project noise or vibration could result in construction-related impacts to nesting raptors, including potential disruption of nesting activity, or destruction of active nests. Construction disturbance during the breeding season (February 1 – August 31) that results in the incidental loss of fertile eggs or nestlings, or otherwise leads to nest abandonment is considered take by USFWS under the Migratory Bird Treaty Act, as well as by CDFG under the California Fish and Game Codes 3503, 3503.5, and 3513. Pre-construction surveys of the Project area for active nests, establishment of work buffers around nests found to be active, and monitoring of nest success would help ensure that no take of raptor nests occurs during Project construction.

Recommendations

Because nests in at Construction 60, 61, 70a, 84a, and 90 are in existing lattice towers that will be removed as part of the Project, SCE should consult with CDFG about appropriate measures to remove these nests during the non-breeding season prior to construction.

4.2 Burrowing Owl

Burrowing owl is a yearlong resident of open, dry grassland and desert habitats, and in grass, forb, and open shrub stages of pinyon-juniper and ponderosa pine forests as high as 5,300 feet ASL. In the vicinity of the Project Area, burrowing owls are predominantly known to be rare transients and winter visitors most frequently found in agricultural and grassland areas near the coast. The occurrence of burrowing owl in the region has notably decreased, as have the number of actively used breeding sites. A search of the eBird website shows five records of burrowing owl in the Cañada Larga area near Segment 1 and the Getty Tap between 2006 and 2010, all during the winter months of December to February (eBird 2012). Burrowing owls recorded at Cañada Larga are believed to be just winter visitors (Ventura Audubon Society 2011). No breeding areas or breeding season observations are documented for this species in the Project Area. It is believed that burrowing owls have largely been, if not completely, eliminated as a breeding species from Ventura and Santa Barbara Counties (Center for Biological Diversity 2010, USFWS 2003).

Recommendations

Though no burrowing owl have been observed in the area during the breeding season, or found during the 2012 breeding season transect surveys, there is suitable habitat for this species and suitable burrows at the two locations described above. No physical ground disturbance is expected to occur within 500 feet of any potential burrow site, however, vehicle and equipment travel will occur along roadways adjacent to habitat at both locations. Activities such as grading, vegetation trimming or removal, and general project noise or vibration could result in construction-related impacts to nesting burrowing owl, including potential disruption of nesting activity, or destruction of active burrows. Construction disturbance during the breeding season (February 1 – August 31) that results in the incidental loss of fertile eggs or nestlings, or otherwise leads to nest abandonment is considered take by USFWS under the Migratory Bird Treaty Act, as well as by CDFG under the California Fish and Game Codes 3503, 3503.5, and 3513. A pre-construction survey of these areas, and occasional visits during construction would help ensure that no burrowing owl breeding activity is occurring at these locations, or is disturbed by Project activities.

5.0 LITERATURE CITED

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APPENDIX D:

Special Status Plant Survey Report

1.0 INTRODUCTION

This report presents the results of a blooming season focused surveys for special status plant species within Segments 3B and 4, and the Getty Tap portion of Segment 1 of the Santa Barbara County Reliability Project, and identifies potential impacts to these biological resources that may result from implementation and construction of the Project.

1.1 Project Description

In 1998, the Southern California Edison Company (SCE) initiated the Project to increase reliability by reinforcing its existing 66 kilovolt (kV) sub-transmission system in northwestern Ventura County and southeastern Santa Barbara County to meet the electrical demands of the south coast of Santa Barbara County during emergency conditions while also enhancing operational flexibility.

The Project has been divided into six geographically-defined Segments (Segments 1, 2, 3A, 3B, and 4, and the Getty Tap) and at three substations (Carpinteria Substation, Casitas Substation, and Santa Clara Substation) (Figure 1).

Segment 1 begins at Santa Clara Substation off Foothill Road in unincorporated Ventura County. From that origin, it heads north along western Long Canyon; turns northwest at Harmon Canyon in the Ventura Hills; traverses Lake, Sexton, and Hall Canyons; then runs west along northern Cañada Seca and crosses Cañada Larga to Casitas Substation, which lies between SR-33 and the Ventura River. Segment 2 extends west from Casitas Substation along the south side of Lake Casitas, to the ‘Y’ near East Casitas Pass. Segment 3B heads west from the ‘Y’ through Casitas Valley along the south side of SR-150, crossing over Madranio Canyon, along Rincon Mountain, and through Rincon Valley. At the Santa Barbara/Ventura County line near the intersection of SR-150 and SR-192, Segment 3B becomes Segment 3A and continues to the west into the Shepard Mesa and Gobernador rural residential areas, then west along SR-192 to Carpinteria Substation. Segment 4 heads west from the ‘Y’ along the north side of SR-150, runs northwest along the ridgetop of Sutton Canyon, and then turns south to Carpinteria Substation. The ‘Getty Tap,’ is located approximately in the middle of Segment 1.

The Project includes the following physical elements:

- Reconstruct existing 66 kilovolt (kV) subtransmission facilities within existing utility rights-of-way (ROW) between the existing Santa Clara Substation in Ventura County and the existing Carpinteria Substation in Santa Barbara County.
- Install marker balls on overhead wire where determined to be necessary.
- Modify utility equipment within the existing Carpinteria Substation, Casitas Substation, Getty Substation, Goleta Substation, Ortega Substation, Santa Barbara Substation, and Santa Clara Substation.
- Install telecommunications facilities to connect the Project to SCE’s existing telecommunications system for the protection, monitoring and control of subtransmission and substation equipment. Install new telecommunications facilities along Segments 1, 2, and 4

and at Carpinteria Substation, Casitas Substation, Santa Clara Substation, and Ventura Substation[1].

- Transfer distribution lines (and third-party infrastructure as necessary) to subtransmission structures along Segment 3A.
- Remove subtransmission infrastructure in Segments 1 and 2.

1.2 Environmental Setting

The Project lies north and west of US-101, between one and six miles from the coastline. Elevations vary through the Project Area from 31 feet above sea level (ASL) near the Carpinteria Substation, which lies in the coastal plain, to 1,500 feet ASL along Segment 4 in the foothills of the western Transverse Ranges, to more than 1,800 feet ASL along portions of Segment 3B near Rincon Peak.

The Project crosses the headwaters of multiple small streams and creeks that flow through agricultural and urban areas before reaching the ocean, and is located in lower gradient reaches of the Santa Clara River and Ventura River watersheds, including Cañada Larga, which is tributary to the Ventura River. While groundwater and surface water sources have been extensively developed for domestic and agricultural uses throughout the area, these riparian corridors contrast sharply with an otherwise dry landscape. Landslides are prone to occur in areas of steep, unstable terrain, and the area has a history of large and sometimes devastating wildland fire events, with “Sundowner” and “Santa Ana” winds contributing to fast-moving and destructive fires (USFS 2005).

The majority of the Project is located on private lands, while three tower sites and associated access and spur roads in Segment 4 are located within the Santa Barbara Front, a geographical unit of lands under the jurisdiction of the Los Padres National Forest owned by the U.S. Forest Service (USFS). Land uses in the immediate vicinity of the Project Area are dominated by agriculture (cattle grazing and orchards) and “open-space” areas covered by native vegetation communities, with low-density residential development and commercial areas (nurseries and row crops) scattered through Segments 3A, 3B, and 4.

Temperatures in the area average 50 to 71° F, with an average annual temperature of 60° F. Average rainfall ranges from 15.4 to 17.7 inches. The east-west orientation of the mountains, combined with the distinct Mediterranean/marine climate, results in a unique botanic zone and mix of species. Predominately north- or south-facing slopes are dominated by alternating bands of sedimentary rock formations, with oak woodlands at lower elevations. Conifers exist in small patches along ridgetops and on north-facing slopes. Noxious weed infestations, including black mustard (*Brassica nigra*), tocalote (*Centaurea melitensis*), Cape ivy (*Delairea odorata*), and ruderal species and escaped cultivars occur throughout the vicinity of the Project, especially along road and trail corridors.

[1] The Project also includes additional telecommunications-related work at Getty Substation, Goleta Substation, Ortega Substation, Santa Barbara Substations, and Ventura Substation; this work would be conducted exclusively within the MEERs or on substation property, and thus would have no impact to biological resources. Therefore, this work is not addressed further in this report.

Figure 1. Project Location

2.0 METHODOLOGY

Prior to conducting the 2012 botanical survey, standard database searches were conducted, and previous surveys in the area were reviewed to obtain a list of federal and state listed plant species documented in the region. The results of these preliminary database searches provided a basis for addressing the appropriate special-status species in the footprint of existing infrastructure (i.e., substations, access roads, and crane pads), proposed additional workspace (spur roads, temporary and permanent drill and crane pads, pulling and stringing sites), and immediate surroundings (hereafter referred to in this section as the Project Area).

2.1 Literature and Database Review

Information about documented special-status plant species was obtained from the California Natural Diversity Database (CNDDB; CDFG 2003). The CNDDB search included U.S. Geological Survey (USGS) 7.5-minute quadrangles Carpinteria, Matilija, Pitas Point, Saticoy, Ventura, and White Ledge Peak as well as the eleven surrounding quadrangles: Camarillo, Hildreth Peak, Lion Canyon, Little Pine Mountain, Ojai, Old Man Mountain, Oxnard, Santa Paula, Santa Paula Peak, Santa Barbara, and Wheeler Springs.

Additional literature and databases referenced include: *The Jepson Manual* (Baldwin 2012); the *CalFlora Database* (CalFlora, 2012); and the *Inventory of Rare and Endangered Plants of California* (CNPS 2010).

2.2 Survey Methods

A biological reconnaissance survey of the Project Area was conducted in February and March 2012 to describe and map the vegetation present in the Project Area and to evaluate the potential of the habitats to support special-status plant and wildlife species. This survey included searching for and identifying whole plants, remnant annual stalks, and/or inflorescences when present.

A focused survey for special-status plant species was conducted within the Segments 3B, 4, and the Getty Tap portion of Segment 1 of the Project Area between May 7 and 15, 2012. The surveys were conducted during the appropriate blooming season for target special-status plant species with a known presence, or have a “Moderate”, or “High” potential to occur in the Project Area. The survey included an area within 100 feet (a 200-foot wide corridor) of the alignment in locations that may provide suitable habitat for special-status species (hereafter referred to as the Survey Area). Individuals or populations of special-status plant species were recorded using a global positioning system (GPS) unit, and representative specimens or photographs of species were taken for identification.

3.0 RESULTS

3.1 Plant Species

A comprehensive list of plant species observed in the Project Area is provided in the Biological Technical Report (BRC 2012). A total of 279 species were identified from the collective botanical surveys of the Project Area with 201 native and 78 non-native species. The list of native species includes ten CNPS Ranked special-status plant species.

Special-Status Plant Species

No Federal or State listed threatened or endangered plant species are documented in the Project Area, or are likely to be found in the Project Area. Suitable habitat exists for one State listed rare species, Santa Ynez false lupine (*Thermopsis macrophylla*). This species has been documented within 5 miles of the project area, although no individuals were observed during field surveys.

Ten special-status species were found within the Survey Area during previous surveys or during the May 2012 botanical survey (Table 1, Figure 2).

Two listed plant species (CNPS RPR List 1 and 2) were documented to occur in the Survey Area: Santa Barbara honeysuckle (*Lonicera subspicata* var. *subspicata*) and Nuttall's scrub oak (*Quercus dumosa*). Based on geographic ranges and the presence of suitable habitat within the Project Area, eight additional CNPS RPR 1 and 2 species have a "High" or "Moderate" potential to occur in the Project Area: Davidson's saltscale (*Atriplex serenana* var. *davidsonii*), late-flowered mariposa lily (*Calochortus fimbriatus*), Plummer's mariposa-lily (*Calochortus plummerae*), Santa Barbara morning glory (*Calystegia sepium binghamiae*), mesa horkelia (*Horkelia cuneata puberula*), Carmel Valley malacothrix (*Malacothrix saxatilis* var. *arachnoidea*), and Ojai navarretia (*Navarretia ojaiensis*). Seven additional listed plant species (CNPS RPR List 3 and 4) are documented to occur in the Survey Area, while three more have a "High" or "Moderate" potential to occur. Descriptions of individual species and locations of documented occurrence are presented in Section 4.1.

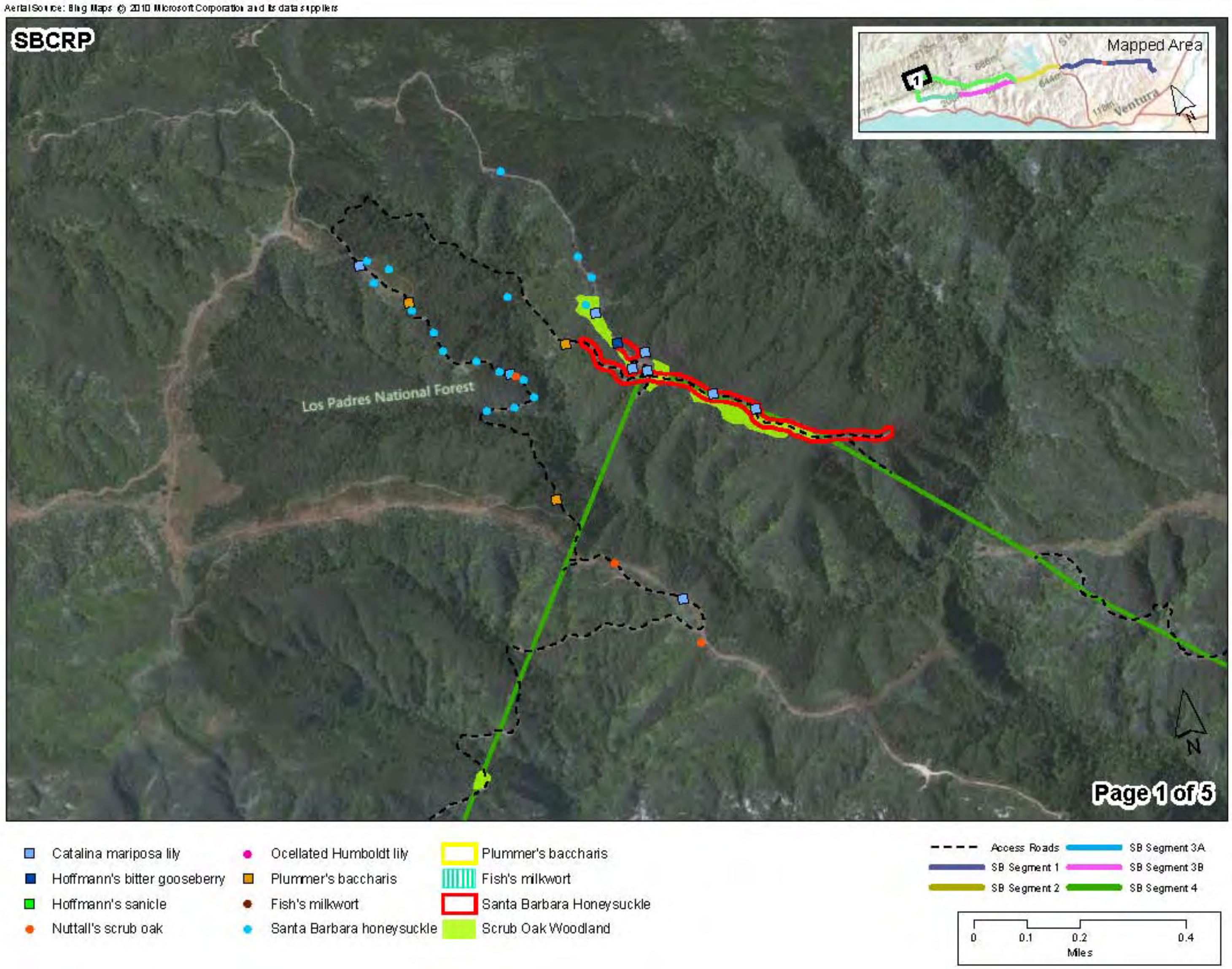
Table 1. Locations of Special-status Plant Species Observed within the Survey Area.

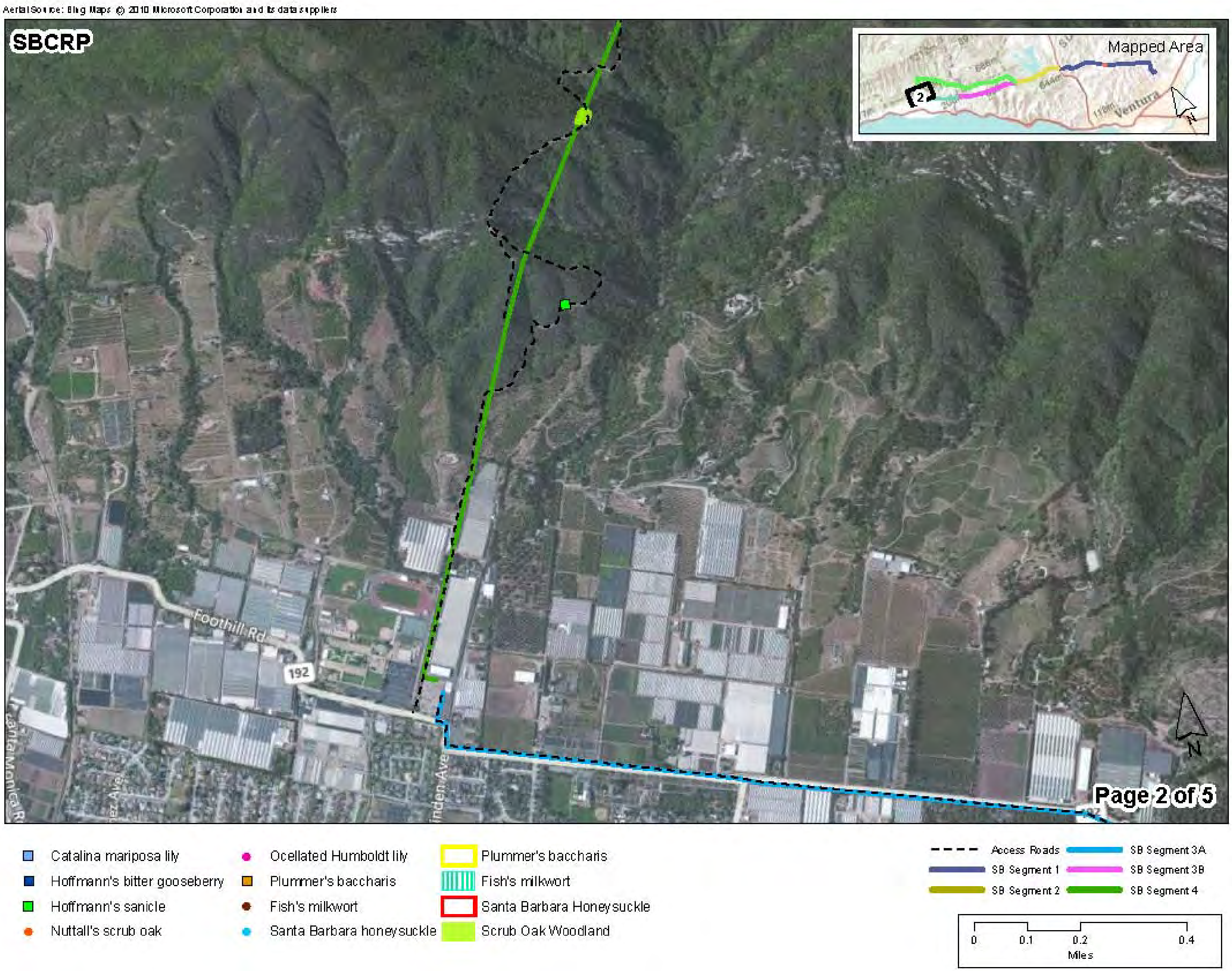
Scientific Name	Common Name	Segment	Location (Construction # or UTM NAD 83)
Baccharis plummerae plummerae	Plummer's baccharis	4	E269538 N3813539
Baccharis plummerae plummerae	Plummer's baccharis	4	E269538 N3813539
Baccharis plummerae plummerae	Plummer's baccharis	4	E269893 N3812884
Baccharis plummerae plummerae	Plummer's baccharis	4	E269988 N3813347
Baccharis plummerae plummerae	Plummer's baccharis	3A	79
Baccharis plummerae plummerae	Plummer's baccharis	3A	80
Baccharis plummerae plummerae	Plummer's baccharis	3A	84a
Baccharis plummerae plummerae	Plummer's baccharis	4	102
Baccharis plummerae plummerae	Plummer’s baccharis	3B	E278024 N3806815
Baccharis plummerae plummerae	Plummer’s baccharis	3B	E279548 N3806479
Baccharis plummerae plummerae	Plummer’s baccharis	3B	E279500 N3806540
Baccharis plummerae plummerae	Plummer’s baccharis	3B	E281297 N3806641
Calochortus catalinae	Catalina mariposa lily	4	E269811 N3813280
Calochortus catalinae	Catalina mariposa lily	4	123
Calochortus catalinae	Catalina mariposa lily	4	124
Calochortus catalinae	Catalina mariposa lily	4	125a
Calochortus catalinae	Catalina mariposa lily	4	125
Calochortus catalinae	Catalina mariposa lily	4	139
Calochortus catalinae	Catalina mariposa lily	4	140
Calochortus catalinae	Catalina mariposa lily	3B	E278112 N3806080
Calochortus catalinae	Catalina mariposa lily	3B	E278113 N3806116
Calochortus catalinae	Catalina mariposa lily	4	E270223 N3813230
Calochortus catalinae	Catalina mariposa lily	4	E270409 N3813132
Calochortus catalinae	Catalina mariposa lily	4	E270528 N3813066
Calochortus catalinae	Catalina mariposa lily	4	E272300 N3811768
Calochortus catalinae	Catalina mariposa lily	4	E272300 N3811768
*Calochortus catalinae**	Catalina mariposa lily*	4	E269406 N3813672
*Calochortus catalinae**	Catalina mariposa lily*	4	E270092 N3813424
*Calochortus catalinae**	Catalina mariposa lily*	4	E270177 N3813242
*Calochortus catalinae**	Catalina mariposa lily*	4	E270227 N3812529
Calochotus fimbriatus	late flowered mariposa lily	4	126
Calochotus fimbriatus	late flowered mariposa lily	4	127
Calochotus fimbriatus	late flowered mariposa lily	4	128
Juglans californica californica	California black walnut	4	96
Juglans californica californica	California black walnut	4	98
Lilium humboldtii ocellatum	Ocellated Humboldt lily	4	E269722 N3813182
Lonicera subspicata var. *subspicata*	Santa Barbara honeysuckle	4	E269430 N3813684
Lonicera subspicata var. *subspicata*	Santa Barbara honeysuckle	4	E269440 N3813614
Lonicera subspicata var. *subspicata*	Santa Barbara honeysuckle	4	E269492 N3813649
Lonicera subspicata var. *subspicata*	Santa Barbara honeysuckle	4	E269542 N3813515
Lonicera subspicata var. *subspicata*	Santa Barbara honeysuckle	4	E269597 N3813441
Lonicera subspicata var. *subspicata*	Santa Barbara honeysuckle	4	E269618 N3813380
Lonicera subspicata var. *subspicata*	Santa Barbara honeysuckle	4	E269715 N3813335
Lonicera subspicata var. *subspicata*	Santa Barbara honeysuckle	4	E269722 N3813182
Lonicera subspicata var. *subspicata*	Santa Barbara honeysuckle	4	E269778 N3813292
Lonicera subspicata var. *subspicata*	Santa Barbara honeysuckle	4	E269806 N3813180
Lonicera subspicata var. *subspicata*	Santa Barbara honeysuckle	4	E269811 N3813280
Lonicera subspicata var. *subspicata*	Santa Barbara honeysuckle	4	E269836 N3813513

Lonicera subspicata var. *subspicata*	Santa Barbara honeysuckle	4	E269847 N3813260
Lonicera subspicata var. *subspicata*	Santa Barbara honeysuckle	4	E269870 N3813892
Lonicera subspicata var. *subspicata*	Santa Barbara honeysuckle	4	E269871 N3813203
Lonicera subspicata var. *subspicata*	Santa Barbara honeysuckle	4	E270028 N3813344
Lonicera subspicata var. *subspicata*	Santa Barbara honeysuckle	4	E270059 N3813336
Lonicera subspicata var. *subspicata*	Santa Barbara honeysuckle	4	E270064 N3813604
Lonicera subspicata var. *subspicata*	Santa Barbara honeysuckle	4	E270065 N3813454
Lonicera subspicata var. *subspicata*	Santa Barbara honeysuckle	4	E270082 N3813276
Lonicera subspicata var. *subspicata*	Santa Barbara honeysuckle	4	E270096 N3813536
Lonicera subspicata var. *subspicata*	Santa Barbara honeysuckle	4	E270159 N3813320
Lonicera subspicata var. *subspicata*	Santa Barbara honeysuckle	4	E270163 N3813217
Lonicera subspicata var. *subspicata*	Santa Barbara honeysuckle	4	E270166 N3813283
Lonicera subspicata var. *subspicata*	Santa Barbara honeysuckle	4	E270186 N3813283
Lonicera subspicata var. *subspicata*	Santa Barbara honeysuckle	4	E270202 N3813284
Lonicera subspicata var. *subspicata*	Santa Barbara honeysuckle	4	E272302 N3811768
Polygala cornuta	Fish's milkwort	4	101
Quercus dumosa	Nuttall's scrub oak	4	E269824 N3813271
Quercus dumosa	Nuttall's scrub oak	4	E270038 N3812670
Quercus dumosa	Nuttall's scrub oak	4	E270261 N3812391
Quercus dumosa	Nuttall's scrub oak	4	114
Quercus dumosa	Nuttall's scrub oak	4	121
Quercus dumosa	Nuttall's scrub oak	4	122
Quercus dumosa	Nuttall's scrub oak	4	123
Quercus dumosa	Nuttall's scrub oak	4	124
Quercus dumosa	Nuttall's scrub oak	4	125a
Quercus dumosa	Nuttall's scrub oak	4	125
Quercus dumosa	Nuttall's scrub oak	4	139
Quercus dumosa	Nuttall's scrub oak	4	140
Quercus dumosa	Nuttall's scrub oak	4	126
Quercus dumosa	Nuttall's scrub oak	4	127
Quercus dumosa	Nuttall's scrub oak	4	128
Quercus dumosa	Nuttall's scrub oak	4	130
Ribes amarum var. *hoffmannii*	Hoffmann's bitter gooseberry	4	E270143 N3813326
Sanicula hoffmannii	Hoffmann’s sanicle	4	E269404 N3811521
Sanicula hoffmannii	Hoffmann’s sanicle	3B	E277377 N3806821
Sanicula hoffmannii	Hoffmann’s sanicle	3B	E277977 N3806844

Asterisk* indicates a non-confirmed identification due to missing plant parts.

Figure 2. Locations of Special-status Plant Species Observed within Segment 3B, Segment 4, and the Getty Tap portion of Segment 1 of the Project Area (5 pages).

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Ocellated Humboldt lily
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Fish's milkwort
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Plummer's baccharis
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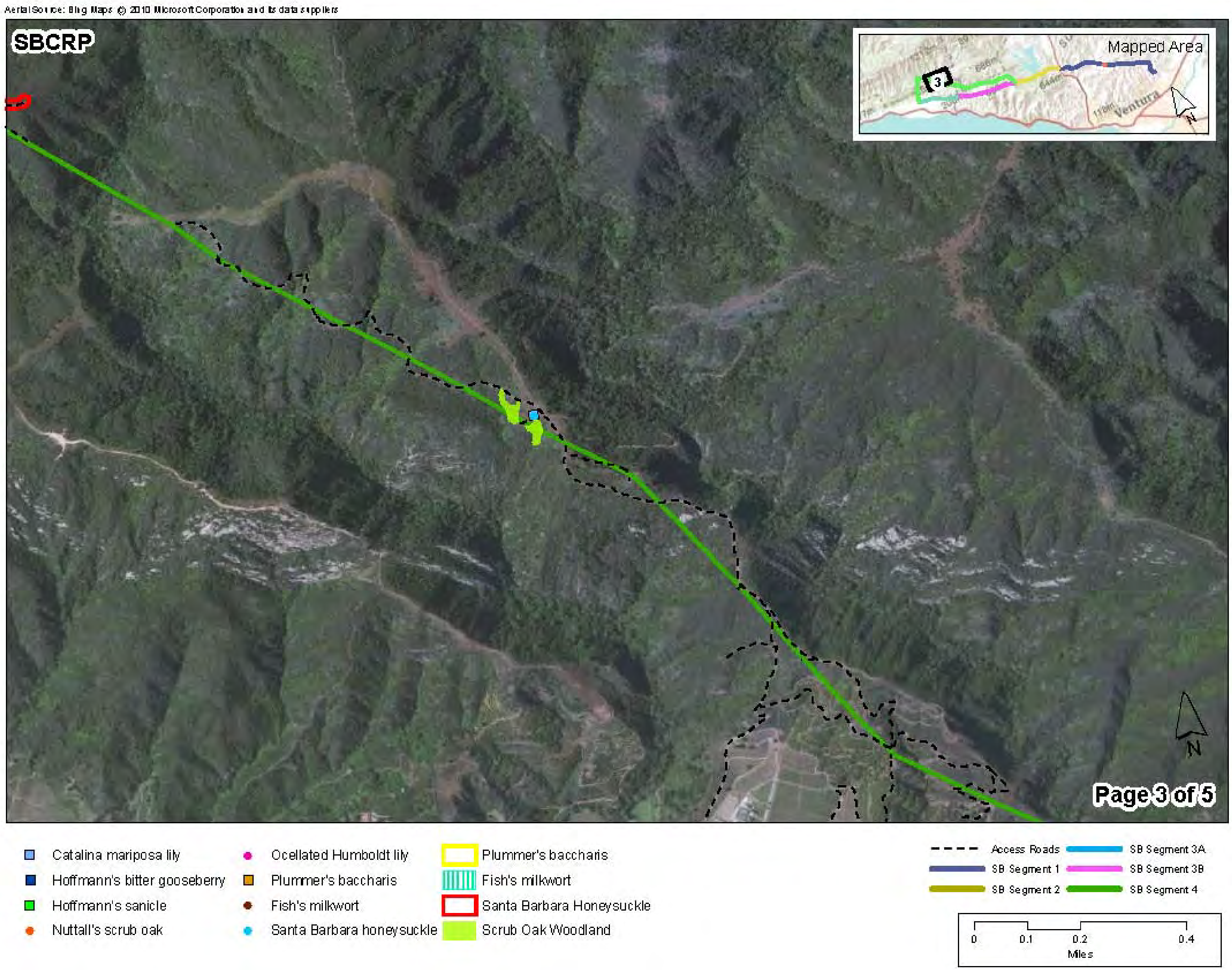
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Fish's milkwort
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Fish's milkwort
Santa Barbara Honeysuckle
Scrub Oak Woodland
Access Roads
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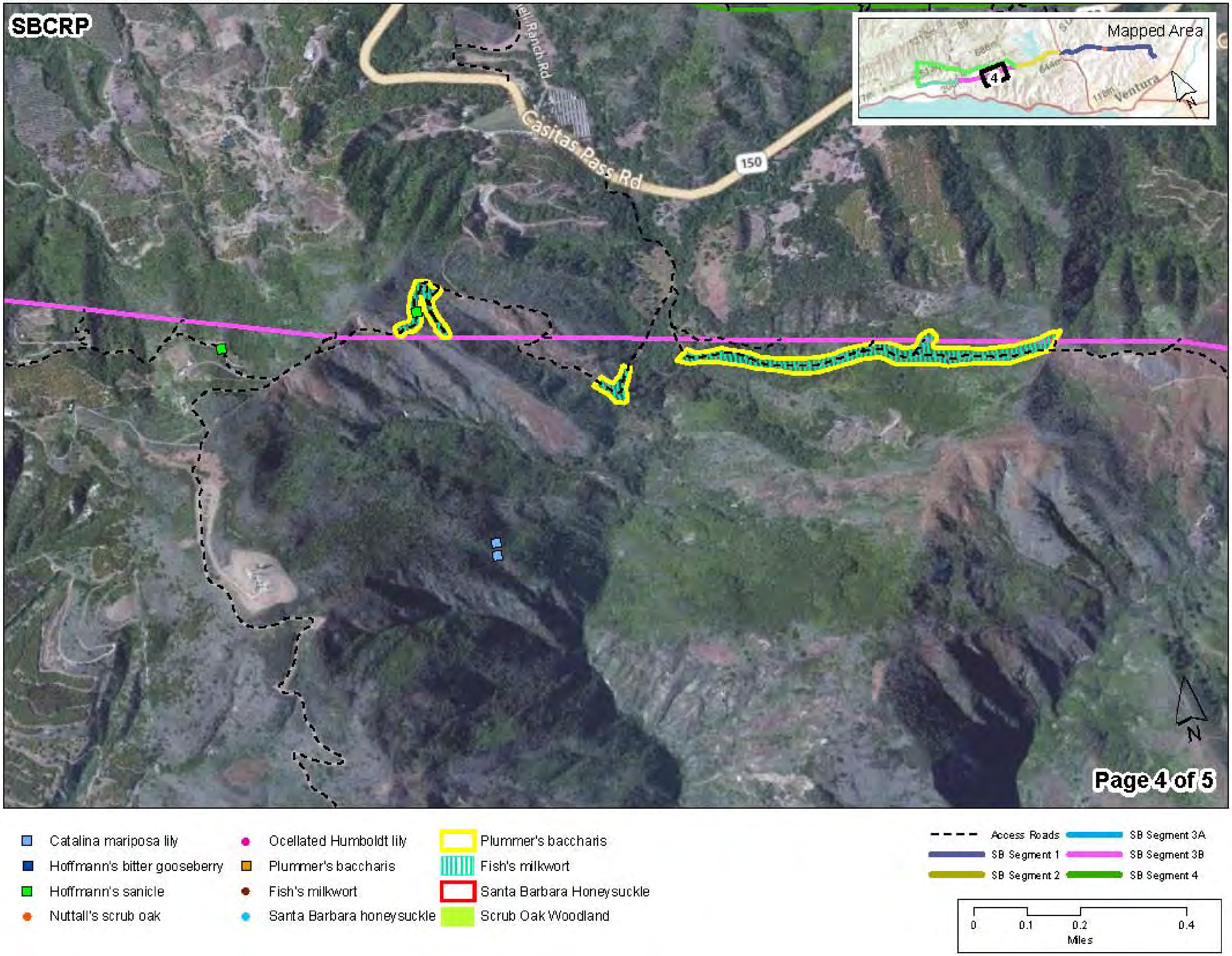

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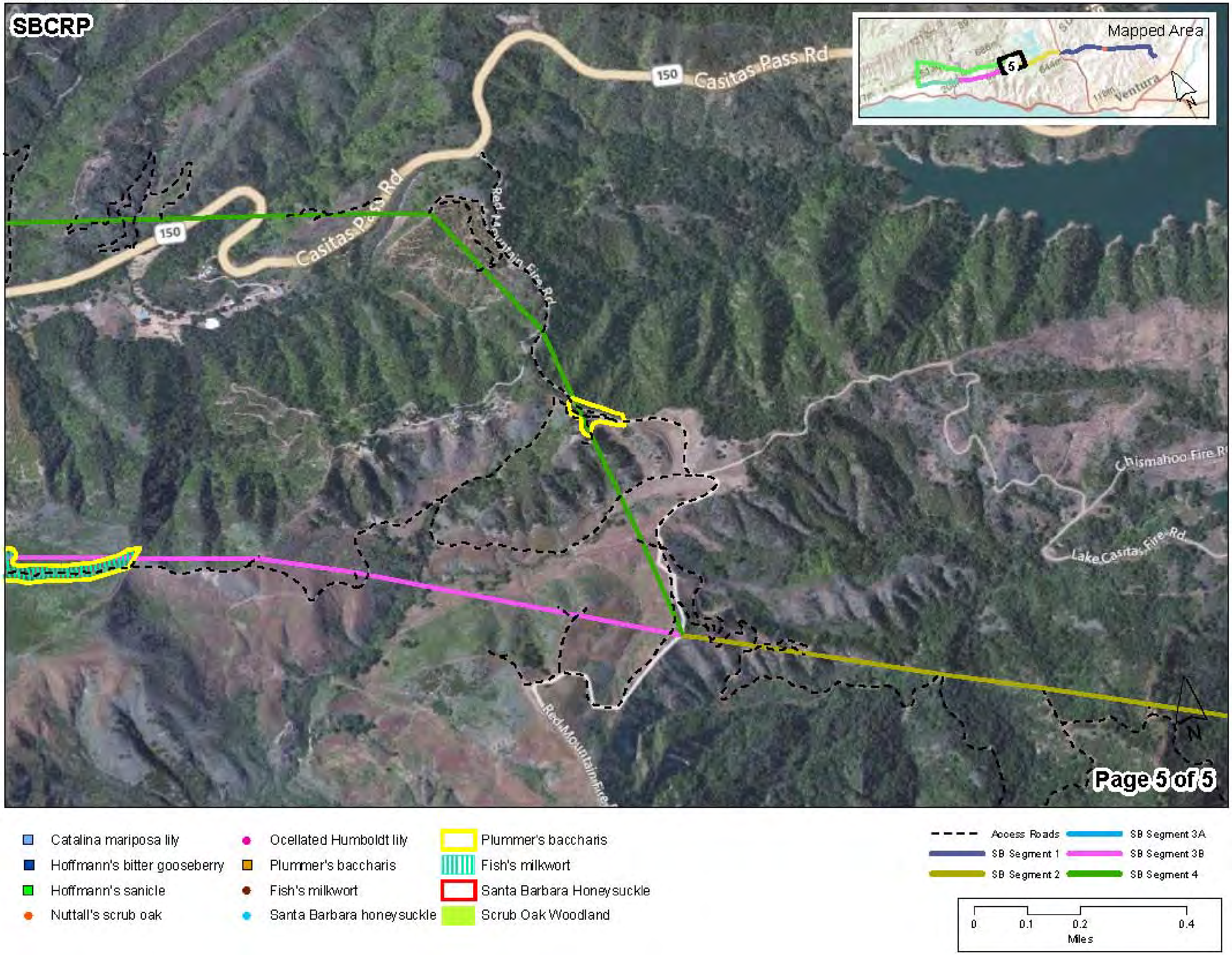

4.0 DISCUSSION

4.1 Special-Status Plant Species Descriptions and Occurrence

Plummer's Baccharis (*Baccharis plummerae plummerae*)

STATUS		
Federal	**State /CNDDB**	**CNPS** (CNPS 2001)
None	None / G3G4, S3.2	Rank 4.3: Uncommon in California

Plummer's baccharis (Photo 1) is a small, broad-leaved winter-deciduous shrub (<2 meters tall) with fine-curled, hair-covered, wand-like stems and 20 to 45-mm, oblanceolate, toothed, 3-veined (prominent), sessile leaves. The flowers, generally blooming between August and October, are arranged in paniculate heads with a bell-shaped involucre, and are not particularly showy. The flower heads are either staminate (5-6.5 mm long) or pistillate (6-8.5 mm long). Plummer's Baccharis is a member of the sunflower family (Asteraceae). Plummer's baccharis typically occurs on rocky, well-drained, north-facing slopes in coastal sage scrub and oak woodland plant communities. It ranges from southern coastal Santa Barbara County to coastal Los Angeles County, and Santa Cruz and Anacapa Islands, from 300 to 1,250 feet in elevation.

Plummer's baccharis was documented during surveys along the access road in Sutton Canyon north of the Carpinteria Substation, at sites between Construction 79 to 102 and 124 to 126 in Segment 4, between Construction 59 to 64 in 3B, and at sites in Segments 1 and 2.

Catalina Mariposa Lily (*Calochortus catalinae*)

STATUS		
Federal	**State /CNDDB**	**CNPS** (CNPS 2001)
None	None / G3, S3.2	Rank 4.2: Uncommon in California

Catalina mariposa lily (Photos 2 and 3) is a perennial herb that re-sprouts annually from a small bulb. The stems are 20 to 40 cm long, generally branched above. The basal strap-shaped leaves are 10 to 30 cm long and usually wither before anthesis (flowering). The inflorescence consists of 1 to 4 bowl-shaped flowers with subtending, opposite bracts 2 to 10 cm long. Sepals are white with purple spots near the base (20 to 30 mm long). Petals are nearly glabrous, white, tinged lilac, and purple-spotted near the base (20 to 50 mm long). The inside of the petals have oblong and densely branched-hairy nectaries. Catalina mariposa lily blooms between February and May. The fruit (capsules) are erect, two to five cm long, and not angled as in other Mariposa lilies. *C. catalinae* is a member of the lily family (Liliaceae). Catalina mariposa lily grows in heavy soils of open grassland, chaparral, and Coastal Sage Scrub communities, at elevations below 2,300 feet. It ranges from San Luis Obispo County to San Diego County, and on Santa Rosa, Santa Cruz, and Santa Catalina Islands.

Photo 1. Plummer's Baccharis (*Baccharis plummerae* ssp. *plummerae*) on Segment 4 in bloom, May 2012.

Photo 2. Catalina Mariposa Lily (*Calochortus catalinae*) on Segment 4 in bloom, May 2012.

Photo 3. Catalina Mariposa Lily (*Calochortus catalinae*) on Segment 4 in bloom, May 2012.

Catalina mariposa lily was documented during surveys along the access road in Sutton Canyon north of the Carpinteria Substation, between Construction 124 and 140 in Segment 4, and sites along Segments 1, 2, and 3B.

California Black Walnut (*Juglans californica californica*)

STATUS		
Federal	**State / CNDDB**	**CNPS** (CNPS 2001)
None	None / G3, S3.2	Rank 4.2: Uncommon in California

California black walnut is a small, broad-leaved, monoecious, winter-deciduous tree (15 meters tall) with one to five trunks. It has pinnately divided leaves with 11 to 19 lanceolate to ovate toothed leaflets (two to eight cm long). The wind pollinated, greenish flowers, blooming between March and May, have four-lobed sepals arranged in pendulous clusters before the leaves emerge. This species produces spheric, leathery-husked, strong-smelling fruit (walnuts) two to three centimeters in diameter. *J. californica californica* is listed in the NIWP with an FAC wetland indicator status (facultative species that is equally likely to occur in wetlands and non-wetlands). *Juglans californica californica* is uncommon, but can be found on slopes and canyons at elevations between 150 and 3,000 feet, and it is often associated with riparian habitats. It ranges from the Santa Lucia Mountains (where they were cultivated), Santa Barbara County, and along the coastal portions of the Transverse Ranges, south to the northern Peninsular Ranges in northern San Diego County. California Black Walnut Forest is a much-fragmented, declining natural community, and it is threatened by urbanization and grazing, which inhibit natural reproduction.

California black walnut is found along numerous drainages and uplands in all Segments of the Project Area, including along some Project access routes in Segment 3B.

Ocellated Humboldt Lily (*Lilium humboldtii ocellatum*)

STATUS		
Federal	**State / CNDDB**	**CNPS** (CNPS 2001)
None	None / G4T3, S3.2	Rank 4.2: Uncommon in California

Ocellated Humboldt lily is a perennial bulbiferous herb (<3.1 meters). Bulb scales are often purple at the tip, obscurely two to five segmented. Flowers are perianth yellow or light orange, with spots margined in lighter red. Ocellated Humboldt lily blooms between March and August. Ocellated Humboldt lily can be found in chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, and riparian woodland at elevations between 100 and 5,900 feet. It ranges among the following counties: Los Angeles, Orange, Riverside, Santa Barbara, San Bernardino, San Diego, San Luis Obispo, and Ventura. It also exists on Anacapa Island and Santa Rosa Island. *L. humboldtii ocellatum* is threatened by development and horticultural collecting on the mainland, and by feral herbivores on Santa Cruz and Santa Rosa Islands.

Ocellated Humboldt lily was documented from previous Project surveys in a drainage along the access road in Sutton Canyon, Segment 4, north of the Carpinteria Substation. This species was not found during the 2012 survey.

Santa Barbara Honeysuckle (*Lonicera subspicata* var. *subspicata*)

STATUS		
Federal	**State /CNDDB**	**CNPS** (CNPS 2001)
None	None / G5T2, S2.2	Rank 1B.2: rare, threatened, or endangered in California and elsewhere

Santa Barbara Honeysuckle is perennial evergreen shrub. Stems are generally twining or reclining (9 to 24 dm); herbage glabrous to puberulent. Leaves are one to four centimeters, narrowly elliptic, and three times longer than wide. *L. subspicata* var. *subspicata* blooms between May and February. Habitats include chaparral, cismontane woodland, and coastal scrub. It ranges from Los Angeles to Santa Barbara Counties, and Santa Catalina Island at elevations below 3,300 feet. This species is threatened by development, road construction, and vehicles.

Santa Barbara honeysuckle was documented during surveys along the access road in Sutton Canyon north of the Carpinteria Substation, and along access roads and pads between Construction 124 and 126 of Segment 4.

Fish's Milkwort (Polygala cornuta var. fishiae)

STATUS		
Federal	**State / CNDDB**	**CNPS** (CNPS 2001)
None	None / G5T4, S3.3	Rank 4.3: Uncommon in California

Fish's milkwort (Photo 4) is a small, broad-leaved, winter-deciduous, 25 cm-tall shrub, from rhizomes, that often form dense thickets up to 2 meters wide. The stems are decumbent to erect (6 to 25 dm long) and covered with leaves that are less than two times as long as wide. The flowers, blooming May through August, are somewhat peaflower-shaped, 7 to 11 mm long, and pale with dark pink buds. Fish's milkwort can be found on exposed slopes growing in chaparral, oak woodland, and riparian woodland habitats at elevations between 300 and 3,500 feet. It ranges from Santa Barbara County in the Outer South Coast Ranges, south through the Transverse Ranges, to the northern Peninsular Ranges in northern San Diego County.

Fish's milkwort was documented during surveys near 12 tower sites in Segments 1 and 2, between Construction 59 to 64 in Segment 3B, and at Construction 101 in Segment 4.

Photo 4. Fish's milkwort (*Polygala cornuta* var. *fishiae*) on Segment 4 in bloom, May 2012.

Nuttall's Scrub Oak (*Quercus dumosa*)

STATUS		
Federal	**State / CNDDB**	**CNPS** (CNPS 2001)
C2	None / G2, S1.1	Rank 1B.1: Plants considered to be rare, threatened, or endangered

Nuttall's scrub oak is a broad-leaved evergreen shrub (1 to 3 m tall) with sparsely short-hairy, dark reddish-brown slender twigs (becoming glabrous) and oblong/elliptic, obtuse-tipped to abruptly pointed, and toothed-margined leaves (1 to 2.5 cm long). The upper leaf surface is slightly shiny-green, and the lower is finely tomentose, becoming glabrous, dull pale green. The fruit (acorn) has a cup that is 8 to 15 mm wide, 5 to 8 mm deep, and bowl-shaped with tubercled scales, and has a nut that is 15 to 25 mm long, slender, ovoid, tapered-tipped, and glabrous-shelled (inside). *Q. dumosa* blooms from February to August. *Q. dumosa* grows predominantly in sandy, clay-loam, and sandstone soils of chaparral and Coastal Sage Scrub habitats near the coast. It is known to occur along the South Coast in Orange, Santa Barbara, and San Diego Counties, and Baja, California at elevations below 1,300 feet. Nuttall's scrub oak is primarily threatened by development.

Nuttall's scrub oak hybridizes with inland scrub oak (*Q. berberidifolia*), which is the widespread scrub type oak known throughout much of cismontane California. Because the two species are able to hybridize, various individual shrubs in one location may show characteristics of both species on a gradient scale. During the most recent botanical survey, May 2012, no definitive samples of Nuttall's scrub oak were identified. However, positive identifications of samples of the rare species were documented in previous years near Construction 121 to 128, and 139 and 140 in Segment 4. The Scrub Oak Woodland polygons from the Biological Technical Report (BioResource Consultants 2012) are used in the mapping to indicate areas where individuals, or hybrids, of the species may occur within the project area (Figure 3).

Hoffmann's Bitter Gooseberry (*Ribes amarum* var. *hoffmannii*)

STATUS		
Federal	**State / CNDDB**	**CNPS** (CNPS 2001)
None	None / G4?T2T3, S2S3	Rank 1B.1: Plants considered to be rare, threatened, or endangered

Hoffmann's bitter gooseberry is a perennial deciduous scrub (<2 m tall). Stems have three nodal spines. Leaves are 2 to 4 cm and glandular-hairy. Inflorescences possess one to three flowers. Flowers are longer than wide with reflexed, purple sepals (2 to 4 mm) and white petals with margins curled inward. Fruit is 15 to 20 mm and purple with stiff bristles. *R. amarum* var. *hoffmannii* blooms between March and April. Hoffmann's bitter gooseberry is found in chaparral and riparian woodland at elevations between 500 to 3,900 feet. Hoffmann's bitter gooseberry ranges among Santa Barbara County, San Diego County, and Ventura County. It has also been found in the Sierra Nevada Foothills, Tehachapi Mountains, and San Francisco Bay Area.

Hoffman's bitter gooseberry was documented in previous years during surveys near Construction 124 and 125 in Segment 4.

Hoffmann's Sanicle (*Sanicula hoffmannii*)

STATUS		
Federal	**State / CNDDB**	**CNPS** (CNPS 2001)
None	None / G3, S3.3	Rank 4.3: uncommon in California

Hoffmann's sanicle (Photo 5) is an erect, taprooted, biennial to perennial herb (<1 m tall). Leaves are bluegreen and generally compound palmate (4.5 to 13.5 cm long). It is a member of the Apiaceae family with umbel like inflorescence. Flowers are green to yellow and bisexual with calyx lobes fused at the base (1 to 2.3 mm) blooming March through May. Hoffmann's sanicle is found in coastal sage scrub, chaparral, and pine woodland areas below 1,650 feet. The range of Hoffmann's sanicle includes the central and south coasts, including the Channel Islands.

Hoffmann's sanicle was documented during the most recent botanical surveys along the access roads between Construction 64 and 66 in Segment 3B and between Construction 131 and 132 on Segment 4. This species may occur in other roadside locations on Segments 3B and 4.

Photo 5. Hoffmann's sanicle (*Sanicula hoffmannii*) on Segment 4 in May 2012.

4.2 Project Impacts on Special-Status Plants

In general, impacts to special-status species are not expected at a population level for any listed species. However, some individuals of these species may be adversely impacted during the grading of access roads, tower pads, or other workspaces. Special avoidance measures should be conducted during road grading activities for spur roads and tower pads at documented Catalina or late-flowered mariposa lily locations during their respective seven-month blooming periods from February through August.

Much of the potential impacts to any species are not expected to be greater than what normally occurs during regular maintenance of the existing access roads and pads, though some new access spur roads and tower pads will be developed. However, weed species that may out-compete native species may spread and colonize disturbed areas following construction, causing indirect impacts to special-status plant populations. Special measures should be prescribed to prevent the introduction, continuance, and spread of noxious weeds within the Project Area.

Recommendations

Impacts to these special-status plant species can be reduced, if not avoided altogether by implementing the following measures:

- A biologist should conduct environmental training for crews, including information about the species that may occur, and avoidance measures that may be practiced to avoid these species.
- Confine work areas and activities to minimize the amount of unnecessary disturbance to native vegetation communities.
- A biologist should conduct a pre-construction survey for special-status plant species, and flag individuals or populations for avoidance as practicable.
- A biological monitor may be used to help direct work activities around special-status species when working in proximity to these sensitive resources.

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Southern California Edison Company
Environmental Affairs Division

Sensitive Species Surveys for the Santa Clara-Carpinteria 66kV Power Line Project

March 2000

BioResource Consultants

......providing applied science and research for natural resources management

Southern California Edison
Environmental Affairs Division
Rosemead, California

Sensitive Species Surveys for the Santa Clara-Carpinteria 66kV Power Line Project

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March 2000

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1.0 INTRODUCTION

Southern California Edison (SCE) is considering replacing or upgrading its 66 kV transmission line towers along the Santa Clara-Carpinteria line. They generally follow a westerly course from Saticoy in eastern Ventura County toward Carpinteria in southeastern Santa Barbara County.

This document describes the results of seasonal field surveys of the natural vegetation and special-status plant and wildlife species conducted along the Southern California Edison's (SCE) Santa Clara-Carpinteria Transmission Line. The purpose of the field surveys was to determine the potential and actual occurrence of any special-status plant and wildlife species at any of the transmission line towers being proposed for upgrade.

2.0 STUDY AREA

The Santa Clara-Carpinteria 66 kV transmission line originates at the SCE Santa Clara (River) Substation in eastern Ventura (Saticoy), Ventura County, and terminates at the Carpinteria Substation in Carpinteria, Santa Barbara County (Figure 1). Detailed maps showing individual tower placements are provided in Appendix A.

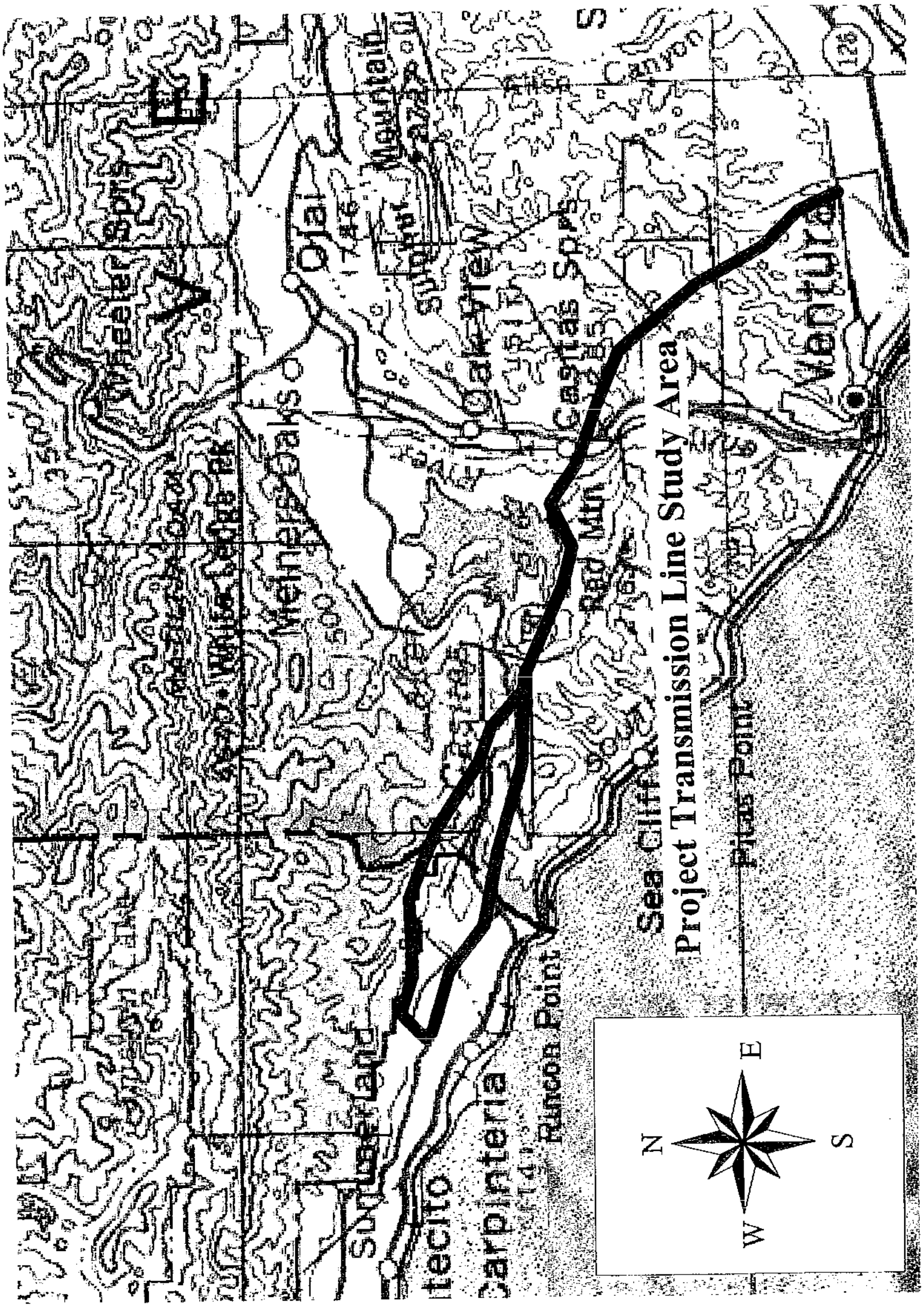
The transmission line bifurcates at approximately its halfway point near East Casitas Pass, a few miles east of the Ventura/Santa Barbara County line. The northern line splits again near the county line.

The biological resources, particularly special-status species and sensitive habitats, were surveyed within a 50-foot radius of each tower. The place of origin, line direction, ending location, and tower/survey site numbers of the "main" SCE transmission line (the Santa Clara-Carpinteria transmission line), and its two "branch" lines, are provided in the following descriptions.

2.1 MAIN LINE:

The Main Line (Santa Clara-Carpinteria Line [Survey Tower Nos. 1-N to 114-N]) begins at Santa Clara Substation in Saticoy (Ventura), heads north along western Long Canyon, and turns northwest at Harmon Canyon (Ventura Hills). The transmission line traverses Lake, Sexton, and Hall Canyons, then runs west along northern Cañada Seca, and crosses Cañada Larga and the Ventura River just west of the Casitas Springs Substation. The Main Line runs along the south side of Lake Casitas, through Casitas Valley, along State Route (SR) 150 (past the Ventura/Santa Barbara County line), heads northwest along the south ridgetop of Sutton Canyon, and finally turns south ending at the Carpinteria Substation.

Figure 1. General Project Location Map



2.2 SOUTH BRANCH:

The South Branch (Santa Clara-Getty Line [Survey Tower Nos. 56 to 166]) forks off from the Main Line, heading due west, at the eastern end of Casitas Valley. It crosses over northern Madranio Canyon, travels along Rincon Mountain and through Rincon Valley, and crosses the intersection of SR150 and SR192, and into the Shepard Mesa and Gobernador rural residential areas. The South Branch runs west along SR192 (69 closely spaced wood poles in ROW) to intersect the Main Line again, which terminates at Carpinteria Substation.

2.3 NORTH BRANCH

The North Branch (Santa Clara-Ojai-Santa Barbara Line [Survey Tower Nos. 88-Na to 104-Na]) is a short line that forks off, to the north, from the Main Line at Gobernador Creek (Santa Barbara County). It heads northwest along the north ridgetop of Sutton Canyon, and turns south to intersect the Main Line again, which heads south, ending at the Carpinteria Substation.

3.0 METHODS

The field surveys were completed between 17 May to 28 June 1999. A team of two qualified biologists (one botanist and one wildlife biologist) traveled to each of the towers and conducted a reconnaissance level survey. Each tower was visited for a minimum of 20 minutes, sometimes significantly longer.

To determine the presence or absence of most wildlife species requires intensive field sampling and observation. Since this was mainly a reconnaissance level survey, our approach was to determine the habitat types present relying on a standard vegetation classification system (Sawyer and Keeler-Wolf 1995) and to associate wildlife occurrence with the presence or absence of habitats that would predict the occurrence of individual wildlife species.

After an orientation meeting with SCE personnel familiar with the project study area, the fieldwork was scheduled and initiated. Travelling in a single off-road vehicle, the team drove SCE maintenance roads or public roads to reach the nearest point possible to each tower. Usually after a short hike, the base of each tower was inspected for a radius of approximately 50 feet. The focus of the surveys was to determine the presence or absence of sensitive plants and animals and to determine the habitat types present. The sensitive plant surveys were timed to include times when there was a high probability of seeing flowering plants. The biologists used standardized field forms to record all observations. These data were later transferred into a computerized database using Microsoft Excel©.

3.1 VEGETATION MAPPING PROTOCOLS AND CLASSIFICATIONS

Trees, shrubs, and herbs form a unique pattern that shifts subtly from season to season, year to year, and through growth, death, and reproduction of individual plants (Sawyer and Keeler-Wolf 1995). Each tower site, observed along the SCE transmission line from Saticoy (Ventura) to Carpinteria, California, has a unique history and varying physical characteristics (soils, climate, and topography), which create differences between each type of vegetation. Although vegetation classification may be determined using strict protocols, it is always subjective to the eye. For example, ecotonal transitions, successional growth stages, and even well established stands can easily be interpreted in more than one way.

Ecotonal transitions create difficulties in naming plant communities because gradual shifts in the land's physical characteristics may cause two separate dominant species to exist in an intermixed mosaic that blends the two otherwise different plant communities. Plant succession creates difficulties in naming plant communities because it causes vegetation to change over time, in which species dominance and community structure may be significantly different at two or more different times. However, a given landscape generally has a limited set of vegetation types, and vegetation following a disturbance often approaches conditions, over time, similar to those before the disturbance (Sawyer and Keeler-Wolf 1995). For these reasons, a hierarchical system of classification is useful for aiding the process of categorizing broad vegetative groups, into more specific and detailed vegetative entities, according to plant structure and species similarities.

Sawyer and Keeler-Wolf (1995) present the California Native Plant Society's (CNPS's) approach to hierarchical classification, in *A Manual of California Vegetation*, and it is the classification approach that is followed for the purposes of this report. Several (approximately 50%) of the plant communities observed during the field surveys are described as 'series' by Sawyer and Keeler-Wolf (1995). Their approach to hierarchical classification of vegetation forms a base line for the vegetation classification at the SCE tower sites, in which the most important units of conservation in any vegetative hierarchy are the floristically based series (or plant communities).

Floristic components of classification include the individual plant taxa that contribute to the vegetation occupying an area, and they form the different plant communities (or series). Although all plant communities observed during the field survey are not described by Sawyer and Keeler-Wolf (1995), the newly observed plant communities are easily classified and named according to the same hierarchical protocols described by them. Section 2, Vegetation Descriptions of SCE Tower Sites, consists of descriptions of the vegetation observed at each of the transmission line towers during the field surveys conducted during Spring and Summer 1999. The three terms (vegetation type, plant community, and plant association) used to describe the vegetation, its floristic components, and the characteristics of each term are described below.

A vegetation type is a broad vegetative unit that is not floristically based, but is defined by stand structure and physiognomic features that are characteristic of the general vegetation. Stand-structure is represented by *growth form* (i.e., trees form woodlands, shrubs form shrublands of either scrub or chaparral, and herbs/grasses form grasslands) and *habit* (i.e., woody, semi-woody, or herbaceous).

