DRAFT

APPENDICES – VOLUME I
ENVIRONMENTAL IMPACT REPORT
STATE CLEARINGHOUSE NO.2021110098
5037 PATATA STREET
INDUSTRIAL DEVELOPMENT
SOUTH GATE, CALIFORNIA

LEAD AGENCY:

CITY OF SOUTH GATE
COMMUNITY DEVELOPMENT DEPARTMENT
8650 CALIFORNIA AVENUE
SOUTH GATE, CALIFORNIA 90280

REPORT PREPARED BY:
BLODGETT BAYLOSIS ENVIRONMENTAL PLANNING
2211 HACIENDA BOULEVARD, SUITE 107
HACIENDA HEIGHTS, CALIFORNIA 91745

NOVEMBER 15, 2022

SGAT 036

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APPENDIX A – NOTICE OF PREPARATION

NOTICE OF PREPARATION

PATATA STREET INDUSTRIAL DEVELOPMENT
5037 PATATA STREET
SOUTH GATE, CALIFORNIA 90280

LEAD AGENCY:

CITY OF SOUTH GATE
COMMUNITY DEVELOPMENT DEPARTMENT
8650 CALIFORNIA AVENUE
SOUTH GATE, CALIFORNIA 90280

REPORT PREPARED BY:

BLODGETT BAYLOSIS ENVIRONMENTAL PLANNING
2211 S. HACIENDA BOULEVARD, SUITE 107
HACIENDA HEIGHTS, CALIFORNIA 91745

NOVEMBER 4, 2021

SGAT 036

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NOTICE OF PREPARATION

This Notice of Preparation (NOP) is a brief notice sent by the City of South Gate, which is the designated lead agency for the Patata Street Industrial Development. The purpose of this NOP is to notify the responsible agencies, trustee agencies, involved public agencies, and the general public that the lead agency intends to prepare an Environmental Impact Report (EIR) to analyze the proposed project's environmental impacts and to identify potential mitigation. An additional purpose of this NOP is to solicit guidance from those agencies as to the scope and content of the environmental information they desire to be included in the EIR.

PROJECT NAME: Patata Street Industrial Development

ADDRESS: The 27.12-acre project site is located at 5037 Patata Street, within the northeastern portion of the City of South Gate.

CITY AND COUNTY: South Gate, Los Angeles County.

LEAD AGENCY: City of South Gate, 8650 California Avenue, South Gate, California 90280.

APPLICANT: The project Applicant is South Gate Owner, LP. 19700 S Vermont Avenue #101, Torrance, California 90502.

PROJECT: The City of South Gate, in its capacity as Lead Agency, is overseeing a new development project that involves the construction and subsequent occupancy of a new industrial development that would total 447,420 square-feet of floor area. The proposed development would include a new main building consisting of 435,420 square feet and a smaller truck maintenance building consisting of 12,000 square feet. The new tilt-up main building would consist of corporate offices, a warehouse, and cooler space, as well as mezzanine space. The main building would include 45,000-square-feet of office space located in the southwestern corner of the main building. The warehouse portion of the main building would include a loading and storage area, a total of 30,000 square feet of 36° cooler storage, and 134,400 square feet of 60° cooler storage. The main building would have two clear heights of 52 feet, 6 inches in the east end and a clear height of 40 feet in the west end. The parapets would vary in height ranging from 45 feet 6 inches to 64 feet above the finished floor elevation. A smaller, 12,000 square foot building would be constructed for use as a truck maintenance workshop. The 27.12-acre project site is located at 5037 Patata Street, within the northeastern portion of the City of South Gate.

Signature
City of South Gate Planning and Development Department

Date

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1. INTRODUCTION

The City of South Gate, in its capacity as Lead Agency, is overseeing a new development project that would involve the construction and subsequent occupancy of a new industrial development that would total 447,420 square-feet of floor area. The 27.12-acre project site is located at 5037 Patata Street, within the northeastern portion of the City of South Gate. The proposed development would include a new main building consisting of 435,420 square feet and a smaller truck maintenance building consisting of 12,000 square feet. The new tilt-up main building would consist of corporate offices, a warehouse, and cooler space, as well as mezzanine space. The main building would include 45,000-square-feet of office space located in the southwestern corner of the main building. The warehouse portion of the main building would include a loading and storage area, a total of 30,000 square feet of 36° cooler storage, and 134,400 square feet of 60° cooler storage. The main building would have two clear heights of 52 feet, 6 inches in the east end and a clear height of 40 feet in the west end. The parapets would vary in height ranging from 45 feet 6 inches to 64 feet above the finished floor elevation. A smaller, 12,000 square foot building would be constructed for use as a truck maintenance workshop.

The proposed Patata Street Industrial Development is considered to be a project under the California Environmental Quality Act (CEQA).[1] The City of South Gate is the designated *Lead Agency* for the proposed "project" and the City will be responsible for the project's environmental review. Section 21067 of CEQA defines a Lead Agency as the public agency that has the principal responsibility for carrying out or approving a project that may have a significant effect on the environment. The project Applicant is Overton Moore Properties, Inc. 19700 S Vermont Avenue #101, Torrance, California 90502. As part of the proposed project's environmental review, the City of South Gate authorized the preparation of this Notice of Preparation (NOP).

The primary purpose of CEQA is to ensure that decision-makers and the public understand the environmental implications of a specific action or project. The purpose of this NOP is to ascertain whether the proposed project will have the potential for significant adverse impacts on the environment. Pursuant to the CEQA Guidelines, additional purposes of this NOP include the following:

- To provide the City of South Gate with information to use as the basis for deciding whether to prepare an Environmental Impact Report (EIR), mitigated negative declaration, or negative declaration for a project;
- To facilitate the project's environmental assessment early in the design and development of the proposed project;
- To eliminate unnecessary EIRs; and,
- To determine the nature and extent of any impacts associated the proposed project.

Although this NOP was prepared with consultant support, the analysis, conclusions, and findings made as part of its preparation, fully represent the independent judgment and position of the City of South Gate, in its capacity as the *Lead Agency*. The City, also determined, as part of this NOP's preparation, that an Environmental Impact Report (EIR) is the appropriate environmental document for the project's

[1] California, State of. *Title 14. California Code of Regulations. Chapter 3. Guidelines for the Implementation of the California Environmental Quality Act*. as Amended 1998 (CEQA Guidelines). § 15060 (b).

environmental review pursuant to CEQA. This NOP will be forwarded to responsible agencies, trustee agencies, and the public for review and comment. These agencies may include, but are not limited to, the following:

- The California Department of Toxic Substances Control (DTSC);
- Los Angeles County Flood Control District n(LACFCD);
- South Coast Air Quality Management District (SCAQMD);
- Los Angeles County Fire Department (LACFD); and,
- Los Angeles County Metropolitan Transportation Authority (LA-MTA)

In addition, the surrounding cities will also be notified including the City of Cudahy, the City of Huntington Park, the City of Bell, the City of Bell Gardens, the City of Paramount, the City of Downey, the City of Lynwood, and the Los Angeles Department of Regional Planning.

A 30-day public review period will be provided to allow these entities and other interested parties to comment on the proposed project and the findings of this NOP. Questions and/or comments should be submitted to the following contact person:

Ms. Yalini Siva, Senior Planner.
City of South Gate, Planning and Development Department
8650 California Avenue
South Gate, California 90280

2. PROJECT LOCATION & ENVIRONMENTAL SETTING

The proposed project site is located within the corporate boundaries of the City of South Gate. The City of South Gate is located approximately ten miles southeast of downtown Los Angeles and 13.5 miles north of the port of Long Beach. The City is bounded by the cities of Huntington Park, Cudahy, and Bell Gardens on the north; unincorporated county areas to the west; Lynwood and Paramount on the south; and Downey to the east. The location of South Gate in a regional context is shown in Exhibit 1. A citywide map is provided in Exhibit 2.

The 27.12-acre project site is located at 5037 Patata Street, within the northeastern portion of the City of South Gate (refer to Exhibit 2). The applicable Assessor's Parcel Number (APN) 6224-031-003. The project site is located in an area of South Gate that consists of manufacturing and distribution uses. Residential development extends along the northern boundary of the project site within the corporate boundaries of the City of Cudahy. A vicinity map is provided in Exhibit 3.

The project site is generally bounded by the Los Angeles River along the eastern side of the project site, Patata Street and the Union Pacific Railroad (Patata Industrial Lead line) to the south, an industrial property and Wilcox Avenue to the west, and the aforementioned residential neighborhood to the north. Local access to the project site is provided by Patata Street, which connects to Atlantic Avenue, located approximately 0.30 mile to the west of the project site. Atlantic Avenue provides access to I-710 via Firestone Boulevard.

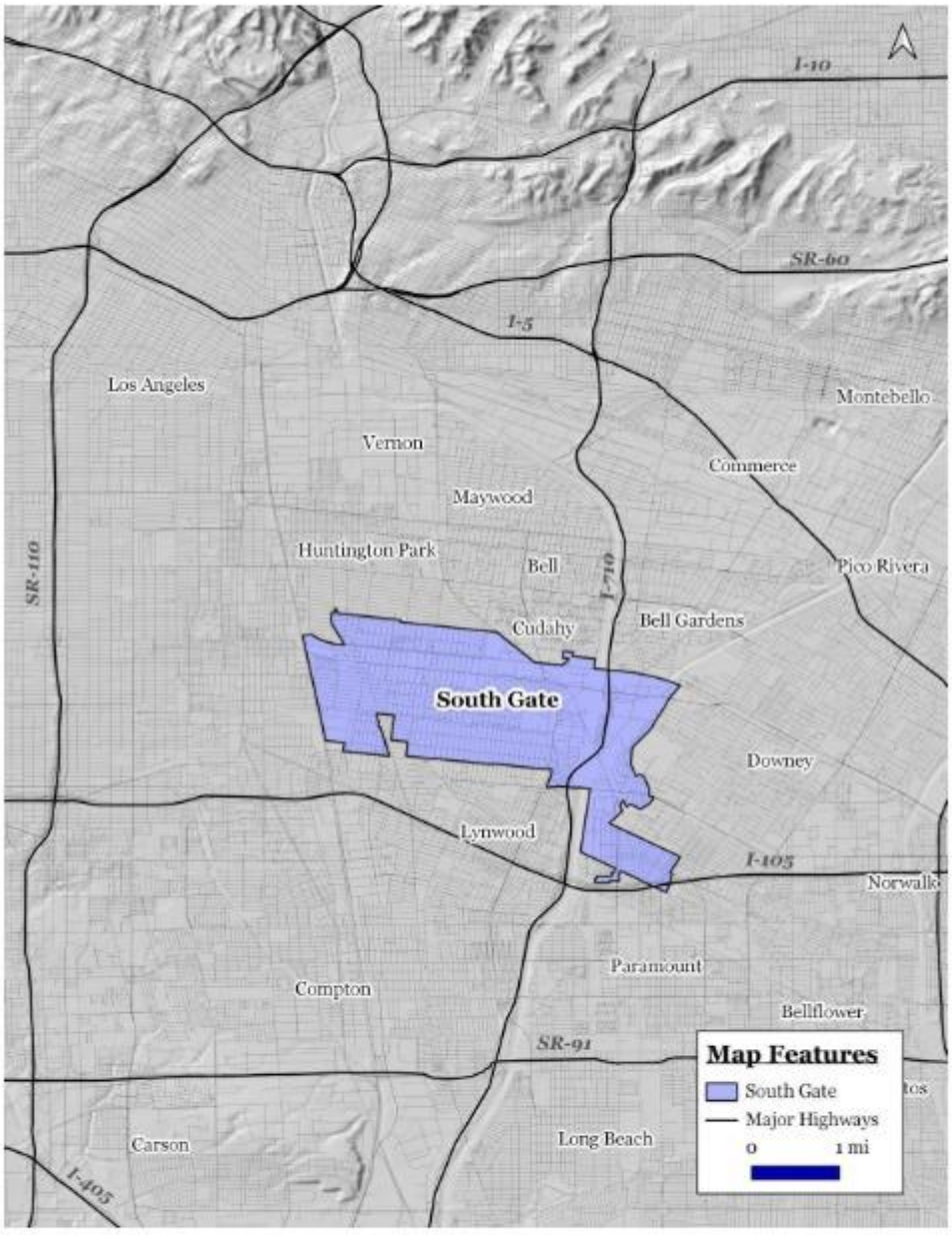


EXHIBIT 1
REGIONAL LOCATION
Source: Blodgett Baylosis Environmental Planning

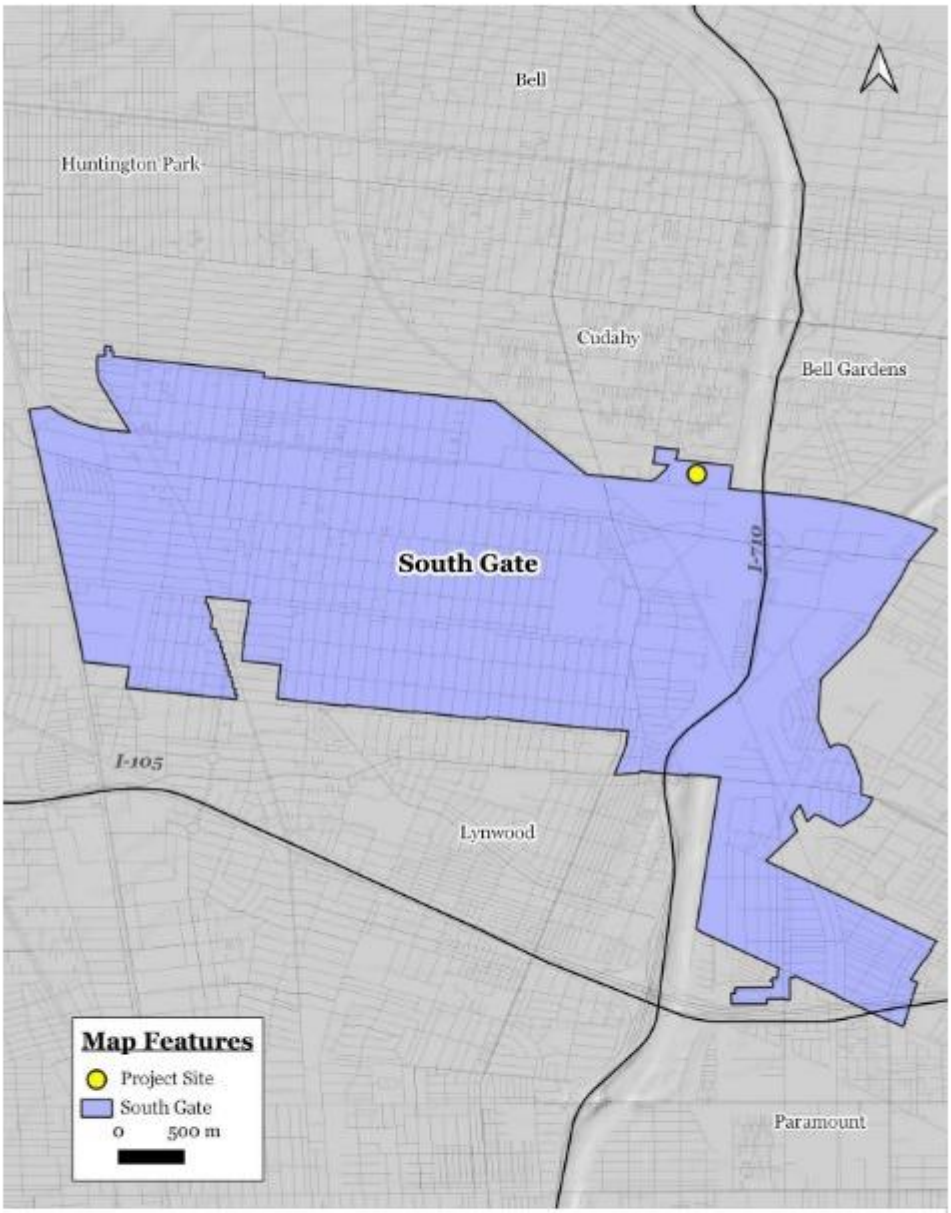


EXHIBIT 2
CITYWIDE MAP
Source: Blodgett Baylosis Environmental Planning

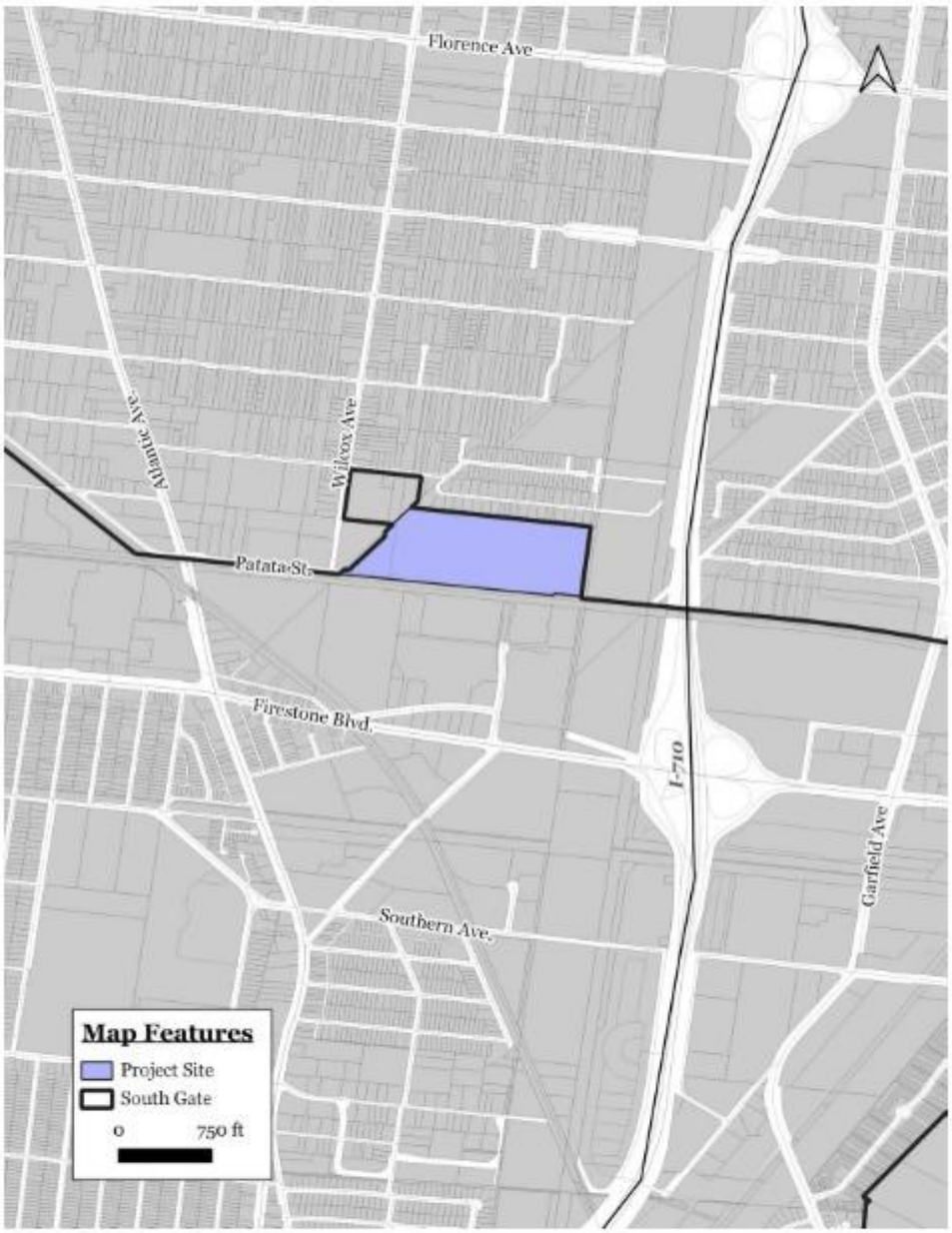


EXHIBIT 2-3
LOCAL MAP
Source: Blodgett Baylosis Environmental Planning

Surrounding land uses in the vicinity of the project site are summarized below:

- *North of the Planning Area*. The project site is bounded on the north by residential units that have frontage along Fostoria Street. These housing units are located within the corporate boundaries of the City of Cudahy.
- *South of the Planning Area*. The south side of the proposed project site is bounded by Patata Street and a Union Pacific Railroad branch line. Industrial uses are located further south.
- *East of the Planning Area*. The Los Angeles River is adjacent to the east of the site. Beyond the Los Angeles River is the Long Beach Freeway (I-710) which extends in a north-south orientation 0.43 miles to the east of the site.
- *West of the Planning Area*. An number of industrial properties are located adjacent to the project site on the west. Further west is Wilcox Avenue and a commercial center, which is situated in the City of Cudahy.

The majority of the project site was previously occupied by the former Armstrong World Industries plant with the former improvements having consisted of approximately 239,200 square feet of manufacturing-related floor area. This plant is now closed and there are no operations being conducted at this time. The western portion of the project site was occupied by manufacturing buildings that have since been demolished. The eastern portion of the project site, located next to the Los Angeles River, is vacant and undeveloped. The previous buildings that occupied the project site included a 5,630-square-foot office building, a 216,600-square-foot concrete building, and a 16,970-square-foot metal building. The only remaining structural improvements include building foundations, broken concrete and asphalt circulation and parking areas, and some unmaintained lanscaping. An existing operational cellular tower is located in the east-central portion of the site. Historic aerial photographs show that the project site contained structures on the western half of the project site dating back to 1954.[2] The project site has no street frontage and has a single point of ingress and egress that is located at the eastern terminus of Patata Street.

3. PROJECT DESCRIPTION

The proposed project would involve the construction of two buildings totaling 447,420 square feet. The primary or main building, located in the center of the project site, would consist of a 435,420-square-foot tilt-up concrete industrial building while the second building would consist of 12,000 square feet. The key elements of the proposed project area outlined below:

- *Site Plan*. The project site consists of 27.12-acres or 1,181,347 square feet. The proposed project would have a lot coverage of 35.7% and a floor area ratio (FAR) of 0.38:1.0.
- *Main Building*. The main building's footprint would be 409,920 square feet and would consist of corporate offices, a warehouse, storage and cooler space, as well as mezzanine space. There would also be a 45,000-square-foot office located in the southwestern corner of the main building. The warehouse portion of the main building would consist of a loading and storage area, a total of 30,000 square feet of 36° cooler storage, and a total of 134,400 square feet of 60° cooler storage.

[2] Nationwide Environmental Title Research, LLC. 2021. Historic Aerials by NETROnline. Website: https://www.historicaerials.com/viewer. Accessed July 28, 2021.

This main building would have two clear heights: 52 feet, 6 inches on the east end and 40 feet on the west end. The parapets vary and would range from 45 feet 6 inches to 64 feet above finish floor.

- *Main Building Loading Docks*. The main building would contain 50 dock-high truck doors, 15 spaces for future dock-high doors (knock-out panels), 11 grade-level truck doors, and nine spaces for future grade-level doors. The loading docks and the truck maneuvering area would be located along the southern and eastern elevations of the main building.

- *Second Building*. The second, smaller building would consist of 12,000-square-feet of floor area. This building would be truck maintenance workshop that would be located at the southeast corner of the project site. The truck maintenance building would be constructed of pre-engineered metal.

- *Design Characteristics*. The design of the proposed main building is intended to accommodate up to one tenant with corporate offices at the building entry. Potential uses could include light assembly, manufacturing, direct to consumer marketing, warehouse/distribution, e-commerce, and possibly other uses permitted within the City's M-2 zone. The 45,000 square-foot 2-story corporate office component would serve as the main public entrance to the building. The corporate office would be recessed and would consist of glazing with horizontal accents and a canopy. The west-facing office would have a punch storefront glazing to provide variety that complements the main entry. Reveals, accent colors, and shortened accent panels would provide an integrated design for the larger building. In addition to a storefront office, the main building would also include a warehouse mezzanine office totaling 3,000 square feet. The entire building would be equivalent to Leadership in Energy and Environmental Design (LEED™) Certified Silver Core and Shell. The proposed industrial building would provide large unobstructed spaces that can accommodate many types of activities and would support changing operations in a changing business landscape.

- *Parking*. Parking would be located within surface parking lots that would surround the proposed main building. The proposed project would accommodate 652 parking stalls, which would exceed the required number of 651 parking stalls. The project would also provide 20 EV charging stations for automobiles, 23 EV charging stations for future zero carbon delivery vehicles; and 30 future EV charging stations for employee or delivery vehicles. At each dock high loading door, an electrical source/pug-in will be installed for EV trucks. Additionally, 22 stalls would be striped for Clean Air Vehicle vanpool/carpool/low-emitting fuel-efficient vehicles. The parking areas would be concentrated on the west side of the project site, with the majority of parking provided near the office and the remainder provided around the perimeter along the north and east property lines. The dock positions and 163 delivery vehicles and trailer stalls would be located on the south side of the main building, providing separation from the residential properties located to the north of the site in the City of Cudahy. The truck court would be screened due to the project site's natural slope to the south. A 28-foot wide drive aisle would be provided the and trucks would be separated prior to entering the site.

- *Open Space and Landscaping*. Setbacks with landscaping would be provided along the property lines consistent with the Zoning Code.[3] The front building setback would be 10 feet, and the rear

[3] City of South Gate. 2015. City of South Gate Comprehensive Zoning Code, 11.24.060 Light and Heavy Manufacturing (M2 & M3) Zones. March. Website: https://www.cityofsouthgate.org/DocumentCenter/View/1183. Accessed July 28, 2021.

and side building setbacks would be 30 feet. The proposed project would provide 122,172 square feet of landscaping, which would be 10 percent of the project site's total land area. Landscaping would be provided around the perimeter of the project site, along the northern and western sides of the main building, and in the parking lots within the western and northern areas of the project site. The proposed landscaping would include varied tree species, shrubs, groundcover, and vines, with drought-tolerant plant species that would be consistent with the surrounding area. A 10-foot screen wall would be provided along the northern property line to create a barrier between the project site and the City of Cudahy residential area. Additionally, the proposed project would include a new bike bath connection to the Los Angeles River Trail via the extension of Patata Street to the east, which is located along the western side of the Los Angeles River.

- *Lighting*. The proposed project would be required to comply with the City's requirements for outdoor lighting. The proposed project's lighting plan would include night lighting for the parking areas, walkways, and driveways. Outdoor lights would be shielded and oriented downward to prevent light trespass and glare. Additionally, no lighting would be directed to the north where residential uses currently exist. The project site lighting would be designed to comply with LEED™, Cal Green and California Title 24 requirements.

- *Access and Circulation*. Two driveways would be provided from the extension of Patata Street and at the end of a proposed cul-de-sac at Patata Street, which currently terminates into the property. The eastern end of Patata Street would be extended approximately 550 feet further to the east into the property with an existing trail connection to the Los Angeles River and the street would end at the proposed cul-de-sac on the southwestern corner of the project site.

- *Grading and Drainage*. Construction of the proposed project would result in approximately 52,173 cubic yards of cut, 52,173 cubic yards of fill, and 41,905 cubic yards of over-excavation. A total of 28,660 cubic yards of contaminated soil would be removed from the site, and approximately 100,000 cubic yards of import would be used to replace the contaminated soil. The proposed project would include the construction of low impact development (LID) stormwater management systems. The project site would include an interconnected WetlandMod system (at-grade with plants) and one underground 60-inch high-performance (HP) system for stormwater detention.

- *Remediation and Building Construction*. The original buildings that previously occupied the project site have been demolished under a separate ministerial demolition permit. The demolition included the existing buildings and all above-ground structures. The remaining surface pavements and foundations on the site will be removed as a part of the soil remediation as a part of the DTSC approved Soil Remediation Work Plan. Soil remediation would consist of exporting asbestos-contaminated soil and importing clean soil and fill to replace the contaminated soil. The demolition and remediation phases of the proposed project are anticipated to take approximately 6 to 7 months. Construction of the proposed project would take approximately 14 months. The existing cell phone tower on the project site would be protected in place as part of the proposed project.

- *Project Employment and Operations*. The proposed project would employ between 250 to 300 employees. Once the facility is open for business, operational times would occur Monday through Friday with 70 percent of the proposed project's operations taking place during the daytime and

afternoon periods and 30 percent occurring during the evening and night. The proposed project would have limited operations on Saturdays and Sundays.

Exhibit 4 includes an illustration of the proposed project's site plan. The elevations of the proposed main building are provided in Exhibit 5.

4. DISCRETIONARY ACTIONS

A Discretionary Action is a decision taken by a government agency (for this project, the government agency is the City of South Gate) that calls for an exercise of judgment in deciding whether to approve a project. As part of the proposed project's implementation, the City will consider following discretionary approvals:

- The rezoning of the site from Heavy Manufacturing (M-3) to Light Manufacturing (M-2);
- The approval of a Conditional Use Permit;
- The approval of a General Plan Amendment for modifications to the Mobility Element to extend the designated truck routes to the project site;
- The approval General Plan Amendment to change the street designation for Patata Street in order to extend Patata Street at the proposed cul-de-sac on the southwestern corner of the project site;
- The approval of an Overlay Zone to limit the criteria of the proposed project; and,
- The approval of a Development Agreement that would limit the City's consideration to a single user with outlined employment and economic benefits to the community.

Subsequent ministerial actions would also be required for the implementation of the proposed project including issuance of grading, building, and occupancy permits.

5. ENVIRONMENTAL REVIEW

The Draft EIR will evaluate whether the proposed project may potentially result in one or more significant environmental effects, which will be evaluated in the relevant EIR sections listed below.

Aesthetics, Light, and Glare;
Agriculture Resources and Forest Resources;
Air Quality;
Biological Resources;
Cultural and Tribal Cultural Resources;
Energy;
Geology, Soils, and Seismicity;
Greenhouse Gas Emissions;
Hazards and Hazardous Materials;
Hydrology and Water Quality;
Land Use and Planning;
Mineral Resources;
Noise;
Population and Housing;
Public Services;
Transportation;
Utilities and Service Systems;
Wildfire;
Cumulative Impacts;
Effects Found not to be Significant; and
Project Alternatives.

The Draft EIR will evaluate the proposed project's environmental impacts for all of the environmental issues identified above. In addition, the Draft EIR will include Mitigation Measure(s) in the event an impact is identified in the analysis.



EXHIBIT 4
PROPOSED PROJECT SITE PLAN
Source: Overton Moore Properties



EXHIBIT 5
PROPOSED PROJECT ELEVATIONS
Source: Overton Moore Properties

6. SCOPING MEETING

A public scoping meeting will be held on prior to the circulation of the Draft EIR. The meeting time and location will be indicated on the City of South Gate website. At this meeting, agencies, organizations, and members of the public will be able to review the proposed project and provide comments on the scope of the environmental review process.

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APPENDICES B – AIR QUALITY IMPACT WORKSHEETS

Patata St Alternative - South Coast Air Basin, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Patata St Alternative

South Coast Air Basin, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Manufacturing	240.00	1000sqft	5.51	240,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	9			**Operational Year**	2024
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - project characteristics

Grading - .

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	60.00
tblConstructionPhase	NumDays	230.00	270.00
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	20.00	30.00
tblConstructionPhase	NumDays	20.00	30.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblConstructionPhase	NumDays	10.00	30.00
tblConstructionPhase	PhaseEndDate	3/22/2024	5/17/2024
tblConstructionPhase	PhaseEndDate	1/26/2024	3/22/2024
tblConstructionPhase	PhaseEndDate	1/27/2023	12/30/2022
tblConstructionPhase	PhaseEndDate	3/10/2023	3/24/2023
tblConstructionPhase	PhaseEndDate	2/23/2024	3/8/2024
tblConstructionPhase	PhaseEndDate	2/10/2023	3/10/2023
tblGrading	AcresOfGrading	30.00	20.00
tblGrading	AcresOfGrading	45.00	15.00

2.0 Emissions Summary

Patata St Alternative - South Coast Air Basin, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	4.4747	45.5303	35.5871	0.0751	25.6945	2.0430	27.7375	13.4723	1.8796	15.3519	0.0000	7,340.9353	7,340.9353	2.1296	0.1373	7,421.6855
2024	40.1627	25.8792	37.5559	0.0726	1.7698	1.1589	2.9287	0.4750	1.0840	1.5590	0.0000	7,105.1396	7,105.1396	1.3921	0.1383	7,181.1582
Maximum	**40.1627**	**45.5303**	**37.5559**	**0.0751**	**25.6945**	**2.0430**	**27.7375**	**13.4723**	**1.8796**	**15.3519**	**0.0000**	**7,340.9353**	**7,340.9353**	**2.1296**	**0.1383**	**7,421.6855**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	4.4747	45.5303	35.5871	0.0751	25.6945	2.0430	27.7375	13.4723	1.8796	15.3519	0.0000	7,340.9353	7,340.9353	2.1296	0.1373	7,421.6855
2024	40.1627	25.8792	37.5559	0.0726	1.7698	1.1589	2.9287	0.4750	1.0840	1.5590	0.0000	7,105.1396	7,105.1396	1.3921	0.1383	7,181.1582
Maximum	**40.1627**	**45.5303**	**37.5559**	**0.0751**	**25.6945**	**2.0430**	**27.7375**	**13.4723**	**1.8796**	**15.3519**	**0.0000**	**7,340.9353**	**7,340.9353**	**2.1296**	**0.1383**	**7,421.6855**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	5.3638	2.2000e-004	0.0245	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0525	0.0525	1.4000e-004		0.0560
Energy	0.1274	1.1578	0.9725	6.9500e-003		0.0880	0.0880		0.0880	0.0880		1,389.3312	1,389.3312	0.0266	0.0255	1,397.5873
Mobile	5.2281	5.9607	57.6625	0.1360	14.3749	0.0940	14.4689	3.8305	0.0874	3.9179		13,860.4740	13,860.4740	0.8022	0.5395	14,041.2988
Total	**10.7192**	**7.1187**	**58.6595**	**0.1429**	**14.3749**	**0.1820**	**14.5570**	**3.8305**	**0.1754**	**4.0059**		**15,249.8577**	**15,249.8577**	**0.8289**	**0.5650**	**15,438.9421**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	5.3638	2.2000e-004	0.0245	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0525	0.0525	1.4000e-004		0.0560
Energy	0.1274	1.1578	0.9725	6.9500e-003		0.0880	0.0880		0.0880	0.0880		1,389.3312	1,389.3312	0.0266	0.0255	1,397.5873
Mobile	5.2281	5.9607	57.6625	0.1360	14.3749	0.0940	14.4689	3.8305	0.0874	3.9179		13,860.4740	13,860.4740	0.8022	0.5395	14,041.2988
Total	**10.7192**	**7.1187**	**58.6595**	**0.1429**	**14.3749**	**0.1820**	**14.5570**	**3.8305**	**0.1754**	**4.0059**		**15,249.8577**	**15,249.8577**	**0.8289**	**0.5650**	**15,438.9421**

Patata St Alternative - South Coast Air Basin, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2023	12/30/2022	5	0	
2	Site Preparation	Site Preparation	1/28/2023	3/10/2023	5	30	
3	Grading	Grading	2/11/2023	3/24/2023	5	30	
4	Building Construction	Building Construction	3/11/2023	3/22/2024	5	270	
5	Paving	Paving	1/27/2024	3/8/2024	5	30	
6	Architectural Coating	Architectural Coating	2/24/2024	5/17/2024	5	60	

Acres of Grading (Site Preparation Phase): 15

Acres of Grading (Grading Phase): 20

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 360,000; Non-Residential Outdoor: 120,000; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	7.00	231	0.29
Demolition	Excavators	3	8.00	158	0.38
Grading	Excavators	1	8.00	158	0.38

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	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
Demolition	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	101.00	39.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Patata St Alternative - South Coast Air Basin, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.5965	0.0000	18.5965	9.9879	0.0000	9.9879			0.0000			0.0000
Off-Road	2.6595	27.5242	18.2443	0.0381		1.2660	1.2660		1.1647	1.1647		3,687.3081	3,687.3081	1.1926		3,717.1219
Total	**2.6595**	**27.5242**	**18.2443**	**0.0381**	**18.5965**	**1.2660**	**19.8625**	**9.9879**	**1.1647**	**11.1527**		**3,687.3081**	**3,687.3081**	**1.1926**		**3,717.1219**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0569	0.0384	0.6276	1.7600e-003	0.2012	1.1300e-003	0.2023	0.0534	1.0400e-003	0.0544		177.8853	177.8853	4.3200e-003	4.0500e-003	179.2014
Total	**0.0569**	**0.0384**	**0.6276**	**1.7600e-003**	**0.2012**	**1.1300e-003**	**0.2023**	**0.0534**	**1.0400e-003**	**0.0544**		**177.8853**	**177.8853**	**4.3200e-003**	**4.0500e-003**	**179.2014**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Site Preparation - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.5965	0.0000	18.5965	9.9879	0.0000	9.9879			0.0000			0.0000
Off-Road	2.6595	27.5242	18.2443	0.0381		1.2660	1.2660		1.1647	1.1647	0.0000	3,687.3081	3,687.3081	1.1926		3,717.1219
Total	**2.6595**	**27.5242**	**18.2443**	**0.0381**	**18.5965**	**1.2660**	**19.8625**	**9.9879**	**1.1647**	**11.1527**	**0.0000**	**3,687.3081**	**3,687.3081**	**1.1926**		**3,717.1219**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0569	0.0384	0.6276	1.7600e-003	0.2012	1.1300e-003	0.2023	0.0534	1.0400e-003	0.0544		177.8853	177.8853	4.3200e-003	4.0500e-003	179.2014
Total	**0.0569**	**0.0384**	**0.6276**	**1.7600e-003**	**0.2012**	**1.1300e-003**	**0.2023**	**0.0534**	**1.0400e-003**	**0.0544**		**177.8853**	**177.8853**	**4.3200e-003**	**4.0500e-003**	**179.2014**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Grading - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.7291	0.0000	6.7291	3.3866	0.0000	3.3866			0.0000			0.0000
Off-Road	1.7109	17.9359	14.7507	0.0297		0.7749	0.7749		0.7129	0.7129		2,872.6910	2,872.6910	0.9291		2,895.9182
Total	**1.7109**	**17.9359**	**14.7507**	**0.0297**	**6.7291**	**0.7749**	**7.5040**	**3.3866**	**0.7129**	**4.0995**		**2,872.6910**	**2,872.6910**	**0.9291**		**2,895.9182**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0474	0.0320	0.5230	1.4700e-003	0.1677	9.4000e-004	0.1686	0.0445	8.7000e-004	0.0453		148.2377	148.2377	3.6000e-003	3.3800e-003	149.3345
Total	**0.0474**	**0.0320**	**0.5230**	**1.4700e-003**	**0.1677**	**9.4000e-004**	**0.1686**	**0.0445**	**8.7000e-004**	**0.0453**		**148.2377**	**148.2377**	**3.6000e-003**	**3.3800e-003**	**149.3345**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Grading - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.7291	0.0000	6.7291	3.3866	0.0000	3.3866			0.0000			0.0000
Off-Road	1.7109	17.9359	14.7507	0.0297		0.7749	0.7749		0.7129	0.7129	0.0000	2,872.6910	2,872.6910	0.9291		2,895.9182
Total	**1.7109**	**17.9359**	**14.7507**	**0.0297**	**6.7291**	**0.7749**	**7.5040**	**3.3866**	**0.7129**	**4.0995**	**0.0000**	**2,872.6910**	**2,872.6910**	**0.9291**		**2,895.9182**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0474	0.0320	0.5230	1.4700e-003	0.1677	9.4000e-004	0.1686	0.0445	8.7000e-004	0.0453		148.2377	148.2377	3.6000e-003	3.3800e-003	149.3345
Total	**0.0474**	**0.0320**	**0.5230**	**1.4700e-003**	**0.1677**	**9.4000e-004**	**0.1686**	**0.0445**	**8.7000e-004**	**0.0453**		**148.2377**	**148.2377**	**3.6000e-003**	**3.3800e-003**	**149.3345**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**		**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0418	1.4272	0.5477	7.1000e-003	0.2497	7.8900e-003	0.2576	0.0719	7.5400e-003	0.0794		766.6626	766.6626	0.0284	0.1112	800.5078
Worker	0.3194	0.2152	3.5217	9.8800e-003	1.1289	6.3600e-003	1.1353	0.2994	5.8600e-003	0.3053		998.1341	998.1341	0.0242	0.0228	1,005.5190
Total	**0.3613**	**1.6424**	**4.0694**	**0.0170**	**1.3786**	**0.0143**	**1.3929**	**0.3713**	**0.0134**	**0.3847**		**1,764.7967**	**1,764.7967**	**0.0526**	**0.1339**	**1,806.0268**

Patata St Alternative - South Coast Air Basin, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Building Construction - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**	**0.0000**	**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0418	1.4272	0.5477	7.1000e-003	0.2497	7.8900e-003	0.2576	0.0719	7.5400e-003	0.0794		766.6626	766.6626	0.0284	0.1112	800.5078
Worker	0.3194	0.2152	3.5217	9.8800e-003	1.1289	6.3600e-003	1.1353	0.2994	5.8600e-003	0.3053		998.1341	998.1341	0.0242	0.0228	1,005.5190
Total	**0.3613**	**1.6424**	**4.0694**	**0.0170**	**1.3786**	**0.0143**	**1.3929**	**0.3713**	**0.0134**	**0.3847**		**1,764.7967**	**1,764.7967**	**0.0526**	**0.1339**	**1,806.0268**

Patata St Alternative - South Coast Air Basin, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769		2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**		**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0408	1.4332	0.5388	6.9900e-003	0.2497	7.9300e-003	0.2576	0.0719	7.5800e-003	0.0795		755.7532	755.7532	0.0284	0.1098	789.1806
Worker	0.2981	0.1922	3.2783	9.5900e-003	1.1289	6.0800e-003	1.1350	0.2994	5.6000e-003	0.3050		968.9259	968.9259	0.0219	0.0212	975.7858
Total	**0.3389**	**1.6255**	**3.8171**	**0.0166**	**1.3786**	**0.0140**	**1.3926**	**0.3713**	**0.0132**	**0.3845**		**1,724.6791**	**1,724.6791**	**0.0503**	**0.1310**	**1,764.9664**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Building Construction - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769	0.0000	2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**	**0.0000**	**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0408	1.4332	0.5388	6.9900e-003	0.2497	7.9300e-003	0.2576	0.0719	7.5800e-003	0.0795		755.7532	755.7532	0.0284	0.1098	789.1806
Worker	0.2981	0.1922	3.2783	9.5900e-003	1.1289	6.0800e-003	1.1350	0.2994	5.6000e-003	0.3050		968.9259	968.9259	0.0219	0.0212	975.7858
Total	**0.3389**	**1.6255**	**3.8171**	**0.0166**	**1.3786**	**0.0140**	**1.3926**	**0.3713**	**0.0132**	**0.3845**		**1,724.6791**	**1,724.6791**	**0.0503**	**0.1310**	**1,764.9664**

Patata St Alternative - South Coast Air Basin, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Paving - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9882	9.5246	14.6258	0.0228		0.4685	0.4685		0.4310	0.4310		2,207.5472	2,207.5472	0.7140		2,225.3963
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9882**	**9.5246**	**14.6258**	**0.0228**		**0.4685**	**0.4685**		**0.4310**	**0.4310**		**2,207.5472**	**2,207.5472**	**0.7140**		**2,225.3963**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0443	0.0286	0.4869	1.4200e-003	0.1677	9.0000e-004	0.1686	0.0445	8.3000e-004	0.0453		143.8999	143.8999	3.2600e-003	3.1500e-003	144.9187
Total	**0.0443**	**0.0286**	**0.4869**	**1.4200e-003**	**0.1677**	**9.0000e-004**	**0.1686**	**0.0445**	**8.3000e-004**	**0.0453**		**143.8999**	**143.8999**	**3.2600e-003**	**3.1500e-003**	**144.9187**

Patata St Alternative - South Coast Air Basin, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Paving - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9882	9.5246	14.6258	0.0228		0.4685	0.4685		0.4310	0.4310	0.0000	2,207.5472	2,207.5472	0.7140		2,225.3963
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9882**	**9.5246**	**14.6258**	**0.0228**		**0.4685**	**0.4685**		**0.4310**	**0.4310**	**0.0000**	**2,207.5472**	**2,207.5472**	**0.7140**		**2,225.3963**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0443	0.0286	0.4869	1.4200e-003	0.1677	9.0000e-004	0.1686	0.0445	8.3000e-004	0.0453		143.8999	143.8999	3.2600e-003	3.1500e-003	144.9187
Total	**0.0443**	**0.0286**	**0.4869**	**1.4200e-003**	**0.1677**	**9.0000e-004**	**0.1686**	**0.0445**	**8.3000e-004**	**0.0453**		**143.8999**	**143.8999**	**3.2600e-003**	**3.1500e-003**	**144.9187**

Patata St Alternative - South Coast Air Basin, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.7 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	37.0800					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.8443
Total	**37.2608**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**		**281.4481**	**281.4481**	**0.0159**		**281.8443**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0590	0.0381	0.6492	1.9000e-003	0.2236	1.2000e-003	0.2248	0.0593	1.1100e-003	0.0604		191.8665	191.8665	4.3400e-003	4.1900e-003	193.2249
Total	**0.0590**	**0.0381**	**0.6492**	**1.9000e-003**	**0.2236**	**1.2000e-003**	**0.2248**	**0.0593**	**1.1100e-003**	**0.0604**		**191.8665**	**191.8665**	**4.3400e-003**	**4.1900e-003**	**193.2249**

Patata St Alternative - South Coast Air Basin, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.7 Architectural Coating - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	37.0800					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609	0.0000	281.4481	281.4481	0.0159		281.8443
Total	**37.2608**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**	**0.0000**	**281.4481**	**281.4481**	**0.0159**		**281.8443**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0590	0.0381	0.6492	1.9000e-003	0.2236	1.2000e-003	0.2248	0.0593	1.1100e-003	0.0604		191.8665	191.8665	4.3400e-003	4.1900e-003	193.2249
Total	**0.0590**	**0.0381**	**0.6492**	**1.9000e-003**	**0.2236**	**1.2000e-003**	**0.2248**	**0.0593**	**1.1100e-003**	**0.0604**		**191.8665**	**191.8665**	**4.3400e-003**	**4.1900e-003**	**193.2249**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	5.2281	5.9607	57.6625	0.1360	14.3749	0.0940	14.4689	3.8305	0.0874	3.9179		13,860.4740	13,860.4740	0.8022	0.5395	14,041.2988
Unmitigated	5.2281	5.9607	57.6625	0.1360	14.3749	0.0940	14.4689	3.8305	0.0874	3.9179		13,860.4740	13,860.4740	0.8022	0.5395	14,041.2988

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Manufacturing	943.20	1,540.80	1221.60	4,730,919	4,730,919
Total	943.20	1,540.80	1,221.60	4,730,919	4,730,919

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Manufacturing	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Manufacturing	0.543401	0.061496	0.184986	0.128935	0.023820	0.006437	0.011961	0.008652	0.000812	0.000508	0.024540	0.000745	0.003706

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.1274	1.1578	0.9725	6.9500e-003		0.0880	0.0880		0.0880	0.0880		1,389.3312	1,389.3312	0.0266	0.0255	1,397.5873
NaturalGas Unmitigated	0.1274	1.1578	0.9725	6.9500e-003		0.0880	0.0880		0.0880	0.0880		1,389.3312	1,389.3312	0.0266	0.0255	1,397.5873

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day											lb/day				
Manufacturing	11809.3	0.1274	1.1578	0.9725	6.9500e-003		0.0880	0.0880		0.0880	0.0880		1,389.3312	1,389.3312	0.0266	0.0255	1,397.5873
Total		**0.1274**	**1.1578**	**0.9725**	**6.9500e-003**		**0.0880**	**0.0880**		**0.0880**	**0.0880**		**1,389.3312**	**1,389.3312**	**0.0266**	**0.0255**	**1,397.5873**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Manufacturing	11.8093	0.1274	1.1578	0.9725	6.9500e-003		0.0880	0.0880		0.0880	0.0880		1,389.3312	1,389.3312	0.0266	0.0255	1,397.5873
Total		**0.1274**	**1.1578**	**0.9725**	**6.9500e-003**		**0.0880**	**0.0880**		**0.0880**	**0.0880**		**1,389.3312**	**1,389.3312**	**0.0266**	**0.0255**	**1,397.5873**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	5.3638	2.2000e-004	0.0245	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0525	0.0525	1.4000e-004		0.0560
Unmitigated	5.3638	2.2000e-004	0.0245	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0525	0.0525	1.4000e-004		0.0560

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.6095					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.7520					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.2600e-003	2.2000e-004	0.0245	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0525	0.0525	1.4000e-004		0.0560
Total	**5.3638**	**2.2000e-004**	**0.0245**	**0.0000**		**9.0000e-005**	**9.0000e-005**		**9.0000e-005**	**9.0000e-005**		**0.0525**	**0.0525**	**1.4000e-004**		**0.0560**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.6095					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.7520					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.2600e-003	2.2000e-004	0.0245	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0525	0.0525	1.4000e-004		0.0560
Total	**5.3638**	**2.2000e-004**	**0.0245**	**0.0000**		**9.0000e-005**	**9.0000e-005**		**9.0000e-005**	**9.0000e-005**		**0.0525**	**0.0525**	**1.4000e-004**		**0.0560**

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Patata St. - South Coast Air Basin, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Patata St.

South Coast Air Basin, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Manufacturing	440.82	1000sqft	27.12	440,820.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	9			**Operational Year**	2024
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - 27 acre site

Construction Phase - construction characteristics

Grading - 27 acre site

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	35.00	60.00
tblConstructionPhase	NumDays	440.00	270.00
tblConstructionPhase	NumDays	45.00	30.00
tblConstructionPhase	NumDays	35.00	30.00
tblConstructionPhase	NumDays	20.00	30.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblConstructionPhase	PhaseEndDate	4/25/2025	5/30/2025
tblConstructionPhase	PhaseEndDate	1/17/2025	5/24/2024
tblConstructionPhase	PhaseEndDate	5/12/2023	4/21/2023
tblConstructionPhase	PhaseEndDate	3/7/2025	2/28/2025
tblConstructionPhase	PhaseEndDate	3/10/2023	3/24/2023
tblGrading	AcresOfGrading	90.00	27.00
tblGrading	AcresOfGrading	45.00	27.00
tblLandUse	LotAcreage	10.12	27.12

2.0 Emissions Summary

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	6.1014	62.1207	47.6205	0.1039	26.4220	2.6929	29.1149	13.5597	2.4775	16.0372	0.0000	10,074.3214	10,074.3214	3.1459	0.2470	10,155.5195
2024	2.0930	16.4418	23.1663	0.0574	2.5288	0.6391	3.1679	0.6811	0.6012	1.2823	0.0000	5,725.7008	5,725.7008	0.6969	0.2415	5,815.0869
2025	68.3798	8.6073	15.0316	0.0242	0.4136	0.4194	0.5870	0.1097	0.3858	0.4303	0.0000	2,345.7414	2,345.7414	0.7167	7.2600e-003	2,364.5342
Maximum	**68.3798**	**62.1207**	**47.6205**	**0.1039**	**26.4220**	**2.6929**	**29.1149**	**13.5597**	**2.4775**	**16.0372**	**0.0000**	**10,074.3214**	**10,074.3214**	**3.1459**	**0.2470**	**10,155.5195**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	6.1014	62.1207	47.6205	0.1039	26.4220	2.6929	29.1149	13.5597	2.4775	16.0372	0.0000	10,074.3214	10,074.3214	3.1459	0.2470	10,155.5195
2024	2.0930	16.4418	23.1663	0.0574	2.5288	0.6391	3.1679	0.6811	0.6012	1.2823	0.0000	5,725.7008	5,725.7008	0.6969	0.2415	5,815.0869
2025	68.3798	8.6073	15.0316	0.0242	0.4136	0.4194	0.5870	0.1097	0.3858	0.4303	0.0000	2,345.7414	2,345.7414	0.7167	7.2600e-003	2,364.5342
Maximum	**68.3798**	**62.1207**	**47.6205**	**0.1039**	**26.4220**	**2.6929**	**29.1149**	**13.5597**	**2.4775**	**16.0372**	**0.0000**	**10,074.3214**	**10,074.3214**	**3.1459**	**0.2470**	**10,155.5195**

Patata St. - South Coast Air Basin, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	9.8520	4.1000e-004	0.0449	0.0000		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004		0.0965	0.0965	2.5000e-004		0.1028
Energy	0.2339	2.1266	1.7863	0.0128		0.1616	0.1616		0.1616	0.1616		2,551.8541	2,551.8541	0.0489	0.0468	2,567.0185
Mobile	9.6027	10.9484	105.9115	0.2498	26.4031	0.1726	26.5757	7.0357	0.1605	7.1961		25,458.2255	25,458.2255	1.4734	0.9909	25,790.3556
Total	**19.6886**	**13.0753**	**107.7428**	**0.2625**	**26.4031**	**0.3343**	**26.7375**	**7.0357**	**0.3222**	**7.3579**		**28,010.1760**	**28,010.1760**	**1.5226**	**1.0377**	**28,357.4769**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	9.8520	4.1000e-004	0.0449	0.0000		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004		0.0965	0.0965	2.5000e-004		0.1028
Energy	0.2339	2.1266	1.7863	0.0128		0.1616	0.1616		0.1616	0.1616		2,551.8541	2,551.8541	0.0489	0.0468	2,567.0185
Mobile	9.6027	10.9484	105.9115	0.2498	26.4031	0.1726	26.5757	7.0357	0.1605	7.1961		25,458.2255	25,458.2255	1.4734	0.9909	25,790.3556
Total	**19.6886**	**13.0753**	**107.7428**	**0.2625**	**26.4031**	**0.3343**	**26.7375**	**7.0357**	**0.3222**	**7.3579**		**28,010.1760**	**28,010.1760**	**1.5226**	**1.0377**	**28,357.4769**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2023	2/10/2023	5	30	
2	Site Preparation	Site Preparation	2/11/2023	3/24/2023	5	30	
3	Grading	Grading	3/11/2023	4/21/2023	5	30	
4	Building Construction	Building Construction	5/13/2023	5/24/2024	5	270	
5	Paving	Paving	1/18/2025	2/28/2025	5	30	
6	Architectural Coating	Architectural Coating	3/8/2025	5/30/2025	5	60	

Acres of Grading (Site Preparation Phase): 27

Acres of Grading (Grading Phase): 27

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 661,230; Non-Residential Outdoor: 220,410; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	7.00	231	0.29
Demolition	Excavators	3	8.00	158	0.38
Grading	Excavators	2	8.00	158	0.38

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	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
Demolition	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	185.00	72.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	37.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Demolition - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.2691	21.4844	19.6434	0.0388		0.9975	0.9975		0.9280	0.9280		3,746.9840	3,746.9840	1.0494		3,773.2183
Total	**2.2691**	**21.4844**	**19.6434**	**0.0388**		**0.9975**	**0.9975**		**0.9280**	**0.9280**		**3,746.9840**	**3,746.9840**	**1.0494**		**3,773.2183**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0474	0.0320	0.5230	1.4700e-003	0.1677	9.4000e-004	0.1686	0.0445	8.7000e-004	0.0453		148.2377	148.2377	3.6000e-003	3.3800e-003	149.3345
Total	**0.0474**	**0.0320**	**0.5230**	**1.4700e-003**	**0.1677**	**9.4000e-004**	**0.1686**	**0.0445**	**8.7000e-004**	**0.0453**		**148.2377**	**148.2377**	**3.6000e-003**	**3.3800e-003**	**149.3345**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Demolition - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.2691	21.4844	19.6434	0.0388		0.9975	0.9975		0.9280	0.9280	0.0000	3,746.9840	3,746.9840	1.0494		3,773.2183
Total	**2.2691**	**21.4844**	**19.6434**	**0.0388**		**0.9975**	**0.9975**		**0.9280**	**0.9280**	**0.0000**	**3,746.9840**	**3,746.9840**	**1.0494**		**3,773.2183**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0474	0.0320	0.5230	1.4700e-003	0.1677	9.4000e-004	0.1686	0.0445	8.7000e-004	0.0453		148.2377	148.2377	3.6000e-003	3.3800e-003	149.3345
Total	**0.0474**	**0.0320**	**0.5230**	**1.4700e-003**	**0.1677**	**9.4000e-004**	**0.1686**	**0.0445**	**8.7000e-004**	**0.0453**		**148.2377**	**148.2377**	**3.6000e-003**	**3.3800e-003**	**149.3345**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					19.0207	0.0000	19.0207	10.0337	0.0000	10.0337			0.0000			0.0000
Off-Road	2.6595	27.5242	18.2443	0.0381		1.2660	1.2660		1.1647	1.1647		3,687.3081	3,687.3081	1.1926		3,717.1219
Total	**2.6595**	**27.5242**	**18.2443**	**0.0381**	**19.0207**	**1.2660**	**20.2867**	**10.0337**	**1.1647**	**11.1985**		**3,687.3081**	**3,687.3081**	**1.1926**		**3,717.1219**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0569	0.0384	0.6276	1.7600e-003	0.2012	1.1300e-003	0.2023	0.0534	1.0400e-003	0.0544		177.8853	177.8853	4.3200e-003	4.0500e-003	179.2014
Total	**0.0569**	**0.0384**	**0.6276**	**1.7600e-003**	**0.2012**	**1.1300e-003**	**0.2023**	**0.0534**	**1.0400e-003**	**0.0544**		**177.8853**	**177.8853**	**4.3200e-003**	**4.0500e-003**	**179.2014**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Site Preparation - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					19.0207	0.0000	19.0207	10.0337	0.0000	10.0337			0.0000			0.0000
Off-Road	2.6595	27.5242	18.2443	0.0381		1.2660	1.2660		1.1647	1.1647	0.0000	3,687.3081	3,687.3081	1.1926		3,717.1219
Total	**2.6595**	**27.5242**	**18.2443**	**0.0381**	**19.0207**	**1.2660**	**20.2867**	**10.0337**	**1.1647**	**11.1985**	**0.0000**	**3,687.3081**	**3,687.3081**	**1.1926**		**3,717.1219**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0569	0.0384	0.6276	1.7600e-003	0.2012	1.1300e-003	0.2023	0.0534	1.0400e-003	0.0544		177.8853	177.8853	4.3200e-003	4.0500e-003	179.2014
Total	**0.0569**	**0.0384**	**0.6276**	**1.7600e-003**	**0.2012**	**1.1300e-003**	**0.2023**	**0.0534**	**1.0400e-003**	**0.0544**		**177.8853**	**177.8853**	**4.3200e-003**	**4.0500e-003**	**179.2014**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Grading - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.9765	0.0000	6.9765	3.4133	0.0000	3.4133			0.0000			0.0000
Off-Road	3.3217	34.5156	28.0512	0.0621		1.4245	1.4245		1.3105	1.3105		6,011.4777	6,011.4777	1.9442		6,060.0836
Total	**3.3217**	**34.5156**	**28.0512**	**0.0621**	**6.9765**	**1.4245**	**8.4010**	**3.4133**	**1.3105**	**4.7238**		**6,011.4777**	**6,011.4777**	**1.9442**		**6,060.0836**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0633	0.0426	0.6974	1.9600e-003	0.2236	1.2600e-003	0.2248	0.0593	1.1600e-003	0.0605		197.6503	197.6503	4.7900e-003	4.5000e-003	199.1127
Total	**0.0633**	**0.0426**	**0.6974**	**1.9600e-003**	**0.2236**	**1.2600e-003**	**0.2248**	**0.0593**	**1.1600e-003**	**0.0605**		**197.6503**	**197.6503**	**4.7900e-003**	**4.5000e-003**	**199.1127**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Grading - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.9765	0.0000	6.9765	3.4133	0.0000	3.4133			0.0000			0.0000
Off-Road	3.3217	34.5156	28.0512	0.0621		1.4245	1.4245		1.3105	1.3105	0.0000	6,011.4777	6,011.4777	1.9442		6,060.0836
Total	**3.3217**	**34.5156**	**28.0512**	**0.0621**	**6.9765**	**1.4245**	**8.4010**	**3.4133**	**1.3105**	**4.7238**	**0.0000**	**6,011.4777**	**6,011.4777**	**1.9442**		**6,060.0836**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0633	0.0426	0.6974	1.9600e-003	0.2236	1.2600e-003	0.2248	0.0593	1.1600e-003	0.0605		197.6503	197.6503	4.7900e-003	4.5000e-003	199.1127
Total	**0.0633**	**0.0426**	**0.6974**	**1.9600e-003**	**0.2236**	**1.2600e-003**	**0.2248**	**0.0593**	**1.1600e-003**	**0.0605**		**197.6503**	**197.6503**	**4.7900e-003**	**4.5000e-003**	**199.1127**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**		**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0772	2.6348	1.0112	0.0131	0.4610	0.0146	0.4755	0.1327	0.0139	0.1466		1,415.3771	1,415.3771	0.0524	0.2053	1,477.8605
Worker	0.5851	0.3942	6.4506	0.0181	2.0679	0.0117	2.0795	0.5484	0.0107	0.5591		1,828.2654	1,828.2654	0.0444	0.0417	1,841.7922
Total	**0.6624**	**3.0289**	**7.4618**	**0.0312**	**2.5288**	**0.0262**	**2.5550**	**0.6811**	**0.0247**	**0.7058**		**3,243.6425**	**3,243.6425**	**0.0968**	**0.2470**	**3,319.6527**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Building Construction - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**	**0.0000**	**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0772	2.6348	1.0112	0.0131	0.4610	0.0146	0.4755	0.1327	0.0139	0.1466		1,415.3771	1,415.3771	0.0524	0.2053	1,477.8605
Worker	0.5851	0.3942	6.4506	0.0181	2.0679	0.0117	2.0795	0.5484	0.0107	0.5591		1,828.2654	1,828.2654	0.0444	0.0417	1,841.7922
Total	**0.6624**	**3.0289**	**7.4618**	**0.0312**	**2.5288**	**0.0262**	**2.5550**	**0.6811**	**0.0247**	**0.7058**		**3,243.6425**	**3,243.6425**	**0.0968**	**0.2470**	**3,319.6527**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day											lb/day				
Off-Road	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769		2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**		**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day											lb/day				
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0753	2.6460	0.9947	0.0129	0.4610	0.0146	0.4756	0.1327	0.0140	0.1467		1,395.2367	1,395.2367	0.0524	0.2027	1,456.9489
Worker	0.5461	0.3521	6.0048	0.0176	2.0679	0.0112	2.0790	0.5484	0.0103	0.5587		1,774.7652	1,774.7652	0.0402	0.0388	1,787.3304
Total	**0.6214**	**2.9981**	**6.9995**	**0.0305**	**2.5288**	**0.0258**	**2.5546**	**0.6811**	**0.0243**	**0.7054**		**3,170.0019**	**3,170.0019**	**0.0926**	**0.2415**	**3,244.2792**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Building Construction - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769	0.0000	2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**	**0.0000**	**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0753	2.6460	0.9947	0.0129	0.4610	0.0146	0.4756	0.1327	0.0140	0.1467		1,395.2367	1,395.2367	0.0524	0.2027	1,456.9489
Worker	0.5461	0.3521	6.0048	0.0176	2.0679	0.0112	2.0790	0.5484	0.0103	0.5587		1,774.7652	1,774.7652	0.0402	0.0388	1,787.3304
Total	**0.6214**	**2.9981**	**6.9995**	**0.0305**	**2.5288**	**0.0258**	**2.5546**	**0.6811**	**0.0243**	**0.7054**		**3,170.0019**	**3,170.0019**	**0.0926**	**0.2415**	**3,244.2792**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Paving - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9152	8.5816	14.5780	0.0228		0.4185	0.4185		0.3850	0.3850		2,206.7452	2,206.7452	0.7137		2,224.5878
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9152**	**8.5816**	**14.5780**	**0.0228**		**0.4185**	**0.4185**		**0.3850**	**0.3850**		**2,206.7452**	**2,206.7452**	**0.7137**		**2,224.5878**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0415	0.0257	0.4536	1.3800e-003	0.1677	8.6000e-004	0.1685	0.0445	7.9000e-004	0.0453		138.9963	138.9963	2.9400e-003	2.9400e-003	139.9464
Total	**0.0415**	**0.0257**	**0.4536**	**1.3800e-003**	**0.1677**	**8.6000e-004**	**0.1685**	**0.0445**	**7.9000e-004**	**0.0453**		**138.9963**	**138.9963**	**2.9400e-003**	**2.9400e-003**	**139.9464**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Paving - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9152	8.5816	14.5780	0.0228		0.4185	0.4185		0.3850	0.3850	0.0000	2,206.7452	2,206.7452	0.7137		2,224.5878
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9152**	**8.5816**	**14.5780**	**0.0228**		**0.4185**	**0.4185**		**0.3850**	**0.3850**	**0.0000**	**2,206.7452**	**2,206.7452**	**0.7137**		**2,224.5878**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0415	0.0257	0.4536	1.3800e-003	0.1677	8.6000e-004	0.1685	0.0445	7.9000e-004	0.0453		138.9963	138.9963	2.9400e-003	2.9400e-003	139.9464
Total	**0.0415**	**0.0257**	**0.4536**	**1.3800e-003**	**0.1677**	**8.6000e-004**	**0.1685**	**0.0445**	**7.9000e-004**	**0.0453**		**138.9963**	**138.9963**	**2.9400e-003**	**2.9400e-003**	**139.9464**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.7 Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	68.1067					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**68.2776**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1022	0.0633	1.1188	3.3900e-003	0.4136	2.1200e-003	0.4157	0.1097	1.9500e-003	0.1116		342.8575	342.8575	7.2500e-003	7.2600e-003	345.2011
Total	**0.1022**	**0.0633**	**1.1188**	**3.3900e-003**	**0.4136**	**2.1200e-003**	**0.4157**	**0.1097**	**1.9500e-003**	**0.1116**		**342.8575**	**342.8575**	**7.2500e-003**	**7.2600e-003**	**345.2011**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.7 Architectural Coating - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	68.1067					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**68.2776**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1022	0.0633	1.1188	3.3900e-003	0.4136	2.1200e-003	0.4157	0.1097	1.9500e-003	0.1116		342.8575	342.8575	7.2500e-003	7.2600e-003	345.2011
Total	**0.1022**	**0.0633**	**1.1188**	**3.3900e-003**	**0.4136**	**2.1200e-003**	**0.4157**	**0.1097**	**1.9500e-003**	**0.1116**		**342.8575**	**342.8575**	**7.2500e-003**	**7.2600e-003**	**345.2011**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	9.6027	10.9484	105.9115	0.2498	26.4031	0.1726	26.5757	7.0357	0.1605	7.1961		25,458.2255	25,458.2255	1.4734	0.9909	25,790.3556
Unmitigated	9.6027	10.9484	105.9115	0.2498	26.4031	0.1726	26.5757	7.0357	0.1605	7.1961		25,458.2255	25,458.2255	1.4734	0.9909	25,790.3556

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Manufacturing	1,732.42	2,830.06	2243.77	8,689,515	8,689,515
Total	1,732.42	2,830.06	2,243.77	8,689,515	8,689,515

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Manufacturing	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Manufacturing	0.543401	0.061496	0.184986	0.128935	0.023820	0.006437	0.011961	0.008652	0.000812	0.000508	0.024540	0.000745	0.003706

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.2339	2.1266	1.7863	0.0128		0.1616	0.1616		0.1616	0.1616		2,551.8541	2,551.8541	0.0489	0.0468	2,567.0185
NaturalGas Unmitigated	0.2339	2.1266	1.7863	0.0128		0.1616	0.1616		0.1616	0.1616		2,551.8541	2,551.8541	0.0489	0.0468	2,567.0185

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Manufacturing	21690.8	0.2339	2.1266	1.7863	0.0128		0.1616	0.1616		0.1616	0.1616		2,551.8541	2,551.8541	0.0489	0.0468	2,567.0185
Total		**0.2339**	**2.1266**	**1.7863**	**0.0128**		**0.1616**	**0.1616**		**0.1616**	**0.1616**		**2,551.8541**	**2,551.8541**	**0.0489**	**0.0468**	**2,567.0185**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Manufacturing	21.6908	0.2339	2.1266	1.7863	0.0128		0.1616	0.1616		0.1616	0.1616		2,551.8541	2,551.8541	0.0489	0.0468	2,567.0185
Total		**0.2339**	**2.1266**	**1.7863**	**0.0128**		**0.1616**	**0.1616**		**0.1616**	**0.1616**		**2,551.8541**	**2,551.8541**	**0.0489**	**0.0468**	**2,567.0185**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	9.8520	4.1000e-004	0.0449	0.0000		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004		0.0965	0.0965	2.5000e-004		0.1028
Unmitigated	9.8520	4.1000e-004	0.0449	0.0000		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004		0.0965	0.0965	2.5000e-004		0.1028

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.1196					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	8.7282					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.1500e-003	4.1000e-004	0.0449	0.0000		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004		0.0965	0.0965	2.5000e-004		0.1028
Total	**9.8520**	**4.1000e-004**	**0.0449**	**0.0000**		**1.6000e-004**	**1.6000e-004**		**1.6000e-004**	**1.6000e-004**		**0.0965**	**0.0965**	**2.5000e-004**		**0.1028**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.1196					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	8.7282					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.1500e-003	4.1000e-004	0.0449	0.0000		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004		0.0965	0.0965	2.5000e-004		0.1028
Total	**9.8520**	**4.1000e-004**	**0.0449**	**0.0000**		**1.6000e-004**	**1.6000e-004**		**1.6000e-004**	**1.6000e-004**		**0.0965**	**0.0965**	**2.5000e-004**		**0.1028**

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

APPENDIX C – TREE STUDY

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Seven Elk Ranch Design Inc.
5328 Alhama Drive • Woodland Hills, California 91364 *Phone (805) 577-8432*
100 Brady Lane • Hamilton, Montana 59840 (mailing address) *kaygreeley@earthlink.net*

March 22, 2022

Mr. Michael Johnson
Vice President Development
Overton Moore Properties
19700 South Vermont Avenue, #1
Torrance, California 90502

Subject: Tree Certification for 5037 Patata Street, South Gate, California 90280

Dear Mr. Johnson:

As requested, we performed an inspection at 5037 Patata Steet, South Gate, California to determine whether the site contains any trees deemed protected under the City of South Gate Municipal Code, Chapter 5.33 – Tree Preservation and Protection.

Under that ordinance, the city ordained that no person, except for a person undertaking official business for the City of South Gate, shall plant, remove, relocate, damage, excessively prune, or cut or encroach into the protected zone of any public tree within the City of South Gate without first obtaining a permit from the Director of Public Works and paying the required fee. A "public tree" is defined as any single or multi-stemmed plan normally reaching mature heights of 15 feet or more, regardless of its current level of maturity, with one-half or more of its trunk or branches on or above all public property.

Ann Burroughs, associate Registered Consulting Arborist inspected the site on March 4, 2022. There are no trees on the site that

An aerial photograph of the site is attached for reference.

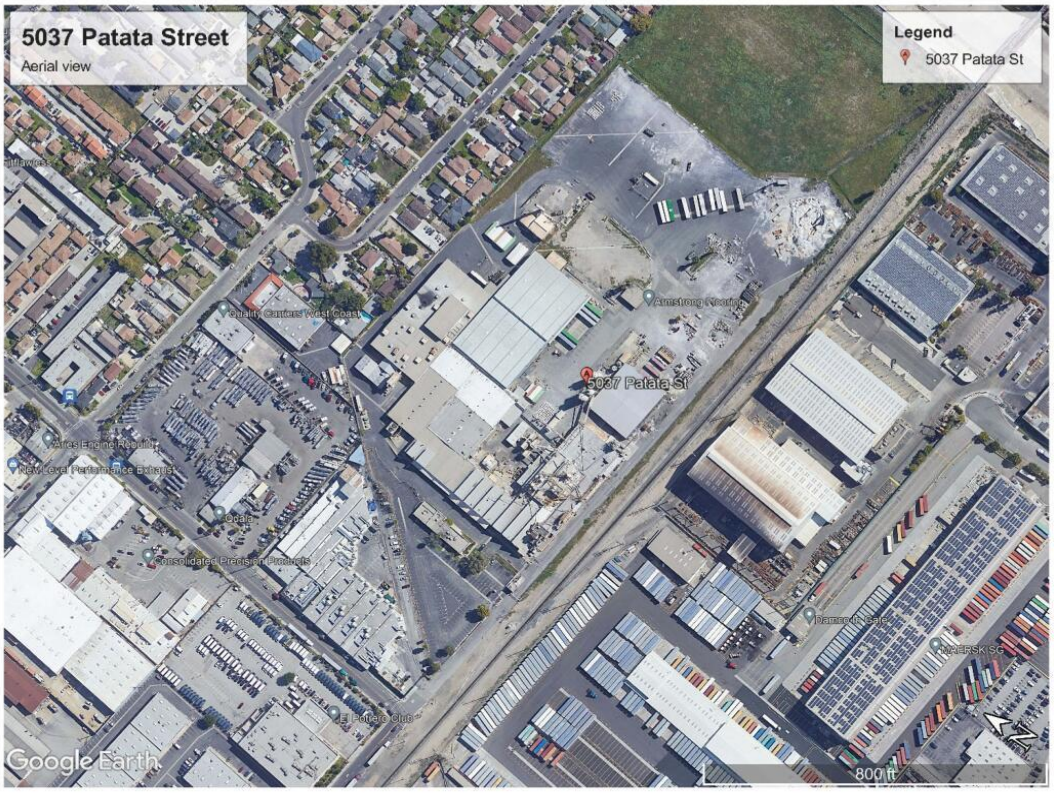
Sincerely,

Kay J. Greeley

KAY J. GREELEY
President

Civil Engineer 37396
Landscape Architect 4035
ISA Board Certified Master Arborist WE-1140B
ISA Tree Risk Assessment Qualified
Member, American Society of Consulting Arborists
ASCA Tree and Plant Appraisal Qualified

MR. MICHAEL JOHNSON
03/22/22
PAGE 2 OF 2



APPENDIX D – CULTURAL RESOURCES SURVEY

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Phase I Cultural Resources Assessment
5037 Patata Street Industrial Project
City of South Gate, Los Angeles County, California

USGS *South Gate, California* 7.5-minute Topographic Quadrangle Map
Land Grant: San Antonio (Lugo)
Assessor's Parcel Number (APN) 6224-031-003

Project Applicant:
Overton Moore Properties
19700 South Vermont Avenue, Suite 101
Torrance, CA 90502

Contact: Michael Johnson, Vice President Development

Lead Agency:
City of South Gate
Planning Division
8650 California Avenue
South Gate, CA 90280

Contact: Grace I. Martin, Interim Community Development Director

Prepared by:
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250 Commerce, Suite 250
Irvine, CA 92602
714.508.4100

Report Authored by: Stefanie Griffin, MA
Fieldwork Conducted by: Natalie Adame

Date: February 16, 2022

THIS REPORT CONTAINS SENSITIVE INFORMATION RELATING TO CULTURAL RESOURCES AND IS NOT INTENDED FOR PUBLIC DISTRIBUTION PURSUANT TO PUBLIC RESOURCES CODE, SECTION 21082.3(C)(2).

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MANAGEMENT SUMMARY

At the request of Overton Moore Properties (project applicant), FirstCarbon Solutions (FCS) conducted a Phase I Cultural Resources Assessment (Phase I CRA) for the proposed 5037 Patata Street Industrial Project (proposed project) located in Los Angeles County, California. The purpose of this assessment is to identify the presence or absence of potentially significant cultural resources within the project site, and if present, propose recommendations for mitigation. Completion of this investigation fulfills the requirements associated with the California Environmental Quality Act (CEQA) Guidelines. This report follows the California Office of Historic Preservation (OHP) procedures for cultural resource surveys and the OHP Archaeological Resource Management Report (ARMR) format for archaeological reports. This report is also intended to fulfill any City of South Gate cultural resources survey and reporting guidelines.

On October 7, 2021, a records search was conducted at the South Central Coastal Information Center (SCCIC) located at California State University, Fullerton, for the project site and a 0.50-mile radius beyond the project boundaries. The current inventories of the National Register of Historic Places (NRHP), the California Register of Historical Resources (CRHR), the California Historical Landmarks (CHL) list, the California Points of Historical Interest (CPHI) list, and the California Built Environment Resource Directory (BERD) for Los Angeles County were also reviewed to determine the existence of previously documented local historical resources. The results of the records search indicate that two historic resources have been recorded within 0.5-mile of the project site; none of which are located within the project boundaries. In addition, seven area-specific survey reports are on file within a 0.5-mile radius; one report (LA-11993) addresses the project site, and two reports (LA-08255 and LA-04834) are immediately south of the project boundaries. This indicates that the project site has previously been surveyed for cultural resources.

On August 12, 2021, FCS sent a request to the NAHC to determine whether any sacred sites are listed on its Sacred Lands File for the project site. A response was received on October 12, 2021, indicating that the Sacred Lands File search failed to locate the presence of Native American cultural resources within the project site. The NAHC included a list of eight tribal representatives available for consultation. To ensure that all Native American knowledge and concerns over potential Tribal Cultural Resources (TCRs) that may be affected by implementation of the proposed project are addressed, a letter containing project information and requesting additional information was sent to each tribal representative on October 15, 2021. One response was received on October 15, 2021, from the Gabrieleño Band of Mission Indians-Kizh Nation requesting Lead Agency contact information for the City of South Gate. No additional responses have been received to date.

On January 14, 2022, FCS Staff Archaeologist, Natalie Adame, surveyed the project site to identify unrecorded cultural resources. Two-thirds of the project site is entirely developed and was the former location of Armstrong Flooring, Inc. The remaining section of the project site is composed of undeveloped land. Ms. Adame split the survey into two sections, first surveying the foundations of the demolished structures, followed by surveying the undeveloped section of the project site. The first part of the survey began on the northwestern corner of the project site, using north–south

transects spaced at 15-meter intervals, whenever possible, moving southeast. The southwestern section of the project site was used as a parking lot and access point to the former factory. As the survey moved east, the foundations and scattered debris of a demolished office building and a distribution center remained. Although these foundations were associated with historic era built environment resources it is assumed that the former buildings did not meet CRHR and NRHP criteria, hence the demolition of these structures. The debris was investigated; however, no archaeological resources with visible diagnostic markers were present. The undeveloped section of the project site is bordered by a security fence to the west and the Los Angeles River to the east. The survey in the undeveloped section started in the northwest corner and followed a northeast–southwest transects spaced at 15-meter intervals, whenever possible, moving southeast. The project area was relatively flat grassy area, with soil visibility of native soils ranging from 5 to 15 percent in areas where bioturbation activities had taken place. Soil composition consisted of dark yellowish brown silty sand (10YR 4/4). To the extent possible, all areas of the project site were inspected for culturally modified soils or other indicators of potential historic or prehistoric resources. No prehistoric or historic resources or raw materials commonly used in the manufacture of tools (e.g., obsidian, Franciscan chert, etc.) were found within the project site.

Based on the results of the records searches, archival research, tribal correspondence, and the pedestrian survey, FCS considers the potential for the proposed project to have an adverse effect on historic or prehistoric cultural resources to be low to moderate. The results from the NAHC Sacred Lands File search were negative for the presence of TCRs within the project site. No prehistoric resources were identified during the pedestrian survey; however, the presence of unrecorded building foundations within the project boundaries increase the possibility that subsurface undiscovered cultural resources may be encountered and impacted by construction activities.

FCS therefore recommends that an Archaeologist who meets the Secretary of the Interior's Professional Qualification Standards for archaeology be present to monitor the site during the initial removal of asphalt, grubbing, and prior to grading and trenching of the site to check for the inadvertent exposure of cultural materials. In the event exposed soils indicate cultural materials may be present, this may be followed by regular or periodic archaeological monitoring as determined by the Archaeologist. Full-time archaeological monitoring is not recommended at this time. Standard procedures for the inadvertent discovery of human remains and cultural resources should be followed and are provided in the report.

SECTION 1: INTRODUCTION

1.1 - Project Location

The 27.12-acre project site is located in the City of South Gate, in Los Angeles County, California (Exhibit 1). The project site is located on the *South Gate, California* United States Geological Survey (USGS) 7.5-minute Topographic Quadrangle Map, Land Grant: San Antonio (Lugo) (Exhibit 2). This project site is bounded by an industrial property (west), a single-family residential neighborhood (north), Patata Street and a Union Pacific Railroad branch line (south), and Los Angeles River (east) (Exhibit 3).

1.2 - Project Description

The project applicant, Overton Moore Properties, is proposing to remove the existing uses and develop a total of 447,420 square feet of warehouse, office, and maintenance space in two buildings. Demolition of all existing on-site buildings and parking lots have already occurred under a separate ministerial demolition permit. The proposed project includes two buildings. The primary building, located in the center of the project site, would consist of a 435,420-square-foot tilt-up concrete industrial building. The building footprint would be 409,920 square feet and would consist of corporate offices, warehouse, and cooler space, as well as mezzanine space. There would be a 45,000-square-foot office at the southwestern corner of the industrial building. The warehouse portion of the industrial building would consist of a loading and storage area, 30,000 square feet of 36-degree cooler storage, and 134,400 square feet of 60-degree storage. The industrial building would have two clear heights of 52 feet 6 inches on the east end and 40 feet on the west end. The parapets vary and would range from 45 feet 6 inches to 64 feet above finish floor. The second building would consist of a 12,000-square-foot truck maintenance workshop to be located at the southeast corner of the project site. The truck maintenance building would be constructed of pre-engineered metal. The proposed project would require rezoning the site from M-3 to M-2. The design of the proposed industrial building is intended to accommodate up to one tenant with corporate offices at the building entry. Potential uses could include light assembly, manufacturing, direct to consumer marketing, warehouse/distribution, e-commerce, and possibly other uses permitted within the City's M-2 zone.

1.3 - Assessment Team

FCS Archaeological Supervisor, Stefanie Griffin, MA, authored this report. FCS Archaeological Field Manager, Natalie Adame conducted the pedestrian survey. Both Ms. Griffin and Ms. Adame exceed the professional standards set for their respective roles by the Secretary of the Interior. Professional qualifications for Ms. Griffin and Ms. Adame can be found in Appendix A.

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Source: Census 2000 Data, The California Spatial Information Library (CaSIL).

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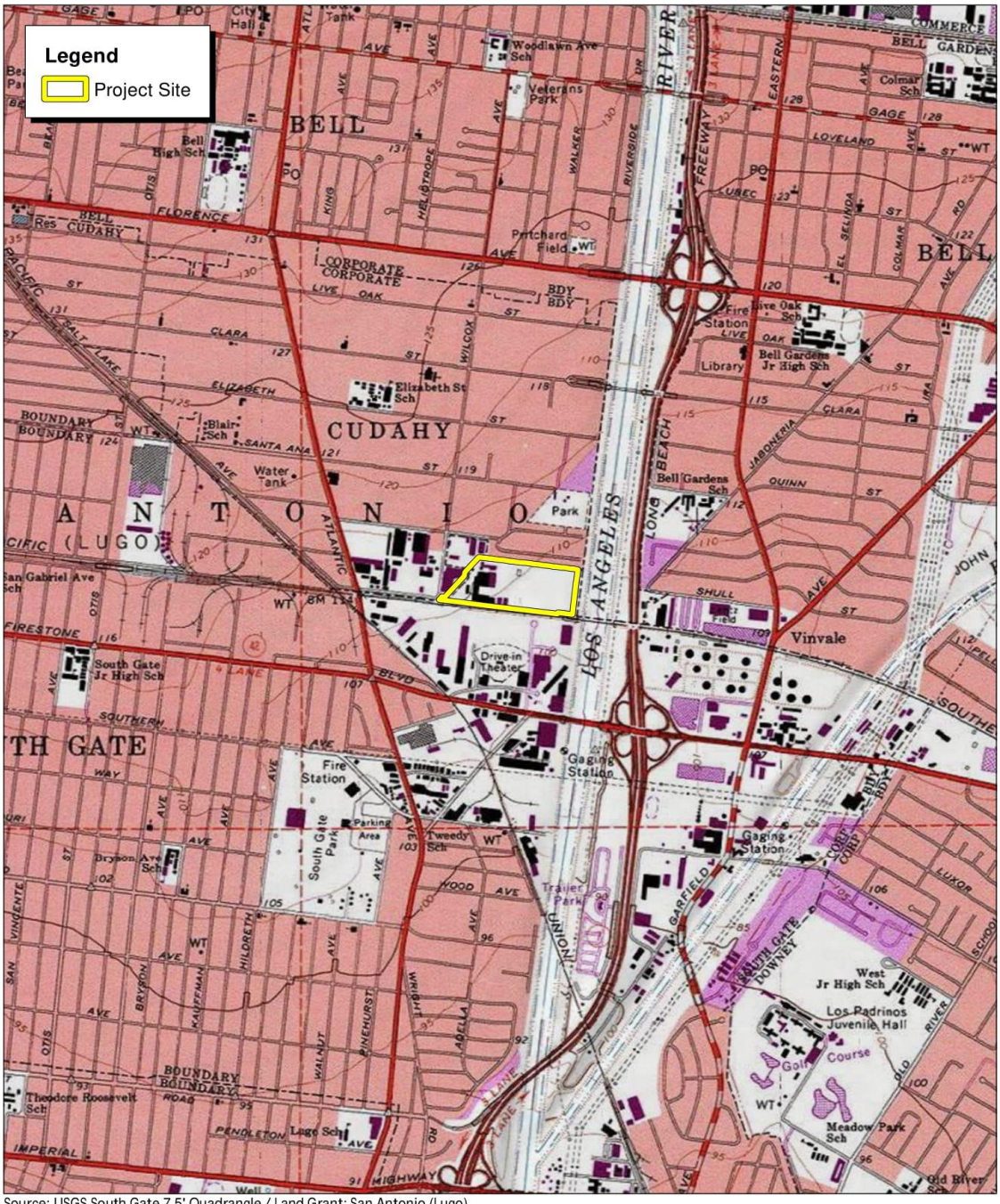
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Exhibit 1
Regional Location Map

CITY OF SOUTH GATE
5037 PATATA STREET INDUSTRIAL PROJECT
PHASE I CULTURAL RESOURCES ASSESSMENT

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Source: USGS South Gate 7.5' Quadrangle / Land Grant: San Antonio (Lugo).

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Exhibit 2
Local Vicinity Map
Topographic Base

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CITY OF SOUTH GATE
5037 PATATA STREET INDUSTRIAL PROJECT
PHASE I CULTURAL RESOURCES ASSESSMENT

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Source: Bing Aerial Imagery.

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1,000 500 0 1,000 Feet

Exhibit 3
Local Vicinity Map
Aerial Base

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CITY OF SOUTH GATE
5037 PATATA STREET INDUSTRIAL PROJECT
PHASE I CULTURAL RESOURCES ASSESSMENT

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SECTION 2: CULTURAL SETTING

The following is a brief overview of the prehistoric and historic background of the general area, which provides context to understand the relevance of resources found in the general project area. This section is not intended to be a comprehensive review of the current resources available; rather, it serves as a general overview.

Further details can be found in the ethnographic studies, mission records, and major published sources, including Beardsley (1948 and 1954), Bennyhoff (1950), Fredrickson (1973), Kroeber (1925), Moratto (1984), Chartkoff and Chartkoff (1984), Heizer (ed. 1978), and Jones and Klar (2007).

2.1 - Prehistoric and Ethnographic Background

Fagan (2003), Moratto (1984), and Chartkoff and Chartkoff (1984) provide recent overviews of California archaeology and historical reviews of the inland Southern California among other locales. An early and widely used regional chronology for coastal Southern California is Wallace's four-part Horizon format (1955), which was later updated and revised by Warren (1968) and more recently by Chartkoff and Chartkoff (1984), and King (1990 and 2000). The sequence provides a framework that relates societal change to change in material culture; the advantages and weaknesses of Southern California chronological sequences are reviewed by Warren (in Moratto 1984), Chartkoff and Chartkoff (1984), and Heizer (ed. 1978).

2.1.1 - Paleoamericans

In North America, radiocarbon dates from existing samples of archaeological materials demonstrate human presence as early as 15,000 years Before Present (BP) (Waters et al. 2018). The lithics from the earliest (14,000 to 15,000 BP) documented sites in North America include cores, flakes, and flake tools (e.g., 5 blades, 14 bladelets, 12 bifaces, one discoidal flake core, 23 edge-modified tools that includes scrapers and gravers from the Debra L. Friedkin site in, Texas) with an absence of projectile points (Waters et al. 2011, 2018). The first known projectile points in North America are from 13,000 years BP, with lanceolate fluted points (Clovis Complex) in sites from central and eastern North America and stemmed projectile points from sites in areas of western North America that were not glaciated (Jenkins et al. 2012; Beck and Jones 2010). Glennan (1972) provides an early study of the hypothesis of Pre-Clovis in Southern California. The oldest California radiocarbon date as of 2007 from archaeological materials confirms a human presence in the northeastern part of the State (from site CA-SIS-218) as early as 13,500 years BP (Jones and Klar 2007). The radiocarbon date corresponds to the period of fluted points and fluted points have been found throughout California (Rondeau et al. 2007; Rondeau 2009) although projectile points and other chronologically and culturally informative materials are absent from the SIS-218 sample.

2.1.2 - Millingstone Complex or Early Period

During the early Post-Glacial Period, after 8,500 BP the Southern California climate became warmer and drier (Fagan 2003). Groundstone artifacts that include manos and metates correspond to the Early Period. The Early Period in Southern California begins as early or earlier than 8,000 BP and ends

by about 2,800 BP (King 1990). The Early Period corresponds to the earliest known sites in Southern California with year-round habitation and cemeteries. Manos and metates consist of a variety of types. Mano and metates of the Early Period in Southern California, correspond to types from studies in the U.S. Southwest that efficiently grind small, oily annual and biennial wild seeds (Adams 1999; Ciolek-Torello 1995; Gilman 1988; Lancaster 1984; Whittlesey 1995). Most annual and biennial wild seed plant types in Southern California are best adapted for warm and dry environments (e.g., Hemizonia fasciculata, which is a summer seed source). Annual and biennial seed crops are highly reliable, nutritious, and productive. Annual and biennial seed producers are also, diverse and afford reliable seed production throughout the year. Compared to later periods, utilitarian artifacts are most frequently found with Early Period burials.

Manos and metates are "kitchen tools" and concentrate within residential areas of Early Period habitation sites in Southern California (King and Merrill 2002; Merrill 2015). Other kinds of lithics that correspond to the Early Period include many kinds of core tools (e.g., hammers, choppers, and scraper planes), knives, bifaces, scrapers (many types), gravers, burins, dart points, and compound bone fishhooks. Sedentism apparently increased in areas with abundant resources that were available for longer periods. Arid inland regions and offshore desert islands (e.g., San Nicolas Island) provided less opportunity for long-term residence without trade and possibly for more mobile subsistence. The Early Period ends about 2,800 BP (King 1990).

2.1.3 - Middle Period

The Middle Period lasted from about 2,800 BP to 750 BP (King 1990). Excavated assemblages retain many attributes of the Early Period but with more diverse artifact types. Middle Period sites can contain large-stemmed or notched small projectile points suggestive of bow and arrow use, especially near the end of the Period, and the use of portable grinding tools continued. Intensive use of mortar and pestles signaled processing of acorns as the primary vegetative staple as opposed to a mixed diet of seeds and acorns. Because of a general lack of data, neither the settlement and subsistence systems nor the cultural evolution of this Period are well understood, but it is very likely that the nomadic ways continued. It has been proposed that sedentism increased with the exploitation of storable food resources, such as acorns, but coastal sites from the Period exhibit higher fishing activity than in previous periods. The first permanently occupied villages make their appearance in this Period (Chartkoff and Chartkoff 1984).

2.1.4 - Late Prehistoric

Extending from 750 BP to Spanish Contact in 1769, the Late Prehistoric includes changes in trade networks and political and secular economic subsystems. There was also a differentiation of types of political economies. Exploitation of marine resources continued to intensify. Assemblages characteristically contain projectile points, and toward the end of the Period the size of the points decreased and notched and stemmed bases appeared, which implies the use of the bow and arrow. Use of personal ornaments such as shell beads, were widely distributed east of the coast, suggesting well-organized and codified trade networks. Additional assemblages in this Period included steatite bowls, asphaltum, grave goods, and elaborate shell ornaments. The use of bedrock milling stations was widespread during this horizon. Increased hunting efficiency and widespread exploitation of

acorns provided reliable and storable food resources. Village size increased during this time, and some of these villages may have held 1,500 or more residents (Chartkoff and Chartkoff 1984). Analyses of skeletons showed that the first signs of malnutrition appeared in this Period, signaling greater competition for food resources (Fagan 2003).

The earliest part of this Period may have seen an incursion of Cupan-Takic speakers from the Great Basin (the "Shoshonean wedge" of Kroeber 1925) may have replaced the Hokan speakers in the area. At the time of Spanish conquest, Cupan-Takic speakers were distributed throughout Orange County, western Riverside County, and the Los Angeles Basin (Gabrieleño, Juaneño, and Cahuilla peoples). Serran-Takic speakers are now represented by the Serranos in the San Bernardino Mountains. Recent work (O'Neil 2002) suggests that the "Shoshonean wedge" is misnamed—the original Los Angeles inhabitants replaced by the incoming Takic-speakers may have been Yuman speakers (similar to those in the California Delta region of the Colorado River) and not Hokan Salinan-Seri (Chumash) speakers as was suggested by Kroeber.

At the time of Spanish conquest, local indigenous groups were composed of constantly moving and shifting clans and cultures. Early ethnographers applied the concept of territorial boundaries to local indigenous groups purely as a conceptualization device, and the data was based on fragmented information provided to them from second-hand sources. At least one Native American group, the Gabrieleño (Tongva), is known to have occupied or utilized resources within the vicinity of the project site at different points in history. A brief overview of the tribal group follows.

2.1.5 - The Tongva (Gabrieleño)

Ethnographic accounts of Native Americans indicate that the Tongva (or Gabrieleño) once occupied the region that encompasses the project area. At the time of contact with Europeans, the Tongva were the main occupants of the southern Channel Islands, the Los Angeles Basin, much of Orange County, and extended as far east as the western San Bernardino Valley. The term "Gabrieleño" came from the group's association with Mission San Gabriel Arcángel, established in 1771. However, today the group prefers to be known by their ancestral name, Tongva. The Tongva are believed to have been one of the most populous and wealthy Native American tribes in Southern California prior to European contact, second only to the Chumash (Bean and Smith 1978; McCawley 1996; Moratto 1984).

The Tongva occupied numerous villages with populations ranging from 50 to 200 inhabitants. Residential structures within the villages were domed, circular, and made from thatched tule or other available wood. Tongva society was organized by kinship groups, with each group composed of several related families who together owned hunting and gathering territories. Settlement patterns varied according to the availability of floral and faunal resources (Bean and Smith 1978; McCawley 1996; Miller 1991). Vegetable staples consisted of acorns, chia, seeds, piñon nuts, sage, cacti, roots, and bulbs. Animals hunted included deer, antelope, coyote, rabbits, squirrels, rodents, birds, snakes, and the Tongva also fished (Bean and Smith 1978; McCawley 1996; Miller 1991).

By the late 18th Century, Tongva population had significantly dwindled due to the introduction of diseases and dietary deficiencies. Tongva communities near the missions disintegrated as individuals

succumbed to Spanish control, fled the region, or died. Later, many of the Tongva fell into indentured servitude to Anglo-Americans. By the early 1900s, few Tongva people had survived and much of their culture had been lost (Bean and Smith 1978; McCawley 1996; Miller 1991). However, in the 1970s, a revival of the Tongva culture began which continues today with growing interest and support.

2.2 - Regional Historic Background

2.2.1 - Spanish and Mexican Exploration and Settlement

The Spanish Period (1769-1821)

The first Europeans to pass through the region, what is modern day Los Angeles County, was Captain Gaspar de Portola, during the Portola Expedition. Portola was accompanied by Father Juan Crespi, who played a central role in mapping the early routes of California (Beck and Hasse 1974, Hyslop 2019). Portola and his expedition arrived in present day San Gabriel Valley on July 30, 1769, with a 64-person garrison, before continuing their route to Monterey Bay. In 1771, the region was visited by Father Francisco Garces, who arrived at modern day San Gabriel Valley, in search of mission sites. His trek from Colorado to modern day Los Angeles County became the main overland route during the Spanish Period. On January 8, 1774, Juan Bautista de Anza, accompanied by Father Garces and Father Juan Diaz, engaged in the De Anza Expedition whose goal was to establish a colony and scout locations for Spanish Missions. Reaching Mission San Gabriel Arcángel, de Anza and 30 Spanish families form one of the first colonies in California (San Diego and San Jose supersede Mission San Gabriel), paving the way for the establishment of El Pueblo de la Reina de Los Angeles Sobre el Rio de la Porciuncula. As the influence of Mission San Gabriel grew, so did the land that it controlled. At its height, Mission San Gabriel controlled roughly 1,500,000 acres of land, extending from the ocean to the San Bernardino Mountains.

In addition to the growth of Mission influence, Los Angeles was expanding as well following the assignment of the first three land grants to three soldiers and by 1810, the population of Los Angeles County had grown to 2,537. The region continued to grow, and the success of the citrus orchards brought a lot of prosperity to the region. Nevertheless, civil unrest and fear of the liberal regime that had taken control of Spain sparked the flames of the Mexican Revolution (Beck and Williams 1972).

The Mexican Period (1821-1848)

In 1821, Mexico overthrew Spanish rule and the monopoly that the missions had in the area began to decline. By 1833, the Mexican government passed The Secularization Act, and the missions, reorganized as parish churches, lost their vast land holdings (Beattie and Beattie 1974). In an act of rebellion against The Secularization Act, Mission fathers ordered the slaughter of over 100,000 cattle (laalmanac.com 2020). Following The Secularization Act, the Mexican government initially planned to redistribute the land to the Native Americans; instead, they were redistributed to prominent citizens. The large ranchos became important financial and social centers with the focus going toward cattle and agriculture. The prosperity in the region attracted Americans from the east to the region seeking to make their own fortune. The influx of American settlers raised tension in the region eventually leading to the Mexican American War (1846-1848), with Mexico ceding its northern territories to the United States after the Treaty of Guadalupe Hidalgo.

2.2.2 - Los Angeles County

Los Angeles County was incorporated on February 18, 1850, as one of the original 27 counties that were incorporated following the annexation of California to the United States. Prior to European contact, Los Angeles County was originally inhabited by the Ventureño, Gabrieleño, and Fernandeño tribes (lanaic.gov 2020). The first European to enter present day Los Angeles County was Captain Gaspar de Portola, who entered the region in 1769 in what is known as the Portola Expedition. The party was on route to Northern California from San Diego in an excursion to claim the Southern and Northern California for Spain (nps.gov 2019). This was followed the establishment of the first community centered around Mission San Gabriel, which was founded by Father Junipero Serra in 1771. 10 years after the establishment of the mission, a group of 10 poblano families, recruited from Mexico, settled in a spot selected by Alta California Governor Felipe de Neve in effort to establish a new pueblo. The name of the new pueblo would be El Pueblo de la Reyna de Los Angeles (lacounty.gov 2020). The new settlement started off small, however, after the establishment of Mission San Fernando Rey de España in 1797 in the northern San Fernando Valley, drew an influx of settlers into the region. After Mexico gained its independence from Spain, trade with the United States became much more frequent as did the trade with the vessel that docked off San Pedro Harbor. During this Period, the region experienced a growth in commerce and population and by the 1840s, Los Angeles was the largest town in Southern California.

After the annexation of California and the discovery of gold in the hills southwest of the Antelope Valley, the population of Los Angeles County grew by the thousands. The exponential growth continued when gold was found in the mountains north of Los Angeles, bringing industry, trade, and commerce to the several communities that had formed. After the end of the Civil War, Los Angeles County had grown to 34,520 square miles, reaching the banks of the Colorado River; however, as counties continued to be established, portions of Los Angeles went to Kern County (1851), San Bernardino (1853), and Orange County (1889). Following the incorporation of Los Angeles County, the City of Los Angles became its first city and its county seat in 1850.

The late 1860s saw a population boom as the marketing to “Go West” caught on. With the completion of the Southern Pacific Railroad in 1880 and the Santa Fe Railroad in 1886, thousands of people came to Los Angeles County, purchased land, and re-sold it thus creating a booming real estate industry. However, after the collapse of financial growth in 1889, many Los Angelenos were forced to sell and/or abandon their homes. The mass exodus was short lived, as the event prompted the creation of the Chamber of Commerce, which campaigned to bring citizens back into the county. The new settlers subsequently benefited from prime real estate as well as fully formed local irrigation districts and numerous civic improvements (lacounty.gov 2020).

As more cities began to form within Los Angeles County, so did industry and population. The first motion picture studio to open was the Nestor Film Company, which opened its doors in 1911 in Hollywood. By 1930, the motion picture industry was a fully established force in the region. The establishment of Long Beach in 1911 and San Pedro Harbor and the several connecting railroad lines, facilitated the distribution of imported and local goods. Today there are 88 cities within the county and an additional 140 unincorporated communities, with a total population of 10,039,107 as of 2019 (census.gov 2020).

2.2.3 - City of South Gate

Located in southeastern Los Angeles County, the area that would become the City of South Gate was a 30,000-acre land grant given to Antonio Maria Lugo and his father by King Ferdinand VII of Spain in 1810 for their family's military service. Known as Rancho San Antonio, the grant was turned into a ranch focusing on cattle farming and agriculture (Whitehead 1976). H.D. Barrows, a descendant of Lugo, wrote in 1896 that "it was one of the finest cattle ranges in the Territory; there was abundance of water on it, and on both sides of it, as the Los Angeles and San Gabriel rivers were not then taken out for irrigation, and there were lines of live willows extending along their banks to near the sea" (Barrows 1896).

The original land grant was passed along and subdivided between descendants of the Lugo family. By 1870, much of the original Rancho San Antonio was parceled into 40-acre tracts. As the size of individual holdings decreased, agriculture, particularly fruit orchards along with cauliflower, beets, barley, beans, and dairy farms replaced cattle ranching by the 1880s (Bicentennial Heritage Committee 1976).

The earlier discovery of gold in Los Angeles County brought an influx of migrants to the region. This combined with the completion of the Southern Pacific Railroad, the Santa Fe Railroad, and a rapidly growing city of Los Angeles meant that real estate prices in the surrounding communities soared as demand for housing increased. On September 23, 1917, Charles B. Hooper, a realtor, purchased large tracts of agricultural land to develop into housing. The demand for housing was so high that despite lack of defined streets, a sewer system, or a water system, Hooper was able to sell 268 half-acre plots of land destined for housing (Beherec 2020). Named the "South Gate Gardens," 125 houses were constructed in by the end of 1918. This housing development quickly became a suburb for white working class families who commuted to Los Angeles and the surrounding area (Laslett 2014).

As the population of South Gate Gardens grew in subsequent years, it joined with other housing tracts such as Home Gardens and Magnolia Park. Together, they successfully petitioned the Los Angeles County Board of Supervisors to form the City of South Gate. South Gate was officially incorporated as a city on January 20, 1923. National corporations began to build factories in South Gate in the following years. Firestone Tire and Rubber Company purchased a 40-acre bean field to build a factory in 1928. In 1936, General Motors constructed a production line for its Pontiac, Oldsmobile, and Buick vehicles, employing over 4000 employees (Nicolaides 2002, City of South Gate 2022).

From the postwar World War II period to today, the City of South Gate continues to be a vibrant working class community home to 98,633 persons, many of whom work in local industries or commute to the larger Los Angeles metropolitan area (City of South Gate 2022).

SECTION 3: RESULTS

3.1 - Records Search

3.1.1 - South Central Coastal Information Center Records Search

On October 12, 2021, a records search for the project site and a 0.5-mile radius beyond the project boundaries was conducted at the SCCIC located at California State University, Fullerton. The current inventories of the NRHP, the CRHR, the CHL list, the CPHI list, and the California BERD for Los Angeles County were also reviewed to determine the existence of previously documented local historical resources.

The results of the records search indicate that two historic resources have been recorded within 0.5-mile of the project site. None of which are located within the project boundaries (Table 1). In addition, seven area-specific survey reports are on file within 0.5-mile radius; one report (LA-11993) addresses the project site, and two reports (LA-08255 and LA-04834) are immediately south of the project boundaries (Table 2). This indicates that the project site has previously been surveyed for cultural resources. SCCIC records search results can be found in Appendix B.