A plant community is a more defined vegetative unit that is characterized and named according to the vegetation's *dominant species*. More specifically, plant communities are defined by the one dominant plant taxon that contributes to the greatest percent ground cover and/or *canopy cover* (open, intermittent, or closed/continuous). This class is usually *floristically-based* (i.e. Purple Needlegrass Perennial Grassland), in which the plant community name specifies a dominant taxon; however, this class may not always be floristically based.

A plant community may also be classified according to more defined *habit* characteristics (i.e., annual [California Annual Grassland], biennial, or perennial; sclerophyll-leaved or soft-leaved; etc.), or can be classified into more descriptive units based on origin (Ruderal Grassland) or flower displays (Wildflower Field). These plant communities do not specify a dominant plant taxon in the name, but they are more defined grassland units, and for the purposes of this report, are considered plant communities.

Table 1 lists all plant communities observed making up the four vegetation types, within the SCE survey area. It gives each community an assigned class code used in the tables in Appendix C

The plant association is a detailed vegetative unit that is always floristically based with either one dominant species plus one or more important associate species, or two *co-dominant* species plus one or more associate species. Co-dominants are two plant taxa that are equally important contributors to the overall percent ground cover, in which neither species is dominant over the other. An example of a plant association is Bigpod Ceanothus-Toyon-Chamise-Lemonadeberry Chaparral, in which Bigpod Ceanothus is the dominant species, or Bigpod Ceanothus and Toyon may be equally important co-dominants, with Chamise and Lemonadeberry as important chaparral canopy associates.

Table 1. Plant communities and class codes.

Plant Community Name	Class Code	Plant Community Name	Class Code
Grassland Types	G	Coastal Sage Scrub Types	S
California Annual Grassland	GCA	Black Sage Scrub	SBS
Purple Needlegrass Perennial Grassland	GPN	Blue Elderberry Scrub	SBE
Ruderal Grassland	GR	California Sagebrush Scrub	SCS
Wildflower Field Grassland	GWF	Chaparral Mallow Scrub	CCM
Chaparral Types	C	Coyote Brush Scrub	SCB
Bigpod Ceanothus Chaparral	CBC	Deerweed Scrub	SD
Lemonadeberry Chaparral	CL	Giant Wildrye Scrub	SGW
Mixed Ceanothus Chaparral	CMC	Mixed Sage Scrub	SMS
Woodland Types	W	Poison Oak Scrub	SPO
Arroyo Willow Woodland	WAW	Purple Sage Scrub	SPS
California Sycamore Woodland	WCS	Developed Land	D
Coast Live Oak Woodland	WLO	Agricultural Orchard	O
Southern California Black Walnut Woodland	WBW	Agricultural Row Crops	RC
		Residential Buildings	R
		Commercial Buildings/Nursery	CN

3.2 SPECIAL STATUS SPECIES

Special-status species are plants and animals that are either listed as *endangered* or *threatened* under the Federal or California Endangered Special Acts, listed as *rare* under the California Native Plant Protection Act, or *considered to be rare* (but not formally listed) by resource agencies, professional organizations (e.g. Audubon Society, California Native Plant Society (CNPS), The Wildlife Society), and the scientific community. For the purposes of this project, we selected the special-status species to be considered using the criteria listed in Table 2.

To determine which special-status species are likely to occur within a 50-foot radius of each tower along the Santa Clara-Carpinteria transmission line, a literature survey (including Skinner and Pavlik [1994]) and a search of the California Department of Fish and Game's (CDFG) Natural Diversity Data Base (NDDB), was conducted for known occurrences in the vicinity of the transmission line.

Table 2. Definitions of special-status species.

Special-Status Plant Species	Special-Status Animal Species
Plants & animals legally protected under the California and Federal Endangered Species Acts or under other regulations. Plants and animals considered sufficiently rare by the scientific community to qualify for such listing; or Plants and animals considered to be sensitive because they are unique, declining regionally or locally, or are at the extent of their natural range.	
• Plants listed or proposed for listing as threatened or endangered under the Federal Endangered Species Act (50 CFR 17.12 for listed plants and various notices in Federal Register for proposed species). • Plants that are Category 1 or 2 candidates for possible future listing as threatened or endangered under the Federal Endangered Species Act (55 CFR 6184, February 21, 1990). • Plants that meet the definitions of rare or endangered species under the CEQA (State CEQA Guidelines, Section 15380). • Plants considered by CNPS to be "rare, threatened, or endangered" in California (Lists 1B and 2 in Skinner & Pavlik [1994]). • Plants listed by CNPS as plants needing more information and plants of limited distribution (Lists 3 and 4 in Skinner and Pavlik [1994]). • Plants listed or proposed for listing by the State of California as threatened or endangered under the California Endangered Species Act (14 CCR 670.5). • Plants listed under the California Native Plant Protection Act (California Fish and Game Code 1900 et seq.). • Plants considered sensitive by other federal agencies (i.e., U.S. Forest Service, Bureau of Land Management) or state and local agencies or jurisdictions. • Plants considered sensitive or unique by the scientific community; occurs at natural range limits (State CEQA Guidelines, Appendix G).	• Animals listed/proposed for listing as threatened/endangered under the Federal Endangered Species Act (50 CFR 17.11 for listed animals and various notices in Federal Register for proposed species). • Animals that are Category 1 or 2 candidates for possible future listing as threatened or endangered under Federal Endangered Species Act (54 CFR 554). • Animals that meet the definitions of rare or endangered species under the CEQA (State CEQA Guidelines, Section 15380). • Animals listed or proposed for listing by the State of California as threatened and endangered under the California Endangered Species Act (14 CCR 670.5). • Animal species of special concern to the CDFG (Remsen [1978] for birds; Williams [1986] for mammals). • Animal species that are fully protected in California (California Fish & Game Code, Section 3511 [birds], 4700 [mammals], 5050 [reptiles, amphibians]).

Appendix D provides status, habitat requirements, distribution, and survey results for each special-status species, either observed in the vicinity of the tower sites or believed to occur at or near the towers, based on the presence of suitable habitat. The information provided, for each identified special-status species, includes: scientific and common (vernacular) names; species status, including Federal and state, CDFG's NDDB Element (Global and State) Ranking, and CNPS List and Rarity-Endangerment-Distribution (R-E-D) Code; a physical description; habitat requirements; species distribution; and survey results.

Listed species are those taxa that are formally listed as endangered or threatened by the federal government (e.g. U.S. Fish and Wildlife Service [USFWS]), pursuant to the federal Endangered Species Act or as endangered, threatened, or rare (for plants only) by the State of California (i.e. California Fish and Game Commission), pursuant to the California Endangered Species Act or the California Native Plant Protection Act.

The NDDB Element Ranking system (NDDB 1997b) provides a numeric global and state ranking system for all special-status species tracked by the NDDB. The global rank (G-rank) is a reflection of the overall condition of an element (species or natural community) throughout its global range. The state ranking (S-rank) is assigned much the same way as the global rank, except state ranks in California often also contain a threat designation attached to the S-rank. This Element Ranking system is defined in Appendix D.

As described for the NDDB ranking, not all special-status species considered in this report are tracked by CNPS, nor are R-E-D codes given to them; therefore, we applied the rules described above to "rank" those special-status species lacking such rankings or codes. This applies to rare lichen taxa that may occur at the towers, for which CNPS has not yet developed or incorporated into its *Inventory of Rare and Endangered Vascular Plants of California* or developed and established by the California Lichen Society. Rarity G- and S-ranks devised for taxa of this report are followed by a "?", denoting tentative assignment.

The CNPS R-E-D Code is a three-numbered numeric ranking for three categories (Rarity-Endangerment-Distribution), which more accurately describes each plant's population levels. Each number-code is described in Appendix E, California Native Plant Society R-E-D Code, is specific for each category.

3.3 TOWER NUMBERING SYSTEMS

Most of the 245 towers surveyed along the SCE transmission line are presently number-and/or letter-coded by SCE; however, several towers, or wooden and steel poles, are either not numbered, out of sequence, or have duplicated numbers. If no original SCE tower number was available during the survey, a temporary consecutive tower number with a "?" was assigned, using SCE's tower numbering system. However, for easier tower accounting and inventorying for these surveys, a unique sequential numbering/letter-codes system was developed and used for all towers surveyed.

4.0 RESULTS

4.1 VEGETATION

Appendix B is a list of all the plant taxa that were observed during the surveys. The botanical vegetation survey of the Santa Clara-Carpinteria transmission line found four general vegetation types, plus the developed land areas, at 245 towers. A total of 390 vegetation/land use observations were recorded at the 245 towers along the transmission line. The number of observations is larger than the number of towers because more than one plant community (or development area) occurred within the 50-foot radius of one or more towers.

4.1.1 Potential Special-Status Vascular Plants- The literature review and database searches identified 44 special-status species of plants known to occur in the region of the SCE Santa Clara-Carpinteria 66 kV transmission line from Saticoy to Carpinteria. Table 3 summarizes the literature and field survey results for special-status vascular plant species. It includes scientific names, whether or not they were observed, and the likelihood of occurrence within SCE boundaries if not directly observed. (Note: the timing of the field surveys is outside the preferred season to observe or detect some of the special-status species [i.e. *Fritillaria ojaiensis*].)

Table 3. Likelihood of occurrence of special-status vascular plants.

Scientific Name	Common Name	Habitat Preference	Status Fed/State/CNPS	Occurrence Likelihood
Acanthomintha obovata ssp. *cordata*	Heart-leaved Thornmint	Chaparral, Woodland, Grassland	-/-/4 1-2-3	Unlikely
Antirrhinum ovatum	Oval-leaved Snapdragon	Chaparral, Woodland, Grassland	C3c/-/4 1-2-3	Unlikely
Aphanisma blitoides	Aphanisma	Coastal Sage Scrub	C2/-/1B 2-2-2	Moderate
Astragalus brauntonii	Braunton Milkvetch	Chaparral, Coastal Sage Scrub, Grassland	E/-/1B 3-2-3	Low
Atriplex pacifica	South Coast Saltscale	Coastal Sage Scrub	C2/-/1B 3-2-2	Moderate
Atriplex serenana var. *davidsonii*	Davidson Saltscale	Coastal Sage Scrub	-/-/1B 3-2-2	Moderate
Baccharis plummerae ssp. *plummerae*	Plummer Baccharis	Coastal Sage Scrub, Live Oak Woodland	-/-/4 1-1-3	Known
Boykinia rotundifolia	Round-leaved Boykinia	Chaparral, Riparian Woodland	-/-/4 1-1-3	Moderate
Calandrinia breweri	Brewer Calandrinia	Chaparral, Coastal Sage Scrub	-/-/4 1-2-2	Possible
Calochortus catalinae	Catalina Mariposa Lily	Coastal Sage Scrub, Grassland	-/-/4 1-2-3	Known
Calochortus plummerae	Plummer Mariposa Lily	Coastal Sage Scrub, Grassland	C2/-/1B 2-2-3	Possible
Calochortus weedii var. *vestus*	Late-flowered Mariposa Lily	Chaparral, Coastal Sage Scrub	C2/-/1B 2-2-3	Moderate

Scientific Name	Common Name	Habitat Preference	Status Fed/State/CNPS	Occurrence Likelihood
Cercocarpus betuloides var. *blancheae*	Island Mountain Mahogany	Chaparral	-/-/4 1-1-3	Low
Chorizanthe procumbens	Prostrate Spineflower	Chaparral, Woodland, Coastal Sage Scrub	-/-/4 1-2-2	Moderate
Convolvulus simulans	Small-flowered Morning-glory	Coastal Sage Scrub, Grassland	-/-/4 1-2-2	Moderate
Delphinium inopinum	Unexpected Larkspur	Upper Montane Coniferous Forest	C3c/-/1B 2-2-3	Unlikely
Dichondra occidentalis	Western Dichondra	Coastal Sage Scrub, Live Oak Woodland	C3c/-/4 1-2-1	Possible
Eriophyllum jepsonii	Jepson Woolly Sunflower	Coastal Sage Scrub, Chaparral	-/-/4 1-1-3	Low
Fritillaria ojaiensis	Ojai Fritillary	Chaparral, Live Oak Woodland	C2/-/1B 3-2-3	Low
Galium cliftonsmithii	Santa Barbara Bedstraw	Coastal Sage Scrub, Live Oak Woodland	-/-/4 1-1-3	Possible
Hordeum intercedens	Vernal Barley	Vernal Pool, Grassland	-/-/3 ?-2-2	Unlikely
Hulsea vestita ssp. *gabrielensis*	San Gabriel Mountains Sunflower	Coniferous Forest	-/-/4 1-1-3	Unlikely
Hulsea vestita ssp. *parryi*	Parry Sunflower	Chaparral, Coniferous Forest	-/-/4 1-1-3	Unlikely
Juglans californica var. *californica*	Southern California Black Walnut	Riparian Forest, Live Oak Woodland	-/-/4 1-2-3	Known
Juncus acutus ssp. *leopoldii*	Southwestern Spiny Rush	Alkaline Seep; Saltmarsh	-/-/4 1-2-1	Low
Lasthenia glabrata ssp. *coulteri*	Coulter's Goldfields	Grassland	C2/-/1B 2-3-2	Low
Layia heterotricha	Pale-yellow Layia	Woodland, Grassland	C2/-/1B 3-3-3	Low
Lepechinia fragrans	Fragrant Pitcher Sage	Chaparral	-/-/4 1-2-3	Moderate
Lessingia tenuis	Spring Lessingia	Lower Coniferous Forest	-/-/4 1-1-3	Unlikely
Lilium humboldtii ssp. *ocellatum*	Ocellated Humboldt Lily	Chaparral, Woodland	C2/-/4 1-2-3	Moderate
Lupinus elatus	Silky Lupine	Coniferous Forest	-/-/4 1-1-3	Unlikely
Mucronea californica	California Spineflower	Floodplain Washes	-/-/4 1-2-3	Unlikely
Orcuttia californica	California Orcutt Grass	Vernal Pool	E/E/1B 3-3-2	Unlikely
Oxytheca carophylloides	Chickweed Oxytheca	Lower Coniferous Forest	-/-/4 1-1-3	Unlikely
Oxytheca parishii var. *abramsii*	Abrams Oxytheca	Chaparral	-/-/1B 2-2-3	Low
Perideridia pringlei	Adobe Yampah	Coastal Sage Scrub, Chaparral	C3c/-/4 1-1-3	Moderate
Phacelia exilis	Transverse Range Phacelia	Coniferous Forests	-/-/4 1-1-3	Unlikely
Polygala cornuta var. *fishiae*	Fish Milkwort	Riparian Forest	-/-/4 1-1-2	Known
Quercus dumosa	Nuttall Scrub Oak	Chaparral	C2/-/1B 2-3-2	Known
Sagittaria sanfordii	Sanford Arrowhead	Marshes, Swamps	C2/-/1B 2-2-3	Unlikely
Senecio aphanactis	Rayless Ragwort	Coastal Sage Scrub	-/-/2 3-2-1	Moderate

Scientific Name	Common Name	Habitat Preference	Status Fed/State/CNPS	Occurrence Likelihood
Sidalcea neomexicana	Salt Spring Checkerbloom	Coastal Sage Scrub, Chaparral	-/-/2 2-2-1	Low
Suaeda taxifolia	Woolly Seablite	Coastal Bluff Scrub, Marshes, Swamps	-/-/4 1-2-1	Unlikely
Thermopsis californica var. *argentata*	Silvery False Lupine	Coniferous Forest, Juniper-Pinyon Woodland	-/-/4 1-1-3	Unlikely

4.1.2 Observed Special-status Vascular Plant Species- We observed five special-status species growing within the 50-foot radius of 58 towers (more than one special-status species may occur at the same tower). These include the following:

- Plummer Baccharis (*Baccharis plummerae* ssp. *plummerae* [16 towers]);
- Catalina Mariposa Lily (*Calochortus catalinae* [9 towers]);
- Southern California Black Walnut (*Juglans californica* var. *californica* [17 towers]);
- Fish Milkwort (*Polygala cornuta* var. *fishiae* [13 towers]); and
- Nuttall's Scrub Oak (*Quercus dumosa* [13 towers]).

These five special-status species were observed a total of 68 times, at a total of 58 towers, resulting in 24% of towers with one or more of the five special-status species. No special-status plant species were observed at the remaining 179 towers (76%). Information about each observed special-status vascular plant species is provided in Appendix C, including a physical description, legal and rarity status, habitat requirements, distribution, results of the field survey, and the survey site numbers where each species occurs.

4.2 WILDLIFE

4.2.1 Special Status Wildlife Species

The special-status wildlife known or found in the study region, or in habitats similar to those found in the project area are listed in Table 4.

Table 4. Occurrence of potential special-status wildlife.

Scientific Name	Common Name	Habitat Preference	Status Fed/State/CNPS	Occurrence Likelihood
AMPHIBIANS				
Taricha torosa torosa	Coast range newt	Vernal pools, Riparian woodlands	CSC	Low
Scaphiopus hammondi	Western spadefoot toad	Grassland with vernal pools	FSC, CSC	Low
Bufo microscapus californica	Southwestern arroyo toad	Washes, streams, sandy streambanks	FE	Low
REPTILES				
Phrynosoma coronatum	Coast horned lizard	Coastal Sage Scrub with friable soils	FSC, CSC	Low
Cnemiodophorus tigris multiscutatus	Coastal western whiptail	Coastal Sage Scrub	FSC,CSC	Low to Moderate
Aniella pulchra pulchra	California legless lizard	Live Oak Woodland	FSC, CSC	Low
Clemmys marmorata ssp. *pallida*	Southwestern pond turtle	Aquatic	FSC, CSC	Low
Salvadora hexalepis virgultea	Coastal patch-nosed snake	Open, rocky outcrops	FSC, CSC	Low
Thamnophis hammondi	Two-striped garter snake	Coastal lowlands	FSC, CSC	Low
BIRDS				
Accipiter cooperii	Cooper's hawk	Oak Woodland, Riparian	CSC (nesting)	Moderate
Accipiter striatus	Sharp-shinned hawk	Oak Woodland, Riparian	CSC (nesting)	Low
Elanus leucurus	White-tailed kite	Oak Woodland, grasslands,wetlands	CFP	Low
Circus cyanus	Northern harrier	Grasslands, Lowlands	CSC (nesting)	Low
Vireo belli pusillus	Least Bell's vireo	Riparian Forests	CE, FE	Low
Campylorhynchus brunneicapillus	Coastal cactus wren	Cactus scrub	CSC	Low
Dendroica petechia brewsteri	Yellow warbler	Riparian Forests	FSC, CSC	Low
Polioptila californica	California gnatcatcher	Coastal Sage Scrub	FT, CSC	Low
Lanius l. ludovicianus	Loggerhead shrike	Grasslands, Shrubland	FSC, CSC	Low
Aimophilia ruficeps canescens	Ashy rufous-crowned sparrow	Brush mixed with Grasslands on steep slopes	FSC, CSC	Low
MAMMALS				
Antrozous pallidus	Pallid bat	Caves, crevices, structures	CSC	Low

Scientific Name	Common Name	Habitat Preference	Status Fed/State/CNPS	Occurrence Likelihood
Plecotus townsendii pallescens	Pale big-eared bat	Caves, crevices, man-made structures	FSC, CSC	Low
Eumops perotis californicus	California mastiff bat	Rock crevices	FSC, CSC	Low
Neotoma lepida intermedia	San Diego desert woodrat	Cactus patches in Coastal Sage Scrub and Chapparal	FSC, CSC	High
Taxidea taxus	American badger	Grasslands, scrub habitats	CSC	Moderate

CE = California Endangered
CFP = Cal. Fully Protected
CSC = Cal. Species of Concern
FE = Federal Endangered
FSC = Federal Species of Concern
FT = Federal Threatened

No state or federally listed rare, threatened, or endangered wildlife species are known to occur or substantially utilize the habitats available in the project area.

The California gnatcatcher is a federally threatened species that occurs near the project area. One historical record (early 1900s) exists for this species in the South Mountain area near Santa Paula, which is outside the project area. The nearest contemporary occurrence record of the California gnatcatcher was formerly thought to be on the Palos Verdes Peninsula in southernwestern Los Angeles County. However, one breeding pair was found recently in coastal sage scrub near the city of Moorpark, approximately 20 miles southeast of the eastern portion of this project's study area. Therefore, the project area remains outside the current known distribution for this species. Additionally, the coastal sage scrub habitat present in much of the project area does not appear to be optimal for this species, which typically prefers relatively dense sagebrush that is mixed with prickly pear cactus.

At present, the U.S. Fish and Wildlife Service does not require intensive surveys for the species, using standardized protocols, north of the Santa Clara River (R. Farris, U.S. Fish and Wildlife Service Biologist, Ventura Field Office, pers. comm.) Therefore, this project is exempt from the existing federal requirements to conduct intensive surveys to determine the presence/absence of this listed species.

The Least Bell's vireo is listed as both a federal and a state endangered species, and the project area is within the species' breeding range. However, least Bell's vireos require relatively extensive and contiguous riparian forests with adjacent upland foraging areas for breeding. No towers are located directly in riparian habitat, although several are adjacent, and no impacts to this species are expected from any tower modifications.

A number of raptor species known to utilize the habitats present in the project area are considered sensitive due to declining populations and habitat loss. Cooper's hawks are relatively common in the area and nest at several locations within the project region. However, none were seen in the project area, nor were any nests observed immediately adjacent to the towers.

Sharp-shinned hawks and northern harriers are likely winter visitors to parts of the project area. The latter is a rare breeding species. White-tailed kites also breed in the region, generally in woodlands, near their grassland and wetland foraging areas. There is very limited suitable habitat for this species in the project area, and no impacts are expected in relation to the proposed project.

The coastal cactus wren is relatively common in the region where cactus scrub is available in large patches. No individuals or suitable habitat were observed in the project area. Yellow warblers have been recorded in the project area. However, this species requires extensive riparian forests for breeding, which would not be impacted by any proposed tower modifications.

Loggerhead shrikes frequent open habitats with sparse shrubs. Extensive losses of grasslands and breeding habitat have resulted in widespread population declines. The species has previously been suggested to forage in Sexton Canyon within the project area, and two individuals were recorded (Towers #43-N and 110-N) during field surveys. Pre-construction and construction monitoring would determine if a nest site were present at a tower scheduled for rebuild. No significant impacts to this species are expected.

Ashy rufous-crowned sparrows prefer to nest on relatively steep slopes with sparse brush and intermixed with grassy areas. Coastal sage scrub is generally considered suitable breeding habitat. The western end of the project area contains some rocky open areas that are potential habitat for this species. While it is possible that this species occurs in the project area, no impacts would be expected.

Three bat species listed as sensitive may occur in the project vicinity. No significant impacts due to tower replacements are expected to any of the sensitive bat species that occur in the region.

It is possible that any of these bat species may periodically use crevices on the existing towers as temporary roost sites. The California mastiff bat typically roosts in small crevices. This species has been found in Wheeler Gorge, some 15 miles north of the project area. This species could be found in the western end of the project area, but it is unlikely that any significant impacts would result from power line modifications. These conditions are very similar for both the pallid bat and the pale big-eared bat.

The San Diego desert woodrat inhabits cactus patches and rocky areas in coastal sage scrub and open chaparral. Six woodrat middens were found during the field surveys (Towers 1-N, 4-N, 8-N, 50-N, 68-N, and 86). It is possible that these were inhabited by San Diego desert woodrats. We made no effort (live trapping) to confirm which woodrat species was present.

American badgers are classified as a California Special Animal, preferring grasslands and open habitats, and feeding mostly on ground squirrels and pocket gophers. Badgers are known to occur in the Santa Paula area. One suspected but unconfirmed den was located in the project area (Tower 3-N). It is likely that badgers are found in or near tower locations, but that this species is not expected to be impacted by the proposed project modifications.

Coast range newts occur in the project area in or near streams in hardwood forests as well as in coastal sage scrub, chaparral, and grassland habitats. This species would not be impacted since power lines in the project area span all wetland habitats.

The western spadefoot toad occupies grassland areas in the region where shallow, temporary pools form after winter rains. It burrows into loose soil or uses existing rodent dens or other underground access. No tower sites were found within vernal pool habitat, and no impacts to this species would be expected from tower modifications. The southwestern arroyo toad is found near washes, streams, and along sandy banks with willows, cottonwoods, or sycamores. Tower lines span areas with habitat for this species, and no impacts are expected.

The coast horned lizard occupies grassland, brushland, woodland, and open coniferous forest in the region. The species' occurrence in the project area is considered limited. We observed few harvester ant colonies, which are prey for the species, and a general absence of friable soils. Ant colonies were found at three locations in the western end of the study site (Towers 88-Na, 97-N, and 99-N). Therefore, it is possible this species may be found in the project area. No impacts from tower modifications are expected.

Coastal western whiptail lizards occur near the project area (e.g., Steckel Park), and may be found in the project area within the more open and drier portions of coastal sage scrub. No impacts of proposed modifications on this species are expected.

California legless lizards occur in the duff under oak groves. Since none of the transmission towers occur within oak groves, no impacts to this species are expected.

The southwestern pond turtle is a highly aquatic species and the two-striped garter snake is a semi-aquatic species. The transmission towers in the project area span wetland and riparian areas. Therefore no impacts to these species are expected.

The coastal patch-nosed snake prefers rocky areas, near grassland, chaparral, sagebrush, and desert scrub. The western end of the project area contains potential habitat for this species, but no impacts are expected from activities associated with transmission tower rebuilding.

5.0 DISCUSSION AND RECOMMENDATIONS

5.1 VEGETATION TYPES

Of the 390 total vegetation type observations, 246 (63% of all observations) are recorded as a type of natural vegetation, including the vegetation types and plant communities/associations described in the preceding section. These habitat types may or may not have been affected by human activities; however, they are sustaining growth and reestablish without the aid of, or enhancement by, humans. Of the four general vegetation types, Coastal Sage Scrub makes up the largest percent ground cover along the transmission line (42% of all vegetative observations), Grassland makes up 25%, Chaparral contributes 18% of the vegetation, and Woodland contributes 15%.

Of the 245 towers, 136 towers (56%) contained only natural vegetation of one or more plant communities. A total of 20 towers (8%) contained natural vegetation and development, while the remaining 89 towers (36%) lacked natural vegetation (of which most contained agricultural crops).

5.2 DEVELOPED AREAS

Of the 390 total observations, 144 (37% of all observations) are recorded as developed (non-natural areas). Developed land includes residential buildings (27 observations), commercial buildings (church, community center, nurseries [34 observations combined]), and agricultural land (avocado, citrus, and exotic fruit orchards [73 observations combined] and row-crops [10 observations]). The developed land percentage, at 37%, is disproportionately high because the towers that were surveyed along SR192 (from the intersection of SR150 west to the Carpinteria Substation) are wooden poles spaced relatively close to each other. These poles are predominantly in the immediate highway right-of-way where no or very few natural/native species are growing. If this stretch of highway were not surveyed, the percentage of developed land within the SCE survey area would be much smaller.

5.3 WILDLIFE CONSIDERATIONS

The Santa Clara-Carpinteria 66kV Power Line Project is not expected to affect any sensitive wildlife species that may occur in the project area.

There are no scientific occurrence records in or near the project area to indicate the presence of California gnatcatchers, a federally threatened species. Potential impacts to other sensitive wildlife species are avoided because the transmission towers avoid wetlands and riparian areas. This assumes that the construction will not require impacts of losses of these habitat types due to the building of new access roads, storage or staging areas, or other project activities that might disturb sensitive habitats.

For the San Diego desert woodrat, a federal and state species of special concern, possible impacts can be avoided by monitoring construction to ensure that no woodrat middens are removed. If middens cannot be avoided, the biological monitor can ensure that such middens are vacant before they are disturbed. Implementing a sensitive biological resources construction monitoring program will reduce any impacts.

Wherever possible, the construction effort to be contained to existing transmission tower pads, access roads, and other previously disturbed areas to minimize additional impacts to natural resources and sensitive species habitat. Based on our surveys, it appeared that new access roads would be needed only rarely, with some construction possibly involving removal/replacement using helicopters due to the rugged terrain or to minimize vegetation losses.

SCE should implement a biological resources monitoring program prior to and during construction. A qualified biologist should be assigned to flag sensitive biological resources for avoidance during construction and to work with construction managers to minimize habitat loss and disturbance to sensitive species.

SCE should implement appropriate erosion control measures to avoid siltation of runoff, streams, and wetlands and minimize erosion of slopes.

Removing the existing transmission towers may affect nesting and roosting sites used by several wildlife species, including several species of bats and raptors. Red-tailed hawk nests were found on six of the towers in the study area. Standard SCE raptor protection procedures should be used to ensure minimal disturbance in these areas.

5.4 SENSITIVE PLANT SPECIES CONSIDERATIONS

The proposed project may affect five sensitive (special-status) plant species, only one of which is considered rare and endangered (but not listed). These plants exist within the project area, and they were observed at several tower sites.

The five sensitive plants include: Plummer Baccharis (Baccharis plummerae), Catalina Mariposa Lily (*Calochortus catalinae*), Southern California Black Walnut *(Juglans californica* var. *californica*), Fish Milkwort (*Polygala cornuta* var. *fishiae*), and Nuttall's Scrub Oak *(Quercus dumosa*). The botanists conducting the field survey at each tower site confirm the presence of these sensitive plants, and these five plants were observed 68 times at 58 different towers.

Greater concern is placed upon *Quercus dumosa* because it is considered a species of special concern by the U.S. Fish and Wildlife Service, and was a former C2 candidate, plus it is the only special-status plant that is CNPS listed as 1B (considered to be rare, threatened, or endangered).

Quercus dumosa is distributed in only a limited number of occurrences in a small range of chaparral habitats primarily near the coast. This scrub oak grows on predominantly dry, south-facing slopes, but may be found on less shaded north-facing slopes as well. *Q. dumosa* often only occurs as an occasional shrub, but it is also recorded as co-dominating chaparral associations or as an important chaparral contributor. For example, Nuttall Scrub Oak thrives locally in Bigpod Ceanothus Chaparral, which is dominated by *Ceanothus megacarpus var. megacarpus.*

Another significant botanical concern involves a habitat type that supports special-status wildlife species. Coastal Sage Scrub plant communities, more specifically California Sagebrush (*Artemisia californica*) Scrub, Mixed Sage (*A. californica* plus *Salvia* ssp.) Scrub, or any scrub type that is dominated or co-dominated by *A. californica*, is of special concern because it provides the required habitat for the federally threatened California Gnatcatcher. These scrub plant communities suffer continuous great losses due to urbanization and development. These shrublands occur throughout the project area and in the immediate vicinity of many of its towers; therefore, efforts should conserve as much California Sagebrush dominated habitat as possible.

A sensitive biological resources monitoring plan should be implemented in order to avoid any unnecessary impacts to all special-status plant species, including the rare *Q. dumosa* and the important California Sagebrush habitat required by the threatened Californian Gnatcatcher. SCE should be informed of the characteristics of the special-status plants involved with this project, and they should be aware of tower locations, which exist in areas inhabited by *Q. dumosa* or *A. californica* dominant scrub plant communities. Potential impacts to *Q. dumosa* can be minimized by avoiding construction activities in the direct vicinity of this species; therefore, all *Q. dumosa* shrubs with the potential to be impacted by construction activities should be flagged so they may be visible and avoided. All construction activities involved with this tower replacement project should be conducted within a minimum area within, or as close to each tower's 50-foot radius as possible in order to minimize or avoid impacts to special-status plants. Lastly, a biological monitor should be present during construction activities to ensure compliance with these regulations.

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APPENDICES

APPENDIX A. MAP ATLAS OF THE PROJECT AREA.

Figure A1. Location of Sensitive Resources along the SCE Santa Clara-Carpinteria Transmission Line Towers

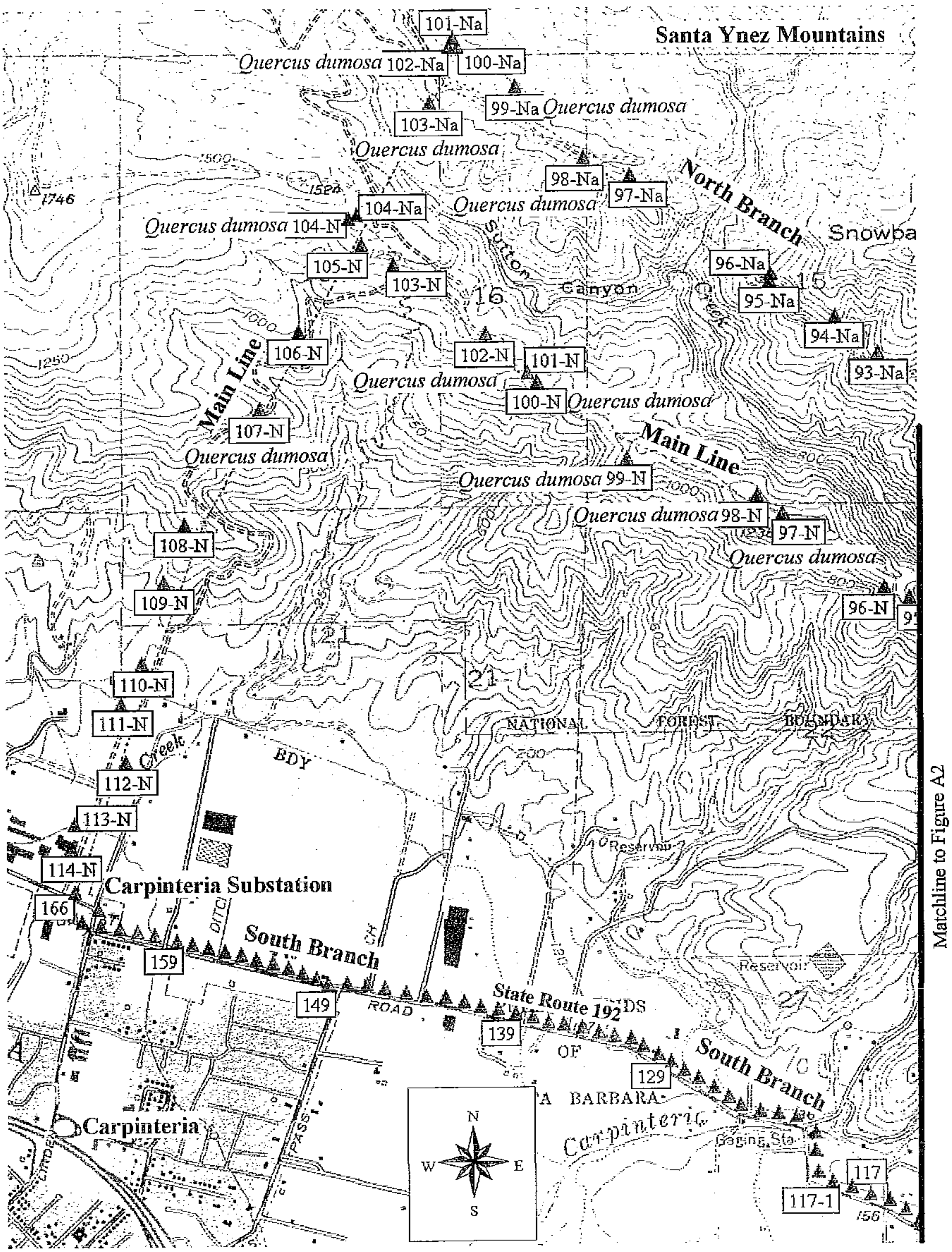


Figure A2. Location of Sensitive Resources along the SCE Santa Clara-Carpinteria Transmission Line Towers

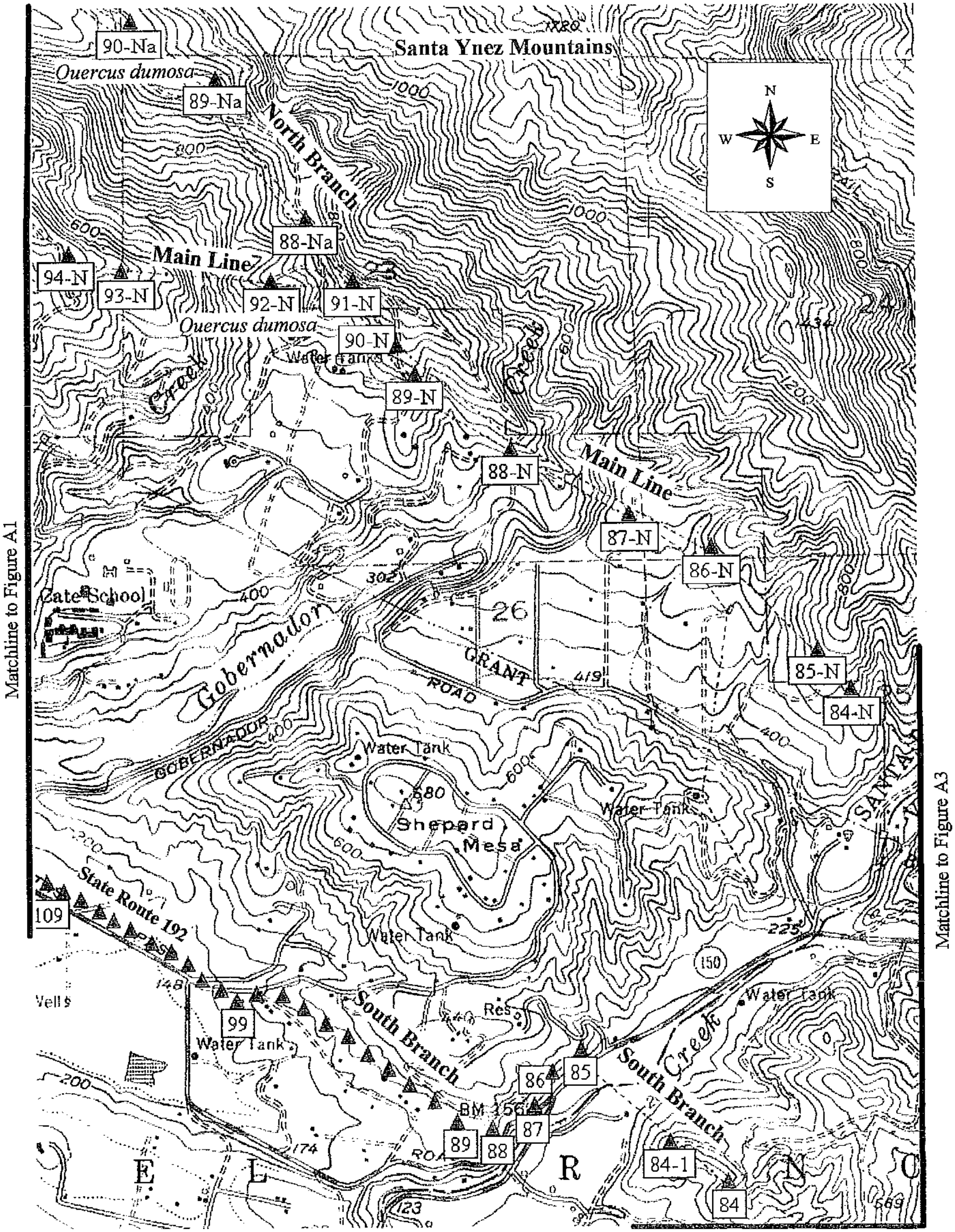


Figure A3. Location of Sensitive Resources along the SCE Santa Clara-Carpinteria Transmission Line Towers

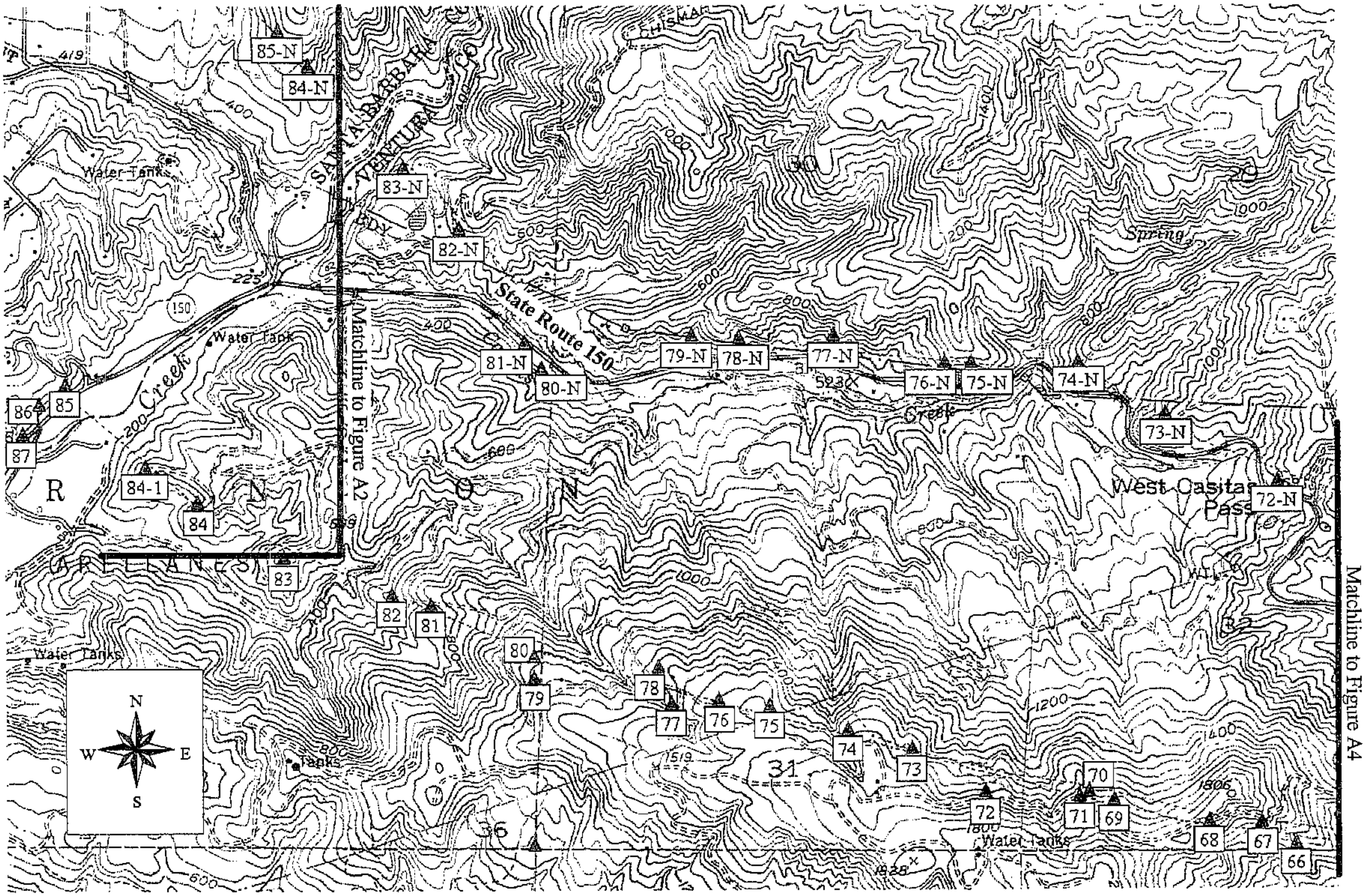


Figure A4. Location of Sensitive Resources along the SCE Santa Clara-Carpinteria Transmission Line Towers

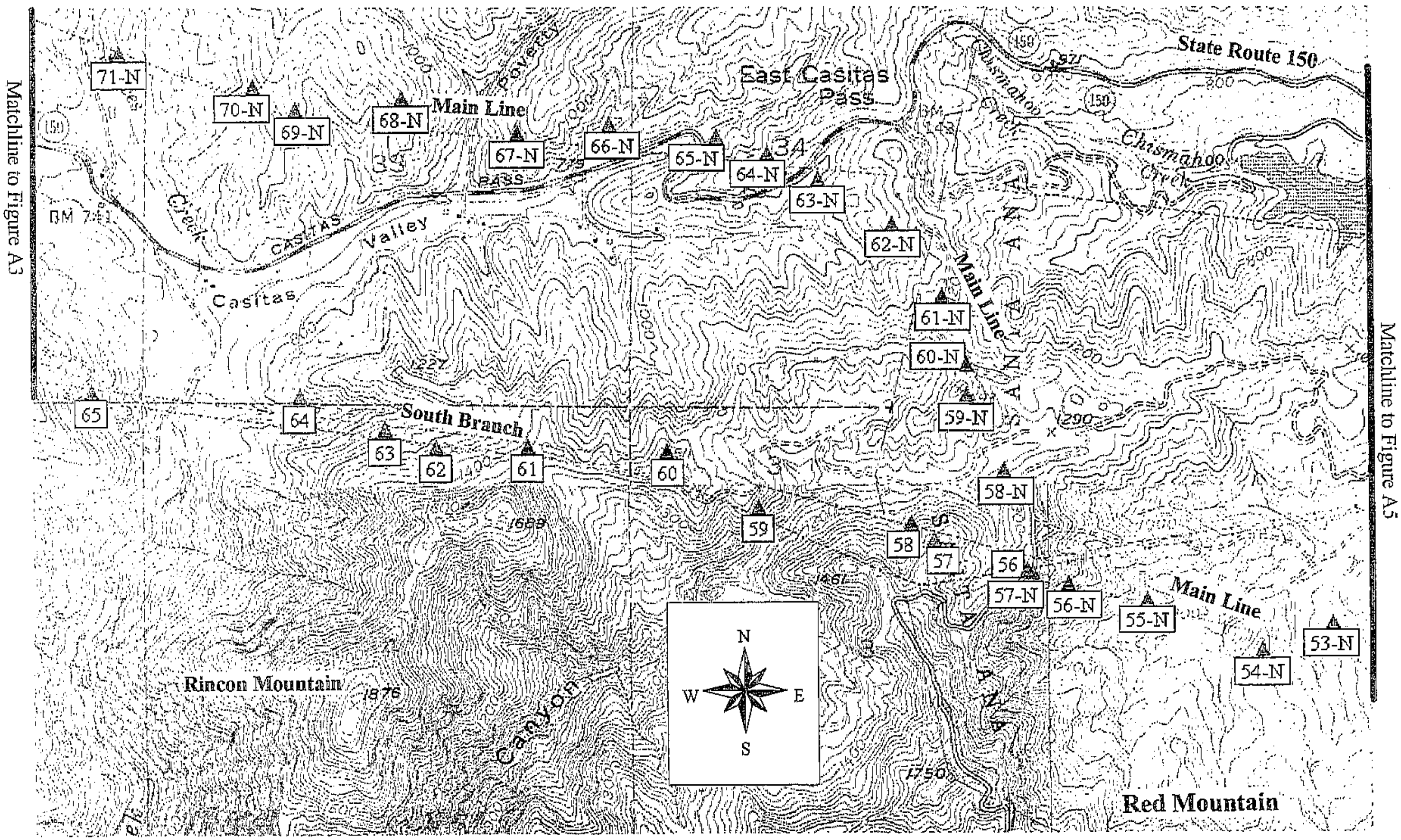


Figure A5. Location of Sensitive Resources along the SCE Santa Clara-Carpinteria Transmission Line Towers

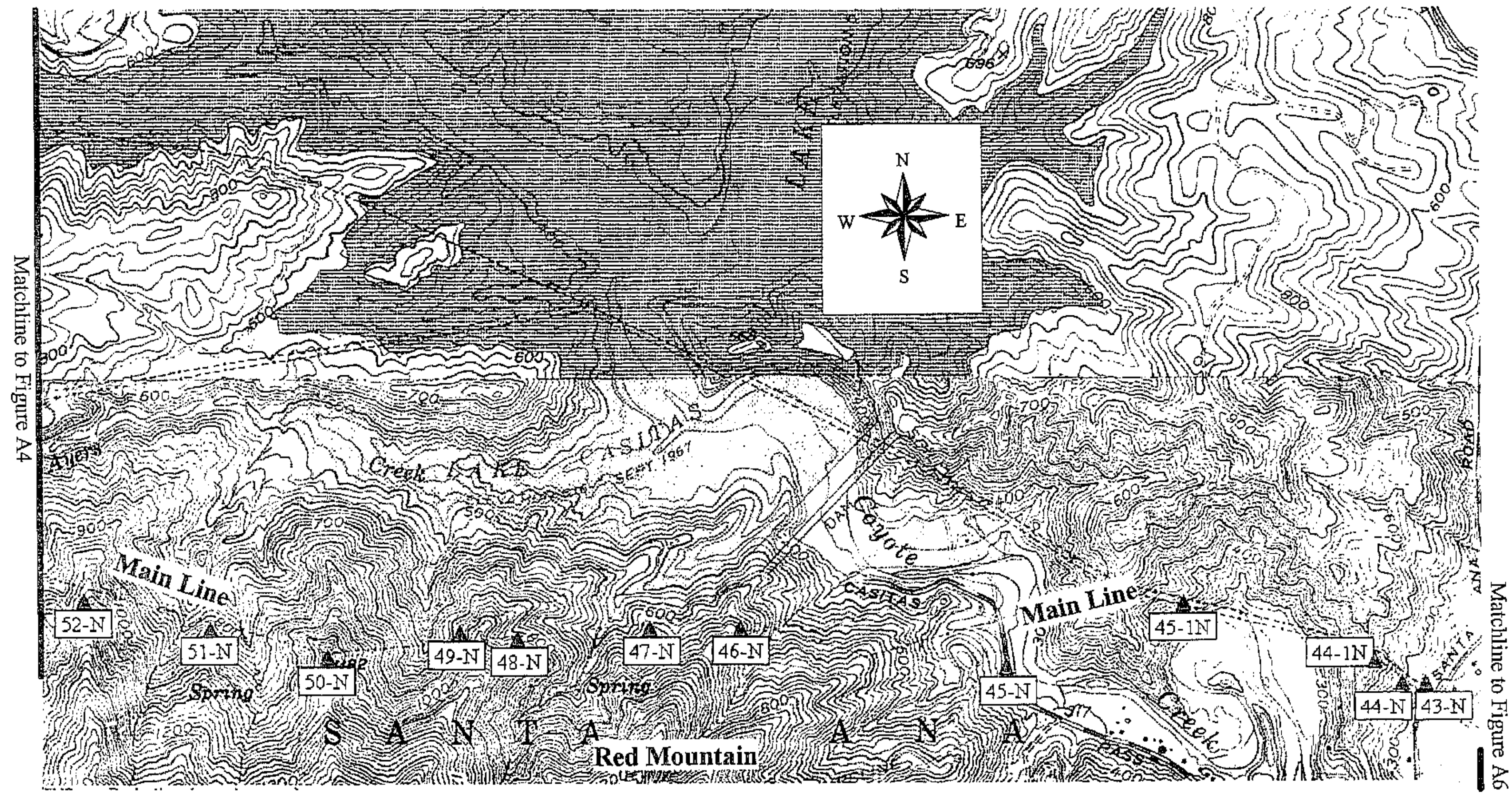


Figure A6. Location of Sensitive Resources along the SCE Santa Clara-Carpinteria Transmission Line Towers

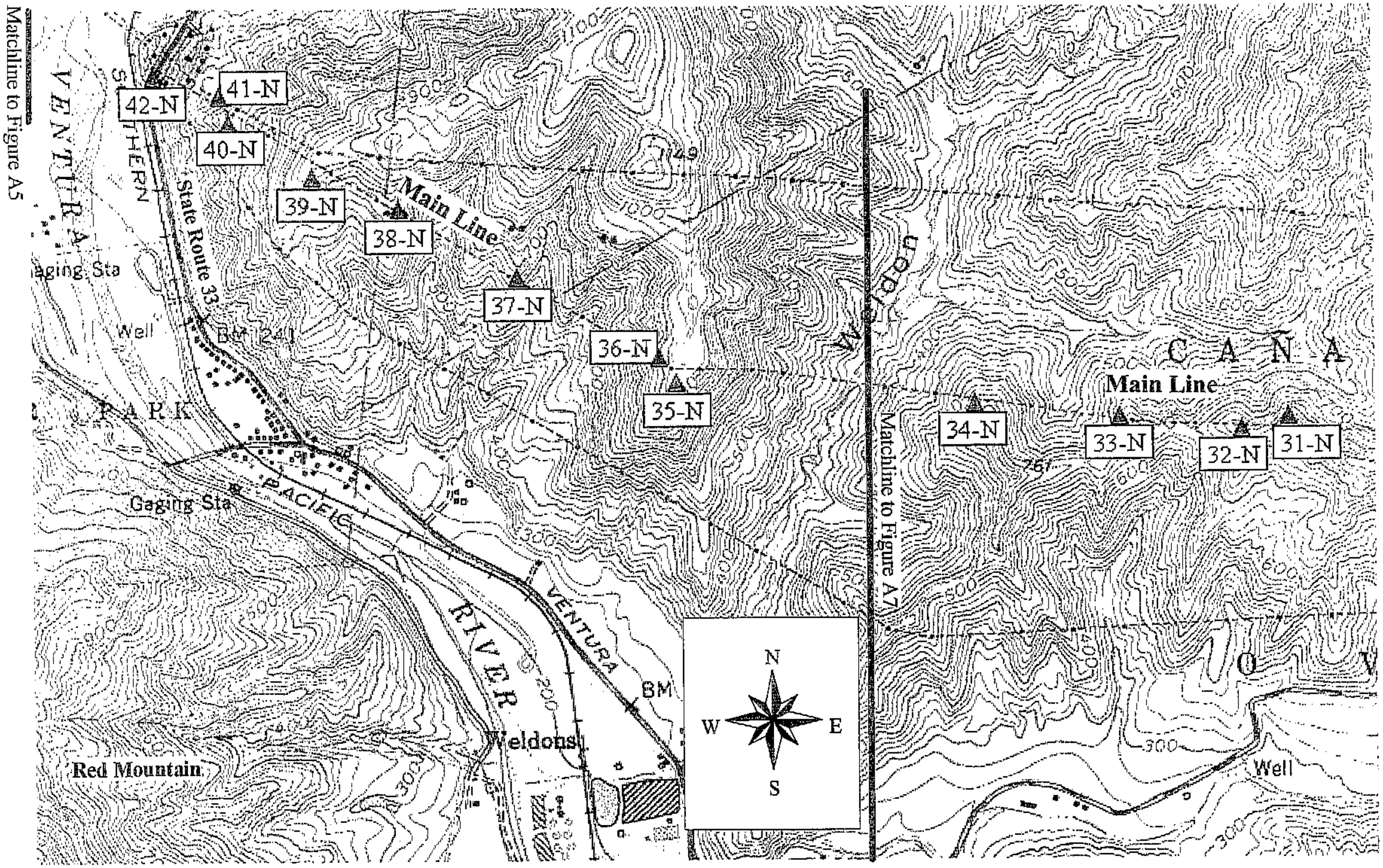


Figure A7. Location of Sensistive Resources along the SCE Santa Clara-Carpinteria Transmission Line Towers

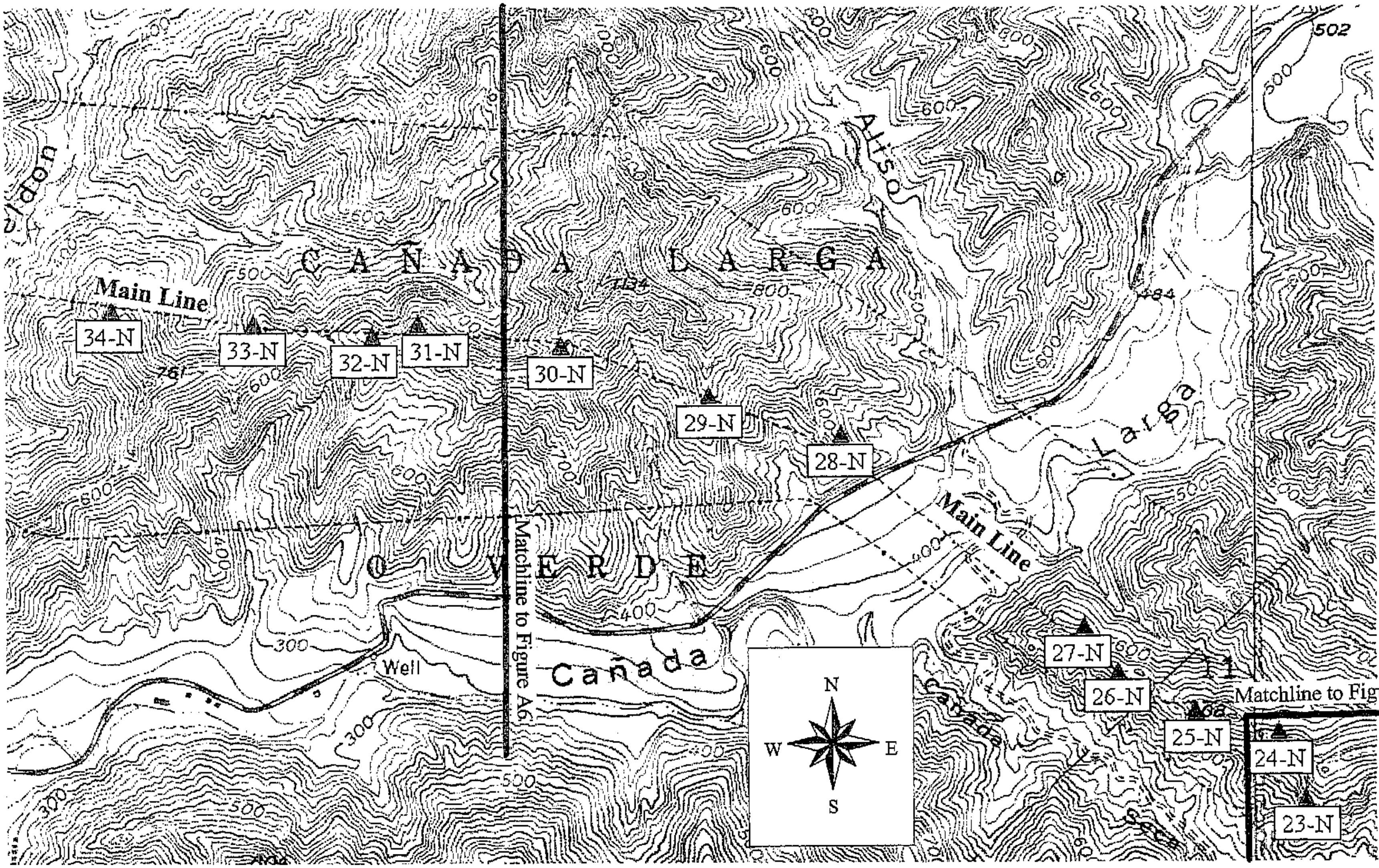


Figure A8. Location of Sensitive Resources along the SCE Santa Clara-Carpinteria Transmission Line Towers

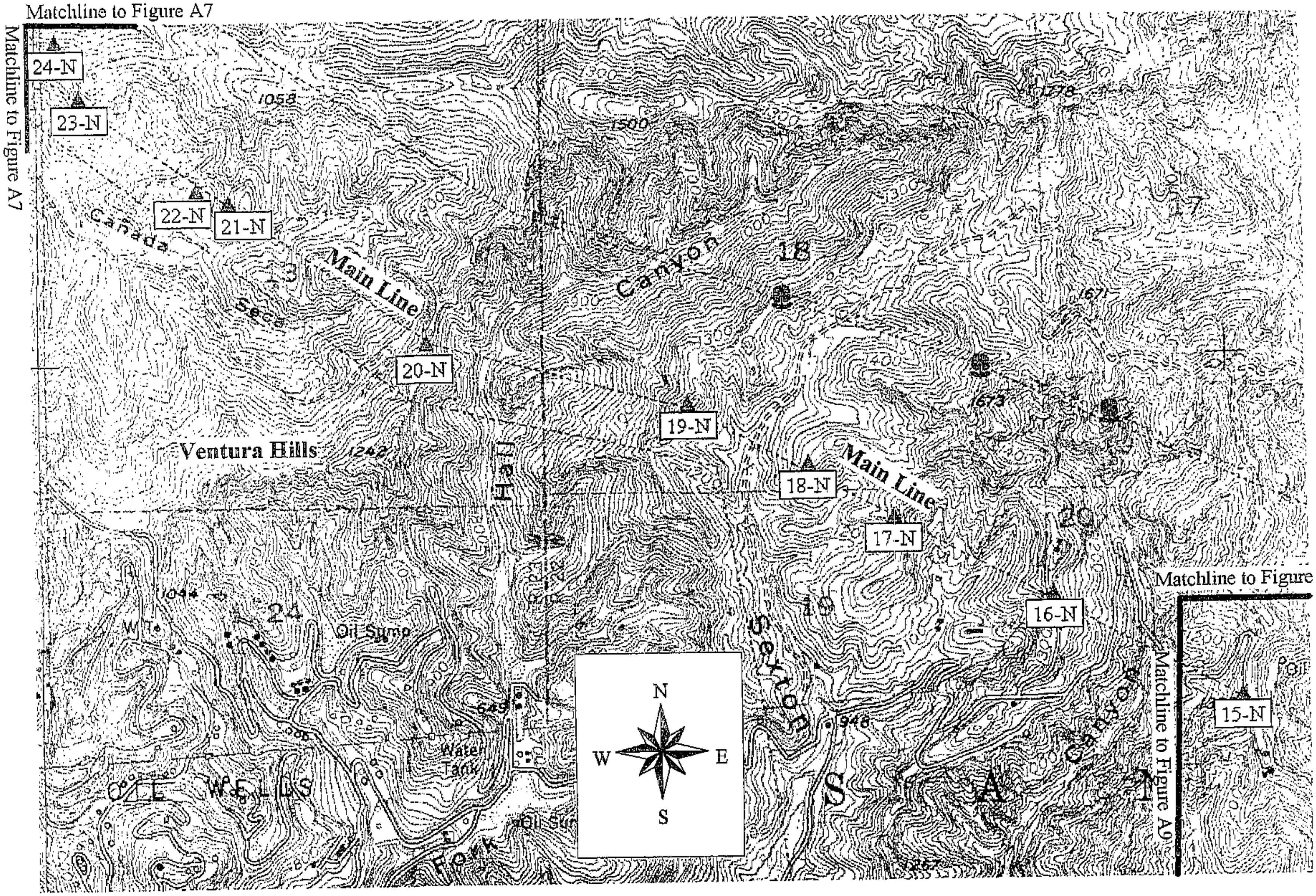
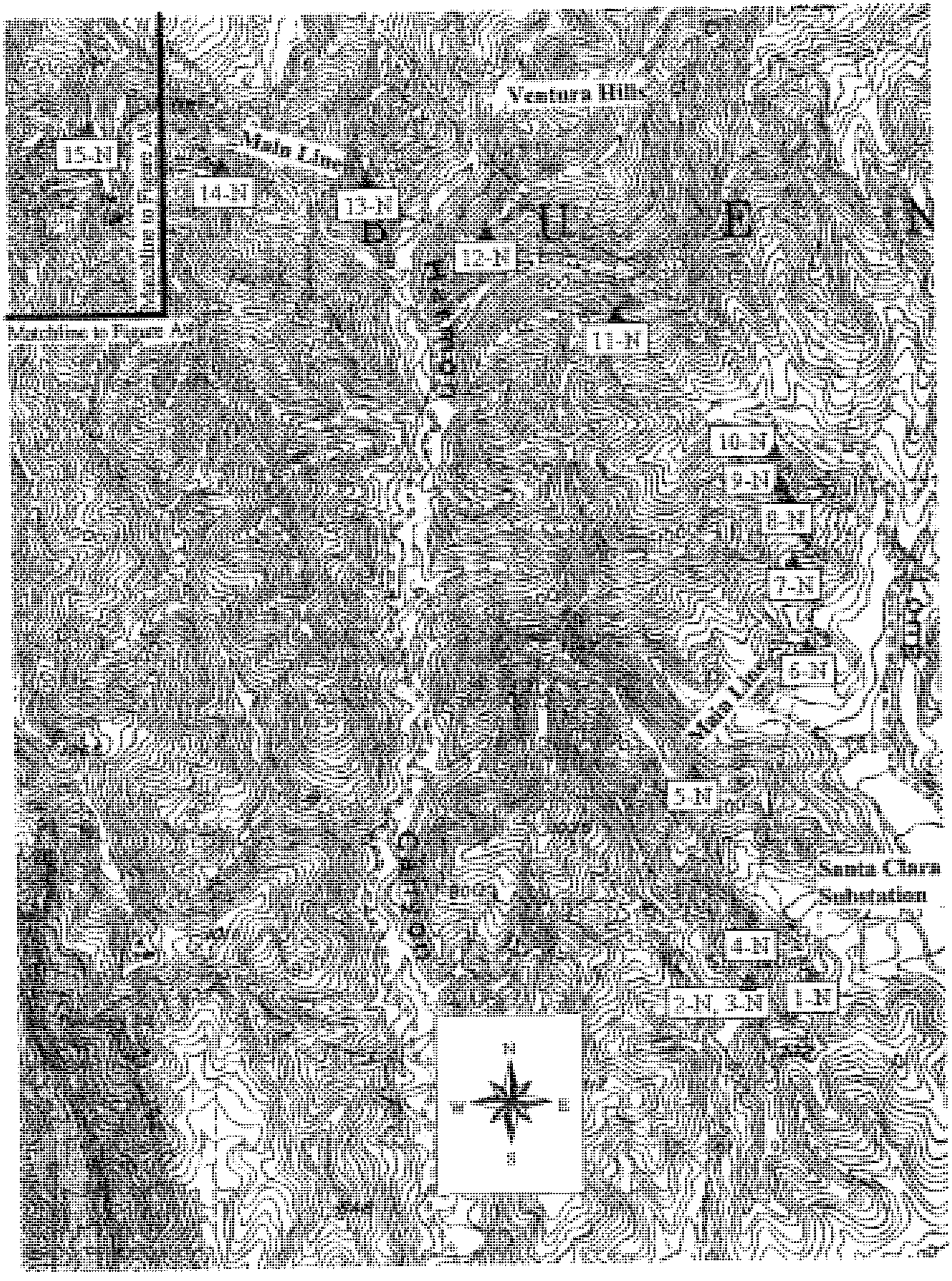


Figure A9. Location of Sensitive Resources along the SCE Santa Clara-Carpinteria Transmission Line Towers



APPENDIX B. PLANT SPECIES OBSERVED

Appendix B lists the plant taxa (common and scientific names) that were observed collectively at all tower sites within the survey area. Special-status species encountered during the field study are in bold-faced type, and the species that are X-marked are the dominant plants observed forming the floristically-based plant communities and associations at the SCE tower sites.