Table 1: Cultural Resources Within 0.5-mile Radius of the Project Site

Resource No.	Resource Description	Date Recorded
P-19-186110	Historic Resource: Union Pacific Railroad, Hobart Tower; HP11 Engineering structure, HP17 Railroad depot, HP39 Other	1999, 2002, 2007, 2018, 2019
P-19-188983	Historic Resource: LA Dept. of Water and Power Boulder Lines North and South, HP09 Public utility building, HP11 Engineering structure	1999, 2008, 2013, 2018
Source: South Central Coastal Information Center (SCCIC) Records Search. October 7, 2021.		

Table 2: Previous Investigations Within 0.5-mile Radius of the Project Site

Report No.	Report Title/Project Focus	Author	Date
LA-03408	Draft Report: a Cultural Resources Literature Search for the Rio Hondo Water Reclamation Program	Gary E. Stickel	1994
LA-04834	Cultural Resources Inventory Report for Williams Communications, Inc. Proposed Fiber Optic Cable System Installation Project, Los Angeles to Anaheim, Los Angeles and Orange Counties	Shahira Ashkar	1999
LA-07616	Cultural Resource Records Search and Site Visit Results for T-Mobile Telecommunications Facility Candidate La03347a (firestone/Atlantic), 8660 Atlantic Avenue, South Gate, Los Angeles County, California	Wayne H. Bonner	2006

Report No.	Report Title/Project Focus	Author	Date
LA-08255	Cultural Resources Final Report of Monitoring and Findings for the Qwest Network Construction Project State of California: Volumes I and II	Cindy Arrington and Nancy Sikes	2006
LA-10324	Cultural Resources Records Search and Site Visit Results for T-Mobile USA Candidate LA33923C (Cudahy Park), 5220 Santa Ana Street, Cudahy, Los Angeles County, California	Wayne H. Bonner	2009
LA-11918	Draft Environmental Impact Report for the Firestone Boulevard/Atlantic Avenue Intersection Improvement Project	Gary Schalman	2007
LA-11993	**Finding of No Adverse Effect for the Proposed Interstate 710 Corridor Project Between Ocean Boulevard and the State Route 60 Interchange**	**Laura O'Neil**	**2012**
Reports listed in **Bold** are within the project site. Source: South Central Coastal Information Center (SCCIC) Records Search. October 7, 2021.			

3.1.2 - Historical Aerials

A review of 20 historic aerial photographs from 1954 to 2018 indicate that from the earliest aerial in 1954 until the present, the project site has been developed for commercial use (Historic Aerials 2021). The areas surrounding the project site consist of industrial/commercial properties and residential neighborhoods to the north of the project. The Los Angeles River is east of the project boundaries and the surroundings areas were developed sometime before 1954.

3.1.3 - Native American Heritage Commission Record Search

On August 12, 2021, FCS sent a request to the NAHC to determine whether any sacred sites are listed on its Sacred Lands File for the project site. A response was received on October 12, 2021, indicating that the Sacred Lands File search failed to locate the presence of Native American cultural resources within the project site. The NAHC included a list of eight tribal representatives available for consultation. To ensure that all Native American knowledge and concerns over potential TCRs that may be affected by implementation of the proposed project are addressed, a letter containing project information and requesting additional information was sent to each tribal representative on October 15, 2021. One response was received on October 15, 2021, from the Gabrieleño Band of Mission Indians-Kizh Nation requesting Lead Agency contact information for the City of South Gate. No additional responses have been received to date. Correspondence related to the NAHC record searches and tribal representatives can be found in Appendix C.

3.2 - Pedestrian Survey and Buried Site Potential

3.2.1 - Pedestrian Survey

On January 14, 2022, FCS Staff Archaeologist, Natalie Adame, surveyed the project site to identify unrecorded cultural resources. Two-thirds of the project site is entirely developed and was the

former location of Armstrong Flooring, Inc. The remaining section of the project site is composed of undeveloped land. Ms. Adame split the survey into two sections, first surveying the foundations of the demolished structures, followed by surveying the undeveloped section of the project site. The first part of the survey began on the northwestern corner of the project site, using north–south transects spaced at 15-meter intervals, whenever possible, and moving southeast. The southwestern section of the project site was used as a parking lot and access point to the former factory. As the survey moved east, the foundations and scattered debris of a demolished office building and a distribution center remained. Although these foundations were associated with potentially historic built environment resources it is assumed that the former buildings did not meet CRHR and NRHP criteria, hence the demolition of these structures. The debris was investigated; however, no archaeological resources with visible diagnostic markers were present. The undeveloped section of the project site is bordered by a security fence to the west and the Los Angeles River to the east. The survey in the undeveloped section started in the northwest corner and followed a northeast–southwest transects spaced at 15-meter intervals, whenever possible, and moving southeast. The project site was relatively flat grassy area, with soil visibility of native soils ranging from 5 to 15 percent in areas where bioturbation activities had taken place. Soil composition consisted of dark yellowish brown silty sand (10YR 4/4). To the extent possible, all areas of the project site were inspected for culturally modified soils or other indicators of potential historic or prehistoric resources. No additional prehistoric or historic resources or raw materials commonly used in the manufacture of tools (e.g., obsidian, Franciscan chert, etc.) were found within the project site

Survey conditions were documented using digital photographs and field notes. During the survey, Ms. Adame examined all areas of the exposed ground surface for prehistoric artifacts (e.g., fire-affected rock, milling tools, flaked stone tools, tool-making debris, ceramics), soil discoloration and depressions that might indicate the presence of a cultural midden, faunal and human osteological remains, and features indicative of the former presence of structures or buildings (e.g., postholes, standing exterior walls, foundations) or historic debris (e.g., glass, metal, ceramics. No additional resources were encountered. Pedestrian Survey photos can be found in Appendix D.

3.2.2 - Buried Site Potential

In addition to the pedestrian survey, the potential for yet identified cultural resources in the project vicinity was reviewed against geologic and topographic geographic information system data for the general area and information from other nearby projects. The proposed project was evaluated against a set of criteria originally identified by a geoarchaeological overview of the Central Valley that was prepared for the California Department of Transportation (Caltrans) Districts 6 and 9 (Meyer et al. 2010). This study mapped the “archaeological sensitivity,” or potential to support the presence of buried prehistoric archaeological deposits, throughout the central valley based on geology and environmental parameters including distance to water and landform slope. The methodology used in the study is applicable to other parts of California, and generally concluded that sites consisting of flat, Holocene-era deposits near water resources had a moderate to high probability of containing subsurface archaeological deposits when compared to earlier Pleistocene deposits situated on slopes or further away from drainages, lakes, and rivers.

The project site is situated on flat terrain, and according to the geological map of Saucedo et al. (2016), the surface of the project site consists entirely of Holocene alluvial deposits. Applying the criteria set forth in Meyer et al. (2011), all Holocene-era deposits have the potential to contain archaeological deposits, which increases with the ease of the slope and proximity to water resources. While the project site is situated near a natural water source, its slope, composition, and proximity to known historic sites would suggest a low to moderate potential for unanticipated buried cultural resources to be impacted by project construction.

SECTION 4: SUMMARY AND RECOMMENDATIONS

4.1 - Summary

In accordance with CEQA Guidelines, FCS assessed the potential for the proposed project to have an adverse impact on known and potential cultural resources at the project site. Results from the SCCIC indicate that two recorded historic resources are within the 0.5-mile search radius of the project site, none of which are located within the project boundaries. Of the seven area-specific survey reports on file within the 0.5-mile radius; one report (LA-11993) addresses the project site, and two reports (LA-08255 and LA-04834) are immediately south of the project boundaries. This indicates that the project site has previously been surveyed for cultural resources. The results of the pedestrian survey identified unrecorded subsurface building foundations associated with the former Armstrong Flooring, Inc. The demolition date of these buildings are unknown; however, it is assumed that they did not meet the criterion for listing on the CRHR and NRHP, hence their removal. No additional cultural resources were identified within the project site.

The NAHC Sacred Lands File search reported negative results for Native American cultural resources in the immediate project area. FCS contacted Native American representatives and to date, one response was received from the Gabrieleño Band of Mission Indians- Kizh Nation. No additional Tribal representatives have provided information or comments pertaining to the project site.

4.2 - Recommendations

4.2.1 - Cultural Resources Recommendations

Based on the results of the records searches, archival research, tribal correspondence, and the pedestrian survey, FCS considers the potential for the proposed project to have an adverse effect on historic or prehistoric cultural resources to be low to moderate. The results from the NAHC Sacred Lands File search were negative for the presence of TCRs within the project site. No prehistoric resources were identified during the pedestrian survey; however, the presence of unrecorded building foundations within the project boundaries increase the possibility that subsurface undiscovered cultural resources may be encountered and impacted by construction activities.

FCS recommends that an Archaeologist who meets the Secretary of the Interior's Professional Qualification Standards for archaeology, be present to monitor the site during the initial removal of asphalt, grubbing, and prior to grading and trenching of the site to check for the inadvertent exposure of cultural materials. In the event exposed soils indicate cultural materials may be present, this may be followed by regular or periodic archaeological monitoring as determined by the Archaeologist. Full-time archaeological monitoring is not recommended at this time. Standard procedures for the inadvertent discovery of human remains and cultural resources should be followed and are provided in the report.

4.3 - Inadvertent Discovery Procedures

4.3.1 - Inadvertent Discovery of Human Remains

There is always the possibility that ground-disturbing activities during construction may uncover previously unknown buried human remains. Should this occur, Section 7050.5 of the California Health and Safety Code applies, and the following procedures shall be followed.

In the event of an accidental discovery or recognition of any human remains, Public Resources Code Section 5097.98 must be followed. In this instance, once project-related earthmoving begins and if there is accidental discovery or recognition of any human remains, the following steps shall be taken:

1. There shall be no further excavation or disturbance of the site, or any nearby area reasonably suspected to overlie adjacent human remains until the County Coroner is contacted to determine whether the remains are Native American and if an investigation of the cause of death is required. If the Coroner determines the remains to be Native American, the Coroner shall contact the NAHC within 24 hours, and the NAHC shall identify the person or persons it believes to be the "most likely descendant" of the deceased Native American. The most likely descendant may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains, and any associated grave goods as provided in Public Resources Code Section 5097.98, or
2. Where the following conditions occur, the landowner or his/her authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity either in accordance with the recommendations of the most likely descendant or on the project area in a location not subject to further subsurface disturbance:
   - The NAHC is unable to identify a most likely descendant, or the most likely descendant failed to make a recommendation within 48 hours after being notified by the Commission;
   - The descendant identified fails to make a recommendation; or
   - The landowner or his authorized representative rejects the recommendation of the descendant, and the mediation by the NAHC fails to provide measures acceptable to the landowner.

4.3.2 - Inadvertent Discovery of Cultural Resources

It is always possible that ground-disturbing activities during construction may uncover previously unknown, buried cultural resources. In the event that buried cultural resources are discovered during construction, operations shall stop in the immediate vicinity of the find and a qualified Archaeologist shall be consulted to determine whether the resource requires further study. The qualified Archaeologist shall make recommendations to the Lead Agency on the measures that shall be implemented to protect the discovered resources, including but not limited to excavation of the finds and evaluation of the finds in accordance with Section 15064.5 of the CEQA Guidelines. Potentially significant cultural resources consist of, but are not limited to, stone, bone, fossils, wood, or shell artifacts or features, including hearths, structural remains, or historic dumpsites. Any

previously undiscovered resources found during construction within the Master Plan area should be recorded on appropriate California Department of Parks and Recreation (DPR) forms and evaluated for significance in terms of CEQA Guidelines.

If the resources are determined to be unique historic resources as defined under Section 15064.5 of the CEQA Guidelines, mitigation measures shall be identified by the monitor and recommended to the Lead Agency. Appropriate mitigation measures for significant resources could include avoidance or capping, incorporation of the site in green space, parks, or open space, or data recovery excavations of the finds.

No further grading shall occur in the area of the discovery until the Lead Agency approves the measures to protect these resources. Any archaeological artifacts recovered as a result of mitigation shall be donated to a qualified scientific institution approved by the Lead Agency where they would be afforded long-term preservation to allow future scientific study.

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Appendix A: Personnel Qualifications

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STEFANIE E. GRIFFIN, MA—STAFF ARCHAEOLOGIST

OVERVIEW

- More than 13 years of experience

Education

- Master of Arts, Interdisciplinary Studies in Prehistoric Archaeology, California State University, Stanislaus, CA
- Bachelor of Arts, Anthropology, Concentration in Prehistoric Archaeology, California State University, Stanislaus, CA

Programs

- ESRI Arc View and Arc Map

Professional Affiliations

- President, National Board of Directors, Upsilon Kappa Delta Multicultural Sorority, Inc., 2009–2015

Stefanie E. Griffin, MA, has more than 13 years of experience in anthropology and archaeology, which she gained from laboratory and field experience. She has worked with private companies and public agencies throughout California and this strengthened her knowledge of CEQA and NEPA policies. She has excellent writing, research, and organizational skills which have aided her when assigning primary and trinomial numbers for archaeological projects for counties in Central California and the development and application of cataloging systems.

RELATED EXPERIENCE AND CLIENT SUMMARY

Ritz-Carlton Napa Valley Resort Hotel Napa Data Recovery of CA-NAP-928, Napa, CA

FCS is currently assisting the US Army Corps of Engineers (USACE) with the data recovery of CA-NAP-928. FCS's Dana DePietro, PhD, RPA, as Principal Investigator, is implementing the Memorandum of Agreement (MOA) and Historic Properties Treatment Plan (HPTP) for the Ritz-Carlton Napa Valley Resort Project, which was determined to have an adverse effect on the prehistoric site CA-NAP-928. The project proponent is a private developer whose application for the hotel site (which included a wetland) prompted Section 106 review by the USACE, San Francisco District. The project would result in the complete displacement of CA-NAP-928, which was determined eligible for listing in the National Register of Historic Places under criterion D for its data potential. To address this adverse effect, the USACE and the California State Historic Preservation Office executed a MOA calling for the implementation of the HPTP. Treatment includes data recovery of the large, complex, multi-period site, involving the analysis of macrobotanical remains, lithics, fire-affected rock, obsidian hydration analysis, C-14 dating, and the treatment and recovery of faunal and human osteological remains. FCS is also working closely with Scott Gabaldon, the Chairperson of the Mishewal Wappo Tribe of Alexander Valley, who has been designated Most Likely Descendant by the Native American Heritage Commission. Mr. Gabaldon has assigned one Native American monitor to be present at the site during all ground-disturbing activities. Ms. Griffin serves as Laboratory Director and Coordinator, developing and applying a cataloging system for all

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features, artifacts, and ecofacts associated with field and laboratory processing. She also facilitates data sets for the initial write-ups for phases two to five of excavation and budgeting.

Basin "EN" Construction Project Cultural Resources for the Fresno Metropolitan Flood Control District, City of Fresno, CA

The Fresno Metropolitan Flood Control District is proposing to acquire and construct a stormwater basin adjacent to Garfield and Gettysburg Avenues in Fresno, California. The project site is 16.80 acres and involves phased excavation to 25 feet below ground surface for the purposes of capturing and recharging stormwater. FCS is providing biological and cultural resource services to evaluate the potential biological effects of the project, and whether any cultural resources are present at the site for the purposes of complying with CEQA. Ms. Griffin will assist the District by providing assessments for cultural resources.

7190 Trenton/Healdsburg Road Project Biological and Cultural Resources Assessments for Green Qi, Sonoma County, CA

Ms. Griffin supported cultural resource assessment efforts for the 7190 Trenton/Healdsburg Road Project. The proposed project includes the renovation and expansion of an existing barn and cultivation of approximately 1 acre. The exact locations of these facilities have not yet been determined. As such, a comprehensive study was conducted.

Elk Grove Mixed-Use Development Air Quality and Cultural Studies for The Planning Associates Group, City of Sacramento, CA

Ms. Griffin provided cultural resource assessment services for a 2.57-acre site consisting of undeveloped land located in Sacramento, California. The site is bounded by a commercial development to the north, multifamily residential development to the south, and West Stockton Boulevard to the east. The project applicant is proposing to develop a four-story, 92-unit building with 5,200 square feet of commercial space, an 800-square-foot leasing office, and a 3,560-square-foot clubhouse.

Field Technician III, Stockton East Water District Project, InContext, City of Stockton, CA

Ms. Griffin performed Phase I initial shovel testing for municipal infrastructure development.

Field Technician, Borello Excavation Project, LSA Associates, Inc., City of Morgan Hill, CA

Ms. Griffin assisted with the rapid recovery excavation of human remains in compliance with Section 106.

Field Technician/Monitor, Southern California Edison 16-1002 Hazardous Tree Removal Program and Drought-Related Hazardous Tree Program, Environmental Intelligence, LLC, Sequoia National Forest and Sierra National Forest, CA

Ms. Griffin was first credential selection for the archaeological division of the company to lead the tree removal program in Sequoia and Sierra National Forests.

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Field Technician, #2159 Sunpower SCL-68, Far Western Anthropological Research Group, Inc., City of San Jose, CA

Ms. Griffin assisted with the excavation project for a previously recorded prehistoric site.

Field Technician, Crowder Canyon Data Recovery, Cogstone Resource Management, Inc. and Applied EarthWorks, Inc., Phelan, CA

Ms. Griffin performed excavation and data recovery of previously recorded prehistoric sites that were to be demolished for the California Department of Transportation expansion highway project.

Field Technician A, BUT 1123 Feather River West Levee Project, Far Western Anthropological Research Group, Inc., Biggs, CA

Ms. Griffin performed excavation, data recovery, laboratory analysis, and artifact processing for the USACE and Enterprise Tribal Group.

Field Technician, Forebay Dam Project 21250.01, ASM Affiliates, Inc., Pollock Pines, CA

Ms. Griffin tested and evaluated a 20th century work camp site in El Dorado County, located within the area of potential effects of the El Dorado Forebay Dam Modification Project.

Field Technician A, Feather River West Levee Project, Far Western Anthropological Research Group, Inc., Gridley, CA

Ms. Griffin reviewed residual materials, sent from the field to the laboratory, to identify all cultural artifacts; inventoried field unit artifacts in preparation for entry into the access database; performed records management; and organized and prepared artifacts to be transported and analyzed.

Field Technician B, #1944 Moke 3700-Acre Survey, Far Western Anthropological Research Group, Inc., Pioneer, CA

For Bear River Lake Resorts, Inc.'s project, Ms. Griffin conducted an archaeological survey for the US Forest Service.

Field Technician, Middle Creek Stewardship Project 23190, ASM Affiliates, Inc., Susanville, CA

Ms. Griffin assisted with Class II and Class III pedestrian surveys of 6,491 acres for the Bureau of Land Management project.

Field Technician, #1868 Mendocino Headlands Project, Far Western Anthropological Research Group, Inc., Mendocino, CA

Ms. Griffin performed exploratory excavation of shovel test units of prehistoric and historic sites.

Field Technician, #1873 Pacific Gas & Electric L107 Fremont Test Project, Far Western Anthropological Research Group, Inc., Fremont, CA

Ms. Griffin assisted in the excavation of a prehistoric site.

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Field Technician A, Feather River West Levee Project, Far Western Anthropological Research Group, Inc., Live Oak, CA

Ms. Griffin participated in monitoring backhoe excavation for construction purposes, unit excavation of prehistoric and historic artifacts, review of residual materials sent from the field to the laboratory to identify all cultural artifacts, preparation of inventory of field unit artifacts for entry into the access database, records management, and organization and preparation of artifacts to be transported for analysis.

Field Technician, Sand Pass Project, Enviroscientists, Inc., Winnemucca, NV

Ms. Griffin performed a 650-acre survey of previously recorded historic sites outside Winnemucca, Nevada, particularly on a private land in Silver State Valley.

Field Technician, NAS Base Fallon Project, ASM Affiliates, Inc., Fallon, NV

Ms. Griffin performed testing and data recovery on training ranges in 37 sites, which ranged from the Paleoindian to Late Archaic eras and included historic materials.

Field Technician, Summit Exploration Survey, ASM Affiliates, Inc., Wells, NV

Ms. Griffin participated in a notice-level clearance survey of five drill pads and associated access roads of a Class III inventory of 750 acres.

Jordan Archaeological Project of La Sierra University, Riverside, Jordan

Ms. Griffin participated in the excavation field school's program, which involves one of three archaeological sites currently being excavated by the Madaba Plains Project in Jordan.

Proyecto Arqueológico Regional El Paraiso, Honduras

Ms. Griffin participated in this Honduras archaeological project, which entailed excavations at several Late Classic Period (425–825 AD) sites. She also conducted raw mineral surveys of El Paraiso Valley.

Anthropological Studies Center, Sonoma State University, City of Rohnert Park, CA

As Laboratory Assistant II, Ms. Griffin processed artifacts through cleaning, sorting and inventory. She also performed historic artifact reconstruction and collection management.

Central California Information Center, California Historical Resources Information System, California State University, Stanislaus, City of Turlock, CA

As Student Intern and Student Assistant, Ms. Griffin participated in the operations of the Central California Information Center by overseeing seven counties in Central Valley. This role entailed data processing of reports, records, and hard-copy and electronic database entries. She also directed Geographic Information System data input, such as mapping and scanning of documents, and performed quality control. Ms. Griffin conducted archaeological investigations, specifically field surveys, excavations, and laboratory analysis, for California Department of Forestry and Fire Protection (CAL FIRE) projects.

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STEFANIE E. GRIFFIN, MA—STAFF ARCHAEOLOGIST

California Department of Transportation District 10, City of Stockton, CA

As Student Intern for the Environmental Planner-Archaeologist, Ms. Griffin assisted in the completion of projects and, to ensure efficiency of day-to-day tasks, filed and maintained the inventory of tracking systems of project materials. She assisted the Archaeologist with writing letters to Native American tribe consultants/monitors and participated in archaeological field surveys.

Previous Administrative Experience

Central California Information Center, City of Turlock, CA

Ms. Griffin served as Assistant Administrator where she managed the processing of archaeological reports for cultural resource management firms and corresponded with the California State Historic Preservation Office to comply with Section 106 of the Historical Preservation Act (HPA). In her previous role as Assistant Lab Administrator, she processed archaeological material for CAL FIRE to comply with Section 106 of the HPA.

California Department of Transportation District 10

Ms. Griffin was an Office Assistant to the Environmental Planner for Archaeology where she wrote correspondences to the Tribal Historical Preservation Office.

Publications

E Griffin, Stefanie (2013) "Building the Maya World: Raw Materials, Trade Routes, and Procurement Strategies in the El Paraiso Valley, Copan, Honduras", California State University Stanislaus Press.

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NATALIE ADAME—ARCHAEOLOGICAL MONITOR

OVERVIEW

- More than 2 years of experience

Education

- Bachelor of Arts, Biological Anthropology, Minor in Geology, California State University, East Bay, Hayward, CA, 2016
- Associate of Arts, Geology, Mt. San Antonio College, Walnut, CA, 2011

Skill

- Esri Aeronautical Reconnaissance Coverage Geographic Information System (ArcGIS)

Natalie Adame has more than 2 years of experience in archaeology, which she gained from extensive fieldwork and museum experience. Ms. Adame has established excellent research skills exemplified by her ability to prepare comprehensive reports and presentations. Her experience includes performing land use analyses and preparing Initial Studies and EIRs for various development projects. As an Archaeological Monitor/Field Technician, Ms. Adame implements Worker Environmental Awareness Programs (WEAP) 'tailgate' training sessions and coordinates with construction staff and Native American Monitors, construction monitoring, and the salvage and recordation of archaeological resources.

RELATED EXPERIENCE AND CLIENT SUMMARY

Biological, Archaeological, and Paleontological Monitoring and Reporting Services, Los Angeles Regional Interoperable Communications System, Los Angeles County, CA

FCS is providing monitoring and reporting services during the construction of more than 150 land mobile radio (LMR) facilities at sites located primarily in Los Angeles County. The LMR sites contain the infrastructure and equipment necessary to provide voice communications coverage throughout the County for emergency responders. These locations are widely dispersed across the County in both urban (intensively developed) and rural (less developed) settings and include coastal locations, sites in downtown Los Angeles, remote mountain peaks across the County, and the northern high desert. FCS is conducting the biological, archaeological, and paleontological pre-construction and construction monitoring and reporting services in accordance with the Construction Management Requirements outlined in the NEPA Environmental Assessment that FCS prepared for the project. Ms. Adame is a Field Archaeological Monitor on the project.

Barton Road Logistics Facility Project EIR, Technical Studies, and Peer Review, City of Colton, CA

FCS is providing CEQA documentation and peer review services for the Barton Road Logistics Facility Project in the City of Colton, in San Bernardino County. The proposed project includes the demolition of four industrial buildings, an office building, and parking lot. The proposed project would construct two state-of-the-art speculative concrete tilt-up industrial warehouse logistics facilities with a total square footage of 960,040 square feet. The project will develop Best-in-Class industrial facilities in the City of Colton that are designed to meet contemporary industry standards, can easily accommodate a wide

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NATALIE ADAME—ARCHAEOLOGICAL MONITOR

variety of warehouse and distribution uses, and are economically competitive with similar warehouse facilities in the local Inland Empire marketplace. FCS is preparing an EIR with supporting stand-alone Air Quality and Greenhouse Gas (GHG) Emissions Analysis with Health Risk Assessment, Biological Resources Assessment, Phase I Cultural Resources Assessment (CRA), Noise Impact Analysis, and Traffic Impact Analysis. Our team will also peer review the Geotechnical Report. The Phase I Cultural Resources Assessment will provide an evaluation and recommendations regarding potential construction related impacts to cultural resources. Ms. Adame is a Field Archaeological Monitor on the project.

Library/Learning Resource Center Building Project Biological and Cultural Construction Monitoring Services for the Solano Community College District, Fairfield, CA

FCS prepared the IS/MND and provided the subsequent biological and cultural construction monitoring services for the construction of a new 59,252-gross-square-foot, 2-story Library/Learning Resources Center building on the Fairfield Campus of the Solano Community College Campus. The building would be constructed on an open quad in the center of campus, replacing an open lawn. FCS conducted AB 52 consultation in coordination with the District and tribal representatives from the Yocha Dehe Wintun Nation to address concerns about tribal cultural resources in the immediate vicinity of the site. In additional to preparing a full PI-CRA, FCS drafted mitigation measures in coordination with the Tribe and District to effectively allow the project to proceed while protecting the Tribal Cultural resources in question. The District approved the project in May 2016, with the approval of the tribe and all parties involved. FCS will provide coordination with Tribal representatives from the Yocha Dehe Wintun Nation, as well as a "tailgate" sensitivity training session for construction personnel. Ms. Adame is a Field Archaeological Monitor on the project.

Prior Work Experience

Archaeologist, Material Culture Consulting, City of Pomona, CA

As an archaeologist, Ms. Adame performed excavations, recorded prehistoric and historic artifacts, and catalogued data using ArcGIS. She conducted Phase I, II, and III Environmental Site Assessments (ESAs) and drafted EIRs. Ms. Adame also prepared Department of Parks and Recreation (DPR) forms, searched records, and monitored projects in the State and county.

Field Archaeologist, ICF International, City of Los Angeles, CA

As a field archaeologist, Ms. Adame conducted environment surveys, performed excavations, and catalogued prehistoric and historic artifacts using ArcGIS. She prepared Federal Environment Management environmental reviews, DPR forms, and ESAs. Ms. Adame also worked with different transportation agencies, including the Orange County Transportation Authority, OC 405 Partners, LA Metro, and the California Department of Transportation.

Field Archaeologist, Dudek , City of Pasadena, CA

As a field archaeologist, Ms. Adame performed architectural and cultural historical assessments and conducted surveys for various projects to evaluate conflicts during construction period. Her responsibilities also include evaluating historic resource significance, cataloguing exhibit pieces, and gathering daily records of environmental compliances.

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NATALIE ADAME—ARCHAEOLOGICAL MONITOR

Grants and Proposal Writer – Applied Anthropology Coursework, California State University, East Bay, City of Hayward, CA

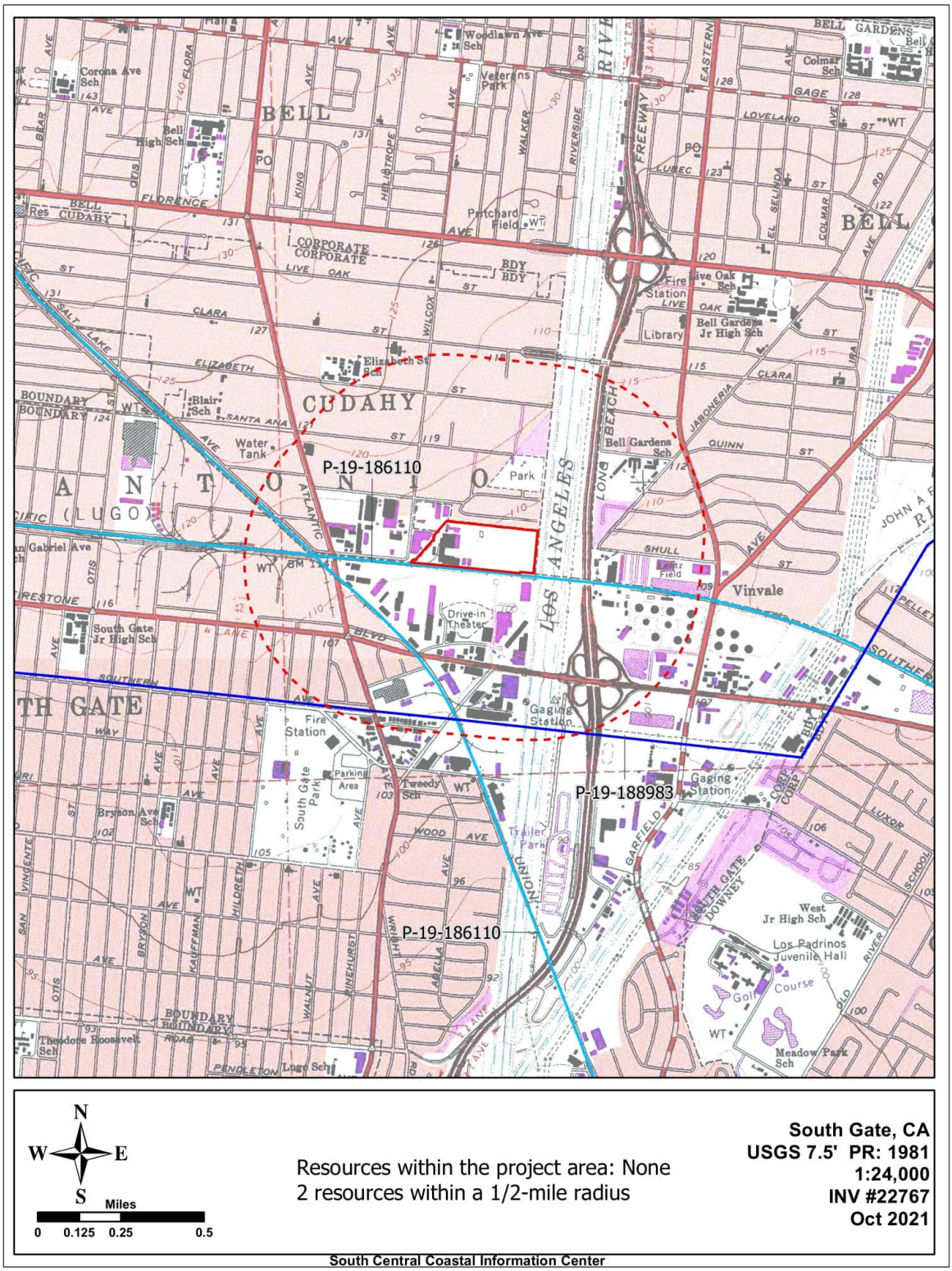
As a Grants and Proposal Writer, Ms. Adame analyzed organizational cultures, conducted needs assessment, and prepared social impact reports. Part of her task was to identify the appropriate research disciplines necessary for specific jobs.

Student Museum Docent, California State University, East Bay, City of Hayward, CA

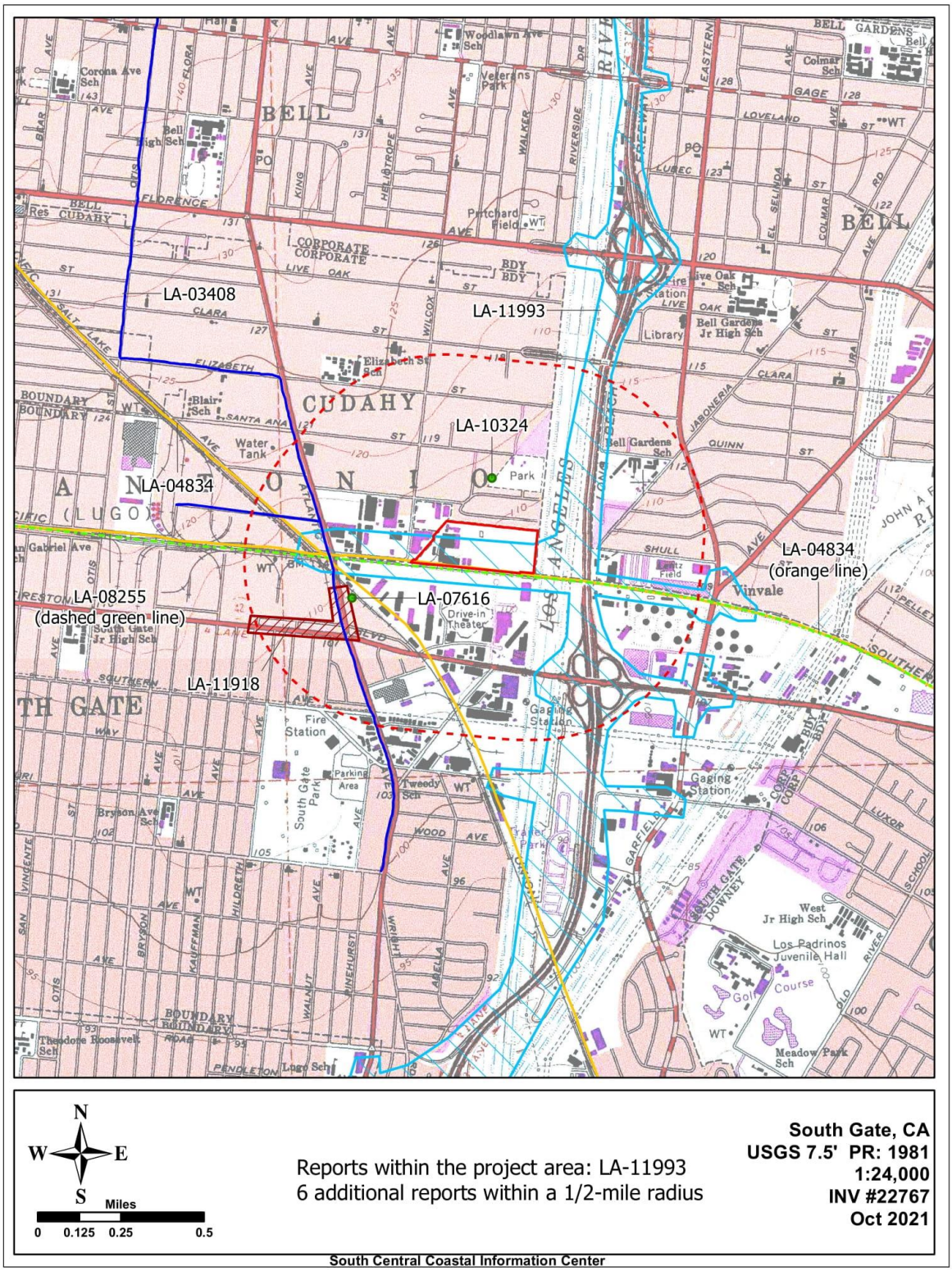
Ms. Adame served as a docent at the university's C.E. Smith Museum of Anthropology. Her responsibilities include preparing materials for exhibits, researching and writing about artifacts, and mounting display materials in the museum.

Appendix B:
South Central Coastal Information Center Records Search Results

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May depict confidential cultural resource locations. Do not distribute.



May depict confidential cultural resource locations. Do not distribute.

Resource Detail: P-19-186110

Identifying information

Primary No.: P-19-186110
Trinomial:
Name: Union Pacific RR, Hobart Tower
Other IDs:

Type	*Name*
Resource Name	Union Pacific RR, Hobart Tower
Other	Union Pacific RR
Other	C-Los Angeles-A-1
Other	#33, 34, & 100
Other	Hobart Tower

Cross-refs: Extends into another county as 30-176630

Attributes

Resource type: Structure
Age: Historic
Information base: Survey
Attribute codes: HP11 (Engineering structure); HP17 (Railroad depot); HP39 (Other)
Disclosure: Unrestricted
Collections: No
Accession no(s):
Facility:

General notes

Recording events

Date	*Recorder(s)*	*Affiliation*	*Notes*
6/22/1999	S. Ashkar	Jones & Stokes	
6/19/2002	D. Livingstone and C. Hamilton	Applied Earthworks	Update
7/11/2007	Francesca G. Smith and Caprice D. Harper	Parsons	update in Parsons report 6th St. Viaduct 2007
3/26/2018	Jessica B. Feldman	ICF	Update
7/25/2019	Jenna Kachour	GPA	Update

Associated reports

Report No.	*Year*	*Title*	*Affiliation*
LA-04834	1999	Cultural Resources Inventory Report for Williams Communications, Inc. Proposed Fiber Optic Cable System Installation Project, Los Angeles to Anaheim, Los Angeles and Orange Counties	Jones & Stokes Associates, Inc.
LA-07532	2006	Records Search and Performed Field Reconnaissance for Metro Pcs Candidate La0275a (sce Transmission Tower) Located Near the Intersection of Whittier Boulevard and Saybrook Avenue, City of Los Angeles, Los Angeles County, California 90022	Cellular, Archaeological Resource, Evaluations
LA-07658	2006	Cultural Resources Investigation for the Proposed Huntington Park Community Center, 6925 Salt Lake Avenue, Huntington Park, Los Angeles County, California	McKenna et al.
LA-07662	2005	Historic Architectural Evaluation and Partial Section 106 Compliance for a Proposed Wireless Telecommunications Services Facility Located at 8846 Alondra Boulevard in the City of Bellflower, Los Angeles County, California	Galvin & Associates
LA-07664	2005	Historic Survey Report and View Shed Analysis Cultural Resource Assessment for the Truba (CA-6346b) Cellular Facility on 2906 Laurel	EarthTouch, Inc.

Resource Detail: P-19-186110

		Place, South Gate, Los Angeles County, Ca	
LA-07934	2006	Archaeological and Paleontological Assessment of the Proposed Peaker Project Location at Center Substation	Southern California Edison
LA-07943	2006	Sbc El Monte, La-0297a	EarthTouch, Inc.
LA-08315	2007	Cultural Resources Records Search and Site Visit Results for Royal Street Communications, Llc Candidate La0866a (holifield Park), 12500 Excelsior Drive, Norwalk, Los Angeles County, California	Michael Brandman Associates
LA-08733	2006	Cultural Resources Records Search Results and Site Visit for Sprint Nextel Telecommunications Facility Candidate Ca8283e (van Wyck) 601 South Santa Fe Avenue,los Angeles, Los Angeles County, California	Michael Brandman Associates
LA-08857	2006	Cultural Resources Records Search and Site Visit Results for T-mobile Candidate La03345c (balowitz Law), 3260 East Florence Avenue, Huntington Park, Los Angeles County, California	Michael Brandman Associates
LA-08858	2006	Cultural Resources Records Search and Site Visit Results for Royal Street Communications, Llc Candidate La0216b (imperial Hwy/palmer Ave), Lighthipe - Mesa M-3/t-2, South Gate, Los Angeles County, California	Michael Brandman Associates
LA-08862	2006	Cultural Resources Records Search and Site Visit Results for Cingular Wireless Candidate Lsancac106 (710 Fwy/imperial Hwy), 10920 South Garfield Avenue, South Gate, Los Angeles County, California	Michael Brandman Associates
LA-08892	2006	Cultural Resources Records Search and Site Visit Results for Royal Street Communications, LLC Telecommunications Facility Candidate LA0282A (Norwalk-SCE MO-T2), 10601 Firestone Boulevard, Norwalk, Los Angeles County, California.	Michael Brandman Associates
LA-09115	2007	Cultural Resources Records Search and Site Visit Results for T-Mobile Candidate LA03857G (Stater Bros), 11300 Firestone Boulevard, Norwalk, Los Angeles County, California	Michael Brandman Associates
LA-09190	2007	Cultural Resources Records Search and Site Visit Results for T-Mobile Canidate LA03051D (SCE Caldon), Near 8866 Juniper Street, Southeast Corner of 88th Street and Juniper Street, Los Angeles, Los Angeles County, California	Michael Brandman Associates
LA-09634	2008	Cultural Resources Records Search and Site Visit Results for T-Mobile USA Candidate LA33302A (Moose Lodge 796), 9320 Alondra Blvd., Bellflower, Los Angeles County, California.	Michael Brandman Associates
LA-09635	2008	Cultural Resources Records Search and Site Visit Results for T-Mobile Candidate LA33378A (Antiquarian), 4851 S. Alameda St., Los Angeles, Los Angeles County, California.	Michael Brandman Associates
LA-09636	2009	Cultural Resource Assessment, Verizon Wireless Services, Cudahy Facility, City of Cudahy, Los Angeles County, California	Bureau Veritas North America, Inc.
LA-09638	2009	Proposed Bechtel Wireless Telecommunications Site EL0324 (Leonis Substation), 3345 Fruitland Ave., Vernon, Los Angeles County, California, 90058	Cellular Archaeological Resource Evaluations
LA-09649	2009	Cultural Resources Records Search and Site	Michael Brandman Associates

Resource Detail: P-19-186110

		Visit Results for T-Mobile USA Candidate LA33346B (Bermingham Controls), 11130 Buisiness Circle, Cerritos, Los Angeles County, California	
LA-09841	2007	Cultural Resources Survey and Testing for the 41st Place and Alameda Project, Los Angeles County, California	SWCA Environmental Consultants
LA-09900	2008	A Cultural Resources Assessment of a Proposed Deteriorated Pole Replacement Project (WO 800060471, 4405-0472) Near South Gate, Los Angeles County, California	Center for Archaeological Research, CSUB
LA-10199	2009	Cultural Resources Records Search, Site Visit Results, and Direct APE Historic Architectural Assessment for Clearwire Candidate CA-LOS6068 / CA6234, 3351 1/2 Firelsone Blvd., South Gate, Los Angeles County, CA.	MBA
LA-10284	2009	Cultural Resources Records Searc, Site Visit Results, and Direct APE Historic Architectural Assessment for Clearwire Candidate CA-LOS2084, 2264 East 15th St., Los Angeles, Los Angeles County, CA.	MBA
LA-10285	2009	Cultural Resources Records Search and Site Visit Results for Verizon Wireless Candidate Downey Relo, Downey Norwalk Road, Norwalk, Los Angeles County, California	Michael Brandman Associates
LA-10320	2009	Cultural Resources Records Search and Site Visit Results for T-Mobile USA Candidate LA02430A, 13840 Paramount Boulevard, Paramount, Los Angeles County, California	Michael Brandman Associates
LA-10324	2009	Cultural Resources Records Search and Site Visit Results for T-Mobile USA Candidate LA33923C (Cudahy Park), 5220 Santa Ana Street, Cudahy, Los Angeles County, California	Michael Brandman Associates
LA-10430	2000	A Cultural Resources Inventory of the Proposed PF. Net/AT&T Fiber Optics Conduit Los Angeles to Marine Corps Base Camp Pendleton, Los Angeles and Orange Counties, California	ASM Affiliates, Inc.
LA-10452	2007	Historical Resources Evaluation Report - 6th Street Viaduct Seismic Improvement Project	Parsons
LA-10506	2004	Cultural Resources Monitoring: North Outfall Sewer - East Central Interceptor Sewer Project	Greenwood and Associates
LA-10541	2005	Finding of Effect for the Proposed Arroyo Seco Bike Path, Los Angeles County, California	EDAW, Inc.
LA-10633	2010	A Class III Archaeological Survey Report for the Industrial Property Located at 12214 Lakewood Blvd. in the City of Downey, Los Angelese County, California	McKenna et al.
LA-10700	2010	Cultural Resources Records Search, Site Visit Results, and Direct APE Historic Architectural Assessment for Clearwire Candidate CA-LOS6156/LA03XCO47, 1925 East Vernon Avenue, Los Angeles, California	Michael Brandman Associates
LA-10723	2010	Cultural Resources Records Search and Site Visit Results for American Tower Corporation Candidate 300809 (Firestone), 7924 Firestone Boulevard, Downey, Los Angeles County, California	Michael Brandman Associates
LA-10724	2010	Cultural Resources Records Search, Site Visit Results, and Direct APE Historic Architectural Assessment for Clearwire Candidate CA-LOS6618/LA03XC384, 8600 Santa Fe Avenue, South Gate, Los Angeles County, California	Michael Brandman Associates
LA-10836	2008	Bellflower Municipal Water System Master Plan	RBF Consulting

Resource Detail: P-19-186110

LA-10891	2009	Archaeological Survey Report, Westside Park Rainwater Irrigation Project 2785 Clyde Avenue, Los Angeles, California	Greenwood & Associates
LA-10942	2010	Cultural Resources Records Search and Site Visit Results for T-Mobile USA Candidate SV11708-E (ATC Colo at Olympic0, 2913 East 12th Street, Los Angeles, Los Angeles County, California	Michael Brandman Associates
LA-11048	2009	American Recovery and Reinvestment Act (ARRA) Funded Security Enhancement Project (PRJ29112359) - Improved Access Controls, Station Hardening, CCTV Surveillance System, and Airborne Particle Detection at Los Angeles Station and Maintenance Yard, LA, CA	URS
LA-11208	2011	Cultural Resources Review ofr American Tower Corporation-302130/Olympic CA 1Trileaf Project #315382, 2913 East 12th Street, Los Angeles, California 90023, Los Angeles County	Trileaf
LA-11211	2010	Cultural Resource Records Search and Site Survey, T-Mobile Site LA33925D St Matthias High School, 7851 Gardendale Street Downey, Los Angeles County, California 90242	T-Mobile USA
LA-11338	2011	Cultural Resource Records Search and Site Survey, AT&T Site EL0005 (51029) Perm-Devon Storage LTE 801 East Commercial Street, Los Angeles, Los Angeles County, California 90012 CASPR #3551015656	ACE Environmental, LLC
LA-11346	2011	LA0131 12851 Leyva Street, Norwalk, CA 90650	ATC Associates
LA-11405	2011	Cultural Resource Records Search and Site Survey AT&T Site LAC778, 4th Street/101 Freeway, 300 1/2 Avery Street, Los Angeles, Los Angeles County, California 90013 CASPR #3551015013	ACE Environmental, LLC
LA-11429	2011	Archaeological/cultural Resources Records Search, City of Lakewood Overview	McKenna et al.
LA-11506	2012	Collocation Submission Packet, FCC Form 621. Verizon Bandini, LA2860C. 3615 E. Vernon Ave. Vernon, Los Angeles County	EarthTouch
LA-11600	2011	Cultural Resources Records Search and Site Visit Results for AT&T Mobility, LLC Facility EL0371-02, USID 103090 (Pine Hurst Mobilite Colo), 9611 Pinehurst Avenue, South Gate, Los Angeles County, California	Environmental Assessment Specialists
LA-11719	2011	Results of a Phase I Archaelogical Study For Proposed AT&T Wireless Telecommunications Site LA0661 (Bellflower Civic Center) located at 9939 Belmont Street, Bellflower, California	Historical Environmental Archaeological Research Team
LA-11965	2012	Cultural Resources Records Search and Site Visit Results for T-Mobile West, LLC Candidate LA33378A (LA3378 Antiquarian), 4851 South Alameda Street, Los Angeles, Los Angeles County, California	MBA
LA-12019	2012	Cultural Resources Records Search and Site Visit Results for T-Mobile West, LLC Candidate LA02217A (SM026 SCE Tower M1 T5), 19900 Claretta Avenue, Cerritos, Los Angeles County, California	MBA
LA-12211	2012	Cuultural Resources Records Search and Site Visit Results for T-Mobile West, LLC Candidate IE05267B (0567 Storage Space Bldg) 300 Avery Street, Los Angeles, Los Angeles County, California	MBA
LA-12302	2012	Cultural Resources Records Search and Site	MBA

Resource Detail: P-19-186110

		Visit Results for T-Mobile West, LLC Candidate LA02430A (LA430 LA-430-00) 13840 Paramount Boulevard, Paramount, Los Angeles County, California	
LA-12349	2012	Metro Relo Starkman/Ensite #11976, 544 Mateo Street, Los Angeles, Los Angeles County	EBI Consulting
LA-12434	2013	Cultural Resources Records Search and Site Visit Results for T-Mobile West, LLC Candidate LA74293T (Pioneer Blvd) 12512 Pioneer Boulevard, Norwalk, Los Angeles County, California	MBA
LA-12445	2013	Cultural Resources Records Search and Site Visit Results for T-Mobile West, LLC Candidate LA02605A (LA 605 SCE/Southgate Nursery), 11100 Scott Avenue, South Gate, Los Angeles County, California	EAS
LA-12446	2013	Cultural Resources Investigation of the Proposed Aspire Public Schools Site on Seville Avenue in Huntington Park, Los Angeles County, California	McKenna et al
LA-12452	2013	Cultural Resources Records Search and Site Visit Results for T-Mobile West, LLC Candidate LA02994B (LA2994 Downey YMCA) 11531 Downey Avenue, Downey, Los Angeles County, California	MBA
OR-02094	1999	Cultural Resources Inventory Report for Williams Communications, Inc. Proposed Fiber Optic Cable System Installation Project, Los Angeles to Anaheim, Los Angeles and Orange Counties	Jones & Stokes Associates, Inc.
OR-03861	2000	A Cultural Resources Inventory of the Proposed PF. Net/AT&T Fiber Optics Conduit Los Angeles to Marine Corps Base Camp Pendleton, Los Angeles and Orange Counties, California	ASM Affiliates, Inc

Location information

County: Los Angeles
USGS quad(s): ANAHEIM, LOS ALAMITOS, LOS ANGELES, SOUTH GATE, WHITTIER
Address:
PLSS:
UTMs:

Management status

Database record metadata

	Date	*User*	
Entered:	5/1/2008	jay	
Last modified:	9/9/2019	mgalaz	
IC actions:	*Date*	*User*	*Action taken*
	5/1/2008	jay	Appended records from Encodent database.
	3/17/2010	mgalaz	Updated.
	9/9/2019	mgalaz	Updated
Record status:	Verified		

Resource Detail: P-19-188983

Identifying information

Primary No.: P-19-188983
Trinomial:
Name: L A Dept of Water & Power Boudler Lines North & South
Other IDs:

Type	*Name*
Resource Name	L A Dept of Water & Power Boudler Lines North & South
Other	LADWP Boulder Lines 1 & 2
Other	Boulder Dam-Los Angeles 287.5 kV Transmission Line

Cross-refs:

Attributes

Resource type: Structure, Element of district
Age: Historic
Information base: Survey
Attribute codes: HP09 (Public utility building); HP11 (Engineering structure)
Disclosure: Unrestricted
Collections: No
Accession no(s):
Facility:

General notes

Recording events

Date	*Recorder(s)*	*Affiliation*	*Notes*
8/1/2008	Noah M. Stewart	Caltrans District 7	
8/2/1999	Stephen Van Wormer	KEA	NR Registration Form
5/17/2018	Jessica B. Feldman	ICF	Update
2/20/2013	Heather Gibson and Marc Beherec	AECOM	Update

Associated reports

Report No.	*Year*	*Title*	*Affiliation*
LA-10883	2008	Finding of no adverse effect - Interstate Route 10-605 Interchange Improvement 07-LA-10/605 PM 31.2/20.9 EA:245400	California Department of Transportation, District 7
LA-11400	2011	Cultural Resource Records Search and Site Survey, AT&T Site LA0006, American Legion, 9539 [9535] California Avenue, South Gate, Los Angeles County, California 90280 CASPR# 3551015523	ACE Environmental, LLC
LA-11746	2012	Archaeolgical Survey Report of the Arrow Irwindale Project, AT&T Mobility Site No. LA0231, 1801 West Gladstone Street, Azusa, Los Angeles County, California	Historic Resource Associates
LA-12041	2012	Cultural Resources Study of the SCE-Thienes River Project, MetroPCS California, LLC Site No. MLAX04170, 11530 Thienes Avenue, South El Monte, Los Angeles County, California 91733	Historic Resource Associates
LA-12096	2012	Historical/Archaeological Resources Survey San Antonio Spreading Grounds Project Three Valleys Municipal Water District City of Claremont, Los Angeles County, California	CRM Tech
LA-12103	2013	Historical/Archaeological Resources Survey Report San Gabriel Valley Water Company Plant 11 Improvements Project, 12638 Fineview Street, City of El Monte Los Angeles County, California	CRM Tech
LA-12133	2011	Cultural Resources Survey Report for the	ECORP Consulting

Resource Detail: P-19-188983

		Whittier Narrows Equestrian Center Project Los Angeles County, California	
LA-12296	2013	Cultural Resources Records Search and Site Visit Results for T-Mobile West, LLC Candidate IE25568A (IE568 SCE Padua Layfair) 5120 U Live Oak Canyon Road, La Verne, Los Angeles County, California	MBA
LA-12306	2013	Cultural Resources Records Search and Site Visit Results for T-Mobile West, LLC Candidate LA23633 (LA3633 SCE Florence Avenue CS) 6241 Florence Avenue, Bell Gardens, California	MBA
LA-12465	2014	A Determination of Eligibilty Study: The Bell Gardens High School Campus and Proposed Improvements, Bell Gardens, Los Angeles County, California	McKenna et al
LA-12756	2014	Cultural Resources Records Search and Site Visit Results for Verizon Wireless Candidate LIONS 5607 North Barranca Avenue, Azusa, Los Angeles County, California	FirstCarbon Solutions
LA-13259	2016	A Class III Section 106 (NHPA) Historic Resource Study for the Arcadia Logistics Center Project, SPL-408-2016-0020, City of Arcadia, Los Angeles County, California (Portions of APNs 8535-020-909, 8541-017-800, 8545-024-007, -011, and -901, and 8546-001-900)	Brian F. Smith and Associates

Location information

County: Los Angeles
USGS quad(s): BALDWIN PARK, EL MONTE, GLENDORA, INGLEWOOD, MT BALDY, SAN DIMAS, SOUTH GATE, WHITTIER
Address:
PLSS:
UTMs:

Management status

Database record metadata

	Date	*User*	
Entered:	4/26/2011	mgalaz	
Last modified:	1/7/2020	mgalaz	
IC actions:	*Date*	*User*	*Action taken*
	7/24/2015	mgalaz	updated
	9/9/2019	mgalaz	Updated
	1/7/2020	mgalaz	Updated

Record status: Verified

Report Detail: LA-03408

Identifiers

Report No.: LA-03408
Other IDs:
Cross-refs:

Citation information

Author(s): Stickel, Gary E.
Year: 1994
Title: Draft Report: a Cultural Resources Literature Search for the Rio Hondo Water Reclamation Program
Affliliation: Environmental Research Archaeologists
No. pages:
No. maps:
Attributes: Literature search
Inventory size: 36 li mi
Disclosure:
Collections:

General notes

Associated resources

No. resources: 0
Has informals:

Location information

County(ies): Los Angeles
USGS quad(s): EL MONTE, LOS ANGELES, SOUTH GATE
Address:
PLSS:

Database record metadata

	Date	User	
Entered:	5/5/2008	jay	
Last modified:	12/13/2016	mgalaz	
IC actions:	*Date*	*User*	*Action taken*
	5/6/2008	jay	Appended records from old Surveys database.