Scientific Name[1]	Common Name[2]	Dominant[3]
Achillea millefolium var. *millefolium*	White Yarrow	X
Adenostoma fasciculatum	Chamise	X
Adiantum jordanii	California Maiden-hair	
Agoseris heterophylla	Mountain Dandelion	
*Agrostis viridis**[4]	Bentgrass	
Alopecurus carolinianus	Carolina Foxtail	
Ambrosia psilostachya var. *californica*	Western Ambrosia	
*Anagallis arvensis**	Scarlet Pimpernel	
Arctostaphylos glandulosa ssp. *mollis*	Santa Ynez Mtns. Eastwood Manzanita	X
Artemisia californica	California Sagebrush	X
Artemisia douglasiana	Mugwort	
Asclepias fascicularis	Narrowleaf Milkweed	
Astragalus trichopodus var. *phoxus*	Antisell Three-pod Milkvetch	
Atriplex lentiformis ssp. *breweri*	Brewer Big Saltbush	
*Atriplex semibaccata**	Australian Saltbush	
*Avena barbata**	Slender Oat	X
*Avena fatua**	Wild Oat	X
Baccharis pilularis	Coyote Brush	X
Baccharis plummerae* ssp. *plummerae	Plummers Baccharis	
Baccharis salicifolia	Mulefat	
Bloomeria crocea ssp. *crocea*	Goldenstars	
*Brachypodium distachyon**	Shortfoot Brachypodium	
Brassica nigra	Black Mustard	X
Brickellia californica	California Brickellbush	X
Bromus laevipes	Woodland Brome	
*Bromus diandrus**	Ripgut Grass	X
*Bromus hordeaceus**	Soft Chess	X
*Bromus madritensis ssp. madritensis**	Foxtail Chess	

[1] Botanical nominclature follows Hickman (1993).
[2] Common (vernacular) names follow Abrams and Ferris (1960), Neihaus and Ripper (1976), and DeGarmo (1980).
[3] A plant is considered a dominant species when its percent cover is 20% or more.
[4] An asterisk "*" indicates taxa not native to California.

Scientific Name[1]	Common Name[2]	Dominant[3]
Bromus madritensis ssp. *rubens**	Red Brome	X
*Bromus trini** (26 May; Tower No. 6-5)	Chilean Grass	
Calochortus albus	Fairy Lantern	
Calochortus catalinae	Catalina Mariposa Lily	
Calystegia macrostegia ssp. *cyclostegia*	Morning-glory	
*Carduus pycnocephalus**	Italian Thistle	
*Carpobrotus chilensis**	Sea Fig	
*Carpobrotus edulis**	Hottentot Fig	
Castilleja affinis ssp. *affinis*	Lay-and-Collie Indian Paintbrush	
Ceanothus megacarpus var. *megacarpus*	Bigpod Ceanothus	X
Ceanothus oliganthus	Hoary Ceanothus	X
Ceanothus spinosus	Greenbark Ceanothus	X
*Centaurea melitensis**	Tocalote	
Cercocarpus betuloides var. *betuloides*	Birchleaf Mountain Mahogany	X
Chamomilla suaveolens	Pineapple Weed	
*Chenopodium ambrosioides**	Mexican Tea	
Chlorogalum pomeridianum var. *pomeridianum*	Soap Plant	
Cirsium occidentale var. *venustum*	Red Thistle	
*Circium vulgare**	Bull Thistle	
Clarkia purpurea ssp. *quadrivulnera*	Four-spotted Purple Clarkia	
Clarkia unguiculata	Elegant Clarkia	
Claytonia perfoliata	Miners Lettuce	
Clematis ligusticifolia	Virgin Bower	
*Conium maculatum**	Poison Hemlock	X
*Conyza bonariensis**	South American Horseweed	
Conyza canadensis	Horseweed	
*Cortedaria selloana**	Pampas Grass	
Cuscuta sp.	Dodder	
*Cynodon dactylon**	Bermuda Grass	
*Cytisus multiflorus**	Spanish Broom	
Datura wrightii	Jimson Weed	
*Daucus carota**	Queen Anne's Lace	
Daucus pusillus	Rattlesnake Weed	
Dichelostemma capitatum ssp. *capitatum*	Blue Dicks	
Dryopteris arguta	Coastal Wood Fern	
Dudleya lanceolata	Lance-leaf Live Forever	
Elymus glaucus ssp. *glaucus*	Woodland Wildrye	
Elymus stebbinsii	Wheat Grass	
*Emex spinosa**	Devils Thorn	
Encelia californica	California Bush Sunflower	X

Scientific Name[1]	Common Name[2]	Dominant[3]
Epilobium canum ssp. *canum*	California Fuchsia	
Epilobium canum ssp. *latifolium*	Broad-leaved California Fuchsia	
Eremocarpus setigerus	Dove Weed	
Eriogonum cinereum	Ash Coast Buckwheat	X
Eriogonum fasciculatum var. *foliolosum*	Leafy California Buckwheat	X
Erigeron foliosus var. *foliosus*	Slender Fleabane	
Eriogonum sp. 1	Buckwheat	
Eriogonum sp. 2	Buckwheat	
Eriophyllum confertiflorum var. *confertiflorum*	Golden Yarrow	X
*Erodium botrys**	Broadleaf Filaree	
*Erodium cicutarium**	Redstem Filaree	
*Erodium moschatum**	Whitestem Filaree	
Eschscholzia californica	California Poppy	
Eucalyptus globulus ssp. *globulus**	Tasmanian Blue Gum Eucalyptus	X
Eucrypta chrysanthemifolia	Eucrypta	
*Euphorbia peplus**	Petty Spurge	
Euthamia occidentalis	Western Goldenrod	
Filago californica	California Filago	
*Foeniculum vulgare**	Sweet Fennel	X
Frankenia salina	Alkali Heath	
Fraxinus dipetala	California Flowering Ash	
Fremontodendron californicum ssp. *californicum*	California Flannel Bush	
Galium nuttallii ssp. *nuttallii*	San Diego Bedstraw	
Galium angustifolium ssp. *angustifolium*	Chaparral Bedstraw	
Galium aparine	Goose Grass	
*Geranium dissectum**	Dissected Geranium	
Gnaphalium californicum	Green Everlasting	X
Hazardia squarrosa var. *obtusa*	Sawtooth Goldenbush	X
Helianthemum scoparium	Peak Rush-rose	
Hemizonia fasciculata	Fascicled Tarplant	
Heteromoles arbutifolia	Toyon	X
Heterotheca grandiflora	Telegraph Weed	
*Hirschfeldia incana**	Summer Mustard	X
Hordeum depressum	Low Barley	
Hordeum murinum ssp. *glaucum**	Summer Barley	X
Juglans californica* var. *californica	Southern California Black Walnut	X
Juncus patens	Spreading Rush	
Keckiella cordifolia	Heart-leaved Bush Penstemon	
*Lactuca serriola**	Prickly Wild Lettuce	
*Lamarkia aurea**	Goldentop	

Scientific Name[1]	Common Name[2]	Dominant[3]
Lathyrus vestitus ssp. *laetiflorus*	Pacific Peavine	
Lathyrus vestitus ssp. *vestitus*	Pacific Peavine	
Lessingia filaginifolia	Cudweed Aster	
Leymus condensatus	Giant Wildrye	X
Leymus triticoides?	Creeping Wildrye	
*Lolium multiflorum**	Italian Ryegrass	X
Lonicera subspicata var. *denudata*	Southern Honeysuckle	
Lonicera subspicata var. *subspicata*	Santa Ynez Mountains Honeysuckle	
Lotus salsuginosus var. *salsuginosus*	Hosackia	
Lotus scoparius	Deerweed	X
Lupinus concinnus	Bajada Lupine	
Lupinus longifolius	Long-leaved Bush Lupine	
Lupinus nanus	Sky Lupine	
Lupinus succulentus	Fleshy Lupine	
Madia gracilis	Slender Tarplant	
Malacothamnus fasciculatus	Chaparral Mallow	X
Malacothrix saxatilis var. *saxatilis*	Cliff-aster	X
Malacothrix saxatilis var. *tenuifolia*	Tenuated Cliff-aster	
Malosma laurina	Laurel Sumac	X
*Malva parviflora**	Cheeseweed	
Marah fabaceus var. *agrestis*	California Man-root	
*Marrubium vulgare**	White Horehound	X
*Medicago polymorpha**	Burclover	
Melica imperfecta	Melic Grass	
*Melilotus alba**	White Sweetclover	
*Melilotus indica**	Sourclover	
Mimulus aurantiacus	Bush Monkeyflower	X
Mirabilis californica	California Wishbone Bush	
Nassella pulchra	Purple Needlegrass	X
Navarretia jaredii	Navarretia	
*Nicotiana glauca**	Tree Tobacco	
Opuntia littoralis	Coast Prickly-pear	
Oxalis albicans ssp. *pilosa*	Hairy White Wood Sorrel	
Paeonia californica	California Peony	
Persea americana	American Persea	
Phacelia affinis	Phacelia	
Phacelia cicutaria	Caterpillar Phacelia	
Phacelia ciliata var. *ciliata*	Ciliate Phacelia	
Phacelia parryi	Parry Phacelia	
*Phalaris minor**	Canary Grass	

Scientific Name[1]	Common Name[2]	Dominant[3]
Pholistoma auritum var. *auritum*	Fiesta Flower	
*Picris echioides**	Bristly Ox-tongue	
*Piptatherum miliaceum**	Smilo Grass	
Platanus racemosa	Western Sycamore	X
*Poa annua**	Annual Bluegrass	
Polygala cornuta* var. *fishiae	Fish Milkwort	
Polypodium californicum	California Polypody	
*Polypogon monspeliensis**	Rabbitsfoot Grass	
Populus balsamifera ssp. *trichocarpa*	Black Cottonwood	
Prunus ilicifolia	Holly-leaf Cherry	
Quercus agrifolia	Coast Live Oak	X
Quercus dumosa	Coastal Scrub Oak	X
Ranunculus californicus	California Buttercup	
*Raphanus sativus**	Wild Radish	
Rhamnus crocea	Spiny Redberry	X
Rhamnus ilicifolia	Hollyleaf Redberry	
Rhus integrifolia	Lemonadeberry	X
Ribes malvaceum var. *malvaceum*	Chaparral Currant	
Ribes speciosum	Fuschia-flowered Gooseberry	X
Rosa californica	California Wild Rose	
Rubus ursinus	California Blackberry	
*Rumex crispus**	Curly Dock	
Salix lasiolepis	Arroyo Willow	X
*Salsola tragus**	Russian Thistle	
Salvia apiana	White Sage	X
Salvia leucophylla	Purple Sage	X
Salvia mellifera	Black Sage	X
Salvia spathaceae	Hummingbird Sage	
Sambucus mexicana	Blue Elderberry	X
Sanicula arguta	Sanicle	
Sanicula bipinnata	Poison Sanicle	
Sanicula crassicaulis	Pacific Sanicle	
Satureja douglasii	Yerba Buena	
*Schinus molle**	Peruvian Pepper Tree	
*Schismus arabicus**	Arabian Grass	
Scrophularia californica ssp. *floribunda*	Many-flowered Figwort	
*Senecio mikanioides**	Cape Ivy	
*Senecio vulgaris**	Common Groundsel	
Sidalcea malvaeflora ssp. *californica*	California Globe Mallow	
*Silene gallica**	Windmill Pink	

Scientific Name[1]	Common Name[2]	Dominant[3]
*Silybum marianum**	Milk Thistle	X
Sisyrinchium bellum	Blue-eyed Grass	X
Solanum douglasii	Douglas Nightshade	
Solanum xantii var. *xantii*	Chaparral Nightshade	
*Sonchus asper**	Prickly Sow-thistle	
*Sonchus oleraceus**	Common Sow-thistle	
Stachys bullata	Hedge Nettle	
Strelitzia reginae	Bird-of-paradise	
Symphoricarpos mollis	Creeping Snowberry	
Thalictrum fendleri	Meadow-rue	
*Torilis nodosa**	Rattlesnake Plant	
Toxicodendron diversilobum	Poison Oak	X
Urtica dioica ssp. *holosericea*	Hoary Creek Nettle	
Venegasia carpesioides	Canyon Sunflower	
Verbena lasiostachys	Western Verbena	X
Vicia villosa ssp. *varia*	Hairy Vetch	
Viola pedunculata	Johnny Jump-up	
*Vulpia bromoides**	Slender Fescue	
Xanthium strumarium	Cocklebur	
Yucca whipplei	Our Lord's Candle	

APPENDIX C. VEGETATION DESCRIPTIONS

This appendix provides a complete inventory of the three vegetative units (vegetation types, plant communities, and plant associations) observed at each tower along the SCE Santa Clara-Carpinteria 66 kV transmission line. Generalized information on the vegetation's stand structure, species descriptions and requirements, site characteristics, and associate species contributing to the plant associations are provided in the following subsections.

Site characteristics are described in order to establish a pattern of species occurrences, as well as to determine species adaptations (to fire, flooding, or drought conditions) and environmental requirements (elevation, slope aspect, soil content/texture, moisture level, and chemical or geological variables). The slope aspect is notably important because it can determine other site characteristics such as sun exposure, moisture levels, wind factors, and local temperature levels. These site characteristics define what species are capable of, or are adapted for, growing in each unique site. Slope aspect observed for each plant association are provided in the summary tables at the beginning of each vegetation type subsection in Appendix C.

The natural vegetation in the study area contains four general vegetation types: grassland, coastal sage scrub, chaparral, and woodland. These are described below.

TYPE 1- GRASSLAND

Grassland consists of predominantly low herbaceous and grassy vegetation that forms a continuous ground cover on open hillsides, or as understory patches below emergent shrubs, shrublands, and woodlands. Many native flowering herb/bulb species (wildflowers), as well as naturalized annual forbs and invasive exotics, are important contributors to grassland. Grassland typically grows in well-developed, deeper, fine textured soils on gentle slopes and flats, coastal terraces, and in disturbed sandy sites. Areas dominated by grasses are often in early succession, and over time, they tend to revert back to shrublands, or even woodlands, if burning and disturbance frequencies are minimal (Zedler et al. 1997). Grassland is recorded a total of 61 times during the field survey, and makes up 25% of the total vegetation observed (second most observed type after Coastal Sage Scrub). Grassland consists of four different plant communities, of which three are not floristically-based. Table C-1 provides an inventory of the four grassland communities and their plant associations, and lists the slope aspect on which each association was observed growing on.

Table C-1. Grassland Inventory for the SCE Towers Vegetation Survey

Grassland Communities and Plant Associations	**Slope Aspect**	**Observations / Totals**
California Annual Grassland (no dominant grass recorded):	N,NE,E,W, ridge top	7
California Annual Grassland-Laurel Sumac	Ridge top	1
Slender Oat Annual Grassland-California Sagebrush	E	2
Ripgut Grass Annual Grassland	N, S	2
Subtotal		12
Purple Needlegrass Perennial Grassland	N	1
Ruderal Grassland (no dominant herb recorded):	N,S,SE,SW,W, r.t.	19
Black Mustard-Cliff-aster Ruderal Grassland-White Sage	SE	1
Black Mustard-Milk Thistle-Poison Hemlock Ruderal Grassland	N, S, E, W	1
Black Mustard-Milk Thistle Ruderal Grassland	S, SW, ridge top	3
Black Mustard-Poison Hemlock Ruderal Grassland-California Sagebrush	W	1
Black Mustard Ruderal Grassland	S, E, W	14
Black Mustard Ruderal Grassland-California Sagebrush	ridge top	1
Black Mustard Ruderal Grassland-Coyote Brush	NE, W	3
Black Mustard Ruderal Grassland-Purple Sage	S	2
Poison Hemlock Ruderal Grassland	NW, SW	2
Poison Hemlock Ruderal Grassland-Coyote Brush	N	1
Ruderal Grassland-California Sagebrush	W	1
White Horehound-Summer Mustard Ruderal Grassland	SE	1
Subtotal		47
Wildflower Field Grassland	N	1
Total Grassland Observations:		**61 = 25 %**

CALIFORNIA ANNUAL GRASSLAND

California Annual Grassland (California Annual Grassland Series according to Sawyer and Keeler-Wolf [1995]) is dominated by alien and native annual grasses (genera including *Avena*, *Bromus*, *Hordeum*, *Lolium*, and *Vulpia*) and herbs. This series occurs on all topographic locations, especially gradual slopes consisting of deep soils, at elevations between sea level and 1,200 meters, and species composition varies among stands. The major factors determining grassland composition include fall temperatures and precipitation, light intensity affected by shading from plants and litter, and microtopography variations. Therefore, the fine scale variation in temporal and spatial structure found in this series suggests that recognition of many species-dominant series is not particularly useful.

Most of the annual grasses found in the study area are primarily Mediterranean in origin, germinate in the fall or early winter with the first rains, and are protected from unseasonal germination by a preference for cool temperatures. Growth is extremely plastic because annual grasses are so well-adapted to California's highly variable rainfall. Floristic richness of California Annual Grassland is also affected to a high degree by land use activity. Although the introduced annual grass species have irreversibly invaded the once native (perennial) grass stands, they are often referred to as naturalized, and are often considered important California Annual Grassland contributors. (Zedler et al. 1997).

California Annual Grassland is recorded at 12 towers, which include seven non-floristic observations, and five observations of the three plant associations (below). These California Annual Grassland floristically-based associations include dominant grasses such as Slender Wild Oat (*Avena barbata*), Wild Oat (*A. fatua*), Ripgut Grass (*Bromus diandrus*), and emergent California Sagebrush (*Artemisia californica*) and Laurel Sumac (*Malosma laurina*) shrubs. Other characteristic grass species typical of California Annual Grassland in the study area include: Soft Chess (*B. hordeaceus*), Foxtail Chess (*B. madritensis* ssp. *madritensis*), Red Brome (*B. m.* ssp. *rubens*), Summer Barley (*Hordeum murinum* ssp. *glaucum*), Italian Ryegrass (*Lolium multiflorum*), and Slender Fescue (*Vulpia bromoides*).

The associate ground layer contributor many native herb and bulb species, as well as naturalized annual forbs, including: Ranchers Fire (*Amsinckia menziesii* var. *intermedia*), mustards (*Brassica* and *Hirschfeldia*), forget-me-nots (*Cryptantha* spp.), Blue Dicks (*Dichelostemma capitatum*), Red-stem Filaree (*Erodium cicutarium*), Green Everlasting (*Gnaphalium californicum*), lupines (*Lupinus* spp.), Curly Dock (*Rumex crispus*), Blue-eyed Grass (*Sisyrinchium bellum*), and Western Verbena (*Verbena lasiostachys*). The more invasive forb components include: thistles (*Carduus pycnocephalus*, *Silybum marianum*, *Sonchus oleraceus*), Tocalote (*Centaurea melitensis*), White Horehound (*Marrubium vulgare*).

The three California Annual Grassland plant associations are:

- California Annual Grassland-Laurel Sumac
- Slender Oat Annual Grassland-California Sagebrush
- Ripgut Grass Annual Grassland

PURPLE NEEDLEGRASS PERENNIAL GRASSLAND

Purple Needlegrass Perennial Grassland (Purple Needlegrass Series according to Sawyer and Keeler-Wolf [1995] or Southern Coastal Needlegrass Grassland according to Magney [1992]) is dominated by *Nassella pulchra*. This tussock-forming, native, perennial grass grows on all topographic locations in deep, high clay content, fine-textured soils that are moist during winter and very dry during summer. Native and introduced annuals are often found growing within the open gaps of the perennial Purple Needlegrass ground cover. While the non-native annual grasses and forbs typically exceed the bunchgrass in cover, Purple Needlegrass must contribute to at least 10% of the ground cover for the stand to be considered a series. This plant community is found as small open pockets within Coastal Sage Scrub communities or intergrading with chaparral and woodland communities. Stands of this once more extensive grassland occur on coastal terraces and foothills in valleys of California's south coast (Santa Ana Mountains), and in coastal Transverse Ranges, at elevations up to 1,300 meters.

Purple Needlegrass Perennial Grassland was observed at one tower (Survey Site No. 44-N), and no Purple Needlegrass associations are recorded. This plant community occurs as an understory to Coastal Sage Scrub, the annual grass associates contributing to the ground layer are those typical of California Annual Grassland, and the native herb associates include the species described in Wildflower Field (below).

RUDERAL GRASSLAND

Ruderal Grassland is a plant community that is typically in early successional stages as a result of a severe human disturbance, or because the land is subject to recurrent natural disturbance. This plant community is dominated by annual and perennial, introduced/non-native, pioneering, herbaceous plants that readily colonize disturbed ground. The ability of exotic species to invade disturbed areas arises from their relationship to old-world ancestors that have co-existed with humans for millennia, and thus are more adapted to exploit disturbed land. Ruderal communities may provide a certain degree of erosion control for recently graded areas, but such communities are also a threat to the natural biodiversity because they continually distribute invasive, highly-competitive non-native propagules into otherwise native vegetation. However, if Ruderal Grassland is left undisturbed, it can undergo succession towards more stable, and less weedy, plant communities such as coastal sage or riparian scrub. (Zedler et al. 1997.)

Ruderal Grassland was observed at 47 towers during the study. Ruderal Grassland was recorded more than any other community of the four vegetation types. Nineteen of the 47 observations are recorded as afloristic ruderal communities, and the other 32 consisted of the twelve floristic associations described below. Several of these associations include emergent native shrubs that, at one time, likely dominated the vegetation, including California Sagebrush, Coyote Brush, Cliff-aster (*Malacothrix saxatilis* [a perennial herb]), White Sage (*Salvia apiana*), and Purple Sage (*S. leucophylla*). These native species are competing with the now dominant ruderal/invasive forbs, including Black Mustard (*Brassica nigra* [most common]), Poison Hemlock (*Conium maculatum*), Summer Mustard (*Hirschfeldia incana*), White Horehound (*Marrubium vulgare*), and Milk Thistle (*Silybum marianum*). Other contributors include grasses typical of California Annual Grassland.

The twelve Ruderal Grassland plant associations identified at one or more of the SCE towers include:

- Black Mustard-Cliff-aster Ruderal Grassland-White Sage
- Black Mustard-Milk Thistle-Poison Hemlock Ruderal Grassland
- Black Mustard-Milk Thistle Ruderal Grassland
- Black Mustard-Poison Hemlock Ruderal Grassland-California Sagebrush
- Black Mustard Ruderal Grassland
- Black Mustard Ruderal Grassland-California Sagebrush
- Black Mustard Ruderal Grassland-Coyote Brush
- Black Mustard Ruderal Grassland-Purple Sage
- Poison Hemlock Ruderal Grassland
- Poison Hemlock Ruderal Grassland-Coyote Brush
- Ruderal Grassland-California Sagebrush
- White Horehound-Summer Mustard Ruderal Grassland

WILDFLOWER FIELD GRASSLAND

Wildflower Field Grassland (Wildflower Field according to Holland [1986]) is characterized by low-growing, naturalized, annual grasses and a significant component of spring-flowering, native and nonnative forbs (wildflowers). Wildflower Field is an amorphous grab bag of herb-dominated types noted for conspicuous annual wildflower displays, but dominance varies form site to site and from year to year at each particular site. This plant community is found growing on fairly poor (soil) sites that are droughty and low in nutrients. Wildflower Field is typically associated with other grassland communities and may grow as a ground layer in woodlands. Wildflower Field occurs in valleys and on foothills of the California Floristic Province, except for the north coast and desert regions, up to 1,500 meters in elevation.

Wildflower Field is recorded at one tower (Survey Site No. 44-N, north-facing slope of Red Mountain near Casitas Dam), the same site occupied by Purple Needlegrass Perennial Grassland, and no distinct Wildflower Field plant associations were observed. It occurs as understory to Coast Live Oak (*Quercus agrifolia*) Woodland and Coastal Sage Scrub. The native wildflowers of this community in the study area include: White Yarrow (*Achillea millefolium* var. *millefolium*), Goldenstars (*Bloomeria crocea* ssp. *crocea*), Four-spotted Purple Clarkia (*Clarkia purpurea* ssp. *quadrivulnera*), Green Everlasting (*Gnaphalium californicum*), California Buttercup (*Ranunculus californicus*), Hummingbird Sage (*Salvia spathaceae*), Sanicle (*Sanicula* spp.), California Globe Mallow (*Sidalcea malvaeflora* ssp. *californica*), Blue-eyed Grass (*Sisyrinchium bellum*), and Johnny Jump-up (*Viola pedunculata*).

TYPE 2- COASTAL SAGE SCRUB

Coastal Sage Scrub is a type of shrubland that is dominated by drought-deciduous, low-growing shrubs and subshrubs that are soft-leaved and grayish-green in color. Scrub plant size is relative to the available water supply present onsite; however, these semi-woody plants are generally low-growing because high temperatures and drying winds can cause severe moisture stress. Coastal Sage Scrub is common in California generally along the coastward slopes of the Transverse, Central Coast, and Peninsular Ranges, and is adapted to a Mediterranean climate. Coastal Sage Scrub forms a continuous to open canopy; it occupies dry, gentle to steep, more or less rocky slopes with shallow or heavy soils; and, it generally occurs at lower elevations. (Zedler et al. 1997.)

Coastal Sage Scrub was observed at 104 towers, contributing to 42% of the total vegetation along the transmission line. This vegetation type makes up a significant portion of the total surveyed area, and is the most frequently encountered habitat type for the study. Coastal Sage Scrub consists of ten different plant communities, which represents more communities than the other three vegetation types. Table C-2 provides an inventory of the ten predominant scrub communities, their plant associations, and slope aspect observed during the tower survey.

Table C-2. Coastal Sage Scrub Inventory for the SCE Transmission Line Vegetation Survey

Coastal Sage Scrub Communities and Plant Associations	Slope Aspect	Observations/ Totals
Black Sage Scrub: Black Sage-Green Everlasting Scrub	S	**1**
Blue Elderberry Scrub	NE	**1**
California Sagebrush Scrub:		
California Sagebrush-Coyote Brush-Blue Elderberry Scrub	W	1
California Sagebrush-Coyote Brush-Toyon Scrub	N	1
California Sagebrush-Coyote Brush Scrub	S,E,W, ridge top	4
California Sagebrush-Deerweed Scrub	S	1
California Sagebrush-Giant Wildrye-Blue Elderberry Scrub	N	1
California Sagebrush-Giant Wildrye-Birchleaf Mountain Mahogany Scrub	E	1
California Sagebrush-Giant Wildrye Scrub	N, E	3
California Sagebrush-Lemonadeberry-Toyon Scrub	E	1
California Sagebrush-Sawtooth Goldenbush Scrub	E, W	1
Subtotal		**14**
Chaparral Mallow Scrub:		
Chaparral Mallow-California Sagebrush-California Bush Sunflower Scrub	S	1
Chaparral Mallow-California Sagebrush-Coyote Brush Scrub	SE	1
Chaparral Mallow-California Sagebrush Scrub	E, W	1
Chaparral Mallow-Coyote Brush-Black Sage Scrub	S	1
Chaparral Mallow-Giant Wildrye-Black Sage Scrub	S	1
Subtotal		**5**
Coyote Brush Scrub (pure stand, or no co-dominant specified)*:*	S	1
Coyote Brush-Bigpod Ceanothus-Nuttall Scrub Oak-Canary Grass Scrub	S	1

Coastal Sage Scrub Communities and Plant Associations	Slope Aspect	Observations/ Totals
Coyote Brush-Black Sage-Greenbark Ceanothus Scrub	W	1
Coyote Brush-Canary Grass Scrub	ridge top	1
Coyote Brush-Giant Wildrye-Blue Elderberry Scrub	NW	1
Coyote Brush-Giant Wildrye-Poison Oak Scrub	SW	1
Coyote Brush-Giant Wildrye-Purple Sage Scrub	N, S	3
Coyote Brush-Giant Wildrye-Scrub	N, W	2
Coyote Brush-Laurel Sumac-Purple Sage Scrub	N, E, W	2
Coyote Brush-Lemonadeberry Scrub	SE	1
Coyote Brush-Poison Oak Scrub-Grasses	E	1
Coyote Brush-Sawtooth Goldenbush Scrub	N	1
Coyote Brush-Sweet Fennel-Greenbark Ceanothus Scrub	ridge top	1
Subtotal		17
Deerweed Scrub:		
Deerweed-Bush Monkeyflower Scrub	N	1
Deerweed-California Buckwheat-Cudweed Aster Scrub	E	1
Deerweed-California Bush Sunflower-Black Mustard Scrub	SE	1
Subtotal		3
Giant Wildrye Scrub:		
Giant Wildrye-Black Mustard-California Bush Sunflower Scrub	E	1
Giant Wildrye-Chaparral Mallow-Bigpod Ceanothus Scrub	S, SW	1
Giant Wildrye-Lemonadeberry Scrub	E	1
Giant Wildrye-Sawtooth Goldenbush-Summer Mustard Scrub	ridge top	1
Giant Wildrye-Toyon Scrub	NW	1
Giant Wildrye Scrub-Annual Grasses-Blue Gum Eucalyptus	S, W, ridge top	1
Subtotal		6
Mixed Sage Scrub:		
California Sagebrush-Black Sage-Chaparral Mallow Scrub	NE	1
California Sagebrush-Black Sage-Green Everlasting Scrub	S	1
California Sagebrush-Purple Sage-Black Mustard Scrub	S	1
California Sagebrush-Purple Sage-Bush Monkeyflower Scrub	NE	1
California Sagebrush-Purple Sage-Chaparral Mallow Scrub	E	1
California Sagebrush-Purple Sage-Coyote Brush Scrub	NW, W, ridge top	2
California Sagebrush-Purple Sage-Deerweed-California Bush Sunflower Scrub	S, E, W, ridge top	2
California Sagebrush-Purple Sage-Giant Wildrye Scrub	N, NW, S, E, W	11
California Sagebrush-Purple Sage-Lemonadeberry Scrub	S	1
California Sagebrush-Purple Sage-Sawtooth Goldenbush Scrub	NW, W	2
California Sagebrnsh-Purple Sage Scrub		12
Subtotal		35
Poison Oak Scrub (pure stand):	N	1
Poison Oak-Sawtooth Goldenbush Scrub	ridge top	2
Poison Oak-Toyon-Blue Elderberry Scrub	N	2
Subtotal		5
Purple Sage Scrub (pure stand, or no co-dominant specified):	N, NE, W, E, S	8
Purple Sage-Birchleaf Mountain Mahogany-Toyon Chaparral	W	1

Coastal Sage Scrub Communities and Plant Associations	Slope Aspect	Observations/ Totals
Purple Sage-Coyote Brush Scrub	E	4
Purple Sage-Giant Wildrye-Blue Elderberry Scrub	E	1
Purple Sage-Giant Wildrye Scrub	NE	1
Purple Sage-Greenbark Ceanothus Scrub	SE	1
Purple Sage-Lemonadeberry-Giant Wildrye-Bush Monkeyflower Scrub	N	1
Subtotal		17
Total Coastal Sage Scrub Observations:		**104 = 42 %**

BLACK SAGE SCRUB

Black Sage Scrub (Black Sage Series according to Sawyer and Keeler-Wolf [1995]) is dominated by *Salvia mellifera*, a native, soft-leaved, aromatic, green shrub with clustered white to pale blue or lavender flowers. It is common in Coastal Sage Scrub and lower chaparral communities at elevations below 1,200 meters (Hickman 1993). *S. mellifera* resprouts both between and after recurring fires, but post-fire resprouting is sensitive to fire intensity (Zedler et al. 1997). Black Sage Scrub is often considered part of the Coastal Sage Scrub collection of series, and forms a continuous or intermittent low canopy, growing over a variable ground layer, on steep dry slopes with shallow soils.

Black Sage-Green Everlasting Scrub is the only Black Sage Scrub plant association observed, found at one tower during the field survey (Survey Tower No. 105-N). This association includes Green Everlasting (*Gnaphalium californicum*) as an important ground layer contributor, growing with the open Black Sage canopy. *G. californicum* is a native, aromatic, glandular, annual herb with pearl-like flowers. It readily occupies open dry sites and commonly grows as a Coastal Sage Scrub understory.

As a result of habitat clearing below the tower, the site is in succession towards Coastal Sage Scrub and/or Bigpod Ceanothus Chaparral (*Ceanothus megacarpus* var. *megacarpus* [described later; observed as dominant habitat surrounding the clearing]). Black Sage has formed an initial open canopy, enabling *G. californicum* to dominate the gaps between the sage shrubs. The associated species for this plant association are: California Sagebrush, California Brickellbush (*Brickellia californica*), Sawtooth Goldenbush (*Hazardia squarrosa*), Toyon (*Heteromeles arbutifolia*), Chaparral Mallow (*Malacothamnus fasciculatus*), Laurel Sumac, and Bush Monkeyflower (*Mimulus aurantiacus*).

Blue Elderberry Scrub

Blue Elderberry Scrub (Mexican Elderberry Series according to Sawyer and Keeler-Wolf [1995]) is dominated by *Sambucus mexicana*, a common, native, large shrub/small tree with moderately large leaves/leaflets, cream-colored flowers, and bluish-black berries. Blue Elderberry occurs at elevations between sea level and 3,000 meters (Hickman 1993). Blue Elderberry is listed in the National Inventory of Wetland Plants (NIWP [Reed 1988]) with a wetland indicator status of FAC, or a facultative species (equally likely to occur in wetlands as in nonwetlands).

Blue Elderberry Scrub forms the intermittent to closed canopy, of less than eight meters tall, over an herbaceous ground layer. This series occurs in intermittently flooded or seasonally saturated soils of freshwater wetlands such as streambanks, floodplains, and open riparian forests at elevations below 300 meters. *S. mexicana* is common in many series, often in upland habitats growing as a small emergent tree over Coastal Sage Scrub and chaparral, and as an understory to woodlands. Blue Elderberry Scrub only includes stands with large Blue Elderberry populations.

Blue Elderberry Scrub was observed only once (Survey Tower No. 57-N) along the transmission line. The important shrub layer associates found growing with Blue Elderberry include: Coyote Brush, Black Mustard (*Brassica nigra*), Sawtooth Goldenbush, and White Sage. The ground layer associates are annual grasses (genera including *Bromus* and *Lolium*), Green Everlasting, and Cliff-aster.

California Sagebrush Scrub

California Sagebrush Scrub (California Sagebrush Series [Sawyer and Keeler-Wolf 1995]) is dominated by *Artemisia californica*, a native, aromatic, slender-stemmed shrub with thread-like grayish leaves. It is a typical shrub of Coastal Sage Scrub and chaparral types of xeric foothills, especially near the coast, at elevations below 800 meters (Hickman 1993).

California Sagebrush Scrub is often considered part of the Coastal Sage Scrub collection of series. It forms a continuous to intermittent canopy consisting of Coyote Brush, California Buckwheat (*Eriogonum fasciculatum*), Deerweed (*Lotus scoparius*), Laurel Sumac, Bush Monkeyflower, and sages as local shrub associates growing over a variable ground layer. Non-native annual grasses, an occasional native bunchgrass (*Nassella* spp.), and native or introduced herbs, are common in canopy gaps. California Sagebrush Series occurs on steep, south-facing slopes and in infrequently flooded, low-gradient alluvial floodplain deposits. This plant community often occurs on shallow alluvial- or colluvial-derived soils, and grows at elevations below 1,200 meters.

The Federally listed (threatened) California Gnatcatcher (*Polioptila californica*) occupies California Sagebrush stands provided by Coastal Sage Scrub habitat. Since scrub communities continue to suffer severe losses due to spreading urbanization, the California Gnatcatcher is vulnerable to habitat depletion (Zedler et al. 1997).

California Sagebrush was found a total of 14 times in the study area, within nine distinct plant associations (listed below). The most commonly observed co-dominants or important canopy associates are Coyote Brush and Giant Wildrye (*Leymus condensatus*), while other important associates include: Birchleaf Mountain Mahogany (*Cercocarpus betuloides* var. *betuloides*), Sawtooth Goldenbush, Toyon, Deerweed, Lemonadeberry, Purple Sage (*Salvia leucophylla*), and Blue Elderberry.

The California Sagebrush plant associations include:

- California Sagebrush-Coyote Brush-Blue Elderberry Scrub
- California Sagebrush-Coyote Brush-Toyon Scrub
- California Sagebrush-Coyote Brush Scrub
- California Sagebrush-Deerweed Scrub
- California Sagebrush-Giant Wildrye-Blue Elderberry Scrub
- California Sagebrush-Giant Wildrye-Birchleaf Mountain Mahogany Scrub
- California Sagebrush-Giant Wildrye Scrub
- California Sagebrush-Lemonadeberry-Toyon Scrub
- California Sagebrush-Sawtooth Goldenbush Scrub

Several other canopy contributors were recorded for the California Sagebrush associations, including: Chamise (*Adenostoma fasciculatum*), California Bush Sunflower (*Encelia californica*), California Buckwheat, Toyon, Chaparral Mallow (*Malacothamnus fasciculatus*), Laurel Sumac, Black Sage (*Salvia mellifera*), and Poison Oak (*Toxicodendron diversilobum*). The ground layer generally consists of California Annual grassland grasses and forbs, including the wildflowers White Yarrow (*Achillea millefolium*), Goldenstars (*Bloomeria crocea*), and Blue Dicks (*Dichelostemma capitatum*).

Chaparral Mallow Scrub

Chaparral Mallow Scrub is dominated by *Malacothamnus fasciculatus*. This native, slender-branched, hairy to white-tawny subshrub has palmately-lobed leaves and spike-like clusters of pale pinkish-purple flowers. Chaparral Mallow occurs in scrub and chaparral types at elevations below 600 meters (Hickman 1993). Chaparral Mallow Scrub forms an intermittent to closed canopy over a variable ground layer, on predominantly south-facing slopes with heavy shallow soils.

Chaparral Mallow Scrub was observed at five towers. Each observation was recorded as one of the five different Chaparral Mallow plant associations (below). The co-dominants/important Chaparral Mallow canopy associates include: California Sagebrush, Coyote Brush, California Bush Sunflower, Giant Wildrye, and Black Sage.

The five Chaparral Mallow plant associations are:

- Chaparral Mallow-California Sagebrush-California Bush Sunflower Scrub
- Chaparral Mallow-California Sagebrush-Coyote Brush Scrub
- Chaparral Mallow-California Sagebrush Scrub
- Chaparral Mallow-Coyote Brush-Black Sage Scrub
- Chaparral Mallow-Giant Wildrye-Black Sage Scrub

Other species observed growing within Chaparral Mallow plant associations include: Ceanothus (*Ceanothus* spp.), California Bush Sunflower, Deerweed, Laurel Sumac, Spiny Redberry (*Rhamnus crocea*), Lemonadeberry (*Rhus integrifolia*), Blue Elderberry, and Poison Oak. The ground layer consists of Golden Yarrow (*Eriophyllum confertiflorum*), Green Everlasting, Purple

Needlegrass (*Nassella pulchra*), Many-flowered Figwort (*Scrophularia californica*), and Blue-eyed Grass.

Coyote Brush Scrub

Coyote Brush Scrub (Coyote Brush Series according to Sawyer and Keeler-Wolf [1995]) is dominated by *Baccharis pilularis*, a bright green, glabrous, native broad-leaved evergreen shrub with toothed, 3-veined leaves. It occurs in scrub and oak woodland communities on stabilized dunes of coastal bars, river mouths, coastline spits, coastal bluffs, open slopes, and ecotonal areas with grasslands (Hickman 1993). Coyote Brush Scrub forms a continuous or intermittent canopy (less than two meters tall) growing over a variable ground layer. Coyote Brush Series occurs at elevations from sea level to 1,000 meters.

Coyote Brush Scrub was observation at 17 towers as one pure stand of Coyote Brush and 16 observations of the twelve different but distinct Coyote Brush plant associations. Coyote Brush Scrub forms the most individual associations over any other recorded Coastal Sage Scrub community along the SCE transmission line. The Coyote Brush plant associations include several co-dominant and important associates such as: California Sagebrush, Black Mustard, Bigpod Ceanothus (*Ceanothus megacarpus* var. *m.*), Greenbark Ceanothus (*C. spinosus*), Sweet Fennel (*Foeniculum vulgare*), Sawtooth Goldenbush, Giant Wildrye, Laurel Sumac, Canary Grass (*Phalaris minor*), Nuttall Scrub Oak (*Quercus dumosa* [special-status species]), Lemonadeberry (*Rhus integrifolia*), Blue Elderberry, sages (*Salvia* spp.), and Poison Oak.

The twelve Coyote Brush associations along the SCE transmission line are:

- Coyote Brush-Bigpod Ceanothus-Nuttall Scrub Oak-Canary Grass Scrub
- Coyote Brush-Black Sage-Greenbark Ceanothus Scrub
- Coyote Brush-Canary Grass Scrub
- Coyote Brush-Giant Wildrye-Blue Elderberry Scrub
- Coyote Brush-Giant Wildrye-Poison Oak Scrub
- Coyote Brush-Giant Wildrye-Purple Sage Scrub
- Coyote Brush-Giant Wildrye-Scrub
- Coyote Brush-Laurel Sumac-Purple Sage Scrub
- Coyote Brush-Lemonadeberry Scrub
- Coyote Brush-Poison Oak Scrub-Grasses
- Coyote Brush-Sawtooth Goldenbush Scrub
- Coyote Brush-Sweet Fennel-Greenbark Ceanothus Scrub

Other Coyote Brush shrub canopy contributors include: Chamise, Birchleaf Mountain Mahogany, buckwheats (*Eriogonum cinereum, E. fasciculatum*), Toyon, Deerweed, Chaparral Mallow, Bush Monkeyflower, Coast Live Oak (*Quercus agrifolia*), Fuschia-flowered Gooseberry (*Ribes speciosum*), and Chaparral Nightshade (*Solanum xantii* var. *xantii*). The ground layer consists of typical Coastal Sage Scrub understory species (*Achillea millefolium, Eriophyllum confertiflorum, Solanum douglasii, Stachys bullata,* and *Verbena lasiostachys*). Coyote Brush Scrub also contains a variety of showy-flowered, less common herbs such as Goldenstars, Catalina Mariposa Lily

(*Calochortus catalinae* [special-status species]), Lanceleaf Live Forever (*Dudleya lanceolata*), and California Peony (*Paeonia californica*).

Deerweed Scrub

Deerweed Scrub is dominated by *Lotus scoparius*, a native drought-deciduous perennial herb or subshrub with branched clustered stems, yellow-reddish flowers, and well-spaced elliptic leaflets. Deerweed is a common species in scrub and chaparral types, and occurs on roadsides, coastal sands, desert slopes, flats, and washes at elevations below 1,500 meters (Hickman 1993). This scrub community was observed as occupying the more recently cleared areas beneath several towers. These disturbed xeric sites appear to be successional towards a more species-rich Coastal Sage Scrub.

Deerweed Scrub was observed along the SCE transmission line as the three distinct plant associations, with each association occurring at a different tower. Deerweed Scrub forms an intermittent low canopy with the co-dominant/important associate shrubs California Bush Sunflower, California Buckwheat, and Bush Monkeyflower growing with the associate herbs Black Mustard and Cliff-aster.

The Deerweed plant associations along the SCE transmission line include:

- Deerweed-Bush Monkeyflower Scrub
- Deerweed-California Buckwheat-Cudweed Aster Scrub
- Deerweed-California Bush Sunflower-Black Mustard Scrub

Other species of Deerweed Scrub associations are: California Sagebrush, Hoary Ceanothus (*Ceanothus oliganthus*), Golden Yarrow, California Poppy (*Eschscholzia californica*), Toyon, Giant Wildrye, White Sage, Blue Elderberry, Many-flowered Figwort (*Scrophularia californica* ssp. *floribunda*), and Poison Oak.

Giant Wildrye Scrub

Giant Wildrye Scrub is dominated by *Leymus condensatus*. Giant Wildrye is a native, large, green, glabrous, shrub-like perennial grass with tall stems. *L. condensatus* grows on dry slopes under oak woodlands or with Coastal Sage Scrub, at elevations below 1,500 meters (Hickman 1993). Although Giant Wildrye is a grass, it is a common Coastal Sage Scrub species and dominates the shrub layer of several plant associations observed in the study area; therefore, this plant is herein characterized this shrub-like grass as forming an intermittent *shrub* canopy growing over a grassy and herbaceous ground layer.

Giant Wildrye Scrub forms six plant associations along the SCE transmission line (each observed once), including several important associates: Bigpod Ceanothus, California Bush Sunflower, Sawtooth Goldenbush, Toyon, Chaparral Mallow, and Lemonadeberry. Giant Wildrye associations also include the introduced mustards (*Brassica nigra*, *Hirschfeldia incana*), grasses of

California Annual Grassland, and emergent Tasmanian Blue Gum (*Eucalyptus globulus* ssp. *globulus*).

The six Giant Wildrye associations observed along the SCE transmission line include:

- Giant Wildrye-Black Mustard-California Bush Sunflower Scrub
- Giant Wildrye-Chaparral Mallow-Bigpod Ceanothus Scrub
- Giant Wildrye-Lemonadeberry Scrub
- Giant Wildrye-Sawtooth Goldenbush-Summer Mustard Scrub
- Giant Wildrye-Toyon Scrub
- Giant Wildrye Scrub-Annual Grasses-Blue Gum Eucalyptus

Mixed Sage Scrub

Mixed Sage Scrub (Mixed Sage Series according to Sawyer and Keeler-Wolf [1995]) is the most typical Coastal Sage Scrub plant community. This upland plant community consists of a mixture of scrub species, including one to three species of sage (*Salvia* spp.). Three aromatic sages, typical of Coastal Sage Scrub or chaparral on dry south-facing slopes, are contributors of Mixed Sage Scrub (Hickman 1993): White Sage (*S. apiana*), with long tomentose stems, densely hairy-gray leaves, and white/lavender flowers (<1,500 meters); Purple Sage (*S. leucophylla*), with grayish, puckered, densely branched-hairy leaves, and rose-lavender flowers (between 50 and 800 meters); and, Black Sage (*S. mellifera*), with greenish, glandular-hairy, puckered leaves and white, pale blue/lavender flowers (<1,200 meters) (Sawyer and Keeler-Wolf 1995).

Mixed Sage Series consists of an equal representation of one to three sages and California Sagebrush, plus a mixture of typical Coastal Sage Scrub species, including California Bush Sunflower, California Buckwheat, Bush Monkeyflower, and prickly-pears (*Opuntia* spp.). Emergent shrubs of Laurel Sumac, Lemonadeberry, and Blue Elderberry may also be present. This series forms a continuous or intermittent canopy (<2 meters tall) over a variable ground layer, and grows on sandy, rocky, shallow soils of upland slopes at elevations below 1,200 meters. No single species or pair of species can dominate stands of this series; instead, three or more species must equally share commonness and cover.

Mixed Sage Scrub is the dominant Coastal Sage Scrub plant community along the SCE transmission line. It was recorded at 35 towers as one of eleven distinct Mixed Sage Scrub plant associations. The most commonly observed important Mixed Sage Scrub canopy contributor was Giant Wildrye, while other important contributors include: Coyote Brush, California Bush Sunflower, Green Everlasting, Sawtooth Goldenbush, Giant Wildrye, Deerweed, Chaparral Mallow, Bush Monkeyflower, and Lemonadeberry.

The eleven Mixed Sage Scrub associations along the SCE transmission line include:

- California Sagebrush-Black Sage-Chaparral Mallow Scrub
- California Sagebrush-Black Sage-Green Everlasting Scrub
- California Sagebrush-Purple Sage-Black Mustard Scrub
- California Sagebrush-Purple Sage-Bush Monkeyflower Scrub
- California Sagebrush-Purple Sage-Chaparral Mallow Scrub

- California Sagebrush-Purple Sage-Coyote Brush Scrub
- California Sagebrush-Purple Sage-Deerweed-California Bush Sunflower Scrub
- California Sagebrush-Purple Sage-Giant Wildrye Scrub
- California Sagebrush-Purple Sage-Lemonadeberry Scrub
- California Sagebrush-Purple Sage-Sawtooth Goldenbush Scrub
- California Sagebrush-Purple Sage Scrub

Other Mixed Sage Scrub canopy associates include: Big Saltbush (*Atriplex lentiformis* ssp. *breweri*), California Brickellbush (*Brickellia californica*), buckwheats (*Eriogonum* spp.), Silver Bush Lupine (*Lupinus albifrons*), Laurel Sumac, Spiny Redberry, Chaparral Currant (*Ribes malvaceum*), Fuchsia-flowered Gooseberry, Chaparral Nightshade, Poison Oak, and emergent ceanothus, Birchleaf Mountain Mahogany, Toyon, and Blue Elderberry.

The Mixed Sage Scrub ground layer includes many native herbs: yarrows (*Achillea millefolium*, *Eriophyllum confertiflorum*), Antisell Three-pod Milkvetch (*Astragalus trichopodus* var. *phoxus*), Goldenstars, Catalina Mariposa Lily, Morning-glory (*Calystegia macrostegia*), Lay-and-Collie Indian Paintbrush (*Castilleja affinis* ssp. *affinis*), Blue Dicks, Lanceleaf Live Forever, Green Everlasting, Purple Needlegrass, California Peony, California Buttercup (*Ranunculus californicus*), Blue-eyed Grass, Western Verbena (*Verbena lasiostachys*), and Hoary Creek Nettle (*Urtica dioica* ssp. *holosericea*).

Poison Oak Scrub

Poison Oak Scrub is dominated by *Toxicodendron diversilobum*, a winter-deciduous poisonous shrub or vine with resinous leaves (becoming bright red in autumn), yellow-green flowers, and leathery creamy-white fruit. The toxic resin-covered leaves, stems, and fruit cause severe contact dermatitis. The widespread Poison Oak occurs in chaparral and oak woodlands of canyon slopes at elevations below 1,650 meters (Hickman 1993). It also commonly occurs along riparian corridors.

Poison Oak Scrub was observed at five towers during the survey. One site consisted of a pure stand; two sites consisted of Poison Oak-Sawtooth Goldenbush Scrub, which includes Sawtooth Goldenbush as a co-dominant; and one site with Poison Oak-Toyon-Blue Elderberry Scrub, in which Toyon and Blue Elderberry are important associate species. The Poison Oak Scrub plant associations of the SCE transmission line form an intermittent shrub canopy consisting of several typical Coastal Sage Scrub species.

Purple Sage Scrub

Purple Sage Scrub (Purple Sage Series according to Sawyer and Keeler-Wolf [1995]) is dominated by *Salvia leucophylla*, a drought-deciduous, aromatic, shrub that prefers dry, open, south-facing slopes between 50 and 800 meters in elevation (Hickman 1993). Purple Sage is often an important shrub with California Sagebrush. Purple Sage typically forms a continuous to intermittent canopy over a variable ground layer. Purple Sage Scrub grows on steep north-facing slopes in colluvial-derived, rocky soils. It is considered part of the Coastal Sage Scrub series collection, and Purple Sage stands typically create mosaics with Coast Live Oak Woodland and Southern California Black Walnut Woodland.

Purple Sage Scrub was observed at 17 towers and is an important component of Coastal Sage Scrub within the study area. Purple Sage Scrub at eight of the 17 towers consisted of little or no canopy associates (pure stands), and nine of the towers sties consisted of six different Purple Sage Scrub plant associations. Of the six plant associations, Coyote Brush and Giant Wildrye were the most common co-dominants or important contributors. However, several other important native shrub species contributed to the canopy of Purple Sage Scrub, including: California Sagebrush, Greenbark Ceanothus, Birchleaf Mountain Mahogany, Toyon, Bush Monkeyflower, Lemonadeberry, and Blue Elderberry.

The six Purple Sage Scrub associations observed along the SCE transmission line include:

- Purple Sage-Birchleaf Mountain Mahogany-Toyon Chaparral
- Purple Sage-Coyote Brush Scrub
- Purple Sage-Giant Wildrye-Blue Elderberry Scrub
- Purple Sage-Giant Wildrye Scrub
- Purple Sage-Greenbark Ceanothus Scrub
- Purple Sage-Lemonadeberry-Giant Wildrye-Bush Monkeyflower Scrub

Other associates of the Purple Sage canopy include: California Bush Sunflower, buckwheat (*Eriogonum* spp.), Green Everlasting, California Black Walnut (*Juglans californica* var. *californica* [special-status species]) Heart-leaved Bush Penstemon (*Keckiella cordifolia*), Deerweed, Laurel Sumac, Purple Needlegrass, Coast Prickly-pear (*Opuntia littoralis*), Fish Milkwort (*Polygala cornuta* ssp. *fishiae* [special-status species]), Coast Live Oak, Fuschia-flowered Gooseberry, Chaparral Nightshade, and Poison Oak.

TYPE 3- CHAPARRAL

Chaparral is a type of shrubland dominated by evergreen shrubs with small, thick, leathery, dark green, sclerophyllous leaves. The shrubs are relatively tall and dense, and are adapted to periodic wildfires by stump sprouting or germination from a dormant seed bank. The evergreen shrubs included in chaparral are also adapted to drought by deep extensive root systems, while their small thick leaf structure prevents permanent damage from moisture loss (Zedler et al. 1997). Many shrubs typical of Coastal Sage Scrub also grow intermixed as associates with chaparral species. Chaparral typically occurs on moderate to steep south-facing slopes with dry, rocky, shallow soils. It is more abundant at higher elevations where temperatures are lower and moisture supplies are more ample. Chaparral vegetation was recorded at 45 transmission line towers, contributing to 18% of the total habitats surveyed during the botanical assessment. Chaparral is third in rank of the four vegetation types observed during the survey, and only consists of three distinct plant communities. Table C-3 provides an inventory of chaparral communities and plant associations found during the study.

Table C-3. Chaparral Inventory for the SCE Towers Vegetation Survey

Chaparral Communities and Plant Associations	Slope Aspect	No. of Towers
Bigpod Ceanothus Chaparral (pure stand, or no co-dominant specified)	S	3
Bigpod Ceanothus-Black Sage Chaparral	N, S, E, W, ridge top	1
Bigpod Ceanothus-Mountain Mahogany-California Sagebrush Chaparral	SW	2
Bigpod Ceanothus-Mountain Mahogany-Nuttall Scrub Oak Chaparral	N	1
Bigpod Ceanothus-Mountain Mahogany-Lemonadeberry Chaparral	N	1
Bigpod Ceanothus-California Buckwheat-Black Sage Chaparral	S	1
Bigpod Ceanothus-California Buckwheat Chaparral	S	1
Bigpod Ceanothus-California Sagebrush Chaparral	SW, SE	2
Bigpod Ceanothus-California Sagebrush-Lemonadeberry Chaparral	S	1
Bigpod Ceanothus-Chaparral Mallow-Black Sage Chaparral	S	3
Bigpod Ceanothus-Chaparral Mallow-Blue Elderberry Chaparral	S	1
Bigpod Ceanothus-Chaparral Mallow-California Sagebrush Chaparral	S	1
Bigpod Ceanothus-Chaparral Mallow-Green Everlasting Chaparral	S	1
Bigpod Ceanothus-Chaparral Mallow-Purple Sage Chaparral	S, SE	2
Bigpod Ceanothus-Chaparral Mallow Chaparral	S, E	3
Bigpod Ceanothus-Giant Wildrye-California Sagebrush Chaparral	S	1
Bigpod Ceanothus-Giant Wildrye-Coyote Brush Chaparral	E	1
Bigpod Ceanothus-Giant Wildrye Chaparral	SE	1
Bigpod Ceanothus-Laurel Sumac-Blue Elderberry Chaparral	S	1
Bigpod Ceanothus-Lemonadeberry Chaparral	S	1
Bigpod Ceanothus-Nuttall Scrub Oak-Chamise-Manzanita Chaparral	N, S	1
Bigpod Ceanothus-Nuttall Scrub Oak-Coyote Brush Chaparral	S	1
Bigpod Ceanothus-Nuttall Scrub Oak-Laurel Sumac Chaparral	S	1
Bigpod Ceanothus-Toyon-Chamise-Poison Oak Chaparral	NE	1

Chaparral Communities and Plant Associations	Slope Aspect	No. of Towers
Subtotal		33
Lemonadeberry Chaparral (pure stand, or no co-dominant specified)	SE, ridge top	2
Lemonadeberry-Blue Elderberry Chaparral	S	1
Lemonadeberry-Chaparral Mallow-Spiny Redberry Chaparral	SE	1
Lemonadeberry-Giant Wildrye-Bigpod Ceanothus Chaparral	S	1
Lemonadeberry-Giant Wildrye-Purple Sage Chaparral	SW	1
Lemonadeberry-Laurel Sumac-Coyote Brush Chaparral	SW	1
Lemonadeberry-Laurel Sumac Chaparral	N, ridge top	1
Subtotal		8
Mixed Ceanothus Chaparral:		
Mixed Ceanothus-California Sagebrush Chaparral	SW	1
Mixed Ceanothus-Nuttall Scrub Oak-Lemonadeberry-Chamise Chaparral	S	1
Mixed Ceanothus-Nuttall Scrub Oak-Purple Sage Chaparral	N	1
Mixed Ceanothus-Toyon Chaparral	S	1
Subtotal		4
Total Chaparral Observations:		45 = 18 %

Bigpod Ceanothus Chaparral

Bigpod Ceanothus Chaparral (Bigpod Ceanothus Series according to Sawyer and Keeler-Wolf [1995]) forms tall dense stands that are dominated by *Ceanothus megacarpus* var. *megacarpus*. Bigpod Ceanothus is an evergreen shrub (<4 meters tall) with firm, one-ribbed, dull green leaves, white to pale lavender flowers, and horn-tipped fruit. Bigpod Ceanothus occurs on dry slopes in canyons near the coast, at elevations below 750 meters (Hickman 1993). Bigpod Ceanothus Chaparral is preadapted to periodic wildfires by producing a large seedbank each year, is long-lived absent fires; however, does not resprout after a wildfire (Holland 1986). Bigpod Ceanothus Chaparral typically forms a continuous to intermittent tall canopy, consisting of few associate species, growing over a sparse ground layer (emergent trees may be present). Percent cover by Bigpod Ceanothus must be at least 60 % to be included in this series. This chaparral occurs on xeric upland slopes, usually fairly near the coast, and grows in shallow, rocky, poorly differentiated soils (Holland 1986).