Record status:

Report Detail: LA-04834

Identifiers

Report No.: LA-04834
Other IDs:
Cross-refs:

Citation information

Author(s): Ashkar, Shahira
Year: 1999
Title: Cultural Resources Inventory Report for Williams Communications, Inc. Proposed Fiber Optic Cable System Installation Project, Los Angeles to Anaheim, Los Angeles and Orange Counties
Affliliation: Jones & Stokes Associates, Inc.
No. pages:
No. maps:
Attributes: Archaeological, Field study
Inventory size: 23.5 line miles
Disclosure:
Collections:

General notes

Same as OR2094

Associated resources

Primary No.	*Trinomial*	*Name*
P-19-186110		Union Pacific RR, Hobart Tower
P-19-186111		Bellflower RR Depot
P-30-176630		Southern Pacific and Union Railr

No. resources: 3
Has informals:

Location information

County(ies): Los Angeles
USGS quad(s): ANAHEIM, HOLLYWOOD, LA HABRA, LONG BEACH, LOS ALAMITOS, LOS ANGELES, SOUTH GATE, WHITTIER
Address:
PLSS:

Database record metadata

	Date	*User*	
Entered:	5/5/2008	jay	
Last modified:			
IC actions:	*Date*	*User*	*Action taken*
	5/6/2008	jay	Appended records from old Surveys database.

Record status:

Report Detail: LA-07616

Identifiers

Report No.: LA-07616
Other IDs:
Cross-refs:

Citation information

Author(s): Bonner, Wayne H.
Year: 2006
Title: Cultural Resource Records Search and Site Visit Results for T-mobile Telecommunications Facility Candidate La03347a (firestone/atlantic), 8660 Atlantic Avenue, South Gate, Los Angeles County, California
Affliliation: Michael Brandman Associates
No. pages:
No. maps:
Attributes: Archaeological, Field study
Inventory size: <1 ac
Disclosure:
Collections:

General notes

Associated resources

No. resources: 0
Has informals:

Location information

County(ies): Los Angeles
USGS quad(s): SOUTH GATE
Address:
PLSS:

Database record metadata

	Date	User	
Entered:	5/5/2008	jay	
Last modified:			
IC actions:	*Date*	*User*	*Action taken*
	5/6/2008	jay	Appended records from old Surveys database.
Record status:			

Report Detail: LA-08255

Identifiers

Report No.: LA-08255
Other IDs:
Cross-refs:

Citation information

Author(s): Arrington, Cindy and Nancy Sikes
Year: 2006
Title: Cultural Resources Final Report of Monitoring and Findings for the Qwest Network Construction Project State of California: Volumes I and Ii
Affliliation: SWCA Environmental Consultants, Inc.
No. pages: 652
No. maps:
Attributes: Archaeological, Field study, Monitoring, Other research
Inventory size: 1431 li mi
Disclosure:
Collections:

General notes

Same as OR3373, VN2504

Associated resources

No. resources: 0
Has informals:

Location information

County(ies): Los Angeles
USGS quad(s): ANAHEIM, BLACK MTN, BURBANK, CAMARILLO, CANOGA PARK, DANA POINT, EL TORO, FRAZIER MOUNTAIN, HOLLYWOOD, INGLEWOOD, LEBEC, LIEBRE MTN, LONG BEACH, LOS ALAMITOS, LOS ANGELES, MOORPARK, NEWHALL, NEWPORT BEACH, OAT MOUNTAIN, ORANGE, OXNARD, PITAS POINT, SAN CLEMENTE, SAN FERNANDO, SAN JUAN CAPISTRANO, SANTA SUSANA, SATICOY, SIMI, SOUTH GATE, TUSTIN, VAN NUYS, VENICE, VENTURA, WARM SPRINGS MOUNTAIN, WHITAKER PEAK, WHITE LEDGE PEAK, WHITTIER
Address:
PLSS:

Database record metadata

	Date	User	
Entered:	5/5/2008	jay	
Last modified:	8/7/2014	agarcia	
IC actions:	*Date*	*User*	*Action taken*
	5/6/2008	jay	Appended records from old Surveys database.

Record status:

Report Detail: LA-10324

Identifiers

Report No.: LA-10324
Other IDs:
Cross-refs:

Citation information

Author(s): Bonner, Wayne H.
Year: 2009
Title: Cultural Resources Records Search and Site Visit Results for T-Mobile USA Candidate LA33923C (Cudahy Park), 5220 Santa Ana Street, Cudahy, Los Angeles County, California
Affliliation: Michael Brandman Associates
No. pages: 11
No. maps:
Attributes: Archaeological, Field study, Other research
Inventory size:
Disclosure: Not for publication
Collections: No

General notes

Associated resources

Primary No.	*Trinomial*	*Name*
P-19-186110		Union Pacific RR, Hobart Tower

No. resources: 1
Has informals:

Location information

County(ies): Los Angeles
USGS quad(s): SOUTH GATE

Address:	*Address*	*City*	*Assessor's parcel no.*	*Zip code*
	5220 Santa Ana Street	Cudahy		

PLSS:

Database record metadata

	Date	*User*
Entered:	2/25/2010	agarcia
Last modified:	2/25/2010	agarcia

IC actions:
Record status:

Report Detail: LA-11918

Identifiers

Report No.: LA-11918
Other IDs:
Cross-refs:

Citation information

Author(s): Schalman, Gary
Year: 2007
Title: Draft Environmental Impact Report for the Firestone Boulevard/Atlantic Avenue Intersection Improvement Project
Affliliation: PCR Services
No. pages: 59
No. maps:
Attributes: Management/planning
Inventory size:
Disclosure:
Collections:

General notes

Associated resources

No. resources: 0
Has informals:

Location information

County(ies): Los Angeles
USGS quad(s): SOUTH GATE
Address:
PLSS:

Database record metadata

	Date	*User*
Entered:	1/17/2013	lnoyes
Last modified:	1/17/2013	lnoyes

IC actions:
Record status:

Report Detail: LA-11993

Identifiers

Report No.: LA-11993
Other IDs:
Cross-refs:

Citation information

Author(s): O'Neill, Laura
Year: 2012
Title: Findning of No Adverse Effect for the Proposed Interstate 710 Corridor Project Between Ocean Boulevard and the State Route 60 Interchange
Affliliation: Galvin Preservation Associates
No. pages: 60
No. maps:
Attributes: Other research
Inventory size:
Disclosure:
Collections:

General notes

Associated resources

No. resources: 0
Has informals:

Location information

County(ies): Los Angeles
USGS quad(s): LONG BEACH, LOS ANGELES, SOUTH GATE
Address:
PLSS:

Database record metadata

	Date	*User*
Entered:	2/27/2013	lnoyes
Last modified:	5/8/2015	mgalaz

IC actions:
Record status:

19-188983

OHP-E-94-001

P36-007694
SBR-7694H

NPS Form 10-900
(Rev. 10-90)

OMB No. 1024-0018
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United States Department of the Interior
National Park Service

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OHP

NATIONAL REGISTER OF HISTORIC PLACES REGISTRATION FORM

This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in How to Complete the National Register of Historic Places Registration Form (National Register Bulletin 16A). Complete each item by marking "x" in the appropriate box or by entering the information requested. If any item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials, and areas of significance, enter only categories and subcategories from the instructions. Place additional entries and narrative items on continuation sheets (NPS Form 10-900a). Use a typewriter, word processor, or computer, to complete all items.

1. Name of Property

historic name Boulder Dam - Los Angeles 287.5 kV Transmission Line

other names/site number Los Angeles Department of Water and Power Boulder Lines 1 and 2

2. Location

street & number _____ ☐ not for publication

city or town _____ ☒ vicinity

state Nevada/California code 003; 071; 037 county Clark Co., NV / San Bernardino Co., CA / Los Angeles Co., CA code _____ zip code _____

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act of 1986, as amended, I hereby certify that this ☐ nomination ☐ request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property ☐ meets ☐ does not meet the National Register Criteria. I recommend that this property be considered significant ☐ nationally ☐ statewide ☐ locally. (☐ See continuation sheet for additional comments.)

_____ _____
Signature of certifying official Date

_____
State or Federal agency and bureau

In my opinion, the property ☒ meets ☐ does not meet the National Register criteria. (☐ See continuation sheet for additional comments.)

Daniel Abeyta, acting SHPO 6/22/00
Signature of commenting or other official Date

California Office of Historic Preservation
State or Federal agency and bureau

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USDI/NPS NRHP Registration Form
Boulder Dam - Los Angeles 287.5 kV Transmission Line
Clark County, Nevada
San Bernardino County, California
Los Angeles County, California

4. National Park Service Certification

I hereby certify that this property is:

	Signature of the Keeper	Date of Action
☐ entered in the National Register. ☐ See continuation sheet.		
☐ determined eligible for the National Register. ☐ See continuation sheet.		
☐ determined not eligible for the National Register.		
☐ removed from the National Register.		
☐ other (explain): _____		

5. Classification

Ownership of Property (Check as many boxes as apply)

- ☐ private
- ☒ public-local
- ☐ public-State
- ☒ public-Federal

Category of Property (Check only one box)

- ☐ building(s)
- ☒ district
- ☐ site
- ☐ structure
- ☐ object

Number of Resources within Property

Contributing	Noncontributing	
2		buildings
		sites
7	1	structures
		objects
9	1	Total

Name of related multiple property listing
(Enter "N/A" if property is not part of a multiple property listing.)

N/A

Number of contributing resources previously in the National Register

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6. Function or Use

Historic Functions
(Enter categories from instructions)

Cat: Industry/Processing/Extraction — Sub: Energy Facility - Transmission Line

Current Functions
(Enter categories from instructions)

Cat: Industry/Processing/Extraction — Sub: Energy Facility - Transmission Line

7. Description

Architectural Classification
(Enter categories from instructions)

No style

Materials
(Enter categories from instructions)

foundation Concrete
roof N/A
walls N/A
other Towers - steel

Narrative Description
(Describe the historic and current condition of the property on one or more continuation sheets.)

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USDI/NPS NRHP Registration Form
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Clark County, Nevada
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8. Statement of Significance

Applicable National Register Criteria (Mark "x" in one or more boxes for the criteria qualifying the property for National Register listing)

☒ **A** Property is associated with events that have made a significant contribution to the broad patterns of our history.

☐ **B** Property is associated with the lives of persons significant in our past.

☒ **C** Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.

☐ **D** Property has yielded, or is likely to yield information important in prehistory or history.

Criteria Considerations (Mark "X" in all the boxes that apply.)

☐ **A** owned by a religious institution or used for religious purposes.

☐ **B** removed from its original location.

☐ **C** a birthplace or a grave.

☐ **D** a cemetery.

☐ **E** a reconstructed building, object,or structure.

☐ **F** a commemorative property.

☐ **G** less than 50 years of age or achieved significance within the past 50 years.

Areas of Significance
(Enter categories from instructions.)

Engineering

Period of Significance

1936-1953

Significant Dates

1936 – Completion of Construction

1953 – Emphasis switches from hydroelectric power to steam generated power

Significant Person
(Complete if Criterion B is marked above)

N/A

Cultural Affiliation

N/A

Architect/Builder

Scattergood, E.F., Chief Electrical Engineer,
Los Angeles Department of Water and Power

Narrative Statement of Significance (Explain the significance of the property on one or more continuation sheets.)

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Boulder Dam - Los Angeles 287.5 kV Transmission Line
Clark County, Nevada
San Bernardino County, California
Los Angeles County, California

9. Major Bibliographical References

Bibliography
(Cite the books, articles, and other sources used in preparing this form on one or more continuation sheets.)

Previous documentation on file (NPS):

- ☐ preliminary determination of individual listing (36 CFR 67) has been requested
- ☐ previously listed in the National Register
- ☐ previously determined eligible by the National Register
- ☐ designated a National Historic Landmark
- ☐ recorded by Historic American Buildings Survey # _____
- ☐ recorded by Historic American Engineering Record # _____

Primary Location of Additional Data:

- ☐ State Historic Preservation Office
- ☐ Other State agency
- ☐ Federal agency
- ☒ Local government
- ☐ University
- ☐ Other

Name of repository:
Los Angeles Dept. of Water and Power Archives

10. Geographical Data

Acreage of Property 11,945

UTM References
(Place additional UTM references on a continuation sheet)

	Zone	Easting	Northing
1			
2			
3			
4			

☒ See continuation sheet.

Verbal Boundary Description
(Describe the boundaries of the property on a continuation sheet.) ☒ See continuation sheet.

Boundary Justification
(Explain why the boundaries were selected on a continuation sheet.) ☒ See continuation sheet.

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USDI/NPS NRHP Registration Form
Boulder Dam - Los Angeles 287.5 kV Transmission Line
Clark County, Nevada
San Bernardino County, California
Los Angeles County, California

11. Form Prepared By

name/title Stephen Van Wormer and Christy Dolan

organization KEA Environmental date August 2, 1999

street & number 1420 Kettner Blvd. Suite 620 telephone (619) 233-1454

city or town San Diego state California
zip code 92101

Additional Documentation

Submit the following items with the completed form:

Continuation Sheets

Maps
A **USGS map** (7.5 or 15 minute series) indicating the property's location.
A **sketch map** for historic districts and properties having large acreage or numerous resources.

Photographs
Representative **black and white photographs** of the property.

Additional items
(Check with the SHPO or FPO for any additional items.)

Property Owner

(Complete this item at the request of the SHPO or FPO.)

name

street & number telephone

city or town state zip code

Paperwork Reduction Act Statement: This information is being collected for applications to the National Register of Historic Places to nominate properties for listing or determine eligibility for listing, to list properties, and to amend existing listings. Response to this request is required to obtain a benefit in accordance with the National Historic Preservation Act, as amended (16 U.S.C. 470 et seq.).

Estimated Burden Statement: Public reporting burden for this form is estimated to average 18.1 hours per response including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding this burden estimate or any aspect of this form to the Chief, Administrative Services Division, National Park Service, P.O. Box 37127, Washington, DC 20013-7127; and the Office of Management and Budget, Paperwork Reductions Project (1024-0018), Washington, DC 20503.

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(Rev. 10-90)

OMB No. 1024-0018
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United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES CONTINUATION SHEET

SECTION 7

Boulder Dam - Los Angeles 287.5 kV Transmission Line
Clark County, Nevada
San Bernardino County, California
Los Angeles County, California

NARRATIVE DESCRIPTION

Summary

The Boulder Dam - Los Angeles 287.5 kV Transmission Line consisted of two parallel electrical transmission circuits, carried on two sets of steel lattice towers, originally designated North and South and then Boulder Lines 1 and 2 (Plate 1). Each was made up of three conductor hollow copper cables that conveyed three-phase 60 cycle electric power from the step-up transformer located at Hoover (formerly Boulder) Dam on the Nevada bank of the Colorado River, to a receiving station on Century Boulevard at Watts in Los Angeles (Map 1) (Scattergood 1935a, 1935b; Soifer 1986; Powers 1993). As a result of modifications, the circuits have been divided into smaller sections that are presently identified as Mead-Victorville 1, McCullough-Victorville 2, and Victorville-Century 1, and Victorville-Century 2 (Figure 1). The McCullough-Victorville 2 segment conductors have been replaced and upgraded to 500 kV. The property begins at Hoover Dam (Map 2) crosses a variety of terrain for approximately 270 miles. About 200 miles, including the switching stations at Silver Lake and Victorville (Maps 3 and 4), lie in the Mojave Desert of Nevada and California. The remainder crosses the coast peninsular ranges in the area of Cajon Pass and Lytle Creek and then passes over the coastal plain of the Los Angeles Basin. Constructed by the Los Angeles Department of Power and Water between 1933 and 1936, the Boulder Dam - Los Angeles 287.5 kV Transmission Line represents a pinnacle of technological achievement in the development of point to point hydroelectric power transmission, and delivered electrical power that made possible the development of the City of Los Angeles from the mid-1930s through the 1940s. The line originally consisted of six components: (1) the two circuits of three conductor cables each along with the towers that supported them, (2) the access road, (3 and 4) two switching stations, one at Silver Lake and one at Victorville in the Mojave Desert, and (5 and 6) the two line termination stations (Boulder Switchyard and Century Receiving Station).

Location

The line passes through a variety of terrain along its approximate 270-mile route. From the step-up transformer at Hoover Dam (Boulder Switchyard), the two parallel lines of single circuit towers follow a southwest course over mountainous desert terrain for about 60 miles, crossing passes at elevations of 4,862, 4,419, and 3,809 feet above mean sea level (AMSL) (Powers 1993:100). They continue in the same direction across 165 miles of desert consisting of hilly terrain separated by a series of flat basins with elevations ranging between 2,000 and 3,000 feet AMSL (Plates 2-7). After leaving the desert, the lines cross the coastal peninsular range through Cajon Pass at 4,400 feet AMSL and drops to the bed of Lytle Creek at 1,800 feet (Plate 8). The lines then continue in a westerly direction through foothills at the base of the mountains for approximately 15 miles at an elevation of around 2,400 feet AMSL (Plate 9). After joining onto a single row of double circuit towers near the City of Upland, California, (Map 5) the line descends onto the coastal plain of the Los Angeles Basin at an elevation of around 1,500 feet and runs southwesterly for about 40 miles to the receiving station at Watts where the elevation is 120 feet AMSL (Plates 10-13; Map 6). Over most of the route the terrain is still largely undeveloped. The last 40 miles across the Los Angeles Basin, however, were primarily agricultural acreage when construction occurred and are now densely urbanized.

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Description

The Boulder - Los Angeles 287.5 kV Transmission Line originally began at the step-up transformer located at the Hoover Dam on the Nevada bank of the Colorado River, where the current generated at the dam power house at 16,320 volts is converted to 287,500 volts (287.5 kV). As shown on Figure 2, power is transmitted to Los Angeles on two parallel three-phase electric transmission circuits each consisting of three conductors. Because of voltage losses during transmission the current arrives at the receiving station on Century Boulevard in Watts at 275 kV, where it is stepped down for local distribution. As originally designed, the line was divided into three sections approximately 90 miles long by switching stations constructed at Silver Lake and Victorville in California's Mojave Desert (Figure 2). The line can be divided into four basic components that will be described in more detail: (1) towers and lightning protection, (2) conductor and associated hardware, (3) transformer and switching stations, and (4) access road.

Towers

The eastern 230 miles, from the step up transformer at Hoover Dam to a point near Upland, California consists of two parallel lines of steel single circuit towers (Figure 2 and Plate 10). A distance of 265 feet separates the two lines of towers. The remaining approximately 40 miles is a single line of double circuit towers. In the single circuit section, towers along each line are placed about every 1,000 feet. In the double circuit section, towers are about 900 feet apart. Originally, a total of 2,695 steel towers were required to carry 1,596 miles of conductor. The lines and their associated towers have been treated as three structures. One structure carries Boulder Line 1 on single circuit towers. The second structure carries Boulder Line 2 on single circuit towers. The third structure begins where Boulder lines 1 and 2 converge and are carried to Century Receiving Station on double circuit towers.

At the time of construction, the single circuit bridge type towers designed for the lines were unlike any other. These towers utilized a skewed base configuration that provided greater strength yet were constructed of the same amount of steel as conventional designs. The towers have an overall "Y" configuration and were made to carry the three conductor cables for each circuit on a cross arm in a flat horizontal configuration. They measure 90 feet from the ground to the top of the cross arm supporting the conductor and 109 feet to the top of the tower. The horizontal spacing between the conductors is 30.0 feet. Towers were designed so height could be adjusted according to changes in terrain. Where additional height was needed, any leg could be extended in 10 foot increments up to 40 feet. The single circuit towers were built of high tensile steel to withstand twice the calculated load they were expected to carry. They could maintain the weight of the conductor covered with .5 inches of ice combined with wind pressure of 8 pounds per square foot (Scattergood 1935a; 1935b; Powers 1993). In 1980, modifications occurred on the Boulder 2 line between the McCullough Switching Station that had been built between 1970 and 1973 and the Victorville Switching Station. Original conductor was replaced with two aluminum cable steel reinforced (ACSR) conductors, each approximately 1.7 inches in diameter and tower cross arms were rebuilt with standardized kits to provide additional clearance and support the additional weight of the new conductor. This portion of the line was redesignated McCullough -Victorville 2 and the voltage increased from 287.5 kV to 500 kV (Powers 1993:101).

Double circuit towers were designed to carry each circuit of three conductor cables in a vertical plane on each side of the tower. The distance between the circuits is 40 feet and the vertical spacing between conductors is 24 feet. The distance from the ground to the bottom cross arm typically is 75 feet and to the top of the tower 144 feet (Figure 3B). The double circuit towers were based on conventional designs in use at the time of construction and were constructed of galvanized steel. Height could be extended by adding 10 foot extensions to the base in a similar manner as the single circuit towers. They could withstand a windload of 12 pounds per square inch with no ice (Scattergood 1935a; Powers 1993:102).

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For both the single and double circuit towers five types were designed: standard suspension, angle suspension, dead end, dead end angle, and transposition towers (Figure 4 and 5). Dead end towers hold the conductor taut and can withstand substantial transverse and longitudinal loading. Standard suspension towers simply provide a support from which the conductor hangs and are used for straight stretches of line between dead end towers. Angle suspension towers are used where small line angles occur, but the transverse tower loading is not so great that a suspension tower cannot be used. Angle dead end towers are used for larger line angles. Dead end, standard suspension, angle suspension, and dead end angle towers all have the same general appearance within the single and double circuit tower classifications. The transposition tower is used to alternate the relative position of the three conductors at regular intervals along the line in order to prevent the build up of inductive currents that can unbalance phase voltages and induce attendant electromotive forces that can interfere with radio signals and nearby communication line transmissions (Taylor 1994; Powers 1993:98). Transposition towers were originally located approximately every 30 miles along the line. For the single circuit section transposition towers have the same general appearance as all other tower types. In the double circuit portion, transposition towers exhibit two extended cross arms. One is located above and the other below the three standard cross arms that convey the circuit conductors.

Standard single circuit suspension towers were designed to function with one broken conductor and one broken ground wire simultaneously in the same span and on the same side of the tower under maximum tension. Single circuit dead end towers could withstand three broken conductors and two broken ground wires under the same circumstances. Double circuit suspension towers could withstand one broken conductor and one broken ground wire on the same side. Angle towers were designed to withstand three broken conductors and two ground wires, and dead end towers would remain undamaged with breakage of all six conductors and both ground wires (Scattergood 1935a; Powers 1993:102).

Protection from lightning was also of primary consideration when designing the line. The Mojave Desert was considered an area of higher potential for lightning strikes than the coastal section west of Cajon Pass. This was the reason for separating the two circuits from each other on two parallel lines of steel towers (Garman 1934:5). Overhead ground wires and underground counterpoise were also used for lightning protection. Each tower was designed to carry two ground wires 32 feet above the conductor. On the single circuit towers, 1/2-inch diameter galvanized steel wire was used. The double circuit towers near the coast had 7/16-inch diameter copper-coated steel cable ground wires. In addition, an underground counterpoise system of four parallel 1/4 inch soft copper wires 135 feet apart and buried 3 feet deep was installed along the entire length of the single circuit tower section. At each tower the counterpoise wires are crossed and interconnected. Due to the lower lightning frequency in the double circuit tower section two continuous counterpoise wires 135 feet apart were considered adequate (Powers 1993; Scattergood 1935a; 1935b).

Conductor and Related Hardware

The conductor for the Boulder lines was designed to be light weight and still able to operate at a high voltage with a minimum of corona loss. As voltage increases the amount of metal necessary to carry the current decreases. One of the problems of transmitting high voltage, however, is that it causes a glowing or splitting of electricity at the conductor surface called corona, which is a direct loss of electricity into the air and a waste of power. Ironically, corona loss can be reduced by increasing the diameter of the cable. The resulting weight increase, however, caused greater structural loading on the towers and necessitated heavier towers (Schema 1983; Scattergood 1935a). The conductor required for the Boulder Line needed to be of the lightest weight possible but still possess a large enough diameter to reduce corona loss. Known as HH (or Heddernheim) Cable, the conductor selected had been developed in Germany in 1927, and was manufactured in the United States by General Cable Corporation, who had obtained the rights to manufacture it in the U.S. in 1933. Built in the form of a hollow flexible copper tube 1.4 inches in diameter, it consisted of spiraling segments interconnected by tongue and groove joints that provided strength, lightness of weight and a sufficient diameter (Figure 6A) (General Cable Corporation 1935; Garman 1934). In addition to the conductor cable, a new "free center" clamp was designed for use at insulator

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attachment points and conductor to conductor connections. The clamp was designed so that the bending of the conductor resulting from vibration is not localized, but evenly distributed, thereby avoiding any concentration of stress on any particular portion of the conductor cable. The clamp consisted of "an outer shell or housing that covers a shell that supports two saddles in which the cable ends ride" (Figures 6B and C) (Scattergood 1935a:11).

Insulator design was another important aspect of the Boulder transmission lines. Research determined a need to increase insulator string length over that used for conventional 220,000 volt systems. The ability of the insulators to function on the foggy California coast after accumulating layers of dust during the dry summers was also studied. The design adopted included 24 10-inch diameter ceramic insulators spaced five inches apart for a total length of 120 inches (10 feet) (Plate 14). Twenty-two 10.5-inch diameter insulators six inches apart for a total length of 11 feet were used for higher than average strain situations at dead end and angle dead end towers (Scattergood 1935a; Powers 1993). As previously mentioned, in 1980 original conductor on the segment of the Boulder 2 line between McCullough and Victorville Switching Stations was replaced with two aluminum cable steel reinforced conductor and new insulators and hardware.

Switching and Transformer Stations

Studies conducted in the late 1920s and early 1930s indicated that the most efficient design for dealing with electrical faults (short circuits, groundings, and other problems) was to separate the line into three segments with two switching stations approximately 90 miles apart (Scattergood 1935a; 1935b). This resulted in construction of switching stations at Silver Lake (near Baker) and Victorville, California (Plates 15-20). The switching stations automatically isolated sections of line in case of short circuits or grounding failures, allowed sections to be isolated for maintenance or repair, and allowed the load from any circuit to be added or transferred to the other (Powers 1993; Scattergood 1935a; 1935b). Switching stations contained circuit breakers for each incoming and outgoing circuit. They were designed to accommodate Boulder Lines 1 and 2 in addition to a third single circuit line planned for the future. The third line (Boulder 3) was completed in 1939 (Powers 1993:97).

Between 1970 and 1973, modifications occurred to the Boulder line affecting the switching stations. Silver Lake was removed from service and a new station constructed 65 miles northeast near McCullough Pass, Nevada. A new switching station was also built near the original Victorville Switching Station. In 1980, the segment of Boulder Line 2 between the old Victorville Switching Station and McCullough Switching Station was upgraded to 500 kV. This section was renamed McCullough-Victorville 2. The new conductor was routed through the old Victorville Switching Station and then extended to the new Victorville Switching Station for switching and circuit breaker connections (Powers 1993: 101; Transmission Design Manual 1991).

Additional changes were made after 1986, when the original Boulder Dam power contracts ended and Western Area Power Administration (WAPA) took over responsibility for delivering electricity to LADWP and other major power suppliers. As illustrated in Figure 7, Boulder Lines 1, 2, and 3 were diverted to Mead Switching Station, which is operated by WAPA. WAPA also operates the transmission lines from Boulder Dam to Mead. As described later, this change resulted in the alteration of a few of the original towers near Mead but has little affected the overall integrity of the Boulder lines.

The transformers are located at the beginning and end of the transmission line. The step-up transformer, near the dam, originally raised the voltage to 287.5 kV (Plate 21). The step-down transformer at the receiving station on Century Boulevard in Los Angeles reduces the voltage to a lower voltage for distribution throughout the city (Plate 22). When they were built, lightning protection was of concern for the substations just as it had been for the transmission lines. A counterpoise grid was installed around each station and overhead ground wires were suspended from tall steel lattice structures.

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Over the years all circuit breakers and transformers in the Boulder, Victorville, and Century stations have been replaced through routine maintenance and system upgrading (Powers 1993; Falconett 1994). This upgraded equipment does not define the character of the district. The Boulder, Victorville, and Century stations do contain original switch racks, counterpoise, and overhead ground wires as well as original buildings, all of which help define the character of the district. New switching stations have been built at McCullough and Victorville and do not contribute to the district. The Control house building at the Century Receiving Station was built in 1926 as a two story, concrete, reserved art deco style structure with a flat roof. It measures approximately 40 by 120 feet. Four large pillars incorporated into the front (east) facade frame the main entrance (Plate 13). Ten decorative buttresses support the west facade of the building. The south end of this facade has a crane door on the second story while the north end has a large metal rolling door. Centered on this facade is a single door. Four single 20-pane windows are located on the south side of the building, two on the second floor and two on the first. A four-pane section opens on each window for ventilation. The east facade contains two sets of six windows placed symmetrically on either side of the front door. They are the same type as those on the south facade. The north side of the building contains five of these windows, three on the second floor and two on the first floor. A third window completes the bottom row on the west end. This window is a single eight-pane window with a single door beneath it. A full basement lies under the building.

Victorville-Century Line 1 enters the yard from Tower 267D1 and is carried onto Rack F on the north side of the building. It goes through a ground connect and into Bank F, which contains six transformers that drop the power from 287.5 kV to 138 kV. The line goes through two sets of disconnects, one in Bus 1 and the other in Bus 2. Victorville-Century Line 2 follows the same pattern but from Tower 267D2 to Rack G and Bank G. Both lines travel south across the yard to Banks E and H which are capable of boosting the power to 230 kV. From there, the power is distributed to Gramercy and Wilmington. Wiring for the receiving station is carried underground in a series of tunnels that were excavated in 1926. Access to these tunnels can be found either in the basement of the Control house or through stairways found next to skylights throughout the yard area (Plates23-25).

In the southwest corner of the yard is an oil house. Constructed in 1926, this single story building is approximately 20 by 21 feet and has an eight foot ceiling (Plates 26-28). It is constructed of poured concrete with a flat roof that has three vents. A ground floor salt shoot, used to soften the water for the condenser, is centered on the exterior of the west facade. Single 16-pane windows are centered on the east and west sides. A four-pane section opens for ventilation. The only entrance to the ground floor is a large single door, centered on the north side. An exterior stairway on the northeast corner of the building leads to the basement and concrete steps continue to the basement floor. The basement is approximately 16 feet deep. A large corrugated metal plate covers oil tanks adjacent to the southeast corner of the building. The building is no longer used as an oil house. The circuit breakers, cooled by oil, are now serviced by a mobile unit.

The building at Victorville switching station is a single story, stuccoed, pueblo revival style structure with a flat roof (Plate 19). It measures approximately 40 by 60 feet. The building exhibits false vigas around the roof line. Multi-paned windows and an ornate wooden front door are located on the front. The rear facade has two single doors with concrete steps leading up to them. The north end of this facade has a louvered vent and the south end has a single six-pane window. A metal rolling door allows access to the pump house and storage area of the building on the north end. The south end of the building contains the main operating room. A full basement lies beneath this building. It contains racks of 12-volt batteries connected in series for emergency power supply to ensure continued operation of the switching gear during a power outage. There are also secondary transformers in the basement which can be used to bring the voltage down in order to power the station. These are no longer in use.

The lines that come into this station are Boulder-Victorville Line 1, and the Boulder-Victorville Line 2. The McCullough-Victorville line (formerly the Boulder-Victorville Line 3) passes over the station to connect with the new Victorville switching

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station (built in 1968), which is outside the verbal boundary description to the northwest. Line 1 comes from a tower on the east side of the switching yard through wave traps to racks (Plate 29). From there it is sent through a series of disconnects and transformers and the voltage is reduced from 287 kV to 4.8 kV. The Boulder-Victorville Line 2 parallels Line 1. A static tower is located at each corner of the yard. Just south of the yard, outside of the verbal boundary description, is a small lattice tower that carries the line that was built to provide power during construction (Plate 30).

The Silver Lake switching station is completely abandoned. Although it retains a portion of one switch rack and lattice structure for overhead ground wires, it does not retain sufficient integrity to contribute to the significance of the district. Both Silver Lake and the Victorville station used to have residential compounds built by LADWP for the remote station employees. These are outside of the verbal boundary description.

Access Road

The approximate 200-mile single lane dirt road through the single circuit section was built as a supply road to transport men and materials over the vast stretches of uninhabited terrain through which most of the line was built. It measures an average of 15 feet wide and is maintained on a seasonal basis by an outside contractor. It has been maintained since completion as an access road, paralleling the two rows of towers through Lytle Creek, Cajon Pass, and across the Mojave Desert (Plate 31).

Contributing and Non-contributing Elements

The Boulder Dam - Los Angeles 287.5 kV Transmission Line consists of a total of nine contributing and one non-contributing element. The contributing elements consist of two buildings (the operator's building at the Victorville switching station and the control house and associated oil house at the Century Receiving Station in Los Angeles) and seven structures (the access road, the single circuit towers and line of Boulder Line 1,the single circuit towers and line of Boulder Line 2, the double circuit towers that carry both Boulder Line 1 and 2, the Boulder Dam station, and the yards at both Victorville and Century). The non-contributing elements consist a single structure, the Silver Lake switching station. The Silver Lake station is a non-contributing element because the lines no longer utilize it. Therefore, the footprint has been altered. Several other items were observed, but considered outside the verbal boundary description. These include Boulder Line 3, the new switching stations at Victorville and McCullough, the towers that brought the power during construction, and the former operator's housing at Victorville and Silver Lake.

Although several features of the contributing elements of the line have been replaced or upgraded, the basic footprint, laid out in the 1930s, is still the same. The character defining features include the following eight categories: (1) the HH cable (2) the skewed single circuit towers (3) the route of the line and associated dirt access road (4) the double circuit towers (5) the exterior of the Century building (6) the exterior of the Victorville building (7) the footprint of the stations, and (8) the racks at the stations.

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STATEMENT OF SIGNIFICANCE

The Boulder Dam - Los Angeles 287.5 kV Transmission Line is considered eligible under Criterion C for its unique engineering and structural characteristics within the context of development of point to point high power transmission in California between 1890 and 1936. The line represents a high level of achievement in point to point high voltage power transmission that remained unsurpassed for many years. In addition, several design components are unique to this transmission line. Secondarily, the line is considered significant under Criterion A for (1) its association with the construction of Boulder Dam, a National Historic Landmark and water reclamation and irrigation project of exceptional importance to the American southwest, and (2) the industrial, economic, and urban development that occurred in metropolitan Los Angeles from the mid-1930s through the 1940s. Without Boulder Dam power the development of modern Los Angeles during these years could not have taken place.

Period of Significance

The period of significance of the Boulder Dam - Los Angeles 287.5 kV Transmission Line is considered to be 1936 to 1953. During this time: (1) the line was constructed and (2) the line was the highest voltage point to point transmission line in the world. In 1953, the importance of hydroelectric power in Los Angeles was superceded by steam generated power (LADWP 1954).

Historic Background

The Boulder Dam - Los Angeles 287.5 kV Transmission Line was built by the Los Angeles Department of Water and Power as a system for the transportation of power from the power plant at Boulder (now Hoover) Dam on the Colorado River to a central receiving station in Los Angeles for general distribution and use within the city. The system was designed to reliably deliver 240,000 MW at the receiving station in Los Angeles (Scattergood 1935a:26).

Electrical power delivered by the system was the principal source of power for the City of Los Angeles between 1936 and 1950. Without it the industrial, economic, and urban development that occurred in metropolitan Los Angeles during the 1930s and 1940s could not have taken place. The line represented a major step forward in the art of long distance power transmission and made available technologies that allowed the effective and economical exploitation of water power in other areas (*Electrical West* 1936). Designed to carry power at 275,000 volts across almost 270 miles of desert and mountains, when completed the lines' operating potential at the step up transformer at Boulder Dam was 287,500 volts. At the time this was the highest commercial operating voltage in the world and a pinnacle of achievement in point to point high voltage power transmission (Garman 1934; Scattergood 1935a; 1935b).

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Development of Point to Point Transmission

Point to point high tension transmission as opposed to transmission networks or grids, is defined as "the long overland transmission of high power uninterrupted by large capacity distribution and switching stations along the way" (Hughes 1983:262). This type of power transmission is appropriate where the power source is geographically separated from the potential urban-industrial power user. Point to point transmission became vital to the development of California during the early twentieth century and the combination of high voltage and transmission distances of 100 miles or more was a phenomena of that state (Hughes 1983:262). Between 1890 and the mid 1930s, point to point transmission in California reached its greatest development in mileage and voltage culminating with the completion of the Boulder lines in 1936 which achieved a high point with the transmission of power at 287,500 volts and a distance of 270 miles. This pinnacle remained until after World War II when still higher voltages were developed throughout the world (Hughes 1983:262-264; Britannica 1965).

The complete history of point to point transmission in California is quite complex (Hughes 1983:267) and can only be surveyed in this document. The discussion will emphasize representative examples of development.

The incentives to develop long distance transmission lines in California were both economic and geographic. At the end of the nineteenth century, industry in the state depended largely on coal imported from Australia or British Colombia as a source of fuel (Downing 1910). Although the state had ample water resources that could potentially be developed for hydroelectric power, these were largely located in the Sierra Nevada Mountains and separated by hundreds of miles from the heavily settled coast where the power was needed (Hughes 1983:266). By the end of the nineteenth century the potential for the development of hydroelectric power in the Sierra Nevada was recognized and after 1890, more pioneering work on long distance transmission was accomplished in California than anywhere else. By 1910, the state had the greatest mileage of high tension network in the world (Downing 1910).

The first high voltage transmission system was built between Mill Creek and Redlands and conveyed 11,000 volts a distance of 16 miles (Downing 1910). Several other early power plants that represented pioneering efforts in point to point transmission development were located in the Sierras northeast of Sacramento. In the summer of 1895, the Folsom power plant on the American River began transmitting electricity 20 miles to Sacramento. The 11,000 volts of current were conducted through lines carried on 40 foot cedar poles set up in two lines along each side of a country road (Hughes 1983:286-89). Developments on the nearby Yuba River by Eugene de Sabla soon eclipsed the Folsom accomplishment. In 1895, de Salba began operation of his Nevada City power plant. A line transmitted 5,500 volts four miles to the town and nearby mines. In 1899, he completed the Yuba River power plant from which lines conducted 16,000 volts 18 miles to Marysville. In 1898, the Colgate plant on the Yuba River began operation to supply local mines and Sacramento 60 miles away. Lines to Sacramento carried 40,000 volts (Hughes 1983:274-275; Britannica 1965).

In 1901, de Salba and his partner Romulus Colgate began construction of the first line to exceed 100 miles, stretching from the Colgate power plant on the Yuba River to Oakland on San Francisco Bay. The line conveyed 60,000 volts for 140 miles. It consisted of two parallel conductors, one copper and one aluminum, that were carried on cedar poles 25 feet apart. Power arrived at Oakland over the new line on April 27, 1901. Through interconnections with other companies power from the Colgate, Nevada City, and Yuba River hydroelectric plants reached California counties to the north and south of Oakland and San Francisco. Development of point to point transmission had conveyed hydroelectricity from the Sierra Nevada to the state's populated coast in six years (Hughes 1983:274-275; Downing 1910:706).

In the southern part of the state, development of hydroelectric power became part of ongoing attempts to develop an infrastructure for the Los Angeles region that would provide for a population many times greater than local water and power resources could support. In 1897, the San Gabriel Electric Company built a hydroelectric plant at Azusa. The power was

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transmitted 25 miles to Los Angeles at 15,000 volts (Woodbury 1914). In 1899, a 30,000 volt, 75 mile line from Santa Ana to Los Angeles was completed. Los Angeles tapped the watershed of the Sierra Nevada in 1905, with the completion of Southern California Edison's Kern River Plant. The transmission line from that source conveyed 60,000 volts 125 miles (Woodbury 1914; Britannica 1965; Hughes 1983:281).

Transmission of higher voltages than 60,000 volts was restricted by limitations of insulator design. All lines developed prior to 1907 consisted of conducting wires supported by single glass or ceramic insulators on steel pins mounted on wooden poles (Britannica 1965; High Tension Transmission Committee 1905). In 1907, E. M. Hewlett and H. W. Buck developed the first suspension insulator, which allowed development of higher voltages (Britannica 1965). Soon lines supported by steel towers and suspension insulators were conveying 100,000 volts and more. By 1911, the Great Western Power Company operated a 100,000 volt line from its Big Bend plant 16 miles north of Oroville to Oakland, California. The Pacific Gas and Electric Company completed its 100,000 volt, 110-mile line from the Drum power plant to Oakland in 1912 (Hughes 1983:280).

Meanwhile, in Southern California, the never ending quest of the Los Angeles region for water and power continued, ultimately resulting in construction of the Boulder line. The Southern Sierra Power Company completed its Bishop to San Bernardino line of 2,000 steel towers traversing 238 miles in 1912. Pacific Light and Power completed a 241 mile, 150,000 volt line from Big Creek to Los Angeles in 1913 (Hughes 1983:281; Woodbury 1914).

The search for sufficient water for the southland also resulted in additional hydroelectric power transmission. As early as 1905, when the population of Los Angeles had reached 160,000, city fathers realized that local water supplies could not provide for a population greater than approximately 350,000 people. Bonds were obtained in 1905 for construction of an aqueduct 250 miles in length to tap water from the Owens River watershed along the eastern slopes of the Sierra Nevada Mountains. Power Plants were installed along the water way at Cottonwood and Division Creek in 1909 (Soifer 1994). Additional bonds were approved in 1910 for construction of hydroelectric power plants along the aqueduct which was completed in 1913 (Scattergood 1935a; 1935b; Cleland 1947). The Bureau of Power and Light, a division of the Los Angeles Department of Water and Power, rapidly expanded hydroelectric production with plants at San Francisquito Canyon in 1917 and 1920, Franklin in 1921, San Fernando in 1922, Big Pine in 1925, and Haiwee in 1927 (Soifer 1994), resulting in a sharp reduction in both domestic and industrial rates (Scattergood 1933; Cleland 1947).

Southern California's rapid growth continued to put pressure on utilities to increase available power supplies. By 1922, Southern California Edison began to upgrade the former 150,000 volt Big Creek lines to 220,000 volts. This was done after extensive laboratory and field tests indicated that the difference between operation of the system at 150,000 and 220,000 volts was a matter only of degree and was feasible with existing technology (Wood 1922). By 1926, Southern California Edison had added a third 220,000 volt line to the Big Creek system (Carlson and Michener 1926).

Development and Construction of the Boulder Lines

The rapid growth of Los Angeles and the surrounding region during the 1920s made it apparent that the power and water possibilities available in the state, including that of the Los Angeles - Owens Valley Aqueduct would soon be exhausted (*Intake* October 1936; Starr 1993). In 1918, Arthur Powell Davis, Chief of the Bureau of Reclamation, had recommended construction of a dam of unprecedented height at Black or Boulder Canyon on the Colorado River 30 miles south of Las Vegas for the development of flood control, the storage of water for irrigation and domestic use, and hydroelectric power. Davis had first suggested this idea in 1902 (*Intake* October 1936). In 1922, O.C. Merrill of the Federal Power Commission noted that although flood control and irrigation were primary concerns in construction of the dam, the cost would be more than the agricultural interests of the Imperial Valley, who would be the primary beneficiaries, could bear. He concluded, therefore, that the Federal Government should undertake the project and recoup its investment by the sale of hydroelectric power that could be produced. Long distance point to point transmission was a crucial element in this scheme since the nearest available

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power market was Southern California (Merrill 1922). In 1924, the Reclamation Bureau recommended construction of Boulder Dam (*Intake* October 1936). That same year an election in Los Angeles indicated citizens by a majority of five to one wanted city government to investigate the possibilities of obtaining water and power from the Boulder Canyon Dam.

Careful and exhaustive investigation of the southwest, undertaken by the Los Angeles Department of Water and Power in 1925, showed that the largest block of power at the lowest cost could be obtained through construction of the proposed Boulder Canyon Dam. The project would provide Los Angeles a large permanent supply of low cost power and domestic water for future generations. In addition, the complete utilization of power and water provided by the dam would double the total invested wealth in the southwest and more than double the gross annual output of industry (Scattergood 1935a; 1935b). Studies also showed that through contracts for the provision of power the entire project would pay for itself (*Intake* October 1936).

On the strength of these investigations the Department of Water and Power worked closely with Arthur P. Davis and the Bureau of Reclamation in furthering legislation authorizing the Boulder Canyon project and in furthering appropriations for its construction (Scattergood 1935a; 1935b). In 1924, Los Angeles voters authorized the city to contract with the Federal Government for an allotment of the power Boulder Dam would generate. In addition, civic leaders and technical experts, comprising a joint committee of the Chamber of Commerce and the Department of Water and Power endorsed the Bureau of Reclamation's plan and recommended that in the event that the Government did not proceed with the Colorado River Plan the City of Los Angeles should undertake to finance the project on its own. The Federal Government authorized construction of Boulder Dam, however, by passing the Swing- Johnson Bill, signed by President Coolidge on December 21, 1928. The commitment of the City of Los Angeles to purchase power provided by the dam, thereby making the project self financing, was instrumental in convincing Congress to pass the bill and the financially conservative President Coolidge to sign it (*Intake* October 1936; Desmond 1934; Scattergood 1935a:26; Starr 1993).

In April 1930, a contract was signed between the City of Los Angeles and the Federal government for a share of the Boulder Canyon power. By 1934, Los Angeles together with the municipalities of Glendale, Pasadena, and Burbank contracted for 19 percent of the firm energy to be developed at the power plant. Firm energy is defined as the amount of power that can be developed reliably and continuously year in and year out (*Intake* October 1936; Garman 1934:1).

In addition, Los Angeles contracted for another 90,000,000 kilowatt hours that were to be made available by increasing the height of the dam. The city also negotiated to take half of the firm power allotted to the states of Nevada and Arizona if not used by those states. The Department of Water and Power, in addition to its own allocation, was made the generating agent for the power allocated to the states of Arizona and Nevada as well as the Metropolitan Water District of Southern California and the municipalities of Glendale, Pasadena, and Burbank (Garman 1934:1). In November 1932, a charter amendment was approved by the voters of Los Angeles that allowed the Power Bureau to borrow $22,800,000 from the Reconstruction Finance Corporation to construct the Boulder transmission line. The loan was granted in February 1933, and was to be repaid in 20 years with interest (*Intake* October 1936:6; Scattergood 1935b:26).

In the meantime, research was undertaken to design the power delivery system. The object was to provide reliable power for the lowest possible cost. Transmission line capacities were investigated for systems ranging from 220,000 volt to 330,000 volts. Studies indicated two circuits of 275,000 volts had approximately the same capacity as three circuits of 220,000 and could be built and operated for considerably less. This led to the decision to develop a 275,000 volt line (Garman 1934; Scattergood 1935a:5).

Planning and construction of a 275,000 volt system required pioneering research. Since 1923, transmission of voltage higher than 220,000 volts had been considered impractical due to limitations of generator, circuit breaker, and transformer design, and corona, or high current losses (Schema 1983). It was therefore necessary to develop an entirely new system from the

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generators in the power house to the transformers in the receiving station at Los Angeles. Development resulted in major contributions to the techniques of power transmission and set a new standard for design of long distance heavy duty transmission circuits. Leading the development program was Los Angeles Power and Water Chief Electrical Engineer E. F. Scattergood. In designing the line he stated that the Bureau would not "construct anything that is not far in advance of the standards of the moment, and which, at the same time, is not part of the ultimate plan" (Scattergood 1933).

As a result of Scattergood's leadership research work was conducted over a period of three years at the Harris J. Ryan High Voltage Laboratory at Stanford University, and on the part of leading manufacturers of electrical machinery, cables, and insulators. This research resulted in new technologies used for the first time in the Boulder power transmission system that included: copper conductor suitable for 275,000 volts, clamps and hardware designed to support the new conductor (see Plate 14 and Figure 8), new transmission tower designs, oil circuit breakers for 287 kV and 2,500,000 kVA interrupting duty with necessary relays, that could clear any faulty section of the transmission line in approximately 1/10 second from the instant of a short circuit, and main generating units in the power plant with only 17.5 percent inherent reactance to maintain system voltage at required higher levels (Scattergood 1935a; 1935b:27; Carroll et al. 1933; Carroll and Cozzens 1933).

These new designs made possible construction of the system for approximately $30,000,000. Estimated costs of construction using the best transmission equipment available prior to these developments was approximately $42,000,000, and would have provided less flexibility and reliability as well as reduced voltage (Scattergood 1935a:27).