Bigpod Ceanothus Chaparral was recorded at 33 towers, which is the most observations of a chaparral community, and it forms more individual plant associations (23) than any other community of any other vegetation type observed along the SCE transmission line. Three of the 33 tower sites occurred as pure stands while the other 30 consisted of one or more of the 23 distinct plant associations. The predominant Bigpod Ceanothus association contributors include: Chamise, Santa Ynez Mountains Eastwood Manzanita (*Arctostaphylos glandulosa* ssp. *mollis*), Birchleaf Mountain Mahogany, Toyon, Giant Wildrye, Chaparral Mallow, Laurel Sumac, Nuttall Scrub Oak, and Lemonadeberry. The important Coastal Sage Scrub species include: California

Sagebrush, Coyote Brush, California Buckwheat, Green Everlasting, sages (*Salvia leucophylla, S. mellifera*), Blue Elderberry, and Poison Oak.

The 23 Bigpod Ceanothus Chaparral plant associations found along the transmission line include:

- Bigpod Ceanothus-Black Sage Chaparral
- Bigpod Ceanothus-Birchleaf Mountain Mahogany-California Sagebrush Chaparral
- Bigpod Ceanothus-Birchleaf Mountain Mahogany-Nuttall Scrub Oak Chaparral
- Bigpod Ceanothus-Birchleaf Mountain Mahogany-Lemonadeberry Chaparral
- Bigpod Ceanothus-California Buckwheat-Black Sage Chaparral
- Bigpod Ceanothus-California Buckwheat Chaparral
- Bigpod Ceanothus-California Sagebrush Chaparral
- Bigpod Ceanothus-California Sagebrush-Lemonadeberry Chaparral
- Bigpod Ceanothus-Chaparral Mallow-Black Sage Chaparral
- Bigpod Ceanothus-Chaparral Mallow-Blue Elderberry Chaparral
- Bigpod Ceanothus-Chaparral Mallow-California Sagebrush Chaparral
- Bigpod Ceanothus-Chaparral Mallow-Green Everlasting Chaparral
- Bigpod Ceanothus-Chaparral Mallow-Purple Sage Chaparral
- Bigpod Ceanothus-Chaparral Mallow Chaparral
- Bigpod Ceanothus-Giant Wildrye-California Sagebrush Chaparral
- Bigpod Ceanothus-Giant Wildrye-Coyote Brush Chaparral
- Bigpod Ceanothus-Giant Wildrye Chaparral
- Bigpod Ceanothus-Laurel Sumac-Blue Elderberry Chaparral
- Bigpod Ceanothus-Lemonadeberry Chaparral
- Bigpod Ceanothus-Nuttall Scrub Oak-Chamise-Manzanita Chaparral
- Bigpod Ceanothus-Nuttall Scrub Oak-Coyote Brush Chaparral
- Bigpod Ceanothus-Nuttall Scrub Oak-Laurel Sumac Chaparral
- Bigpod Ceanothus-Toyon-Chamise-Poison Oak Chaparral

Several other shrub species were found within the Bigpod Ceanothus canopy include: California Brickellbush, California Bush Sunflower, Ash Coast Buckwheat (*Eriogonum cinereum*), Chaparral Bedstraw (*Galium angustifolium* ssp. *angustifolium*), Sawtooth Goldenbush, Toyon, Heart-leaved Bush Penstemon, Santa Ynez Mountains Honeysuckle (*Lonicera subspicata* var. *subspicata*), Deerweed, Chaparral Mallow, Bush Monkeyflower, oaks (*Quercus agrifolia, Q. berberidifolia*), Coast Prickly-pear, Spiny Redberry, Chaparral Nightshade, Canyon Sunflower (*Venegasia carpesioides*), and Our Lord's Candle (*Yucca whipplei*).

The ground layer is composed of a variety of native, showy-flowered herbs including: Antisell Three-pod Milkvetch, Golden Yarrow, Green Everlasting, Peak Rush-rose (*Helianthemum scoparium*), Fascicled Tarplant (*Hemizonia fasciculata*), Cliff-aster, Caterpillar Phacelia (*Phacelia cicutaria*), Pacific Sanicle (*Sanicula crassicaulis*), Many-flowered Figwort, Blue-eyed Grass, and Hedge Nettle (*Stachys bullata*); the native perennial vines Morning-glory (*Calystegia macrostegia*) and Pipestem Clematis (*Clematis ligusticifolia*); the native perennial grasses Wheat Grass (*Elymus stebbinsii*) and Purple Needlegrass; and, the ruderal Tocalote (*Centaurea melitensis*), Sweet Fennel, White Horehound (*Marrubium vulgare*), Tree Tobacco (*Nicotiana glauca*), and Milk Thistle (*Silybum marianum*).

Lemonadeberry Chaparral

Lemonadeberry Chaparral (Sumac Series according to Sawyer and Keeler-Wolf [1995]) is dominated by *Rhus integrifolia*, a large aromatic, evergreen, glandular shrub with leathery shinny-green leaves, white to pinkish petals, and glandular-hairy reddish fruit. Lemonadeberry grows on north-facing slopes of canyons at elevations below 900 meters (Hickman 1993). The sole or dominant plant taxon of this series may either be Laurel Sumac or *R. integrifolia*. These shrubs may occur together as shrub-canopy co-dominants; however, Lemonadeberry Chaparral was observed as the dominant species in the shrub canopy along the SCE transmission line. Lemonadeberry forms an intermittent to continuous canopy over a variety of scrub associates and a sparse grassy ground layer. This series occurs on steep upland slopes, with shallow coarse soils, and at elevations near sea level up to 400 meters. Sumac (/Lemonadeberry) Series is often overlooked by combining it with mixed chaparral; however, many characteristic chaparral genera (*Adenostoma*, *Arctostaphylos*, *Ceanothus*, *Quercus*) are absent from, or are uncommon in, Sumac Series.

Lemonadeberry Chaparral was observed at eight towers. Two observations are recorded as pure stands while the other six observations consisted of six distinct Lemonadeberry Chaparral plant associations (each observed once). The Lemonadeberry Chaparral associations include several shrub canopy associates growing over scattered ground layer herbs typical of Coastal Sage Scrub communities. Lemonadeberry Chaparral co-dominants/important canopy associates include: Coyote Brush, Bigpod Ceanothus, Giant Wildrye, Chaparral Mallow, Laurel Sumac, Spiny Redberry, Purple Sage, and Blue Elderberry.

The six Lemonadeberry plant associations observed along the SCE transmission line are:

- Lemonadeberry-Blue Elderberry Chaparral
- Lemonadeberry-Chaparral Mallow-Spiny Redberry Chaparral
- Lemonadeberry-Giant Wildrye-Bigpod Ceanothus Chaparral
- Lemonadeberry-Giant Wildrye-Purple Sage Chaparral
- Lemonadeberry-Laurel Sumac-Coyote Brush Chaparral
- Lemonadeberry-Laurel Sumac Chaparral

Mixed Ceanothus Chaparral

Mixed Ceanothus Chaparral is co-dominated by two or three species of *Ceanothus*. The three *Ceanothus* species recorded at the towers are evergreen shrubs of dry slopes (Hickman 1993), and were observed as forming a continuous (dense) tall canopy over a sparse ground layer. The species of *Ceanothus* contributing to this chaparral are: Bigpod Ceanothus, Hoary Ceanothus (*C. oliganthus* var. *oliganthus*), and Greenbark Ceanothus (*C. spinosus*).

Mixed Ceanothus Chaparral was recorded at four towers along the transmission line, with each observation consisting of a different plant association. These associations are similar to Bigpod Ceanothus associations, except the percent ground cover is represented by an equal representation of two or three species of Ceanothus rather than just by Bigpod Ceanothus alone. The co-dominants and important canopy contributors of Mixed Ceanothus Chaparral include: Chamise, California Sagebrush, Toyon, Nuttall Scrub Oak, Lemonadeberry, and Purple Sage.

The four Mixed Ceanothus Chaparral plant associations along the transmission line are:

- Mixed Ceanothus-California Sagebrush Chaparral (*C. megacarpus & C. spinosus*)
- Mixed Ceanothus-Nuttall Scrub Oak-Lemonadeberry-Chamise Chaparral (all 3 species of *Ceanothus*)
- Mixed Ceanothus-Nuttall Scrub Oak-Purple Sage Chaparral (all 3 species of *Ceanothus*)
- Mixed Ceanothus-Toyon Chaparral (*C. megacarpus & C. spinosus*)

Other Mixed Ceanothus Chaparral shrub canopy associates include: Santa Ynez Mountains Eastwood Manzanita, Coyote Brush, Birchleaf Mountain Mahogany, California Buckwheat, Sawtooth Goldenbush, Heart-leaved Bush Penstemon, Santa Ynez Mountains Honeysuckle, Deerweed, Chaparral Mallow, Bush Monkeyflower, Coast Live Oak, Spiny Redberry, Black Sage, Blue Elderberry, and Our Lord's Candle.

The ground layer growing among shrub canopy openings includes: White Yarrow, Lay-and-Collie Indian Paintbrush, Golden Yarrow, San Diego Bedstraw (*Galium nuttallii* ssp. *nuttallii*), Purple Needlegrass, Canary Grass, Hummingbird Sage (*Salvia spathaceae*), Many-flowered Figwort, and Blue-eyed Grass.

TYPE 4- WOODLAND

Woodland describes a vegetation type dominated by woody trees and tall tree-like shrubs, forming an open to closed canopy growing over a scattered variety of low-growing shrubs and a grassy ground layer. Some woodland communities may not contain a shrub stratum, and may only form a tall canopy over annual or perennial grasslands. The understory of woodland is directly related to the density of the woodland canopy and its percent canopy cover. Permanent shade created by dense woodlands typically inhibits the growth of stratified canopy layers.

Woodland was observed at 36 towers and contributes to 15% of the total vegetated landscape along the SCE transmission line botanical assessment, and woodland was observed the least out of the four vegetation types. The four woodland plant communities observed along the transmission line include two winter-deciduous riparian woodlands, a winter-deciduous riparian and/or upland woodland, and an evergreen upland woodland of slopes and canyons. A summary of these four woodland communities, their plant associations, and slope aspect are included in Table C-4.

Table C-4. Woodland Inventory for the SCE Towers Vegetation Survey

Woodland Communities and Plant Associations	Slope Aspect	No. of Towers
Arroyo Willow Woodland (no co-dominant specified)	N	1
Arroyo Willow Woodland-Coyote Brush	flat/W	1
Subtotal		**2**
California Sycamore Woodland:		
California Sycamore-Coast Live Oak Woodland	N	1
California Sycamore-Poison Oak-Black Sage Woodland	flat/S	1
California Sycamore-Southern California Black Walnut Woodland	S	1
Subtotal		**3**
Coast Live Oak Woodland (no co-dominant specified)	N,NE,NW,S,E,W	13
Coast Live Oak-Arroyo Willow Woodland	flat/W	1
Coast Live Oak-Bigpod Ceanothus Woodland	NE	1
Coast Live Oak-Lemonadeberry Woodland	W	1
Coast Live Oak-Southern California Black Walnut-Greenbark Ceanothus Woodland	N, E, W	2
Coast Live Oak-Southern California Black Walnut Woodland	N, NW, W	4
Coast Live Oak-Toyon-Birchleaf Mountain Mahogany Woodland	N	1
Coast Live Oak-Toyon Woodland	N	1
Coast Live Oak Woodland-California Sagebrush	NW	1
Coast Live Oak Woodland-Giant Wildrye	W	1
Subtotal		**26**

Woodland Communities and Plant Associations	Slope Aspect	No. of Towers
Southern California Black Walnut Woodland (no co-dominant recorded)	N	1
Southern California Black Walnut-Chaparral Mallow Woodland	W	1
Southern California Black Walnut-Coast Live Oak Woodland	NE, SE	2
Southern California Black Walnut-Greenbark Ceanothus Woodland	N, W	1
Subtotal		6
Total Woodland Observations:		**36 = 15 %**

Arroyo Willow Woodland

Arroyo Willow Woodland (Arroyo Willow Series according to Sawyer and Keeler-Wolf [1995]) forms riparian habitat that is dominated by *Salix lasiolepis*. Arroyo Willow is a winter-deciduous shrub or small tree with shinny dark green leaves (lower surface white tomentose) (Hickman 1993). The NIWP (Reed 1988) lists Arroyo Willow with an FACW wetland indicator status (facultative wetland species usually found in wetlands). Arroyo Willow Series occurs in seasonally flooded or saturated freshwater wetland habitats, such as floodplains and low-gradient depositions along rivers and streams, and is abundant in marshes, meadows, and springs, at elevations below 1,800 meters. This woodland community forms a continuous canopy growing over a sparse shrub layer and variable ground layer (depending on canopy thickness).

Arroyo Willow Woodland was observed at two towers (Survey Tower Nos. 64 & 120). Tower 120 consists of Arroyo Willow-Coyote Brush Woodland with Coyote Brush as a co-dominant. The tree canopy associates (including tree-like shrubs) contributing to the willow stands include: Toyon, Southern California Black Walnut, California Sycamore (*Platanus racemosa*), Coast Live Oak, Lemonadeberry, and Blue Elderberry.

The shrub stratum below the Arroyo Willow canopy consists of important associates including the special-status species Plummer Baccharis (*Baccharis plummerae* ssp. *plummerae*) and Fish Milkwort (*Polygala cornuta* ssp. *fishiae*), the shrub-like perennial grass Giant Wildrye, and scrub species such as Spiny Redberry, Fuschia-flowered Gooseberry, Purple Sage, and Poison Oak.

The herbaceous ground layer under Arroyo Willow includes a variety of native forbs such as Mugwort (*Artemisia douglasiana*), Morning-glory, Pipestem Clematis, Many-flowered Figwort, Hedge Nettle, Hoary Creek Nettle, and Western Verbena. The non-native ground layer contributors include: Black Mustard, Italian Thistle (*Carduus pycnocephalus*), Tocalote (*Centaurea melitensis*), Poison Hemlock (*Conium maculatum*), Summer Mustard, Sourclover (*Melilotus indica*), and Cape Ivy (*Senecio mikanioides*).

California Sycamore Woodland

California Sycamore Woodland (California Sycamore Series according to Sawyer and Keelcr-Wolf [1995]) is dominated by the monoecious, wind-pollinated, broad-leaved winter-deciduous

Platanus racemosa. This native tree has smooth pale bark and large, densely hairy, palmately lobed leaves, and it is a common tree occurring along streamsides and in canyons (Hickman 1993). The NIWP (Reed 1988) lists *P. racemosa* with a wetland indicator status of FACW, or a facultative wetland species.

California Sycamore Series grows in wetland soils, permanently saturated at depth, of freshwater riparian corridors, braided depositional channels of intermittent streams, gullies, springs, seeps, river banks, and terraces adjacent to floodplains subject to high-intensity seasonal flooding. This series also occurs on upland rocky canyon slopes, in alluvial, open cobbly, and rocky soils, at elevations below 2,400 meters. A shrubby thicket of evergreen and deciduous shrubs may grow below the 35-meter, widely spaced, sycamore canopy, and the ground layer is generally grassy.

California Sycamore Woodland was recorded at three towers, and a different plant association occupies each tower. The tree species co-dominating the California Sycamore canopy are Coast Live Oak and Southern California Black Walnut, while Black Sage and Poison Oak grow as important understory shrubs to the tall emergent sycamores. Arroyo Willow is common in these riparian sycamore stands, and intergrading upland shrub species include: California Sagebrush, Coyote Brush, Birchleaf Mountain Mahogany, Californica Buckwheat, Chaparral Mallow, and Lemonadeberry.

California Sycamore plant associations along the SCE transmission line include:

- California Sycamore-Coast Live Oak Woodland
- California Sycamore-Poison Oak-Black Sage Woodland
- California Sycamore-Southern California Black Walnut Woodland

Coast Live Oak Woodland

Coast Live Oak Woodland (Coast Live Oak Series according to Sawyer and Keeler-Wolf [1995]) is dominated by *Quercus agrifolia* var. *agrifolia*, a broad-leaved evergreen, wide-topped tree with furrowed dark gray bark and weakly spine-toothed, convex, dark green leaves (Hickman 1993). *Q. agrifolia* is the most widely distributed of the evergreen oaks, and is capable of achieving large size and old age (Zedler et al. 1997). This oak occurs in valleys and on slopes of riparian woodland fringes, scattered in grassland or Coastal Sage Scrub communities, as an element of Mixed Evergreen Forest, or as a contributor to other oak woodlands. Coast Live Oak, as a series, predominantly occurs on steep slopes and on raised stream banks or terraces. Coast Live Oak Woodland (Series) forms a continuous to open canopy (<30 meters tall), has an understory of occasional or common shrubs and an absent or herbaceous ground layer, and requires sandstone or shale-derived soils of elevations below 1,200 meters.

Coast Live Oak Woodland was recorded at 26 towers, representing the most common woodland of the four woodland plant communities encountered along the transmission line. Thirteen tower sites were recorded as exclusively Coast Live Oak Woodland (without co-dominants), while the other 13 are of the nine variable Coast Live Oak Woodland plant associations, including co-dominants and several important associates. The co-dominant species and important tree canopy contributors of these sites are Greenbark Ceanothus, Toyon, Southern California Black Walnut, and Arroyo Willow. The dominant understory shrubs include: California Sagebrush, Bigpod Ceanothus, Birchleaf Mountain Mahogany, Giant Wildrye, and Lemonadeberry.

The nine Coast Live Oak associations observed along the transmission line are:

- Coast Live Oak-Arroyo Willow Woodland
- Coast Live Oak-Bigpod Ceanothus Woodland
- Coast Live Oak-Lemonadeberry Woodland
- Coast Live Oak-Southern California Black Walnut-Greenbark Ceanothus Woodland
- Coast Live Oak-Southern California Black Walnut Woodland
- Coast Live Oak-Toyon-Birchleaf Mountain Mahogany Woodland
- Coast Live Oak-Toyon Woodland
- Coast Live Oak Woodland-California Sagebrush
- Coast Live Oak Woodland-Giant Wildrye

Coast Live Oak understory also includes other typical Coastal Sage Scrub species: Coyote Brush, Plummer Baccharis, buckwheats (*Eriogonum cinereum*, *E. fasciculatum*), Toyon, Heart-leaved Bush Penstemon, Deerweed, Chaparral Mallow, Laurel Sumac, Bush Monkeyflower, Fish Milkwort, Hollyleaf Cherry (*Prunus ilicifolia*), Spiny Redberry, Fuschia-flowered Gooseberry, California Wild Rose (*Rosa californica*), California Blackberry (*Rubus ursinus*), Purple Sage, Blue Elderberry, Poison Oak, Canyon Sunflower, and Our Lord's Candle.

A ground layer consisting of annual grasses and several showy wildflowers also contribute to the oak woodland understory as well: Goldenstars, Lay-and-Collie Indian Paintbrush, Four-spotted Purple Clarkia, Blue Dicks, Lanceleaf Live Forever, Pacific Peavine (*Lathyrus vestitus*), Fleshy Lupine (*Lupinus succulentus*), Navarretia (*Navarretia jaredii*), California Buttercup, Hummingbird Sage, California Globe Mallow (*Sidalcea malvaeflora* ssp. *californica*), Blue-eyed Grass, Douglas Nightshade (*Solanum douglasii*), Hedge Nettle, Western Verbena, and Johnny Jump-up.

Southern California Black Walnut Woodland

Southern California Black Walnut Woodland (California Walnut Series according to Sawyer and Keeler-Wolf [1995]) is dominated by *Juglans californica* var. *californica*, a broad-leaved winter-deciduous, monoecious, tree that blooms from March to May. It has gray-brown bark, toothed leaflets, and spheric, leathery-husked, strong-smelling fruit (walnuts). *J. californica* is and uncommon endemic, ranging from coastal southern California from Santa Barbara County to Los Angeles County, found on canyon slopes at elevations between 50 and 900 meters (Hickman 1993). It is listed in the NIWP (Reed 1988) with a of FAC (facultative species) wetland indicator status. *J. californica* is a CNPS List 4 (limited distribution) and has an R-E-D (Rare-Endangerment-Distribution) code of 1-2-3 (Rare, but low potential for extinction-Endangered in a portion of its range-Endemic to California) (Skinner and Pavlik 1994). Southern California Black Walnut Woodland is a much fragmented, declining natural community, and it is threatened by urbanization and grazing, which inhibit natural reproduction (Skinner and Pavlik 1994).

California Walnut Series forms an open to closed canopy (<10 meters tall) growing over a common or infrequent shrub stratum and a sparse or grassy ground layer. This woodland requires deep, shale-derived, intermittently flooded/saturated soils of freshwater riparian corridors, floodplains, incised canyons, seeps, and stream or river banks at elevations between 150 and 900 meters.

Southern California Black Walnut Woodland was observed at six towers along the SCE transmission line. Three walnut woodland plant communities are recorded without co-dominant species, and the other three were recorded as each of the different walnut plant associations listed below. Coast Live Oak may grow as a tree canopy co-dominant, while Greenbark Ceanothus and Chaparral Mallow occur as dominant understory shrubs.

The three Southern California Black Walnut Woodland plant associations along the SCE transmission line are:

- Southern California Black Walnut-Chaparral Mallow Woodland
- Southern California Black Walnut-Coast Live Oak Woodland
- Southern California Black Walnut-Greenbark Ceanothus Woodland

The less dominant walnut understory shrubs include: California Sagebrush, Coyote Brush, Hoary Ceanothus, Toyon, Giant Wildrye, Southern Honeysuckle, Deerweed, Fish Milkwort, Spiny Redberry, Fuschia-flowered Gooseberry, Purple Sage, and Poison Oak.

The ground layer consists of Goldenstars, Morning-glory, Miners Lettuce (*Claytonia perfoliata*), San Diego Bedstraw, Green Everlasting, Summer Mustard, Purple Needlegrass, Peony, Pacific Sanicle, Many-flowered Figwort, Blue-eyed Grass, Hedge Nettle, and Western Verbena.

APPENDIX D. SENSITIVE PLANT DESCRIPTIONS

Plummer Baccharis (*Baccharis plummerae* ssp. *plummerae*)

STATUS		
Federal	**State / NDDB**	**CNPS (Skinner and Pavlik 1994)**
None	None / G3G4, S3.2	List 4: Plants of Limited Distribution R-E-D Code: 1-1-3

Plummer Baccharis (*Baccharis plummerae* A. Gray ssp. *plummerae*) is a small, broad-leaved winter-deciduous shrub (<2 meters tall) with fine-curled, hair-covered, wand-like stems and 20 to 45-mm, oblanceolate, toothed, 3-veined (prominent), sessile leaves. The flowers, generally blooming between August and October, are arranged in paniculate heads with a bell-shaped involucre, and are not particularly showy. The flower heads are either staminate (5-6.5 mm long) or pistillate (6-8.5 mm long). Plummer Baccharis is a member of the sunflower family (Asteraceae). (Hickman 1993.)

Plummer Baccharis typically occurs on rocky, well-drained, north-facing slopes in Coastal Sage Scrub and oak woodland plant communities. It ranges from southern coastal Santa Barbara County to coastal Los Angeles County, and the Santa Cruz and Anacapa Islands, below 425 meters in elevation (Hickman 1993, Skinner and Pavlik 1994). The type-locality (collection site from which it was formally described and named) for Plummer Baccharis is in Glen Lock Ravine, on the south slope of the Santa Ynez Mountains, approximately 2.4 km west of Santa Barbara (Smith 1976).

Plummer Baccharis was observed at 16 towers (Main Line Tower Nos. 14-N, 15-N, 44-N, 59-N, 60-N, 65-N, and 83-N; South Branch Tower Nos. 62, 63, 64, 69, 72, 73, 74, 80, and 82) along the Santa Clara-Carpinteria transmission line. This special-status species was mostly observed on north-facing slopes, but also occurs on moister south-facing slopes in shade of emergent trees. The predominant vegetation types inhabited by Plummer Baccharis are Coastal Sage Scrub and Woodland. The dominant species of the Coastal Sage Scrub plant communities, in which *B. plummerae* was observed growing, include: California Sagebrush, Coyote Brush, Toyon, Giant Wildrye, and Purple Sage. The dominant species of the Woodland plant communities, in which *B. plummerae* grows, include: Greenbark Ceanothus, Coast Live Oak, Southern California Black Walnut, Lemonadeberry, and Blue Elderberry.

Catalina Mariposa Lily (*Calochortus catalinae*)

STATUS		
Federal	**State / NDDB**	**CNPS** (Skinner and Pavlik 1994)
None	None / G3, S3.2	List 4: Plants of Limited Distribution R-E-D Code: 1-2-3

Catalina Mariposa Lily (*Calochortus catalinae* S. Watson) is a perennial herb that resprouts annually from a small bulb. The stems are 20-40 cm long, generally branched above. The basal strap-shaped leaves are 10-30 cm long, usually wither before anthesis (flowering). The inflorescence consists of 1 to 4 bowl-shaped flowers with subtending, opposite bracts 2-10 cm long. Sepals are white with purple spots near the base (20-30 mm long). Petals are nearly glabrous, white, tinged lilac, and purple-spotted near the base (20-50 mm long). The inside of the petals have oblong and densely branched-hairy nectaries. Catalina Mariposa Lily blooms between March and May (Smith 1976). The fruit (capsules) are erect, 2-5 cm long, and not angled as in other Mariposa lilies. *C. catalinae* is a member of the lily family (Liliaceae). (Hickman 1993.)

Catalina Mariposa Lily grows in heavy soils of open grassland, chaparral, and Coastal Sage Scrub communities, at elevations below 700 meters. It ranges from San Luis Obispo County to San Diego County, and on Santa Rosa, Santa Cruz, and Santa Catalina Islands (Skinner and Pavlik 1994). Some known occurrences of *C. catalinae* are in the Conejo Valley (Thousand Oaks and Camarillo), Ventura Hills, and the Upper Ojai Valley. *C. catalinae* is threatened by development.

Catalina Mariposa Lily was observed at nine towers (Main Line Tower Nos. 11-N, 12-N, 16-N, 18-N, 19-N, and 20-N; South Branch Site No. 57; North Branch Tower Nos. 100-Na and 101-Na). This species grows on variable slope faces, within the survey area, which are inhabited predominantly by Coastal Sage Scrub and Grassland types. The dominant species that form the Coastal Sage Scrub communities (primarily Mixed Sage Scrub), in which *C catalinae* grows, include: California Sagebrush, Coyote Brush, California Bush Sunflower, Sawtooth Goldenbush, Giant Wildrye, Deerweed, and Purple Sage. The dominant species of California Annual Grassland and Ruderal Grassland communities, in which *C catalinae* grows, include: Slender Oat, mustards, brome grasses, Tocalote, Blue Dicks, Golden Yarrow, Low Barley, Italian Ryegrass, Purple Needlegrass, and Milk Thistle.

Southern California Black Walnut (*Juglans californica ssp. californica*)

STATUS		
Federal	**State / NDDB**	**CNPS (Skinner and Pavlik 1994)**
None	None / G3, S3.2	List 4: Plants of Limited Distribution R-E-D Code: 1-2-3

Southern California Black Walnut (*Juglans californica* S. Watson ssp. *californica*) is a small, broad-leaved, monoecious, winter-deciduous tree (15 meters tall) with one to five trunks. It has pinnately divided leaves with 11-19 lanceolate to ovate toothed leaflets (2-8 cm long). The wind pollinated, greenish flowers, blooming between March and May, have 4-lobed sepals arranged in pendulous clusters before the leaves emerge. This species produces spheric, leathery-husked, strong-smelling fruit (walnuts) 2-3 centimeters in diameter. *J. californica* ssp. *c.* is listed in the NIWP (Reed 1988) with an FAC wetland indicator status (facultative species that is equally likely to occur in wetlands and non-wetlands), and is a member of the walnut family (Juglandaceae). (Hickman 1993.)

Juglans californica var. *c.* is uncommon, but can be found on slopes and canyons at elevations between 50 and 900 meters, and it is often associated with riparian habitats (Hickman 1993). It ranges from the Santa Lucia Mountains (where they were cultivated), Santa Barbara County, and along the coastal portions of the Transverse Ranges, south to the northern Peninsular Ranges in northern San Diego County. Some reported occurrences of Southern California Black Walnut are along Santa Paula Creek at Sisar Creek and along the Lower Piru Creek. It is also known from the Santa Monica Mountains at Little Sycamore Canyon, and elsewhere in Ventura County (Magney and Burgess 1996). Southern California Black Walnut Forest (Holland 1986) is a much-fragmented, declining natural community, and it is threatened by urbanization and grazing, which inhibit natural reproduction. (Skinner and Pavlik 1994.)

Juglans californica var. *c.* was observed at 17 towers (Main Line Tower Nos. 38-N, 41-N, 44-N, 45-N, 45-1N, 45-N to 51-N, 53-N, 54-N, 77-N, and 79-N; South Branch Tower Nos. 85 and 86). This species grows on variable slope faces within the survey area, which are inhabited predominantly by Woodland and Coastal Sage Scrub types. Dominant species of woodlands (Coast Live Oak Woodland, Coast Live Oak-Southern California Black Walnut Woodland, and California Sycamore-Southern California Black Walnut Woodland), in which *J. californica* grows, include: Ceanothus (*Ceanothus* spp.), Toyon, California Sycamore, Coast Live Oak, Lemonadeberry, and Blue Elderberry. Dominant species contributing to the walnut tree understory include typical Coastal Sage Scrub (Mixed Sage Scrub) and chaparral species, such as California Sagebrush, Coyote Brush, Birchleaf Mountain Mahogany, California Buckwheat, Lemonadeberry, sages, and Poison Oak.

Fish Milkwort *(Polygala cornuta var. fishiae)*

STATUS		
Federal	**State / NDDB**	**CNPS** (Skinner and Pavlik 1994)
None	None / G5T4, S3.3	List 4: Plants of Limited Distribution R-E-D Code: 1-1-2

Fish Milkwort (*Polygala cornuta* Kellogg var. *fishiae* [C. Parry] Jepson) is a small, broad-leaved, winter-deciduous, 25dm-tall shrub, from rhizomes, that often forms dense thickets up to 2 meters wide. The stems are decumbent to erect (6-25 dm long) and covered with leaves that are >2 times as long as wide. The flowers, blooming May through August, are somewhat peaflower-shaped, 7-11.2 mm long, and pale with dark pink buds. Fish Milkwort is a member of the milkwort family (Polygalaceae). (Hickman 1993.)

Fish Milkwort can be found on exposed slopes growing in chaparral, oak woodland, and riparian woodland habitats at elevations between 100 and 1,100 meters. It ranges from Santa Barbara County, in the Outer South Coast Ranges south through the Transverse Ranges to the northern Peninsular Ranges in northern San Diego County. (Hickman 1993).

P. cornuta var. *f.* was observed at 13 towers (Main Lie Tower Nos. 45-N, 46-N, 48-N, 51-N, 52-N, 54-N, and 82-N; South Branch Tower Nos. 62, 63, 64, 66, 71, and 80). This species grows on variable slope faces inhabited predominantly by Coastal Sage Scrub and woodlands. Four Coastal Sage Scrub communities/associations are inhabited by *P. cornuta*: Mixed Sage Scrub co-dominated by California Sagebrush and Purple Sage; California Sagebrush-Coyote Brush Scrub; Lemonadeberry-Laurel Sumac Scrub; and Poison Oak-Toyon-Blue Elderberry Scrub. The Coast Live Oak Woodlands inhabited by *P. cornuta* include: Coast Live Oak Woodland, Coast Live Oak-Southern California Black Walnut Woodland, and Coast Live Oak-Toyon. *P. cornuta* was also observed in Southern California Black Walnut Woodland.

Nuttall Scrub Oak (*Quercus dumosa*)

STATUS		
Federal	**State / NDDB**	**CNPS (Skinner and Pavlik 1994)**
C2	None / G2, S1.1	List 1B: Plants considered to be rare, threatened, or endangered R-E-D Code: 2-3-2

Quercus dumosa Nuttall is a broad-leaved evergreen shrub (1-3 m tall) with sparsely short-hairy, dark reddish-brown slender twigs (becoming glabrous) and oblong/elliptic, obtuse-tipped to abruptly pointed, and toothed-margined leaves (1-2.5 cm long). The upper leaf surface is slightly shiny-green, and the lower is finely tomentose, becoming glabrous, dull pale green. The fruit (acorn) has a cup that is 8-15 mm wide, 5-8 mm deep, and bowl-shaped with tubercled scales, and has a nut that is 15-25 mm long, slender, ovoid, tapered-tipped, and glabrous-shelled (inside). *Q. dumosa* blooms from February to March (Skinner and Pavlik 1994) and is a member of the oak or beech family (Fagaceae). (Hickman 1993.)

Q. dumosa grows predominantly in sandy, clay-loam, and sandstone soils of chaparral and Coastal Sage Scrub habitats near the coast. It is known to occur along the South Coast in Orange, Santa Barbara, and San Diego Counties, and Baja, California at elevations below 200 meters. Nuttall Scrub Oak hybridizes with Scrub Oak (*Q. berberidifolia*), which is the widespread scrub type oak from much of cismontane California, previously called *Q. dumosa*, is now *Q. berberidifolia*. Nuttall Scrub Oak is primarily threatened by development. (Hickman 1993; Skinner and Pavlik 1994.)

Q. dumosa was observed at 13 towers (Main Line Tower Nos. 97-N to 100-N, 102-N, and 107; North Branch Tower Nos. 90-Na, 92-Na, 98-Na, 99-Na, 102-Na, 103-Na, and 104-Na). This oak grows on mostly south facing slopes and on less shaded north-facing slopes. *Q. dumosa* often only occurs as an occasional shrub, but is also recorded as co-dominating chaparral associations or as an important chaparral contributor. Nuttall Scrub Oak thrives locally in Bigpod Ceanothus Chaparral, dominated by *Ceanothus megacarpus* var. *m*. The important Bigpod Ceanothus-Nuttall Scrub Oak canopy contributors include: Chamise, Santa Ynez Mountains Eastwood Manzanita, Coyote Brush, Birchleaf Mountain Mahogany, Toyon, Giant Wildrye, Chaparral Mallow, Lemonadeberry, and Purple Sage.

APPENDIX E, Part 1. Natural Diversity Data Base Element Ranking System.

Global Ranking (G)	
G1	<6 viable elements occurrences (populations for species), OR < 1,000 individuals, OR < 809.4 hectares (ha) (2,000 acres [ac]).
G2	6 to 20 element occurrences OR 809.4 to 4,047 ha (2,000 to 10,000 ac).
G3	21 to 100 element occurrences OR 3,000 to 10,000 individuals OR 4,047 to 20,235 ha (10,000 to 50,000 ac).
G4	Apparently secure; this rank is clearly lower than G3, but factors exist to cause some concern (i.e. there is some threat, or somewhat narrow habitat).
G5	Population or stand demonstrably secure to ineradicable due to being commonly found in the world.
GH	All sites are **historic**; the element has not been seen for at least 20 years, but suitable habitat still exists.
GX	All sites are **extirpated;** this element is extinct in the wild.
GXC	Extinct in the wild; exists in cultivation.
G1Q	The element is very rare, but there is a taxonomic question associated with it.
Subspecies Level: Subspecies receive a T-rank attached to the G-rank. With the subspecies, the G-rank reflects the condition of the entire species, whereas the T-rank reflects the global situation of just the subspecies or variety. * For example: *Chorizanthe robusta* var. *hartwegii* is ranked G2T1. The G-rank refers to the whole species range (*Chorizanthe robusta*), whereas the T-rank refers only to the global condition of the variety (var. *hartwegii*).	
State Ranking (S)	
S1	Less than 6 element occurrences OR less than 1,000 individuals OR less than 809.4 ha (2,000 ac). S1.1 = very threatened S1.2 = threatened S1.3 = no current threats known
S2	6 to 20 element occurrences OR 3,000 individuals OR 809.4 to 4,047 ha (2,000 to 10,000 ac). S2.1 = very threatened S2.2 = threatened S2.3 = no current threats known..
S3	21 to 100 element occurrences OR 3,000 to 10,000 individuals OR 4,047 to 20,235 ha (10,000 to 50,000 ac). S3.1 = very threatened S3.2 = threatened S3.3 = no current threats known
S4	Apparently secure within California; this rank is clearly lower than S3 but factors exist to cause some concern (i.e., there is some threat, or somewhat narrow habitat). NO THREAT RANK.
S5	Demonstrably secure to ineradicable in California. NO THREAT RANK.
SH	All California sites are **historical**; the element has not been seen for at least 20 years, but suitable habitat still exists.
SX	All California sites are **extirpated;** this element is extinct in the wild.
Notes	
1. Other considerations used when ranking a species or natural community include the pattern of distribution of the element on the landscape, fragmentation of the population/stands, and historical extent as compared to its modern range. It is important to take an aerial view when ranking sensitive elements rather than simply counting element occurrences.	
2. Uncertainty about the rank of an element is expressed in two major ways: by expressing the rank as a range of values (e.g. S2S3 means the rank is somewhere between S2 and S3), and by adding a ? to the rank (e.g. S2?). This represents more certainty than S2S3, but less than S2. (Natural Diversity Data Base 1997.)	

APPENDIX E, Part 2. California Native Plant Society R-E-D Code

Rarity (R)	
1	Rare, but found in sufficient numbers and distributed widely enough that the potential for extinction is low at this time
2	Distributed in a limited number of occurrences, occasionally more if each occurrence is small
3	Distributed in one to several highly restricted occurrences, or present in such small numbers that it is seldom reported
Endangerment (E)	
1	Not endangered
2	Endangered in a portion of its range
3	Endangered throughout its range
Distribution (D)	
1	More or less widespread outside California
2	Rare outside California
3	Endemic to California

Source: Skinner and Pavlik 1994.

APPENDIX F. Summay of vegetation types and special-status species for each tower

Tower Numbers		Vegetation[5]					Special-status Species	
Survey[6]	SCE[7]	Grassland	Scrub	Chaparral	Woodland	Develop	Plants[8]	Animals[9]
				Main Line				
1-N	0-1A		SCB					
2-N	0-1W	GAC	SPS					
3-N	0-1E	GAC	SPS					
4-N	0-2		SCS					GN
5-N	0-3		SCS					GN
6-N	0-4		SPS					
7-N	0-5	GR	SMS					GN
8-N	0-6	GR	SMS					GN
9-N	1-1		SCS, SMS					GN
10-N	1-2		SCS	CBC				GN
11-N	1-3		SMS				*Cc*	GN
12-N	2-1	GR	SMS				*Cc*	GN
13-N	2-2		SMS					GN
14-N	WH-A?		SCS				*Bpp*	GN
15-N	3-1		SMS				*Bpp*	GN
16-N	3-2	GR	SMS				*Cc*	GN
17-N	3-3	GR	SMS					GN
18-N	3-4		SMS				*Cc*	GN
19-N	4-1	GR	SMS				*Cc*	GN
20-N	4-2		SCS, SMS				*Cc*	GN
21-N	5-1	GAC	SPS					
22-N	5-2		SCS					GN
23-N	G?	GR						
24-N	5-4	GR						
25-N	5-5	GAC, GR						
26-N	5-6	GR						
27-N	6-1	GR						
28-N	6-2	GR						
29-N	6-3	GR						
30-N	6-4		SMS					GN
31-N	7-2	GR	SMS					GN

[5] See Appendix E for key to these vegetation and developed land codes.

[6] Survey Tower Numbers are the codes assigned to each tower site, after the field work was completed, for line designation, tower sequencing, tower number duplication elimination, and vegetation inventory.

[7] SCE Tower Numbers are either the original numbers/codes as encountered in the field, or, they are temporary codes (with a "?") assigned to towers with missing numbers for initial tower identification.

[8] Key to Special-status Plants:

Bpp = *Baccharis plummerae* ssp. *plummerae* (Plummer Baccharis)
Cc = *Calochortus catalinae* (Catalina Mariposa Lily)
Jcc = *Juglans californica* var. *californica* (Southern California Black Walnut)
Pcf = *Polygala cornuta* var. *fishiae* (Fish Milkvetch)
Qd = *Quercus dumosa* (Nuttall Scrub Oak)

[9] Key to Special Status Wildlife:

GN= Polioptila californica (California gnatcatcher)

Tower Numbers		Vegetation[5]					Special-status Species	
Survey[6]	SCE[7]	Grassland	Scrub	Chaparral	Woodland	Develop	Plants[8]	Animals[9]
32-N	7-3	GR	SMS					GN
33-N	7-4		SMS, SPS					GN
34-N	7-5		SCB					
35-N	8-1	GAC	SCB					
36-N	8-2		SCB					
37-N	8-3	GR	SGW					
38-N	9-1		SGW, SPS				*Jcc*	
39-N	9-2	GR						
40-N	9-3	GR						
41-N	9-4				WLO		*Jcc*	
42-N	9-5?		SCB, SPS					
43-N	0-2N	GAC	SPS		WLO			
44-N	1-2N	GPN, GWF			WLO		*Bpp, Jcc*	
44-1N	0-3		SPO, SPS	CL				
45-N	1-1N		SPS		WBW		*Jcc, Pcf*	
45-1N	F?				WCS, WLO		*Jcc*	
46-N	1-4?				WLO		*Jcc, Pcf*	
47-N	1-5				WLO		*Jcc*	
48-N	2-1	GR			WBW		*Jcc, Pcf*	
49-N	2-2	GR			WLO		*Jcc*	
50-N	2-3		SMS		WBW		*Jcc*	GN
51-N	2-4				WLO		*Jcc, Pcf*	GN
52-N	3-1		SCS				*Pcf*	
53-N	3-1A?				WBW		*Jcc*	
54-N	3-2	GR	SMS		WLO		*Jcc, Pcf*	GN
55-N	3-3			CBC				GN
56-N	13-1	GR						
57-N	13-2	GR	SBE,SCB,SPS					
58-N	13-3	GR						
59-N	13-4		SPS		WLO		*Bpp*	
60-N	13-5	GAC	SMS		WLO		*Bpp*	GN
61-N	13-6	GAC			WLO			GN
62-N	13-7		SCB			O		
63-N	14-1		SCB			O		
64-N	WH-B?		SD					
65-N	14-3		SCS				*Bpp*	GN
66-N	14-4		SCS, SCM					GN
67-N	14-5		SCB, SMS					GN
68-N	14-6		SCM					
69-N	15-1		SCM					GN
70-N	15-2				WLO			GN
71-N	15-3		SCM					
72-N	15-4	GR				O		
73-N	16-1	GR				O		
74-N	16-2		SCB			O		
75-N	16-3		SCM			O		GN
76-N	16-4			CBC				
77-N	16-5			CBC			*Jcc*	
78-N	17-1			CL		O		

Tower Numbers		Vegetation[5]					Special-status Species	
Survey[6]	SCE[7]	Grassland	Scrub	Chaparral	Woodland	Develop	Plants[8]	Animals[9]
79-N	17-2			CBC		O	*Jcc*	
80-N	8-1	GR				O		
81-N	8-2	GR				O		
82-N	8-3			CL			*Pcf*	
83-N	8-4				WLO	O	*Bpp*	
84-N	8-5			CL		O		
85-N	8-6			CBC				
86-N	9-5			CL		O		
87-N	9-8				WLO	O		
88-N	19-2		SMS		WLO			GN
89-N	19-3		SCS			O		GN
90-N	19-4			CBC		O		
91-N	19-5			CBC				
92-N	19-6			CBC			*Qd*	
93-N	20-1		SCS					GN
94-N	20-2	GPN, GR	SCS, SGW					GN
95-N	20-3		SD	CBC				
96-N	20-4?			CBC				
97-N	20-5		SD	CBC			*Qd*	
98-N	20-6			CMC	WLO		*Qd*	
99-N	21-1			CBC			*Qd*	
100-N	21-2		SCB	CBC			*Qd*	GN
101-N	21-3		SMS	CBC				
102-N	21-4		SCB				*Qd*	
103-N	21-5			CBC				
104-N	1-4?			CBC			*Qd*	
105-N	1-3?		SBS					
106-N	1-2				WLO			
107-N	1-1?			CBC			*Qd*	
108-N	0-9?		SGW	CBC	WLO			
109-N	0-8?			CBC				
110-N	0-7	GAC	SCS					GN
111-N	0-6					O, CN		
112-N	0-5					O, CN		
113-N	0-4					O, CN		
114-N	0-3					O, CN		
South Branch								
56	4-1		SPS					
57	4-2	GAC	SCB				*Cc*	
58	4-3		SMS					GN
59	4-4	GAC	SPS					
60	4-5	GAC, GR	SCB, SMS					
61	5-1	GR	SMS					
62	5-2		SPO				*Bpp, Pcf*	
63	5-3				WLO		*Bpp, Pcf*	
64	5-4				WAW, WLO		*Bpp, Pcf*	
65	6-1	GR	SPS					
66	6-2		SMS				*Pcf*	
67	6-3		SGW, SPS					

Tower Numbers		Vegetation[5]					Special-status Species	
Survey[6]	SCE[7]	Grassland	Scrub	Chaparral	Woodland	Develop	Plants[8]	Animals[9]
68	6-4		SMS					GN
69	6-5		SMS				*Bpp*	GN
70	6-6		SMS					GN
71	6-7	GR					*Pcf*	
72	6-8		SGW				*Bpp*	
73	7-1		SCB				*Bpp*	
74	7-2	GR	SCB			O	*Bpp*	
75	7-3	GR		CL		R		
76	7-4					O, R		
77	7-5	GR				O		
78	7-6	GR						
79	8-1				WLO	O, R		
80	8-2		SCB		WLO	O	*Bpp, Pcf*	
81	8-3?	GR				O, R		
82	8-4?				WLO	O	*Bpp*	
83	8-5					O		
84	8-6		SMS			O		GN
84-1	9-1					O		
85	D?			CL			*Jcc*	
86	E?			CL	WBW		*Jcc*	
87	3?					O		
88	4?					O		
89	5?					O		
90	6?					O		
91	7?					O		
92	8?					O		
93	9?					O		
94	10?	GR				O, R		
95	11?	GR				R		
96	12?	GR				R		
97	13?	GR				O, R		
98	14?					R		
99	4141437		SPO			R		
100	4141436	GR				O, R		
101	3/SR192?				WCS			
102	4141435					RC		
103	2115769					RC		
104	2115838					RC		
105	2115768					RC		
106	106202					RC		
107	106201					O, R		
108	106199					O		
109	106197					O		
110	106195					CN		
111	106194					CN		
112	106193					O		
113	427491					O		
114	16/SR192?					O, R		
115	2303868					O, R		

Tower Numbers		Vegetation[5]					Special-status Species	
Survey[6]	SCE[7]	Grassland	Scrub	Chaparral	Woodland	Develop	Plants[8]	Animals[9]
116	106187					O, R		
117	2116387					O, R		
117-1	2116387					O, R		
118	192098					O, R		
119	192087					O, R		
120	1920986				WAW	R		
121	1920984				WLO			
122	25/SR192?					O		
123	1920989					O		
124	1723097				WCS			
125	2295420					CN		
126	1723095					CN		
127	1665177					CN		
128	4170613					O		
129	4170616					O		
130	2115767					O		
131	106165					O		
132	106164					O		
133	106163					O		
134	106162					O		
135	106160					O		
136	106159					O		
137	106157					O		
138	1871704					O		
139	106155					O		
140	106154					O		
141	106152					O, CN		
142	1524182					O, CN		
143	1324181					CN		
144	106149					CN		
145	4305748					CN		
146	106146					CN		
147	1061--?					CN		
148	2303869					CN		
149	52/SR192?					O, CN		
150	1238737					O, CN		
151	54/SR192?					O, RC		
152	123874					O, RC, CN		
153	56/SR192?					CN		
154	4170614					RC, CN		
155	4305747					RC, CN		
156	4305746					RC, CN		
157	4305745					CN		
158	1238745					CN		
159	62/SR192?					R, CN		
160	1238747					R, CN		
161	64/SR192?					R, CN		
162	1238749					R, CN		
163	66/SR192?					R, CN		

Tower Numbers		Vegetation[5]					Special-status Species	
Survey[6]	SCE[7]	Grassland	Scrub	Chaparral	Woodland	Develop	Plants[8]	Animals[9]
164	106125					R, CN		
165	1920853					R, CN		
166	106123					CN		
North Branch								
88-Na	10-5			CBC				
89-Na	10-6			CBC	WLO			
90-Na	11-3	GR		CBC			*Qd*	
91-Na	11-4			CBC				
93-Na	11-6			CBC				
94-Na	11-7			CBC				
95-Na	11-8			CBC				
96-Na	11-9			CMC				GN
97-Na	12-1			CBC				
98-Na	12-2			CBC			*Qd*	
99-Na	12-3			CMC			*Qd*	
100-Na	12-4?		SCB				*Cc*	
101-Na	12-5?		SPO				*Cc*	
102-Na	12-6		SPO				*Qd*	
103-Na	C?			CMC			*Qd*	
104-Na	H?			CBC				

Appendix I

Cultural Resources Studies

In accordance with the California Public Resources Code Section 6254.10, information regarding the location of archaeological resources shall be protected from public viewing.

CULTURAL RESOURCES TECHNICAL REPORT WILL BE PROVIDED UPON REQUEST.

Appendix J

Geological Resources Studies

EDISON
O&M SERVICES

A *SOUTHERN CALIFORNIA EDISON* SM Company

FOUNDATION DESIGN RECOMMENDATIONS
SANTA CLARA-CARPINTERIA 66 KV T/L
SANTA CLARA SUBSTATION TO CASITAS SUBSTATION
VENTURA COUNTY, CALIFORNIA

PREPARED BY: SOUTHERN CALIFORNIA EDISON COMPANY
ENGINEERING & TECHNICAL SERVICES
CIVIL/STRUCTURAL/ GEOTECHNICAL GROUP

June 29, 2000

June 29, 2000

Mr. Bill Sasse

Subject: Foundation Design Recommendations
Santa Clara-Carpinteria 66 kV T/L
Santa Clara Substation to Casitas Substation
Ventura County, California

References:

1. Report No. 144
   No. 4 Santa Clara-Casitas 66 kV Transmission Line
   Tower Footing Design Data
   Prepared by the Engineering Department
   Dated July 18, 1956

2. Report No. 200
   Santa Clara-Goleta 220 kV Transmission Line
   Soil Investigation
   Prepared by the Engineering Department
   Dated September 1966

INTRODUCTION

At your request, we are herein submitting results of our field investigation of the soil and geologic conditions at the proposed new pole/tower sites along the subject transmission line. Recommended drilled pier foundation design parameters for use in the "BIPILE" program are listed on the attached tables. The recommendations are based upon a site visit performed during May 15 to May 18, 2000; and a review of the referenced reports and the local geology.

It is our understanding that the existing lattice towers of Santa Clara-Carpinteria 66 kV T/L and portion of the Santa Clara-Getty-PS 85 66 kV T/L will be replaced by tubular steel poles (TSP) with few exceptions that lattice towers will still be used. This phase of the study is for the transmission line between Santa Clara and Casitas Substations, existing towers numbered from M0T1A to M9T3. Section of the subject alignment is depicted on the Figure 1, Site Plan.

Based on the provided information, the section of line will be approximately 9.5 miles long. Most poles will be on or near ridge tops. The diameters of the pole footings will approximately range from 56 to 84 inches and the proposed pole heights will be range from 60 to 100 feet.

FIELD INVESTIGATION AND LABORATORY TESTING

Field investigation consisted of site visit to each proposed pole location, and was performed during May 15 to May 18, 2000. Purpose of our site reconnaissance is to evaluate any visible geotechnical and geological conditions at each pole location along the alignment.

Five (5) disturbed and undisturbed near-surface samples were taken at selected locations on the transmission line. The samples were tested in the laboratory to determine soil strength parameters. Current laboratory testing results confirm earlier studies (Ref. 1 and 2).

The soil strength characteristics of the geologically-young sediments are similar. The design recommendation is for a single soil type for the entire Line. The soil type is designated as Soil Type A in the footing design table (Table 1). Table 2 includes special design and construction considerations which should be used accordingly in the foundation design. Laboratory test results are present on the Appendix.

GEOLOGY AND SITE CONDITIONS

The transmission line right-of-way starts at Santa Clara Substation on a site graded in alluvium and bedrock. The first towers leaving the Substation are in sandstone. Bedrock along the entire route consists of Pliocene and Pleistocene Age marine and non-marine sandstones, siltstones and shales. These geologically-young sediments have been folded and faulted by active east-west and northeasterly-trending faults.

Shallow landslides of less than 20-foot depths are common along the right-of-way. The landsliding is the result of recent uplift of the mountains and the light degree of consolidation and cementation in the sediments. Most of the shallow landslides do not appear to be the result of adverse bedding in shales. Some of the larger, north-facing slides may be the result of bedding plane failures.

In some areas, the towers are sited on the very peak of ridges with landslides both upline towards Casitas Substation and downline towards Santa Clara Substation. In these instances, we have recommended that the pole be relocated offline towards the edge of the right-of-way wherever is feasible.

When the towers are moved offline, they are moved down the ridge line and are below the towers which will be replaced. The existing towers will not be removed until the new poles are set and the new lines installed. This means that temporary access roads will have to be cut on the steep slopes below the existing towers. Each one of these cuts will require care to avoid activating landslides or undercutting the existing tower foundations.

In some cases, it may not be feasible to move offline. This means that poles will be constructed on the steep side slopes. The footing design data (Table 2) shows a recommended design for additional scour at these sites.

The major active Red Mountain Fault crosses the transmission line just west of Weldon Canyon in the vicinity of Pole M8-P3. This Fault will very likely move during the 40-50 year lifetime of the poles. If the movement is mostly vertical, the transmission line should not be impacted.

M8P1 and M8P2 are in areas where extremely difficult drilling has been reported in the past. The sandstones and conglomerates are well cemented. Coring and explosives may be required. This cementing is related to the active faulting.

ANTICIPATED CONSTRUCTION CONSIDERATIONS

Pile Drilling

Generally, the soil-weathered zone is 3 to 5 feet thick with rock getting gradually harder with depth. Drilling on the adjacent Santa Clara-Goleta 220 kV Transmission Line showed weathered rock ranging from 3 to 13 feet underlain by shale and sandstone.

In most cases, the rock could be drilled using a truck-mounted bucket auger or a relatively powerful large auger-type drill such as a Texoma or Watson-type rig. Some hard sandstone layers can be expected which may require core barrels or special tools or cutting teeth.

As indicated above, difficult drilling will be encountered near M8P1 and M8P2. The drilling conditions at almost all other poles should not be difficult with large flight augers.

Grading

Grading on steep slopes will be required to provide access for drilling equipment. It is our understanding that the new poles will be also built with helicopter if the slopes are too steep for equipment to reach there.

Temporary cut slopes should be made at slopes no steeper than 1:1. The top of the cut slope should be no closer than five feet from the edge of any existing footing. Temporary fill slopes will be made at the angle of repose are approximately 1:1. These fill slopes will be unstable when saturated. The fill material will turn to mudflow during periods of heavy rainfall. Care must be taken not to place fills above developed areas or areas where mudflows can inundate structures, livestock or producing orchards.

We have prepared idealized sections showing typical grading and setbacks (Figures 2 and 3). These details are designed to protect the existing towers from failure during construction of the new poles. After completion and the existing towers are removed, each site should be re-graded to divert drainage away from the new pole. In addition, all disturbed areas should be restored by filling to match original grade. All fill placed should be benched into the competent native materials and should be properly compacted. A typical side hill benching detail is attached as Figure 4.

RECOMMENDATIONS

We have provided ultimate soil design parameters for the foundations on Table 1. We recommend that these values be used with a factor of safety of at least 1.5 for final design.

The area where these poles are to be constructed is historically prone to landsliding and many of the sites have been damaged in 1969, 1978, 1983, and 1998. Consequently, special measurements are exercised to take this special subsurface and geologic conditions into consideration and provided on the attached Table 2. The design values are intended to take special subsurface and geological conditions into account.

In Table 2, additional lateral loads are recommended at the top of the some foundations to compensate for a landslide load on the side of the foundation. This load assumes that the soil on the hill below the tower slides away and the footing acts as a retaining wall supporting a 15-foot wide and 15-foot high soil face with an equivalent fluid load of 50 pound-per-square-foot (pcf) (up to 30° slope) (only three towers get this load).

To prevent excessive disturbing of the subsurface soils and to utilize them as an additional protection measurement on the slope, without obstructing the drilling of the new footing, we recommend that the existing lattice tower footings to be left in-place after towers are removed.

All sites will be properly graded. Berms and/or swales should be constructed as needed. Positive surface drainage should be provided to prevent water ponding at the TSP's foundations.

-o0o-

The Geotechnical Group should review printouts of drilled pier computer design to verify compatibility with the above recommendations. If you have any questions or comments regarding this information, please call the undersign at PAX 47795.

ZAID AHMAD, P.E.
Lead Engineer
Civil/Structural/Geotechnical Group
Engineering & Technical Services
Southern California Edison Company

s/civil/geotech/mc/2000/santacarpin3.doc

Attachment

TABLE 1

JUNE 29, 2000
FOUNDATION DESIGN RECOMMENDATIONS
SANTA CLARA—CARPINTERIA, 66 kV T/L
VENTURA COUNTY
(SOIL TYPE A)

A. Drilled Pier Foundation Design Parameters with No Landslide Corrections

1.	Soil Density	
	a. Moist	120 pcf
	b. Saturated	132 pcf
	c. Submerged	70 pcf
2.	Ultimate Bearing Capacity	
	a. At surface—moist	3400 psf
	b. Rate of increase per foot—moist	1680 psf
	c. Rate of increase per foot—submerged	980 psf
	d. Maximum not to exceed	35,000 psf
3.	Ultimate Moist Skin Friction at Depth of 10 Feet	750 psf
4.	Estimated Depth to Groundwater	>100 feet
5.	Friction Angle of Soil	30 degrees
6.	Ratio of Submerged to Moist Skin Friction	0.59
7.	Depth to Bedrock (Case by Case)	0-20 feet
8.	Passive Pressure Multiplier Factor (PPM)	2.5
9.	Ultimate Lateral Soil Pressure at a Depth of 10 Feet	9,000 psf
10.	Side Hill Slope	varies
11.	Minimum Length	30 feet
12.	Scour Depth (or projection)	varies
13.	Additional Lateral Load	Varies(See Table 2)

NOTES:

1. Minor to moderate caving should be expected during the drilling of the pier foundation excavations. The use of water during drilling of pier excavations should aid in control of caving. Casing, drilling mud, or other means to control caving should be made available if the use of water is found to be ineffective.

2. The soil parameters in this table represent ultimate values which require the use of appropriate factors of safety for design.

3. The area is subject to numerous landslides. We have attempted to provide design parameters to resist the landslide movement on Table 2.

TABLE 2
Special Considerations, Proposed M0-T1A to M9-P3
Santa Clara-Carpinteria 66 kV T/L
Santa Clara Substation to Casitas Substation
Ventura County, California

POLE	SOIL TYPE	SIDE HILL SLOPE (DEGREES)	ADDED LANDSLIDE LOAD AT TOP	DESIGN SCOUR[4] (FEET)	SPECIAL DESIGN CONSIDERATIONS & RECOMMENDED MOVEMENT FROM EXISTING TOWER
M0-T1A	A	8	N/A	0	Move pole 15 ft. north[1] or south[2] stay online.
M0-T1	A	15	N/A	**5**	See Note 3
M0-P2	A	15	N/A	0	Move pole 15 ft. north or south stay online.
M0-P3	A	**25**	N/A	0	Move pole 15 ft. **north** stay online.
M0-P4	A	**20**	N/A	0	See Note 3
M0-P5	A	30	N/A	**5**	Move pole 15 ft. south. Recommended to lower pad 10 ft.
M0-P6	A	18	N/A	5	Move pole 10-15 ft. north for scour.
M1-P1	A	25	28.1 kips	10	Move pole 15-30 ft. north.
M1-P2	A	20	N/A	5	Move pole north or south 15 feet stay online.
M1-P3	A	30	N/A	5	See Note 3. Steep slopes north & south. West access road will be a problem.
M2-P1	A	30	N/A	5	See Note 3. Steep slopes north and south. West access road will be a problem.
M2-P2	A	30	N/A	5	See Note 3. Access road will be a problem on steep ridge.
M2-P3	A	0	N/A	0	Move 15 ft. north (wood frame). Can also go offline to south towards Santa Clara

Table 2
(continued)

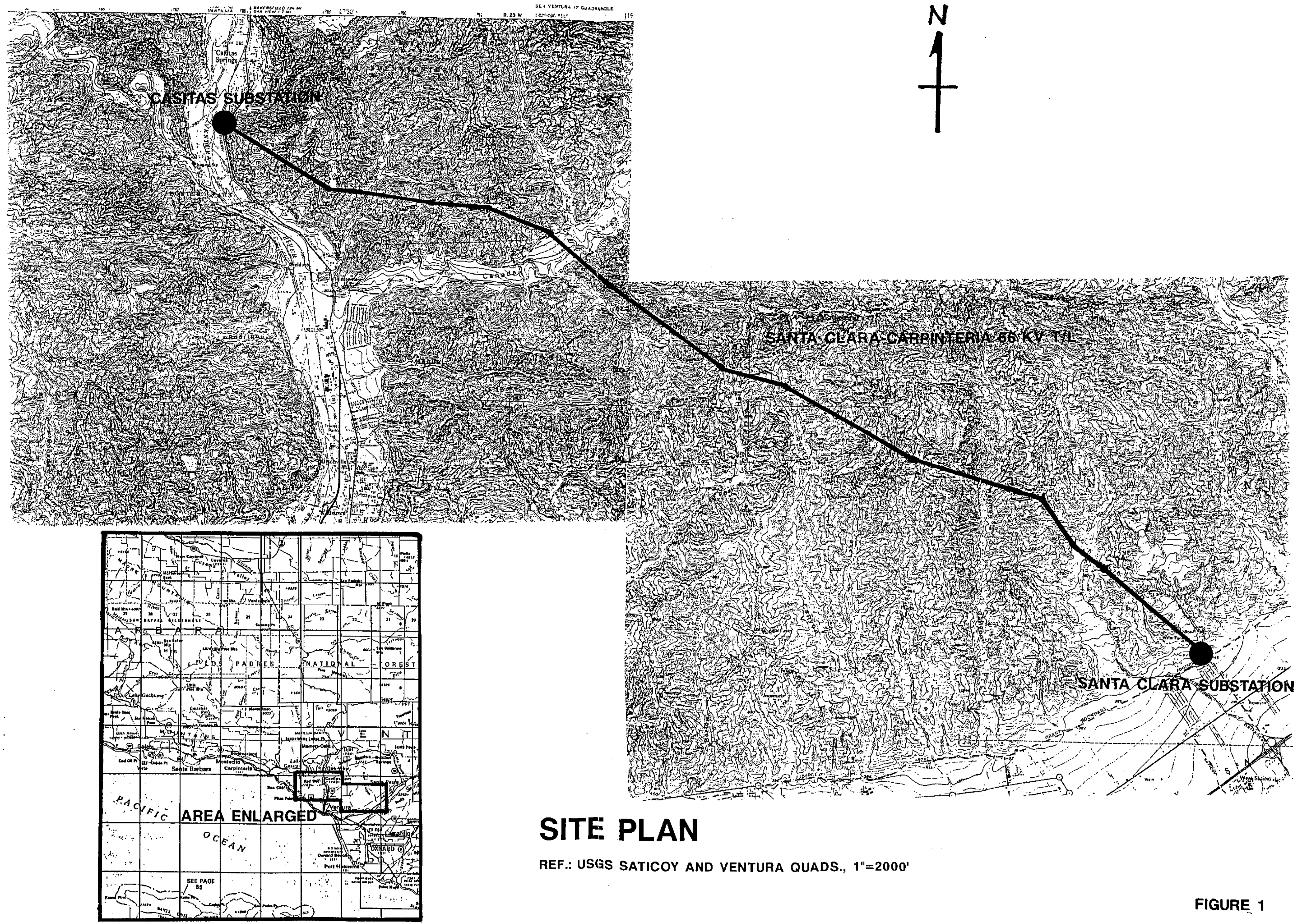
POLE	SOIL TYPE	SIDE HILL SLOPE (DEGREES)	ADDED LANDSLIDE LOAD AT TOP	DESIGN SCOUR[4] (FEET)	SPECIAL DESIGN CONSIDERATIONS & RECOMMENDED MOVEMENT FROM EXISTING TOWER
M3-P1	A	30	N/A	5	Move pole south toward Santa Clara or offline. If needed, west towards edge of R/W.
M3-P2	A	**20**	N/A	**0**	Move pole 15 ft. north. Slopes north and south.
M3-P3	A	**20**	N/A	**0**	Move pole 15 ft. north. Slopes north and south.
M3-P4	A	20	N/A	5	Move pole 15 ft. online north towards Casitas Substation.
M4-P1	A	15	N/A	20	See Note 3
M4-P2	A	30	28.1 kips	5	See Note 3. Active landslide below crib wall. Design for 15 ft. of landslide pressure. Use 5 ft. for scour.
M4-P4	A	**25**	N/A	**5**	Move pole 15 ft **north** along slope.
M5-P1	A	**26**	N/A	**0**	See Note 3
M5-P2	A	20	N/A	5	See Note 3
M5-P3	A	20	N/A	10	Existing pole not to be replaced.
M5-P4	A	**20**	N/A	**0**	Move pole up to 50 ft. to south.
M5-P5	A	**20**	28.1 kips	10	See Note 3. Big landslide below 220 kV tower.
M5-P6	A	16	N/A	5	Move pole north or south 15 ft. to 30 ft.
M6-T1	A	15	N/A	5	Move pole online 15 ft. south or north.
M6-T2	A	**20**	N/A	5	Move pole online 15 to 20 ft. north or south. Adjacent 220 kV tower experienced damages from landslide

Table 2
(continued)

POLE	SOIL TYPE	SIDE HILL SLOPE (DEGREES)	ADDED LANDSLIDE LOAD AT TOP	DESIGN SCOUR[4] (FEET)	SPECIAL DESIGN CONSIDERATIONS & RECOMMENDED MOVEMENT FROM EXISTING TOWER
M6-P3	A	30	N/A	5	See note 3. Landslide to north and south.
M6-P4	A	20	N/A	5	Move pole north or lower pad 15 ft.
M7-P2	A	15	N/A	5	Move pole 15 ft. **south**. Lower 5 ft. and design for scour.
M7-P3	A	20	N/A	10	Move pole 15 ft. north. Design for scour of 10 ft. and lower 10 ft.
M7-P4	A	22	N/A	8	Move pole 15 ft. north. Design for 8 ft. scour
M7-P5	A	**15**	N/A	**0**	Move pole 15 ft. north. Site has crib wall. **Recommend lowering pad 10 ft.**
M8-P1	A	35	N/A	0	Move pole 15 ft. north or south (north best).
M8-P2	A	30	N/A	0	Move pole 15 ft. north or south (south best).
M8-P3	A	25	N/A	**0**	Move pole 15 ft. north or south.
M9-P1	A	**27**	N/A	**0**	Move pole 15 ft. north or south.
M9-P2	A	25	N/A	5	Move pole 15 ft. north or south.
M9-P3	A	20	N/A	10	Move pole 15 ft. south. Road badly scoured. Some seepage.

Note:

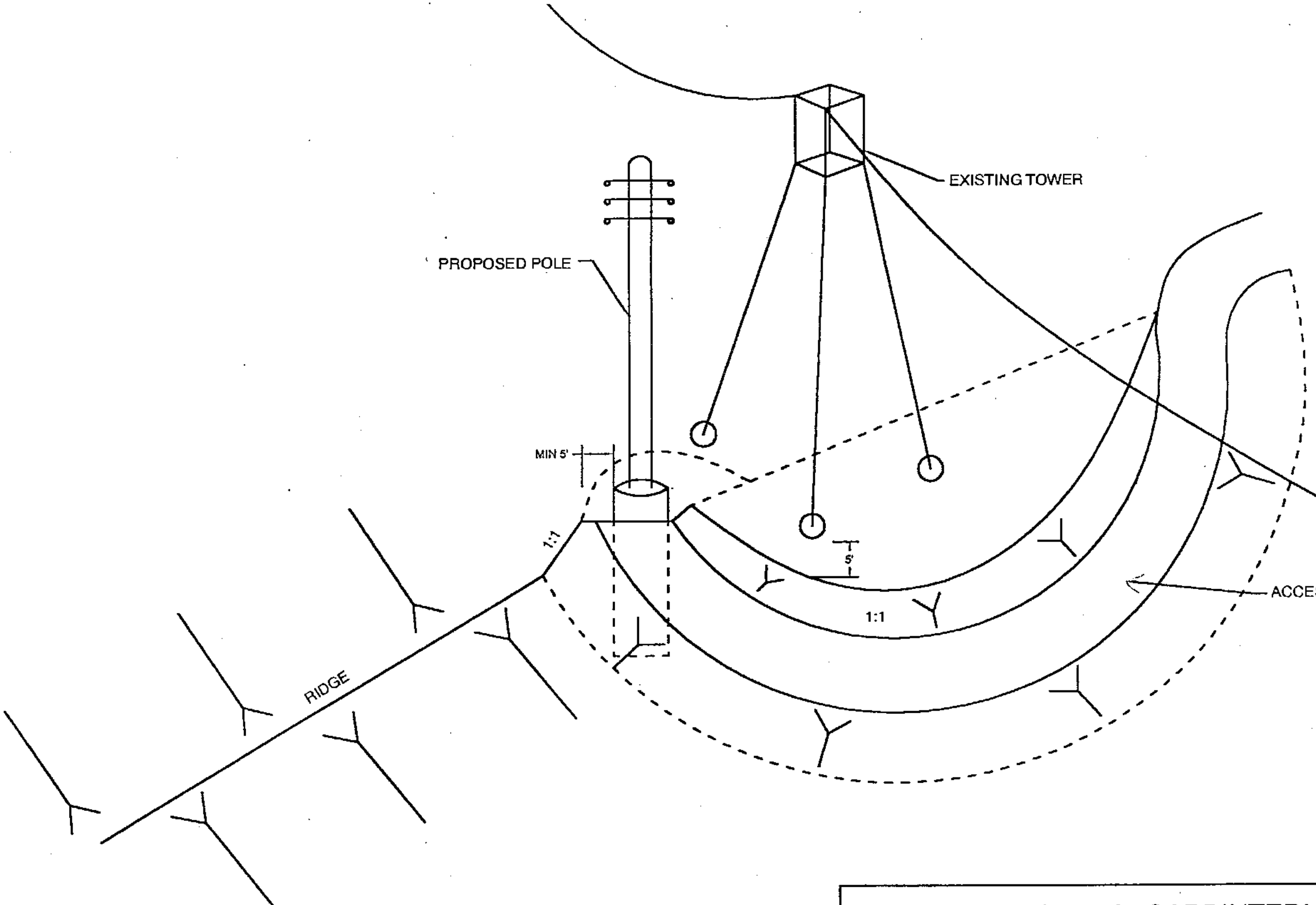
1. "North" is considered toward Casitas Substation online.
2. "South" is considered toward Santa Clara Substation online.
3. The new pole(s)/tower(s) will be constructed on the same existing tower location(s).
4. Denote a recommended additional length to be added to the program results.
5. All existing tower footings are recommended be left in-place, if feasible.



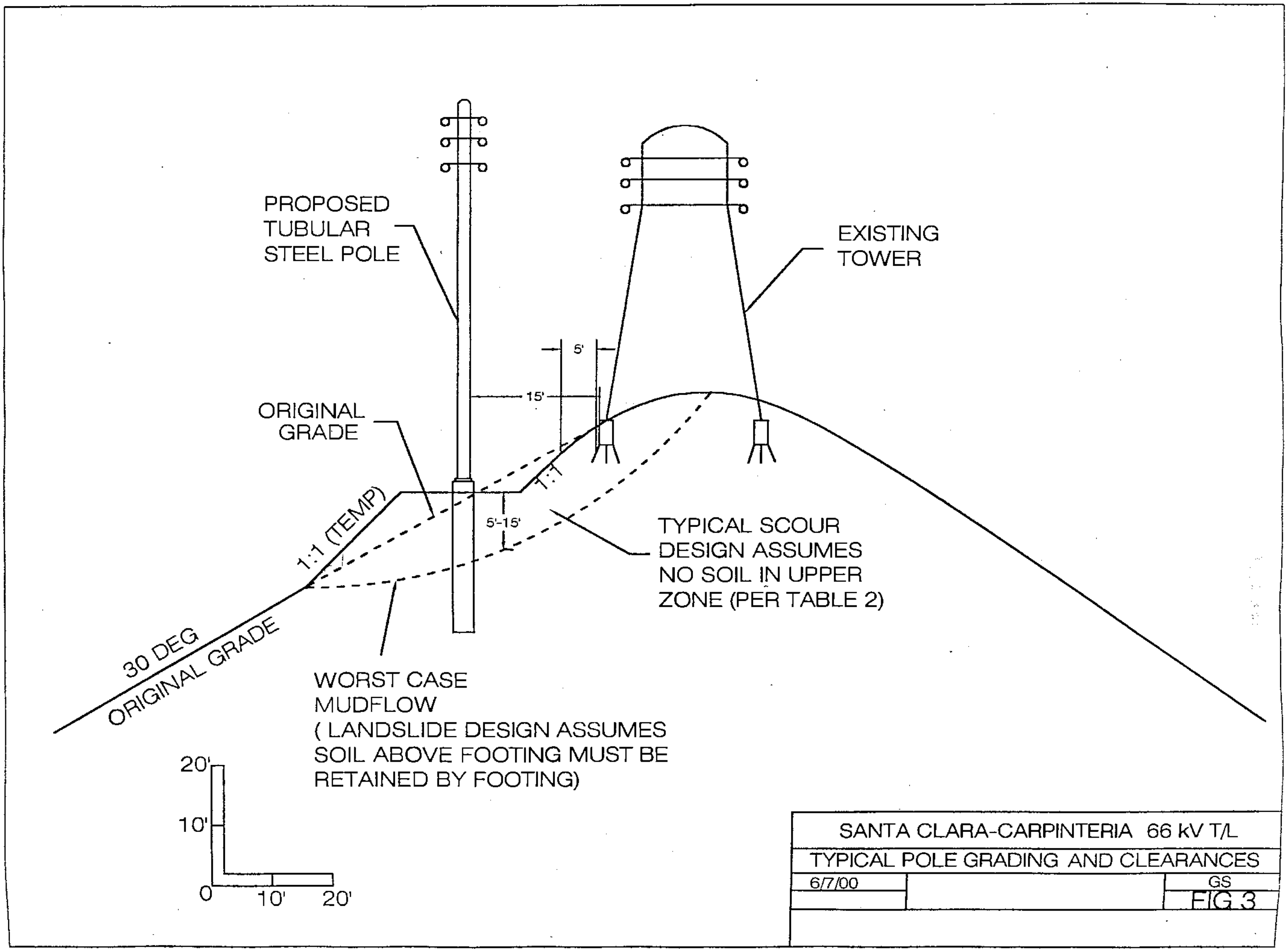
SITE PLAN

REF.: USGS SATICOY AND VENTURA QUADS., 1"=2000'

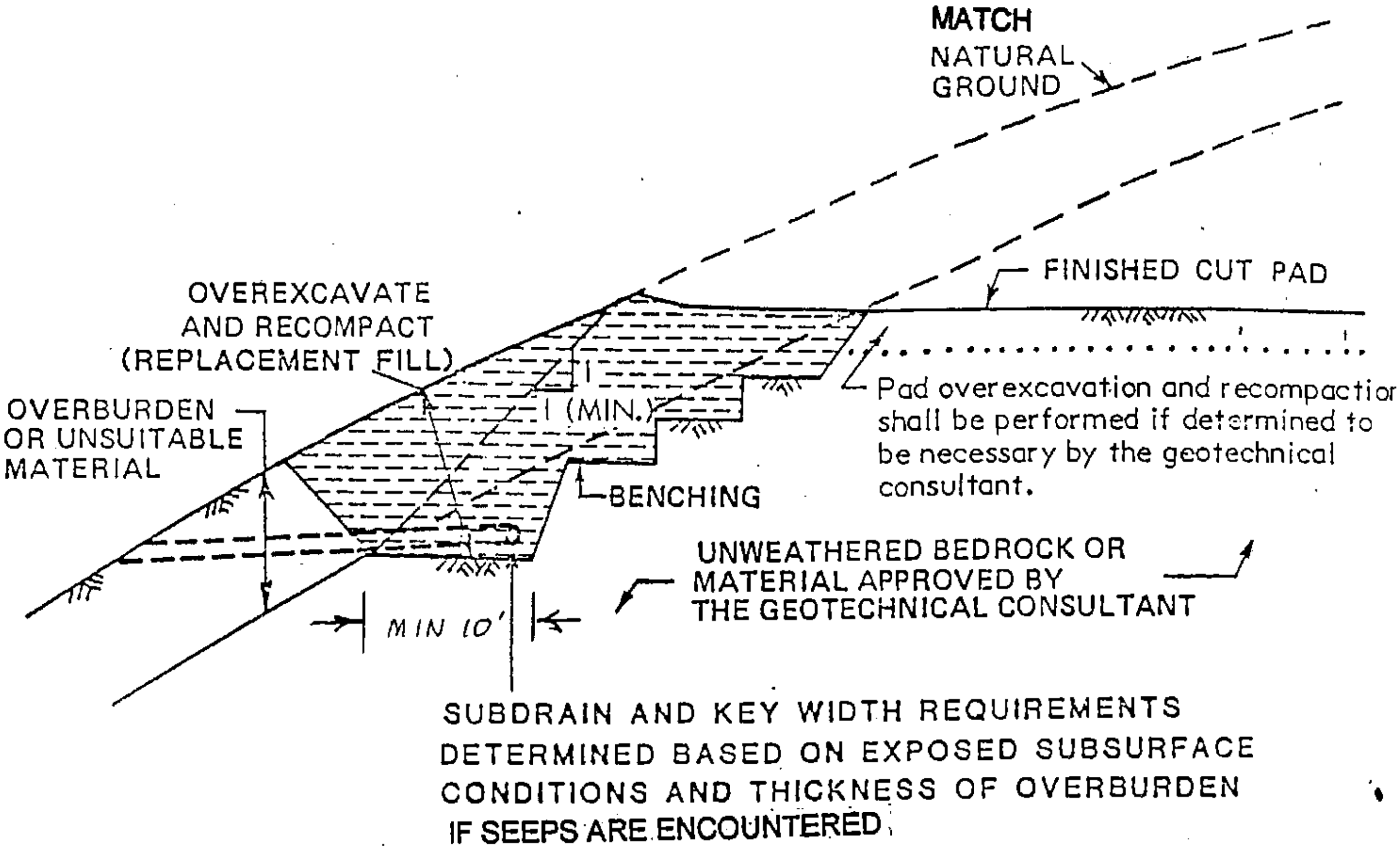
FIGURE 1



SANTA CLARA -CARPINTERIA		
TEMP ACCESS ROAD GRADING		
6/6/00		GS
		FIG 2


PROPOSED
TUBULAR
STEEL POLE
EXISTING
TOWER
5'
15'
ORIGINAL
GRADE
1:1 (TEMP)
1:1
5'-15'
TYPICAL SCOUR
DESIGN ASSUMES
NO SOIL IN UPPER
ZONE (PER TABLE 2)
30 DEG
ORIGINAL GRADE
WORST CASE
MUDFLOW
(LANDSLIDE DESIGN ASSUMES
SOIL ABOVE FOOTING MUST BE
RETAINED BY FOOTING)
20'
10'
0
10'
20'
SANTA CLARA-CARPINTERIA 66 kV T/L
TYPICAL POLE GRADING AND CLEARANCES
6/7/00
GS
FIG 3

SIDE HILL
CUT PAD DETAIL



NOTE: All soil compaction should be performed to 90 percent of maximum Density as obtained by ASTM D1557-91 (5-layer) method of compaction.

FIGURE 4

APPENDIX

LABORATORY TEST RESULTS

SUMMARY OF TEST RESULTS
TABLE 1

Project: SANTA CLARA—CARPINTERIA 66 kV T/L

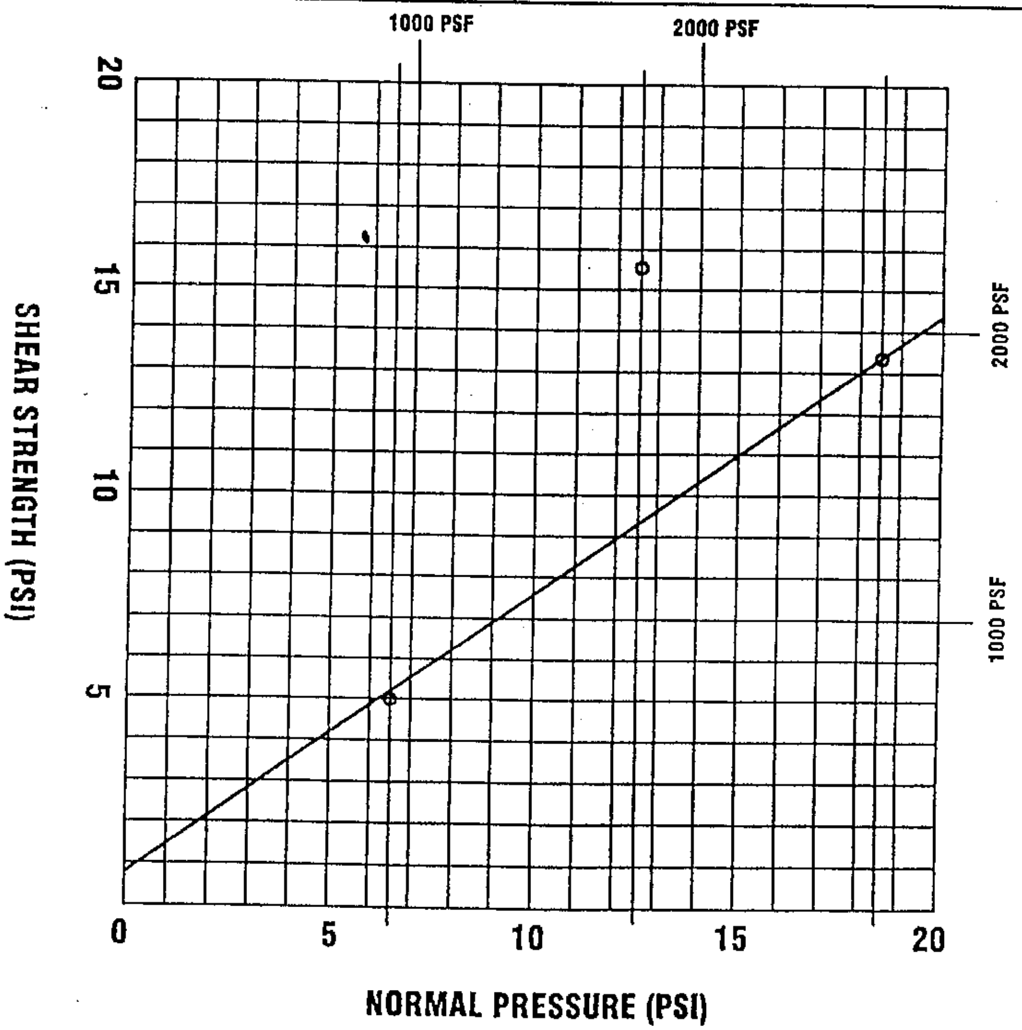
DALE HINKLE P. E. INC.

HOLE No.	Depth ft.	SAMPLE TYPE	Field Moisture %	FIELD DRY DENSITY lbs/cu. ft.	Gravel %	Sand %	Fines %	% CONSOLIDATION 2.5 psi	5.0 psi	10.0 psi	20.0 psi	40.0 psi	DEG. ϕ	Cohesion psf	Maximum pcf	Density %W	% Relative Compaction	ATTERBERG LIMITS LL	PL
M3T2	1	RING	3.9	113.1									34	100					
M3T3	1-2	RING	15.6	117.2									34	300					
M5T4	1	BAG	12.7	118.2		10.5	89.5						0	550	120.8	12.8			
M6T4	1-3	BAG	13.9	122.5	53	28	19						40	0	132.5	8.0			
M6T7	1	BAG	18.0	103.6	0	5	95						18	500	120.5	11.5			

DALE HINKLE P.E. INC.
15519 ROCKFIELD BLVD., SUITE B
IRVINE, CALIFORNIA 92618

Direct Shear Test Data

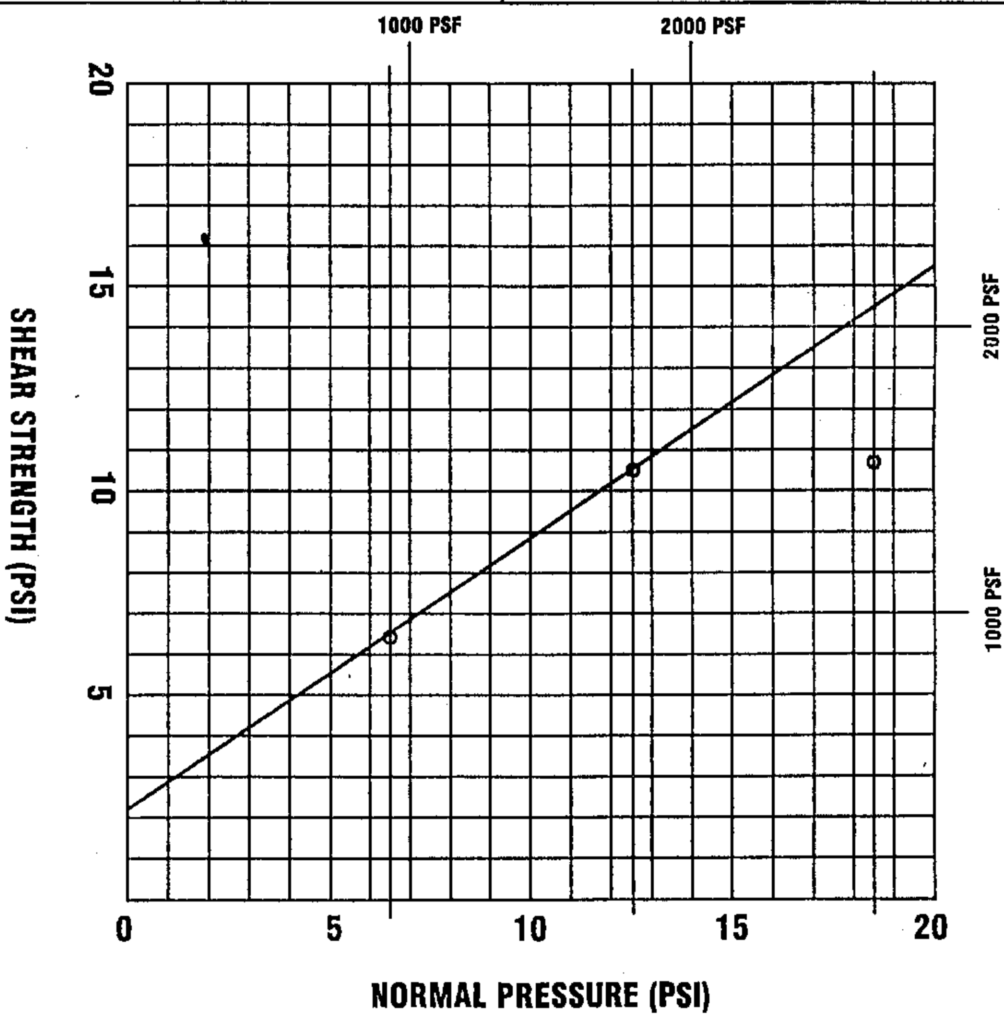
LOCATION SANTA CLARA CARPINTERIA	SATURATED % W
JOB NAME 66 kV T/L	ANGLE OF INTERNAL FRICTION 34 deg
HOLE NUMBER M3-T2	COHESION 100 psf
HOLE DEPTH 1'	DRY DENSITY 113.1
SAMPLE TYPE: UNDISTURBED	INITIAL FIELD MOISTURE 3.9
TESTED BY: DRK	SATURATED DENSITY



DALE HINKLE P.E. INC.
15519 ROCKFIELD BLVD., SUITE B
IRVINE, CALIFORNIA 92618

Direct Shear Test Data

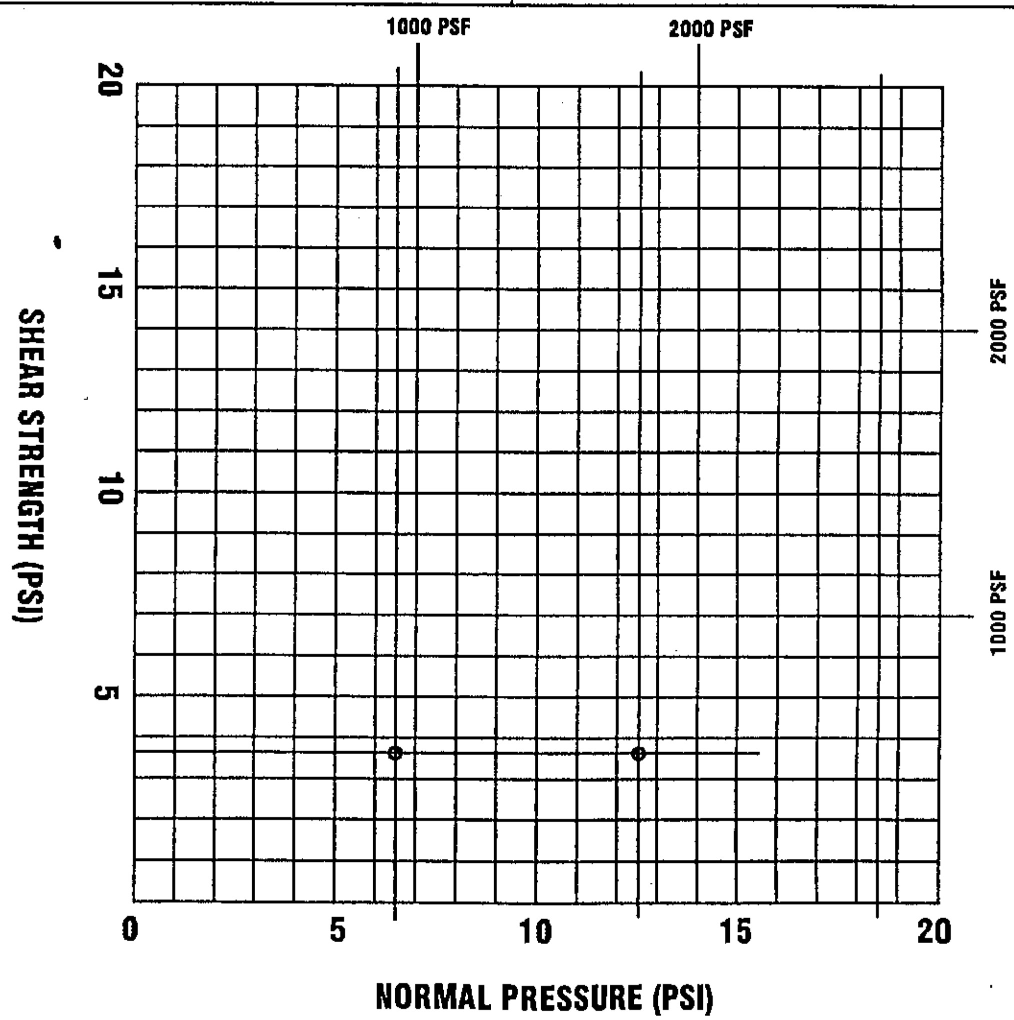
LOCATION SANTA CLARA CARPINTERIA	**SATURATED % W**
JOB NAME 66 kV T/L	**ANGLE OF INTERNAL FRICTION** 34DEG
HOLE NUMBER M3-T3	**COHESION** 300 PSF
HOLE DEPTH 1'-2'	**DRY DENSITY** 117.2
SAMPLE TYPE: UNDISTURBED	**INITIAL FIELD MOISTURE** 15.6
TESTED BY: DRK	**SATURATED DENSITY**



DALE HINKLE P.E. INC.
15519 ROCKFIELD BLVD., SUITE B
IRVINE, CALIFORNIA 92618

Direct Shear Test Data

LOCATION SANTA CLARA-CARPINTERIA	SATURATED % W
JOB NAME 66 kV T/L	ANGLE OF INTERNAL FRICTION 0
HOLE NUMBER M5-T4	COHESION 550 psf
HOLE DEPTH 1'	DRY DENSITY 118.2
SAMPLE TYPE: UNDISTURBED	INITIAL FIELD MOISTURE 12.7
TESTED BY: DRK	SATURATED DENSITY



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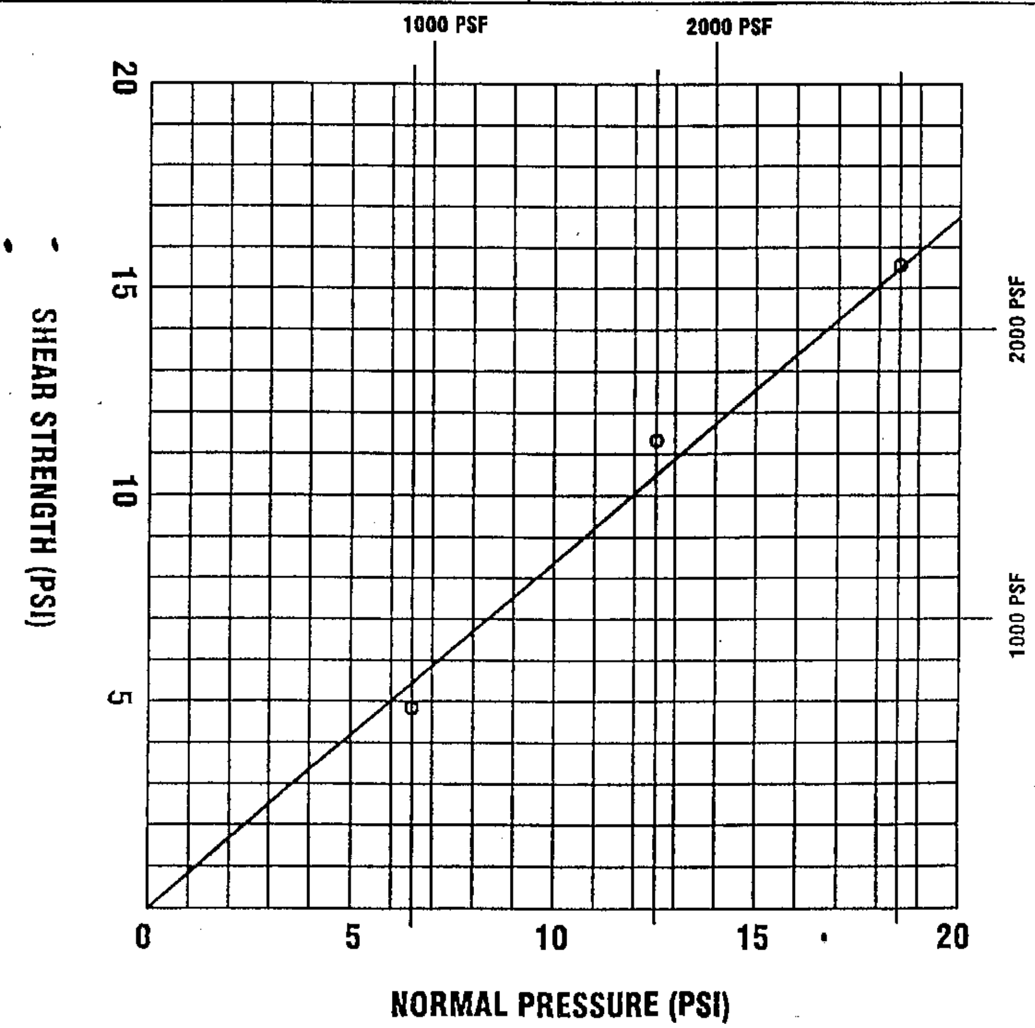
IRVINE, CALIFORNIA 92618

Direct Shear Test Data

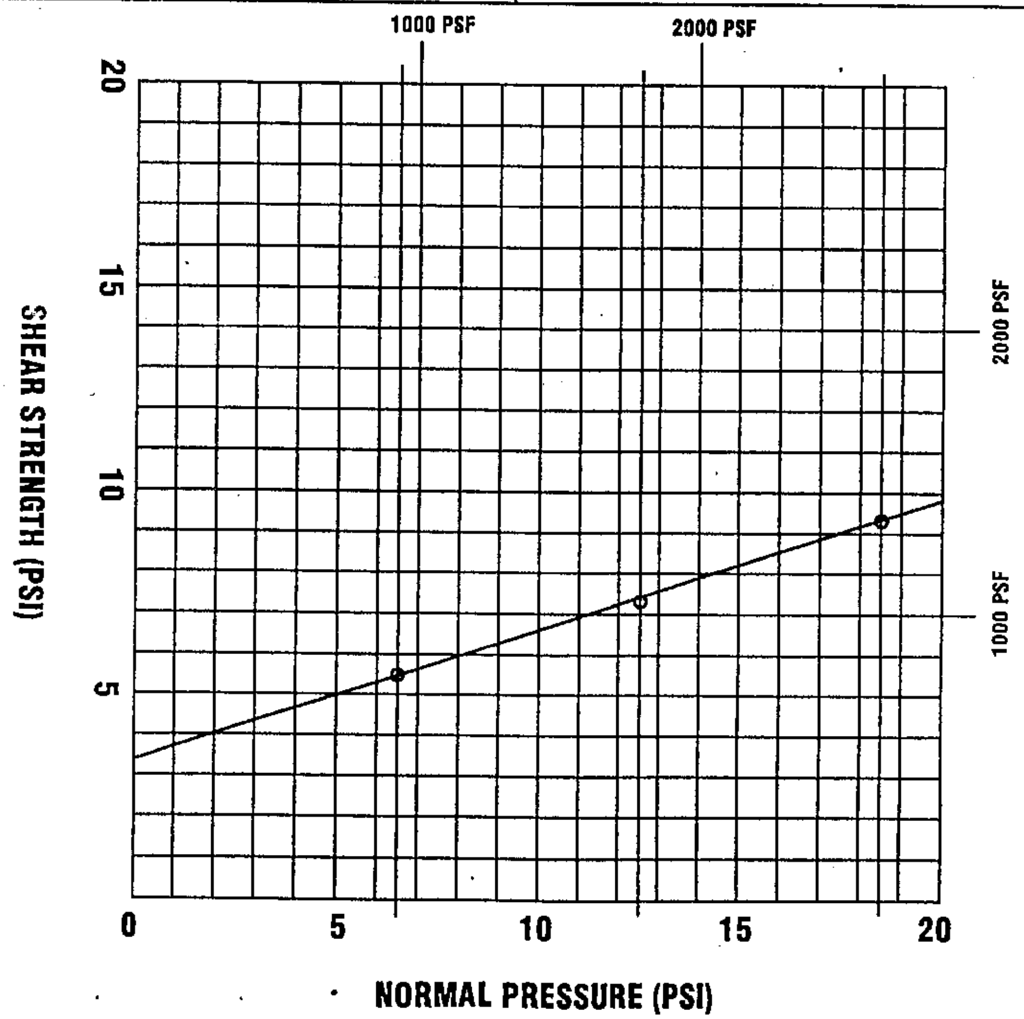
LOCATION	SANTA CLARA CARPINTERIA	SATURATED % W	
JOB NAME	66 kV T/L	ANGLE OF INTERNAL FRICTION	40 deg
HOLE NUMBER	M6-T4	COHESION	0
HOLE DEPTH	1'-3'	DRY DENSITY	122.5
SAMPLE TYPE:	REMOLDED	INITIAL FIELD MOISTURE	13.9
TESTED BY:	DRK	SATURATED DENSITY	



DALE HINKLE P.E. INC.
15519 ROCKFIELD BLVD., SUITE B
IRVINE, CALIFORNIA 92618

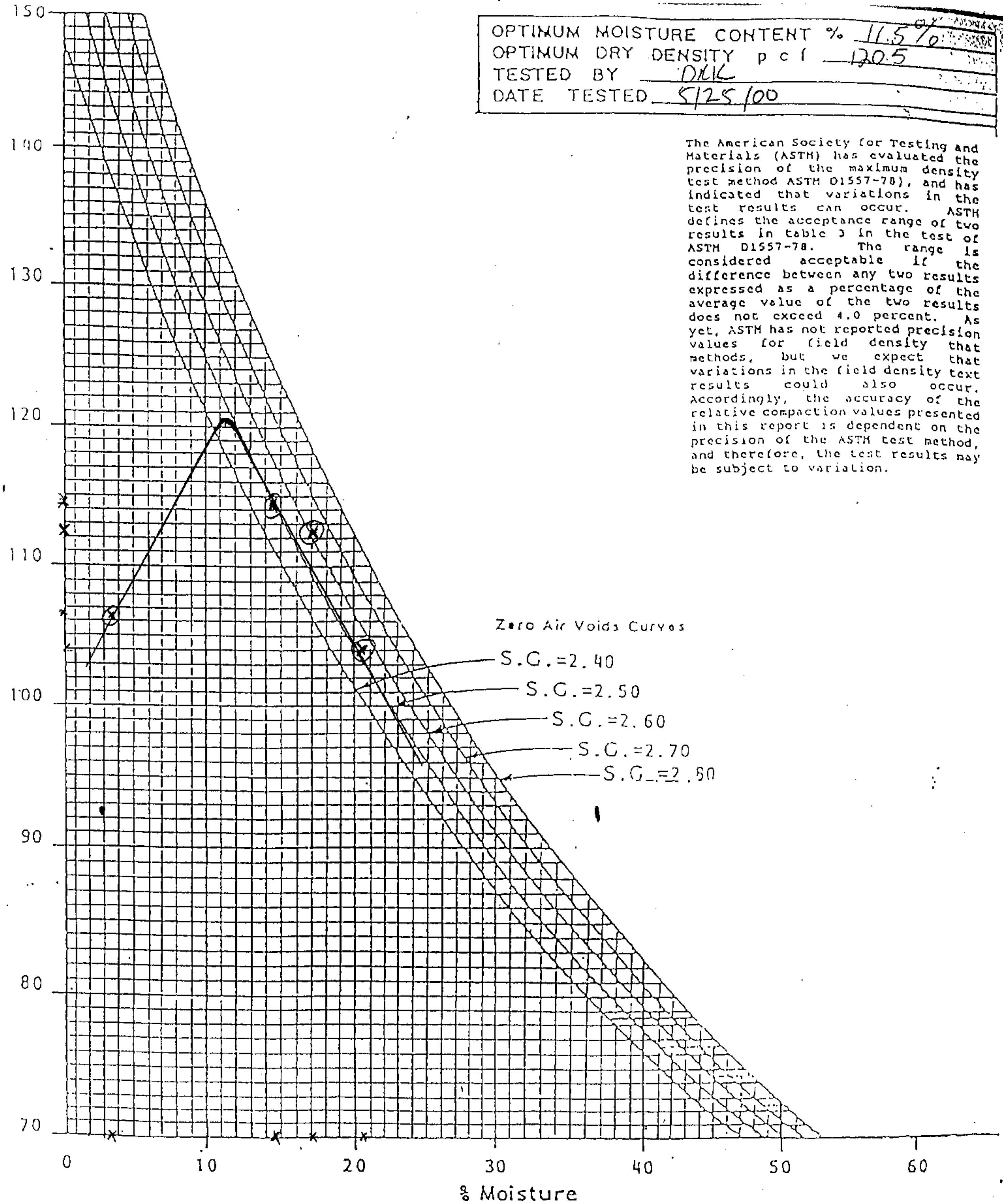
Direct Shear Test Data

LOCATION SANTA CLARA-CARPINTERIA	**SATURATED % W**
JOB NAME 66kV T/L	**ANGLE OF INTERNAL FRICTION** 18 DEG
HOLE NUMBER M6-T7	**COHESION** 500 PSF
HOLE DEPTH 1'	**DRY DENSITY** 103.6 PCF
SAMPLE TYPE: REMOLDED	**INITIAL FIELD MOISTURE** 18 %
TESTED BY: DRK	**SATURATED DENSITY**



OPTIMUM MOISTURE CONTENT %	11.5%
OPTIMUM DRY DENSITY pcf	120.5
TESTED BY	DKK
DATE TESTED	5/25/00

The American Society for Testing and Materials (ASTM) has evaluated the precision of the maximum density test method ASTM D1557-78), and has indicated that variations in the test results can occur. ASTM defines the acceptance range of two results in table 3 in the test of ASTM D1557-78. The range is considered acceptable if the difference between any two results expressed as a percentage of the average value of the two results does not exceed 4.0 percent. As yet, ASTM has not reported precision values for field density that methods, but we expect that variations in the field density text results could also occur. Accordingly, the accuracy of the relative compaction values presented in this report is dependent on the precision of the ASTM test method, and therefore, the test results may be subject to variation.



PERFORMED IN GENERAL ACCORDANCE WITH ASTM D1557-78.

MAXIMUM DRY DENSITY

SCE Santa Clarita

PROJECT 66 KVT/L

HOLE NO. U6T-7

DEPTH ft. 1'

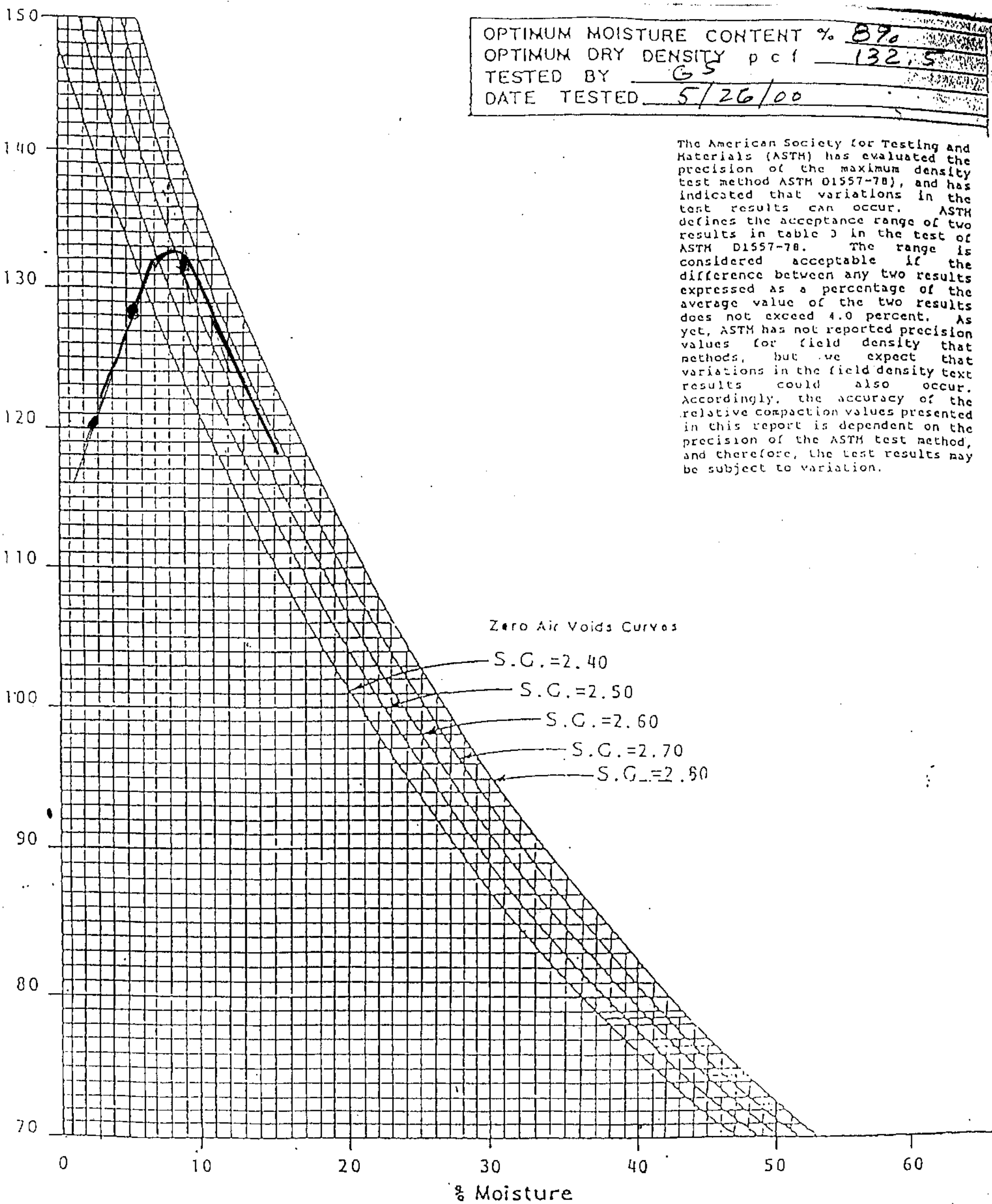
SAMPLE NO.

SCALE	CHECKED BY	DRAWN BY
DATE		

DALE HINKLE P.E. INC.

OPTIMUM MOISTURE CONTENT % 8%
OPTIMUM DRY DENSITY pcf 132.5
TESTED BY GS
DATE TESTED 5/26/00

The American Society for Testing and Materials (ASTM) has evaluated the precision of the maximum density test method ASTM D1557-78), and has indicated that variations in the test results can occur. ASTM defines the acceptance range of two results in table 3 in the test of ASTM D1557-78. The range is considered acceptable if the difference between any two results expressed as a percentage of the average value of the two results does not exceed 4.0 percent. As yet, ASTM has not reported precision values for field density that methods, but we expect that variations in the field density text results could also occur. Accordingly, the accuracy of the relative compaction values presented in this report is dependent on the precision of the ASTM test method, and therefore, the test results may be subject to variation.



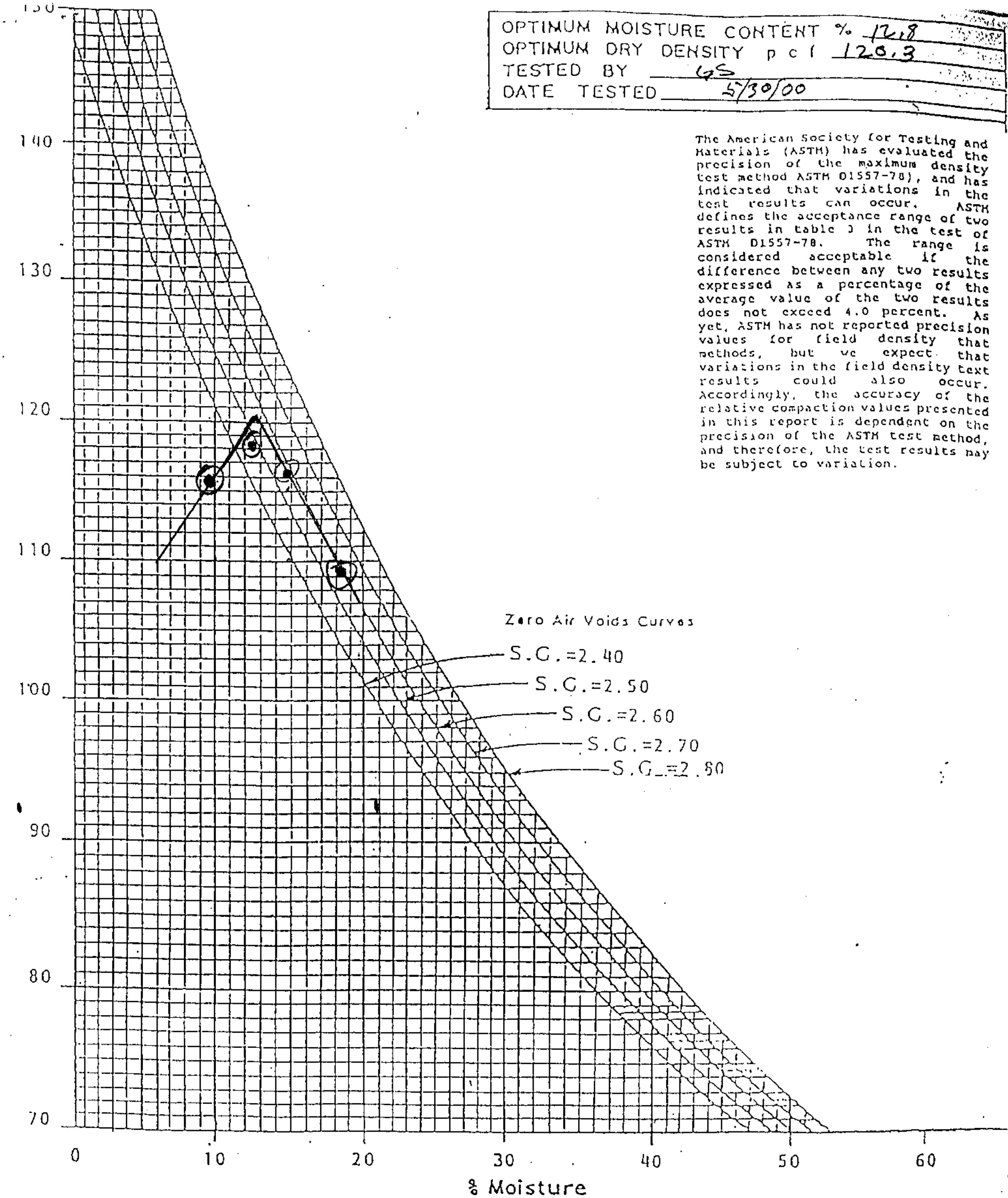
PERFORMED IN GENERAL ACCORDANCE WITH ASTM D1557-78.

MAXIMUM DRY DENSITY

ROJECT Santa Clara carpinteria	SCALE	CHECKED BY	DRAWN BY
OLE NO. M6T4	DATE		
EPTH ft. 1-3'	DALE HINKLE P.E. INC.		
AMPLE NO.			

OPTIMUM MOISTURE CONTENT % 12.8
OPTIMUM DRY DENSITY pcf 120.3
TESTED BY GS
DATE TESTED 5/30/00

The American Society for Testing and Materials (ASTM) has evaluated the precision of the maximum density test method ASTM D1557-78), and has indicated that variations in the test results can occur. ASTM defines the acceptance range of two results in table 3 in the test of ASTM D1557-78. The range is considered acceptable if the difference between any two results expressed as a percentage of the average value of the two results does not exceed 4.0 percent. As yet, ASTM has not reported precision values for field density that methods, but we expect that variations in the field density text results could also occur. Accordingly, the accuracy of the relative compaction values presented in this report is dependent on the precision of the ASTM test method, and therefore, the test results may be subject to variation.



PERFORMED IN GENERAL ACCORDANCE WITH ASTM D1557-78.

MAXIMUM DRY DENSITY

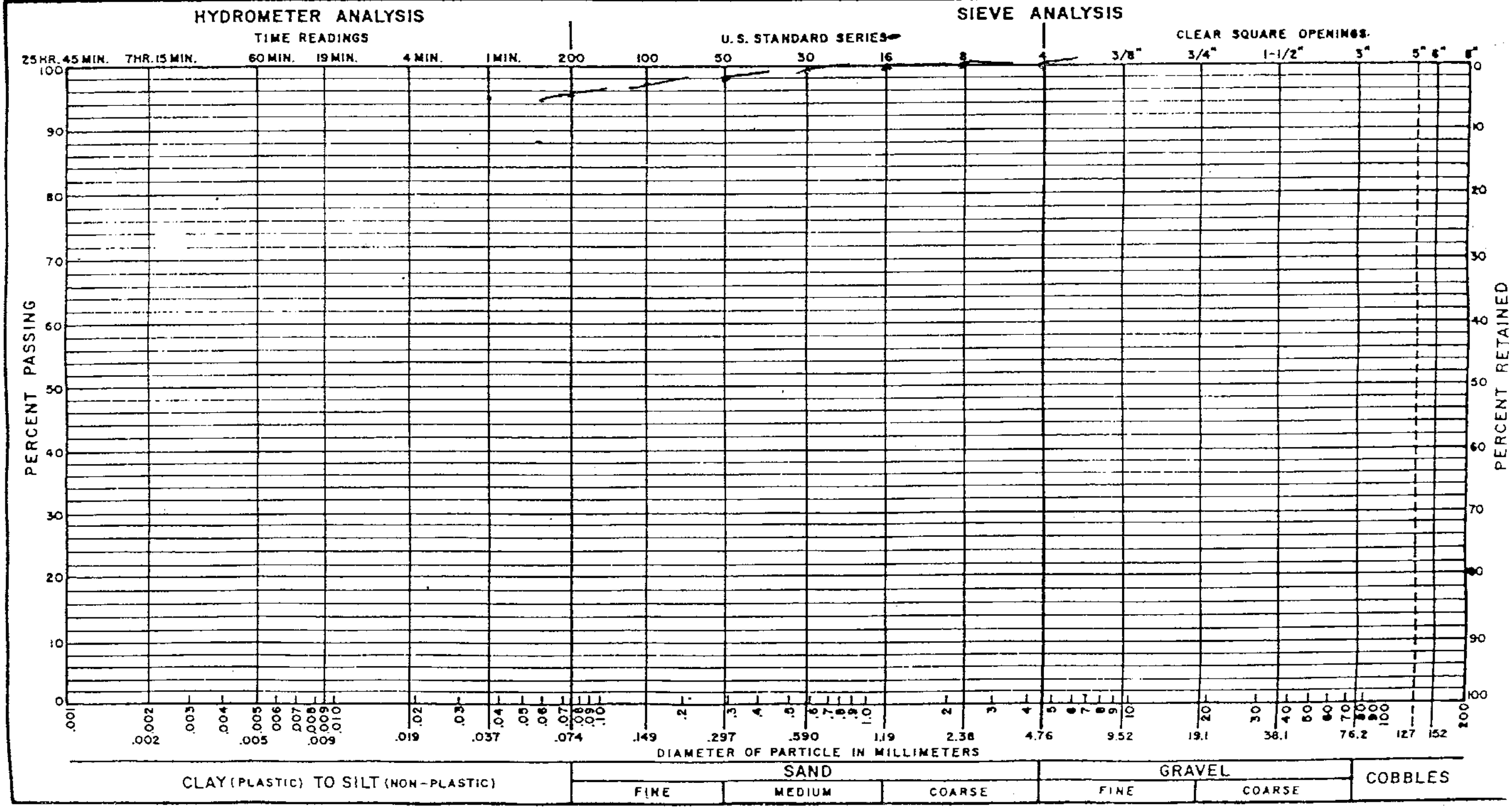
ROJECT Santa Clara Carpinteria
OLE NO. MS-T4
EPTH ft. 1'
AMPLE NO.

SCALE	CHECKED BY	DRAWN BY
DATE		

DALE HINKLE P.E. INC.

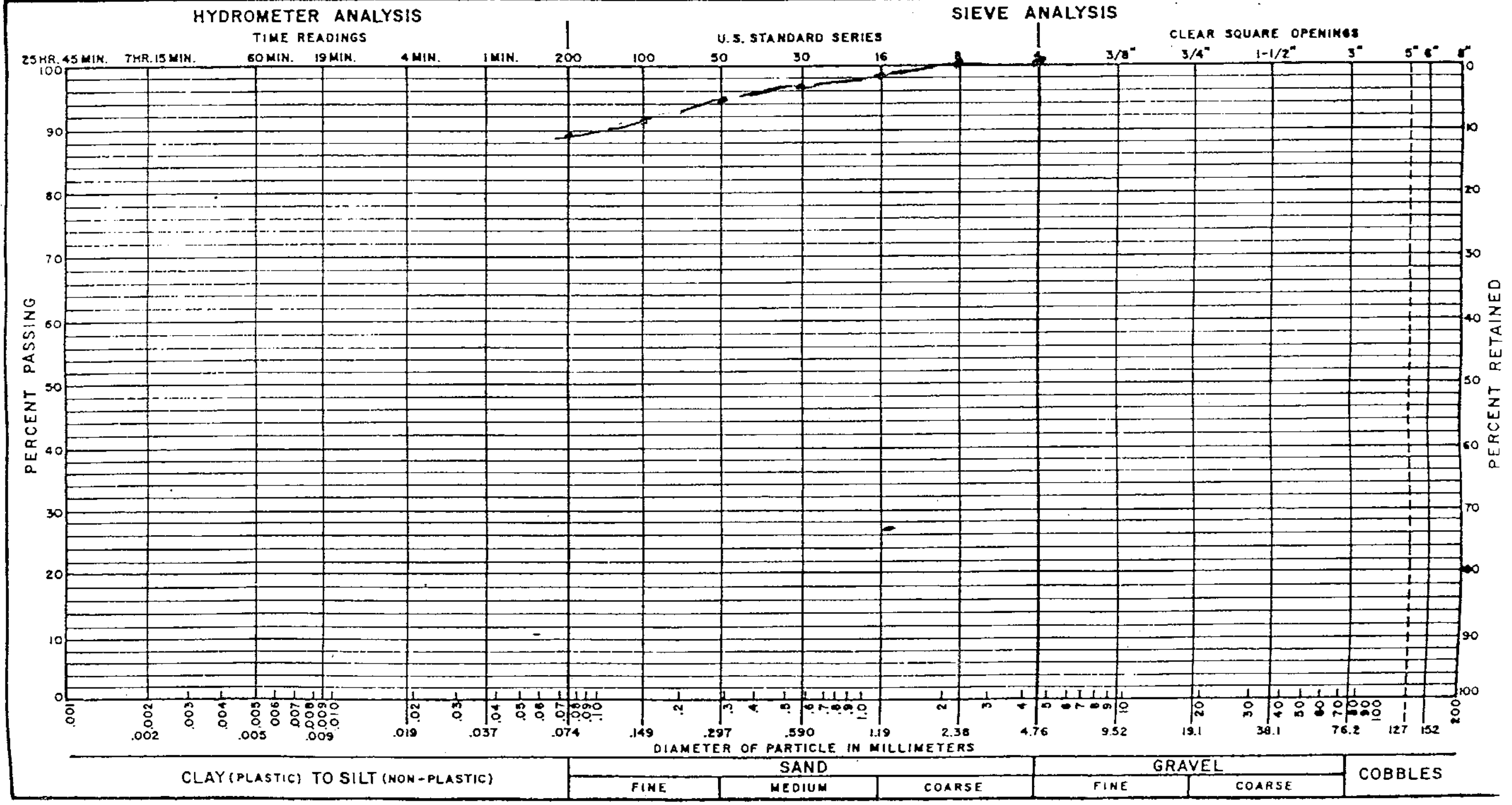
GRADATION TESTS

PROJECT Santa Clara Carpinteria				TESTED BY GS				DATE 5/25/00	
% GRAVEL	0								
% SAND	5								
% SILT & CLAY	95								
DEPTH FT.	1'								
HOLE NO.	M6-77								
SAMPLE NO.									