The final plans for the line required 2,695 steel towers that would run for a length of 266 miles and carry 1,596 miles of copper conductor. Construction began in June 1933. Preliminary work was extremely difficult due to the rugged and uninhabited terrain over which most of the line ran. For the transportation of men and materials along the route, 200 miles of roads were surveyed and built across steep hills and mountains, deep ravines, and drifting desert sand. After completion of the line these continued in use as maintenance access roads (Desmond 1934). With the road building program seven construction camps were built between Cajon Pass and the dam site. They were located approximately 30 miles apart at Cozy Dell, Victorville, Harvard, Kingston Valley, and Silver Lake, in California, and Jean and Boulder City in Nevada. General headquarters for all field operations was at Yermo, California, and a railroad depot construction point near Barstow, California. Construction camps for the double-circuit portion were located at San Dimas, Baldwin Park, and Montebello, with headquarters at San Dimas (*Intake* July 1933).

Work progressed rapidly. In December, the first tower was completed and, by January 1934, the project was 12 percent completed with 60 standing towers and foundations set for 428 towers (Plate 32). Cable stringing was scheduled to start in April 1934 and tower erection to be completed by June 1935 (*Intake* January 1934). In erecting the towers a regular routine was followed. First the four footings were dug. The three foot in diameter by seven foot deep holes were excavated with an earth boring machine, except in mountains areas where bedrock had to be removed by hand. Tower stubs were placed in the holes in a bed of reinforced concrete. Tower assembly was conducted by three separate gangs. First the assembly gang constructed the towers into predetermined units. Next came the erectors who set up the towers and installed all bolts, followed by the checking gang which checked all tower parts, tightened bolts, installed locknuts, and turned in a final erection report (*Intake* October 1936). Work did not proceed according to the original schedule. Cable stringing did not begin until a year after the projected date in April 1935 (*Intake* April 1935). By this time, however, all work was rapidly nearing completion. On October 24th, the last single circuit tower was completed and by November work had begun on the final 40 miles of double circuit towers (*Intake* November 1935). In December, the construction camps in the desert were dismantled, leaving "only the trim, latticed steel towers and the curving spans of copper cables" (*Intake* December 1935). By September 1936, cable stringing had been completed (*Intake* September 1936). On October 9, 1936, amidst a demonstration of pageantry that had "never been equaled in the history of the city," the Boulder power transmission line became operational (*Intake* October 1936). Miss Elizabeth Scattergood pressed a golden key that released the first output of electrical power 266 miles away at Boulder Dam and lighted a flaming arc 60 feet in the air that bathed the civic center in brilliance. Sixteen huge

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searchlights on top of City Hall then lit up the sky while smaller arcs flared on Broadway. Electrical power from Boulder Dam had arrived in Los Angeles (Soifer 1986).

Integrity

Integrity is the ability of a property to convey its historic significance. The Boulder Dam - Los Angeles 287.5 kV Transmission Line was evaluated for the seven aspects of integrity identified for the National Register: location, design, setting, materials, workmanship, feeling, and association (National Park Service 1991:44).

Location

Location is defined as "the place where the historic property was constructed or the place where the event occurred" (National Park Service 1991:44). With the exception of occasional tower relocations the Boulder - Los Angeles 287.5 kV Transmission Line retains a high degree of integrity of location. Overall, the line occupies the exact same location it did when constructed. Some towers have been moved, but the effect on the overall location of the line has been negligible and none of the relocations have resulted in a rerouting of major segments. Relocations have mostly occurred in the double circuit portion where construction of urban infrastructure including freeways and flood control dams have necessitated minor right of way adjustments. Specific instances include:

1942 - An undetermined number of towers were relocated for construction of Santa Fe Dam.

1952- Six towers were relocated for construction of Whittier Narrows Flood Control Dam.

1953 - Two towers were relocated for construction of San Antonio Dam.

1962 - An undetermined number of towers were relocated for crossing the San Gabriel Freeway.

1964 - One tower was relocated for construction of the Pomona Freeway.

1966 - Five towers were relocated for construction of the Foothill Freeway.

1968 - Several towers were replaced near Mead Switching Station.

1969 - Approximately 1 mile of line relocated for rerouting at Rosemead Boulevard.

1974 - Two towers were replaced on either side of Live Oak Reservoir.

In the single circuit section only two relocations have occurred. In 1969, one tower was relocated for the California aqueduct and in 1980 two towers were relocated at the Mojave River Crossing (Transmission Design Manual 1991).

Design

Design is defined as the "combination of elements that create the form, plan, space, structure, and style of a property." It results from conscious decisions made during the original conception and planning of the property (National Park Service 1991:44-45). The design of the Boulder Dam - Los Angeles 287.5 kV Transmission line was conceived primarily to assure reliability and convey power at 275,000 volts to the receiving station at Watts. The line was planned to be the main source of power for metropolitan Los Angeles and conceptualized to assure it could continue to deliver electricity in spite of lightning

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strikes, short circuits and other electrical faults, or required routine maintenance. Elements adopted to assure voltage and reliability consisted of the overall layout of the system and tower configuration. Key elements are considered to be (1) delivery of high voltage power (287.5 kV at the time), (2) 90-mile segments, (3) single/double configuration, and (4) rotary tower design.

In spite of modifications that have occurred over 60 years of operation, the Boulder - Los Angeles Transmission Line retains these key design elements, giving it a high degree of design integrity. The original switching stations still exist in an easily recognizable state as do the vast majority of the towers. Boulder Line 1 still utilizes the original, distinctive HH cable and is operated at the original 287.5 kV. While Boulder Line 2 is now operated for most of its length at 500 kV, utilizing newer aluminum cable, the distinctive high crowned, rotary towers provide a very strong sense of continuity with the original design. Moreover, the original single/double circuit configuration of Boulder Lines 1 and 2 has been maintained as originally planned. While the Silver Lake Switching Station has been removed from service, sufficient hardware still exists at the site to recall its original function.

The diversion of all three Boulder Lines to Mead Switching Station in Nevada during the late 1980s has altered the original design concept to some degree. LADWP no longer controls the portion of the lines from Hoover Dam to Mead, but rather, receives power from WAPA at Mead. However, the diversion to Mead required replacement of very few towers and relatively little associated conductor. Consequently, the visual element of design maintains strong continuity with the original in both the WAPA and LADWP segments.

Generally, the towers maintain their overall design elements. Minor tower replacements have occurred in the double circuit portion. As mentioned previously (see Location), in 1969, approximately one mile of line was relocated for the rerouting of Rosemead Boulevard at Whittier Narrows Dam. Five towers were removed and replaced with six dead end towers. In 1974, two towers were replaced on either side of Live Oak Reservoir. In the single circuit section Boulder Line 1 (Century - Victorville 1) towers remain unaltered except for minor repair. Boulder Line 2 towers were modified in 1980 on the McCullough - Victorville 2 segment when the line was upgraded to 500 kV. Of the 860 original towers in this section 801 were modified at least slightly and 59 (6%) replaced including all dead end towers (Transmission Design Manual 1991). The modifications have not altered the basic original configuration of the towers and the new dead end towers have an overall configuration similar to original towers on the line (Figure 8: see also Figure 4 and Plates 1 and 31). Consequently, the sense of the original design has been maintained.

Setting

Setting is defined as the "physical environment of a historic property" (National Park Service 1991:44-45). The transmission lines setting has remained largely unaltered along its 215 mile route in the Mojave Desert and through Cajon Pass and Lytle Creek. The biggest change in the Mojave Desert has been the construction along the right of way of Boulder Line 3 in 1939, and the IPP line in the mid 1980s. These impacts, however, are minor. The setting of vast desert landscape over which the 287.5 kV Boulder Dam - Los Angeles Transmission Line was built still remains unaltered and the two rows of steel towers paralleling the access road form an identifiable unit in the center of the existing lines built beside them (see Plates 33-36). From Victorville Switching Station through Cajon Pass and Lytle Creek the right of way is generally unencumbered by additional transmission lines (see Plate 7). The most severe changes in setting have occurred on the approximately 40 mile double circuit portion of the line due to the development of urban Los Angeles (see Plate 12). However, this portion was not undeveloped wilderness at the time of construction and has evolved from agricultural to urban use.

In summary, the 287.5 kV transmission line retains a high degree of integrity of setting over approximately 80 percent of its route. Those portions constructed over uninhabited wilderness remain largely unchanged except for minor alterations. Overall, approximately 13 percent of the overall setting has been affected by urbanization. The areas most altered include

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that portion that presently runs through urban Los Angeles and approximately five miles of right of way west of the Victorville Switching Station that has undergone urban development. However, the Los Angeles portion was not undeveloped property when the line was constructed and change in this area has been more of type than degree.

Materials

Materials are defined as the "physical elements that were combined during a particular period of time and in a particular pattern or construction to form a historic property" (National Park Service 1991:44-45). Materials for the Boulder Dam -Los Angeles 287.5 kV Transmission Line includes steel towers, concrete footings, original conductors and hardware, counterpoise, and original equipment in transformer and switching stations. Modifications have occurred unevenly to materials on the line although overall they are still largely intact. All equipment has been updated at the transformer and receiving stations so that these facilities have been the most compromised with respect to integrity of materials. Original towers, switch racks, counterpoise, and overhead ground wires and associated supporting antenna are still in existence at Century, Victorville, and Hoover Dam, however, so that the stations still retain their overall original appearance (see Plates 17-22). At Silver Lake most of the switch racks have been removed (see Plates 15 and 16). Materials of the structural system consisting of steel towers and concrete footings is largely intact with the exceptions previously discussed. Conductor and associated hardware is still in place on most of the line although some significant portions have been replaced. Between the Victorville Switching Station and the Los Angeles Receiving Station, both circuits retain original HH conductor and hardware except in small sections where segments have been replaced as a result of relocation and repair. Approximately four miles or 20,956 feet of original conductor and associated hardware has been replaced in this 90-mile section. Of this all but 700 feet, located along Lytle Creek, has been in the double circuit portion (Data Book n.d.). In the 150-mile section between the McCullough and Victorville Switching Stations all original conductor on Boulder Line 2 (McCullough - Victorville 2) has been replaced with aluminum cable conductor. Boulder Line 1 in this portion is still largely unaltered, as only approximately 1.5 miles or 7,846 feet have been replaced with aluminum conductor (Data Book n.d.). From the transformer at Hoover Dam to the new McCullough Switching Station, the lines consist of original HH conductor (Data Book n.d; Powers 1993). It is estimated that approximately one third of the original counterpoise in the desert regions has been removed by vandals scavenging the copper. It was never replaced because time has shown that original concerns over the potential for lightning strikes in this section were highly exaggerated (Taylor 1994). In conclusion, in spite of modifications that have occurred to the Boulder Dam - Los Angeles 287.5 kV Transmission Line as a result of vandalism, maintenance, repair, and upgrading; the historic fabric is still approximately 70 percent intact.

Workmanship

Workmanship is defined as "physical evidence of crafts of a particular culture or people" (National Park Service 1991:44-45). The Boulder Dam - Los Angeles 287.5 kV Transmission line retains integrity of workmanship through the existence of original towers, conductor, insulators, and other hardware already discussed above.

Feeling and Association

Feeling is defined as "a property's expression of the aesthetic or historic sense of a particular period or time." It results from the presence of historic features that together convey the property's historic character. Association is the "direct link between an important historic event and a historic property" (National Park Service 1991:44-45). Integrity of location, setting, design and materials discussed above combine to give a strong sense of feeling and association to the Boulder Dam -Los Angeles 287.5 kV transmission line. The line exists on its original location in a largely unaltered setting. Within this context the original towers, road, transformer and switching stations and conductor with its associated hardware combine to convey the historic character of its development and construction over vast stretches of harsh uninhabited terrain as well as its existence as a unique example of point to point high voltage transmission. In the single circuit section the two parallel lines of steel

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towers and the access road form a definable unit that stretches for hundreds of miles across desert and mountains. As such, the line still has a strong sense of association with the historic events of its own development and construction as well as the Boulder Canyon project.

Integrity Summary

The Boulder Dam - Los Angeles 287.5 kV Transmission Line retains integrity of location, design, setting, materials, workmanship, feeling and association in spite of alterations that have occurred during 60 years of operation. With the exception of occasional tower relocations the line retains a high degree of integrity of location. These changes have mostly occurred in the western double circuit tower section where urban development has resulted in construction of freeways and flood control dams where towers needed to be raised or moved.

The lines still retain a high degree of integrity of design, materials, and workmanship. The structural system consisting of steel towers is still largely intact for both lines and the lines still function as originally designed. Between the Victorville Switching Station and the Los Angeles Receiving Station, both lines retain original HH conductor and hardware except in small sections where segments have been replaced as a result of relocation or repair. This is also the case between the step up transformer at Hoover Dam and the McCullough Switching Station. Between the McCullough and Victorville Switching Stations, conductor on Boulder Line 2 has been replaced with aluminum cable and the towers modified. Approximately six percent of the original towers along this section have been replaced. Boulder Line 1 in this portion is still largely unaltered.

The transmission line also retains a high degree of setting, feeling, and association. The setting along the 200 miles of line in the Mojave Desert has changed little since the project was completed. Because of this the entire single circuit section retains a strong sense of association with the Boulder Canyon Project and the original construction effort over vast stretches of uninhabited harsh terrain.

The setting has changed to varying degrees on the double circuit tower portion of the line due to the development of urban Los Angeles. However, this portion was not undeveloped wilderness at the time of construction and has evolved from agricultural to urban use.

Significance Summary Statement

In summary, the Boulder Dam - Los Angeles 287.5 kV Transmission Line is significant under Criterion C in that it is a prime example of point to point long distance high voltage transmission and represented the pinnacle of achievement of over 40 years of transmission line development in California. In addition, it is significant under Criterion A because it is associated with the construction of Boulder/Hoover Dam and the development of metropolitan Los Angeles. In spite of 60 years of operation the line still retains a high degree of integrity of location, design, setting, materials, workmanship, feeling, and association.

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UTM References for Boulder Transmission Lines 1 and 2

Hoover Dam, Nev. - Ariz.

Boulder Switch yard (Center point)	11/ 703720	mE
	3988155	mN
BTL I	11/ 703430	mE
	3988130	mN
BTL II	11/ 703460	mE
	3988200	mN
BTL I	11/ 702780	mE
	3987720	mN
BTL II	11/ 702780	mE
	3987790	mN

Boulder Beach, Nev. - Ariz.

BTL I	11/ 702760	mE
	3987700	mN
BTL II	11/ 702760	mE
	3987780	mN
Access Road	11/ 700530	mE
	3987345	mN
BTL I	11/ 699740	mE
	3986020	mN
BTL II	11/ 699630	mE
	3986020	mN
Access Road	11/ 699775	mE
	3986020	mN

Boulder City, Nev.

BTL I	11/ 699740	mE
	3986020	mN
BTL II	11/ 699630	mE
	3986020	mN
Access Road	11/ 699775	mE
	3986020	mN
BTL I	11/ 691770	mE
	3975500	mN
BTL II	11/ 691770	mE
	3975620	mN
Access Road	11/ 691770	mE
	3975550	mN

Boulder City NW, Nev.

BTL I	11/ 691770	mE
	3975500	mN
BTL II	11/ 691770	mE
	3975620	mN
Access Road	11/ 691770	mE
	3975550	mN
BTL I	11/ 687890	mE
	3971910	mN
BTL II	11/ 687840	mE
	3971905	mN
Access Road	11/ 687780	mE
	3971905	mN

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Boulder City SW, Nev.

BTL I	11/ 687890	mE
	3971910	mN
BTL II	11/ 687780	mE
	3971900	mN
Access Road	11/ 687840	mE
	3971905	mN
BTL I	11/ 680720	mE
	3964060	mN
BTL II	11/ 680720	mE
	3964160	mN
Access Road	11/ 680720	mE
	3964100	mN

Sloan SE, Nev.

BTL I	11/ 680720	mE
	3964060	mN
BTL II	11/ 680720	mE
	3964160	mN
Access Road	11/ 680720	mE
	3964100	mN
BTL I	11/ 671280	mE
	3957675	mN
BTL II	11/ 671140	mE
	3957675	mN
Access Road	11/ 671205	mE
	3957675	mN

McCullough Mtn. NE, Nev.

BTL I	11/ 671280	mE
	3957720	mN
BTL II	11/ 671140	mE
	3957725	mN
Access Road	11/ 671205	mE
	3957675	mN
BTL I	11/ 669540	mE
	3956910	mN
BTL II	11/ 669540	mE
	3957040	mN
Access Road	11/ 669560	mE
	3956930	mN

McCullough Pass, Nev.

BTL I	11/ 669560	mE
	3956910	mN
BTL II	11/ 669560	mE
	3957040	mN
Access Road	11/ 669560	mE
	3956930	mN
BTL I	11/ 658325	mE
	3951700	mN
BTL II	11/ 658325	mE
	3951790	mN
Access Road	11/ 658325	mE
	3951750	mN

Roach, Nev.

BTL I	11/ 658325	mE
	3951700	mN
BTL II	11/ 658325	mE
	3951790	mN
Access Road	11/ 658325	mE
	3951750	mN
BTL I	11/ 647420	mE
	3943370	mN
BTL II	11/ 647230	mE
	3943370	mN
Access Road	11/ 647330	mE
	3943370	mN

Ivanpah Lake, Calif. - Nev.

BTL I	11/ 647150	mE
	3943230	mN
BTL II	11/ 647150	mE
	3943325	mN
Access Road	11/ 647150	mE
	3943280	mN
BTL I	11/ 635880	mE
	3940100	mN
BTL II	11/ 635880	mE
	3940200	mN
Access Road	11/ 635880	mE
	3940240	mN

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Clark Mtn., Calif.

BTL I	11/	635880	mE
		3940100	mN
BTL II	11/	635880	mE
		3940200	mN
Access Road	11/	635880	mE
		3940240	mN
BTL I	11/	624580	mE
		3938940	mN
BTL II	11/	624580	mE
		3939030	mN
Access Road	11/	624580	mE
		3939075	mN

Pachalka Spring, Calif.

BTL I	11/	624580	mE
		3938940	mN
BTL II	11/	624580	mE
		3939030	mN
Access Road	11/	624580	mE
		3939075	mN
BTL I	11/	613320	mE
		3933870	mN
BTL II	11/	613320	mE
		3933940	mN
Access Road	11/	613320	mE
		3933980	mN

East of Kingston Spring, Calif.

BTL I	11/	613320	mE
		3933870	mN
BTL II	11/	613320	mE
		3933940	mN
Access Road	11/	613320	mE
		3933980	mN
BTL I	11/	602030	mE
		3929800	mN
BTL II	11/	602030	mE
		3929880	mN
Access Road	11/	602030	mE
		3929925	mN

Kingston Spring, Calif.

BTL I	11/	602030	mE
		3929800	mN
BTL II	11/	602030	mE
		3929880	mN
Access Road	11/	602030	mE
		3929925	mN
BTL I	11/	599500	mE
		3928840	mN
BTL II	11/	599380	mE
		3928840	mN
Access Road	11/	599340	mE
		3928840	mN

Torquoise Mtn., Calif.

BTL I	11/	599500	mE
		3928840	mN
BTL II	11/	599380	mE
		3928840	mN
Access Road	11/	599340	mE
		3928840	mN
BTL I	11/	590770	mE
		3921940	mN
BTL II	11/	590770	mE
		3922030	mN
Access Road	11/	590770	mE
		3922075	mN

North of Baker, Calif.

BTL I	11/	590770	mE
		3921940	mN
BTL II	11/	590770	mE
		3922030	mN
Access Road	11/	590770	mE
		3922075	mN
BTL I	11/	579480	mE
		3916060	mN
BTL II	11/	579480	mE
		3916140	mN
Access Road	11/	579480	mE
		3916100	mN

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Silurian Valley, Calif.

BTL I	11/ 579480	mE
	3916060	mN
BTL II	11/ 579480	mE
	3916140	mN
Access Road	11/ 579480	mE
	3916100	mN
BTL I	11/ 577640	mE
	3914770	mN
BTL II	11/ 577520	mE
	3914770	mN
Access Road	11/ 577610	mE
	3914770	mN

West of Baker, Calif.

BTL I	11/ 577640	mE
	3914770	mN
BTL II	11/ 577520	mE
	3914770	mN
Access Road	11/ 577610	mE
	3914770	mN
BTL I	11/ 568180	mE
	3907380	mN
BTL II	11/ 568180	mE
	3907500	mN
Access Road	11/ 568180	mE
	3907450	mN

Red Pass Lake, Calif.

BTL I	11/ 568180	mE
	3907380	mN
BTL II	11/ 568180	mE
	3907500	mN
Access Road	11/ 568180	mE
	3907450	mN
BTL I	11/ 557780	mE
	3900750	mN
BTL II	11/ 557440	mE
	3900750	mN
Access Road	11/ 558115	mE
	3900750	mN

West Cronese Lakes, Calif.

BTL I	11/ 557780	mE
	3900750	mN
BTL II	11/ 557440	mE
	3900750	mN
Access Road	11/ 558115	mE
	3900750	mN
BTL I	11/ 556870	mE
	3899500	mN
BTL II	11/ 556870	mE
	3899690	mN
Access Road	11/ 556870	mE
	3899600	mN

Bitter Spring, Calif.

BTL I	11/ 556870	mE
	3899500	mN
BTL II	11/ 556870	mE
	3899690	mN
Access Road	11/ 556870	mE
	3899600	mN
BTL I	11/ 547910	mE
	3886830	mN
BTL II	11/ 547790	mE
	3886830	mN
Access Road	11/ 547850	mE
	3886830	mN

Dunn, Calif.

BTL I	11/ 547910	mE
	3886830	mN
BTL II	11/ 547790	mE
	3886830	mN
Access Road	11/ 547850	mE
	3886830	mN
BTL I	11/ 545570	mE
	3884380	mN
BTL II	11/ 545570	mE
	3884500	mN
Access Road	11/ 545570	mE
	3884460	mN

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Alvord Mtn. East, Calif.

BTL I	11/ 545570	mE
	3884375	mN
BTL II	11/ 545570	mE
	3884500	mN
Access Road	11/ 545570	mE
	3884460	mN
BTL I	11/ 534220	mE
	3873980	mN
BTL II	11/ 534220	mE
	3874080	mN
Access Road	11/ 534220	mE
	3874005	mN

Alvord Mtn. West, Calif.

BTL I	11/ 534220	mE
	3873980	mN
BTL II	11/ 534220	mE
	3874080	mN
Access Road	11/ 534220	mE
	3874000	mN
BTL I	11/ 532940	mE
	3872910	mN
BTL II	11/ 532820	mE
	3872910	mN
Access Road	11/ 532900	mE
	3872910	mN

Harvard Hill, Calif.

BTL I	11/ 532940	mE
	3872910	mN
BTL II	11/ 532820	mE
	3872910	mN
Access Road	11/ 532900	mE
	3872910	mN
BTL I	11/ 522840	mE
	3864460	mN
BTL II	11/ 522840	mE
	3864570	mN
Access Road	11/ 522840	mE
	3864525	mN

Yermo, Calif.

BTL I	11/ 522840	mE
	3864460	mN
BTL II	11/ 522840	mE
	3864570	mN
BTL I	11/ 518480	mE
	3859000	mN
BTL II	11/ 518350	mE
	3859000	mN
Access Road	11/ 518425	mE
	3859000	mN

Minneola, Calif.

BTL I	11/ 518480	mE
	3859000	mN
BTL II	11/ 518350	mE
	3859000	mN
Access Road	11/ 518425	mE
	3859000	mN
BTL I	11/ 511430	mE
	3854210	mN
BTL II	11/ 511430	mE
	3854300	mN
Access Road	11/ 511430	mE
	3854350	mN

Daggett, Calif.

BTL I	11/ 511430	mE
	3854210	mN
BTL II	11/ 511430	mE
	3854300	mN
Access Road	11/ 511430	mE
	3854350	mN
BTL I	11/ 500000	mE
	3846340	mN
BTL II	11/ 500000	mE
	3846460	mN
Access Road	11/ 500000	mE
	3846380	mN

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Barstow SE, Calif.

BTL I	11/ 500000	mE
	3846340	mN
BTL II	11/ 500000	mE
	3846460	mN
Access Road	11/ 500000	mE
	3846380	mN
BTL I	11/ 498580	mE
	3845120	mN
BTL II	11/ 498440	mE
	3845120	mN
Access Road	11/ 498515	mE
	3845120	mN

Stoddard Well, Calif.

BTL I	11/ 498580	mE
	3845120	mN
BTL II	11/ 498440	mE
	3845120	mN
Access Road	11/ 498515	mE
	3845120	mN
BTL I	11/ 488560	mE
	3840760	mN
BTL II	11/ 488560	mE
	3840840	mN
Access Road	11/ 488560	mE
	3840800	mN

Turtle Valley, Calif.

BTL I	11/ 488560	mE
	3840760	mN
BTL II	11/ 488560	mE
	3840840	mN
Access Road	11/ 488560	mE
	3840800	mN
BTL I	11/ 477980	mE
	3831280	mN
BTL II	11/ 477850	mE
	3831280	mN

Apple Valley North, Calif.

BTL I	11/ 477980	mE
	3831280	mN
BTL II	11/ 477850	mE
	3831280	mN
BTL I	11/ 477080	mE
	3830460	mN
BTL II	11/ 477080	mE
	3830560	mN

Victorville, Calif.

BTL I	11/ 477080	mE
	3830460	mN
BTL II	11/ 477080	mE
	3830560	mN
Access Road	11/ 476740	mE
	3830200	mN
Victorville Switch yard (Center point)	11/ 471050	mE
	3824785	mN
Victorville Operations Building	11/ 470995	mE
	3824725	mN
BTL I	11/ 466630	mE
	3817460	mN
BTL II	11/ 466540	mE
	3817460	mN
Access Road	11/ 466580	mE
	3817460	mN

Hesperia, Calif.

BTL I	11/ 466630	mE
	3817460	mN
BTL II	11/ 466540	mE
	3817460	mN
Access Road	11/ 466580	mE
	3817460	mN
BTL I	11/ 465570	mE
	3815680	mN
BTL II	11/ 465570	mE
	3815830	mN
Access Road	11/ 465570	mE
	3815750	mN

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CONTINUATION SHEET
ADDITIONAL DOCUMENTATION - SECTION 10
Boulder Dam - Los Angeles 287.5 kV Transmission Line
Clark County, Nevada
San Bernardino County, California
Los Angeles County, California

Baldy Mesa, Calif.

BTL I	11/ 465570	mE
	3815680	mN
BTL II	11/ 465570	mE
	3815830	mN
Access Road	11/ 465570	mE
	3815750	mN
BTL I	11/ 458360	mE
	3803630	mN
BTL II	11/ 458260	mE
	3803630	mN
Access Road	11/ 458310	mE
	3803630	mN

Cajon, Calif.

BTL I	11/ 458360	mE
	3803630	mN
BTL II	11/ 458260	mE
	3803630	mN
Access Road	11/ 458310	mE
	3803630	mN
BTL I	11/ 456390	mE
	3789780	mN
BTL II	11/ 456290	mE
	3789780	mN
Access Road	11/ 456290	mE
	3789780	mN

Devore, Calif.

BTL I	11/ 456390	mE
	3789780	mN
BTL II	11/ 456290	mE
	3789780	mN
Access Road	11/ 456295	mE
	3789780	mN
BTL I	11/ 453920	mE
	3780400	mN
BTL II	11/ 453920	mE
	3780470	mN
Access Road	11/ 453920	mE
	3780425	mN

Cucamonga Peak, Calif.

BTL I	11/ 453920	mE
	3780400	mN
BTL II	11/ 453920	mE
	3780470	mN
Access Road	11/ 453920	mE
	3780425	mN
BTL I	11/ 442400	mE
	3780170	mN
BTL II	11/ 442400	mE
	3780260	mN
Access Road	11/ 442400	mN
	3780220	mN

Mt. Baldy, Calif.

BTL I	11/ 442400	mE
	3780170	mN
BTL II	11/ 442400	mE
	3780260	mN
Access Road	11/ 442400	mE
	3780220	mN
BTL I-II	11/ 438500	mE
	3779660	mN
BTL I-II	11/ 430850	mE
	3777350	mN

Glendora, Calif.

BTL I-II	11/ 430850	mE
	3777350	mN
BTL I-II	11/ 426700	mE
	3776110	mN

San Dimas, Calif.

BTL I-II	11/ 426700	mE
	3776110	mN
BTL I-II	11/ 419300	mE
	3775390	mN

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CONTINUATION SHEET
ADDITIONAL DOCUMENTATION - SECTION 10
Boulder Dam - Los Angeles 287.5 kV Transmission Line
Clark County, Nevada
San Bernardino County, California
Los Angeles County, California

Baldwin Park, Calif.

BTL I-II	11/	419300	mE
		3775390	mN
BTL I-II	11/	407720	mE
		3768880	mN

El Monte, Calif.

BTL I-II	11/	407720	mE
		3768880	mN
BTL I-II	11/	399340	mE
		3762490	mN

Whittier, Calif.

BTL I-II	11/	399340	mE
		3762490	mN
BTL I-II	11/	396065	mE
		3759120	mN

South Gate, Calif.

BTL I-II	11/	396065	mE
		3759120	mN
BTL I-II	11/	384500	mE
		3756980	mN

Inglewood, Calif.

BTL I-II	11/	384500	mE
		3756980	mN
BTL I-II	11/	384220	mE
		3756980	mN
Century Receiving Station Receiving Yard (Center point)	11/	384075	mE
		3756920	mN
Century Receiving Station Control House	11/	384150	mE
		3756700	mN

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CONTINUATION SHEET
ADDITIONAL DOCUMENTATION - SECTION 10
Boulder Dam - Los Angeles 287.5 kV Transmission Line
Clark County, Nevada
San Bernardino County, California
Los Angeles County, California

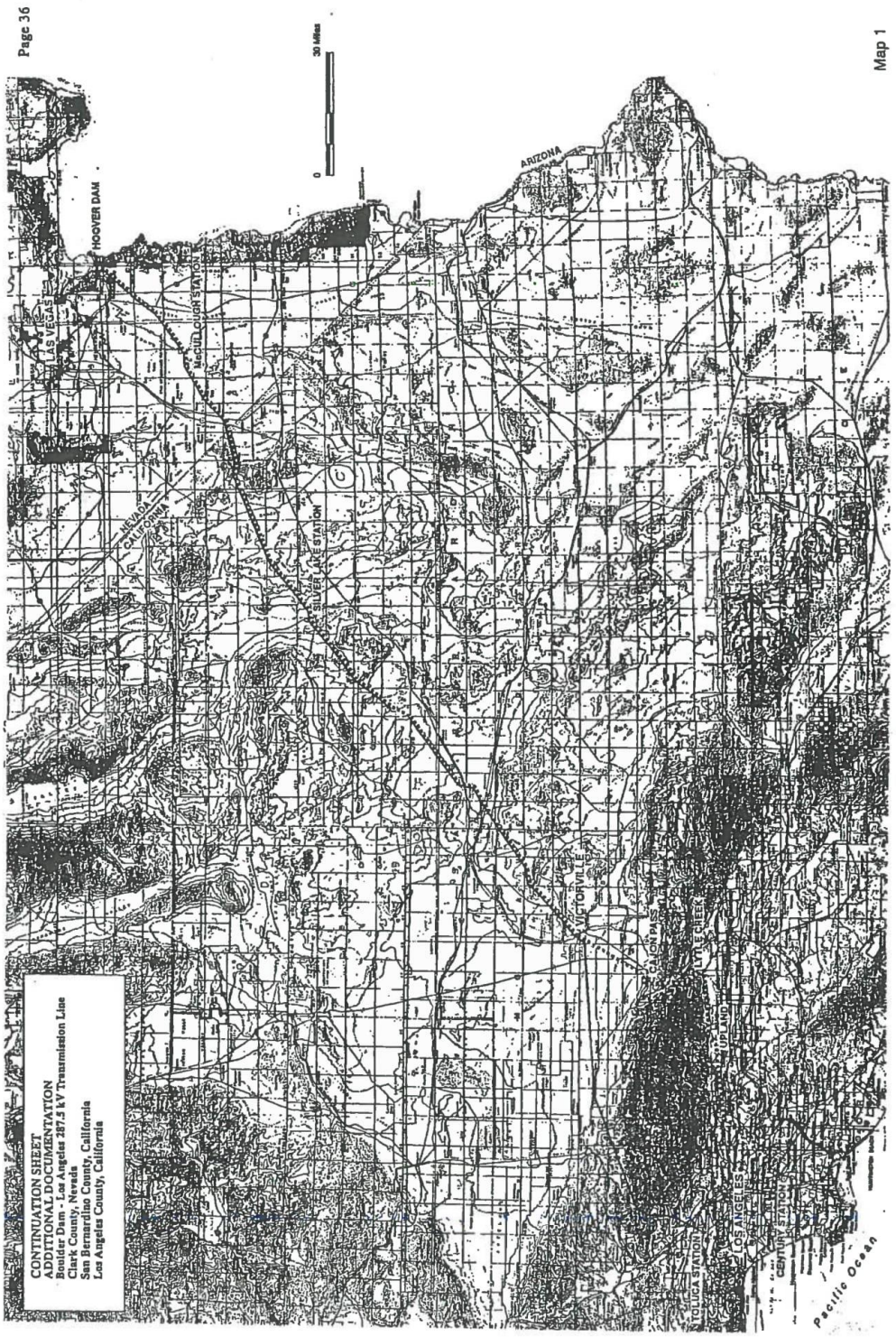
Verbal Boundary Description

The boundaries of the property begin at the step up transformer station 2,000 feet southwest of Hoover Dam in Nevada, through the Silver Lake and Victorville Switching Stations in California's Mojave Desert, and end at the Century Receiving Station in Los Angeles, California (Map 1). The Boulder station measures 675 ft northeast-southwest and 300 ft northwest-southeast. The single-circuit transmission corridor is 400 feet wide and 225.2 miles long. This portion of the corridor includes the Silver Lake and Victorville switching stations (Maps 3 and 4). The Silver Lake station measures approximately 620 ft square while the Victorville station is 650 ft northeast-southwest and 600 ft northwest-southeast. The double circuit transmission corridor, which begins near the city of Upland, California, is 200 feet wide and 40.8 miles long (Map 5). The line ends at the Century Receiving Station (Map 6). This station measures approximately 1,600 ft north-south and 650 ft east-west.

Boundary Justification

The boundaries for this linear resource encompass the transmission corridor from beginning to end and the components considered to be contributing elements.

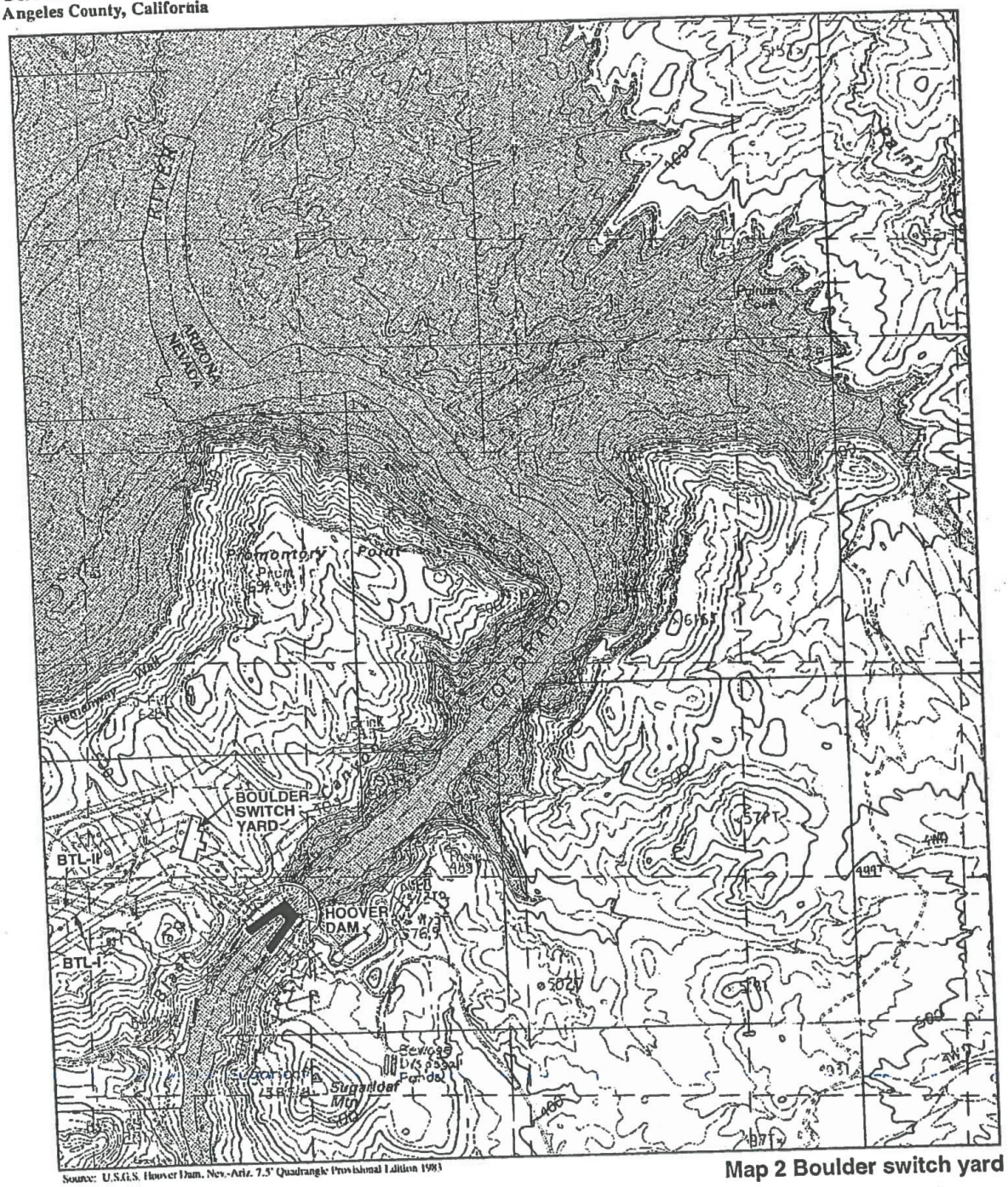
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Page 36
Map 1
30 Miles
0
ARIZONA
HOOVER DAM
LAS VEGAS
NEVADA
CALIFORNIA
SILVER PEAK
VICTORVILLE
UPLAND
LOS ANGELES
CENTER STATION
TOLUGA STATION
Pacific Ocean
CONTINUATION SHEET
ADDITIONAL DOCUMENTATION
Boulder Dam - Los Angeles 287.5 kV Transmission Line
Clark County, Nevada
San Bernardino County, California
Los Angeles County, California

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CONTINUATION SHEET
ADDITIONAL DOCUMENTATION
Boulder Dam - Los Angeles 287.5 kV Transmission Line
Clark County, Nevada
San Bernardino County, California
Los Angeles County, California

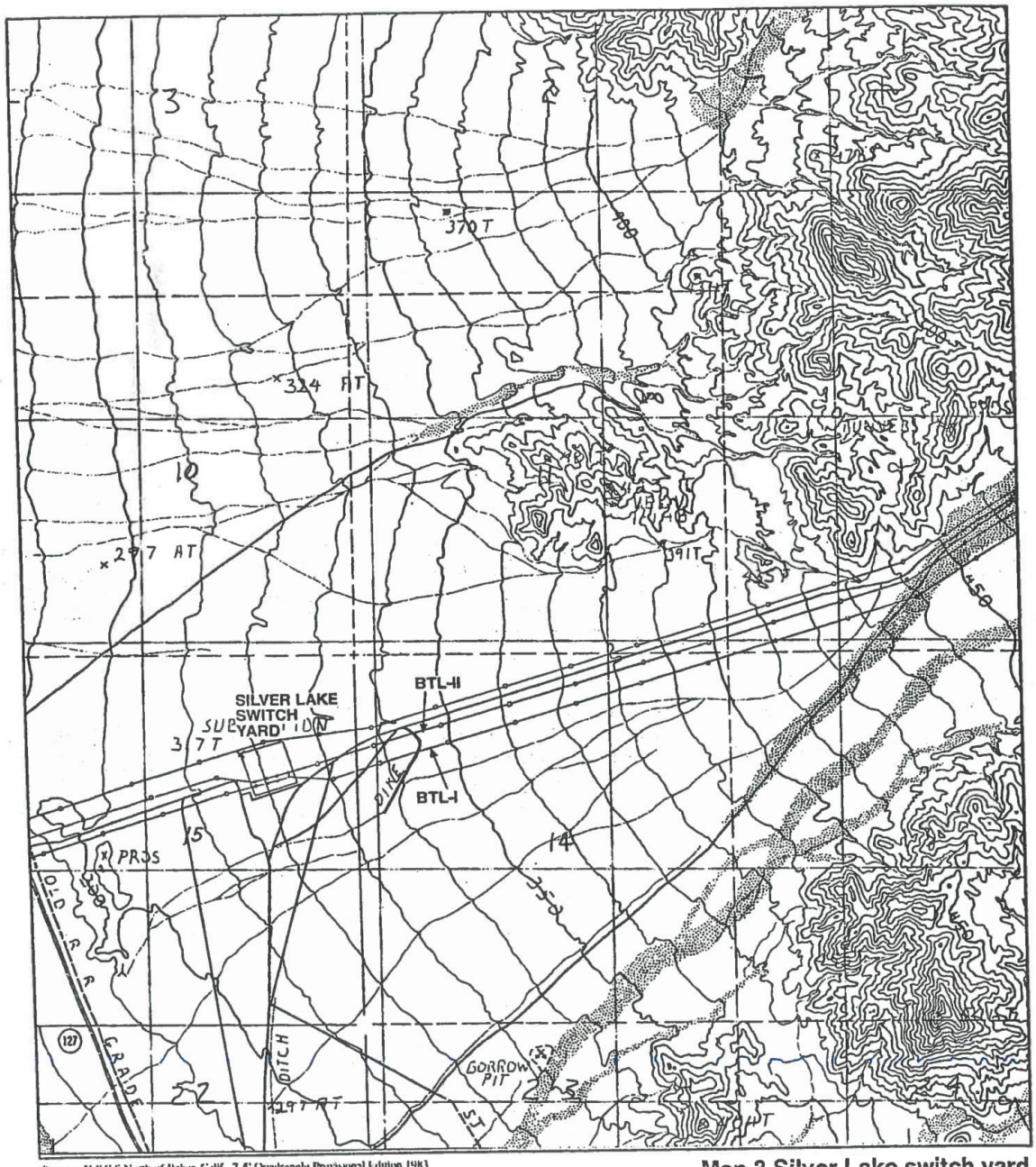
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Map 2 Boulder switch yard

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CONTINUATION SHEET
ADDITIONAL DOCUMENTATION
Boulder Dam - Los Angeles 287.5 kV Transmission Line
Clark County, Nevada
San Bernardino County, California
Los Angeles County, California



Source: U.S.G.S. North of Baker, Calif. 7.5' Quadrangle Provisional Edition 1983

0 2000 Feet

Map 3 Silver Lake switch yard

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State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code: 2B

Other Listings
Review Code | Reviewer | Date

Page 1 of 18 *Resource Name or #: Boulder Dam-Los Angeles 287.5 kV Transmission Line

P1. Other Identifier: Los Angeles Department of Water and Power Boulder Lines 1 and 2

*P2. Location: ☐ Not for Publication ☒ Unrestricted *a. County: Los Angeles

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

*b. USGS 7.5' Quad: see below Date: T ; R ; ¼ of ¼ of Sec ; M.D. B.M.

c. Address: City: Zip:

d. UTM: Zone: 10 ; mE/ mN (G.P.S.)

e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) Quads (south to north): Inglewood, South Gate, Whittier, El Monte, Baldwin Park, San Dimas, Glendora and Mt. Baldy

*P3a. Description: (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)
The Boulder Dam - Los Angeles 287.5 kV Transmission Line is two parallel electrical transmission circuits carried on steel lattice towers running approximately 270 miles from the Hoover Dam to Century Receiving Station near Watts, in Los Angeles County California. This form documents the approximately 40-mile segment situated within Los Angeles County.

*P3b. Resource Attributes: (List attributes and codes) HP11. Engineering structure, HP9. Public utility building

*P4. Resources Present: ☐Building ☐Structure ☐Object ☐Site ☐District ☒Element of District ☐Other (Isolates, etc.)

P5a. Photo or Drawing (Photo required for buildings, structures, and objects.)



P5b. Description of Photo: (View, date, accession #)
Looking west from Bess Avenue Pedestrian Overcrossing

*P6. Date Constructed/Age and Sources: ☒Historic ☐Prehistoric ☐Both
1935-1936

*P7. Owner and Address:
LA Dept of Water and Power
111 North Hope Street
Los Angeles, CA 90012

*P8. Recorded by: (Name, affiliation, and address)
Noah M. Stewart
Caltrans, District 7
100 South Main Street, Suite 100
Los Angeles, CA 90012

*P9. Date Recorded:
August 2008

*P10. Survey Type: (Describe)
Reconnaissance survey

*P11. Report Citation: (Cite survey report and other sources, or enter "none.") Noah M. Stewart. Historic Resources Evaluation Report: Interstate Route 10 – 605 Interchange Improvement, 07-LA-10/605 PM 31.2/20.9, EA 24540K, 2008.

*Attachments: ☐NONE ☒Location Map ☐Sketch Map ☒Continuation Sheet ☐Building, Structure, and Object Record ☐Archaeological Record ☒District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

DPR 523A (1/95) *Required information

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State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
DISTRICT RECORD

Primary #
HRI #
Trinomial

Page 2 of 18 *NRHP Status Code: 2B

*Resource Name or # (Assigned by recorder): Boulder Dam-Los Angeles 287.5 kV Transmission Line

D1. Historic Name: Los Angeles Department of Water and Power Boulder Lines North and South
D2. Common Name: Los Angeles Department of Water and Power Boulder Lines 1 and 2

*D3. Detailed Description (Discuss overall coherence of the district, its setting, visual characteristics, and minor features. List all elements of district.): The historic district is a linear resource approximately 270 miles long. It is composed of several contributing elements including the transmission line cables (originally approximately 1,600 miles of 1.4-inch diameter hollow copper conductor), the single and double circuit towers carrying the cables (originally 2,695 towers in total), the access road serving the towers, two switching stations and two transformer stations.

Not all aspects of the historic district are located within Los Angeles County. The access road is exclusively located within the Mojave Desert, where it serves the single circuit towers and switching stations. Only the double circuit towers were used within Los Angeles County and there no switching stations were needed in the region. The final aspect of the historic district within Los Angeles County is the Century Receiving Station, the transformer station where the high voltage power is stepped-down to a lower voltage for distribution throughout the city. Century Receiving Station includes the control house building and associated oil house as well as the yard (switch racks, counterpoise grid and overhead round wires). (see Continuation Sheet page 3)

*D4. Boundary Description (Describe limits of district and attach map showing boundary and district elements.):
The boundary of the entire district encompasses the transmission corridor from its beginning at the Boulder Dam (later Hoover Dam), on the Nevada side of the Colorado River, to the Century Receiving Station in Los Angeles, California, a distance of approximately 270 miles.

Within Los Angeles County the historic district includes the transmission corridor, which is approximately 40 miles long, from its intersection with the Los Angeles/San Bernardino County line near the City of Claremont to the Century Receiving Station, in south Los Angeles. In addition to the transmission corridor the boundary includes the Century Receiving Station parcel located at the corner of Central Avenue and Century Boulevard, Los Angeles.

*D5. Boundary Justification:
The boundaries for this resource encompass the transmission corridor from beginning to end as well as all of the components considered to be contributing elements.

*D6. Significance: Theme: Engineering Area: State of California
Period of Significance: 1936 - 1953 Applicable Criteria: A & C (Discuss district's importance in terms of its historical context as defined by theme, period of significance, and geographic scope. Also address the integrity of the district as a whole.)
The Boulder Dam-Los Angeles 287.5 kV Transmission Line was determined eligible for inclusion on the National Register of Historic Places in 1999 under Criteria A and C. Under Criterion A it was found significant for (1) its association with the construction of Hoover Dam, a National Historic Landmark and water reclamation and irrigation project of exceptional importance to the American southwest, and (2) the (see Continuation Sheet page 3)

*D7. References (Give full citations including the names and addresses of any informants, where possible.):
Van Wormer, Stephen and Christy Dolan. National Register of Historic Places Registration Form: Boulder Dam–Los Angeles 287.5 kV Transmission Line. San Diego: KEA Environmental for the U.S. Department of the Interior, Bureau of Land Management, 1999.

*D8. Evaluator: Noah M. Stewart Date: August 2008
Affiliation and Address: Caltrans, District 7, 100 South Main Street, Suite 100, Los Angeles, CA 90012

DPR 523D (1/95) *Required information

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State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary #
HRI#
Trinomial

Page 3 of 18 *Resource Name or # (Assigned by recorder) Boulder Dam-Los Angeles 287.5 kV Transmission Line
*Recorded by: Noah M. Stewart , Caltrans, District 7 *Date: ☒ Continuation ☐ Update

*D3. Detailed Description (continued from page 2)
control house building and associated oil house as well as the yard (switch racks, counterpoise grid and overhead round wires).

The double circuit towers were based on conventional designs of the time. Five types were designed including the standard suspension, angle suspension, dead end, dead end angle and transposition towers; each providing a specific function. The tower are comprised of a galvanized steel latticework and are typically 144 feet tall, however the height could be adjusted by adding 10 foot extensions to the base. The towers carry the conductor cables in a vertical plane on both sides of the tower.

The control house building at the Century Receiving Station was built in 1926 of reinforced concrete construction. The building measures approximately 40 by 120 feet, the longer side facing the street. It is two stories over a basement, designed in a reserved Beaux-Arts style (the Starved Classical vein). The façade is symmetrical with the entry at the center, framed by four two-story pilasters, two on either side of the door. The doorway is capped with a classical pediment. The roof is flat but hidden behind a stepped parapet. The windows appear to be steel framed industrial fixed panes. As the station existed prior to the completion of the transmission of such high voltage a major upgraded was required before it could receive power from the Hoover Dam. At the time of completion the two transformer banks installed at the station were the largest installation in the world, both from the standpoint of size and capacity.

*D6. Significance: (continued from page 2)
industrial, economic, and urban development that occurred in metropolitan Los Angeles from the mid-1930s through the 1940s. Without the power from the Hoover Dam the development of modern Los Angeles during these years could not have taken place.

It was also determined significant under Criterion C for its unique engineering and structural characteristics within the context of development of point-to-point high power transmission in California. The line represents a high level of achievement in point to point high voltage power transmission that remained unsurpassed for many years.

Based on the information included in the 1999 National Register nomination and compared to the current state of the historic district within Los Angeles County the Boulder Dam-Los Angeles 287.5 kV Transmission Line appears to continue to be eligible for the National Register of Historic Places under Criterion A and C.

DPR 523L (1/95) *Required information

19-188983

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary #
HRI#
Trinomial

Page 4 of 18 *Resource Name or # (Assigned by recorder) Boulder Dam-Los Angeles 287.5 kV Transmission Line
*Recorded by: Noah M. Stewart , Caltrans, District 7 *Date: ☒ Continuation ☐ Update

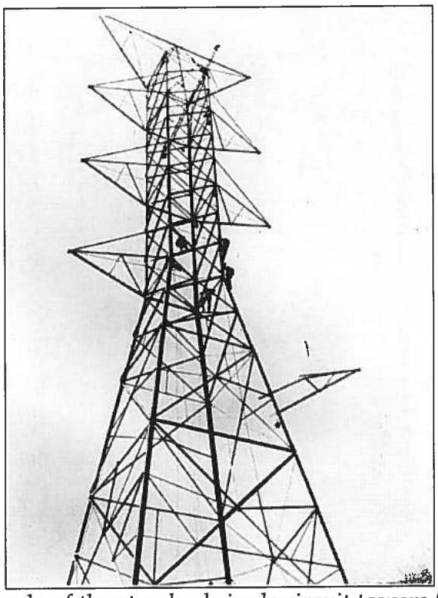


Figure 1: Example of the standard single circuit towers found throughout Los Angeles County, ca. 1935. From the Historical Photo Collection of the Department of Water and Power, City of Los Angeles.

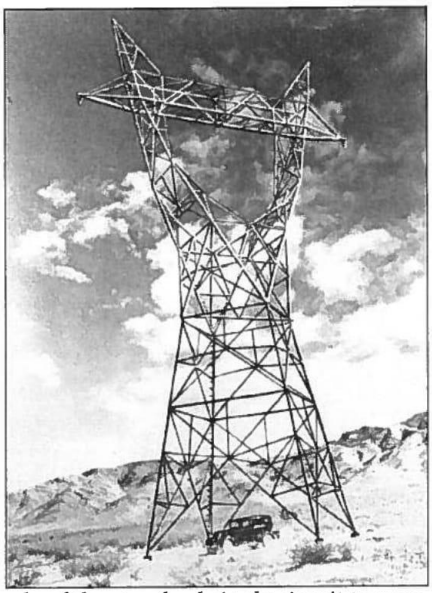


Figure 2: Example of the standard single circuit towers, ca. 1935. From the Historical Photo Collection of the Department of Water and Power, City of Los Angeles.

DPR 523L (1/95) *Required information

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State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary #
HRI#
Trinomial

Page 5 of 18 *Resource Name or # (Assigned by recorder) Boulder Dam-Los Angeles 287.5 kV Transmission Line
*Recorded by: Noah M. Stewart , Caltrans, District 7 *Date: ☒ Continuation ☐ Update



Figure 3: Aerial photograph of the Century Receiving Station showing the control house on the upper right, the oil house center left and the yard, ca. 1935. From the Historical Photo Collection of the Department of Water and Power, City of Los Angeles.

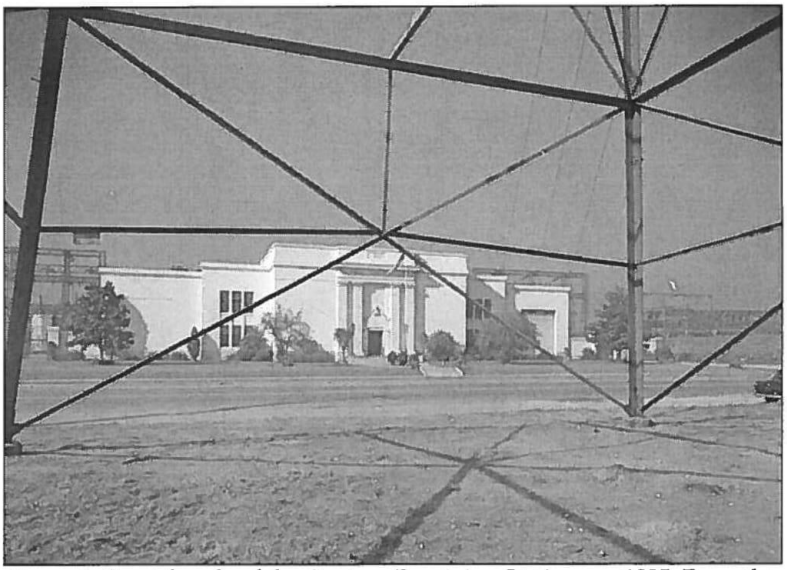


Figure 4: Front façade of the Century Receiving Station, ca. 1935. From the Historical Photo Collection of the Department of Water and Power, City of Los Angeles.

DPR 523L (1/95) *Required information

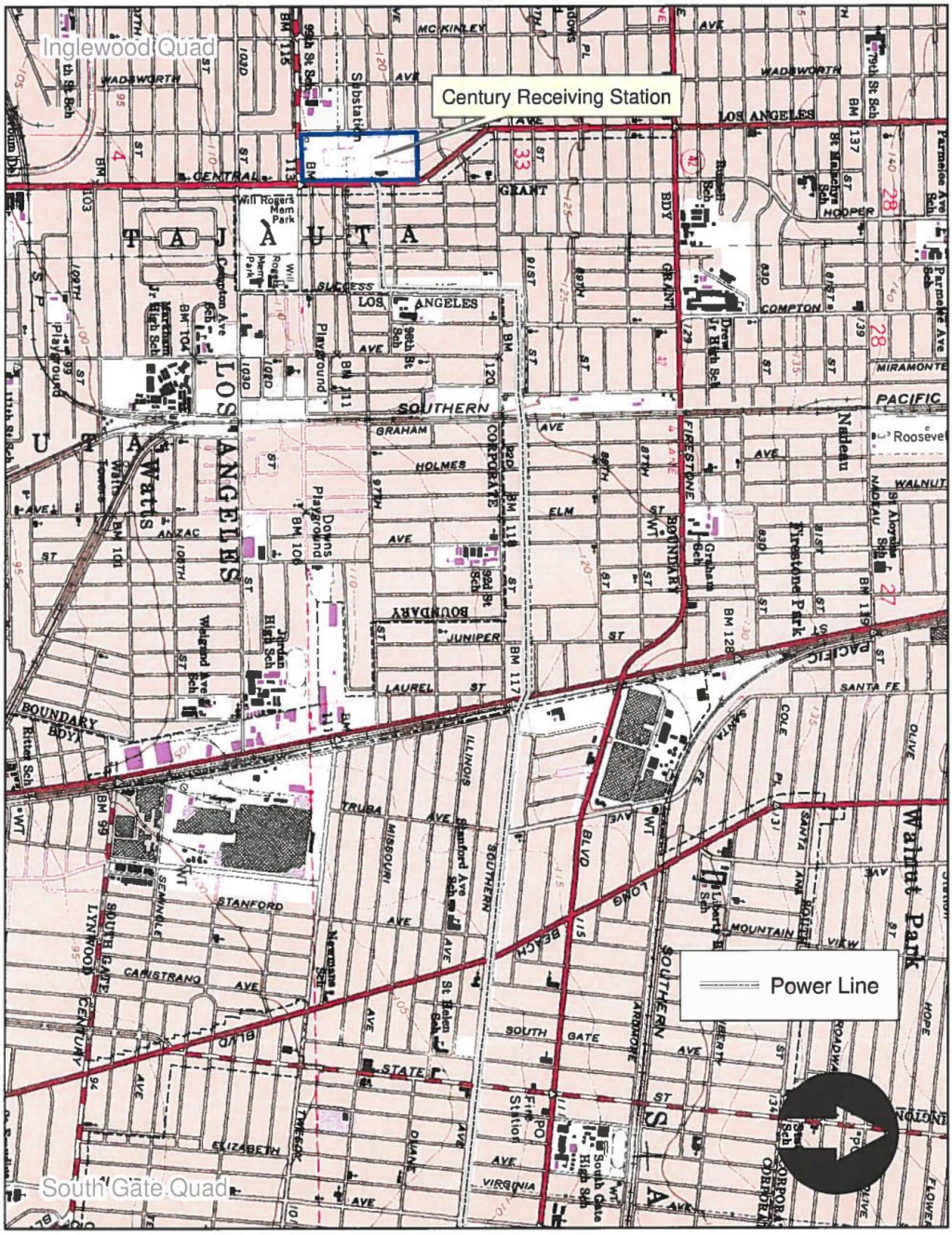
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State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LOCATION MAP

Primary #
HRI#
Trinomial

Page 6 of 18 *Resource Name or #: Boulder Dam-Los Angeles 287.5 Transmission Line

*Map Name: Inglewood and South Gate *Scale: 1:24,000 *Date of Map:



DPR 523J (1/95) *Required Information

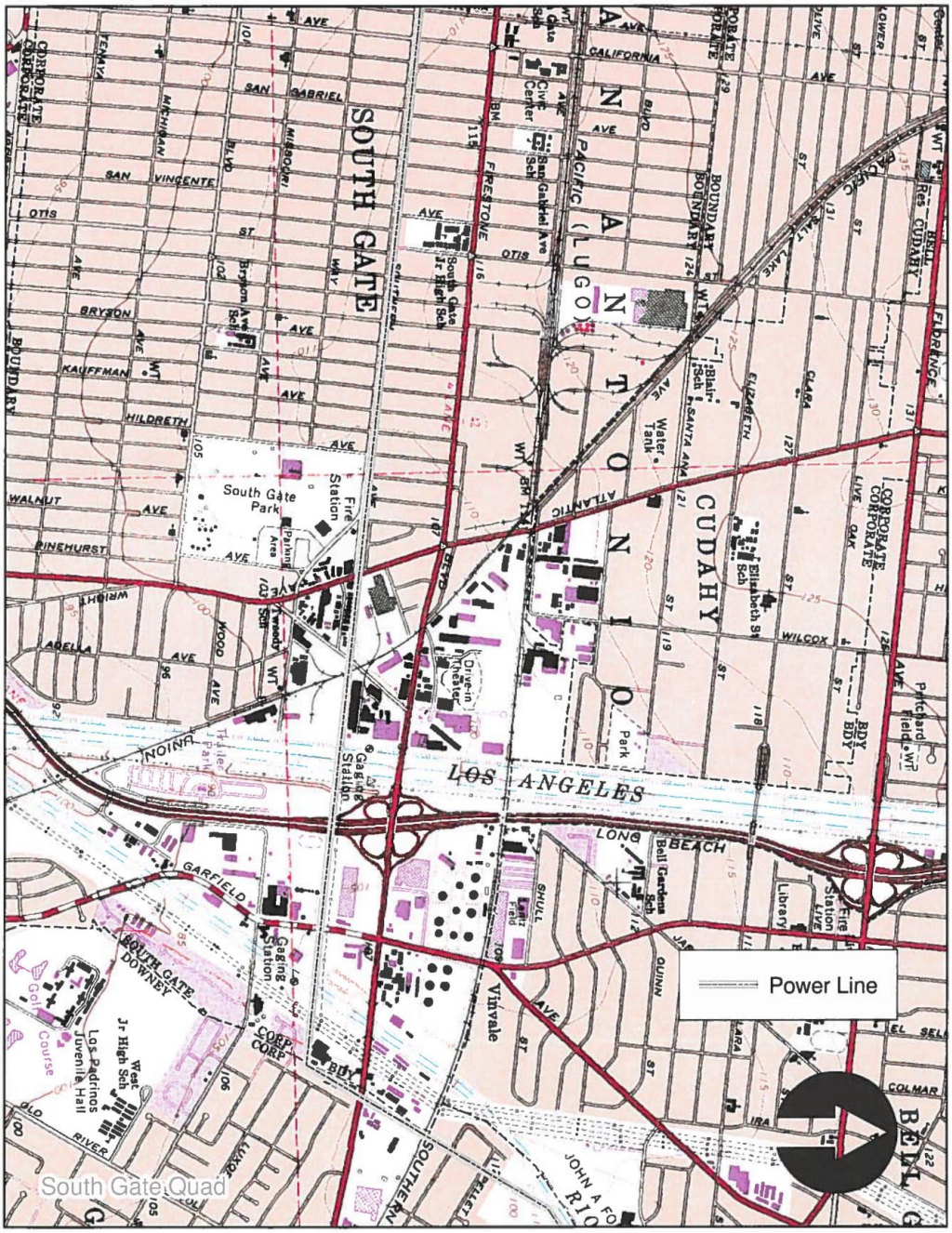
19-188983

State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LOCATION MAP

Primary #
HRI#
Trinomial

Page 7 of 18 *Resource Name or #: Boulder Dam-Los Angeles 287.5 Transmission Line

*Map Name: South Gate *Scale: 1:24,000 *Date of Map:



DPR 523J (1/95) *Required Information

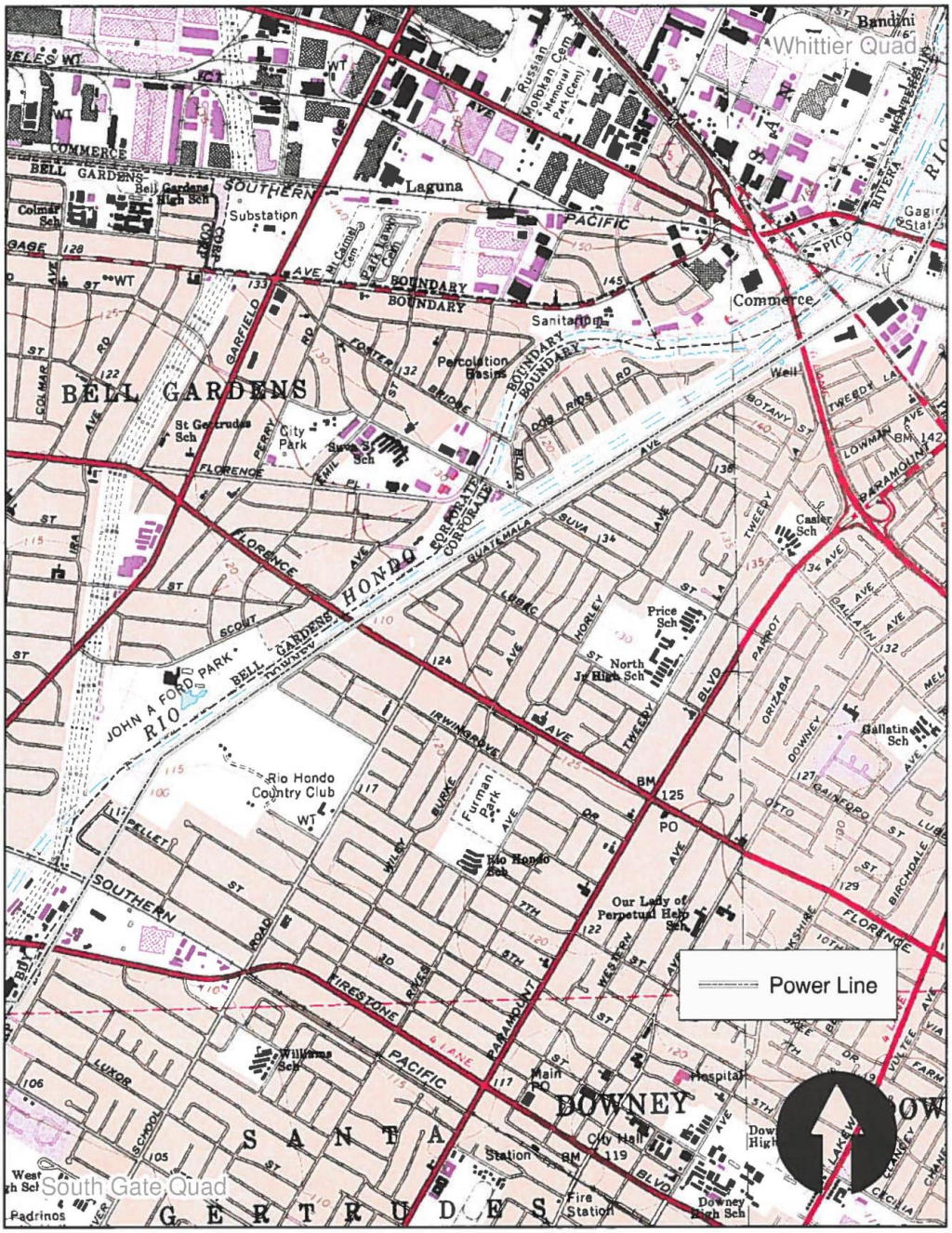
19-188983

State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LOCATION MAP

Primary #
HRI#
Trinomial

Page 8 of 18 *Resource Name or #: Boulder Dam-Los Angeles 287.5 Transmission Line

*Map Name: South Gate and Whittier *Scale: 1:24,000 *Date of Map:



DPR 523J (1/95) *Required Information

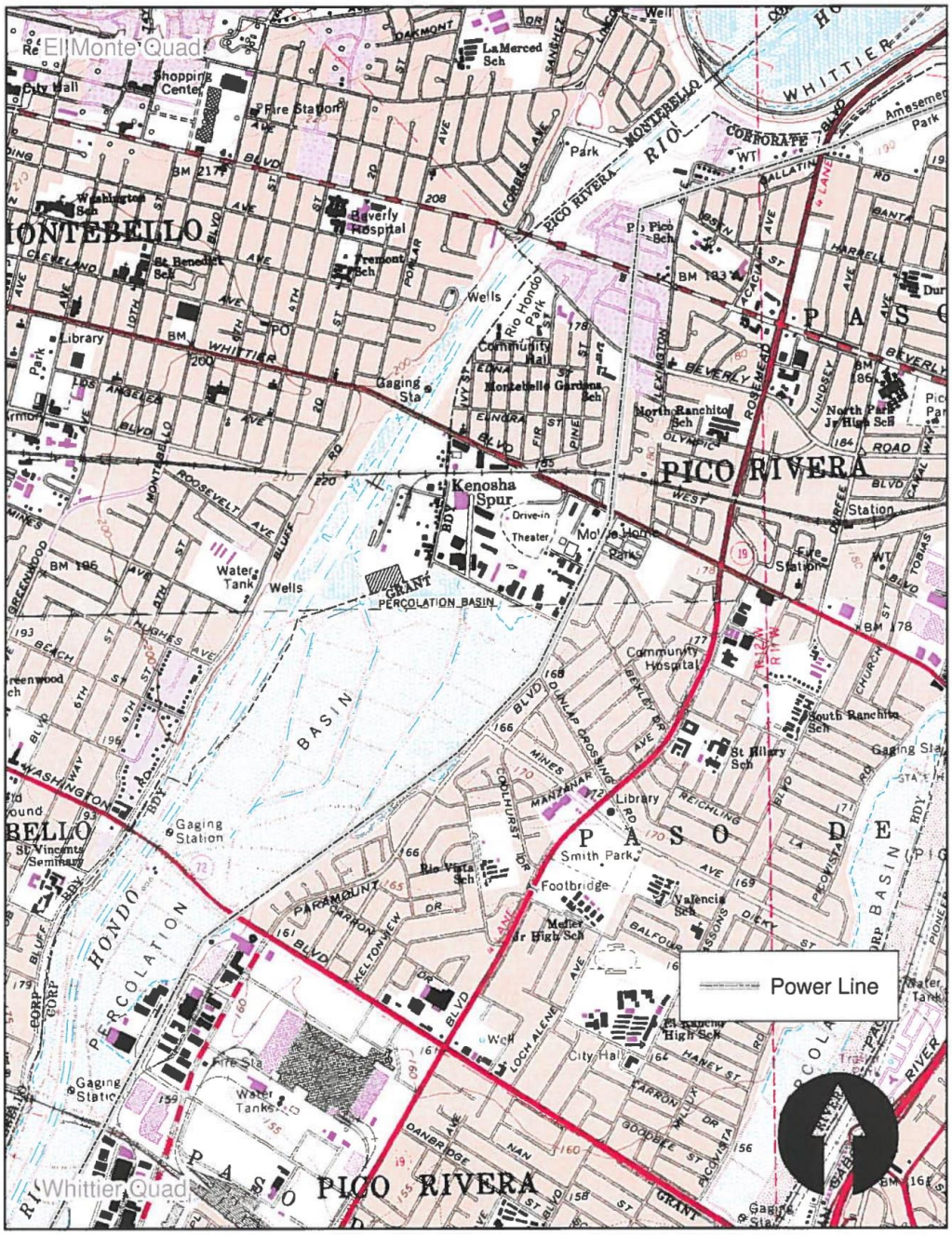
19-188983

State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LOCATION MAP

Primary #
HRI#
Trinomial

Page 9 of 18 *Resource Name or #: Boulder Dam-Los Angeles 287.5 Transmission Line

*Map Name: Whittier and El Monte *Scale: 1:24,000 *Date of Map:



DPR 523J (1/95) *Required Information

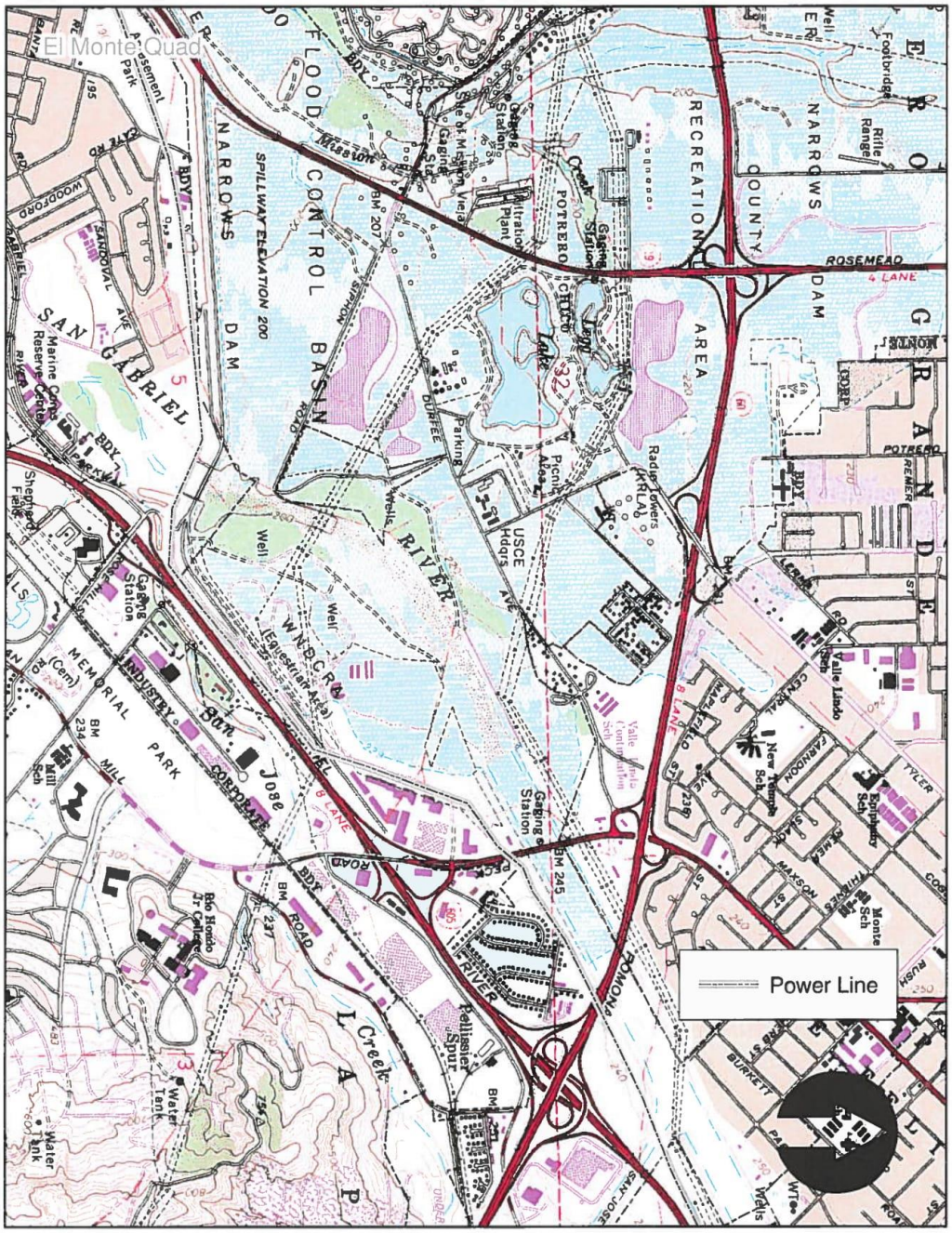
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State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LOCATION MAP

Primary #
HRI#
Trinomial

Page 10 of 18 *Resource Name or #: Boulder Dam-Los Angeles 287.5 Transmission Line

*Map Name: El Monte *Scale: 1:24,000 *Date of Map:



DPR 523J (1/95) *Required Information

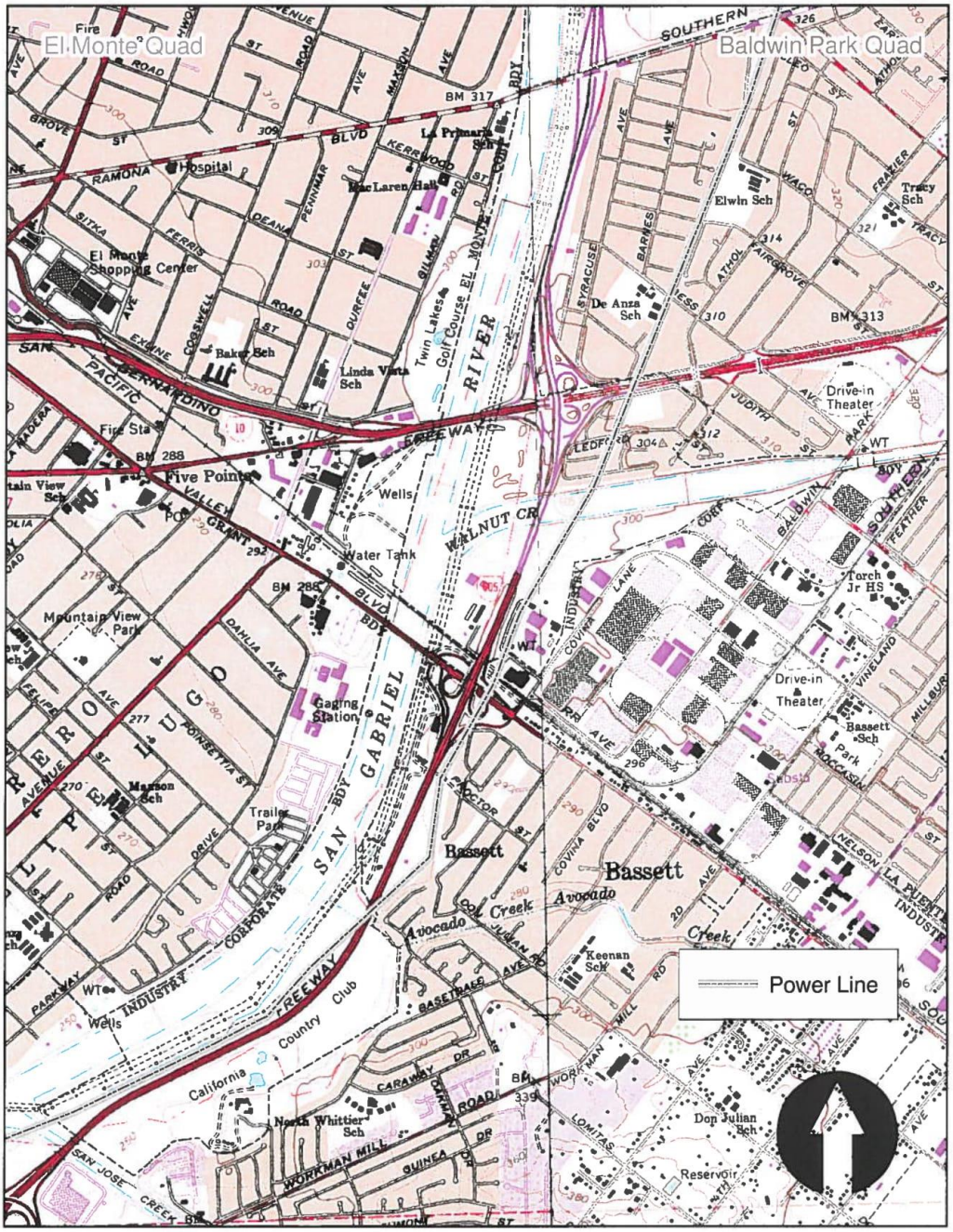
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State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LOCATION MAP

Primary #
HRI#
Trinomial

Page 11 of 18 *Resource Name or #: Boulder Dam-Los Angeles 287.5 Transmission Line

*Map Name: El Monte and Baldwin Park *Scale: 1:24,000 *Date of Map:



DPR 523J (1/95) *Required Information

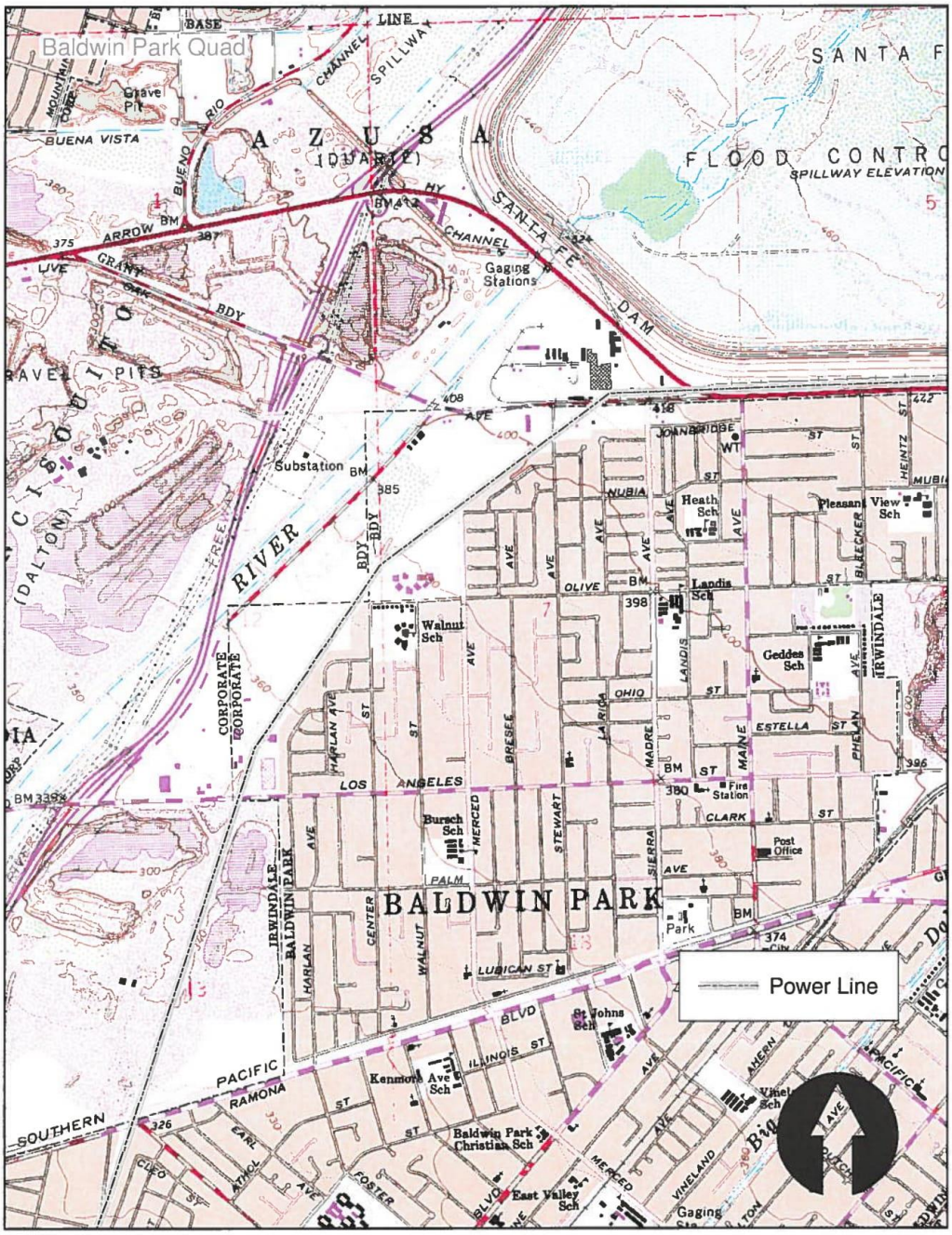
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State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LOCATION MAP

Primary #
HRI#
Trinomial

Page 12 of 18 *Resource Name or #: Boulder Dam-Los Angeles 287.5 Transmission Line

*Map Name: Baldwin Park *Scale: 1:24,000 *Date of Map:



DPR 523J (1/95) *Required Information

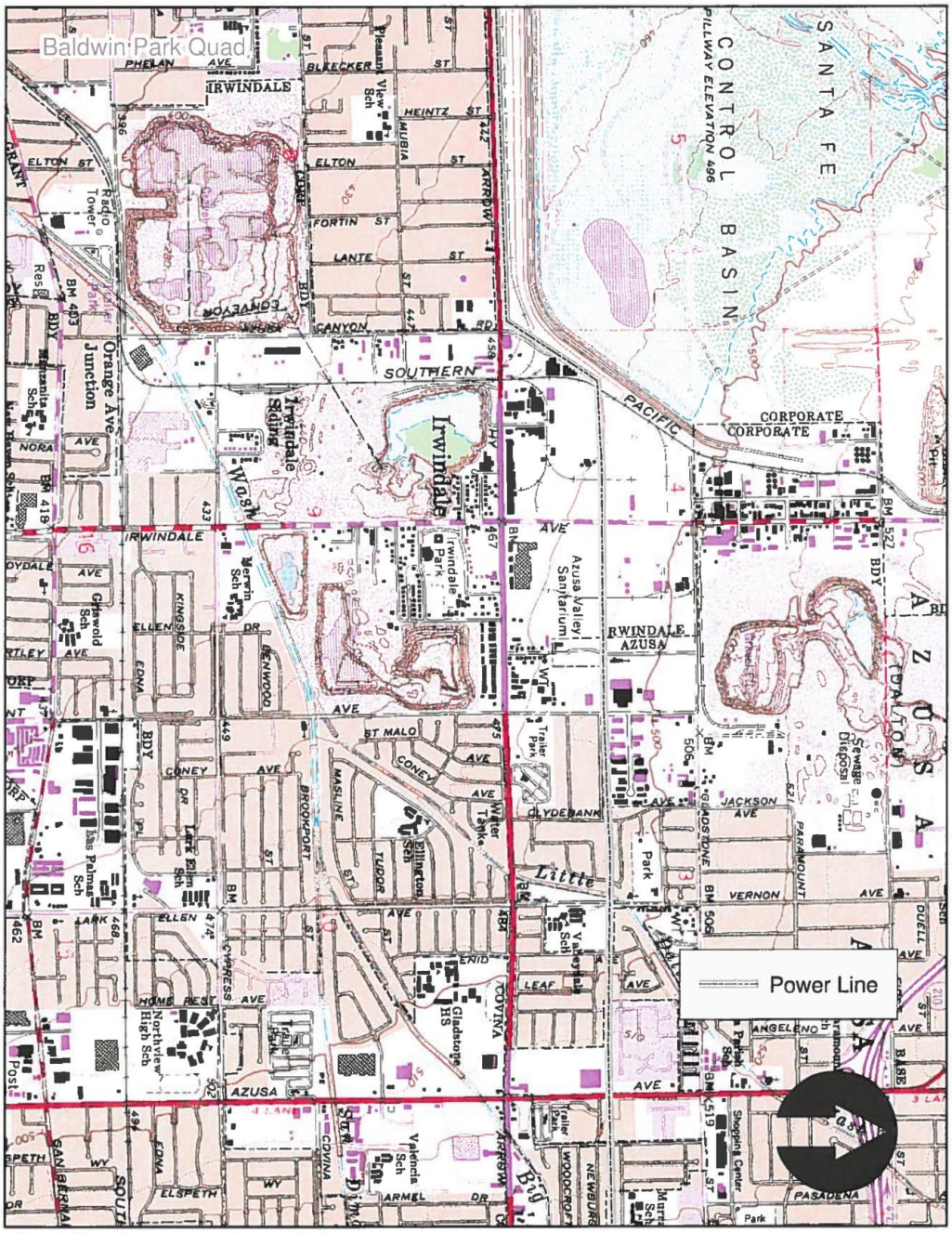
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State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LOCATION MAP

Primary #
HRI#
Trinomial

Page 13 of 18 *Resource Name or #: Boulder Dam-Los Angeles 287.5 Transmission Line

*Map Name: Baldwin Park *Scale: 1:24,000 *Date of Map:



DPR 523J (1/95) *Required Information

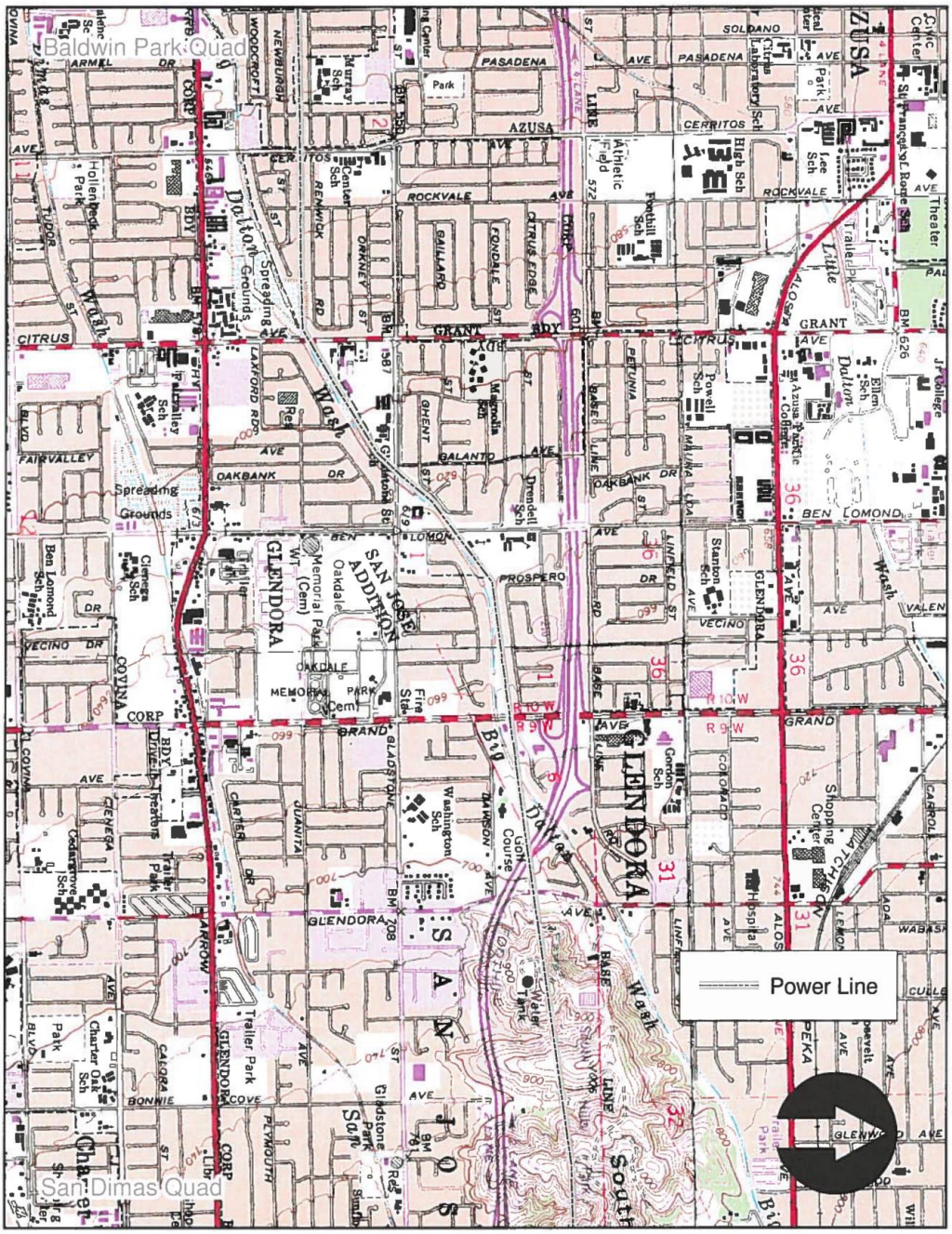
19-188983

State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LOCATION MAP

Primary #
HRI#
Trinomial

Page 14 of 18 *Resource Name or #: Boulder Dam-Los Angeles 287.5 Transmission Line

*Map Name: Baldwin Park and San Dimas *Scale: 1:24,000 *Date of Map:


Baldwin Park Quad
San Dimas Quad
Power Line
ZUSA
AZUSA
GLENDORA
SAN JOSE ADDITION
Spreading Grounds
Dalton Spreading Grounds
Wash
PASADENA
ROCKVALE
CITRUS
GRAND
BEN LOMOND
PROSPERO
VECINO
COVINA
CORP
Memorial Park (Cem)
Oakdale Memorial Park (Cem)
Fire Sta
Water Tank
Trailer Park
Golf Course
Athletic Field
Shopping Center
Hospital
Theater
Civic Center
Library
Park
High Sch
Lee Sch
Foothill Sch
Powell Sch
Ellen Sch
Stanton Sch
Gordon Sch
Washington Sch
Dexter Sch
Dorsey Sch
Glendora Sch
Ben Lomond Sch
Charter Oak Sch
Citrus Sch
Fairvalley Sch
Laxford Rd
Renwick Rd
Orkney St
Gallard
Fondale St
Citrus Edge
Petunia
Galanto
Oakbank Dr
Linfield St
Glendora Ave
Gladstone
Juanita
Barranca
Barbara
Carroll
Carlisle
Glenega
Bonnie
Calora
Plymouth
Cove
Wabash
Coronado
Alosta
Lemon
Lone Hill
Base Line
Foothill Blvd
Fairvalley Blvd
Citrus Edge
Trailer Park
Mobile Home Park
Cemetery
Golf Course
Water Tank
Fire Station
Hospital
Shopping Center
Theater
Library
Civic Center
Park
Athletic Field
Spreading Grounds
Wash
Dalton
Little
Glendora
San Dimas
South
Baldwin Park
Azusa
Covina
Charter
Glendora
Glendora
Glendora

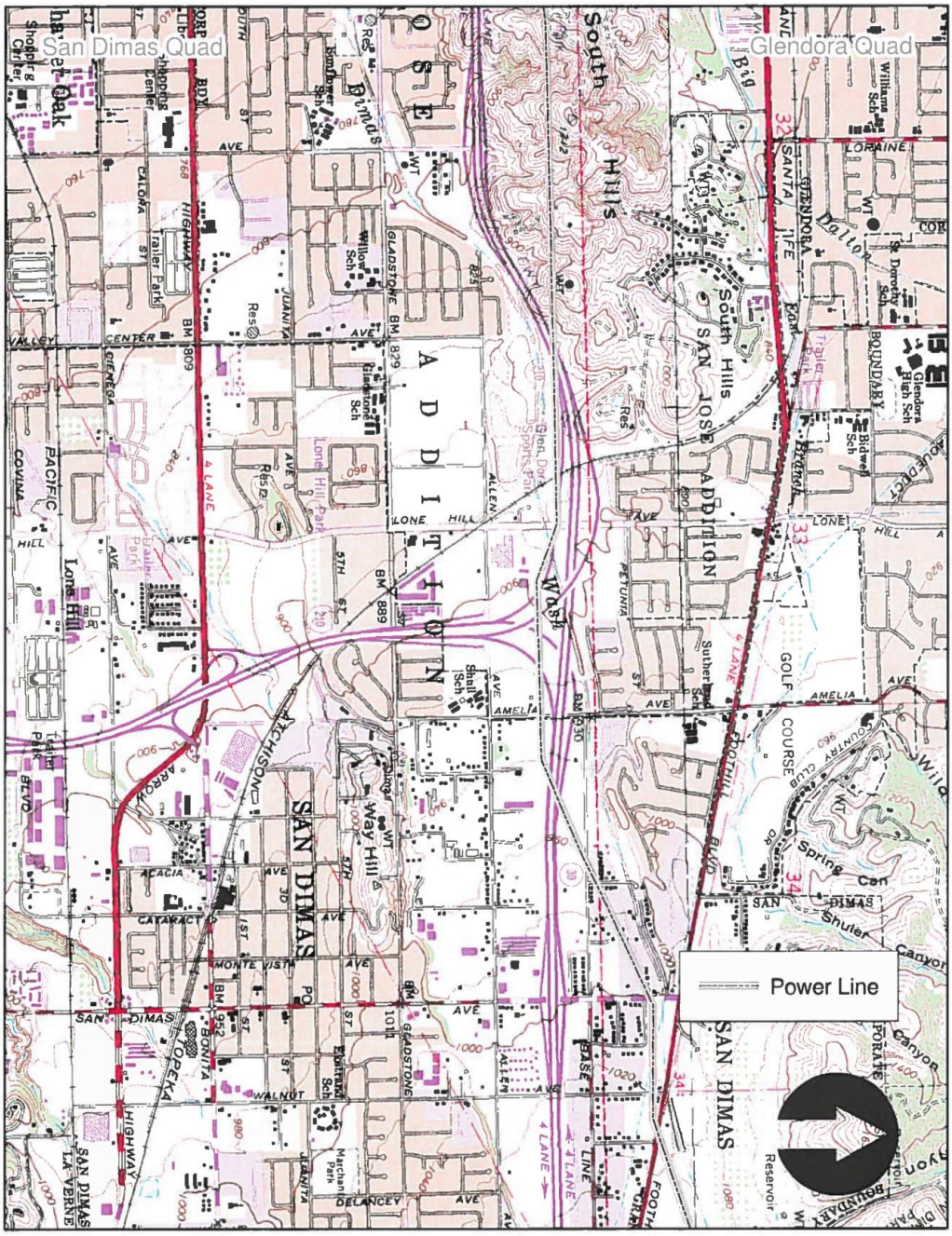
19-188983

State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LOCATION MAP

Primary #
HRI#
Trinomial

Page 15 of 18 *Resource Name or #: Boulder Dam-Los Angeles 287.5 Transmission Line

*Map Name: San Dimas and Glendora *Scale: 1:24,000 *Date of Map:



DPR 523J (1/95) *Required Information

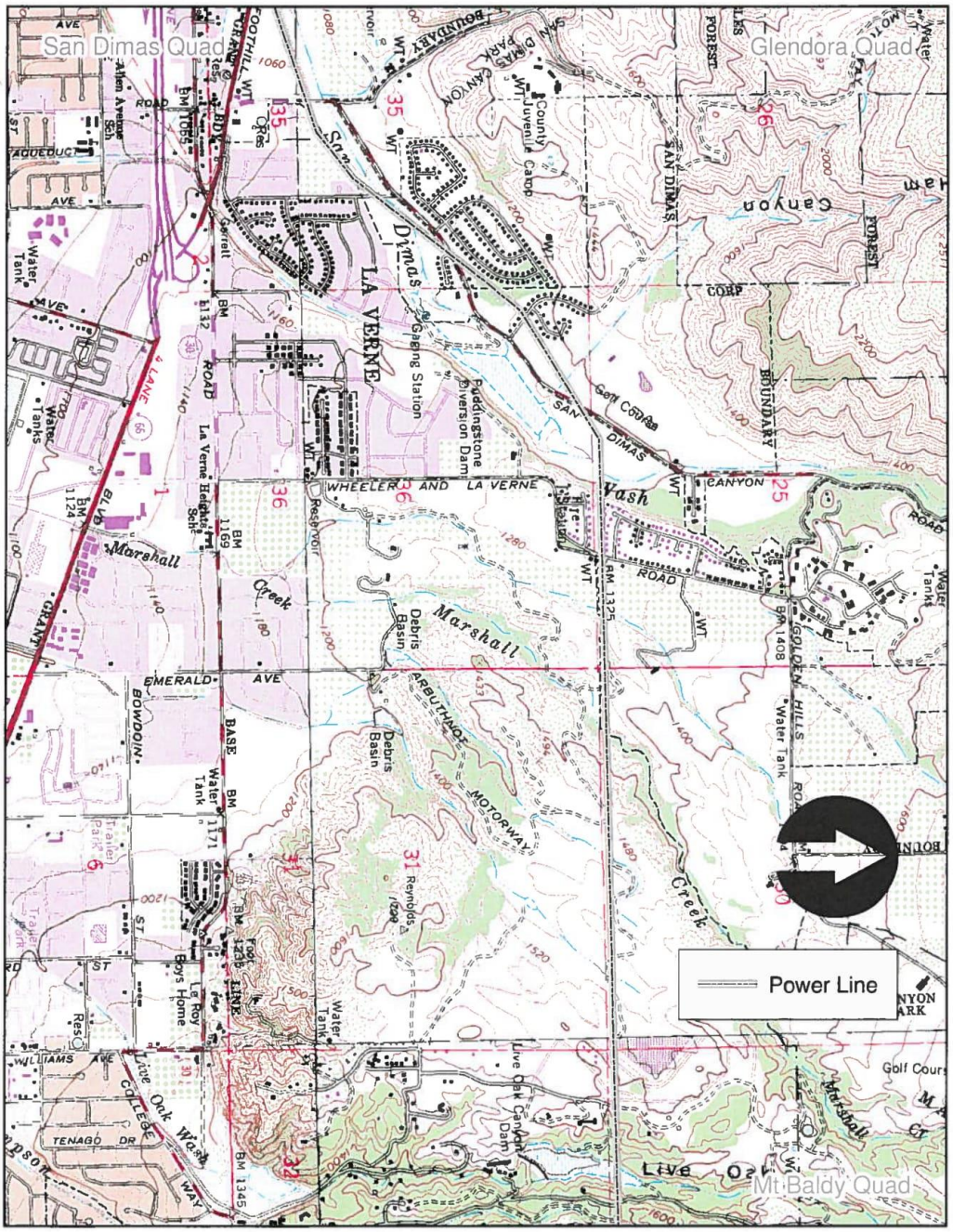
19-188983

State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LOCATION MAP

Primary #
HRI#
Trinomial

Page 16 of 18 *Resource Name or #: Boulder Dam-Los Angeles 287.5 Transmission Line

*Map Name: San Dimas, Glendora and Mt Baldy *Scale: 1:24,000 *Date of Map:



DPR 523J (1/95) *Required Information

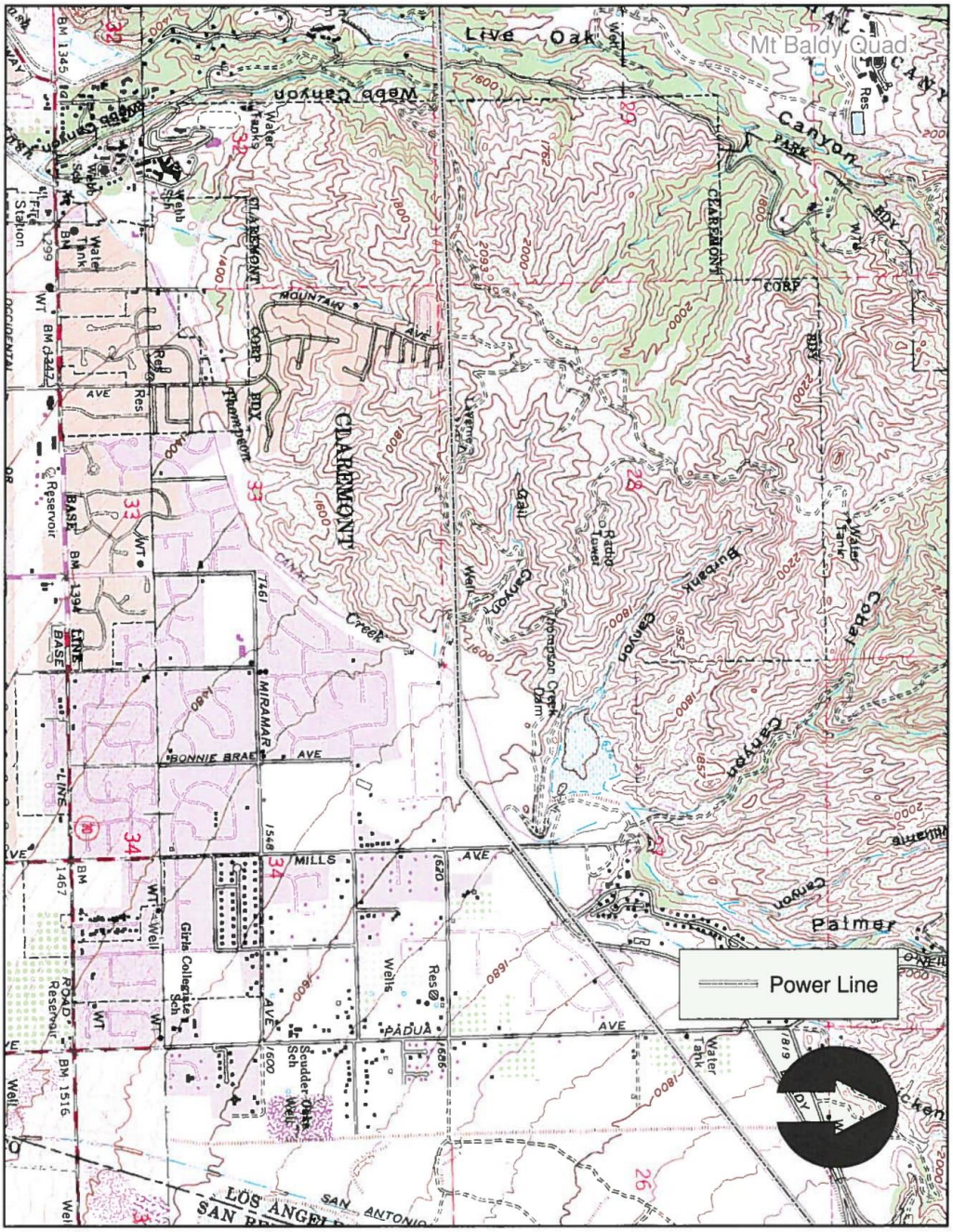
19-188983

State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LOCATION MAP

Primary #
HRI#
Trinomial

Page 17 of 18 *Resource Name or #: Boulder Dam-Los Angeles 287.5 Transmission Line

*Map Name: Mt Baldy *Scale: 1:24,000 *Date of Map:



DPR 523J (1/95) *Required Information

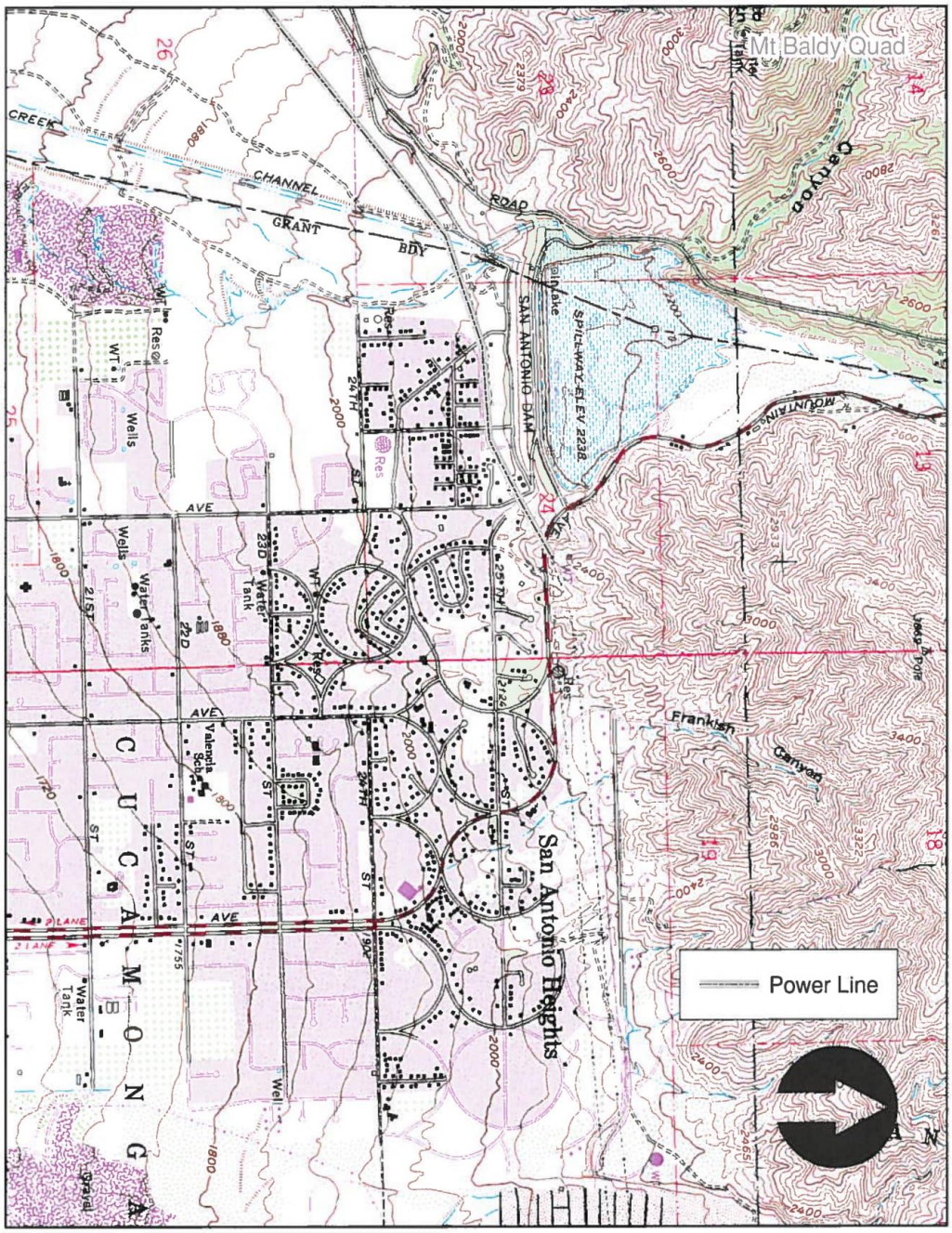
19-188983

State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LOCATION MAP

Primary #
HRI#
Trinomial

Page 18 of 18 *Resource Name or #: Boulder Dam-Los Angeles 287.5 Transmission Line

*Map Name: Mt Baldy *Scale: 1:24,000 *Date of Map:



DPR 523J (1/95) *Required Information

State of California – The Resources Agency DEPARTMENT OF PARKS AND RECREATION **CONTINUATION SHEET**	Primary # 19-188983 update HRI# Trinomial

Page 1 of 1 ***Resource Name or #:** Boulder Dam-Los Angeles 287.5 kV Transmission Line

***Recorded by:** Heather Gibson and Marc Beherec ***Date:** 02/20/2013 ☐Continuation ☒ Update

A segment of the Boulder Dam-Los Angeles 287.5 kV Transmission Line, including cables and two double circuit towers (see Photograph), was included in the survey for the Groundwater Reliability Improvement Program (GRIP) Recycled Water Project. On February 20, 2013, Heather Gibson and Marc Beherec conducted a cultural resources survey and observed the 1,670-foot segment of the resource. Two double circuit towers were also observed. There did not appear to be any alterations to the resource since it was last recorded by Caltrans in 2008 (Stewart 2008).