GRADATION TESTS

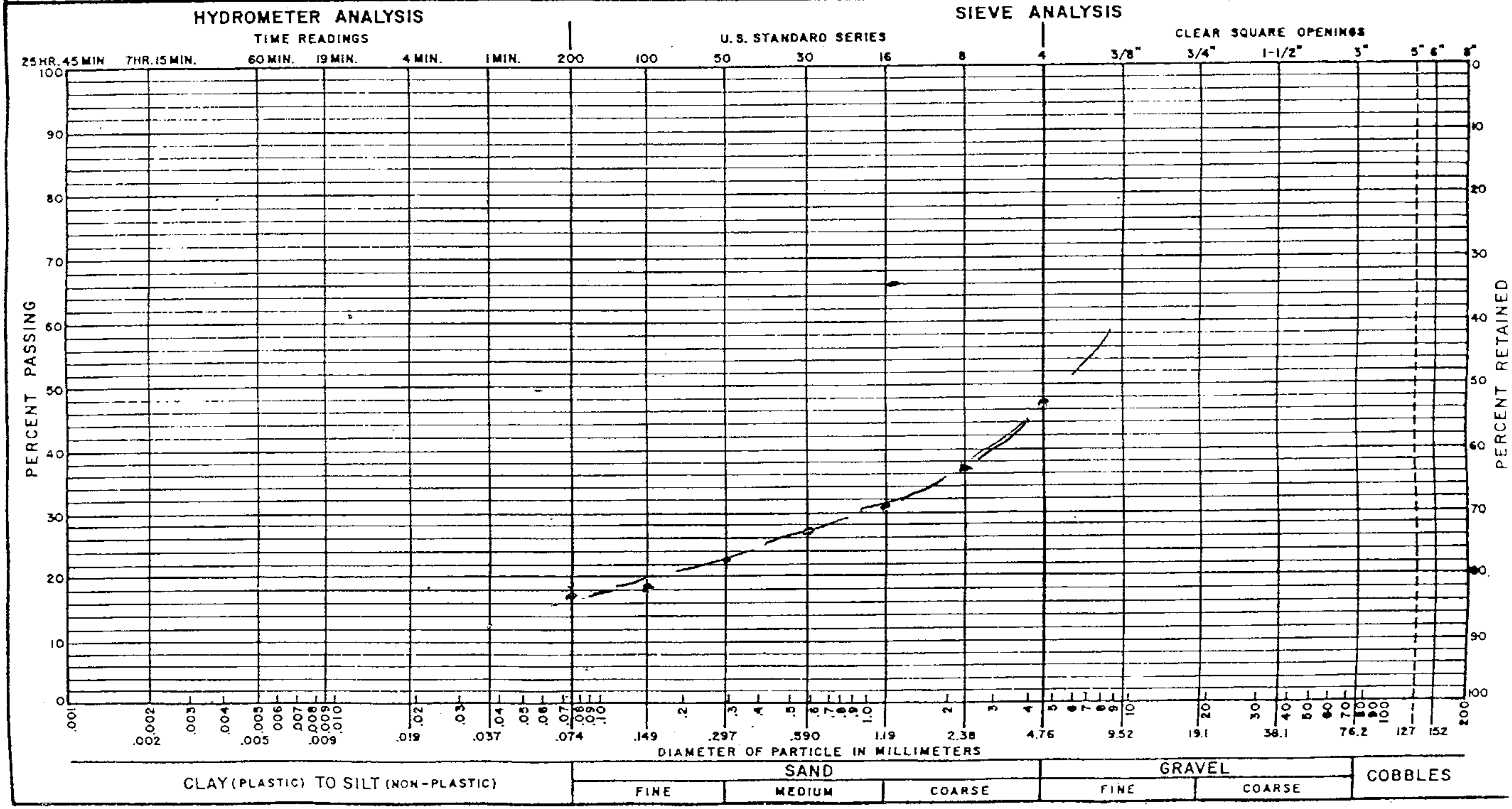
PROJECT Santa Clara Carpinteria				TESTED BY GS				DATE 5/26/00	
% GRAVEL									
% SAND	10.5								
% SILT & CLAY	89.5								
DEPTH FT.	1'								
HOLE NO.	MST4								
SAMPLE NO.									



66 KV T/L

GRADATION TESTS

PROJECT	Santa Clara Carpinteria			TESTED BY	GS			DATE	3/26/00
% GRAVEL	53								
% SAND	28								
% SILT & CLAY	19								
DEPTH FT.	1-3'								
HOLE NO.	M6-T4								
SAMPLE NO.	SANDSTONE								



EDISON
O&M SERVICES

A *SOUTHERN CALIFORNIA EDISON* ℠ Company

FOUNDATION DESIGN RECOMMENDATIONS
SANTA CLARA-CARPINTERIA 66 KV T/L
PROPOSED TSP SITES LOCATED WITHIN 5 MILES WEST FROM CASITAS SUBSTATION
EXISTING TOWERS M0T2 TO M4T1
VENTURA COUNTY, CALIFORNIA

PREPARED BY: SOUTHERN CALIFORNIA EDISON COMPANY
ENGINEERING & TECHNICAL SERVICES
CIVIL/STRUCTURAL/ GEOTECHNICAL GROUP

May 30, 2001

May 30, 2001

Mr. Bill Sasse

Subject: Foundation Design Recommendations
Proposed TSP Sites Located within 5 Miles West from Casitas Substation
Existing Towers M0T2 to M4T1
Santa Clara-Carpinteria 66 kV T/L
Ventura County, California

INTRODUCTION

At your request, we are herein submitting results of our field investigation of the soil and geologic conditions at the proposed new pole sites along the subject transmission line. Recommended drilled pier foundation design parameters for use in the "BIPILE" program are listed on the attached tables. The recommendations are based upon a site visit performed during May 1, 2001; a review of the referenced reports and the local geology; and a field note which depicted the tentative pole locations provided by yourself.

It is our understanding that the existing lattice towers of Santa Clara-Carpinteria 66 kV T/L and portion of the Santa Clara-Getty-PS 85 66 kV T/L will be replaced by tubular steel poles (TSP) with few exceptions that lattice towers will still be used. The first phase of the study for this subject project was performed during June 2000 which includes the T/L segment between the Santa Clara and the Casitas Substations. This phase of the study is starting from west side of the Ventura River opposite to the Casitas Substation (M0T2) and ending at approximately 5 miles west from the Casitas Substations (M4T1). Section of the subject alignment is depicted on the Figure 1, Site Plan.

Based on the site visit, most poles will be on or near ridge tops. Based on Phase I study for the subject project (Ref. 2), the diameters of the pole footings will approximately range from 56 to 84 inches and the proposed pole heights will be range from 60 to 100 feet.

GEOLOGICAL AND GEOTECHNICAL EVALUATIONS

Geological and geotechnical evaluations consisted of site visit to each proposed pole location was performed on May 1, 2001. Purpose of our site reconnaissance is to evaluate any visible geotechnical and geological conditions at each pole location along the alignment and to verify that the recommendations contained in the referenced reports are applicable to this project.

Results of this field reconnaissance confirm information contained on the referenced report (Ref. 1).

GEOLOGIAL CONDITIONS

This portion of southern California is controlled, geologically, by a series of roughly east-west trending faults and folds. The structure displays rather linear ridges composed of alternating sandstones, siltstones and shales.

The transmission corridor lies west of the Casitas Substation, which is situated on the eastern side of the Ventura River. The first few tower sites are situated in the Miocene-age Vaqueros Formation. This material is dominantly a massive to poorly bedded light gray to tan, fine-grained sandstone. Locally the sandstone is cemented with calcareous material. The formation is relatively free of landsliding.

Before crossing the Coyote Creek, below the Lake Casitas dam, the corridor enters an area underlain by the Oligocene-age Sespe Formation. This unit is composed of pinkish-gray to light brown, moderately hard arkosic sandstone, interbedded with maroon-red siltstone and claystone. The corridor trends through this material for nearly two miles. Along this area there are several large landslides noted by previous geologic reports.

At about two miles west of the dam, the corridor crosses into another formation – the Rincon Shale. This material is poorly bedded gray clay shale and siltstone. As noted in the field, it is very susceptible to landsliding and soil slumping. In addition, it forms a deep weathered soil.

Local Structure and Faulting

The major geologic features in this region include the Red Mountain Fault which trends east-west, south of the corridor and the Arroyo Parida Fault which trends east-west, north of the corridor. Intermittently, there are other smaller faults, which likewise trend roughly east-west. Between each of the larger faults, there are a series of fold axes that also trend east-west. These axes cause the rock to be folded in such a way that dipping beds are somewhat asymmetrical about the axis of the fold. This results in a somewhat unpredictable condition with respect to determine the likelihood of landsliding at a given site.

Local Seismicity

The level of seismic activity associated with these faults is considered low to moderate for southern California. There are no indications of high levels of earthquakes occurring within this region. Seismic factors should not play a significant role in design of the transmission structures within the region.

Landsliding/Slope Instability

Each site along the corridor was inspected for the existence or likelihood of future landsliding. In most cases, there were no indications (except as noted in the site notes) of the existence of landsliding or slope instability. The exceptions included site No's M1T1, M2T1, M2T4, M3T3, and M3T4. The area adjacent to M2T3 has been noted prior to this report as an area of major instability (adjacent to M12T1, Santa Clara-Goleta 220kV T/L). At this time, however, there is no indication that the landslide will impact the proposed TSP.

SUBSURFACE SOIL CONDITIONS

Subsurface soils in the vicinity along the subject alignment typically consist of clayey silt and silty clay with random sand layers. Cobbles and boulders were also noted at some locations. Groundwater is not anticipated within a depth that would affect design. Logs of boring from the referenced report (Ref. 1) which described the subsurface soil conditions in the project vicinity along the subject T/L are present in the Appendix.

Based on the site visit, the design recommendation is for a single soil type for the entire Line. The soil type is designated as Soil Type A in the footing design table (Table 1).

CONSTRUCTION CONSIDERATIONS

Drilling for Pier Foundation

In most cases, the rock can be drilled using a truck-mounted bucket auger or a relatively powerful large auger-type drill. Difficult drilling is expected if hard sandstone layers are encountered which may require core barrels or special tools such as cutting teeth. Possible locations to expect difficult drilling are believed at existing M2T2, M2T3, and M3T2B sites. Drilling conditions at other poles should not be difficult with large flight augers.

Grading

Grading on steep slopes will be required to provide access for drilling equipment. It is our understanding that the new poles will be also built with helicopter if the slopes are too steep for equipment to reach there.

Temporary cut slopes should be made at slopes no steeper than 1:1. The top of the cut slope should be no closer than five (5) feet from the edge of any existing footing. Temporary fill slopes will be made at the angle of repose of approximately 1:1. These fill slopes will be unstable when saturated. The fill material can turn to mudflow during periods of heavy rainfall. Care must be taken not to place fills above developed areas or areas where mudflows can inundate structures, livestock or producing orchards.

We have prepared idealized sections showing typical grading and setbacks (Figures 2 and 3). These details are designed to protect the existing towers from failure during construction of the new poles. After completion and the existing towers are removed, each site should be re-graded to divert drainage away from the new pole. In addition, all disturbed areas should be restored by filling to match original grade. All fill placed should be benched into the competent native materials and should be properly compacted. A typical side hill benching detail is attached as Figure 4.

During the site visit, rock flows were noted which could obstruct the service road between the towers M1T4 - M1T5 - M2T1. It is recommended that culverts with adequate diameter and/or wet crossings should be installed at these drainage-problem areas.

RECOMMENDATIONS

We have provided ultimate soil design parameters for the foundations on Table 1. The soil parameters in this table represent ultimate values which require the use of appropriate factors of safety for design.

Based on the referenced report and our understanding of the design, landslide load as provided on the last report is not recommended at this study since the assumed landslide load (approximately 30 kips) is negligible compared to the design lateral loading at average 1,500 kips.

To prevent excessive disturbance of the subsurface soils and to utilize them as an additional protection measurement on the slope, without obstructing the drilling of the new footing, we recommend that the existing lattice tower footings to be left in-place after towers are removed.

All sites should be properly graded. Berms and/or swales should be constructed as needed. Positive surface drainage should be provided to prevent water from ponding at the TSP's foundations.

The Geotechnical Group should review printouts of drilled pier computer design to verify compatibility with the above recommendations. If you have any questions or comments regarding this information, please call the undersign at PAX 47795.

H. Gene Hawkins
CEG #952, Consulting Geologist

ZAID AHMAD, P.E.
Lead Engineer
Civil/Structural/Geotechnical Group
Engineering & Technical Services
Southern California Edison Company

s/civil/geotech/mc/2001/santacarpin-II.doc
Attachment

References:

1. Report No. 200
   Santa Clara-Goleta 220 kV Transmission Line
   Soil Investigation
   Prepared by the Engineering Department
   Dated September 1966

2. Foundation Design Recommendations
   Santa Clara-Carpinteria 66 kV T/L
   Santa Clara Substation to Casitas Substation
   Ventura County, California
   Prepared by the Civil/Structural/ Geotechnical Group
   Dated June 29, 2000

TABLE 1

FOUNDATION DESIGN RECOMMENDATIONS
SANTA CLARA—CARPINTERIA, 66 KV T/L
POLES AT APPROXIMATELY 5 MILES WEST OF CASITAS SUBSTATION
VENTURA COUNTY
(SOIL TYPE A)

1.	Soil Density		
	a.	Moist	120 pcf
	b.	Saturated	132 pcf
	c.	Submerged	70 pcf
2.	Ultimate Bearing Capacity		
	a.	At surface—moist	3500 psf
	b.	Rate of increase per foot—moist	1200 psf
	c.	Rate of increase per foot—submerged	600 psf
	d.	Maximum not to exceed	30,000 psf
3.	Ultimate Moist Skin Friction at Depth of 10 Feet		750 psf
4.	Estimated Depth to Groundwater		>100 feet
5.	Friction Angle of Soil		30 degrees
6.	Ratio of Submerged to Moist Skin Friction		0.50
7.	Depth to Hard Bedrock		Varies (See Table 2)
8.	Passive Pressure Multiplier Factor (PPM)		2.5
9.	Ultimate Lateral Soil Pressure at a Depth of 10 Feet		8,000 psf
10.	Side Hill Slope		Varies (See Table 2)
11.	Minimum Length		30 feet
12.	Additional Drilled Pier Length to Add into Final Design		Varies (See Table 2)
13.	Additional Lateral Load		Varies (See Table 2)

NOTES:

1. Minor to moderate caving should be expected during the drilling of the pier foundation excavations. The use of water during drilling of pier excavations should aid in control of caving. Casing, drilling mud, or other means to control caving should be made available if the use of water is found to be ineffective.

2. The soil parameters in this table represent ultimate values which require the use of appropriate factors of safety for design.

Table-2 Special Considerations
Santa Clara-Carpinteria 66 kV T/L
Poles at Approximately 5 Miles West of Casitas Substation
Ventura County, California

Existing Location	SOIL TYPE	SIDE HILL SLOPE (DEGREES)	ADDITIONAL LENGTH TO ADD IN FINAL DESIGN [2] (FEET)	SPECIAL CONSTRUCTION CONDITIONS
M0-T2	A	Note 1	10	Neglect upper 10 feet of soils or add 10 feet to the result
M0-T3	A	Note 1	10	Upper soils may cave
M0-T4				No new pole is planned at this location
M1-T1	A	Note 1	20	Pole will be located approx. 12 feet to a very steep slope. Neglect upper 20 feet of soils or add 20 feet to the result
M1-T2	A	18	N/A	
M1-T3	A	N/A	5	Neglect upper 5 feet of soils or add 5 feet to the result
M1-T4	A	Note 1	10	Neglect upper 10 feet of soils or add 10 feet to the result
M1-T5	A	Note 1	15	Neglect upper 15 feet of soils or add 15 feet to the result; Need access road
M2-T1	A	17	5	Entire area is possible landslide May encounter groundwater (**See Note 5**)
M2-T2	A	25	N/A	Hard drilling may be encountered
M2-T3	A	Note 1	15	Neglect upper 15 feet of soils or add 15 feet to the result; Hard drilling may be encountered; Need access road
M2-T4				No new pole is planned at this location
M3-T1	A	Note 1	5	Neglect upper 5 feet of soils or add 5 feet to the result
M3-T2A	A	18	N/A	
M3-T2B	A	Note 1	5	Neglect upper 5 feet of soils or add 5 feet to the result; Hard drilling may be encountered
M3-T3	A	37	N/A	Landslide at new pole location Need grading on existing access road
M3-T4	A	29	N/A	See **Note 6**; Need access road
M4-T1	A	N/A	N/A	

Note:

1. Effects of nearby side hill slope is compensated by adding an additional pile length (column 4) to final results
2. Denote a recommended additional length for potential scour and/or other considerations.
3. The new pole(s)/tower(s) will be constructed near the same existing tower location(s).
4. All existing tower footings are recommended be left in-place, if feasible.
5. In addition to the side hill slope, it is recommended that additional 5 feet to be added into final pier length or a preliminary test boring should be performed to evaluate groundwater and slide plane conditions.
6. Ideal pole location is where the existing tower is.

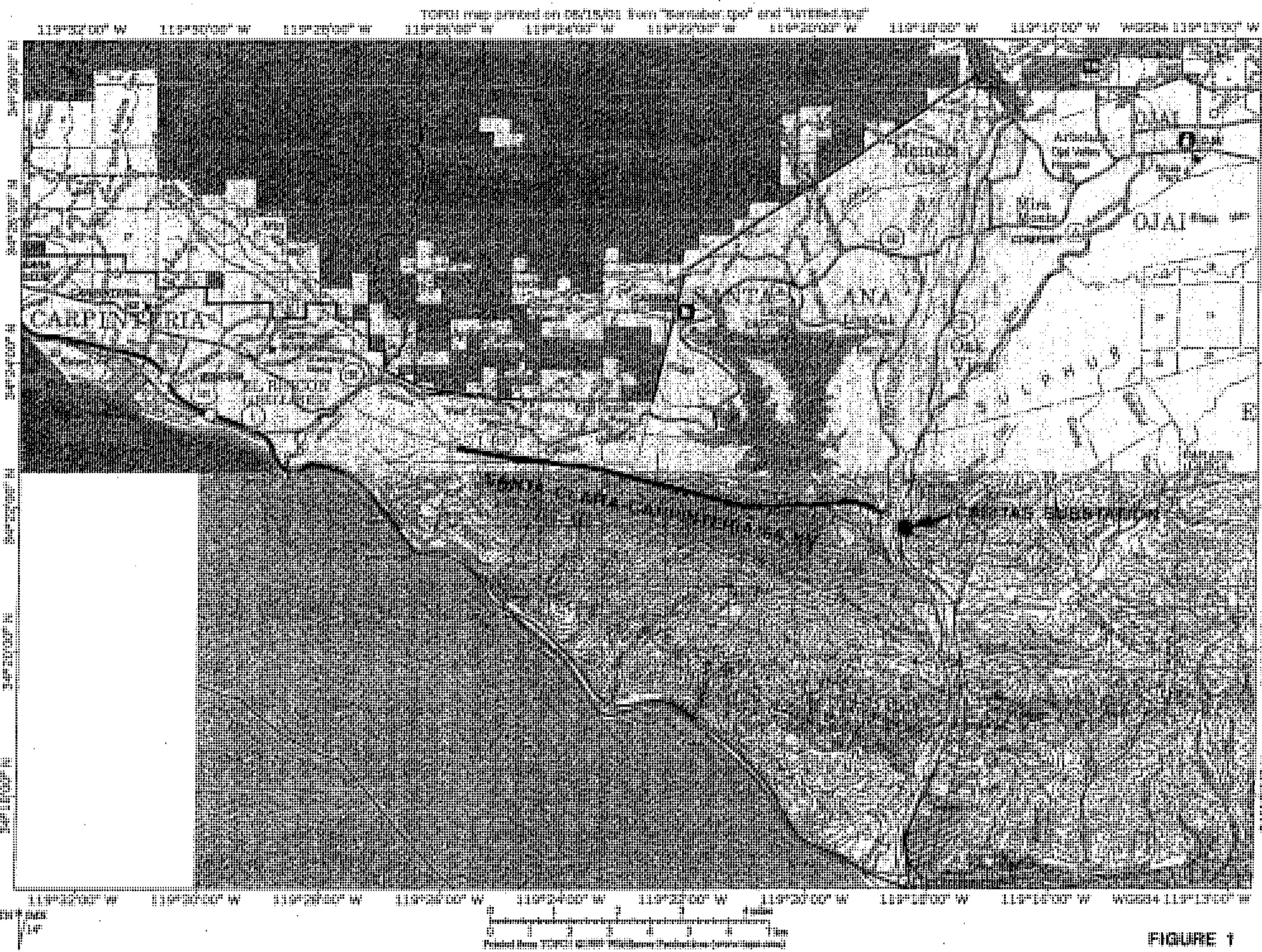
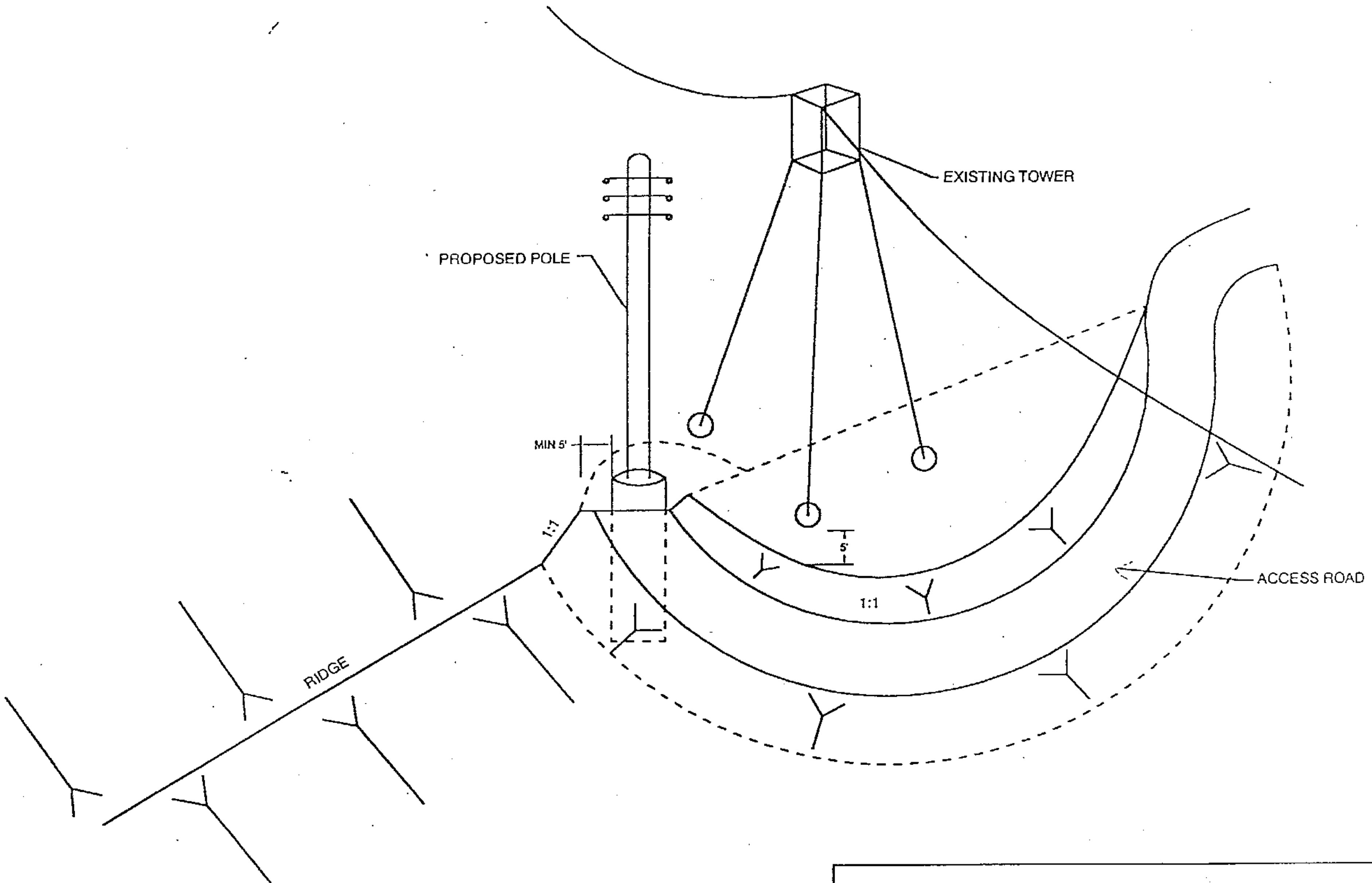
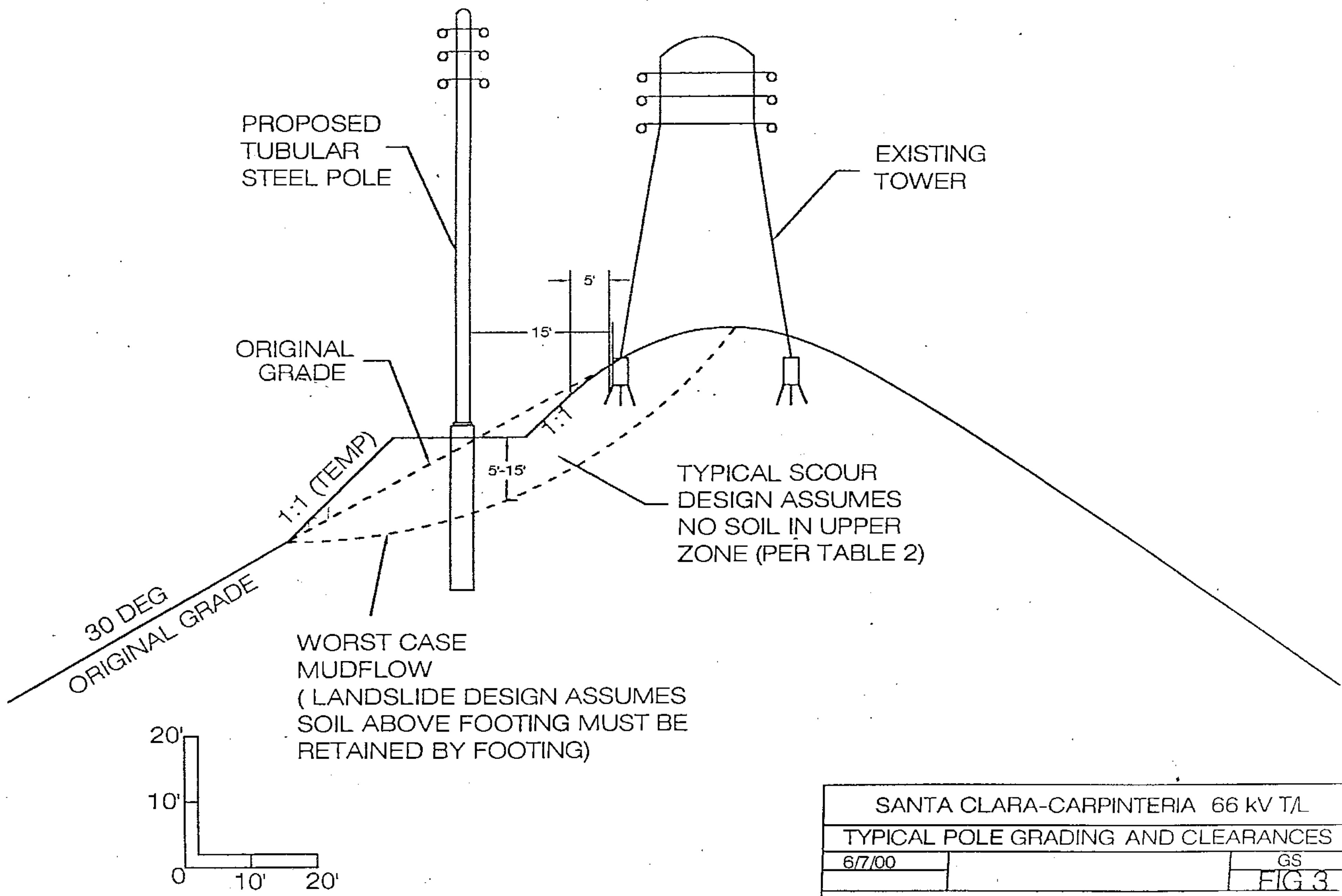


FIGURE 1

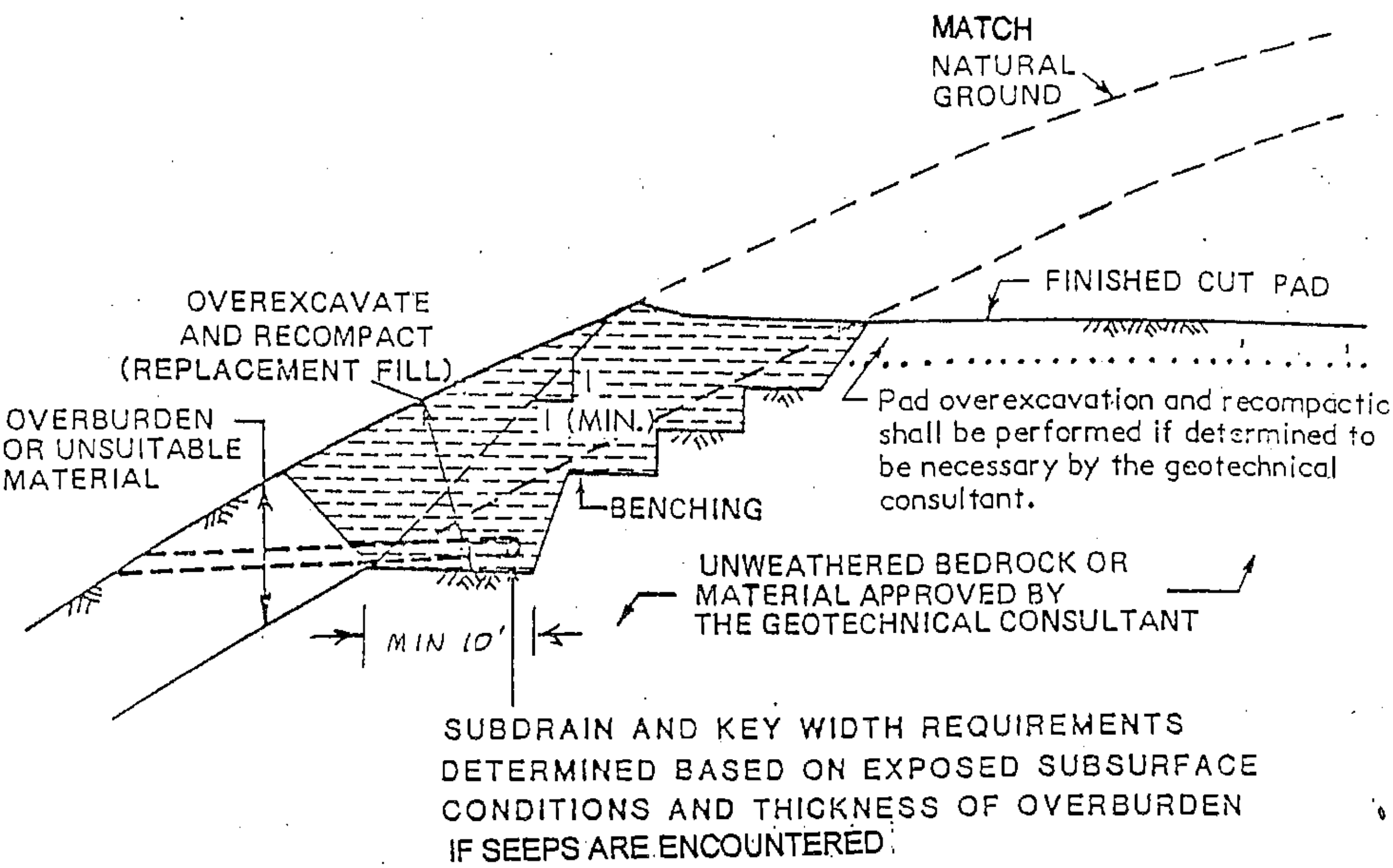


SANTA CLARA -CARPINTERIA		
TEMP ACCESS ROAD GRADING		
6/6/00		GS
		FIG 2



SANTA CLARA-CARPINTERIA 66 kV T/L		
TYPICAL POLE GRADING AND CLEARANCES		
6/7/00		GS
		FIG 3

SIDE HILL
CUT PAD DETAIL

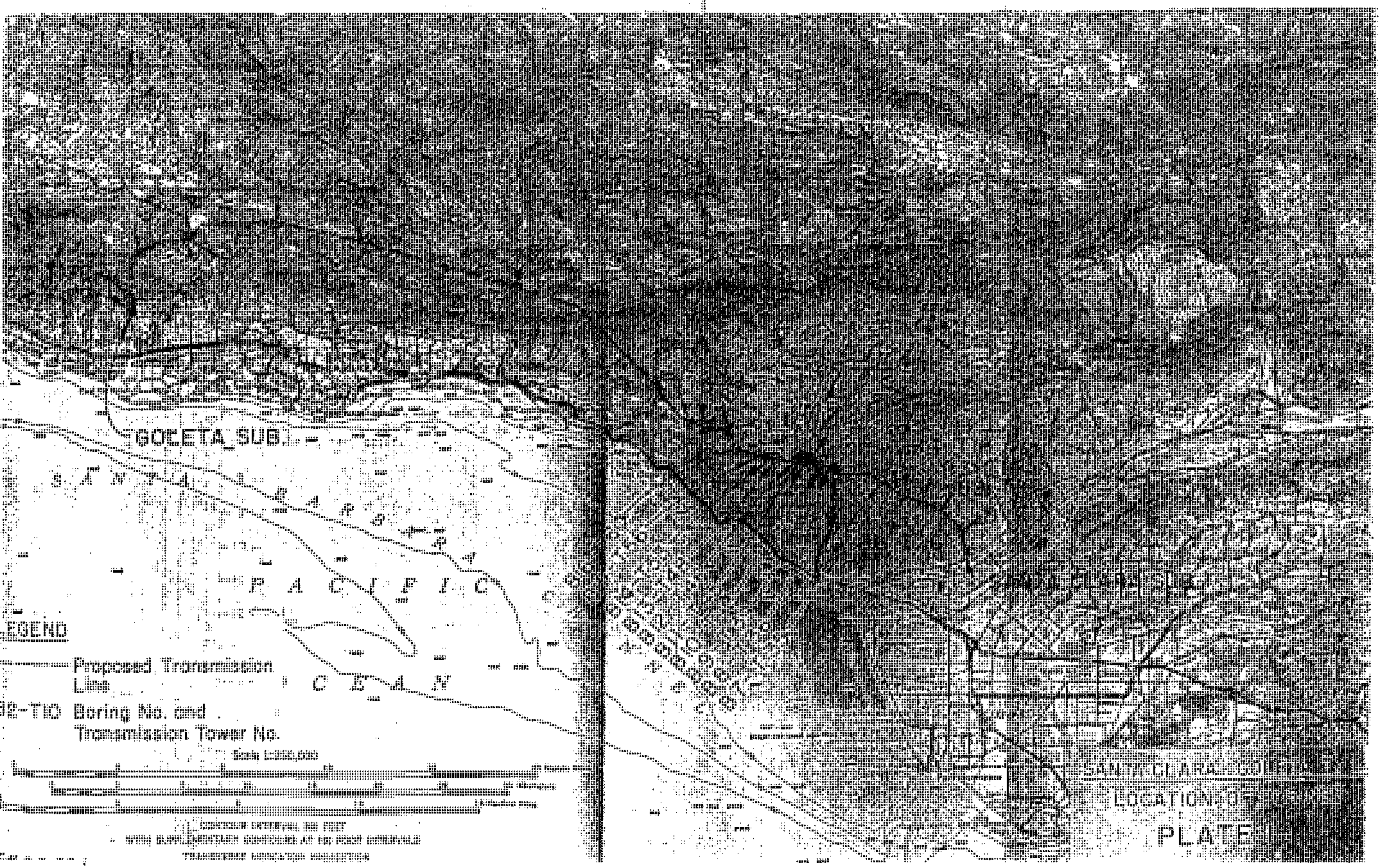


NOTE: All soil compaction should be performed to 90 percent of maximum Density as obtained by ASTM D1557-91 (5-layer) method of compaction.

FIGURE 4

APPENDIX

REFERENCED LOGS OF BORING


GOLETA SUB.
SANTA BARBARA
PACIFIC OCEAN
SANTA CLARA SUB.
LEGEND
Proposed Transmission Line
Boring No. and Transmission Tower No.
SANTA CLARA - GOLETA
LOCATION OF
PLATE 1

LOG OF BORING

SOUTHERN CALIFORNIA EDISON COMPANY

ENGINEERING DEPARTMENT

HOLE NO. 10 DATE DRILLED 6-20-66

PROJECT Santa Clara-Goleta 220KVT/L SHEET 1 OF 1

LOCATION At construction site no. 43 EXPLORATION METHOD Bucket Rig

GROUND ELEVATION SIZE OF HOLE 18-inch diameter

DEPTH TO WATER TABLE * CONTRACTOR Helton Drilling Co.

DEPTH TO TOP OF SOLID ROCK - DRILLER Call-Lyons

INSPECTOR Wallace-Merritt-Bardin

UNDISTURBED SAMPLES				SAMPLES			DEPTH	
WEIGHT POUNDS	DROP INCHES	INCHES DRIVEN	TOTAL BLOWS	UNDIST.	BAG	JAR	FEET	FIELD DESCRIPTION
							0	<u>River deposits</u>,
							1	Fine sandy silt, brown, dry, stiff, approximately 25 percent rounded gravel and cobbles to 5 inches.
							2	
							3	Gravelly sand, compact, tan, dry, about 30 percent rounded cobbles and gravel to to 10 inches.
							4	
							5	Bottom
							6	Hole caves to 30 inches due to large cobbles.
							7	
							8	
							9	
							10	
							11	
							12	
							13	
							14	
							15	
							16	
							17	
							18	
							19	

REMARKS: * Ground water fluctuates from below 25 feet to as high as ground level.

LOG OF BORING

SOUTHERN CALIFORNIA EDISON COMPANY — ENGINEERING DEPARTMENT

HOLE NO. 11 DATE DRILLED 6-20-66 SHEET 1 OF 2

PROJECT Santa Clara-Goleta 220KV T/L EXPLORATION METHOD Bucket-Rig

LOCATION 150' N of construction site No. 45 SIZE OF HOLE 18-inch diameter

GROUND ELEVATION CONTRACTOR Helton Drilling Co.

DEPTH TO WATER TABLE - DRILLER Call-Lyons

DEPTH TO TOP OF SOLID ROCK - INSPECTOR Wallace-Bardin

UNDISTURBED SAMPLES: WEIGHT POUNDS	DROP INCHES	INCHES DRIVEN	TOTAL BLOWS	SAMPLES: UNDIST.	BAG	JAR	*	DEPTH FEET	FIELD DESCRIPTION
							7	0	Weathered shale, brown, dry, stiff,
							15	1	excavates as angular sand and gravel
							26		sized fragments which can easily be
							34		broken by hand.
								2	Damp
								3	
								4	
								5	Hard
							24		
							56	6	
								7	
								8	
								9	
							19	10	
							63	11	
								12	
								13	Gray
								14	
								15	Soft, wet, plastic.
							7		
							14	16	
							19		
							23	17	Streaks of brown clay
Ring Sampler								18	
1800	12	18	17					19	Hard
								20	

REMARKS: * Standard penetration test.

LOG OF BORING

SOUTHERN CALIFORNIA EDISON COMPANY
ENGINEERING DEPARTMENT

HOLE NO. 11 DATE DRILLED 6-20-66 SHEET 2 OF 2

PROJECT Santa Clara-Goleta 220KV T/L EXPLORATION METHOD Bucket-Rig

LOCATION 150' N of construction site No. 45 SIZE OF HOLE 18-inch diameter

GROUND ELEVATION ________ CONTRACTOR Helton Drilling Co.

DEPTH TO WATER TABLE - DRILLER Call-Lyons

DEPTH TO TOP OF SOLID ROCK - INSPECTOR Wallace-Bardin -

UNDISTURBED SAMPLES				SAMPLES				DEPTH	FIELD DESCRIPTION
WEIGHT POUNDS	DROP INCHES	INCHES DRIVEN	TOTAL BLOWS	UNDIST.	BAG	JAR	*	FEET	
							26 60	20	Weathered shale, gray, wet, very stiff, excavates as angular sand and gravel sized fragments which can easily be broken by hand.
								21	
								22	
								23	
								24	
							7 28 54	25	
								26	No caving, easy drilling.
								27	Bottom
								28	
								29	
								30	
								31	
								32	
								33	
								34	
								35	
								36	
								37	
								38	
								39	
								40	

LOG OF BORING

SOUTHERN CALIFORNIA EDISON COMPANY

ENGINEERING DEPARTMENT

HOLE NO. 12 DATE DRILLED 6-20-66 SHEET 2 OF 2

PROJECT Santa Clara-Goleta 220KV T/L EXPLORATION METHOD Bucket-Rig

LOCATION 200' N of construction site No. 46 SIZE OF HOLE 18-inch diameter

GROUND ELEVATION CONTRACTOR Helton Drilling Co.

DEPTH TO WATER TABLE - DRILLER Call-Lyons

DEPTH TO TOP OF SOLID ROCK 25' INSPECTOR Wallace-Bardin

UNDISTURBED SAMPLES				SAMPLES			DEPTH FEET	FIELD DESCRIPTION
WEIGHT POUNDS	DROP INCHES	INCHES DRIVEN	TOTAL BLOWS	UNDIST.	BAG	JAR		
							20	Weathered shale.
							21	Red-brown, slightly damp, hard, excavates as angular fragments which can be broken by hand.
							22	
							23	
							24	Hard drilling.
							25	Bottom
							26	Easy drilling from 0-24 feet. No caving.
							27	
							28	
							29	
							30	
							31	
							32	
							33	
							34	
							35	
							36	
							37	
							38	
							39	

REMARKS:

LOG OF BORING

SOUTHERN CALIFORNIA EDISON COMPANY — ENGINEERING DEPARTMENT

HOLE NO. 13 DATE DRILLED 6-20-66 SHEET 1 OF 2

PROJECT Santa Clara-Goleta 220KV T/L EXPLORATION METHOD Bucket-Rig

LOCATION 75' W of construction site No. 49 SIZE OF HOLE 18-inch diameter

GROUND ELEVATION CONTRACTOR Helton Drilling Co.

DEPTH TO WATER TABLE - DRILLER Call-Lyon

DEPTH TO TOP OF SOLID ROCK 23 INSPECTOR Wallace-Bardin

UNDISTURBED SAMPLES: WEIGHT POUNDS	DROP INCHES	INCHES DRIVEN	TOTAL BLOWS	SAMPLES: UNDIST.	BAG	JAR	#	DEPTH FEET	FIELD DESCRIPTION
						↕ (0–2)	5	0	Highly weathered shale, reddish
							13	1	brown, damp, stiff.
							25		
							37	2	
								3	[illegible] not penetrate
								4	[illegible]
Ring Sampler									[illegible] easy drilling
1800	12	18	8	↕ (5–7)				5	
								6	Weathered sand stone, reddish-brown, slightly damp, excavates as fine to
								7	medium sand, dense
								8	
								9	
						↕ (10–11.5)	15	10	
							40	11	Weathered shale, reddish brown, hard slightly damp, excavates as angular sand and gravel size fragments ~~which~~
							75		
								12	may be broken by hand with some difficulty.
								13	
								14	
						↕	50	15	
								16	
								17	
								18	Thin layer green sandy shale
								19	
								20	

LOG OF BORING

SOUTHERN CALIFORNIA EDISON COMPANY — ENGINEERING DEPARTMENT

HOLE NO. 13 DATE DRILLED 6-20-66 SHEET 2 OF 2

PROJECT Santa Clara-Galeta 220KV T/L EXPLORATION METHOD Bucket-Rig

LOCATION 75' W at construction site No. 49 SIZE OF HOLE 18-inch diameter

GROUND ELEVATION CONTRACTOR Helton Drilling Co.

DEPTH TO WATER TABLE - DRILLER Call-Lyons

DEPTH TO TOP OF SOLID ROCK 23 INSPECTOR Wallace-Bardin-Merritt

UNDISTURBED SAMPLES				SAMPLES			DEPTH	FIELD DESCRIPTION
WEIGHT POUNDS	DROP INCHES	INCHES DRIVEN	TOTAL BLOWS	UNDIST.	BAG	JAR	FEET	
							20	
								Shale, reddish brown, slightly damp, hard excavates as angular sand and gravel.
							21	
							22	
								Bucket can not penetrate
							23	
								Bottom
							24	No caving, easy drilling.
							25	
							26	
							27	
							28	
							29	
							30	
							31	
							32	
							33	
							34	
							35	
							36	
							37	
							38	
							39	

REMARKS:

LOG OF BORING

SOUTHERN CALIFORNIA EDISON COMPANY — ENGINEERING DEPARTMENT

HOLE NO. 14 DATE DRILLED 6-21-66 SHEET 1 OF 1

PROJECT Santa Clara-Goleta 220KV T/L EXPLORATION METHOD Bucket-Rig

LOCATION At construction site No. 53 SIZE OF HOLE 18-inch diameter

GROUND ELEVATION CONTRACTOR Helton Drilling Co.

DEPTH TO WATER TABLE - DRILLER Call-Lyons

DEPTH TO TOP OF SOLID ROCK 16 INSPECTOR Wallace-Bardin-Merritt

UNDISTURBED SAMPLES				SAMPLES				DEPTH	FIELD DESCRIPTION
WEIGHT POUNDS	DROP INCHES	INCHES DRIVEN	TOTAL BLOWS	UNDIST.	BAG	JAR	#	FEET	
							6	0	Weathered shale, reddish-brown, stiff, dry.
							14	1	
							28		
							37	2	
								3	Sand stone, gray, hard, highly fractured, slightly damp.
								4	Weathered shale, reddish-brown, stiff, damp, highly decomposed, plastic
Split tube								5	
1800	12	24	15					6	
								7	
								8	Thin layer gray sand stone, hard.
								9	
								10	
							7		
							17	11	
							31		
							60	12	
								13	
								14	Sand stone, gray-brown, slightly damp, hard.
								15	
							60		Can not penetrate.
								16	Bottom
								17	Gad used in attempt to break up material. (1 inch in 60 blows)
								18	
								19	
								20	

REMARKS: # Standard penetrometer test.

LOG OF BORING

SOUTHERN CALIFORNIA EDISON COMPANY — ENGINEERING DEPARTMENT

HOLE NO. 15 DATE DRILLED 6-21-66 SHEET 1 OF 2

PROJECT Santa Clara-Goleta 220KV T/L EXPLORATION METHOD Bucket-Rig

LOCATION Construction site No. 56 SIZE OF HOLE 18-inch diameter

GROUND ELEVATION CONTRACTOR Helton Drilling Co.

DEPTH TO WATER TABLE - DRILLER Call-Lyons

DEPTH TO TOP OF SOLID ROCK - INSPECTOR Wallace-Merritt-Bardin

UNDISTURBED SAMPLES: WEIGHT POUNDS	DROP INCHES	INCHES DRIVEN	TOTAL BLOWS	SAMPLES: UNDIST.	BAG	JAR	#	DEPTH FEET	FIELD DESCRIPTION
								0	
							11		Weathered shale,
							23	1	reddish brown, dry, stiff.
							36		
								2	
								3	slightly damp
								4	
							11	5	
							24	6	
							39		
							54	7	
								8	
								9	
								10	Sand stone,
							16		light tan, slightly damp, dense
							31		
							48	11	
							61		
								12	Weathered shale, brown, damp, stiff.
								13	
								14	Sand stone, tan, dense.
								15	
							13		
							29		
							34	16	Weathered shale, brown, damp, very stiff.
							47	17	
								18	Occasional thin layers sand stone.
								19	
								20	

REMARKS: Standard penetration test.

LOG OF BORING

SOUTHERN CALIFORNIA EDISON COMPANY — ENGINEERING DEPARTMENT

HOLE NO. 15 DATE DRILLED 6-21-66 SHEET 2 OF 2
PROJECT Santa Clara-Goleta 220KVT/L EXPLORATION METHOD Bucket-Rig
LOCATION Construction site no. 56 SIZE OF HOLE 18-inch diameter
GROUND ELEVATION CONTRACTOR Helton Drilling Co.
DEPTH TO WATER TABLE - DRILLER Call-Lyons
DEPTH TO TOP OF SOLID ROCK - INSPECTOR Wallace-Merritt-Bardin

UNDISTURBED SAMPLES				SAMPLES				DEPTH	
WEIGHT POUNDS	DROP INCHES	INCHES DRIVEN	TOTAL BLOWS	UNDIST.	BAG	JAR	*	FEET	FIELD DESCRIPTION
								20	Weatherd shale Brown, damp, very stiff, excavates in fragments which are easily broken by hand.
								21	
								22	
								23	
								24	Easy drilling, no caving
								25	Bottom
								26	
								27	
								28	
								29	
								30	
								31	
								32	
								33	
								34	
								35	
								36	
								37	
								38	
								39	

REMARKS: * See sheet 1.

LOG OF BORING

SOUTHERN CALIFORNIA EDISON COMPANY — ENGINEERING DEPARTMENT

HOLE NO. 16 DATE DRILLED 6-21-66 SHEET 1 OF 2

PROJECT Santa Clara-Goleta 220KV T/L EXPLORATION METHOD Bucket-Rig

LOCATION Construction site 60 SIZE OF HOLE 18-inch diameter

GROUND ELEVATION CONTRACTOR Helton Drilling Co.

DEPTH TO WATER TABLE - DRILLER Call-Lyons

DEPTH TO TOP OF SOLID ROCK - INSPECTOR Wallace-Merritt-Bardin

UNDISTURBED SAMPLES: WEIGHT POUNDS	DROP INCHES	INCHES DRIVEN	TOTAL BLOWS	SAMPLES: UNDIST.	BAG	JAR	#	DEPTH FEET	FIELD DESCRIPTION
								0	Weathered shale, Dark brown, dry, stiff.
								1	
Split Tube								2	
								3	Slightly damp
1800	12	24	12					4	
Lost Sample									
							10	5	
							18	6	
							26		
							34	7	
								8	
								9	
							3	10	Damp, soft, plastic.
							5	11	
							7		
							8	12	
							2		
							3	13	
							4		
							8	14	Medium
							17		
								15	
								16	Stiff
							10		
							24	17	
							48		Angular fragments, may be broken by hand.
							80	18	
								19	
								20	

LOG OF BORING

SOUTHERN CALIFORNIA EDISON COMPANY — ENGINEERING DEPARTMENT

HOLE NO. 16 DATE DRILLED 6-21-66 SHEET 2 OF 2
PROJECT Santa Clara-Goleta 220KV T/L EXPLORATION METHOD Bucket-Rig
LOCATION Construction site 60 SIZE OF HOLE 18-inch diameter
GROUND ELEVATION CONTRACTOR Helton Drilling Co.
DEPTH TO WATER TABLE - DRILLER Call-Lyons
DEPTH TO TOP OF SOLID ROCK - INSPECTOR Wallace-Bardin-Merritt

UNDISTURBED SAMPLES				SAMPLES				DEPTH	FIELD DESCRIPTION
WEIGHT POUNDS	DROP INCHES	INCHES DRIVEN	TOTAL BLOWS	UNDIST.	BAG	JAR	*	FEET	
								20	Weathered shale,
								21	Tan, slightly damp, stiff.
								22	Gray, hard.
								23	
							20/60		
								24	Bottom
								25	No caving, easy drilling
								26	
								27	
								28	
								29	
								30	
								31	
								32	
								33	
								34	
								35	
								36	
								37	
								38	
								39	

REMARKS: * See sheet 1

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FOUNDATION DESIGN RECOMMENDATIONS FROM EAST CASITAS PASS TO RINCON ROAD SR-150 EXISTING TOWERS M4T2 TO M9T1 SANTA CLARA-CARPINTERIA 66 KV T/L VENTURA COUNTY, CALIFORNIA

PREPARED BY: SOUTHERN CALIFORNIA EDISON COMPANY
ENGINEERING & TECHNICAL SERVICES
CIVIL/STRUCTURAL/ GEOTECHNICAL GROUP

July 3, 2001

July 3, 2001

Mr. Bill Sasse

Subject: Foundation Design Recommendations
From East Casitas Pass to Rincon Road SR-150
Existing Towers M4T2 TO M9T1
Santa Clara-Carpinteria 66 kV T/L
Ventura County, California

INTRODUCTION

At your request, we are herein submitting results of our field investigation of the soil and geologic conditions at the proposed new pole sites along the subject transmission line. Recommended drilled pier foundation design parameters for use in the "BIPILE" program are listed on the attached tables. The recommendations are based upon a site visit performed during May 23 and 24, 2001; a review of the referenced reports and the local geology.

It is our understanding that the existing lattice towers of Santa Clara-Carpinteria 66 kV T/L and portion of the Santa Clara-Getty-PS 85 66 kV T/L will be replaced by tubular steel poles (TSP) with few exceptions that lattice towers will still be used. The first phase of the study for this subject project was performed during June 2000 which includes the T/L segment between the Santa Clara and the Casitas Substations.

The second phase of the study is starting from west side of the Ventura River opposite to the Casitas Substation (M0T2) and ending at approximately 5 miles west from the Casitas Substations (M4T1). The investigation for Phase 2 was performed and completed in May 2001.

The third phase of the project is starting from south of the East Casitas Pass to Rincon Road which starts from M4T2 to M7T1 along the Santa Clara-Carpinteria 66 kV T/L and continues to M7T2 through M9T1 along the Santa Clara-Getty 66 kV T/L. Section of the phase 3 alignment is depicted on the Figure 1, Site Plan.

Based on the site visit, most poles will be on or near ridge tops. Based on Phase I study for the subject project (Ref. 2), the diameters of the pole footings will approximately range from 56 to 84 inches and the proposed pole heights will be range from 60 to 100 feet.

GEOLOGICAL AND GEOTECHNICAL EVALUATIONS

Geological and geotechnical evaluations consisted of site visit to each proposed pole location was performed on May 23 to 24, 2001 with the presence of Mr. Jim Billingsley, SCE Construction Forces, regional T/L patrol crew, and yourself. Purpose of our visual inspection was to evaluate any visible geotechnical and geological conditions at each pole location along the alignment and to estimate the subsurface soil parameters to aid in the design of the new poles. No additional field and laboratory soil testing were conducted during this study.

Geological Conditions

This portion of southern California is controlled, geologically, by a series of roughly east-west trending faults and folds. The structure displays rather linear ridges composed of alternating sandstones, siltstones and shales. The rock units in this area are generally linear, trending approximately east-west.

This section of the transmission corridor lies west of Lake Casitas and south of East Casitas Pass, which is situated on the western side of the Ventura River and south of Highway 150. Approximately 3 miles of this portion of the line lies within the Miocene-age Rincon Shale. This material is poorly bedded gray clay shale and siltstone. As noted in the field, it is very susceptible to landsliding and soil slumping. In addition, it forms a deep weathered soil. Along this area there are several large landslides noted by previous geologic reports. Immediately west of West Casitas Pass, there is an impressively large landslide which has move northward from the northern edge of the outcrops of the Rincon Shale. This slide is about one mile in length and ½ mile in width. It is an active mass and tends to move, at least in part, each year.

As the corridor continues westerly, it passes into an area underlain by Miocene-age Monterey Formation. This material consists of marine shale units. They are composed of white-weathering soft, fissile to punky clay shale with interbeds of hard siliceous shales and thin limestone beds. Occasionally, there are large concretions up to 2-3 feet in diameter. The western portion of this material shows several small to moderate landslides within the geologic maps. However, these landslides do not appear to have an effect on towers within the transmission corridor.

Continuing toward the west, the corridor crosses into a small section of the Plio-Pleistocene – age Santa Barbara Formation. This unit consists of interbedded, shallow-marine, massive to poorly bedded, slightly consolidated, tan to yellow fossiliferous sandstones and siltstones. The material is generally not prone to landsliding.

The final geologic unit along this portion of the corridor is the Pleistocene-age Casitas Formation. This nonmarine unit is composed of weakly consolidated, massive to poorly bedded, gray to tan cobble-boulder gravels and gray to reddish sand and clay.

Local Structure and Faulting

The major geologic features in this region include the Red Mountain Fault which trends east-west, south of the corridor and the Arroyo Parida Fault which trends east-west, north of the corridor. Intermittently, there are other smaller faults such as the Shepard

Mesa and Rincon Creek faults, which likewise trend roughly east-west. Between each of the larger faults, there are a series of fold axes that also trend east-west. These axes cause the rock to be folded in such a way that dipping beds are somewhat asymmetrical about the axis of the fold. This results in a somewhat unpredictable condition with respect to determine the likelihood of landsliding at a given site.

Local Seismicity

The level of seismic activity associated with these faults is considered low to moderate for southern California. There are no indications of high levels of earthquakes occurring within this region. Seismic factors should not play a significant role in design of the transmission structures within the region.

Landsliding/Slope Instability

Each site along the corridor was inspected for the existence or likelihood of future landsliding. In most cases, there were no indications (except as noted in the site notes) of the existence of landsliding or slope instability. The exceptions included site No's M6T5, M6T6, and M7T1. The area to the west (and away from the proposed location) of M5T1 appears as a shallow soil failure.

Subsurface Soil Conditions

Subsurface soils in the vicinity along the subject alignment typically consist of clayey silt and silty clay with random sand layers, followed by bedrock consisted of sandstones, siltstones, and shales. Surficial cracks were observed during site visit at/near the tower Nos. M4T2 through M5T2, M6T2, M7T3 through M7T5, M8T1, and M8T6 which suggests that the subsurface soils have expansive potential.

As described on the Section, Geological Conditions, cobbles and boulders were also noted during the site visit near the end of the alignment which may cause caving during the drilled pier construction. Casing, drilling mud, or other means to control caving should be made available if the use of water is found to be ineffective. Groundwater is not anticipated within a depth that would affect design.

CONSTRUCTION CONSIDERATIONS

Drilling for Pier Foundation

In most cases, the rock can be drilled using a truck-mounted bucket auger or a relatively powerful large auger-type drill. Difficult drilling is expected if hard sandstone layers are encountered which may require core barrels or special tools such as cutting teeth. Possible locations to expect difficult drilling are believed at existing M8T3 site. Drilling conditions at other poles should not be difficult with large flight augers.

Grading

Grading on steep slopes will be required to provide access for drilling equipment. It is our understanding that the new poles will be also built with helicopter if the slopes are too steep for equipment to reach there.

Temporary cut slopes should be made at slopes no steeper than 1:1. The top of the cut slope should be no closer than five (5) feet from the edge of any existing footing. Temporary fill slopes will be made at the angle of repose of approximately 1:1. These fill slopes will be unstable when saturated. The fill material can turn to mudflow during periods of heavy rainfall. Care must be taken not to place fills above developed areas or areas where mudflows can inundate structures, livestock or producing orchards.

We have prepared idealized sections showing typical grading and setbacks (Figures 2 and 3). These details are designed to protect the existing towers from failure during construction of the new poles. After completion and the existing towers are removed, each site should be re-graded to divert drainage away from the new pole. In addition, all disturbed areas should be restored by filling to match original grade. All fill placed should be benched into the competent native materials and should be properly compacted. A typical side hill benching detail is attached as Figure 4.

During the site visit, running springs on the service road were noted near tower M5T3. It is recommended that culverts, wet crossings, water bars, McCarthy drains and/or other erosion control facilities should be installed to mitigate the roadway erosion.

RECOMMENDATIONS

We have provided ultimate soil design parameters for the foundations on Table 1. The soil parameters in this table represent ultimate values which require the use of appropriate factors of safety for design.

Based on the referenced report and our understanding of the design, landslide load as provided on the last report is not recommended at this study since the assumed landslide load (approximately 30 kips) is negligible compared to the design lateral loading at average 1,500 kips.

To prevent excessive disturbance of the subsurface soils and to utilize them as an additional protection measurement on the slope, without obstructing the drilling of the new footing, we recommend that the existing lattice tower footings to be left in-place after towers are removed.

All sites should be properly graded. Berms and/or swales should be constructed as needed. Positive surface drainage should be provided to prevent water from ponding at the TSP's foundations.

The Geotechnical Group should review printouts of drilled pier computer design to verify compatibility with the above recommendations. If you have any questions or comments regarding this information, please call the undersign at PAX 47795.

H. Gene Hawkins
CEG #952, Consulting Geologist

ZAID AHMAD, P.E.
Lead Engineer
Civil/Structural/Geotechnical Group
Engineering & Technical Services
Southern California Edison Company

s/civil/geotech/mc/2001/santacarpin-III.doc
Attachment

References:

1. Report No. 200
   Santa Clara-Goleta 220 kV Transmission Line
   Soil Investigation
   Prepared by the Engineering Department
   Dated September 1966

2. Foundation Design Recommendations
   Santa Clara-Carpinteria 66 kV T/L
   Santa Clara Substation to Casitas Substation
   Ventura County, California
   Prepared by the Civil/Structural/ Geotechnical Group
   Dated June 29, 2000

3. Foundation Design Recommendations
   Proposed TSP Sites Located within 5 Miles West from Casitas Substation
   Existing Towers M0T2 to M4T1
   Santa Clara-Carpinteria 66 kV T/L
   Ventura County, California
   Dated May 30, 2001

TABLE 1
FOUNDATION DESIGN RECOMMENDATIONS
FROM EAST CASITAS PASS TO RINCON ROAD SR-150
EXISTING TOWERS M4T2 TO M9T1
SANTA CLARA-CARPINTERIA 66 KV T/L
VENTURA COUNTY, CALIFORNIA

	Soil Type A	**Soil Type B**
1.Soil Density (pcf)		
a. Moist	120	120
b. Saturated	132	132
c. Submerged	70	70
2. Ultimate Bearing Capacity (psf)		
a. At surface—moist	5,000	10,000
b. Rate of increase per foot—moist	1,300	5000
c. Rate of increase per foot—submerged	800	3000
d. Maximum not to exceed	30,000	50,000
3. Ultimate Moist Skin Friction at Depth of 10 Feet (psf)	1,000	1,000
4. Estimated Depth to Groundwater (feet)	>100	>100
5. Friction Angle of Soil (degree)	27	30
6. Ratio of Submerged to Moist Skin Friction	0.55	0.55
7. Depth to Hard Bedrock (feet)	>50	>50
8. Passive Pressure Multiplier Factor (PPM)	3.0	3.0
9. Ultimate Lateral Soil Pressure at a Depth of 10 Feet (psf)	9,500	15,000
10. Side Hill Slope	Varies (See Table 2)	Varies (See Table 2)
11. Minimum Length (feet)	30	30
12. Additional Drilled Pier Length to Add into Final Design	Varies (See Table 2)	Varies (See Table 2)

NOTES:

1. Minor to moderate caving should be expected during the drilling of the pier foundation excavations. The use of water during drilling of pier excavations should aid in control of caving. Casing, drilling mud, or other means to control caving should be made available if the use of water is found to be ineffective.

2. The soil parameters in this table represent ultimate values which require the use of appropriate factors of safety for design.

Table-2 Special Considerations

Santa Clara-Carpinteria 66 kV T/L

Existing Location	SOIL TYPE	SIDE HILL SLOPE (DEGREES)	ADDITIONAL LENGTH TO ADD IN FINAL DESIGN [2] (FEET)	REMARKS AND SPECIAL CONSTRUCTION CONDITIONS
M4T2	A	-	10	Located on a 18° slope
M4T3	A	20	-	No access
M4T4	A	15	-	No access
M4T5	A	-	-	Existing pad will be lowered
M5T1	A	-	10	Slide at west side; new pole will on a future cut pad at the east (Casitas Sub) side.
M5T2	A	20	-	Adjacent to slide; no access
M5T3	B	20	-	No access; spring uphill of the tower (water in service roadway)
M5T4	B	-	5	Located at the bottom of the canyon in a heavy vegetated area.
M6T1	B	35	(use 35° or add 25 feet pile length to final result)	Not accessible; on a steep (35°) slope
M6T2	B	35	(use 35° or add 25 feet pile length to final result)	on a steep (35°) slope
M6T3	B	35	(use 35° or add 25 feet pile length to final result)	on a steep (35°) slope
M6T4	A	-	-	Pole will be located at the east (Casitas Sub) side
M6T5	A	-	10	Slide at north side
M6T6	A	20	-	Slide at west side
M7T1	A	10	-	Slide at north side
M7T2	B	-	5	On a gentle slope
M7T3	A	-	5	Neglect upper 5 feet of surficial disturbed soils
M7T4	A	10	-	
M7T5	A	18	-	
M7T6	B	27	-	
M8T1	A	15	-	
M8T2	B	20	-	
M8T3	B	15	-	Hard drilling should be anticipated
M8T4	B	45	(use 45° or add 25 feet pile length to final result)	on a steep (45°) slope
M8T5	B	20	-	
M8T6	A	28	-	
M9T1	A	-	-	Pole will be located at the east (Casitas Sub) side

Note:

1. Effects of adjoining side hill slope are compensated by either using the actual slopes (column 3) or adding an additional pile length (column 4) to final results.
2. Column 4 denotes a recommended additional length for potential scour and/or other considerations.
3. The new pole(s)/tower(s) will be constructed near the same existing tower location(s).
4. All existing tower footings are recommended be left in-place, if feasible.

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FOUNDATION DESIGN RECOMMENDATIONS (PHASE IV) FROM EAST CASITAS PASS TO CARPINTERIA SUBSTATION EXISTING TOWERS M13T2 TO CARPINTERIA SUBSTATION SANTA CLARA-CARPINTERIA 66 KV T/L VENTURA AND SANTA BARBARA COUNTIES, CALIFORNIA

PREPARED BY: SOUTHERN CALIFORNIA EDISON COMPANY
ENGINEERING & TECHNICAL SERVICES
CIVIL/STRUCTURAL/ GEOTECHNICAL GROUP

December 20, 2001

December 20, 2001

Mr. Bill Sasse

Subject: Foundation Design Recommendations (Phase IV)
From East Casitas Pass to Carpinteria Substation
Existing Towers M13T2 to Carpinteria Substation
Santa Clara-Carpinteria 66 kV T/L
Ventura and Santa Barbara Counties, California

INTRODUCTION

At your request, we are herein submitting results of our field investigation of the soil and geologic conditions at the proposed new pole sites along the subject transmission line. Recommended drilled pier foundation design parameters for use in the "BIPILE" program are listed on the attached tables. The recommendations are based upon a site visit performed during September 26 and 27; and October 4, 2001; a review of the referenced reports and the local geology.

It is our understanding that the existing lattice towers of Santa Clara-Carpinteria 66 kV T/L and portion of the Santa Clara-Getty-PS 85 66 kV T/L will be replaced by tubular steel poles (TSP) with few exceptions that lattice towers will still be used.

Phase 1 of the study for this subject project was performed during June 2000 which includes the T/L segment between the Santa Clara and the Casitas Substations. Phase 2 portion of the study was started from west side of the Ventura River opposite to the Casitas Substation (M0T2) and ended at approximately 5 miles west from the Casitas Substations (M4T1). The investigation for Phase 2 was performed and completed in May 2001. The third phase of the project was started from south of the East Casitas Pass to Rincon Road which starts from tower M4T2 to M7T1 along the Santa Clara-Carpinteria 66 kV T/L and continues to M7T2 through M9T1 along the Santa Clara-Getty 66 kV T/L.

This report covers the fourth phase of the project which starts from about ¼ mile south of East Casitas Pass (M13T2) and runs along the existing Goleta-Santa Clara 220 kV Nos. 1 and 2 till tower No. M6T4 for about 3.5 miles. After M6T4, the T/L goes along the Santa Clara-Ojai-Santa Barbara 66 kV T/L in the northwest direction for about 5.3 miles where it takes a right angle bend to the southwest toward the terminus of the project at Carpinteria Substation (existing towers M7T1 to Carpinteria Substation). Total length of the new T/L in phase 4 is approximately 11 miles. Section of the phase 4 alignment is depicted on the Figure 1, Site Map.

Based on the site visit, most of the proposed new poles will be located on or near the existing slopes or at ridge tops. Based on Phase I study for the subject project (Ref. 2), the diameters of the pole footings will approximately range from 56 to 84 inches and the proposed pole heights will range from 60 to 100 feet.

GEOLOGICAL AND GEOTECHNICAL EVALUATIONS

Geological and geotechnical evaluations consisted of site visits to each proposed pole location and were performed on September 26, 27 and October 4, 2001. Present during the job walk were Mr. Jim Billingsley, SCE Construction Forces, regional T/L patrol crew, yourself, and Zaid Ahamd, Gene Hawkins, Ming Chi from SCE Geotechnical Group. Purpose of our visual inspection was to evaluate any visible geotechnical and geological conditions at each pole location along the alignment and to estimate the subsurface soil parameters to aid in the design of the new poles. No additional field and laboratory soil testing were conducted during this study. Recommendations contained in this report were based on our visual observations of the site conditions, review of local geology and pertinent geotechnical and geological information contained in our files.

Geological Conditions

This portion of southern California is controlled, geologically, by a series of east-west trending faults and folds. The structure displays rather linear ridges composed of alternating sandstones, siltstones and shales.

This section of the transmission corridor lies about ¼ mile south of the East Casitas Pass area (Hwy 150 and the 'chlorinator station'). The terminus of the line is at the Carpinteria Substation. Total distance for this section is on the order of 11 miles.

The tower sites within the first 6 ½ miles (from East Casitas Pass to west of Gobernador Creek, Santa Barbara County) are situated in the Oligocene-age Sespe Formation. This material is dominantly maroon to reddish-brown silty shales with interbedded red sandstone. Locally the Sespe formation has conglomerate layers and lighter-colored sandstones. Drilling in this material should vary easy to moderately difficult. At many of the sites where this material is present, there are indications of expansive soils on the order of 3-4 feet deep.

The formation is relatively free of landsliding. However, at West Casitas Pass (Hwy 150), the corridor passes along the northern edge of a major landslide complex. The corridor passes to the north of the highway and away from the active landslide. Therefore, the slide should not impact the transmission corridor.

The transmission corridor next crosses into the Eocene-age Coldwater Sandstone. This sandstone is a hard, tan, bedded to massive material. Locally, it has thin beds of siltstone and shale. Drilling (esp. M10T6 to M11T2) in this material should be hard to difficult. The formation is relatively free of landslides. The corridor crosses this material for less than 1 mile.

After leaving the Coldwater Sandstone, the material again crosses into the Sespe Formation. The corridor trends northwest for about 1-½ miles where it takes a right angle bend to the southwest. The total length of this section within the Sespe formation is about two miles. No landslides were noted within this section of the corridor.

The corridor once again crosses into the Coldwater Sandstone for about ¼ mile and then into the Sespe Formation once again for about ¼ mile. When the corridor leaves this material, it crosses into younger alluvial deposits composed of unconsolidated floodplain materials of silt, sand, and gravel. Drilling within this material should be easy to moderate, depending on the size of cobbles encountered.

Local Structure and Faulting

The major geologic features in this region include the Arroyo Parida Fault which trends east-west, and crosses the corridor and the Shepard Mesa, Rincon Creek and Carpinteria Faults which trends east-west, and lie south of the corridor. Intermittently, there are other smaller faults, which likewise trend roughly east-west. Between each of the larger faults, there are a series of fold axes that also trend east-west. These axes cause the rock to be folded in such a way that dipping beds are somewhat asymmetrical about the axis of the fold. This results in a somewhat unpredictable condition with respect to determine the likelihood of landsliding at a given site.

Local Seismicity

The level of seismic activity associated with these faults is considered low to moderate for southern California. There are no indications of high levels of earthquakes occurring within this region. Seismic factors should not play a significant role in design of the transmission structures within the region.

Landsliding/Slope Instability

Each site along the corridor was inspected for the existence or likelihood of future landsliding. In most of the sites, there were no indications of the existence of landsliding or slope instability. However, between towers M13T4 and M13T5, there is an area of active soil slumping. This area should be monitored to insure that it does not encroach near the towers.

Subsurface Soil Conditions

Subsurface soils in the vicinity along the subject T/L alignment typically consist of clayey silt and silty clay with random sand layers, followed by bedrock consisted of sandstones, siltstones, and shales. Surficial cracks were observed during site visit at/near the tower which suggests that the subsurface soils have expansive potential.

Cobbles and boulders were also noted during the site visit at some new pole locations of the alignment which may cause caving during the drilled pier construction. Groundwater is not anticipated within a depth that would affect design.

CONSTRUCTION CONSIDERATIONS

Drilling for Pier Foundation

In most cases, the rock can be drilled using a truck-mounted bucket auger or a relatively powerful large auger-type drill. Difficult drilling is expected if hard sandstone layers are encountered which may require core barrels or special tools such as cutting teeth. As a minimum, possible locations to expect difficult drilling are believed at existing M10T6 to M11T2 sites.

At areas with the presence of cobbles and boulders, severe caving should be anticipated which could obstruct the construction of drilled pier foundations. Cobbles, boulders, and any loose soils should be removed from the bottom of the drilled hole prior to pouring concrete. For drilled pier foundations, the use of water (presoaking) and/or adequate size of drilling auger to remove oversized materials during the drilling may aid in the control of caving. Drilling mud (the slurry method), casing, or other means to control caving will be required if water is found ineffective. Alternative foundation recommendations, such as rock anchor and/or block footings, can be provided upon requested.

Drilling conditions at other poles should not be difficult with large flight augers.

Grading

Grading on steep slopes will be required to provide access for drilling equipment. It is our understanding that the new poles could be installed with helicopter if the slopes are too steep for equipment to reach there.

Temporary cut slopes should be made at slopes no steeper than 1:1. The top of the cut slope should be no closer than five (5) feet from the edge of any existing footing. Temporary fill slopes will be made at the angle of repose of approximately 1:1. These fill slopes will be unstable when saturated. The fill material can turn to mudflow during periods of heavy rainfall. Care must be taken not to place fills above developed areas or areas where mudflows can inundate structures, livestock or producing orchards.

We have prepared idealized sections showing typical grading and setbacks (Figures 2 and 3). These details are designed to protect the existing towers from failure during construction of the new poles. Each tower/TSP site should be re-graded to divert drainage away from the new pole. In addition, surficial drainage at all disturbed areas should be restored by filling to match original grade. All fill placed should be benched into the competent native materials and should be properly compacted. A typical side hill benching detail is attached as Figure 4.

RECOMMENDATIONS

Drilled pier foundation should be constructed in accordance with SCE's Construction Specification 3.2T, Drilled Pier Foundations. Recommended drilled pier foundation design parameters for use in SCE's "BIPILE" computer program are presented in Table 1. These parameters represent ultimate soil values which require the use of appropriate factors of safety.

As aforementioned, most of the towers and poles will be located on sloping ground and/or close to side hill slopes. Therefore, we recommend "Side Hill Slope" or "Scour Depth" to be used in the BIPILE computer program as shown on the attached Table-2 "Special Considerations".

To prevent excessive disturbance of the subsurface soils and to utilize them as an additional protection measurement on the slope, without obstructing the drilling of the new footing, we recommend that the existing lattice tower footings to be left in-place after towers are removed.

All sites should be properly graded. Berms and/or swales should be constructed as needed. Positive surface drainage should be provided to prevent water from ponding at the TSP's foundations.

The Geotechnical Group should review printouts of drilled pier computer design to verify compatibility with the above recommendations. If you have any questions or comments regarding this information, please call the undersign at PAX 47795.

H. Gene Hawkins
CEG #952, Consulting Geologist

ZAID AHMAD, P.E.
Lead Engineer
Civil/Structural/Geotechnical Group
Engineering & Technical Services
Southern California Edison Company

s/civil/geotech/mc/2001/SantaCarpin-IV.doc
Attachment

References:

1. Report No. 200
   Santa Clara-Goleta 220 kV Transmission Line
   Soil Investigation
   Prepared by the Engineering Department
   Dated September 1966

2. Foundation Design Recommendations (Phase 1)
   Santa Clara-Carpinteria 66 kV T/L
   Santa Clara Substation to Casitas Substation
   Ventura County, California
   Prepared by the Civil/Structural/ Geotechnical Group
   Dated June 29, 2000

3. Foundation Design Recommendations (Phase 2)
   Proposed TSP Sites Located within 5 Miles West from Casitas Substation
   Existing Towers M0T2 to M4T1
   Santa Clara-Carpinteria 66 kV T/L
   Ventura County, California
   Dated May 30, 2001

4. Foundation Design Recommendations (Phase 3)
   From East Casitas Pass to Rincon Road SR-150
   Existing Towers M4T2 To M9T1
   Santa Clara-Carpinteria 66 kV T/L
   Ventura County, California
   Dated July 3, 2001

TABLE 1
FOUNDATION DESIGN RECOMMENDATIONS
EXISTING TOWERS M13T2 TO CARPINTERIA SUB
SANTA CLARA-CARPINTERIA 66 KV T/L
VENTURA AND SANTA BARBARA COUNTIES, CALIFORNIA

	Soil Type A	Soil Type B	Soil Type C
1.Soil Density (pcf)			
a. Moist	115	125	120
b. Saturated	120	135	130
c. Submerged	58	73	68
2. Ultimate Bearing Capacity (psf)			
a. At surface—moist	5,000	10,000	7,500
b. Rate of increase per foot—moist	1,300	5000	1,500
c. Rate of increase per foot—submerged	800	3000	1,000
d. Maximum not to exceed	30,000	50,000	40,000
3. Ultimate Moist Skin Friction at Depth of 10 Feet (psf)	1,000	1,000	1,200
4. Estimated Depth to Groundwater (feet)	>100	>100	>100
5. Friction Angle of Soil (degree)	27	33	28
6. Ratio of Submerged to Moist Skin Friction	0.55	0.55	0.60
7. Depth to Hard Bedrock (feet)	>30*	>30*	>30*
8. Passive Pressure Multiplier Factor (PPM)	3.0	4.5	3.5
9. Ultimate Lateral Soil Pressure at a Depth of 10 Feet (psf)	9,500	20,000	15,000
10. Side Hill Slope	Varies (See Table 2)	Varies (See Table 2)	Varies (See Table 2)
11. Minimum Length (feet)	N/A	N/A	N/A
12. Additional Drilled Pier Length to Add into Final Design	Varies (See Table 2)	Varies (See Table 2)	Varies (See Table 2)

NOTES:

1. Minor to moderate caving should be expected during the drilling of the pier foundation excavations. The use of water during drilling of pier excavations should aid in control of caving. Casing, drilling mud, or other means to control caving should be made available if the use of water is found to be ineffective.

2. The soil parameters in this table represent ultimate values which require the use of appropriate factors of safety for design.

3. Hard drilling should be anticipated. Appropriate drilling equipment should be available to drill on hard foundation soils and rocks.

* For computer purpose ONLY, assuming rock is drillable.

Table-2 Special Considerations
M13T2 TO CARPINTERIA SUB
SANTA CLARA-CARPINTERIA 66 KV T/L
VENTURA AND SANTA BARBARA COUNTIES, CALIFORNIA

Existing Location	SOIL TYPE	SIDE HILL SLOPE (DEGREES)	ADDITIONAL LENGTH TO ADD IN FINAL DESIGN [2] (FEET)	REMARKS AND SPECIAL CONSTRUCTION CONDITIONS
M13T2	A	-	5	Crack on surface
M13T3	A	-	5	Crack on surface
M13T4	A	30	-	Adjacent to steep slope.
M13T5	A	-	5	Existing slope will be cut 5 feet down for future pole pad
M13T6	A	-	-	
M13T7	A	-	5	Steep Slope at Casitas Side
M14T1	B	-	-	Pole will be built on a cut pad
M-Frame	A	-	-	May be eliminated
M4T5	A	-	-	Will be moved about 200 feet toward Casitas side on a higher elevation level ground
M4T6	B	30	-	Steep slope on both sides. Need access to pad
M5T1	B	-	5	Pole will be built on a cut pad by lowering slope on Carpinteria side
M5T2	B	-	5	Pole will be built on a pad by leveling the slope on Casitas side
M5T3	B	-	-	
M5T4	B	-	-	
M6T1	C	-	5	Need access road
M6T2	B	-	-	Slope adjacent to existing tower on Carpinteria side will be lowered 5 feet for new pole
M6T3	B	-	-	Slope adjacent to existing tower on Casitas side will be lowered 5 feet for new pole
M6T4	C	-	10	Near washed out area. This site should be monitored regularly.
M7T1	B	-	5	
M7T2	C	15	-	Need access road. May be eliminated.
M7T3	C	-	5	Pole will be at the toe of the slope at Carpinteria Side
M7T4	B	-	10	Need access road. On steep slope.
M7T5	C	-	5	Pole will be on a gentle slope at Carpinteria Side

(Continued)

Table-2 Special Considerations
M13T2 TO CARPINTERIA SUB
SANTA CLARA-CARPINTERIA 66 KV T/L
VENTURA AND SANTA BARBARA COUNTIES, CALIFORNIA

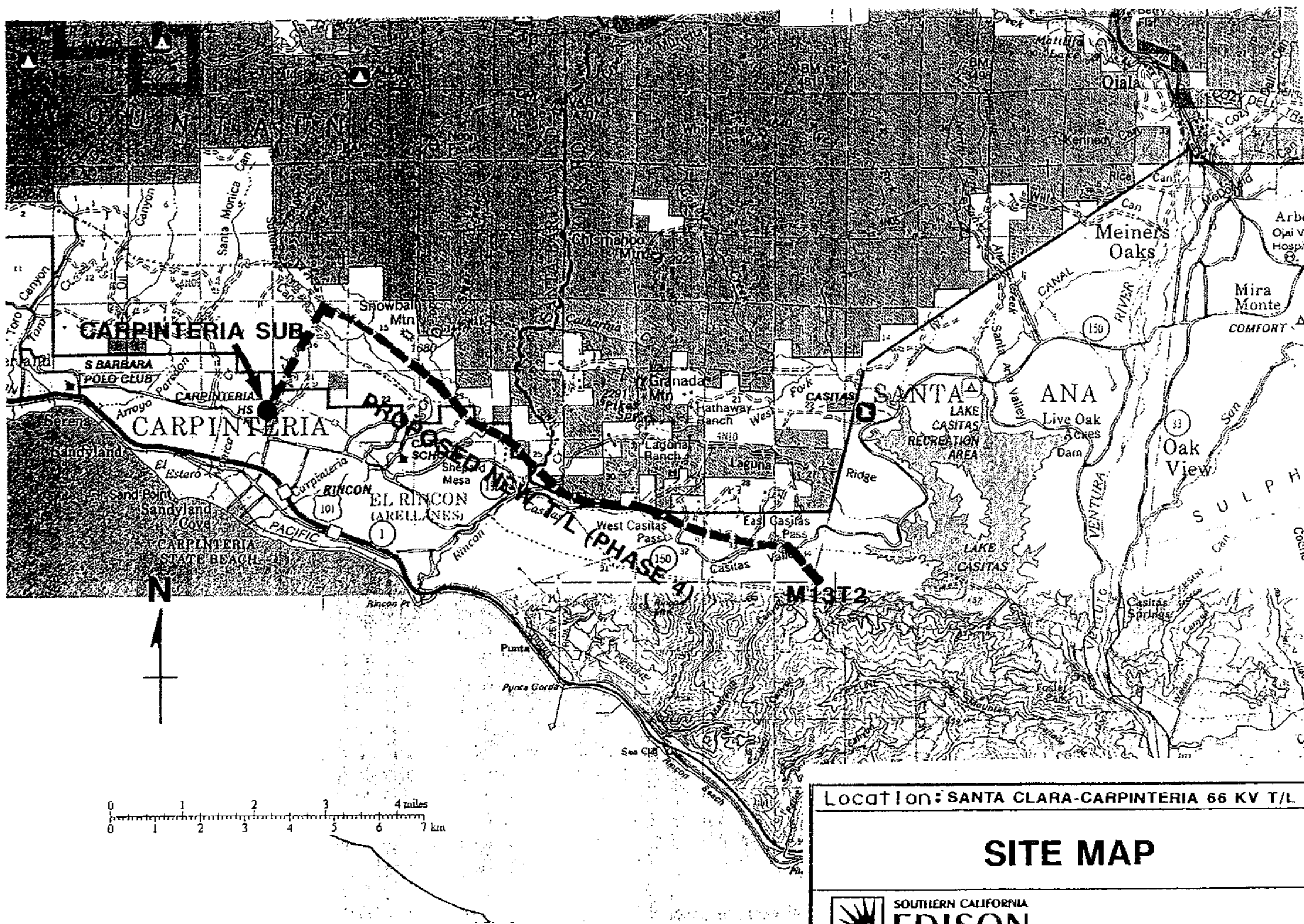
Existing Location	SOIL TYPE	SIDE HILL SLOPE (DEGREES)	ADDITIONAL LENGTH TO ADD IN FINAL DESIGN [2] (FEET)	REMARKS AND SPECIAL CONSTRUCTION CONDITIONS
M17T4	C	-	10	Need access road.
M17T5	C	-	5 feet for M8T2 10 feet for M17T5	
M17T6	C	-	5	Need access road
M18T1	C	-	-	Need access road
M18T2	C	-	5	Need access road. Pole will at Carpinteria side.
M18T3	C	-	5	Pole location was not visited. Values are provided based on assumptions.
M18T4	C	-	5	Need access road
M18T5	C	-	-	
M19T1	B	-	5	Need access road
M19T2	B	-	5	
M19T3	B	-	-	
M19T4	B	-	-	
M19T5	B	-	5	
M10T5	C	-	5	Need access road.
M10T6	B	-	5	Need access road. Soils eroded in the vicinity.
M11T1	B	-	-	
M11T2	B	-	5	Cracks on surface.
M11T3	C	-	5	On a gentle slope. Cracks on surface.
M11T4	B	-	5	On a gentle slope.
M11T5	B	-	5	Need access road. On a gentle slope.
M11T6	B	-	5	Need pad for the new pole. On a gentle slope.
M11T7	C	-	5	Need pad for the new pole. On a gentle slope.
M11T8	C	-	-	
M11T9	B	-	5	Need access road. Located adjacent to slopes.
M12T1	B	-	5	Need access road. Located adjacent to slopes.
M12T2	C	-	-	

(continued)

Table-2 Special Considerations
M13T2 TO CARPINTERIA SUB
SANTA CLARA-CARPINTERIA 66 KV T/L
VENTURA AND SANTA BARBARA COUNTIES, CALIFORNIA

Existing Location	SOIL TYPE	SIDE HILL SLOPE (DEGREES)	ADDITIONAL LENGTH TO ADD IN FINAL DESIGN [2] (FEET)	REMARKS AND SPECIAL CONSTRUCTION CONDITIONS
M12T3	C	-	-	
M12T4	C	-	5	Cracks on surface.
M12T5	C	-	5	Need access road. On a gentle slope.
Proposed TSP's	C	-	5	Cracks on surface.
M1T3	C	-	10	Called M1T6 in job walk. New pole will be located on the road instead of setting on the existing tower location.
M1T4	C	-	5	Called M1T5 in job walk. Need access road. On a gentle slope.
Cons. 42	C	20	-	Called M1T4 in job walk. Located adjacent to slopes
Cons. 43	C	-	10	Called M1T3 in job walk. Located adjacent to slopes.
M1T2	C	-	5	On a gentle slope.
M1T1	B	-	-	Set pole at Casitas side.
M0T6	B	-	5	Called M0T9 in job walk.
M0T5	C	20	-	Called M0T8 in job walk. Pole location was not accessible during site visit. Values are provided based on assumptions.
M0T4A	B	-	5	Called M0T7 in job walk. On a gentle slope.
M0T4	C	-	-	Called M0T6 in job walk.
M0T3	C	-	5	Called M0T5 in job walk. Located adjacent to a storm drain.
M0T2	C	-	-	Called M0T4 in job walk.
M0T1	C	-	-	Called M0T3 in job walk.

Note:
1. Effects of adjoining side hill slope of each pole are compensated by either using the actual slopes (column 3) or using a scour depth (column 4) in computer program.
2. Column 4 denotes a recommended additional length for potential scour and/or other considerations.
3. The new pole(s)/tower(s) will be constructed near the same existing tower location(s).
4. All existing tower footings are recommended be left in-place, if feasible.

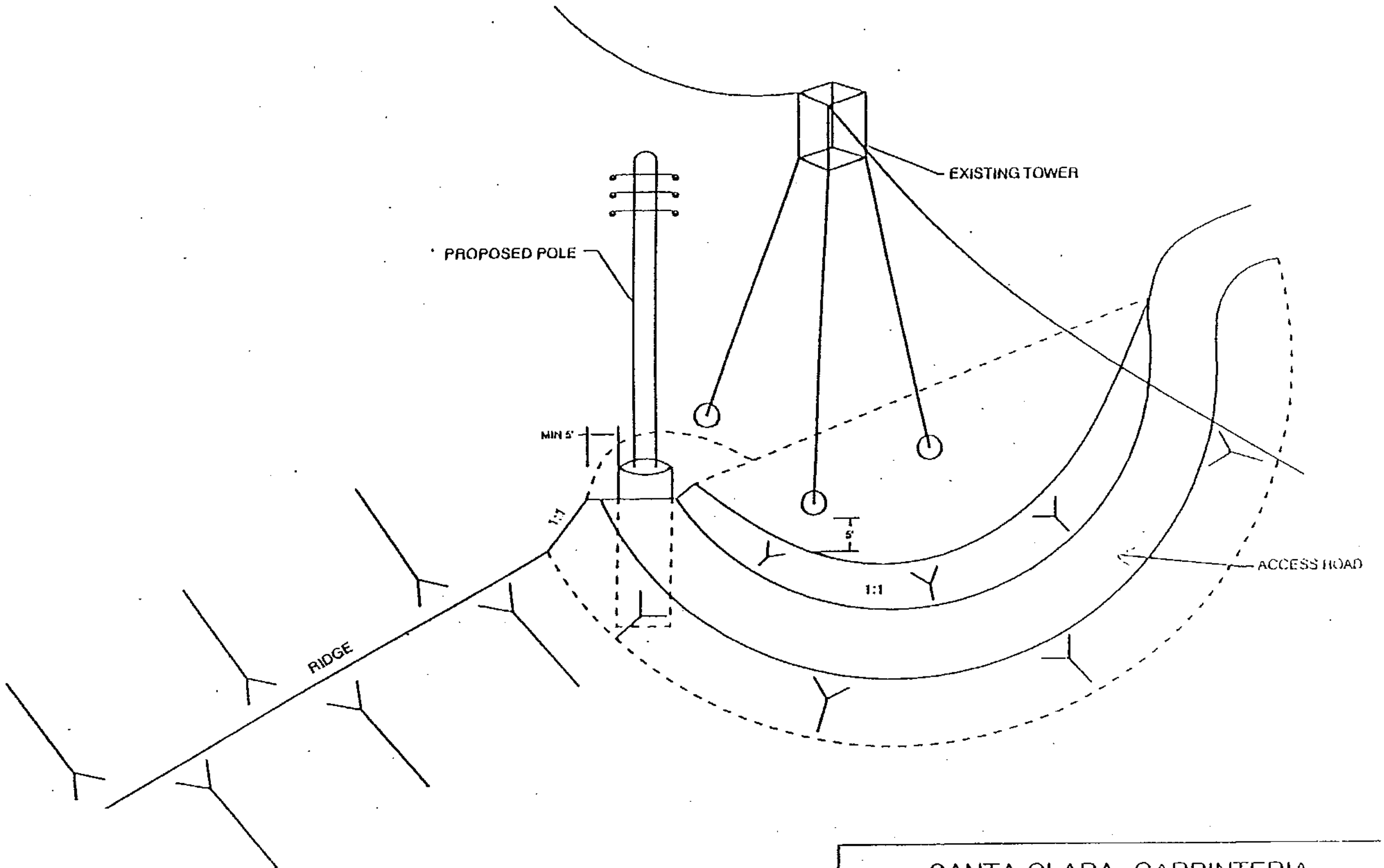


Location: SANTA CLARA-CARPINTERIA 66 KV T/L

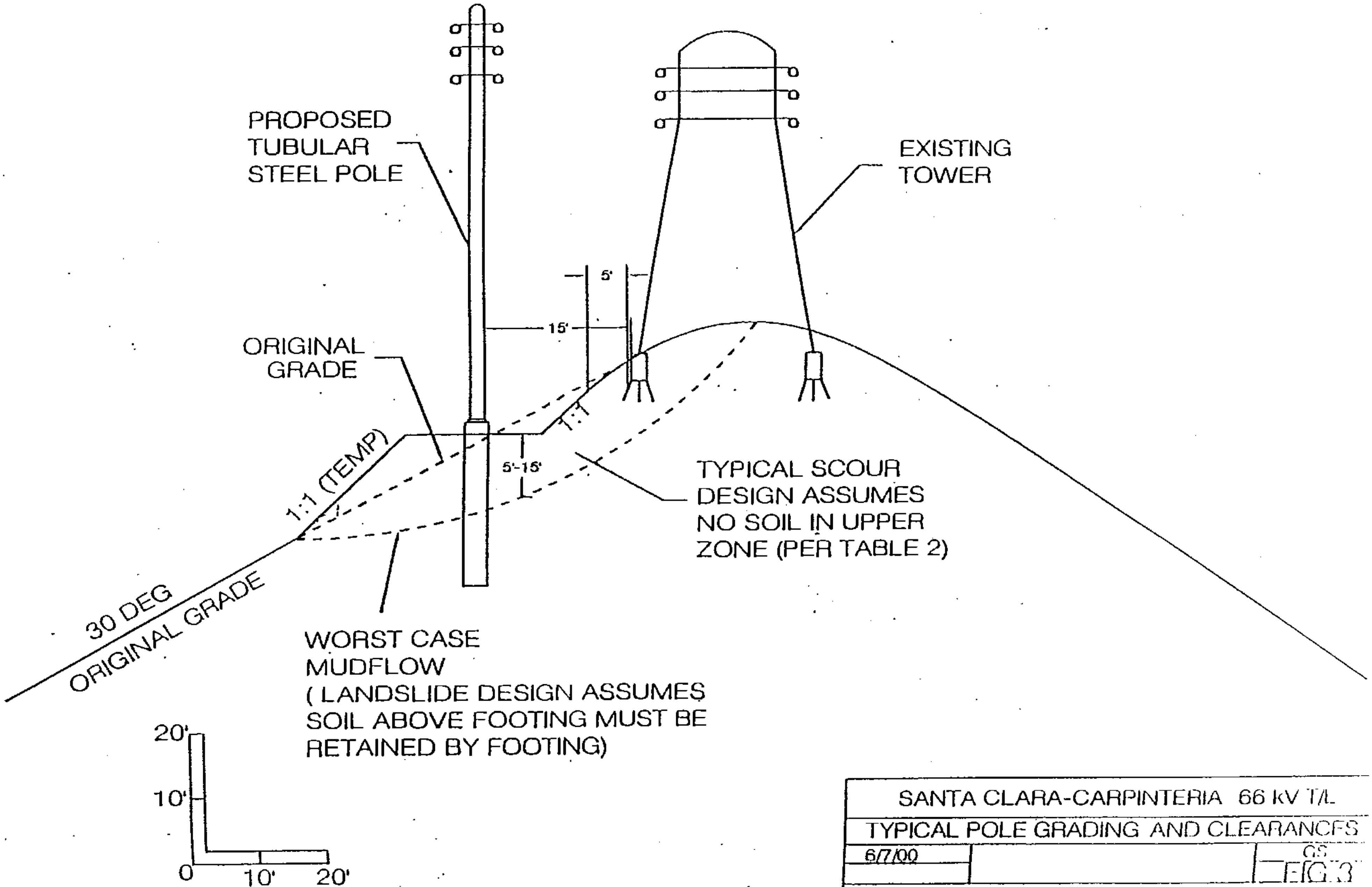
SITE MAP

SOUTHERN CALIFORNIA EDISON An EDISON INTERNATIONAL Company

FIGURE 1



SANTA CLARA -CARPINTERIA		
TEMP ACCESS ROAD GRADING		
6/6/00		GS
		FIG 2



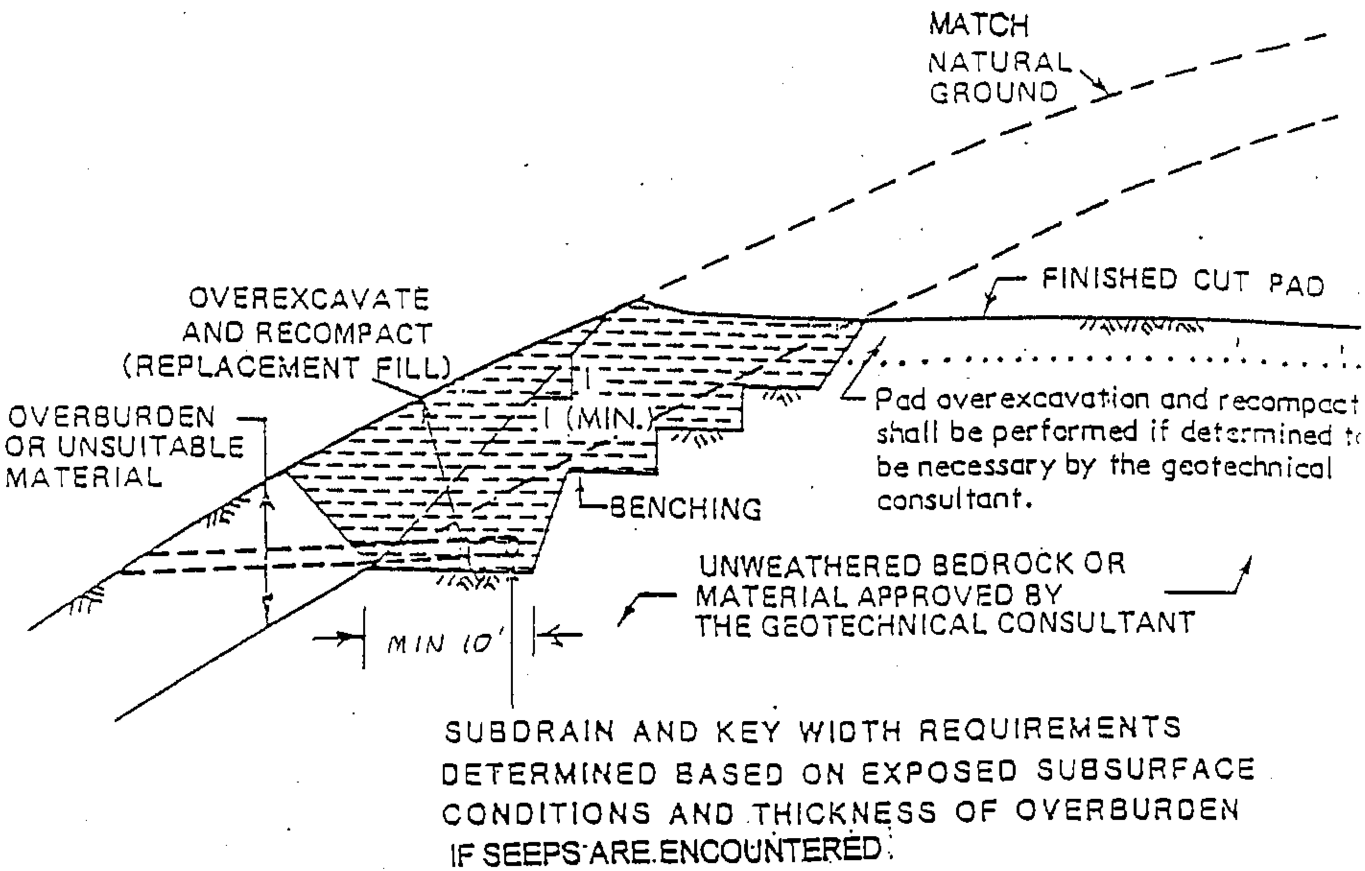
SANTA CLARA-CARPINTERIA 66 kV T/L

TYPICAL POLE GRADING AND CLEARANCES

6/7/00

FIG. 3

SIDE HILL
CUT PAD DETAIL



NOTE: All soil compaction should be performed to 90 percent of maximum Density as obtained by ASTM D1557-91 (5-layer) method of compaction.

Appendix K

Noise Study

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Southern California Edison

Technical Noise Study
Santa Barbara County Reliability Project
Santa Barbara County and Ventura County, California

CA000773.0001

September 10, 2012

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Figures

Appendices

1. Executive Summary

This technical noise study provides an analysis of the potential noise impacts associated with infrastructure upgrades and installation for the Southern California Edison (SCE) Santa Barbara County Reliability Project (Project). The Project also includes equipment upgrades at the Santa Clara, Casitas, and Carpinteria substations.[1] The Project would be located in Santa Barbara County and Ventura County. Santa Clara Substation and Casitas Substation are both located in unincorporated Ventura County. The Carpinteria substation is located at 4952 Foot Hill Road in the City of Carpinteria, California.

The noise sensitive receptors potentially impacted by the Project's proposed construction operations include single family residences located adjacent to some pole replacement locations and conductor and telecommunications cable installation sites. The County of Ventura limits temporary construction noise levels to 75 dBA Leq at residential property lines. The County of Santa Barbara does not have established noise threshold limits for temporary construction operations. Therefore, this analysis will apply the County of Ventura noise threshold limits for all Project construction operations. The construction noise impacts at sensitive noise receptors located less than approximately 132 feet from the pole removal/replacement locations and conductor/telecommunications installation sites will exceed the County of Ventura noise threshold limit of 75 dBA Leq. Mitigation will be required for sensitive receptors located less than approximately 132 feet from these operations.

The nearest noise sensitive receptors potentially impacted by the proposed construction operations at Santa Clara Substation are located approximately 0.69 miles southwest and 0.54 miles southeast of the substation. The County of Ventura limits temporary construction noise levels to 75 dBA Leq at residential property lines. The noise impacts associated with the construction operations at the Santa Clara Substation will not exceed the County of Ventura noise threshold limit 75 dBA Leq at the sensitive receptors located nearest the substation. Therefore, no mitigation is required.

The nearest noise sensitive receptors potentially impacted by the proposed construction operations at the Casitas Substation are located adjacent to the north and east of the

[1] The Project also includes the installation of protection upgrades within existing MEER buildings at Getty, Goleta, Isla Vista, and Santa Barbara substations. Because this work would be conducted exclusively within the existing MEERs, no noise impacts would be generated and these activities are not discussed in this report.

substation. The County of Ventura limits temporary construction noise levels to 75 dBA Leq at residential property lines. The noise impacts associated with the construction operations at the Casitas Substation will not exceed the County of Ventura noise threshold limit 75 dBA at the sensitive receptors located to the north and east of the substation. Therefore, no mitigation is required.

The nearest noise sensitive receptors potentially impacted by the proposed construction operations at the Carpinteria Substation are located adjacent to the west and south of the substation. The City of Carpinteria limits temporary construction noise levels to 75 dBA Ldn at residential property lines. The noise impacts associated with the construction operations at the Carpinteria Substation will exceed the City of Carpinteria noise threshold limit of 75 dBA Ldn at the western property line adjacent to the existing school. The noise levels at the schools building facades will not exceed the noise threshold limit. To limit the noise impacts to the school we recommend mitigation for the construction operations.

Based on this noise analysis, the potential noise impacts from the proposed construction activities associated with the Santa Clara-Getty 66 kV System and the Carpinteria Substation are considered to be significant. However, with mitigation, these construction noise impacts will be reduced to less than significant.

The potential noise impacts from the proposed construction activities associated with Santa Clara Substation and the Casitas Substation are considered to be less than significant. Therefore, no mitigation is necessary.

2. Introduction

This noise study provides an analysis of the potential noise impacts associated with construction activities associated with the Southern California Edison (SCE) Santa Barbara Reliability Project. The Project also includes equipment upgrades at the Santa Clara, Casitas, and Carpinteria substations. The Project is located in Santa Barbara County and Ventura County. Santa Clara Substation and Casitas Substation are located in unincorporated Ventura County. Carpinteria Substation is located at 4952 Foot Hill Road in the City of Carpinteria, California. For more information please refer to Figure 1: Aerial Image Showing the Project Location.

This report provides an analysis of the construction operation noise levels; a summary of the existing noise environment at the existing substations and at sensitive receptors located adjacent to construction sites; a discussion of the County of Santa Barbara, County of Ventura, and the City of Carpinteria Municipal Code noise limits applicable to the residential and school land uses adjacent to the Project; and a comparison of the construction operation noise levels with the applicable County and City Municipal Code limits.

A summary of Noise Fundamentals and Acoustical Terms used in this report are presented in Appendix A.

2.1 Project Background

Project activities are divided according to their geographic location. Telecommunication cable would be installed on existing TSPs in Segments 1 and 2, and on TSPs to be installed in Segment 4. In Segments 3B and 4, new TSPs would be installed, followed by installation of new conductor. In Segment 3A, a total of 51 wood power poles would be removed and replaced with a light weight steel pole system (LWS), and the existing conductor replaced.

The proposed construction activities for pole and conductor removal/replacement are listed as follows:

- Conductor removal
- Wood pole removal
- TSP installation
- LWS installation
- Conductor installation

Construction activities at Capinteria Substation consist of pole and conductor removal/replacement, as well as minor substation equipment replacement and upgrades. The equipment replacement and upgrades would not include any of the transformers and, therefore, it is concluded that no new mechanical noise sources shall be generated within the substation as a result of this project.

The construction activities at the Casitas Substation and the Santa Clara Substation consist of trenching operations, as well as minor substation equipment replacement and upgrades. The installation of a new TSP will also be included in the Casitas Substation construction. The equipment replacement and upgrades will not include any of the transformers and, therefore, it is concluded that no new mechanical noise sources shall be generated within these two substations as a result of the Project.

The proposed construction activities for the three substations are listed as follows:

- Trenching operations
- Minor mechanical equipment replacement
- Conductor removal
- TSP installation
- Conductor installation

All of the construction activities at each site will occur only during daytime hours; construction work at any site near a sensitive noise receptor would not be conducted for a period of 3 or more consecutive days. The construction equipment and activities are based on the construction equipment and workforce estimates provided by SCE. The noise emission levels for the proposed construction equipment are based on the FHWA Construction Noise Handbook. For more information please refer to Appendix B: Construction Activities and Construction Equipment Noise Levels.

3. Methodology and Equipment

3.1 Methodology

3.1.1 24 Hour Noise Monitor Measurement

To document the existing noise conditions at the three substations, a series of 24-hour ambient noise measurements were collected from midnight to midnight on Monday, February 13th, 2012. The noise monitors were programmed to log data every 30 minutes during the continuous 24 hour time period. The microphones at each monitoring location were placed at approximately 5 feet above the existing project site grade. During the on-site ambient noise measurements, start and end times were recorded, along with background ambient noise sources to accurately account for the noise environment in the area.

3.1.2 1 Hour Noise Measurement

To document the existing daytime noise level at sensitive receptor locations, a series of one-hour equivalent sound level measurement (Leq, A-weighted) were conducted on Monday, February 13th, 2012. During these measurements, the sound level meter was programmed to log data every ten minutes during the continuous 1 hour time period. The microphones at the noise measurement locations were placed at approximately 5 feet above the existing site grade. During the on-site ambient noise measurements, start and end times were recorded, along with background ambient noise sources to accurately account for the noise environment in the area.

3.1.3 Noise Model Software

Modeling of the construction operations and surrounding environment was accomplished using CadnaA (Computer Aided Noise Abatement), Ver. 4.0, which is a model-based computer program developed by DataKustik for predicting noise impacts in a wide variety of conditions. CadnaA assists in the calculation, presentation, assessment, and mitigation of all types of environmental noise exposure conditions. It allows for the input of project information such as noise source data, sound barriers, intervening structures, ground absorption, and topography to create a detailed CAD model, and uses the most up-to-date calculation standards to predict outdoor noise propagation impacts for evaluating regulatory compliance thresholds at property lines and other adjacent community areas.

3.2 Measurement Equipment

Some or all of the following equipment was used to measure existing noise levels:

- Larson Davis Model 824 Sound Level Meter
- Larson Davis Model 820 Sound Level Meters
- Larson Davis Model CA200 Microphone Calibrator
- Hand-held magnetic compass, microphone with windscreen, tripods
- Distance measurement wheel, digital camera

The sound level meter was field-calibrated prior to and following the noise measurement to ensure accuracy. All sound level measurements conducted and presented in this report, in accordance with the regulations, were made with a sound level meter that conforms to the American National Standards Institute (ANSI) specifications for sound level meters ANSI SI.4-1983 (R2001). All instruments are maintained with National Bureau of Standards traceable calibrations, per the manufacturers' standards.

4. Existing Environmental Setting

4.1 Existing Noise Environment

The Santa Barbara Reliability Project is located within Santa Barbara County and Ventura County. Project-related construction activities would occur mainly in rural areas. However, some Project activities would be conducted in proximity to residences and other potentially sensitive noise receptors. Existing noise sources identified in proximity to these residences include the rise and fall of community noise, roadway vehicle noise, and aircraft over flight noise.

Santa Clara Substation is located in unincorporated Ventura County to the east of the City of San Buenaventura (Ventura). The land use adjacent to the substation is zoned as rural and agricultural. The existing noise sources in the area of the substation include substation transformer banks, community noise, and vehicle noise associated with Elizabeth Road.

Casitas Substation is located at the south end of Casitas Springs, an unincorporated community in unincorporated Ventura County. The land use adjacent to the substation is zoned as commercial/residential mixed use with single family residences located directly north and east. The existing noise sources in the area of the substation include substation transformer banks, community noise, and vehicle noise associated with SR-33 (North Ventura Avenue).

Carpinteria Substation is located at 4952 Foot Hill Road in the City of Carpinteria, California. The land use adjacent to the substation is zoned as low density residential to the south and public facility to the west. The existing noise sources in the area of the substation include substation transformer banks, community noise, and vehicle noise associated with Foothill Road.

4.1.1 Noise Sensitive Receptors

Overall, the noise sensitive receptors potentially impacted by the Project's construction activities are single family residences located adjacent to a few pole and conductor removal/replacement activities.

The nearest noise sensitive receptors potentially impacted by the proposed construction operations at Santa Clara Substation are located approximately 0.69 miles southwest and 0.54 miles southeast of the substation.

The nearest noise sensitive receptors potentially impacted by the proposed construction operations at Casitas Substation are located adjacent to the north and east of the substation.

The nearest noise sensitive receptors potentially impacted by the proposed construction operations at Carpinteria Substation are located adjacent to the west and south of the substation.

4.1.2 24 Hour Noise Monitoring Measurements

To document the existing ambient noise conditions within the vicinity of the three existing substations, a mechanized environmental noise monitor was placed along the northwestern property line of the Carpinteria Substation, at the northern property line of the Casitas Substation, and at the southwestern property line of the Santa Clara Substation. These three 24-hour noise monitors were programmed to record continuously throughout a typical business day on Monday, February 13th, 2012. The results of this monitoring are shown in Table1 below. For more information please refer to Figures 2 through 4.

Table 1. Measured Existing 1 hour Noise Levels on February 13th, 2012

Military Time	Carpinteria Substation Measured 1 hour Noise Level (dBA Leq)	Casitas Substation Measured 1 hour Noise Level (dBA Leq)	Santa Clara Substation Measured 1 hour Noise Level (dBA Leq)
0:00:00	43.8	51.5	42.7
1:00:00	41.4	47.6	43.5
2:00:00	40.7	49.5	43.8
3:00:00	43.8	50.5	43.8
4:00:00	45.7	52.7	43.1
5:00:00	47.8	56.8	42.0
6:00:00	52.0	59.9	47.5
7:00:00	50.0	61.7	43.9
8:00:00	50.4	61.3	54.4
9:00:00	51.3	60.3	53.3
10:00:00	52.8	59.9	53.0
11:00:00	53.0	60.1	47.1
12:00:00	54.2	59.8	48.4

Military Time	Carpinteria Substation Measured 1 hour Noise Level (dBA Leq)	Casitas Substation Measured 1 hour Noise Level (dBA Leq)	Santa Clara Substation Measured 1 hour Noise Level (dBA Leq)
13:00:00	56.9	60.0	53.9
14:00:00	56.8	60.9	57.9
15:00:00	56.5	62.2	48.5
16:00:00	56.4	61.4	53.7
17:00:00	54.4	62.3	49.8
18:00:00	50.5	60.1	47.5
19:00:00	49.0	58.8	43.9
20:00:00	48.7	57.8	43.4
21:00:00	48.1	56.6	43.3
22:00:00	46.1	55.1	42.1
23:00:00	42.5	54.0	42.4
24 Hour Leq	52.0	59.0	50.1
CNEL	55.4	63.7	52.8

The noise monitoring data provided in Table 1 shows that the ambient hourly noise levels measured at Carpinteria Substation range from 40.7 dBA to 56.8 dBA, with a 24 hour Leq of 52.0 dBA and a CNEL of 55.4 dBA. The ambient hourly noise levels measured at Casitas Substation range from 47.6 dBA to 62.3 dBA, with a 24 hour Leq of 59.0 dBA and a CNEL of 63.7 dBA. And, finally, the ambient hourly noise levels measured at Santa Clara Substation range from 42.0 dBA to 57.9 dBA, with a 24 hour Leq of 50.1 dBA and a CNEL of 52.8 dBA.

4.1.3 1 Hour Noise Level Measurements

To further document the existing daytime ambient noise levels at several potential noise sensitive receptor locations, a series of one-hour equivalent sound level measurements (Leq, A-weighted) were conducted on Monday February 13th, 2012. A single one-hour noise measurement was conducted at a total of six locations, encompassing five in the vicinity of pole and conductor removal/replacement sites and one at the residential community subdivision located nearest Santa Clara Substation. The results of this monitoring are shown in Table 2 below. For more information please refer to Figures 5 and 6.

Table 2. Measured Existing 1 hour Noise Levels at Sensitive Receptors on February 13th, 2012

Noise Measurement Location (Coordinates)	Nearest SCE Construction Site	Measured 1 hour Noise Level (dBA Leq)
34°23'8.79"N, 119°26'53.63"W	Construction Site 72	37.7
34°22'58.49"N, 119°26'16.32"W	Construction Site 69	50.6
34°22'55.79"N, 119°26'5.74"W	Construction Site 68	54.1
34°24'36.64"N, 119°27'51.44"W	Construction Site M19T2	51.6
34°23'58.43"N, 119°26'52.56"W	Construction Site M18T1	50.1
34°17'26.25"N, 119°12'1.73"W	Santa Clara Substation	46.4

While conducting the 1 hour ambient field noise measurements, it was noted that the temperature ranged from 65° F to 70° F and the wind speeds ranged from 1 mph to 5 mph. During the noise measurements, it was further noted that the skies were clear with low humidity. The noise measurement data provided in Table 2 shows that the noise levels measured at the six identified sensitive noise receptors range from 37.7 dBA to 54.1 dBA.

5. Applicable Noise Criteria

The Project is located in three jurisdictions: the City of Carpinteria, the County of Ventura, and the County of Santa Barbara. The applicable noise criteria for these three jurisdictions are discussed below.

5.1 City of Carpinteria

The City of Carpinteria noise regulations are set forth by Resolution No. 408 Noise Thresholds Section, which supersedes Ordinance No. 394. This section states:

"Temporary construction noise which exceeds 75 dB(A) CNEL for 12 hours within a 24-hour period at residences would be considered significant. Additionally, where temporary construction noise would substantially interfere with normal business communication, or affect sensitive receptors, such as day care facilities, hospitals or schools, temporary impacts would be considered significant."

Accordingly, the temporary construction activities conducted at Carpinteria Substation, as well as pole and conductor removal/replacement within the City of Carpinteria limits, shall be limited to 75 dBA CNEL at residential and school property lines. For more information please refer to Appendix C: Relevant Excerpts from Applicable Noise Criteria.

5.2 County of Ventura

The County of Ventura noise regulations are set forth by the County's Construction Noise Threshold Criteria and Control Plan. The temporary construction noise limits established within this document are provided in Tables 3 and 4 below.

Table 3. Daytime Construction Activity Noise Threshold Criteria

Construction Duration Affecting Noise-sensitive Receptors	**Noise Threshold Criteria shall be the greater of these noise levels at the nearest receptor area or 10 feet from the nearest noise-sensitive building**	
	Fixed Leq(h), dBA	**Hourly Equivalent Noise Level (Leq), dBA[1,2]**
0 to 3 days	75	Ambient Leq(h) + 3 dB
4 to 7 days	70	Ambient Leq(h) + 3 dB
2 to 8 weeks	65	Ambient Leq(h) + 3 dB
4 to 7 days	60	Ambient Leq(h) + 3 dB
2 to 8 weeks	55	Ambient Leq(h) + 3 dB

Note 1. The instantaneous Lmax shall not exceed the NTC by 20 dBA more than 8 times per daytime hour.

Note 2. Local ambient Leq measurements shall be made on any mid-week day prior to the project work.

Table 4. Nighttime Construction Activity Noise Threshold Criteria

Receptor Location	Noise Threshold Criteria shall be the greater of these noise levels at the nearest receptor area or 10 feet from the nearest noise-sensitive building	
	Fixed Leq(h), dBA	Hourly Equivalent Noise Level (Leq), dBA[1,2]
Resident, Live-in Institutional	45	Ambient Leq(h) + 3 dB

Note 1. The instantaneous Lmax shall not exceed the NTC by 20 dBA more than 8 times per daytime hour.

Note 2. Local ambient Leq measurements shall be made on any mid-week day prior to the project work.

Accordingly, the temporary construction activities conducted at Santa Clara Substation and Casitas Substation, and activities along Segments 1, 2, 3B, and 4 located in the County of Ventura, shall be limited to 75 dBA Leq at residential and school property lines. For more information please refer to Appendix C: Relevant Excerpts from Applicable Noise Criteria.

5.3 County of Santa Barbara

The County of Santa Barbara Municipal Code Chapter 9.16 limits construction operations from 7:00 a.m. to 7:00 p.m. The Municipal Code does not provide noise limits for temporary construction operations. However, the County has an established Noise Element which states:

"In the planning of land use, 65 dB Day-Night Average Sound Level should be regarded as the maximum exterior noise exposure compatible with noise-sensitive uses unless noise mitigation features are included in project designs."

Based on the County of Santa Barbara Noise Element, activities along Segment 3A and activities along Segment 4 located in Santa Barbara County will be limited to 65 dBA Ldn at residential property lines. For more information please refer to Appendix C: Relevant Excerpts from Applicable Noise Criteria.

6. Noise Impact Analysis

6.1 Construction Noise Analysis

6.1.1 Pole and Conductor Removal/Replacement Noise Analysis

The noise analysis for the pole removal and installation construction activities is based on the construction equipment and workforce estimate provided by SCE. Under the applied six construction scenarios described below, the 75 dBA Leq noise contour distances range from 132 feet to 204 feet. It is noted that a majority of the pole removal and installation construction activities will occur within the County of Ventura. The County of Ventura limits temporary construction noise to 75 dBA Leq. Three of the five sensitive receptors evaluated previously during the field site reviews are located within the 75 dBA Leq noise contour and, therefore, shall require some form of applied mitigation. Mitigation options include: 1) deploying a temporary portable sound barrier, or 2) moving people out of their homes during the construction period. The construction noise contour distances are summarized in Table 5 below. For more information please refer to Appendix D: Aerial Images Showing Pole Removal/Replacement Locations and 75 dBA Leq Noise Contour.

Table 5. Pole Removal and Installation Noise Contour Distances

Construction Operations	Contour Distance (feet)				
	75 dBA Leq	70 dBA Leq	65 dBA Leq	60 dBA Leq	55 dBA Leq
Conductor Removal	183	327	572	975	1,610
Wood Pole Removal	171	307	537	916	1,517
LWS Foundation Install	173	309	539	924	1,534
LWS Assembly	134	243	428	739	1,240
LWS Erection	132	239	420	726	1,219
Conductor Install	204	364	630	1,067	1,757

6.1.2 Carpinteria Substation Construction Noise Analysis

The noise analysis for Carpinteria Substation construction activities is based on the construction equipment and workforce estimate provided by SCE. The City of Carpinteria limits temporary construction noise to 75 dBA CNEL for 12 hours within a 24-hour period. The 75 dBA CNEL noise threshold is shown to be exceeded at the substation property line facing the existing school to the west. However, the noise levels at the school building façade are shown not exceed the 75 dBA CNEL noise threshold limit. The noise impacts to all other sensitive receptors in the area will not exceed the 75 dBA CNEL noise threshold limit. The calculated construction noise levels are summarized in Table 6 below. For more information please refer to Figure 7: Arial Image Showing Carpinteria Substation and Modeled Noise Sensitive Receptors.

Table 6. Carpinteria Substation Construction Noise Impact Levels

Noise Receptor Number	Noise Receptor Location	Construction Operations Noise Impacts (dBA CNEL)					
		Conductor Removal	Wood Pole Removal	TSP Foundation Install	TSP Assembly	TSP Erection	Conductor Install
1	Property Line Adjacent to the School Parking Lot	78.6	78.7	78.8	76.2	76.9	79.5
2	Northern School Building Façade	72.8	72.3	72.6	70.3	70.3	73.7
3	Western School Building Façade	68.5	66.2	66.4	64.2	64.2	67.7
4	Southern Residence	69.4	66.9	67.2	65.1	65.0	68.7
5	Southern Residence	68.8	66.2	66.5	64.4	64.2	68.1

A reasonable mitigation recommendation to limit the construction noise impacts to the school may be achieved by constructing a temporary sound blocking noise barrier nearest the construction activity. A second viable mitigation option to reduce the noise impacts at the school would be to conduct the construction activities when the school is not in session.

6.1.3 Casitas Substation Construction Noise Analysis

The noise analysis for Casitas Substation construction activities is based on the construction equipment and workforce estimate provided by SCE. The County of Ventura limits temporary construction noise to 75 dBA Leq. The modeled construction noise impacts range from 58.1 dBA Leq at the northwestern residence to 70.4 dBA Leq at the western residence. The noise impacts from the construction activities will not exceed the County of Ventura noise limits. Therefore, as a result of this noise study, no mitigation is required. The calculated construction noise levels are summarized in Table 7 below. For more information please refer to Figure 8: Arial Image Showing the Casitas Substation and Modeled Noise Sensitive Receptors.

Table 7. Casitas Substation Construction Noise Impact Levels

Noise Receptor Number	Noise Receptor Location	Construction Operations Noise Impacts (dBA Leq)				
		Trenching Activities	Equipment Replacement Activities	TSP Foundation Install	TSP Assembly	TSP Erection
1	Northwestern Residence	68.6	68.2	60.4	58.3	58.1
2	Northern Residence	64.6	64.3	63.1	61.0	60.8
3	Western Residence	69.3	68.8	69.2	67.1	66.9
4	Western Residence	69.6	69.3	70.4	68.3	68.1

6.1.4 Santa Clara Substation Construction Noise Analysis

The noise analysis for Santa Clara Substation construction activities is based on the construction equipment and workforce estimate provided by SCE. The County of Ventura limits temporary construction noise to 75 dBA Leq. The construction noise impacts range from 35.2 dBA Leq at the southwestern residence to 43.4 dBA Leq at the southeastern residence. The noise impacts from the construction activities will not exceed the County of

Ventura noise limits. Therefore, as a result of this noise study, no mitigation is required. The calculated construction noise levels are summarized in Table 8 below. For more information please refer to Figure 9: Arial Image Showing Santa Clara Substation and Modeled Noise Sensitive Receptors.

Table 8. Santa Clara Substation Construction Noise Impact Levels

Noise Receptor Number	Noise Receptor Location	Construction Operations Noise Impacts (dBA Leq)	
		Trenching Activities	Equipment Replacement Activities
1	Southwestern Residence	36.1	35.2
2	Southern Residence	41.0	40.4
3	Southeastern Residence	43.4	43.0

6.2 Substation Operational Noise Analysis

The Santa Barbara County Reliability project will not replace or install any mechanical equipment noise producing components within the defined three substations. The majority of the equipment being replaced will be conductors and switches. The transformer banks within the three substations will not be replaced or upgraded. Therefore, existing operational noise levels at the substations are not expected to change or increase. A further analysis was deemed unnecessary.

7. Findings

The noise analysis as described within the previous sections indicates that construction noise impacts at the sensitive noise receptors located less than approximately 132 feet from the pole and conductor removal/replacement sites will exceed the County of Ventura noise threshold limit of 75 dBA. Mitigation will be required for sensitive receptors located less than approximately 132 feet from the construction activities. Typical and viable mitigation options include: 1) deploying a temporary portable sound barrier, or 2) moving people out of their homes during the construction period.

The noise impacts associated with the proposed construction operations at Carpinteria Substation will exceed the City of Carpinteria noise threshold limit of 75 dBA Ldn at the western property line adjacent to the existing school. However, the construction noise levels at the schools building facades will not exceed the noise threshold limit. To limit the noise impacts to the school we recommend mitigation for the construction operations to include: 1) deploying a temporary portable sound barrier, or 2) conduct the construction activities when the school is not in session.

The noise impacts associated with the construction operations at Casitas Substation will not exceed the County of Ventura noise threshold limit 75 dBA Leq at the sensitive receptors located to the north and east of the substation. Therefore, no mitigation is required.

The noise impacts associated with the construction operations at Santa Clara Substation will not exceed the County of Ventura noise threshold limit 75 dBA Leq at the sensitive receptors located to the south substation. Therefore, no mitigation is required.

In conclusion, based on this noise analysis, the potential noise impacts from the proposed construction activities associated with the installation/removal of subtransmission infrastructure in Segments 3B and 4 and at Carpinteria Substation are considered to be significant. However, with mitigation, these construction noise impacts will be reduced to less than significant.

The potential noise impacts from the proposed construction activities associated with Santa Clara Substation and the Casitas Substation are considered to be less than significant. Therefore, no mitigation is necessary.

8. Limitations

The opinions and findings presented in this report are based upon the scope of services, information obtained through the performance of the services, and the schedule as agreed upon by ARCADIS and the party for whom this report was originally prepared. This report is an instrument of professional service and was prepared in accordance with the generally accepted standards and level of skill and care under similar conditions and circumstances established by the environmental consulting industry. No representation, warranty or guarantee, express or implied, is intended or given. To the extent that ARCADIS relied upon any information prepared by other parties not under contract to ARCADIS, ARCADIS makes no representation as to the accuracy or completeness of such information. This report is expressly for the sole and exclusive use of the party for whom this report was originally prepared for a particular purpose. Only the party for whom this report was originally prepared and/or other specifically named parties have the right to make use of and rely upon this report. Reuse of this report or any portion thereof for other than its intended purpose, or if modified, or if used by third parties, shall be at the user's sole risk.