The Boulder Dam-Los Angeles 287.5 kV Transmission Line, including this segment, was determined eligible for the NRHP in 1999 (Van Wormer and Dolan 1999). There have been no significant alterations, and this segment contributes to the NRHP-eligible resource. It is considered a contributing feature of a NRHP-eligible historic property.



Boulder Dam-Los Angeles 287.5 kV Transmission Line (P-19-188983). View to Southwest.

REFERENCES:

Stewart, Noah M. 2008 *Department of Parks and Recreation Site Records, P-19-188983.* Report on file, South Central Coastal Information Center, California State University, Fullerton.

Van Wormer, Stephen and Christy Dolan. 1999. National Register of Historic Places Registration Form: Boulder Dam-Los Angeles 287.5 kV Transmission Line. San Diego: KEA Environmental for the U.S. Department of the Interior, BLM.

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

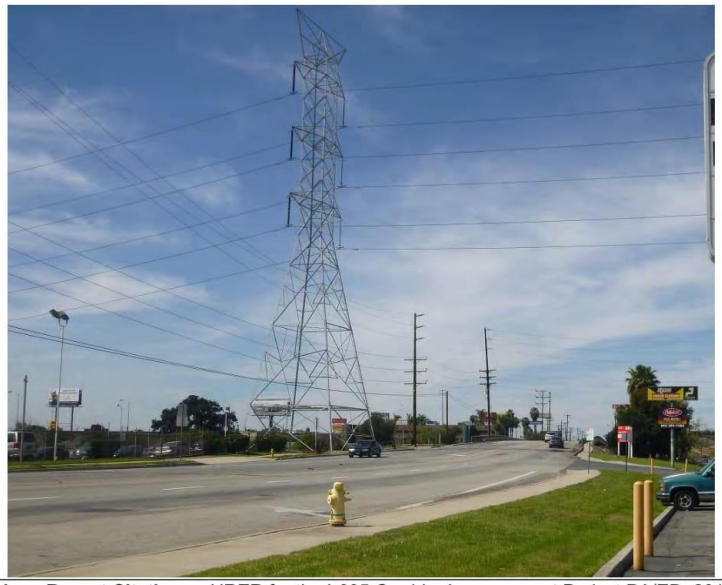
Primary # 19-188983 (Update)
HRI #
Trinomial
NRHP Status Code: 2B
Other Listings
Review Code Reviewer Date

***Resource Name or #:** Boulder Dam – Los Angeles 287.5kV Transmission Line (Los Angeles Department of Water & Power Boulder Lines 1 & 2) **Caltrans Map Reference No.:** 23
P1. Other Identifier:
***P2. Location:** ___ **Not for Publication** X **Unrestricted**
***a. County** Los Angeles **County/Route/Postmile:**
***b. USGS 7.5' Quad:** ~~Whittier~~ **Date** 1965, rev. 1981 **T** ___ **;R** ___ **of** ___ **of Sec** ___ ; ___ **B.M.**
c. Address **City** **Zip**
d. UTM:: **Zone** , **mE/** **mN**
***e. Other Locational Data** (APN #, etc.) Baldwin Park, Pico Rivera, Downey

***P3a. Description:** (Briefly describe resource below)
This update form is for three segments of the 270-mile-long Boulder Dam – Los Angeles 287.5 kV transmission line which runs from the Hoover Dam in Nevada west to the Century Receiving Station near Watts, in Los Angeles County, California. Specifically, these segments are located on the single row of double circuit towers line which descends from Upland, California over the Los Angeles Basin, running 41 miles south/southwest to the receiving station at Watts. Character-defining features of the line include the HH cables, skewed single circuit towers, route of line and associated direct access road, and double circuit towers. Three segments of this linear resource are documented in this update form: 1.) An approximately 1,545' segment in the Baldwin Park Vicinity; 2.) An approximately seven-mile long segment with its northern terminus in the southern portion of Baldwin Park continuing southward toward Pico Rivera; 3.) An approximately three-mile long segment between Pico Rivera and Downey. Please see the attached linear feature records for specific information regarding each segment.

***P3b. Resource Attibutes:** HP 11. Engineering Structure, H39. Other
****P4. Resources Present:** ___Building X Structure ___Object ___Site ___District ___Elements of District ___Other

P5a. . Photograph or Drawing (Photograph required for buildings, structures, and objects.)



P5b. Description of Photo: Looking southwest across Telegraph Road at Santa Ana Freeway (I-5) towards the overhead lines (vicinity of 7875 Telegraph Road, Pico Rivera) (ICF, 5/17/2018)
***P6. Date Constructed/Age:** 1936-1953 (NRHP nomination, 2000)
X Historic Prehistoric Both
***P7. Owner and Address:** Los Angeles Department of Water and Power 221 N. Figueroa Street, Room 1600, Los Angeles, CA 90012
***P8. Recorded by:** Jessica B. Feldman, ICF 555 W. 5th Street, Suite 3100 Los Angeles, CA 90013
***P9. Date Recorded:** 5/17/2018
***P10. Type of Survey:** Intensive Reconnaissance X Other **Describe:** Section 106 Compliance

***P11. Report Citation:** HRER for the I-605 Corridor Improvement Project PA/ED, 2019
***Attachments:** ___NONE X Map Sheet X Continuation Sheet ___Building, Structure and Object Record
X Linear Resource Record ___Archaeological Record ___District Record ___Milling Station Record ___Rock Art Record
___Artifact Record ___Photograph Record ___Other (List):

Caltrans DPR 523A (01/15) Page 1 of 9
*Required Information.

State of California — The Resources Agency | Primary #: 9-188983 (Update)
DEPARTMENT OF PARKS AND RECREATION | HRI #/Trinomial

CONTINUATION SHEET

____Continuation X Update

Caltrans Map Reference No.: 23

Resource Identifier: Boulder Dam – Los Angeles 287.5kV Transmission Line (Los Angeles Department of Water & Power Boulder Lines 1 & 2)

County/Route/Postmile:

L7. Integrity Considerations:

Recent modifications, other than routine maintenance, are not known. The cables are assumed to be aluminum and not copper; their general alignment and connection to the associated towers appears to be intact based on field surveys.

Evaluation:

This entire linear resource was evaluated for National Register eligibility in 1999 and found eligible under Criteria A and C. Under Criterion A, the entire transmission line is eligible for the National Register for its association with the construction of Boulder Dam, a National historic Landmark and water reclamation and irrigation project of exceptional importance to the American Southwest, as well as for its association with the industrial, economic, and urban development that occurred in metropolitan Los Angeles from the mid-1930s through the 1940s. Under Criterion C, the transmission line is eligible for the National Register owing to its unique engineering and structural characteristics – at the time, this transmission line was highest commercial operating voltage in the world, and carried 275kV across 270 miles of desert and mountains.

Character-defining features of the line include the HH cables, skewed single circuit towers, route of line and associated direct access road, and double circuit towers. Therefore, this 40 mile long segment of overhead transmission line is a contributing feature of a much large NRHP-eligible historic linear feature. Despite minor modifications, primarily from copper to aluminum materials, the wires are essential characteristics of the linear resource and continue to provide evidence of the original tower/cable configurations and the delivery of high voltage power over long distance. As a result, this segment of the Boulder Dam-Los Angeles 287.5 kV Transmission Line appear to continue to contribute to the overall NRHP-eligible property.

"Constructed by the Los Angeles Department of Power and Water between 1933 and 1936, the Boulder Dam – Los Angeles 287.5 kV Transmission Line represents a pinnacle of technological achievement in the development of the City of Los Angeles from the mid-1930s through the 1940s."

References:

Hayes, Brian. *Infrastructure. A Field Guide for the Industrial Landscape*. W.W. Norton & Company: New York, NY. 2005.

Van Wormer, Stephen and Christy Dolan. *Boulder Dam – Los Angeles 287.5 kV Transmission Line*. National Register of Historic Places Registration Form. 2000.

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LINEAR FEATURE RECORD

Primary # 19-188983 (Update)
HRI#
Trinomial

Resource Identifier: Boulder Dam – Los Angeles 287.5kV Transmission Line (Los Angeles Department of Water & Power Boulder Lines 1 & 2)

Caltrans Map Reference No.: 23

County/Route/Postmile:

L1. Historic and/or Common Name: LADWP Boulder Lines 1 & 2, Upland to Watts section (Baldwin Park vicinity segment only)

L2a. Portion Described: ___ Entire Resource X Segment ___ Point Observation **Designation:**

b. Location of point or segment: (Provide below UTM coordinates, legal description, other useful locational data. Show the field-inspected area on Location Map)
Segment 1: ~1,545 feet of alignment in Baldwin Park, beginning at a tower just south of Farnell Street, crossing Walnut Creek to the south and connecting to towers in the vicinity of 263 N. Covina Lane in La Puente. Please see location map.

L3. Description:
Close-up visual observation of this segment was limited due to lack of access; however, these are tapered concrete monopoles with three sets of arms on one side, near the top of the pole. Other materials include the wires and insulation material.

L4. Dimensions:
(In feet for historic, meters for prehistoric resources)

- **a. Top Width:** n/a
- **b. Bottom Width:** n/a
- **c. Height or Depth:** n/a
- **d. Length of Segment:** 1,545 feet

L5. Associated Resources: (list below)

L4e. Sketch of Cross-Section (include scale) **Facing:** N/A

L6. Setting: (briefly describe below)
Transmission corridor right-of-way typically includes a paved or unpaved access road. Setting is urban, often parallel to, or intersecting, roads and freeways, or flood control channels.

L7. Integrity Considerations: (briefly describe below)
It was observed that despite modifications to materials and workmanship, primarily the result of replacement of the original type of tower, this resource continues to provide evidence of the original tower/cable configurations and the delivery of high voltage power over a long distance.

L8a. Photograph, Map or Drawing



L8b. Description of Photo/Map/ Drawing (View, scale, etc.)
Image taken from Westcott Avenue (Baldwin Park), looking south towards Interstate 10 (I-10), which shows the type of towers that replaced the original steel lattice towers (ICF, 5/2018)

L9. Remarks:

L10. Form Prepared by: (Name, affiliation, and address)
Jessica B. Feldman
ICF
555 W. 5th Street
Los Angeles, CA 90013

L11. Date: December 11, 2018

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LINEAR FEATURE RECORD

Primary # 19-188983 (Update)
HRI#
Trinomial

Resource Identifier: Boulder Dam – Los Angeles 287.5kV Transmission Line (Los Angeles Department of Water & Power Boulder Lines 1 & 2)

Caltrans Map Reference No.: 23

County/Route/Postmile:

L1. Historic and/or Common Name: LADWP Boulder Lines 1 and 2, Upland to Watts section (Baldwin Park to Pico Rivera segment only)

L2a. Portion Described: ___ Entire Resource _X_ Segment ___ Point Observation **Designation:**

b. Location of point or segment: (Provide below UTM coordinates, legal description, other useful locational data. Show the field-inspected area on Location Map)
Segment 2: ~36,500 feet (~7 miles) of alignment beginning in the southern part of Baldwin Park on the east side of the San Gabriel River Freeway (Interstate 605/I-605). The transmission line continues in a south/southwest configuration, crossing the highway and continuing between I-605 and the San Gabriel River, over a diversion channel, the Pomona Freeway (State Route 60/SR-60), Peck Road and south through the City of Industry. It is located within close proximity of the west side of I-605 in the City of Industry and turns west/southwest near Rose Hills Road and heads into Pico Rivera, where it turns south at Ibsen Street and Paramount Boulevard, terminating just north of Loch Lomond Drive. Please see location map.

L3. Description:
Close visual inspection was not possible due to this being a private property/utility. The primary materials observed are the metal construction of the tower itself and the materials used for the wire and possible insulation materials.

L4. Dimensions:
(In feet for historic, meters for prehistoric resources)
- **a. Top Width:** n/a
- **b. Bottom Width:** n/a
- **c. Height or Depth:** n/a
- **d. Length of Segment:** 1,545 feet

L5. Associated Resources: (list below)

L4e. Sketch of Cross-Section (include scale) **Facing:** N/A

L6. Setting: (briefly describe below)
Transmission corridor right-of-way typically includes a paved or unpaved access road. Setting is urban, often parallel to, or intersecting, roads and freeways, or flood control channels.

L7. Integrity Considerations: (briefly describe below)
It was observed that despite modifications to materials and workmanship, this resource continues to provide evidence of the original tower/cable configurations and the delivery of high voltage power over a long distance.

L8a. Photograph, Map or Drawing



L8b. Description of Photo/Map/ Drawing (View, scale, etc.)
Image looking towards tower (original design) and transmission lines in the vicinity of 471 S. Rall Avenue (La Puente), looking southwest. (ICF, 5/2018)

L9. Remarks:

L10. Form Prepared by: (Name, affiliation, and address)
Jessica B. Feldman
ICF
555 W. 5th Street
Los Angeles, CA 90013

L11. Date: December 11, 2018

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LINEAR FEATURE RECORD

Primary # 19-188983 (Update)
HRI#
Trinomial

Resource Identifier: Boulder Dam – Los Angeles 287.5kV Transmission Line (Los Angeles Department of Water & Power Boulder Lines 1 & 2)

Caltrans Map Reference No.: 23

County/Route/Postmile:

L1. Historic and/or Common Name: LADWP Boulder Lines 1 & 2, Upland to Watts section (Pico River to Downey segment only)

L2a. Portion Described: ___ Entire Resource X Segment ___ Point Observation **Designation:**

b. Location of point or segment: (Provide below UTM coordinates, legal description, other useful locational data. Show the field-inspected area on Location Map)
Segment 3: ~3 miles of alignment between Pico Rivera and Downey. Beginning at approximately Loch Lomond Drive south of Whittier Boulevard and the residential streets to the west of Paramount Boulevard. Much of this corridor is located to the west of the Rio Hondo flood plan. Please see location map

L3. Description:
Metal is the primary construction material for the steel lattice type of tower; other materials include the physical wires as well as any insulation material.

L4. Dimensions:
(In feet for historic, meters for prehistoric resources)

- **a. Top Width:** n/a
- **b. Bottom Width:** n/a
- **c. Height or Depth:** n/a
- **d. Length of Segment:** ~15,000 feet (~3 miles)

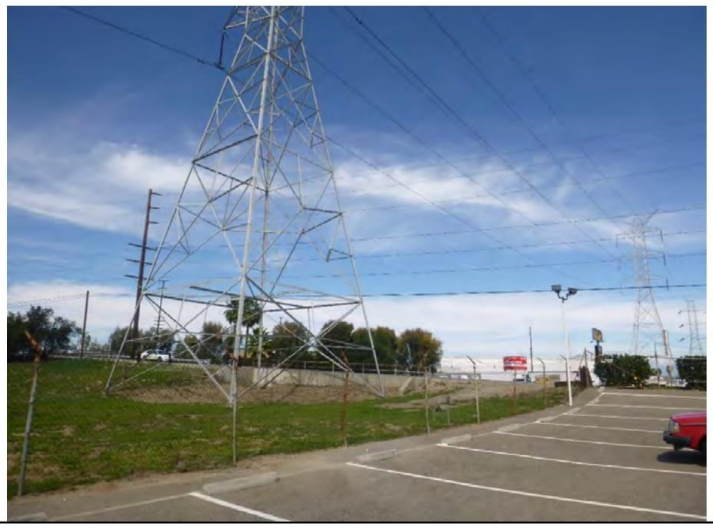
L5. Associated Resources: (list below)

L4e. Sketch of Cross-Section (include scale) **Facing:** N/A

L6. Setting: (briefly describe below)
Transmission corridor right-of-way typically includes a paved or unpaved access road. Setting is urban, often parallel to, or intersecting, roads and freeways, or flood control channels.

L7. Integrity Considerations: (briefly describe below)
It was observed that despite modifications to materials and workmanship, this resource continues to provide evidence of the original tower/cable configurations and the delivery of high voltage power over a long distance.

L8a. Photograph, Map or Drawing



L8b. Description of Photo/Map/ Drawing (View, scale, etc.)
Looking northwest towards transmission line from Metro parking lot in the vicinity of 7878 Telegraph Road, ICF, 3/ 2018

L9. Remarks:

L10. Form Prepared by: (Name, affiliation, and address)
Jessica B. Feldman/ICF
555 W. 5th Street
Los Angeles, CA 90013

L11. Date: December 11, 2018

State of California — The Resources Agency DEPARTMENT OF PARKS AND RECREATION **LOCATION MAP**	Primary # 19-188983 (Update) HRI# Trinomial

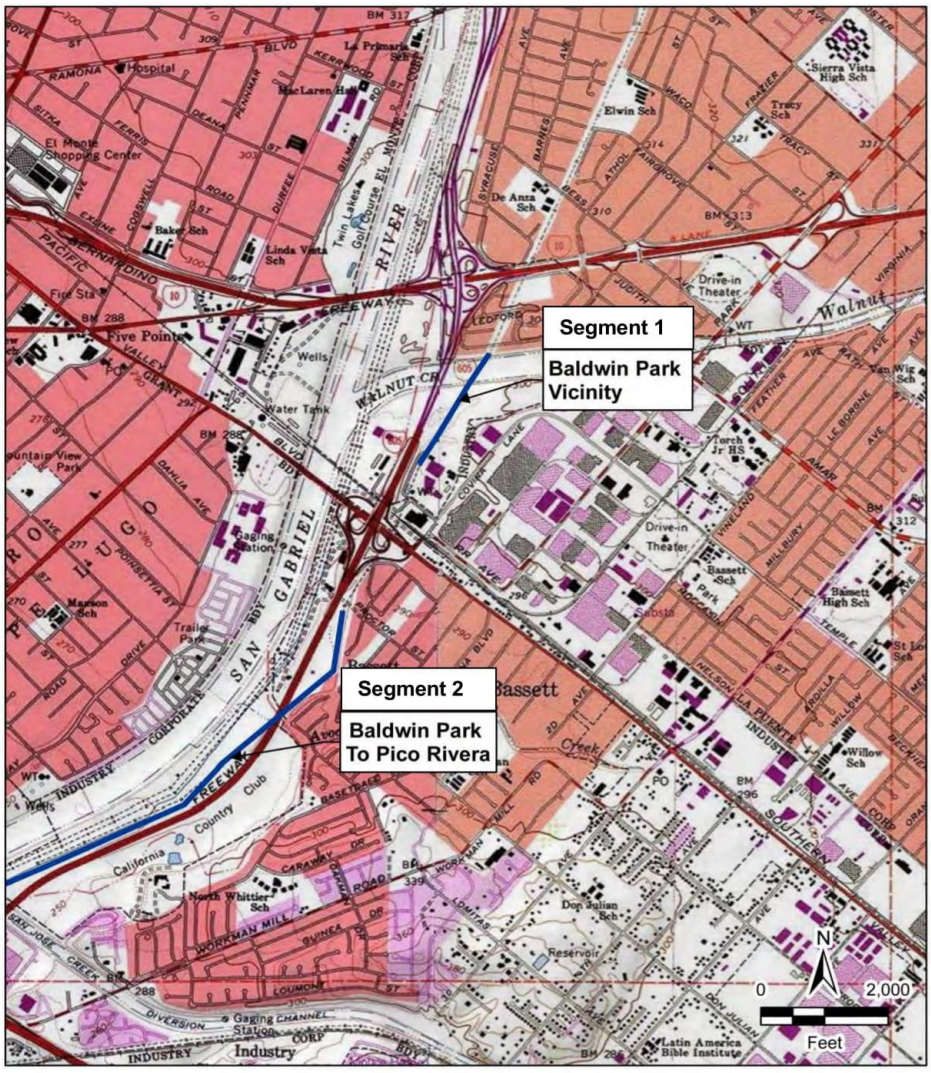
Resource Identifier: Boulder Dam – Los Angeles 287.5kV Transmission Line (Los Angeles Department of Water & Power Boulder Lines 1 & 2)

Caltrans Map Reference No.: 23

County/Route/Postmile:

Map Name: ~~Whittier~~ *Scale: 1:24,000 *Date of Map: 1965; rev. 1981

EL MONTE & BALDWIN PARK QUADS



Caltrans DPR 523J (1/95) Page 6 of 9
*Required information

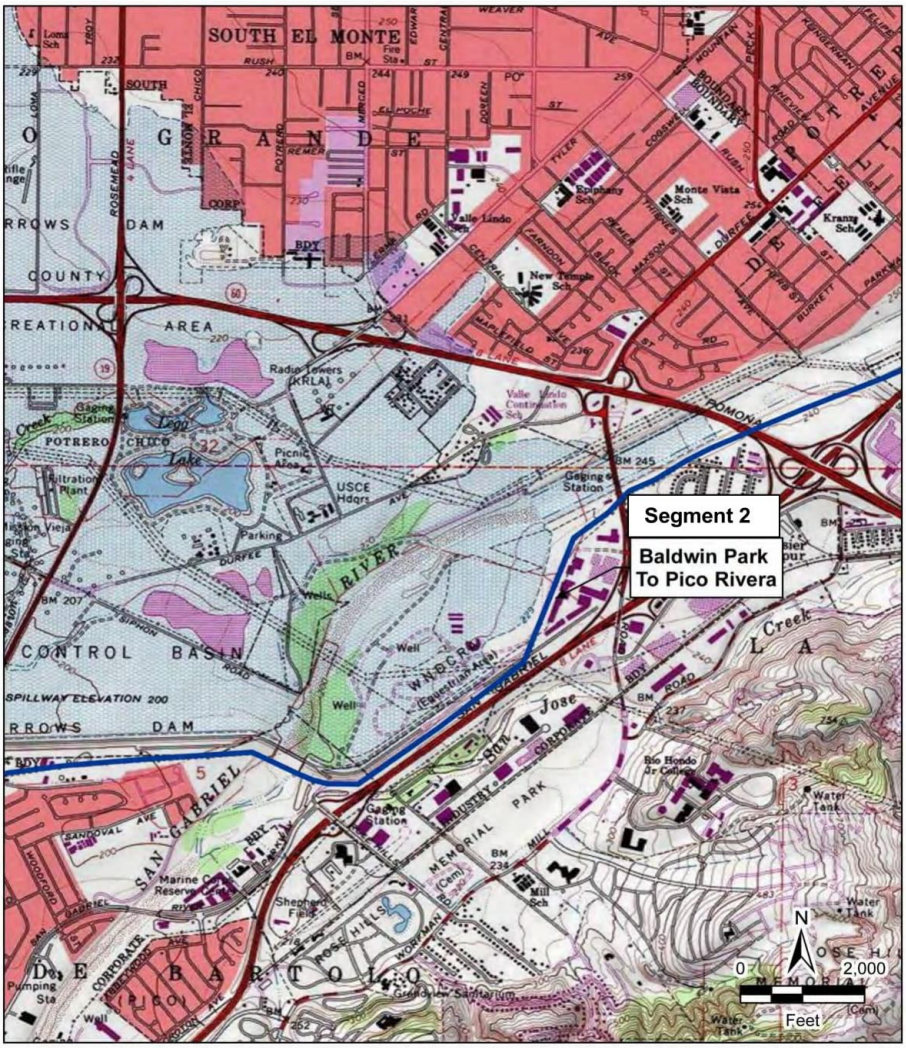
State of California — The Resources Agency DEPARTMENT OF PARKS AND RECREATION **LOCATION MAP**	Primary #	19-188983 (Update)
	HRI#	
	Trinomial	

Resource Identifier: Boulder Dam – Los Angeles 287.5kV Transmission Line (Los Angeles Department of Water & Power Boulder Lines 1 & 2)

Caltrans Map Reference No.: 23

County/Route/Postmile:

Map Name: ~~Whittier~~ EL MONTE QUAD *Scale: 1:24,000 *Date of Map: 1965; rev. 1981



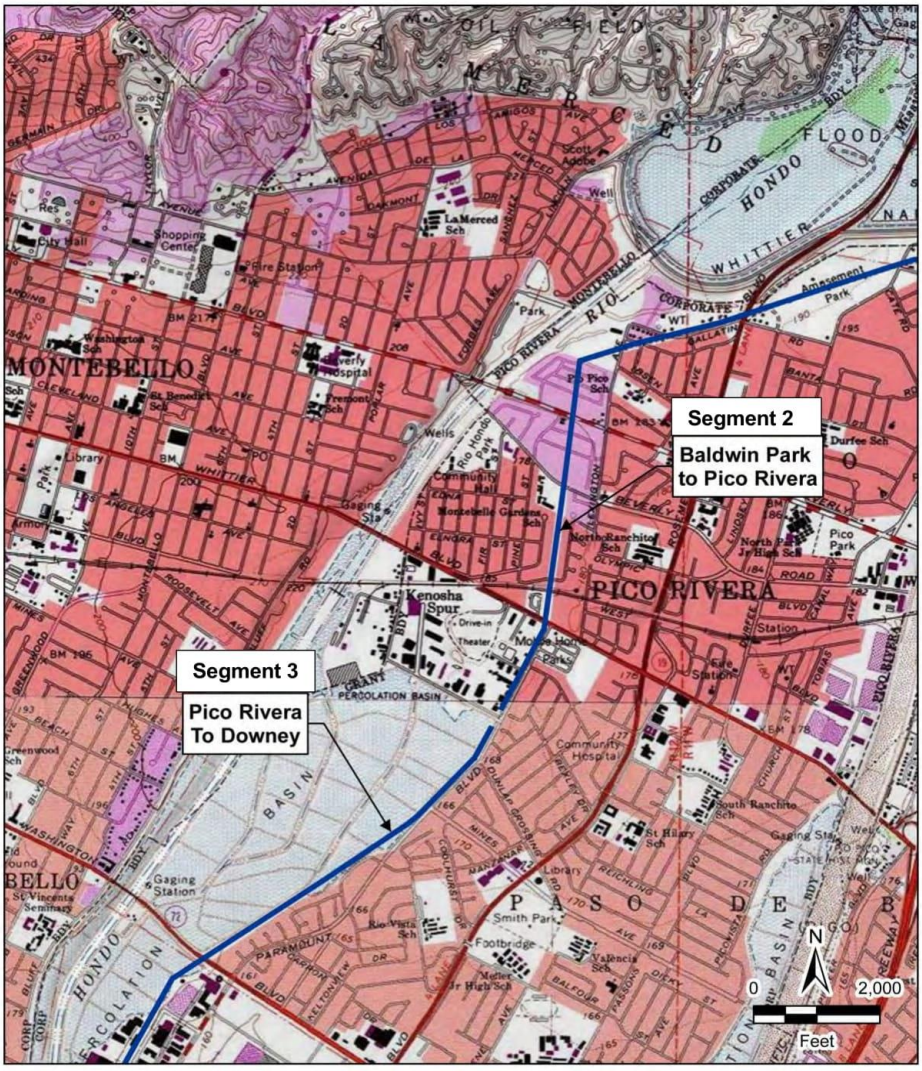
State of California — The Resources Agency DEPARTMENT OF PARKS AND RECREATION **LOCATION MAP**	Primary # 19-188983 (Update) HRI# Trinomial

Resource Identifier: Boulder Dam – Los Angeles 287.5kV Transmission Line (Los Angeles Department of Water & Power Boulder Lines 1 & 2)

Caltrans Map Reference No.: 23

County/Route/Postmile:

Map Name: ~~Whittier~~ EL MONTE & WHITTIER *Scale: 1:24,000 *Date of Map: 1965; rev. 1981



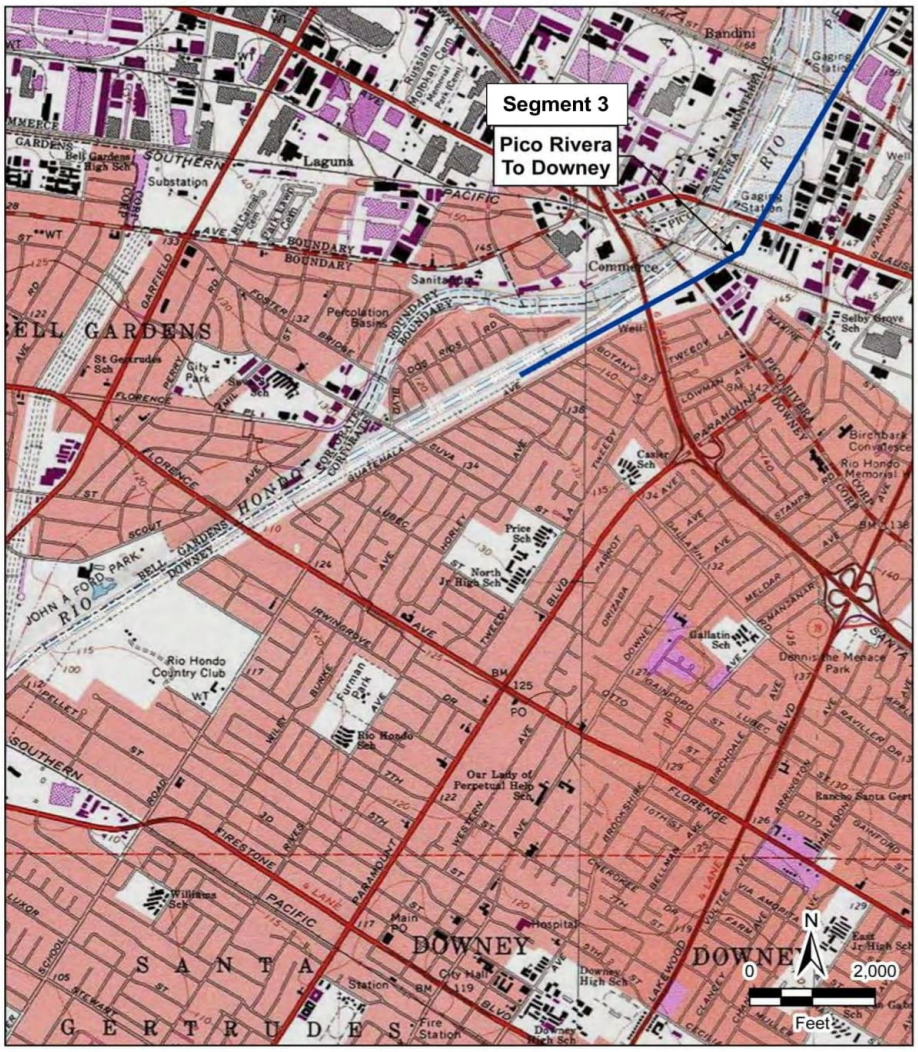
State of California — The Resources Agency DEPARTMENT OF PARKS AND RECREATION **LOCATION MAP**	Primary #	19-188983 (Update)
	HRI#	
	Trinomial	

Resource Identifier: Boulder Dam – Los Angeles 287.5kV Transmission Line (Los Angeles Department of Water & Power Boulder Lines 1 & 2)

Caltrans Map Reference No.: 23

County/Route/Postmile:

Map Name: Whittier & SOUTH GATE *Scale: 1:24,000 *Date of Map: 1965; rev. 1981



State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary # 19-186110
HRI #
Trinomial 30-176630
NRHP Status Code
Other Listings
Review Code _____ Reviewer _____ Date _____

Page 1 of 14 *Resource Name or #: (Assigned by Recorder) C-Los Angeles-A-1

P1. Other Identifier: Union Pacific Railroad

*P2. Location: ☐ Not for Publication ☒ Unrestricted *a. County Los Angeles and Orange

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

*b. USGS 7.5' Quad see below Date _____ T _____; R _____; ____ ¼ of ____ ¼ of Sec ____; _____ B.M.

c. Address _____ City _____ Zip _____

d. UTM: (Give more than one for large and/or linear resources) Zone: _____; _____ mE/ _____ mN

e. Other Locational Data: (e.g. parcel #, directions to resource, elevation, etc., as appropriate)

This segment of the railroad is located on the following USGS quads: Los Angeles (1966, PR 1981), South Gate (1964, PR 1981), Whittier (1965, PR 1981), Los Alamitos (1964, PR 1981), and Anaheim (1965, PR 1981).

*P3a. Description (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

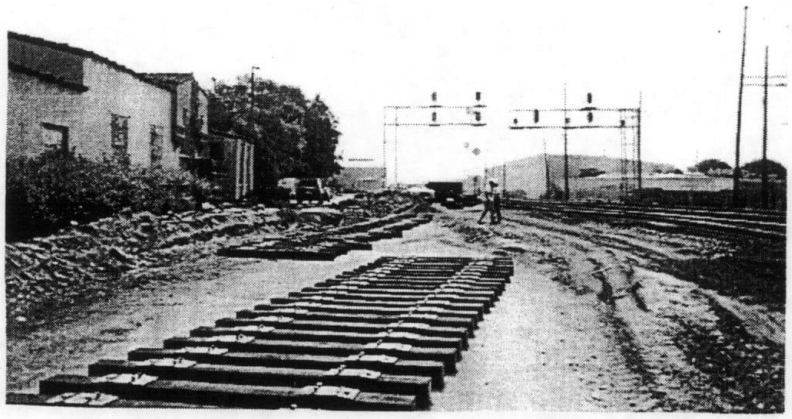
The Union Pacific Railroad is a standard gauge railroad which runs through the Los Angeles area. It is part of a larger resource, the Union Pacific Railroad line. Numerous associated features include railroad stations, sidings, spurs, and railyards.

The rail lines that were included in our survey areas were all acquired by Union Pacific, but were originally other railroad lines. These include the Southern Pacific, the Pacific Electric, the Los Angeles and San Pedro railroad, and the Los Angeles and Salt Lake Railroad. The Southern Pacific through Los Angeles area was constructed in the 1870s, and originally ran south from Los Angeles through Watts and Compton to Willmington, and east from Los Angeles through Alhambra, San Gabriel, Puente, Pomona and on through Colton before heading toward Yuma. (See continuation sheet.)

*P3b. Resource Attributes: (List attributes and codes) HP39. Other - Railroad

*P4. Resources present: ☐ Building ☒ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (isolates, etc.)

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects)



P5b. Description of Photo: (View, date, accession #) Railroad overview, Los Angeles

*P6. Date Constructed/Age and Sources: ☒ Historic ☐ Prehistoric ☐ Both
1870s-present

*P7. Owner and Address:
Union Pacific Railroad

*P8. Recorded by: (Name, affiliation, and address) S. Ashkar
Jone s & Stokes Associates, Inc.
2600 V Street, Suite 100
Sacramento, CA 95818

*P9. Date Recorded: 6/22/99

*P10. Survey Type: (Describe)
Cursory and Intensive pedestrian surveys

*P11. Report Citation: (Cite survey report and other sources, or enter "none.") Jones & Stokes. 1999. Cultural Resources Inventory Report for Williams Communications, Inc. Proposed Fiber Optic Cable System Installation Project, Los Angeles to Anaheim, Los Angeles and Orange Counties

*Attachments: NONE ☒ Location Map ☐ Sketch Map ☒ Continuation Sheet ☒ Building, Structure, and Object Record
☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record
☐ Artifact Record ☐ Photograph Record ☐ Other (List): _____

DPR 523A (1/95) *Required Information

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

Primary # 19-186110
HRI # 30-176630

BUILDING, STRUCTURE, AND OBJECT RECORD

Page 2 of 14

*NRHP Status Code

*Resource Name or # (Assigned by recorder) C-Los Angeles-A-1

B1. Historic Name: Southern Pacific Railroad

B2. Common Name: Union Pacific Railroad

B3. Original Use: railroad B4. Present Use: railroad

*B5. Architectural Style:

*B6. Construction History: (Construction date, alterations, and date of alterations)

Major portion of track and associated spurs, sidings, and station were constructed between 1869 and 1905. The tracks are currently in use and maintenance and replacement continue.

*B7. Moved? [X] No [ ] Yes [ ] Unknown Date: Original Location:

*B8. Related Features:

Numerous sidings, spurs, stations and railyards

B9a. Architect: b. Builder:

*B10. Significance: Theme: Railroad Area: California, U.S.

Period of Significance: 1869 to present Property Type: railroad Applicable Criteria: A, B

(Discuss imporance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

Portions of this railroad are additions to the first transcontinental railroad. Other portions were instrumental in the development of Los Angeles as a major business center, or other communities. The modern Union Pacific Railroad system is made up of other, often smaller historic railroads that helped to form the economy and population of Southern California. The rail system enabled the transportation of goods to ports and the emmigration of large numbers of people. The railroad is also associated with a number of important historical figures, including the Big Four (Mark Hopkins, Collis P. Huntington, Leland Stanford, and Charles Crocker). Therefore, the historic railroad is eligible for NRHP listing under Criteria A and B.

B11. Additional Resource Attributes: (List attributes and codes)

*B12. References:

(Sketch Map with north arrow required.)

B13. Remarks:

*B14.Evaluator: S. Ashkar Jones & Stokes
2600 V Street, Suite 100 Sacramento, CA 95818-1914

*Date of Evaluation: 6/22/99

(This space reserved for official comments.)

DPR 523 B (1/95)

*Required Information

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary # 19-186110
HRI #
Trinomial 30-176630

Page 3 of 14 *Resource Name or # (Assigned by recorder) C-Los Angeles-A-1

*Recorded by S. Ashkar, S. Hilton, C. Havelaar, C. Fish *Date 6/22/99 [X] Continuation [ ] Update

P3a. Description

Another Southern Pacific Line headed southeast from Watts through Norwalk and Buena Park to Santa Ana.

The Pacific Electric was formed in 1902 by Henry E. Huntington, the nephew of railroad mogul Collis P. Huntington. In direct competition with the Southern Pacific Railroad, the Pacific Electric conntected 42 incorporated cities within a 35 mile radius of Los Angeles. The trains were know as the Big Red Cars, and prior to the popularization of automobiles provided the preferred means of transportation. At it's peak in 1926, the company operated 1,164 miles of track throughout the Los Angeles area. Henry Huntington sold his shared to Southern Pacific in 1910, and in 1911 Southern Pacific merged with other local railways to create the Pacific Electric Railway, which provided expanded the system. With the rise of the automobile, the Pacific Electric sold its passenger service to Metropolitan Coach Lines, which operated busses in 1953. Service between Los Angeles and Long Beach officially ended on April 8, 1961, signaling the end of the Big Red Cars. The rail line located within our project areas included the portion that rund down the center of Alhambra Avenue, though some of the rails have been removed. (Crump 1970.)

The Los Angeles and San Pedro Railroad was incorporated in February 1868 to build the first railroad in Southern California and construction began in 1869. The line connected the port of Wilmington and the city of Los Angeles. When the Southern Pacific was built through Los Angeles, the Southern Pacific received subsidies and the stock of the Los Angeles and San Pedro Railroad. The Southern Pacific consolidated with the Los Angeles and San Pedro Railroad in 1874 and the track became the Harbor Division of the Southern Pacific. (Dunscomb 1967; Robinson 1978.)

The San Pedro, Los Angeles and Salt Lake Railroad Company was formed in 1901 for the purpose of constructing a rail line between Los Angeles and Salt Lake City. The line formally opened on May 1, 1905. The line extended north from Los Angeles to Las Vegas and on to Salt Lake City. Other lines ran from Los Angeles south to Wilmington via Bells and Workman, and east from Los Angeles through Pico, Clayton, paralleling the Southern Pacific line through Walnut, Sprada and Ontario and dipping south from there towards Riverside. The name was shortened to the Los Angeles and Salt Lake in 1916. In 1921, the line became the southwestern arm of the Union Pacific. (Fickewirth 1992; Hofsommer 1986; Myrick 1992.)

The Southern Pacific eventually absorbed the smaller rail lines and the Southern Pacific emerged as the name for the system in 1884 when the Southern Pacific Company of Kentucky was incorporated. In the 1990s, the Union Pacific acquire the holdings of the Southern Pacific Company.