Results of any investigations or testing and any findings presented in this report apply solely to conditions existing at the time when ARCADIS's investigative work was performed. It must be recognized that any such investigative or testing activities are inherently limited and do not represent a conclusive or complete characterization. Conditions in other parts of the project site may vary from those at the locations where data were collected. ARCADIS's ability to interpret investigation results is related to the availability of the data and the extent of the investigation activities. As such, 100 percent confidence in environmental investigation conclusions cannot reasonably be achieved.

ARCADIS, therefore, does not provide any guarantees, certifications or warranties regarding any conclusions regarding environmental contamination of any such property. Furthermore, nothing contained in this document shall relieve any other party of its responsibility to abide by contract documents and applicable laws, codes, regulations or standards.

9. References

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Figures

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Appendix A

Summary of Noise Fundamentals and Acoustical Terms

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Appendix B

Construction Activities and
Construction Equipment Noise Levels

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Appendix C

Relevant Excerpts from Applicable Noise Criteria

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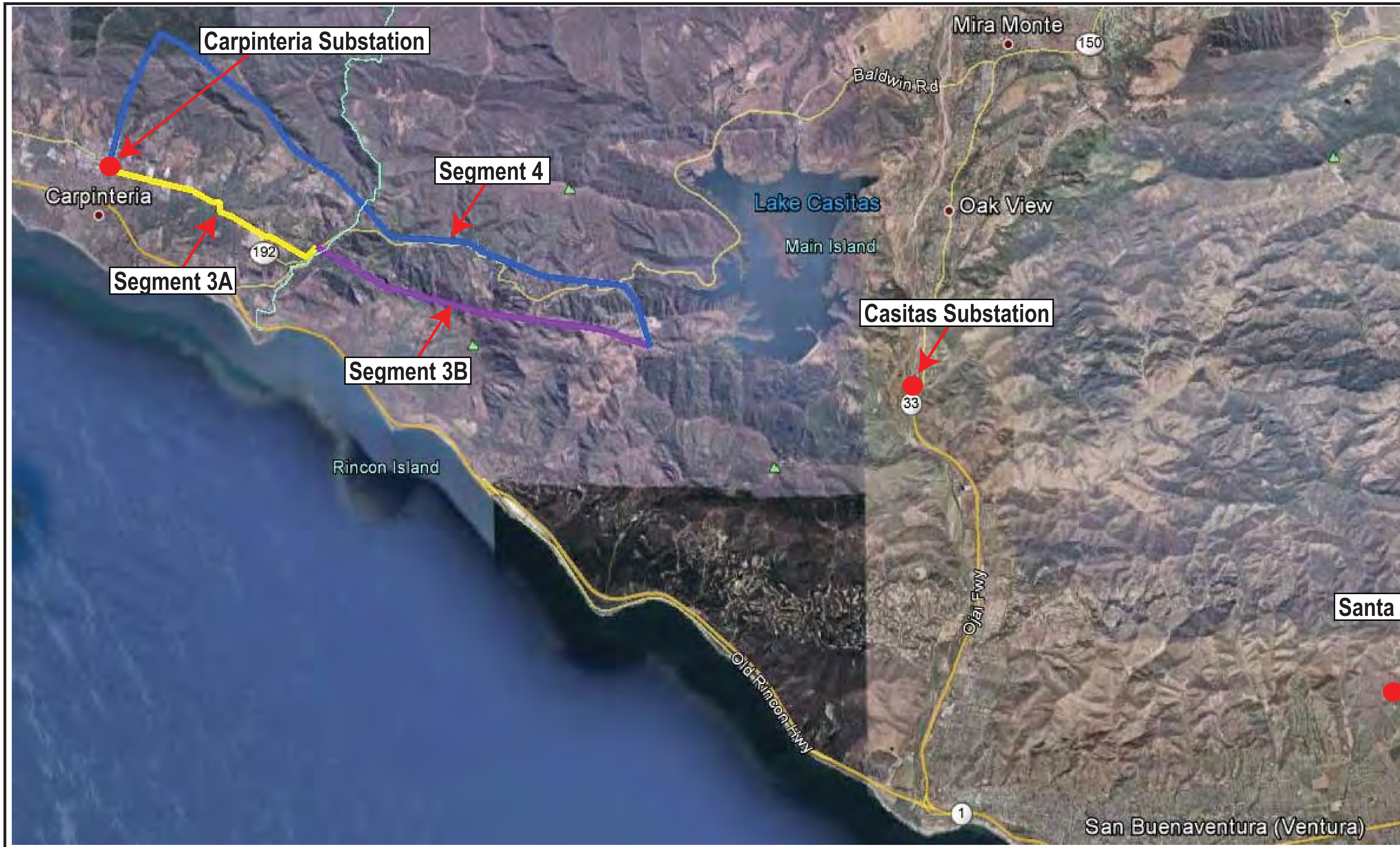
Appendix D

Aerial Images Showing Pole Removal/Replacement Locations and 75 dBA Leq Noise Contour



Southern California Edison
Santa Barbara County and Ventura County, California

Aerial Image Showing the Project Location

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FIGURE
1

Southern California Edison
Santa Barbara County and Ventura County, California

Aerial Image Showing the Carpinteria Substation and Noise Monitor Location

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FIGURE
2

Southern California Edison
Santa Barbara County and Ventura County, California

Aerial Image Showing the Casitas Substation and Noise Monitor Location

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FIGURE 3

Southern California Edison
Santa Barbara County and Ventura County, California

Aerial Image Showing the Santa Clara Substation and Noise Monitor Location

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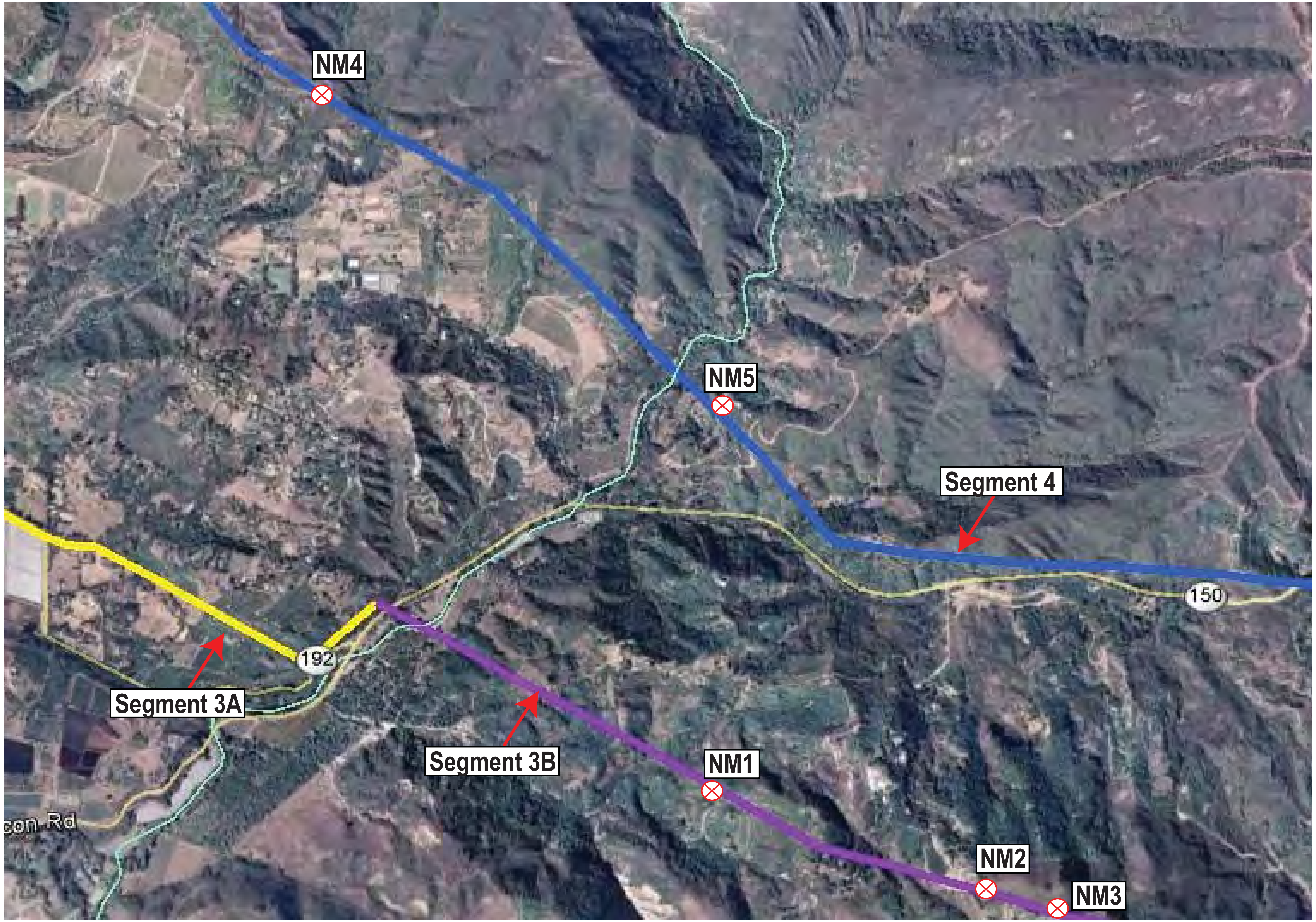
FIGURE
4



Southern California Edison
Santa Barbara County and Ventura County, California

Aerial Image Showing 1 Hour Noise Measurement Locations at Segments 3A, 3B, and 4

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FIGURE 5

Southern California Edison
Santa Barbara County and Ventura County, California

Aerial Image Showing the 1 Hour Noise Measurement Location Near the Santa Clara Substaion

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FIGURE
6

Southern California Edison
Santa Barbara County and Ventura County, California

Aerial Image Showing the Carpinteria Substation and Modeled Noise Sensitive Receptors

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FIGURE
7

Southern California Edison
Santa Barbara County and Ventura County, California

Aerial Image Showing the Casitas Substation and Modeled Noise Sensitive Receptors

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FIGURE 8

Southern California Edison
Santa Barbara County and Ventura County, California

Aerial Image Showing the Santa Clara Substation and Modeled Noise Sensitive Receptors

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FIGURE
9

Subject: Summary of Noise Fundamentals and Acoustical Terms

Noise Background

Noise is a physical disturbance in a medium, such as air, that is capable of being detected by the human ear. Sound waves in air are caused by variations in pressure above and below the static value of atmospheric pressure. Sound is measured in units of decibels (dB) on a logarithmic scale. The "pitch" (high or low) of the sound is a description of frequency, which is measured in Hertz (Hz). Most common environmental sounds are composed of a composite of frequencies.

Human Perception of Noise

A normal human ear can usually detect sounds within frequencies from 20 Hz to about 20,000 Hz. However, humans are most sensitive to frequencies from 500 Hz to 4000Hz. Certain frequencies are given more "weight" during assessment because human hearing is not equally sensitive to all frequencies of sound. The dBA scale corresponds to the sensitivity range for human hearing. Noise levels capable of being heard by humans are measured in dBA. A noise level change of 3 dBA or less is barely perceptible to average human hearing and is considered "less than significant". However, a 5 dBA change in noise level is clearly noticeable and is considered to be "substantial". A 10 dBA change in noise level is considered a "significant impact" and is perceived as a doubling or halving of noise loudness, while a 20 dBA change is considered a "dramatic change" in loudness. Table 1 provides typical instantaneous noise levels of common activities in dBA.

Table 1. Typical Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	110	Rock Concert
Jet Fly-over at 1,000 feet	100	
Gas Lawn Mower at 3 feet	90	
Diesel Truck at 50 feet, at 50 miles per hour (mph)	80	Food Blender at 3 feet
Noisy Urban Area, Daytime Gas Lawn Mower at 100 feet	70	Vacuum Cleaner at 10 feet
Commercial Area Heavy Traffic at 300 feet	60	Normal Speech at 3 feet
Quiet Urban Daytime	50	Large Business Office, Dishwasher in Next Room
Quiet Urban Nighttime	40	Theater, Large Conference Room (Background)
Quiet Suburban Nighttime	30	Library
Quiet Rural Nighttime	20	Bedroom at Night
	10	Broadcast/Recording Studio (background level)
Lowest Threshold of Human Hearing	0	Lowest Threshold of Human Hearing

Source: Caltrans Technical Noise Supplement, October 1998

Sound Propagation and Attenuation

Sound from a source spreads out as it travels away from the source, and the sound pressure level diminishes with distance in accordance with the “inverse square law.” Individual sound sources are considered “point sources” when the distance from the source is large compared to the size of the source, for example: transformer bank, construction equipment, and turbines. Sound from a point source radiates hemispherically, which yields a 6 dB sound level reduction for each doubling of the distance from the source. If the sound source is quite long in one dimension the source is considered a “line source”, for example: roadways and railroads. Sound from a line source radiates cylindrically, which typically yields a 3 dB sound level reduction for each doubling of the distance from the source.

In addition to distance attenuation, the air absorbs a certain amount of sound energy, and atmospheric effects (wind, temperature, precipitation), and terrain/vegetation effects also influence the sound propagation and attenuation over large distances from the source.

Community Noise

An individual’s sound exposure is valued based on a measurement of the noise that the individual experiences over a specified time interval. A sound level is a measurement of noise that occurs during a specified period of time. A continuous source of noise is rare for long periods of time and is typically not a characteristic of community noise. Community noise refers to outdoor noise in the vicinity of a community and most commonly originates from transportation vehicles or stationary mechanical equipment. A community noise environment varies continuously over time with respect to the contributing sources. Within a community, ambient noise levels gradually change throughout a typical day and the changes can be correlated to the increase and decrease of transportation noise or to the daytime/nighttime operation of stationary mechanical equipment. The variation in community noise throughout a day is also due to the addition of short-duration single-event noise sources, such as aircraft and sirens as well as various natural sources.

The metrics for evaluating the community noise environment are based on measurements of the noise exposure over a period of time in order to characterize and evaluate the cumulative noise impacts. These metrics are time-varying and are defined as statistical noise descriptors.

Construction Noise

Construction activities could result in varying degrees of ground vibration, depending on the kind of equipment and operations involved, and the distances between the construction activities and the nearest sensitive receptors. The effects of ground borne vibrations generated from construction activities are typically imperceptible to an average human outside of the project site. However, high magnitude vibrations can result in damage to nearby structures within the immediate vicinity of the source.

Definitions

A-Weighted Sound Levels: Decibels (referenced to 20 micro-Pascals) as measured with an A-weighting network of a standard sound level meter, abbreviated dB(A).

Ambient Noise Level: The measured ambient noise level associated with all existing environmental, transportation, and community noise sources, in the absence of any audible construction activity.

CNEL: The Community Noise Equivalent Level that represents a 24-hour A-weighted sound level average conducted from midnight to midnight, where sound levels during the evening hours of 7:00 PM to 10:00 PM have an added 5 dB weighting, and nighttime hours of 10:00 PM to 7:00 AM have an added 10 dB weighting.

Daytime: The period from 7:00 a.m. to 7:00 p.m.

Ldn: The Day-Night Average Sound Level (abbreviated as DNL or L_{DN}) that represents a 24-hour A-weighted sound level average conducted from midnight to midnight, where sound levels during the nighttime hours of 10:00 PM to 7:00 AM have an added 10 dB weighting, but no added weighting on the evening hours.

Leq: The equivalent sound level, or the time-integrated continuous sound level, that represents the same sound energy as the varying sound levels, logarithmically averaged over a specified monitoring period.

Lmax: The instantaneous greatest noise level measured on a sound level meter during a designated time interval.

Lmin: The instantaneous lowest noise level measured on a sound level meter during a designated time interval.

Lx: The base sound level that is exceeded x percent during a specified time.

Nighttime: Periods other than daytime (as defined above), including legal holidays.

Noise Emission: The industry standard format of sound power level, which is the total acoustic power radiated from a given sound source as relates to a reference power level of 10 picowatts. Sound power level differs from sound pressure level, which quantifies the fluctuations in air pressure caused by acoustic energy.

Noise Level Measurements: Unless otherwise indicated, the use of A-weighted and "slow" response of a noise monitoring instrument complying with at least Type 2 requirements as defined by the latest revision of American National Standard Institute (ANSI) S1.4 Specification for Sound Level Meters.

Sensitive Receptor Location: A location of regulatory compliance where particular sensitivities to noise exist, such as residential areas, institutions, hospitals, parks, or other environmentally sensitive areas.

Sound Pressure Level (SPL): The observable effect of acoustic energy radiation, quantifying the sound level as perceivable by the receiver. When Sound Pressure is used to describe a noise source, the distance between source and receiver must be known in order to yield useful information about the power rating of the source.

Sound power Level (PWL): A specialized analytical metric used to fully quantify the acoustic energy emitted by a source which is considered a complete value without the accompanying information on the position of measurement relative to the source. It may be used to calculate the sound pressure level at any desired distance away from the source.

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(SUB-TRANS PROJECTS ONLY TEMPLATE)
CONSTRUCTION EQUIPMENT AND WORKFORCE ESTIMATES BY ACTIVITY
CONSTRUCT SINGLE/DOUBLE-CIRCUIT ?? KV T/L

WORK ACTIVITY				ACTIVITY PRODUCTION			
Primary Equipment Description	Estimated Horse-Power	Probable Fuel Type	Primary Equipment Quantity	Estimated Workforce	Estimated Schedule (Days)	Duration of Use (Hrs/Day)	Estimated Production Per Day
Survey (1)				**4**	#		**# Miles**
1-Ton Truck, 4x4	300	Gas	2		=	8	1 Mile
Marshalling Yard (2)				**4**			
1-Ton Truck, 4x4	300	Gas	1		Duration of Project	4	
R/T Forklift	125	Diesel	1			6	
Boom/Crane Truck	350	Diesel	1			2	
Water Truck	300	Diesel	1			8	
Truck, Semi Tractor	400	Diesel	1			2	
R/W Clearing (3)				**5**	#		**# Miles**
1-Ton Truck, 4x4	300	Gas	1		=	8	0.25 Mile
Backhoe/Front Loader	125	Diesel	1		=	6	
Track Type Dozer	150	Diesel	1		=	6	
Motor Grader	250	Diesel	1		=	6	
Water Truck	300	Diesel	1		=	8	
Lowboy Truck/Trailer	450	Diesel	1		=	4	
Roads & Landing Work (4)				**5**	#		**# Miles & # Pads**
1-Ton Truck, 4x4	300	Gas	1		=	8	Existing Roads: 2 Miles New Roads (Mod): 1 Mile New Roads (Mtns): 0.5 Mile Structure Pads (Flat to Mod): 4 Pads Structure Pads (Mtns): 2 Pads
Backhoe/Front Loader	125	Diesel	1		=	4	
Track Type Dozer	150	Diesel	1		=	4	
Motor Grader	250	Diesel	1		=	6	
Water Truck	300	Diesel	1		=	8	
Drum Type Compactor	100	Diesel	1		=	6	
Excavator	250	Diesel	1		.5	4	
Lowboy Truck/Trailer	450	Diesel	1		=	4	
Guard Structure Installation (5)				**6**	#		**# Structures**
3/4-Ton Truck, 4x4	275	Gas	1		=	8	5 Structures
1-Ton Truck, 4x4	300	Gas	1		=	8	
Compressor Trailer	60	Diesel	1		=	4	
Manlift/Bucket Truck	250	Diesel	1		=	4	
Boom/Crane Truck	350	Diesel	1		=	6	
Auger Truck	210	Diesel	1		=	4	
Extendable Flat Bed Pole Truck	400	Diesel	1		=	8	
Remove Existing Conductor & GW (6)				**14**	#		**# Circuit Miles**

(SUB-TRANS PROJECTS ONLY TEMPLATE)

CONSTRUCTION EQUIPMENT AND WORKFORCE ESTIMATES BY ACTIVITY

CONSTRUCT SINGLE/DOUBLE-CIRCUIT ?? KV T/L

WORK ACTIVITY				ACTIVITY PRODUCTION			
Primary Equipment Description	Estimated Horse-Power	Probable Fuel Type	Primary Equipment Quantity	Estimated Workforce	Estimated Schedule (Days)	Duration of Use (Hrs/Day)	Estimated Production Per Day
1-Ton Truck, 4x4	300	Gas	2		=	4	
Manlift/Bucket Truck	250	Diesel	2		=	8	
Boom/Crane Truck	350	Diesel	2		=	8	Non-Bundled: 0.5 Mile
Bull Wheel Puller	350	Diesel	1		.67	6	
Sock Line Puller	300	Diesel	1		.67	6	
Static Truck/ Tensioner	350	Diesel	1		=	6	Bundled: 0.33 Mile
Lowboy Truck/Trailer	450	Diesel	2		=	4	
Wood/H-Frame/LWS Pole Removal (7)				**6**	#		**# Poles**
1-Ton Truck, 4x4	300	Gas	2		=	8	
Compressor Trailer	60	Diesel	1		=	4	9 Poles
Manlift/Bucket Truck	250	Diesel	1		=	6	or
Boom/Crane Truck	350	Diesel	1		=	6	4 H-Frames
Flat Bed Pole Truck	400	Diesel	1		=	8	
TSP Removal (8)				**8**	#		**# TSPs**
1-Ton Truck, 4x4	300	Gas	2		=	4	
Compressor Trailer	60	Diesel	1		=	8	
R/T Crane (M)	215	Diesel	1		=	6	0.75 TSPs
Boom/Crane Truck	350	Diesel	1		=	6	
Flat Bed Truck/Trailer	400	Diesel	1		=	4	
TSP Foundation Removal (9)				**4**	#		**# TSPs**
3/4-Ton Truck, 4x4	275	Gas	1		=	4	
Compressor Trailer	60	Diesel	1		=	8	
Backhoe/Front Loader	125	Diesel	1		=	6	0.5 TSPs
Dump Truck	350	Diesel	1		=	6	
Excavator	250	Diesel	1		=	4	
LST Removal (10)				**6** (S/C) **8** (D/C	#		**# LSTs**
1-Ton Truck, 4x4	300	Gas	2		=	4	
Compressor Trailer	60	Diesel	1		=	8	
R/T Crane (M)	215	Diesel	1		=	6	0.5 LSTs
Boom/Crane Truck	350	Diesel	1		=	6	
Flat Bed Truck/Trailer	400	Diesel	1		=	4	
LST Foundation Removal (11)				**4**	#		**# LSTs**
3/4-Ton Truck, 4x4	275	Gas	1		=	4	2 LSTs
Compressor Trailer	60	Diesel	1		=	8	

(SUB-TRANS PROJECTS ONLY TEMPLATE)
CONSTRUCTION EQUIPMENT AND WORKFORCE ESTIMATES BY ACTIVITY
CONSTRUCT SINGLE/DOUBLE-CIRCUIT ?? KV T/L

WORK ACTIVITY				**ACTIVITY PRODUCTION**			
Primary Equipment Description	Estimated Horse-Power	Probable Fuel Type	Primary Equipment Quantity	Estimated Workforce	Estimated Schedule (Days)	Duration of Use (Hrs/Day)	Estimated Production Per Day
Backhoe/Front Loader	125	Diesel	1		=	6	
Dump Truck	350	Diesel	1		=	6	
Excavator	250	Diesel	1		=	4	
Install TSP Foundations (12)				**6**	#		**# TSPs**
3/4-Ton Truck, 4x4	275	Gas	1		=	4	0.5 TSPs
Boom/Crane Truck	350	Diesel	1		=	4	
Backhoe/Front Loader	125	Diesel	1		=	6	
Auger Truck	210	Diesel	1		.5	6	
Water Truck	300	Diesel	1		=	8	
Dump Truck	350	Diesel	1		=	4	
Concrete Mixer Truck	350	Diesel	3		.67	2	
TSP Haul (13)				**4**	#		**# TSPs**
3/4-Ton Truck, 4x4	275	Gas	1		=	8	4 TSPs
Boom/Crane Truck	350	Diesel	1		=	6	
Flat Bed Pole Truck	400	Diesel	1		=	8	
TSP Assembly (14)				**8**	#		**# TSPs**
3/4-Ton Truck, 4x4	275	Gas	2		=	4	1 TSP
1-Ton Truck, 4x4	300	Gas	2		=	4	
Compressor Trailer	60	Diesel	1		=	6	
Boom/Crane Truck	350	Diesel	1		=	8	
TSP Erection (15)				**8**	#		**# TSPs**
3/4-Ton Truck, 4x4	275	Gas	2		=	4	1 TSP
1-Ton Truck, 4x4	300	Gas	2		=	4	
Compressor Trailer	60	Diesel	1		=	4	
Boom/Crane Truck	350	Diesel	1		=	8	
Wood/LWS Pole Haul (16)				**4**	#		**# Wood & # LWS Poles**
3/4-Ton Truck, 4x4	275	Gas	1		=	8	6 Poles
Boom/Crane Truck	350	Diesel	1		=	6	
Flat Bed Pole Truck	400	Diesel	1		=	8	
Wood/LWS Pole Assembly (17)				**8**	#		**# Wood & # LWS Poles**
3/4-Ton Truck, 4x4	275	Gas	2		=	4	4 Poles
1-Ton Truck, 4x4	300	Gas	2		=	4	
Compressor Trailer	60	Diesel	1		=	6	
Boom/Crane Truck	350	Diesel	1		=	8	

(SUB-TRANS PROJECTS ONLY TEMPLATE)
CONSTRUCTION EQUIPMENT AND WORKFORCE ESTIMATES BY ACTIVITY
CONSTRUCT SINGLE/DOUBLE-CIRCUIT ?? KV T/L

WORK ACTIVITY				**ACTIVITY PRODUCTION**			
Primary Equipment Description	Estimated Horse-Power	Probable Fuel Type	Primary Equipment Quantity	Estimated Workforce	Estimated Schedule (Days)	Duration of Use (Hrs/Day)	Estimated Production Per Day
Install Wood/H-Frame/LWS Pole (18)				**6**	**#**		**# Poles**
1-Ton Truck, 4x4	300	Gas	1		=	8	4 Poles or 2 H-Frames
Manlift/Bucket Truck	250	Diesel	1		=	6	
Boom/Crane Truck	350	Diesel	1		=	6	
Auger Truck	210	Diesel	1		=	4	
Backhoe/Front Loader	125	Diesel	1		=	8	
Extendable Flat Bed Pole Truck	400	Diesel	1		=	8	
Install Conductor (19)				**20**	**#**		**# Circuit Miles**
1-Ton Truck, 4x4	300	Gas	3		=	4	0.33 Mile
Manlift/Bucket Truck	250	Diesel	4		=	8	
Boom/Crane Truck	350	Diesel	1		=	8	
Dump Truck	350	Diesel	1		=	2	
Wire Truck/Trailer	350	Diesel	2		=	6	
Sock Line Puller	300	Diesel	1		.33	6	
Bull Wheel Puller	350	Diesel	1		.67	6	
Static Truck/ Tensioner	350	Diesel	1		=	6	
Backhoe/Front Loader	125	Diesel	1		=	2	
Lowboy Truck/Trailer	450	Diesel	2		=	4	
Hughes 500 E Helicopter		Jet A	1		.25	6	
Fuel, Helicopter Support Truck	300	Diesel	1		.25	6	
Guard Structure Removal (20)				**6**	**#**		**# Structures**
3/4-Ton Truck, 4x4	275	Gas	1		=	8	7 Structures
1-Ton Truck, 4x4	300	Gas	1		=	8	
Compressor Trailer	60	Diesel	1		=	4	
Manlift/Bucket Truck	250	Diesel	1		=	4	
Boom/Crane Truck	350	Diesel	1		=	6	
Extendable Flat Bed Pole Truck	400	Diesel	1		=	8	
Restoration (21)				**7**	**#**		**# Miles**
1-Ton Truck, 4x4	300	Gas	2		=	4	1 Mile
Backhoe/Front Loader	125	Diesel	1		=	4	
Motor Grader	250	Diesel	1		=	6	
Water Truck	300	Diesel	1		=	8	

(SUB-TRANS PROJECTS ONLY TEMPLATE)
CONSTRUCTION EQUIPMENT AND WORKFORCE ESTIMATES BY ACTIVITY
CONSTRUCT SINGLE/DOUBLE-CIRCUIT ?? KV T/L

WORK ACTIVITY				**ACTIVITY PRODUCTION**			
Primary Equipment Description	Estimated Horse-Power	Probable Fuel Type	Primary Equipment Quantity	Estimated Workforce	Estimated Schedule (Days)	Duration of Use (Hrs/Day)	Estimated Production Per Day
Drum Type Compactor	100	Diesel	1		=	4	
Lowboy Truck/Trailer	450	Diesel	1		=	4	
Vault Installation (22)				**6**	#		**# Vaults**
1-Ton Truck, 4x4	300	Gas	2		=	4	0.33 Vaults
Backhoe/Front Loader	125	Diesel	1		=	8	
Excavator	250	Diesel	1		.5	6	
Dump Truck	350	Diesel	2		=	8	
Water Truck	300	Diesel	1		=	8	
165-Ton Crane	500	Diesel	1		.33	6	
Concrete Mixer Truck	350	Diesel	3		.5	2	
Lowboy Truck/Trailer	450	Diesel	1		.33	4	
Flat Bed Truck/Trailer	400	Diesel	3		.33	4	
Duct Bank Installation (23)				**6**	#		**# Trench Feet**
1-Ton Truck, 4x4	300	Gas	2		=	4	250 Feet
Compressor Trailer	60	Diesel	1		=	4	
Backhoe/Front Loader	125	Diesel	1		=	6	
Dump Truck	350	Diesel	2		=	6	
Pipe Truck/Trailer	275	Diesel	1		=	6	
Water Truck	300	Diesel	1		=	8	
Concrete Mixer Truck	350	Diesel	3		=	2	
Lowboy Truck/Trailer	450	Diesel	1		.33	4	

Crash Size Assumptions:

#1 Survey = one 4-man crew
#2 Marshalling Yards = one 4-man crew
#3 Right-of-way Clearing = one 5-man crew
#4 Roads & Landing Work = one 5-man crew
#5 Guard Structure Installation = one 6-man crew
#6 Remove Existing Conductor & GW = one 14-man crew
#7 Remove Existing Wood/LWS Poles = one 6-man crew
#8 Remove Existing TSPs = one 8-man crew
#9 Remove Existing TSP Foundations = one 4-man crew
#10 Remove Existing LSTs = one 6-man crew
#11 Remove Existing LST Foundations = one 4-man crew
#12 Install Foundations for TSPs = one 6-man crew
#13 TSP Haul = one 4-man crew

#14 TSP Assembly = one 8-man crew
#15 TSP Erection = one 8-man crew
#16 TSP Haul = one 4-man crew
#17 TSP Assembly = one 8-man crew
#18 Install Wood/LWS Pole = one 6-man crew
#19 Conductor & GW Installation = two 10-man crews
#20 Guard Structure Removal = one 6-man crew
#21 Restoration = one 7-man crew
#22 Vault Installation = one 6-man crew
#23 Duct Bank Installation = one 6-man crew

Construction Noise Handbook

9.0 Construction Equipment Noise Levels and Ranges

9.1 Equipment Type Inventory and Related Emission Levels

Noise levels generated by individual pieces of construction equipment and specific construction operations form the basis for the prediction of construction-related noise levels. A variety of information exists related to sound emissions related to such equipment and operations. This data transcends the period beginning in the 1970s thru 2006. This information exists for both stationary and mobile sources and for steady, intermittent, and impulse type generators of noise.

9.1.1 Stationary Equipment

Stationary equipment consists of equipment that generates noise from one general area and includes items such as pumps, generators, compressors, etc. These types of equipment operate at a constant noise level under normal operation and are classified as non-impact equipment. Other types of stationary equipment such as pile drivers, jackhammers, pavement breakers, blasting operations, etc., produce variable and sporadic noise levels and often produce impact-type noises. Impact equipment is equipment that generates impulsive noise, where impulsive noise is defined as noise of short duration (generally less than one second), high intensity, abrupt onset, rapid decay, and often rapidly changing spectral composition. For impact equipment, the noise is produced by the impact of a mass on a surface, typically repeating over time.

9.1.2 Mobile Equipment

Mobile equipment such as dozers, scrapers, graders, etc., may operate in a cyclic fashion in which a period of full power is followed by a period of reduced power. Other equipment such as compressors, although generally considered to be stationary when operating, can be readily relocated to another location for the next operation.

9.2 Sources of Information

Construction-related equipment and operation noise level data may be provided by numerous sources, including suppliers, manufacturers, agencies, organizations, etc. Some information is included in this document, and many web-based links are given for equipment manufacturers.

9.3 Specifics of Construction Equipment and Operation Noise Inventories

Details included in each specific inventory of construction equipment and operation noise emission levels are often variable in terms of how data is represented. Some inventories include ranges of noise levels while others present single numbers for each equipment type. Others provide levels for specific models of each type of construction equipment. Often, different noise descriptors are used, such as L_{Aeq}, L_{max}, L_{10}, sound power level, etc. As such, the array of data does not readily lend itself to being combined into a single table or easily compared. As such, this Handbook attempts to summarize a variety of such inventories and provide links to each, thereby providing the reader with a variety of sources from which to choose the appropriate levels for use in his or her respective analysis.

9.4 Summaries of Referenced Inventories

Included below are examples of several inventories of construction-related noise emission values. These and additional inventories are included on the companion CD-ROM.

9.4.1 RCNM Inventory

Equipment and operation noise levels in this inventory are expressed in terms of L_{max} noise levels and are accompanied by a usage factor value. They have been recently updated and are based on extensive measurements taken in conjunction with the Central Artery/Tunnel (CA/T) Project. Table 9.1 summarizes the equipment noise emissions database used by the CA/T Project. While these values represent the "default" values for use in the RCNM, user-defined equipment and corresponding noise levels can be added.

Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors.

Equipment Description	Impact Device?	Acoustical Usage Factor (%)	Spec. 721.560 L_{max} @ 50 feet (dBA, slow)	Actual Measured L_{max} @ 50 feet (dBA, slow) (Samples Averaged)	Number of Actual Data Samples (Count)
All Other Equipment > 5 HP	No	50	85	N/A	0
Auger Drill Rig	No	20	85	84	36

Backhoe	No	40	80	78	372
Bar Bender	No	20	80	N/A	0
Blasting	Yes	N/A	94	N/A	0
Boring Jack Power Unit	No	50	80	83	1
Chain Saw	No	20	85	84	46
Clam Shovel (dropping)	Yes	20	93	87	4
Compactor (ground)	No	20	80	83	57
Compressor (air)	No	40	80	78	18
Concrete Batch Plant	No	15	83	N/A	0
Concrete Mixer Truck	No	40	85	79	40
Concrete Pump Truck	No	20	82	81	30
Concrete Saw	No	20	90	90	55
Crane	No	16	85	81	405
Dozer	No	40	85	82	55
Drill Rig Truck	No	20	84	79	22
Drum Mixer	No	50	80	80	1
Dump Truck	No	40	84	76	31
Excavator	No	40	85	81	170
Flat Bed Truck	No	40	84	74	4
Front End Loader	No	40	80	79	96
Generator	No	50	82	81	19
Generator (<25KVA, VMS Signs)	No	50	70	73	74

Gradall	No	40	85	83	70
Grader	No	40	85	N/A	0
Grapple (on backhoe)	No	40	85	87	1
Horizontal Boring Hydraulic Jack	No	25	80	82	6
Hydra Break Ram	Yes	10	90	N/A	0
Impact Pile Driver	Yes	20	95	101	11
Jackhammer	Yes	20	85	89	133
Man Lift	No	20	85	75	23
Mounted Impact Hammer (hoe ram)	Yes	20	90	90	212
Pavement Scarifier	No	20	85	90	2
Paver	No	50	85	77	9
Pickup Truck	No	40	55	75	1
Pneumatic Tools	No	50	85	85	90
Pumps	No	50	77	81	17
Refrigerator Unit	No	100	82	73	3
Rivit Buster/Chipping Gun	Yes	20	85	79	19
Rock Drill	No	20	85	81	3
Roller	No	20	85	80	16
Sand Blasting (single nozzle)	No	20	85	96	9
Scraper	No	40	85	84	12
Sheers (on	No	40	85	96	5

backhoe)					
Slurry Plant	No	100	78	78	1
Slurry Trenching Machine	No	50	82	80	75
Soil Mix Drill Rig	No	50	80	N/A	0
Tractor	No	40	84	N/A	0
Vacuum Excavator (Vac-Truck)	No	40	85	85	149
Vacuum Street Sweeper	No	10	80	82	19
Ventilation Fan	No	100	85	79	13
Vibrating Hopper	No	50	85	87	1
Vibratory Concrete Mixer	No	20	80	80	1
Vibratory Pile Driver	No	20	95	101	44
Warning Horn	No	5	85	83	12
Welder/Torch	No	40	73	74	5

For each generic type of equipment listed in Table 9.1, the following information is provided:

- an indication as to whether or not the equipment is an impact device;
- the acoustical usage factor to assume for modeling purposes;
- the specification "Spec" limit for each piece of equipment expressed as an L_{max} level in dBA "slow" at a reference distance of 50 foot from the loudest side of the equipment;
- the measured "Actual" emission level at 50 feet for each piece of equipment based on hundreds of emission measurements performed on CA/T work sites; and

RESOLUTION NO. 408

A RESOLUTION OF THE CARPINTERIA CITY COUNCIL SUPERCEDING IN FULL ORDINANCE NO. 394 AND ADOPTING UPDATED AND REVISED ENVIRONMENTAL REVIEW REGULATIONS PURSUANT TO THE CALIFORNIA ENVIRONMENTAL QUALITY ACT OF 1970 AND CARPINTERIA MUNICIPAL CHAPTER 8.48, AS AMENDED

WHEREAS, the State of California has declared that every citizen has a responsibility to contribute to the preservation and enhancement of the environment, and that it is the intent of the State that all permitting authorities who regulate projects of private individuals, corporations, and public agencies which are found to affect the quality of the environment shall ensure that such projects shall be conditioned to mitigate any adverse impact on the environment; and

WHEREAS, Section 15050 of the State Administrative Code, addressing the California Environmental Quality Act of 1970, requires that each public agency establish and adopt procedures to ensure compliance with the California Environmental Quality Act of 1970, as amended; and

WHEREAS, the State Environmental Guidelines are very specific as to the nature of these required procedures; and

WHEREAS, amendments to the California Environmental Quality Act make it appropriate to revise existing City procedures; and

WHEREAS, a streamlined and efficient environmental review process is encouraged and desirable; and

WHEREAS, the existing environmental guidelines and procedures are wholly superceded; and

WHEREAS, the Community Development Director, in cooperation with the City Attorney, has prepared a proposed and revised Environmental Review Procedure program and recommended such adoption; and

WHEREAS, the City of Carpinteria Planning Commission has considered the proposed Environmental Review Procedure and finds that such will meet the requirements of the California Environmental Quality Act, as amended, and provide the City with an improved permit processing procedure and has recommended that the City Council adopt the updated and revised Environmental Review Regulations.

NOW, THEREFORE, THE CARPINTERIA CITY COUNCIL HEREBY RESOLVES that the Carpinteria Environmental Review Procedure, attached hereto as Exhibit "A", is hereby approved and adopted.

In addition, the SBCAPCD has prepared criteria and thresholds for determining significance under CEQA. For further information regarding air quality standards for findings of significance, please refer to the County Air Quality Attainment Plan completed by SBCAPCD.

NOISE THRESHOLDS

Properties and Measurement

Measurement of sound involves determining three variables: (1) magnitude; (2) frequency; and (3) duration.

1. Magnitude

The magnitude of vibrations in air pressure associated with sound wave results in the quality commonly referred to as "loudness." Human ears respond to a very wide range of sound pressures, producing numbers of awkward size when sound pressures are related on an arithmetic (1, 2, 3, ...) scale. It has therefore become customary to express sound magnitude in decibels (dB) which are logarithmic (1, 10, 100, ...) ratios comparing measured sound pressures to a reference pressure. The reference pressure commonly used in noise measurement is 20 micro-Pascals, which is considered to be the quietest sound normal ears can hear. This sound level is assigned the value zero dB, and each increment in sound level of 20 dB represents a relative change in sound pressures of ten times.

Because decibels are logarithmic ratios, they cannot be manipulated in the same way as arithmetic numbers. Addition of decibels produces such results as 70 dB + 70 dB = 73 dB. Thus, if a single automobile produces a sound level of 70 dB, two such automobiles would produce a total sound level of 73 dB. Twice as much acoustic energy is being generated, yet this is represented as a 3 dB change. As a second example of decibel addition, if one automobile produces a sound level of 79 dB and the other 60 dB, the combined sound level will be about 70.4 dB. When the difference between two sound levels is greater than about 10 decibels, the lesser sound is negligible in terms of affecting the total level.

2. Frequency

A second characteristic of sound which must be included in the measurement is frequency. Typical community sounds consist of a wide range of frequencies, from the low roar of a diesel engine to the high-pitched whine of jet aircraft. The human ear responds to sounds whose frequencies are in the range from 20 Hz to 20,000 Hz. People generally find higher pitched sound to be more annoying than lower pitched sounds.

Presently, the most widely used measure of "loudness" for community noise evaluation is the A-weighted sound level. The primary advantage of this descriptor is simplicity, and it has fair correlation with subjective assessments of loudness and annoyance. Sound levels in this section are A-weighted and referred to as "dB(A)".

3. Duration

Community Noise Equivalent Level (CNEL) is a noise index that attempts to take into account differences in intrusiveness between daytime and nighttime noises. CNEL value result from the averaging of hourly Energy-Equivalent Sound Levels (Leq) for a 24-hour period, with a weighting factor applied to evening and nighttime Leq values.

For CNEL calculations, the day is divided into time periods with the following descriptions and weightings:

Community Noise Equivalent Level

Daytime:	7:00 a.m. – 7:00 p.m.	-	weighting factor of 1 dB
Evening:	7:00 p.m. – 10:00 p.m.		weighting factor of 5 dB
Nighttime:	10:00 p.m. – 7:00 a.m.	-	weighting factor of 10 dB

Noise Exposure Contours

Noise exposure contours are the mapped expressions of points of equal average noise level, analogous to topographic contours which are the mapped expression of points of equal elevation. Noise contours can be drawn with respect to any noise measure; to satisfy State requirements for the Noise Element, LDN and CNEL have been used in this section. Noise contours usually refer to a single source of noise such as a freeway, although they sometimes combine multiple sources.

Noise Thresholds

a. A proposed development that would generate noise levels in excess of 65 dB CNEL and could affect sensitive receptors would be considered to have a significant impact.

b. Outdoor living areas of noise sensitive uses that are subject to noise levels in excess of 65 dB CNEL would be considered to be significantly impacted by ambient noise. A significant impact would also occur where interior noise levels cannot be reduced to 45 dB CNEL or less.

c. A project will have a significant effect on the environment if it will increase substantially the ambient noise levels for adjoining areas.

All noise studies evaluating ambient noise levels and changes resulting from project development should be prepared by licensed acoustical engineers.

Noise Threshold Criteria

1. Controlling Noise

Significant noise impact problems in Carpinteria are primarily associated with transportation facilities. Noise in the vicinity of railroads and major traffic ways exceeds health and welfare criteria for noise exposure in relation to residential use. Specifically, Carpinteria citizens are exposed to noise from the U.S. 101, major roadways, the Union Pacific Railroad line and stationary sources. While noise from commercial, industrial, agricultural and population activities may be part of the ambient noise at any location, rarely do these generate noise of the same magnitude as transportation sources. In the City, many people are exposed to transportation noise at Day-Night Average Levels (Ldn) exceeding 60 dB. This exposure level is considered here to be the maximum compatible with residential and other noise-sensitive land use. In locations outside the immediate influence of a major transportation noise source, ambient Day-Night Average Levels typically range from 46 dB to 57 dB. Although localized noise problems will exist in these areas, generally ambient noise levels are acceptable, based on health and welfare criteria.

Controlling the impact of transportation noise must be approached both by quieting vehicles and by protecting sensitive land uses in locations where noise impact is excessive. The first of these approaches is beyond the legal jurisdiction of the City or County because Federal and State legislation is preemptive in the field of noise source control. The City's primary opportunities to manage transportation noise impacts lie in:

- Planning for compatible uses near existing transportation facilities.
- Imposing design standards on proposed sensitive development near existing transportation facilities.
- Incorporating noise control features into the design of new or expanded traffic ways to protect existing sensitive areas.

2. Planning Policies

   a. In the planning of land use, 65 dB Day-Night Average Sound Level is regarded as the maximum exterior noise exposure compatible with noise-sensitive uses unless mitigation features are included in project designs.

   b. Noise-sensitive land uses are considered to include:

      - Residential, including single and multi-family dwellings, mobile home parks, dormitories, and similar uses.
      - Transient lodging, including hotels, motels, and similar uses.
      - Hospitals, nursing homes, convalescent hospitals, and other facilities for long-term medical care.
      - Public or private educational facilities, libraries, churches, and places of public assembly.

   c. Noise-sensitive uses proposed in areas where the Day-Night Average Sound Level is 65 dB or more should be designed so that interior noise levels attributable to exterior sources do not exceed 45 dB LDN when doors and windows are closed. An analysis of the noise insulation effectiveness of proposed construction should be required, showing that the building design and construction specifications are adequate to meet the prescribed interior noise standard.

d. Residential uses proposed in areas where the Day-Night Average Sound Level is 65 dB or more should be designed so that noise levels in exterior living spaces will be less than 65 dB LDN. An analysis of proposed projects should be required, indicating the feasibility of noise barriers, site design, building orientation, etc. to meet the prescribed exterior noise standard.

e. In the planning and design of major transportation routes and facilities, noise impacts on existing or planned land uses are carefully considered so that noise-related land use conflicts are minimized.

The following guidelines will be used to determine a potential threshold at which noise levels would be considered significant under CEQA and mitigating would probably be required.

Traffic Noise:

1) New Construction

a) <u>All Residential (single -family and multi-family) and other noise sensitive land uses which include schools, libraries, hospitals, day-care, convalescent homes, hotels, motels and parks.</u>

Exterior noise levels would be considered significant if projected traffic forecasts (year 2010) would result in noise levels exceeding 65 dB (A) CNEL at exterior usable areas (does not include residential front yards or balconies, unless the balconies are part of the usable open space calculation for multi-family units).

Interior noise levels for hotels, motel, and dwellings other than detached single-family dwelling units are regulated by Building Inspection. Noise insulation for these structures is required so that interior noise levels do not exceed 45 dB. Therefore, interior noise levels for these structures would not be considered significant under CEQA. The environmental document should include a discussion of potential noise impacts and how they would be reduced.

Since single-family detached residences are not presently covered by the City Noise Ordinance, interior noise levels for single-family homes which exceed 45dB, would be considered significant.

<u>Rule of Thumb</u>

If the structure of outdoor living or usable area would be 50 feet or less from the center of the outside lane of a street with existing or <u>future</u> traffic volumes of 7,500

ADT or greater, the exterior and interior threshold levels may be exceeded and a noise study or calculation is necessary.

b) Offices, Churches, Business and Professional Uses

Traffic noise levels for these uses would be considered significant if they exceed 70 dB(A) CNEL at exterior usable areas, such as outdoor restaurant or employee eating areas.

Rule of Thumb

If the structure or outdoor usable area would be 50 feet or less from the center of the outside lane of a street with an existing or future ADT of 20,000 or greater, the exterior levels may be exceeded and a noise study or calculation is necessary.

c) Commercial, Retail, Industrial and Outdoor Spectator Sports Uses

Traffic noise levels for these uses would be considered significant if they exceed 75 dB(A) CNEL at outdoor usable areas.

Rule of Thumb

If the structure or outdoor usable area would be 50 feet or less from the center of the outside lane of a street with and existing or future ADT of 40,000 or greater, the exterior level may be exceeded and a noise study or calculation is necessary.

d) Noise studies on an existing single-family residence remodel would not be required.

Noise From Adjacent Stationary Uses (Noise Generators)

1) A project which would generate nose levels at the property line which exceed the City's Noise Ordinance Standards is considered potentially significant (such as a car wash).

2) If a non-residential use, such as a commercial, industrial or school use, is proposed to about an existing residential use, the noise level of the non-residential use should not exceed the residential standards of 64 dB(A) CNEL at the adjoining property line. Although the noise level could be consistent with the City's Noise Ordinance Standards, a noise level above 65 dB(A) CNEL at the residential property line could be considered a significant environmental impact.

Impacts to Wildlife and Natural Preserves

Increases from rural to urban noise levels in a wildlife refuge, or passive wilderness, or open space park could be considered significant and would be determined on a case-by-case basis.

Temporary Construction Noise

Temporary construction noise which exceeds 75 dB(A) CNEL for 12 hours within a 24-hour period at residences would be considered significant. Additionally, where temporary construction noise would substantially interfere with normal business communication, or affect sensitive receptors, such as day care facilities, hospitals or schools, temporary impacts would be considered significant.

For the noise level analysis, an increase in noise would be considered significant if any of the following conditions occurred for an extended period of time:

- An increase in noise levels of 10 dB(A) if the existing noise levels are below 55 dB(A) (creates a potential significant nuisance effect);

- An increase in noise levels that exceeds noise level standards if the existing noise levels are between 55 and 60 dB(A) (violates existing regulatory requirement); or

- An increase in noise levels of 5 dB(A) if the existing noise levels are above 60 dB(A) (violates or worsens a violation of an existing regulatory requirement).

For vehicular traffic, a noise level of 65 Leq (FAA, EPA) will be used. For construction activity, applicable federal, state, and/or local standards, criteria, or ordinances will be applied. The Ldn and Leq measures are expressed on the dB(A) sound level scale. For purposes of comparing noise level indices, the Leq (for the peak-traffic period) is approximately equivalent to the Ldn. *(URS Corporation, A Guide For Environmental Analysis)* Project noise impacts are significant if they raise existing (ambient) levels from below to above the applicable criterion or if noise resulting from the project increases average ambient levels which are already above the applicable criterion by more than three dB, or if project-generated noise results in a five dB increase and the resulting level remains below the maximum considered normally acceptable. These criteria for significance recognize (1) the threshold levels of acceptability established by the local government agencies; (2) that once the threshold level has been passed, any noticeable change above that level (a three dB increase) results in a further degradation of the noise environment; and (3) that a clearly noticeable change (a five dB increase) in the noise environment, even though the threshold has not been reached, is also a significant impact, because people respond to changes in noise level regardless of the absolute level of the noise.

Table A - Land Use Noise Compatibility Matrix

Land Use Categories		Community Noise Equivalent Level (CNEL)						
Categories	Uses	>55	60	65	70	75	80>	
RESIDENTIAL	Single Family, Duplex, Multiple Family	A	A	B	C	C	D	D
RESIDENTIAL	Mobile Home	A	A	B	C	C	D	D
COMMERCIAL Regional, District	Hotel, Motel, Transient Lodging	A	A	B	B	C	C	D
COMMERCIAL Regional, Village, District, Special	Commercial Retail, Bank, Restaurant, Movie Theater	A	A	A	A	B	B	C
COMMERCIAL INDUSTRIAL INSTITUTIONAL	Office Building, Research and Development, Professional Offices, City Office Building	A	A	A	B	B	C	D
COMMERCIAL Recreation INSTITUTIONAL Civic Center	Amphitheater, Concert Hall Auditorium, Meeting Hall	B	B	C	C	D	D	D
COMMERCIAL Recreation	Children's Amusement Park, Miniature Golf Course, Go-cart Track, Equestrian Center, Sports Club	A	A	A	B	B	D	D
COMMERCIAL General, Special INDUSTRIAL INSTITUTIONAL	Automobile Service Station, Auto Dealership, Manufacturing, Warehousing, Wholesale, Utilities	A	A	A	A	B	B	B
INSTITUTIONAL General	Hospital, Church, Library, Schools' Classroom	A	A	B	C	C	D	D
OPEN SPACE	Parks	A	A	A	B	C	D	D
OPEN SPACE	Golf Course, Cemeteries, Nature Centers, Wildlife Reserves, Wildlife Habitat	A	A	A	A	B	C	C
AGRICULTURE	Agriculture	A	A	A	A	A	A	A

<u>**INTERPRETATION**</u>

ZONE A CLEARLY COMPATIBLE	Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction without any special noise insulation requirements.
ZONE B NORMALLY COMPATIBLE	New construction or development should be undertaken only after detailed analysis of the noise reduction requirements are made and needed noise insulation features in the design are determined. Conventional construction, with closed windows and fresh air supply systems or air conditioning, will normally suffice.
ZONE C NORMALLY INCOMPATIBLE	New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of noise reduction requirements must be made and needed noise insulation features included in the design
ZONE D CLEARLY INCOMPATIBLE	New construction or development should generally not be undertaken.

COUNTY OF VENTURA

CONSTRUCTION NOISE THRESHOLD CRITERIA AND CONTROL PLAN

Adopted November 2005
Amended July 2010

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Each phase has a different equipment mix depending on the work to be accomplished. Some have more continuous noise, while others may have more impact type noise. Typical construction phases and equipment usage factors are given in Appendix A. Construction phase equipment usage factors, combined with receptor distances and equipment noise emissions, can be used in estimating future project noise. Such methods are discussed in Appendix B.

Figure 3. Noise-Sensitive Receptors

Receptor Description	Typical Sensitive Time Period
Hospitals, Nursing Homes (quasi-residential)	24 hours
Single-Family and Multi-Family Dwellings (residential)	Evening/Night
Hotels/Motels (quasi-residential)	Evening/Night
Schools, Churches, Libraries (when in use)	Daytime/Evening

Construction Noise Threshold Criteria

Standardized federal or state criteria have not been adopted for assessing construction noise impacts. Therefore, municipal planning criteria are generally developed and applied on a project-specific basis. Construction project noise criteria take into account the existing noise environment, the time-varying noise during the various phases of construction activities, the duration of the construction, and the adjacent land use.

Specific construction noise limits for noise-sensitive locations are not currently specified in the General Plan or administrative code of the County of Ventura. This document, therefore, is intended to establish construction noise thresholds and standard noise monitoring and control measures. These threshold criteria, monitoring and control measures shall be applied to all discretionary development projects (public projects, PD Permits, Conditional Use Permits) and should be applied to ministerial development permits by amending the county building code (including excavation and grading). Construction noise monitoring methods are discussed in Appendix C. Construction projects that exceed the noise threshold criteria at sensitive receptor sites, shall implement effective noise mitigation measures recommended by the manufacturers, considering the guidelines of Appendix D. The permitting agency/department shall review the construction noise mitigation measures and confirm compliance with the noise threshold criteria.

During daytime hours, construction work should comply with the County of Ventura construction noise threshold criteria (NTC), defined hereafter. Normally, no evening or nighttime construction activity is permitted in areas having noise-sensitive receptors. However, in the event such activity is deemed necessary and is permitted, reduced noise threshold criteria are provided for construction that must occur during evening and/or nighttime hours. Emergency construction work is exempt from these construction noise thresholds.

<u>Daytime Construction</u>[1] - Daytime (7:00 a.m. to 7:00 p.m. Monday through Friday, and from 9:00 a.m. to 7:00 p.m. Saturday, Sunday and local holidays) generally means any time period not

[1] These criteria only apply to the noise-sensitive receptors that are sensitive to noise impacts during the daytime. See Figure 3 (above).

specifically defined as a more noise-sensitive time period. The daytime construction noise threshold criteria are given in Figure 4. Depending on project duration, the daytime noise threshold criteria shall be the greater of the fixed L_{eq}(h) limit (which includes non-construction evening and nighttime noise) or the measured ambient L_{eq}(h) plus 3 dB.

Evening Construction[2] - Evening hours (7:00 p.m. to 10:00 p.m.) are more noise-sensitive time periods. Therefore, evening construction noise threshold criteria differ from the daytime criteria. Overall project construction noise, for the noise-sensitive hours specified, shall not exceed the noise threshold criteria listed in Figure 5, at the nearest noise-sensitive receptor area or 10 feet from the façade of the nearest noise-sensitive building.

Nighttime Construction[3] - Nighttime hours (10:00 p.m. to 7:00 a.m. Monday through Friday, and from 10:00 p.m. to 9:00 a.m. Saturday, Sunday and local holidays) are the most noise-sensitive time periods. Therefore, nighttime and holiday construction noise threshold criteria differ from the daytime and evening criteria. Overall project construction noise, for the noise-sensitive hours specified, shall not exceed the noise threshold criteria listed in Figure 6, at the nearest noise-sensitive receptor area or 10 feet from the façade of the nearest noise-sensitive building.

Maximum Construction Noise - In addition, the construction-related, slow response, instantaneous maximum noise (L_{max}) shall not exceed the noise threshold criteria by 20 dBA more than eight times per daytime hour, more than six times per evening hour and more than four times per nighttime hour.

Determination of Compliance - The construction noise at sensitive receptor locations for each construction phase is due to the contributions of each piece of noise producing equipment used in each construction phase. The resulting construction phase noise must be compared to the construction noise threshold criteria to determine whether noise mitigation measures are required. The construction noise monitoring methods are discussed in Appendix C and typical noise mitigation measures are given in Appendix D. During periods of greater construction noise activity, the construction noise shall be monitored by a designated person trained in the use of a sound meter in accordance with the methods of Appendix C. When construction noise fails to comply with the appropriate noise threshold criteria, or falls out of compliance during use, the designated noise monitor shall immediately identify the non-compliant activity or equipment. Either the non-compliant activity must be stopped and the equipment removed from service or effective remedial action must be taken, similar to the noise mitigation measures of Appendix D, to restore compliance with the respective noise threshold criteria.

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[2] These criteria apply to all noise-sensitive receptors. See Figure 3 (above).

[3] These criteria only apply to the noise-sensitive receptors that are sensitive to noise impacts during the nighttime. See Figure 3 (above).

Figure 4. Daytime Construction Activity Noise Threshold Criteria

Construction Duration Affecting Noise-sensitive Receptors	Noise Threshold Criteria shall be the greater of these noise levels at the nearest receptor area or 10 feet from the nearest noise-sensitive building	
	Fixed Leq(h), dBA	Hourly Equivalent Noise Level (L_{eq}), dBA[1, 2]
0 to 3 days	75	Ambient L_{eq}(h) + 3 dB
4 to 7 days	70	Ambient L_{eq}(h) + 3 dB
1 to 2 weeks	65	Ambient L_{eq}(h) + 3 dB
2 to 8 weeks	60	Ambient L_{eq}(h) + 3 dB
Longer than 8 weeks	55	Ambient L_{eq}(h) + 3 dB

Note 1. The instantaneous L_{max} shall not exceed the NTC by 20 dBA more than 8 times per daytime hour.
Note 2. Local ambient Leq measurements shall be made on any mid-week day prior to project work.

Figure 5. Evening Construction Activity Noise Threshold Criteria

Receptor Location	Evening Noise Threshold Criteria shall be the greater of these noise levels at the nearest receptor area or 10 feet from the nearest noise-sensitive building	
	Fixed Leq(h), dBA	Hourly Equivalent Noise Level (L_{eq}), dBA[1, 2]
Residential	50	Ambient L_{eq}(h) + 3 dB

Note 1. The instantaneous L_{max} shall not exceed the NTC by 20 dBA more than 6 times per evening hour.
Note 2. Hourly evening local ambient noise measurements shall be made on a typical mid-week evening prior to project work.

Figure 6. Nighttime Construction Activity Noise Threshold Criteria

Receptor Location	Nighttime Threshold Criteria shall be the greater of these noise levels at the nearest receptor area or 10 feet from the nearest noise-sensitive building	
	Fixed Leq(h), dBA	Hourly Equivalent Noise Level (L_{eq}), dBA[1, 2]
Resident, Live-in Institutional	45	Ambient L_{eq}(h) + 3 dB

Note 1. The instantaneous L_{max} shall not exceed the NTC by 20 dBA more than 4 times per nighttime hour.
Note 2. Hourly nighttime local ambient noise measurements shall be made on a typical mid-week night prior to project work.

Construction Noise Complaints

The daytime noise threshold criteria for construction activity are provided in Figure 4. When evening and nighttime construction is necessary, evening and nighttime construction operations (except for emergency construction) must comply with the evening and nighttime noise threshold criteria listed in Figures 5 and 6, respectively. If these respective construction noise threshold criteria are exceeded, there would likely be strong adverse community reaction. However, noise complaints are possible, even when construction work complies with the criteria.

NOISE ELEMENT

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SANTA BARBARA COUNTY
COMPREHENSIVE PLAN

County of Santa Barbara
Planning and Development
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CONCLUSIONS AND RECOMMENDATIONS

Significant noise impact problems in Santa Barbara County are primarily associated with transportation facilities. Noise in the vicinity of airports, railroads, and major trafficways exceeds health and welfare criteria for noise exposure in relation to residential use. While noise from commercial, industrial, agricultural, and "population" activities may be part of the ambient level at any location, rarely do these generate noise of the same magnitude as transportation sources.

In the unincorporated County, it is estimated that as many as 8,000 housing units and 21,000 persons are potentially exposed to transportation noise at Day-Night Average Levels exceeding 60 dB. In locations outside the immediate influence of a major transportation noise source, ambient Day-Night Average Levels typically range from 46 dB - 57 dB. Although localized noise problems will exist in these areas, generally ambient noise levels are acceptable, based on health and welfare criteria.

Controlling the impact of transportation noise must be approached both by quieting vehicles and by protecting sensitive land uses in locations where noise impact is excessive. The first of these approaches is beyond the legal jurisdiction of the County; Federal and State legislation is preemptive in the field of noise source control. The County's primary opportunities to manage transportation noise impact lie in:

1. Planning for compatible uses near existing transportation facilities.

2. Imposing design standards on proposed sensitive development near existing transportation facilities.

3. Incorporating noise control features into the design of new or expanded trafficways to protect existing sensitive areas.

The following recommended County policies concentrate in these areas.

1) In the planning of land use, 65 dB Day-Night Average Sound Level should be regarded as the maximum exterior noise exposure compatible with noise-sensitive uses unless noise mitigation features are included in project designs.[ii]

2) Noise-sensitive land uses should be considered to include:

   a) Residential, including single and multifamily dwellings, mobile home parks, dormitories, and similar uses.

   b) Transient lodging, including hotels, motels, and similar uses.

   c) Hospitals, nursing homes, convalescent hospitals, and other facilities for long-term medical care.