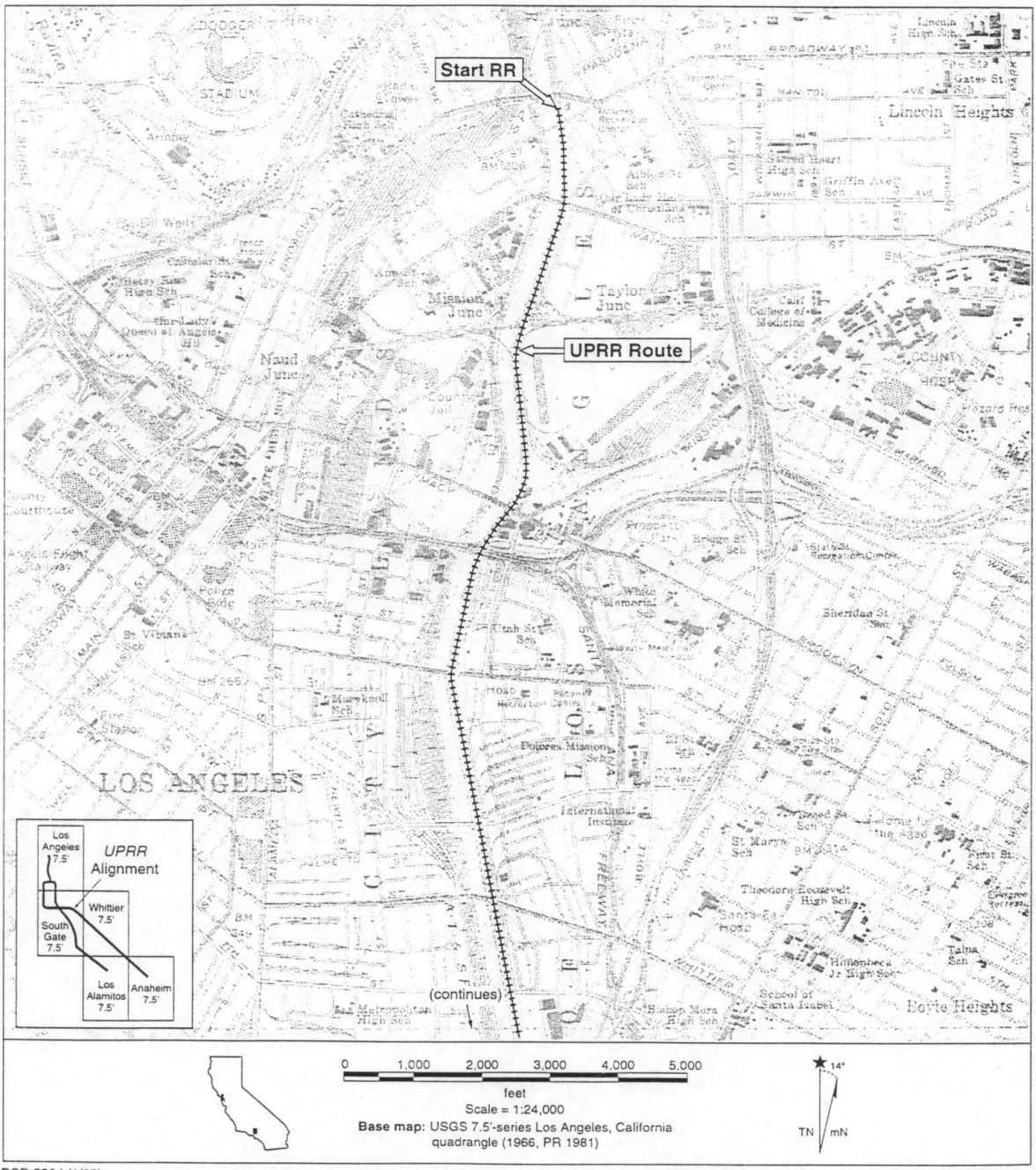
DPR 523L (1/95) *Required information

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary # 19-186110
HRI # 30-176630
Trinomial

Page 4 of 14
*Resource Name or #: UPRR Route
*Map Name: Los Angeles, California *Scale: 1:24,000 (1"=2,000') *Date of Map: PR 1981



DPR 523J (1/95)

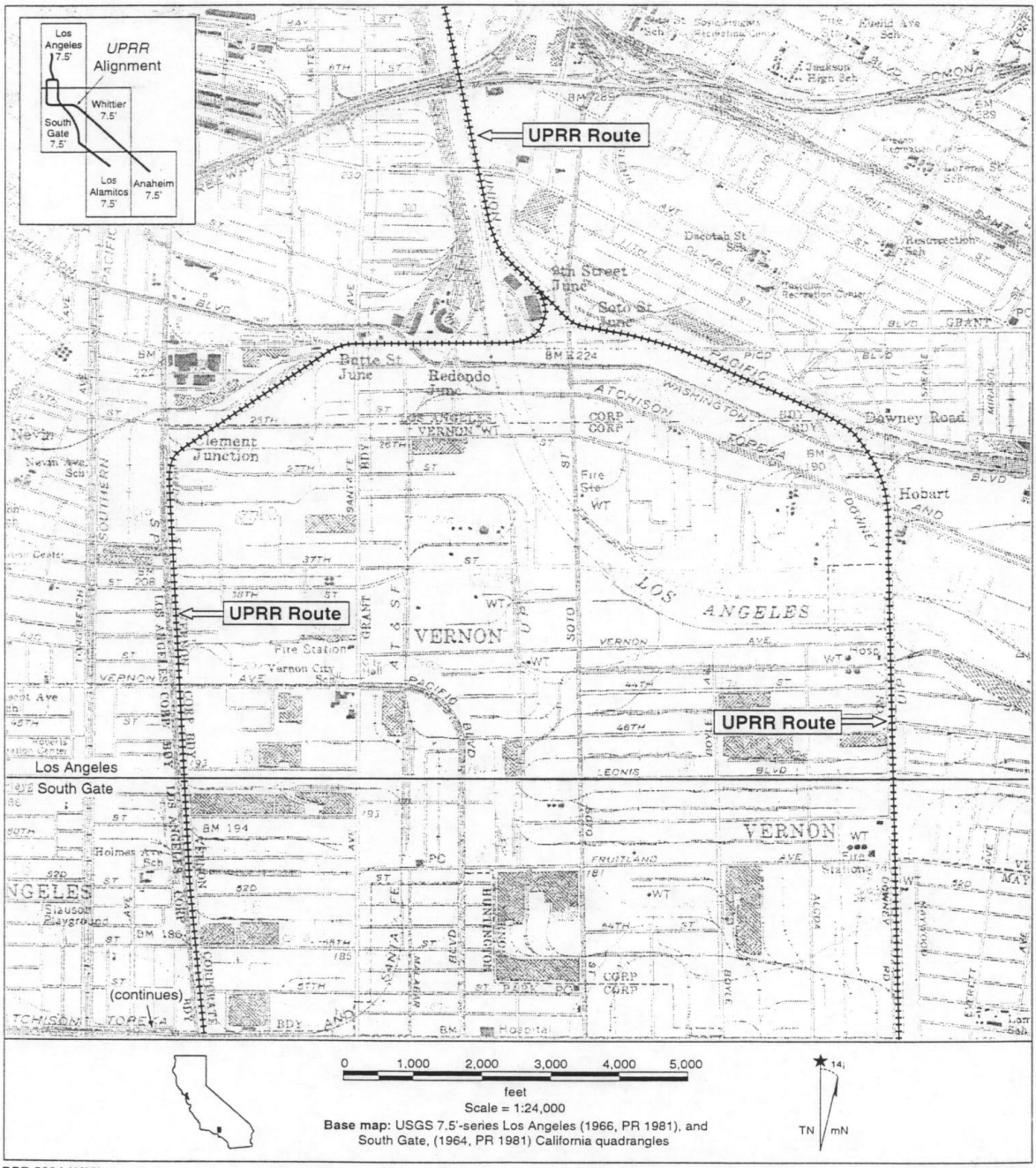
*Required information

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary # 19-186110
HRI #
Trinomial 30-176630

Page 5 of 14
*Resource Name or #: UPRR Route
*Map Name: Los Angeles and South Gate, California *Scale: 1:24,000 (1"=2,000') *Date of Map: PR 1981



DPR 523J (1/95)

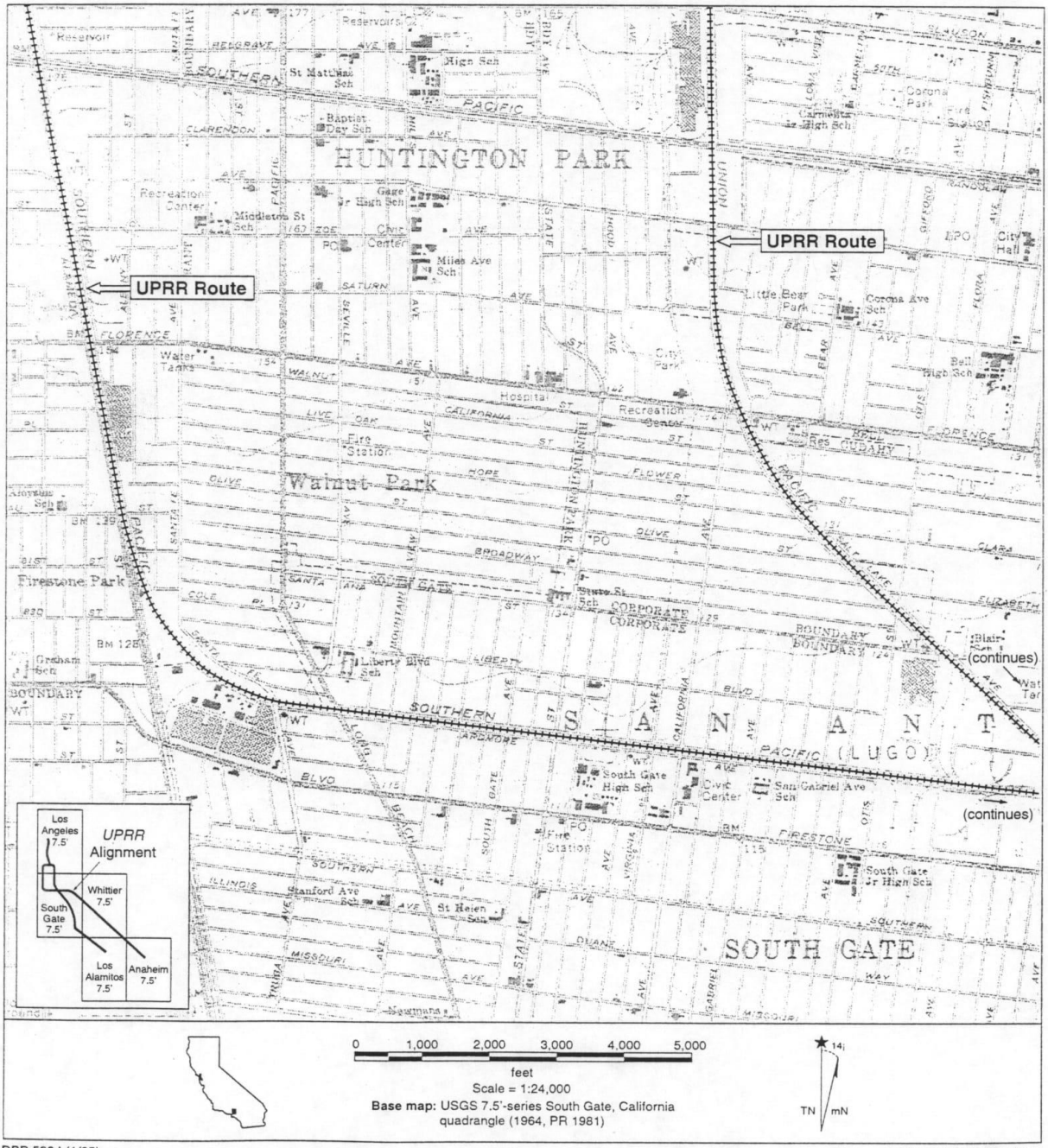
*Required information

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary # 19-186110
HRI # 30-176630
Trinomial

Page 6 of 14
*Resource Name or #: UPRR Route
*Map Name: South Gate, California *Scale: 1:24,000 (1"=2,000') *Date of Map: PR 1981



DPR 523J (1/95)

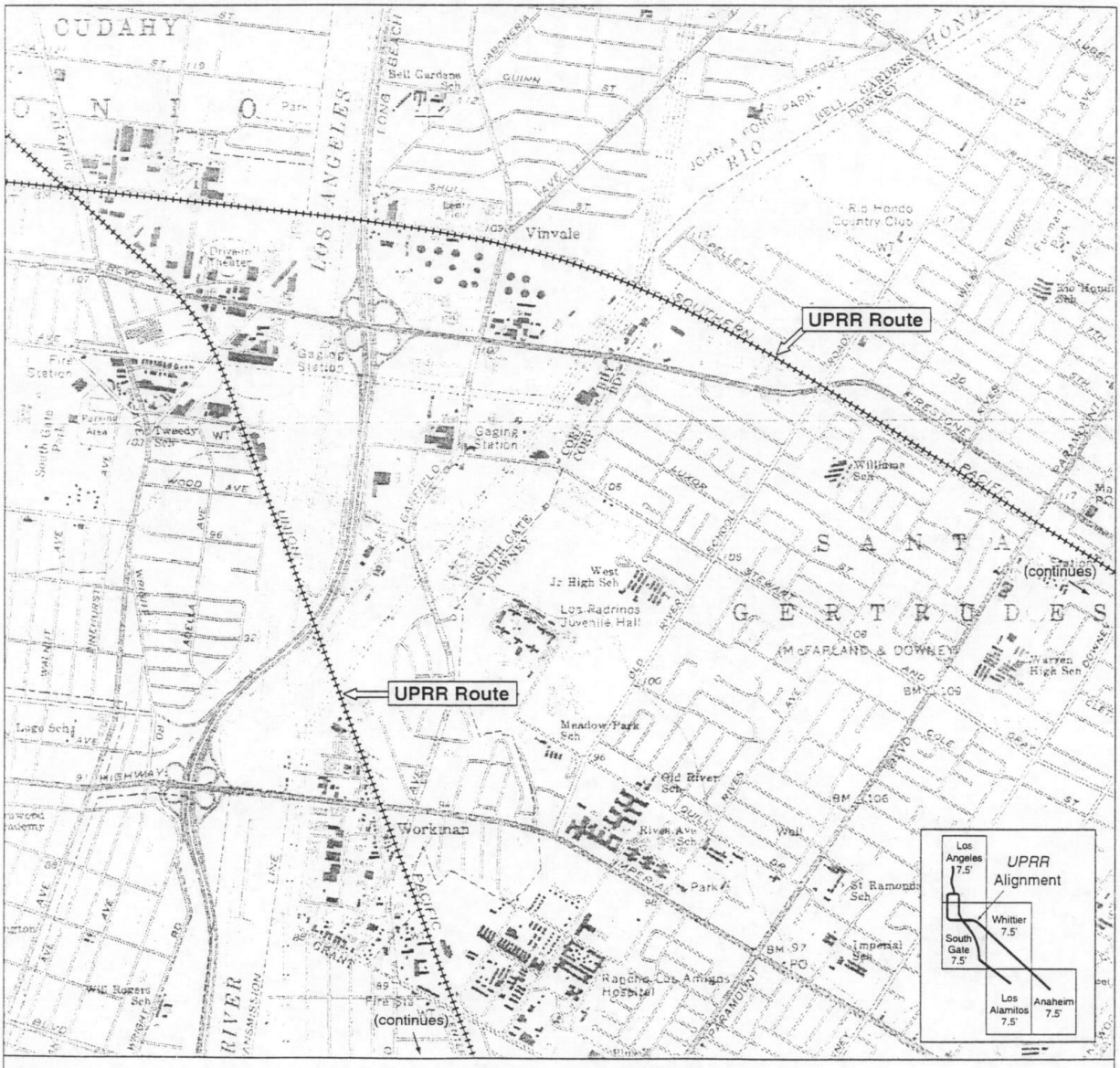
*Required information

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary # 19-186110
HRI #
Trinomial 30-176630

Page 7 of 14
*Resource Name or #: UPRR Route
*Map Name: South Gate, California *Scale: 1:24,000 (1"=2,000') *Date of Map: PR 1981



DPR 523J (1/95)

*Required information

19-186110

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary # 30-176630
HRI #
Trinomial

Page 8 of 14
*Resource Name or #: UPRR Route
*Map Name: South Gate and Whittier, California *Scale: 1:24,000 (1"=2,000') *Date of Map: PR 1981



DPR 523J (1/95)

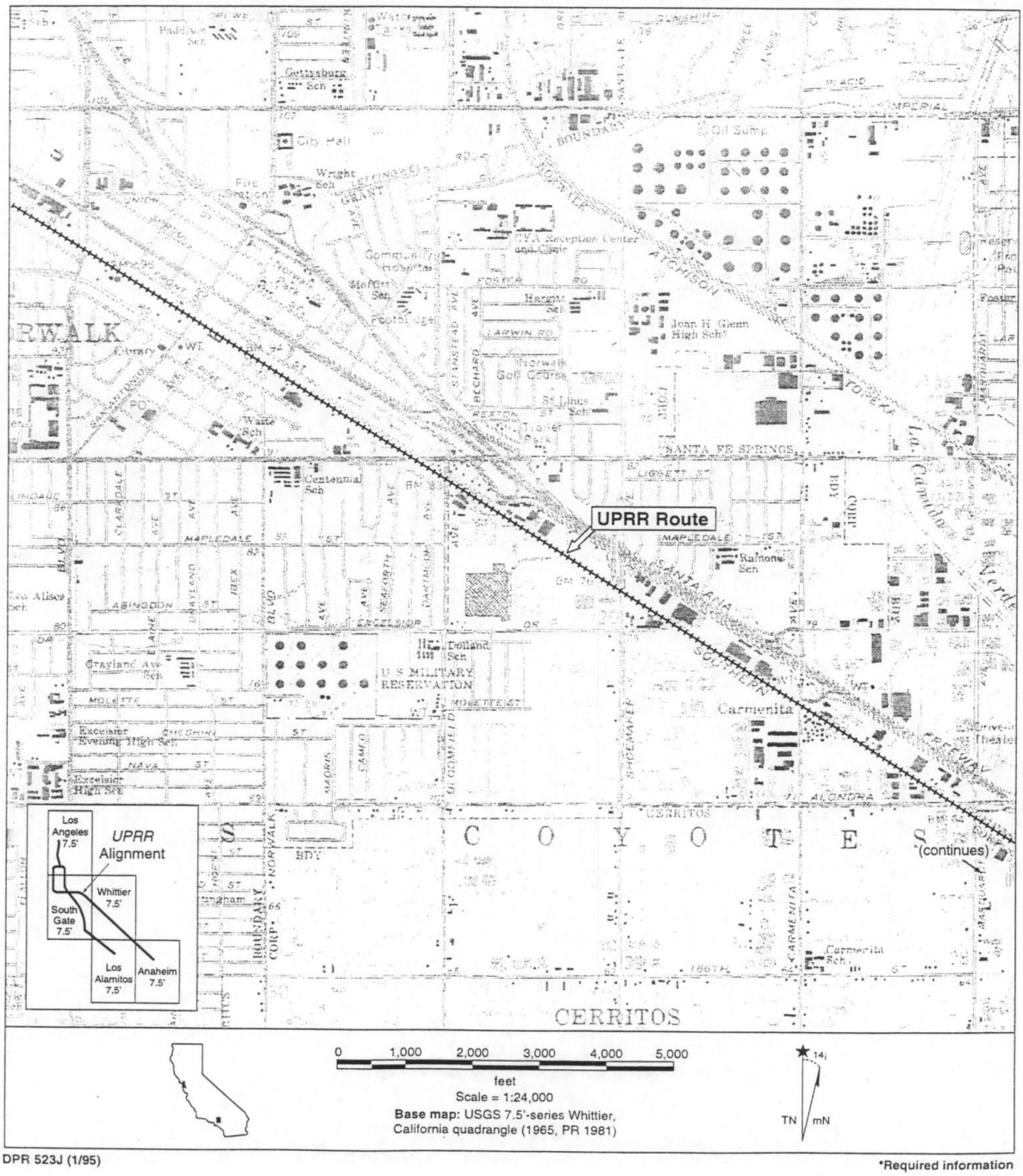
*Required information

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary # 19-186110
HRI # 30-176630
Trinomial

Page 9 of 14
*Resource Name or #: UPRR Route
*Map Name: Whittier, California *Scale: 1:24,000 (1"=2,000') *Date of Map: PR 1981



DPR 523J (1/95)

*Required information

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary # 19-186110
30-176630
HRI #
Trinomial

Page 10 of 14
*Resource Name or #: UPRR Route
*Map Name: Whittier, Los Alamitos, Anaheim California *Scale: 1:24,000 (1"=2,000') *Date of Map: PR 1981



Base map: USGS 7.5'-series Whittier, Los Alamitos, and Anaheim, California quadrangles (PR 1981)

DPR 523J (1/95)

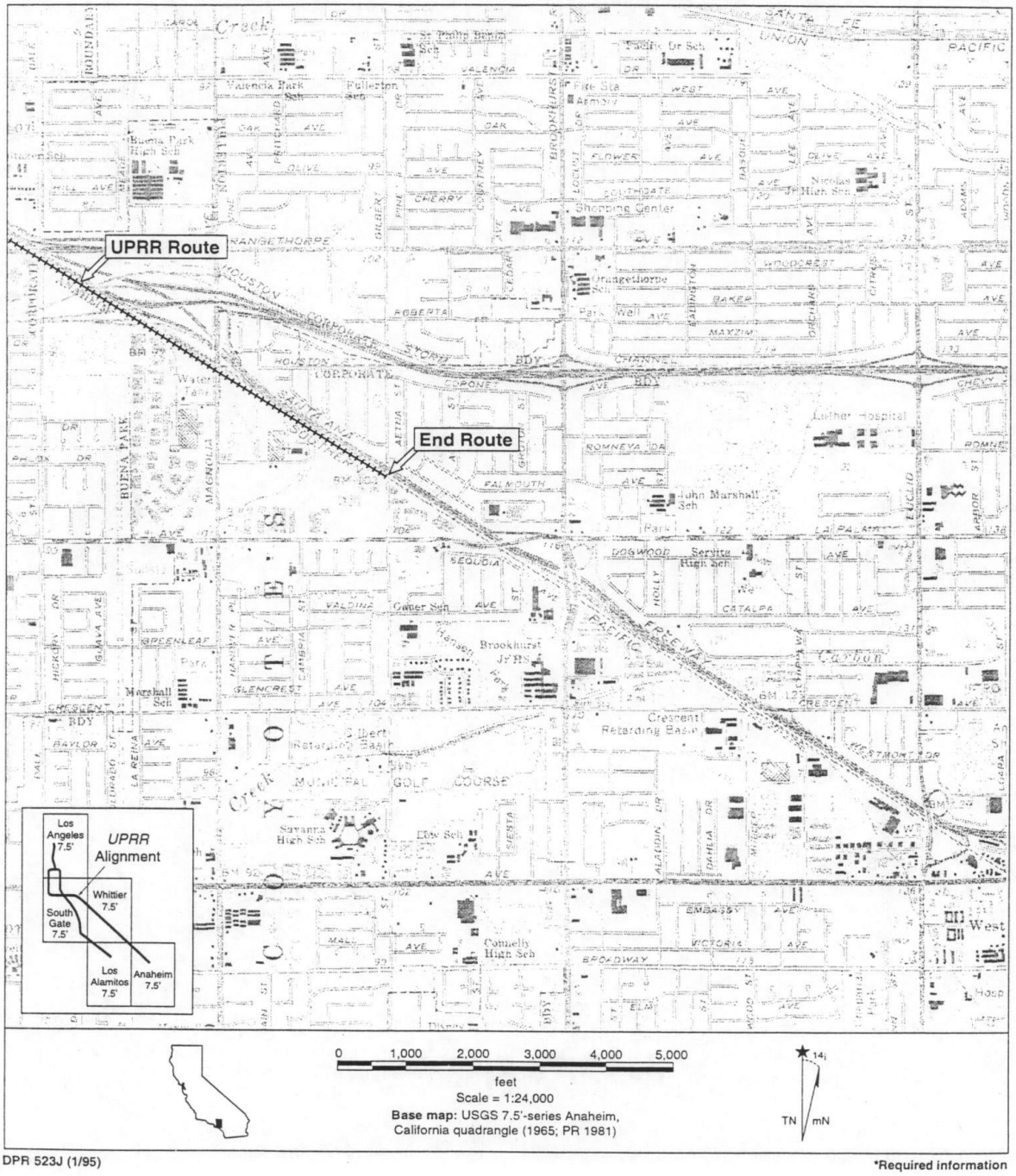
*Required information

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary # 19-186110
HRI #
Trinomial 30-176630

Page 11 of 14
*Resource Name or #: UPRR Route
*Map Name: Anaheim California *Scale: 1:24,000 (1"=2,000') *Date of Map: PR 1981



DPR 523J (1/95)

*Required information

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary # 19-186110
HRI # 30-176630
Trinomial

Page 12 of 14
*Resource Name or #: UPRR Route
*Map Name: South Gate, California *Scale: 1:24,000 (1"=2,000') *Date of Map: PR 1981



DPR 523J (1/95)

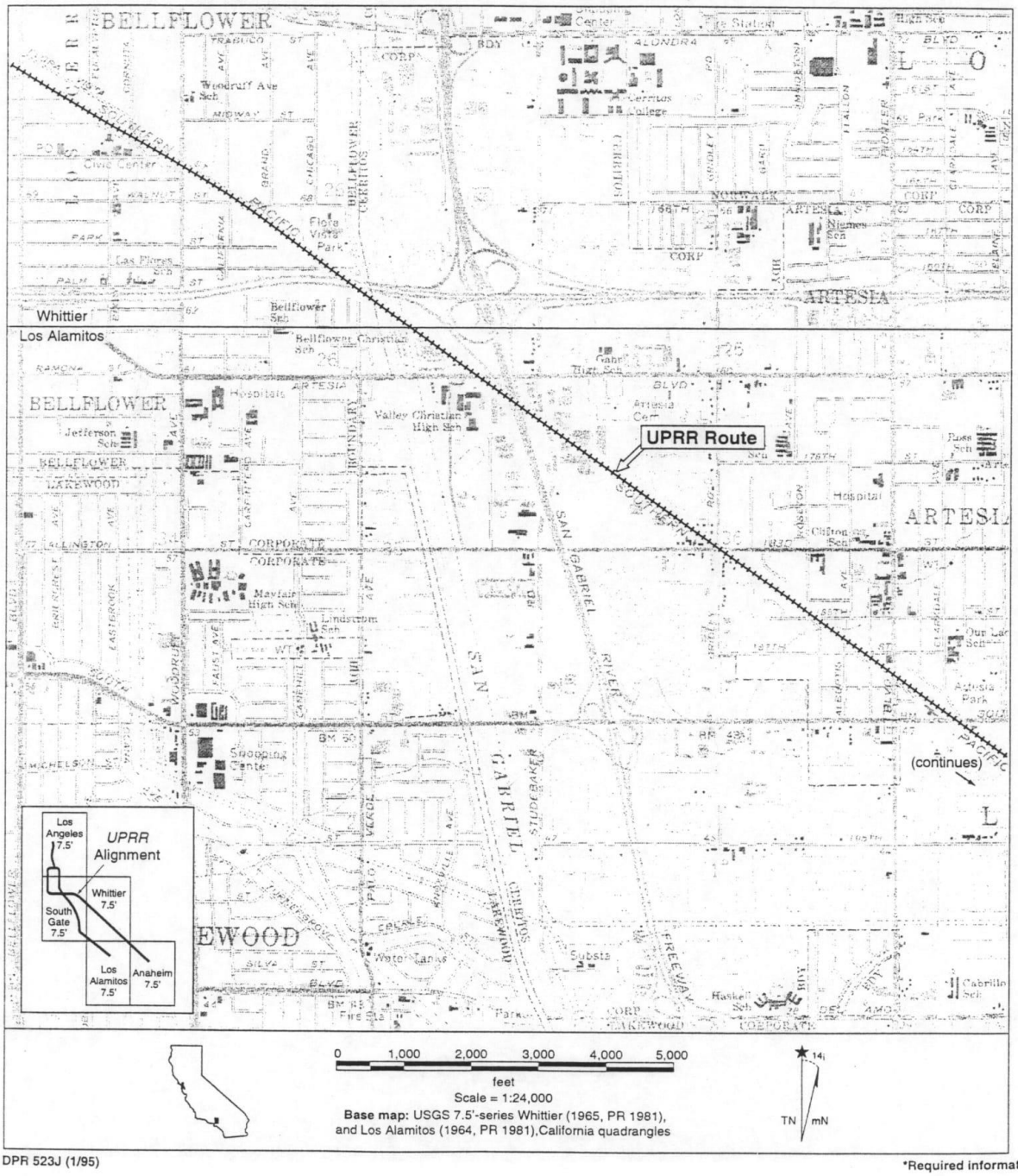
*Required information

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary # 19-186110
HRI # 30-176630
Trinomial

Page 13 of 14
*Resource Name or #: UPRR Route
*Map Name: Whittier and Los Alamitos, California *Scale: 1:24,000 (1"=2,000') *Date of Map: PR 1981



DPR 523J (1/95)

*Required information

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary # 19-186110
HRI # 30-176630
Trinomial

Page 14 of 14
*Resource Name or #: UPRR Route
*Map Name: Los Alamitos, California *Scale: 1:24,000 (1"=2,000') *Date of Map: PR 1981



DPR 523J (1/95)

*Required information

Applied EarthWorks, Inc.

PRIMARY RECORD

Primary # 19-186110 Supplement
HRI # 30-176630
Trinomial
NRHP Status Code

Page 1 **of** 6 **Other Listings** Union Pacific Railroad/Hobart Tower
Review Code **Reviewer** **Date**

P1. Temporary Number/Resource Name: Hobart Tower

P2. Location: **a. County** Los Angeles , California ☐ Not for publication ☒ Unrestricted
b. USGS 7.5' Quad Los Angeles, CA. **Date** 1966, photorevised 1981, 1994
T. 2S, **R.** 13W ; **of** **of** **of** **Sec.** Not sectioned
c. Address: **City** **Zip**
d. Zone 11 , 3763940 **mE/** 388860 **mN**
e. Other Locational Data (e.g., parcel #, legal description, directions to resource, additional UTMs, etc., when appropriate): The segment of the Union Pacific Railroad recorded previously under this Primary Number is located on the following USGS quads: Los Angeles, (1966, photorevised 1981); South Gate (1964, photorevised 1981); Whittier (1965, photorevised 1981); Los Alamitos (1964, photorevised 1981); and Anaheim (1965, photorevised 1981). The Hobart Tower is specifically located east of Downey Road and north of E. 26th St., west of the Hobart Yard and east of the Union Pacific Railroad line; the Burlington Northern Santa Fe Railroad is located south of the Hobart Tower.

P3a. Description (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries): The Union Pacific Railroad is a standard gauge railroad that runs through the Los Angeles area. It is part of a larger resource, the Union Pacific Railroad line. Numerous associated features include railroad stations, sidings, spurs, and rail yards. This supplemental record is specifically for the Hobart Tower (see Building, Structure, Object Record).

P3b. Resource Attributes (List attributes and codes): HP 39 – other: Railroad; HP 17– Railroad Switching Tower

P4. Resources Present: ☐ Building ☒ Structure ☐ Object ☐ Site ☐ District ☐ Element of district ☐ Other:

P5. Photograph or Drawing: (Photograph required for buildings, structures, and objects.) See Site Record dated 6/22/99.

P6. Date Constructed/Age and Source: ☐ Prehistoric ☒ Historic ☐ Both

P7. Owner and Address: Union Pacific Railroad.

P8. Recorded by (Name, affiliation, address): D. Livingstone and C. Hamilton, Applied EarthWorks, Inc. 3292 E. Florida Ave., Suite A, Hemet, CA 92544.

P9. Date Recorded: 19 June 2002

P10. Type of Survey: ☐ Intensive ☐ Reconnaissance ☒ Other:
Describe: Recordation of Hobart Tower.

P11. Report Citation (Provide full citation or enter "none"): *The Alameda Corridor Hobart Tower 1926–2002, Hobart Junction, Los Angeles, CA.* Prepared by Applied EarthWorks, Inc. for the Alameda Corridor Transportation Authority, April 2002.

***Attachments:** ☐ None ☒ Location Map ☒ Site Map ☐ Continuation Sheet ☐ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☒ Photograph Record ☒ Other: Building, Structure, and Object Record.

Applied EarthWorks, Inc.

BUILDING, STRUCTURE, AND OBJECT RECORD

Primary # 19-186110
Trinomial/HR # 30-176630

Page 2 **of** 6

B1. Historic Name: Hobart Tower
B2. Common Name: Hobart Tower
B3. Original Use: Railroad Signal Tower **B4. Present Use:** Signal Communication
***B5. Architectural Style:** Mediterranean
***B6. Construction History:** (Construction date, alterations, and date of alterations)
Hobart Tower began operation in September 1926; it is the last operating signal tower west of Omaha, Nebraska. Hobart is an interlocking tower, so named for the interlocking machine or interlocker, an electro-mechanical device used to control signals and tracks switching. Hobart Tower retains the original interlocker, as well as its original architectural integrity.

***B7. Moved?** ☒ No ☐ Yes ☐ Unknown **Date:** **Original Location:**
***B8. Related Features:** Features related to the Hobart Tower consisted of tracks, cantilever signal light bridges, and track switches, all of which were renovated or removed in 2001. The cantilever lights and track switches operated 350 to 1,000 ft north, south, east, and west of Hobart Tower. The original tracks abutted Hobart Tower approximately 12–15 ft to the west and 20–30 ft to the south and east.

B9a. Architect: Los Angeles & Salt Lake Railroad Co. **b. Builder:** Los Angeles & Salt Lake Railroad Co.
***B10. Significance: Theme** Railroad Transportation **Area** Los Angeles, California.
Period of Significance 1926–2001 **Property Type** Railroad Tower **Applicable Criteria** HP17
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)
Hobart Tower is an architectural feature of the Union Pacific Railroad (Site No. 19-186110/30-17660), a historic railroad considered eligible for listing on the NRHP. Hobart Tower is the last officially operating signal tower west of Omaha, Nebraska. For more than 75 years, Hobart Tower controlled signal and switching operations for freight and passenger trains of the Los Angeles & Salt Lake, Union Pacific, Atchison Topeka & Santa Fe, Burlington Northern Santa Fe, Metrolink and Amtrak railways. With the closure of nearby Dayton, Mission, and Redondo Junction towers, Hobart Tower became the last of its kind. Beginning January 2002, Hobart's signal and switching functions shifted to the authority of the regional operating center in San Bernardino. Hobart's geographical scope included most of the main railroad lines between the Port of Los Angeles and Hobart Yard, freight shipping facilities considered to be among the busiest in North America.

B11. Additional Resource Attributes: (List attributes and codes) HP11 – Engineering Structure

***B12. References:**

Gustafson, Lee, and Phil Serpico
1992 *Coast Lines Depots*. Omni Publications, Palmdale, California.
Robertson, Donald
1998 *Encyclopedia of Western Railroad History, Vol. 4.* Caxton Printers, Ltd., Idaho.
Alameda Corridor Transportation Authority (ACTA) and Applied EarthWorks, Inc. (Æ)
2002 *Hobart Tower, 1926–2002.* Alameda Corridor Transportation Authority, Carson, California.
Jones & Stokes
1999 Cultural Resources Inventory Report for Williams Communications, Inc. Site record for 19-186110/30-176630.

B13. Remarks: Hobart Tower ceased formal signaling operations January 2002. There is no immediate plan to preserve or relocate the building and its equipment. Hobart Tower is in imminent danger of neglect.

(This space reserved for official comments.)

B14. Evaluator: M.C. Hamilton, Senior Historical Archaeologist and Architectural Historian, Applied EarthWorks, Inc., 3292 East Florida Ave., Suite A, Hemet, CA 92544

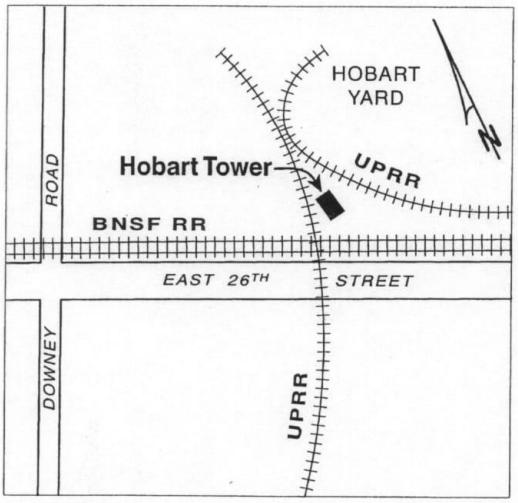
***Date of Evaluation:** January 2002

Applied EarthWorks, Inc.
CONTINUATION SHEET

Primary # 19-186110
HRI #/Trinomial 30-176630

Page 3 of 5

Temporary Number/Resource Name: Hobart Tower



Applied EarthWorks, Inc.

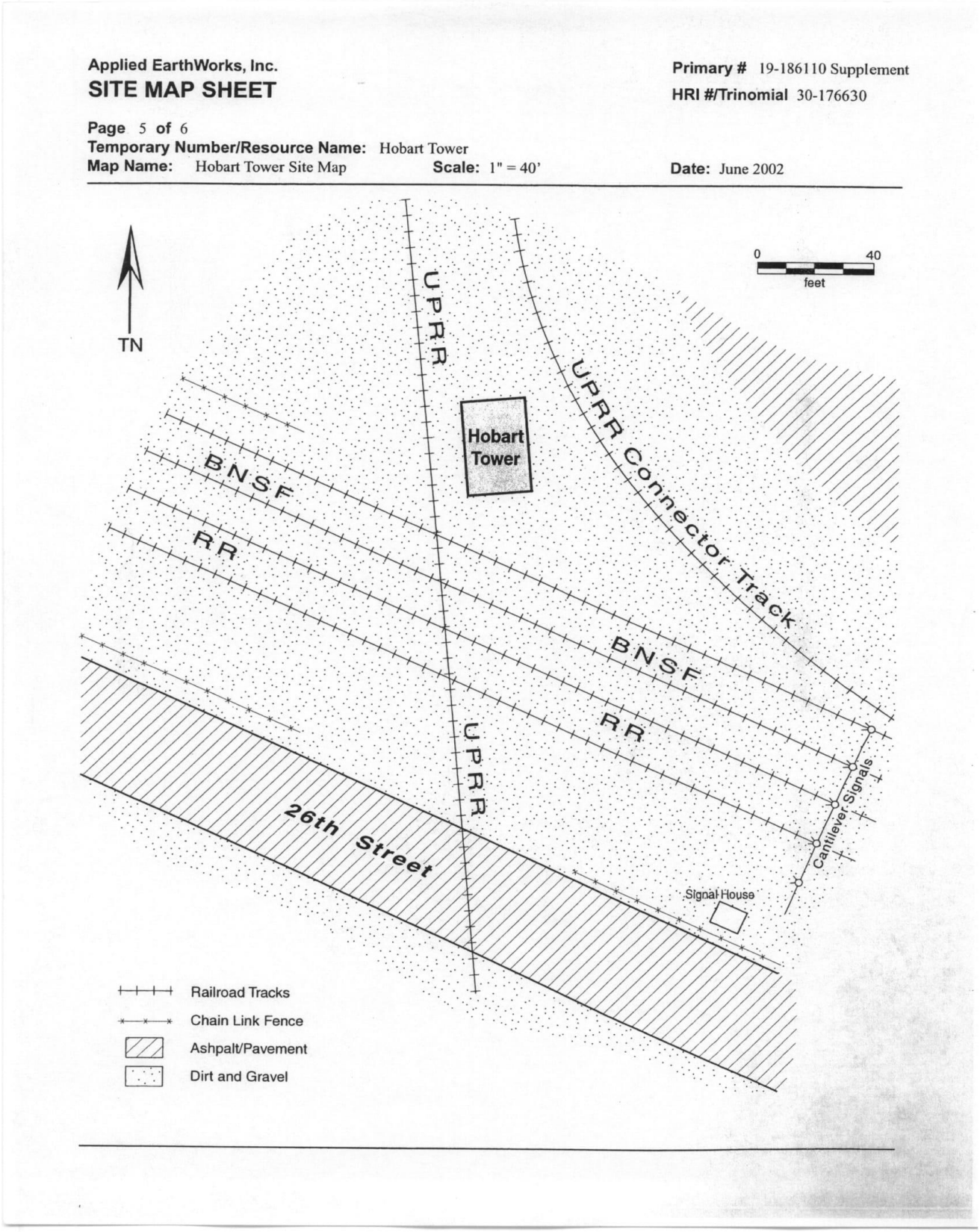
PHOTOGRAPH RECORD

Page 4 **of** 6

Primary # 19-186110 Supplement
HRI #/Trinomial 30-176630

Temporary Number/Resource Name: Hobart Tower
Project Name: Alameda Corridor **Roll #** Hobart-1 **Photographer:** D. Livingstone
Camera Format: 35 mm **Lens Size:** 28 mm
Film Type and Speed: Color slide **Year:** 2002
Negatives Kept at: 3292 E. Florida Ave., Suite A, Hemet, CA 92544

Mo.	Day	Time	Exp./ Frame	Subject/Description	View Toward	Accession #
2	10	1150	2	Hobart Tower: oblique view of southeast corner of tower.	SW	
2	10	1155	3	Hobart Tower: oblique view of southeast corner of tower.	SW	
2	10	1210	14	Hobart Tower: frontal view of west side.	E	
2	10	1212	15	Hobart Tower: frontal view of west side.	E	

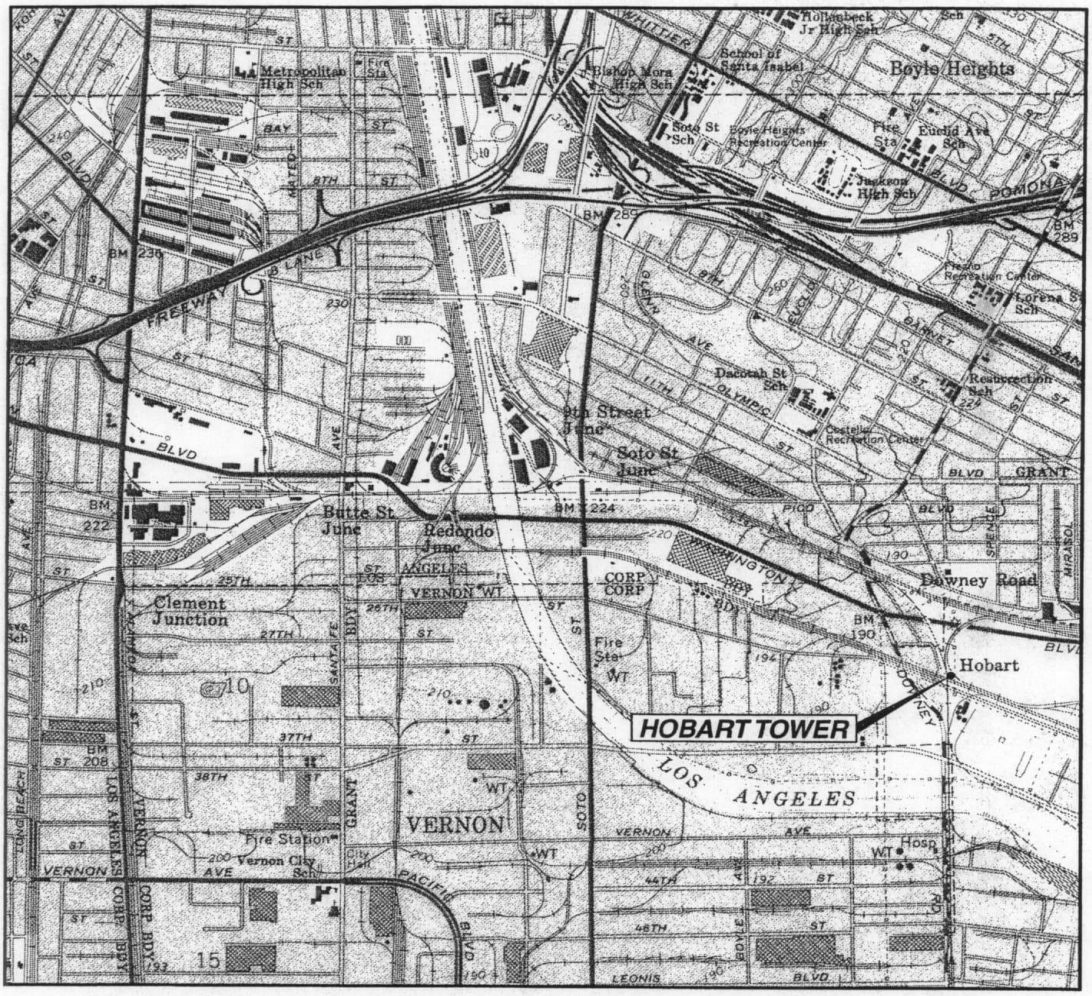

Applied EarthWorks, Inc.
SITE MAP SHEET
Primary # 19-186110 Supplement
HRI #/Trinomial 30-176630
Page 5 of 6
Temporary Number/Resource Name: Hobart Tower
Map Name: Hobart Tower Site Map
Scale: 1" = 40'
Date: June 2002
TN
0
40
feet
UPRR
Hobart Tower
UPRR Connector Track
BNSF RR
BNSF RR
UPRR
26th Street
Cantilever Signals
Signal House
Railroad Tracks
Chain Link Fence
Ashpalt/Pavement
Dirt and Gravel

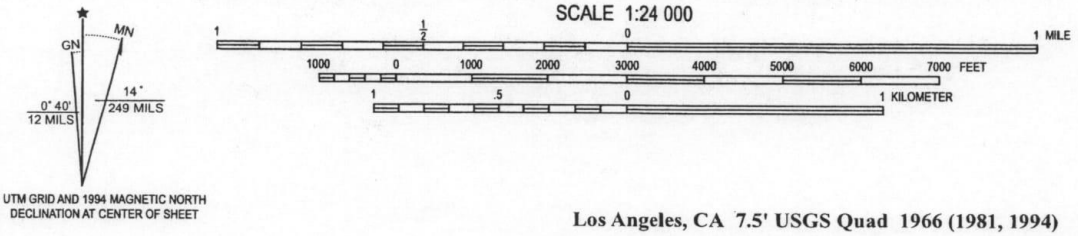
Applied EarthWorks, Inc.

LOCATION MAP SHEET

Primary # 19-186110 Supplement
HRI #/Trinomial 30-176630

Page 6 **of** 6
Temporary Number/Resource Name: Hobart Tower
Map Name: Hobart Tower Location Map **Scale:** 1:24,000 **Date:** June 2002





Los Angeles, CA 7.5' USGS Quad 1966 (1981, 1994)

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary # 19-186110 (Update)
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code | Reviewer | Date

Page 1 of 6 *Resource Name or #: Union Pacific Railroad (No. 33, 34, and 100)

P1. Other Identifier: Union Pacific Railroad

*P2. Location: ☐ Not for Publication ☒ Unrestricted *a. County: Los Angeles

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

*b. USGS 7.5' Quad: Los Angeles Date: 1966 (photo revised 1981 and 1994) T 1S; R 13W; unsectioned; S.B.B.M.

c. Address: City: Los Angeles Zip: 90023

d. UTM: Zone: 11 ; mE/ mN (G.P.S.)

e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) Elevation: ~245 feet above msl

Tracks located on the east side of the Los Angeles River north and south of the 6th Street Viaduct

*P3a. Description: (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

The Union Pacific Railroad (UP) tracks in the project area are comprised of a set of 5 freight tracks, which run roughly north-south on the east side of the Los Angeles River. Two sets of continuous welded rail (tracks) are immediately east of the Los Angeles River, and three converge into a single line south of the 6th Street Viaduct. The sets of continuous welded tracks are arranged in linear configurations, parallel to one another. This segment of tracks is contiguous at the north and south ends to additional portions of railroad track. The tracks are not physically distinguishable from other steel, standard guage, continuous welded freight railroad tracks. This segment of railroad may have been directly associated with the development of the community because of its original connection with the Los Angeles & San Pedro Railroad (1869), Los Angeles Terminal Railway Company (1891), San Pedro, Los Angeles, & Salt Lake Railroad Company (1901), Los Angeles & Salt Lake Railroad (1920), Southern Pacific (c. 1920s), Union Pacific (1997). The trackbed is roughly flat (with berms at tracks), and this segment is bordered by Mission Street on the east side, Metrolink and the chanelized Los Angeles River on the west side. The 6th Street Viaduct notably runs perpendicular to the tracks, overhead.

*P3b. Resource Attributes: (List attributes and codes) HP11 (Engineering structure); HP39 (Other-railroad)

*P4. Resources Present: ☐ Building ☒ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5a. Photo or Drawing (Photo required for buildings, structures, and objects.)



P5b. Description of Photo: (View, date, accession #) View north from crossover, July 11 2007 07 11 07 46

*P6. Date Constructed/Age and Sources:
☒ Historic ☐ Pehistoric
☐ Both
circa 1869-present

*P7. Owner and Address:
Union Pacific Railway
1400 Douglas Street
Omaha, NE 68179

*P8. Recorded by: (Name, affiliation, and address)
Francesca G. Smith and
Caprice D. (Kip) Harper
Parsons
100 W. Walnut Street, B-Pod 2nd Fl.
Pasadena, CA 91124

*P9. Date Recorded: 07/11/07

*P10. Survey Type: (Describe)
Intensive

*P11. Report Citation: (Cite survey report and other sources, or enter "none.")

Historical Resources Evaluation Report: 6th Street Viaduct Seismic Improvement Project, prepared by Francesca G. Smith, 2007.

*Attachments: ☐ NONE ☐ Location Map ☐ Sketch Map ☐ Continuation Sheet ☒ Building, Structure, and Object Record
☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record
☐ Artifact Record ☐ Photograph Record ☐ Other (List):

DPR 523A (1/95) *Required information

S:\Road&Highway\Projects\646745.Sixth ST EIS-EIR\Cultural\Built Environment\DPRs\DPRs Oct 4 2007\19-186110_Union Pacific RR_Primary Update.doc

State of California — The Resources Agency **Primary #** 19-186110 (Update)
DEPARTMENT OF PARKS AND RECREATION **HRI#**

BUILDING, STRUCTURE, AND OBJECT RECORD

Page 2 **of** 6 ***NRHP Status Code** 6Z (Segment only)

***Resource Name or #** (Assigned by recorder) Union Pacific Railroad (No. 33, 34, and 100)

B1. Historic Name: Southern Pacific Railroad/San Pedro, Los Angeles & Salt Lake Railroad/Los Angeles Terminal Railroad
B2. Common Name: Union Pacific
B3. Original Use: railroad B4. Present Use: railroad
***B5. Architectural Style:** N/A
***B6. Construction History:** (Construction date, alterations, and date of alterations)
Ongoing maintenance and reconfiguration of tracks for more than 100 years (dates unknown).
***B7. Moved?** ☒No ☐Yes ☐Unknown **Date:** **Original Location:**
***B8. Related Features:**
B9a. Architect: N/A b. Builder:
***B10. Significance: Theme:** **Area:**
Period of Significance: **Property Type:** **Applicable Criteria:**
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

This segment of railroad tracks, formerly part of the Los Angeles Terminal Railway, San Pedro, Los Angeles & Salt Lake Railroad and Los Angeles & Salt Lake Railroad yard was reduced in size at the turn of the 20th century, a a segment of railroad tracks is modestly recognizable to its original appearance. Now operated by Union Pacific, the linear resource is a series of parallel railroad tracks. The remaining tracks have been maintained for over 100 years, however, no buildings or other substantial railroad-related resources from the former San Pedro, Los Angles & Salt Lake Railroad yard remain. Because of these changes, the property lacks integrity of design, materials, workmanship and location (as it was developed after the 20th century and streets were built). The surrounding landscape has changed over the years and the resource no longer retains integrity of setting. In part because of described alterations to materials, workmanship, location and setting, this property is not eligible for listing in the National or California registers under Criterion C or 3. No evidence was discovered to warrant consideration under Criterion D/4.

A previous evaluation of this railroad system in the greater Los Angeles area found the railroad eligible for the National Register under Criteria A and B (Jones & Stokes, 6/22/99). While the entire railroad line or perhaps the entire Los Angeles Branch may be eligible for the National and California registers, this small segment of the much larger 27,000 mile system no longer retains sufficient integrity to be eligible (Union Pacific *2006 Analyst Fact Book*). It is very short segment of a much longer linear historic resource, parts of which may be historically significant.

B11. Additional Resource Attributes: (List attributes and codes)

***B12. References:**
Union Pacific Corporation, *2006 Analyst Fact Book,*
John Signor, *The Los Angeles and Salt Lake Railroad Company: Union Pacific's Historic Salt Lake Route*

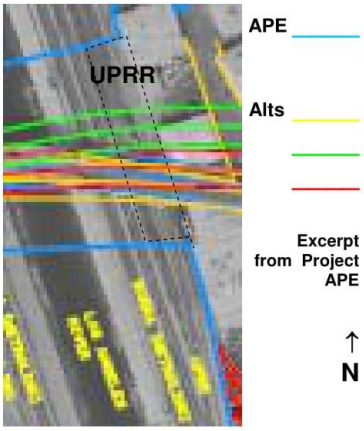
B13. Remarks:

***B14. Evaluator:** Francesca G. Smith

***Date of Evaluation:** 07/11/07

(This space reserved for official comments.)

(Sketch Map with north arrow required.)



DPR 523B (1/95) ***Required information**
S:\Road&Highway\Projects\646745.Sixth ST EIS-EIR\Cultural\Built Environment\DPRs\DPRs Oct 4 2007\19-186110_Union Pacific RR_BSO.doc

State of California — The Resources Agency Primary # 19-186110 (Update)
DEPARTMENT OF PARKS AND RECREATION HRI #
LINEAR FEATURE RECORD Trinomial

Page 3 **of** 6 **Resource Name or #:** (Assigned by recorder) Union Pacific Railroad (Nos. 33, 34, and 100)

L1. Historic and/or Common Name:) Union Pacific Railroad

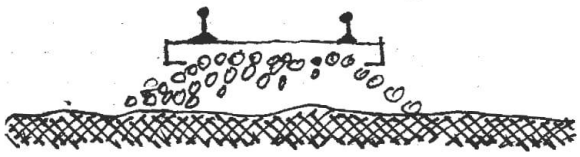
L2a. Portion Described: ☐ Entire Resource ☒ Segment ☐ Point Observation **Designation:**

b. Location of point or segment: (Provide UTM coordinates, legal description, and any other useful locational data. Show the area that has been field inspected on a Location Map) 11S, 386708.15mE/ 3767199.03mN (northernmost point) and 11S, 386750.89mE/3767033.01mN (southernmost point)'
The approximately 450- foot-long segment is located on the east side of the Los Angeles River at the 6th Street Viaduct.

L3. Description: (Describe construction details, materials, and artifacts found at this segment/point. Provide plans/sections as appropriate.) Union Pacific was the third transcontinental railroad to reach Los Angeles in 1905, arriving through its subsidiary, the Los Angeles Terminal Railroad. Los Angeles Terminal Railroad was originally namd for Terminal Island, and subsequently became the San Pedro, Los Angeles & Salt Lake Railroad; shortly after that, it was Los Angeles & Salt Lake Railroad through a series of mergers and acquisitions. By that time, the three main competing railroads were the Southern Pacific (SP), Atchison Topeka & Santa Fe Railway and Union Pacific. In 1910, then-rival, SP was established in Los Angeles on the west side of the river. Agriculture was one of the first industries to benefit from the presence of the railroads, notably the citrus industry after the advent of the refrigerated freight car. As a result of this growth, enormous rail yards like this property once was, (see Continuation Sheet 4) developed on both sides of the Los Angeles River. The current configuration of sets of railroads tracks bears no resemblance to the former LA & SL RR Yards that once occupied the site.

L4. Dimensions: (In feet for historic features and meters for prehistoric features)
a. Top Width: 4'- 8.5 " (standard guage)
b. Bottom Width: +- 9'-0" per track
c. Height or Depth: 5" (track- top to bottom)
d. Length of Segment: +- 450 feet

L4e. Sketch of Cross-Section (include scale) **Facing:**
sketch of section (no scale)

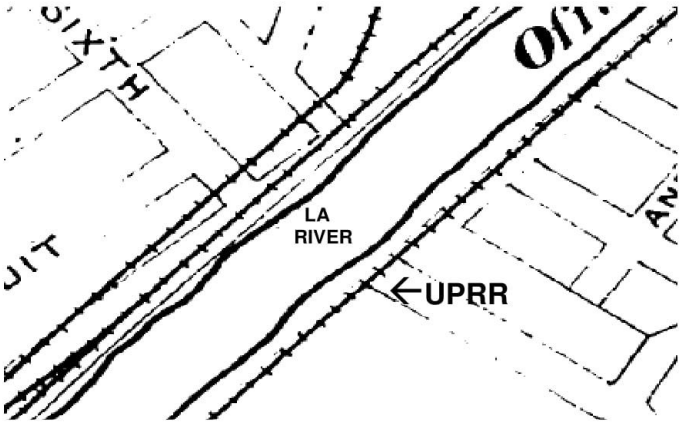


L5. Associated Resources:

6. Setting: (Describe natural features, landscape characteristics, slope, etc., as appropriate.)
Located on the east side of the Los Angeles River, a channelized flood control channel. Situated north, south and beneath 6th Street Viaduct.

L7. Integrity Considerations: This segment has been subject to ongoing maintenance, the Los Angeles River has been channelized and industrial urban development has greatly altered the integrity of setting of the railroad.

L8a. Photograph, Map or Drawing



Annotated excerpt from *Sanborn Fire Insurance Co. Map of Los Angeles,* Volume 1, Sheet 0, 1894.

L8b. Description of Photo, Map, or Drawing (View, scale, etc.)
Excerpt *Sanborn Fire Insurance Co Maps of Los Angeles*, sheet 0
-plan view, no scale

L9. Remarks:
L8 depicts UPRR's predecessor San Pedro, Los Angeles & Salt Lake Railroad

L10. Form Prepared by: (Name, affiliation, and address)
Francesca G. Smith and Caprice D. (Kip) Harper
Parsons
100 W. Walnut Street, B-Pod, 2nd Floor
Pasadena, CA 91124

L11. Date: 07/11/07

S:\Road&Highway\Projects\646745.Sixth ST EIS-EIR\Cultural\Built Environment\DPRs\DPRs Oct 4 2007\19-186110_Union Pacific RR_Lin Feat Rec.doc

State of California — The Resources Agency DEPARTMENT OF PARKS AND RECREATION CONTINUATION SHEET	Primary # 19-186110 (Update) HRI# Trinomial #

Page 4 **of** 6 ***Resource Name or # (Assigned by recorder)** Union Pacific Railroad (No. 33, 34, and 100)

***Recorded by:** Francesca G. Smith and Caprice D. (Kip) Harper ***Date:** 05/24/07 ☒ Continuation ☐ Update

L3. Description:

P5a. Drawing:



P5b. Description of Drawing: Annotated excerpt from John Signor's *The Los Angeles & Salt Lake Railroad Company*, depicting the Los Angeles & Salt Lake Railway in 1930. Project area is noted.

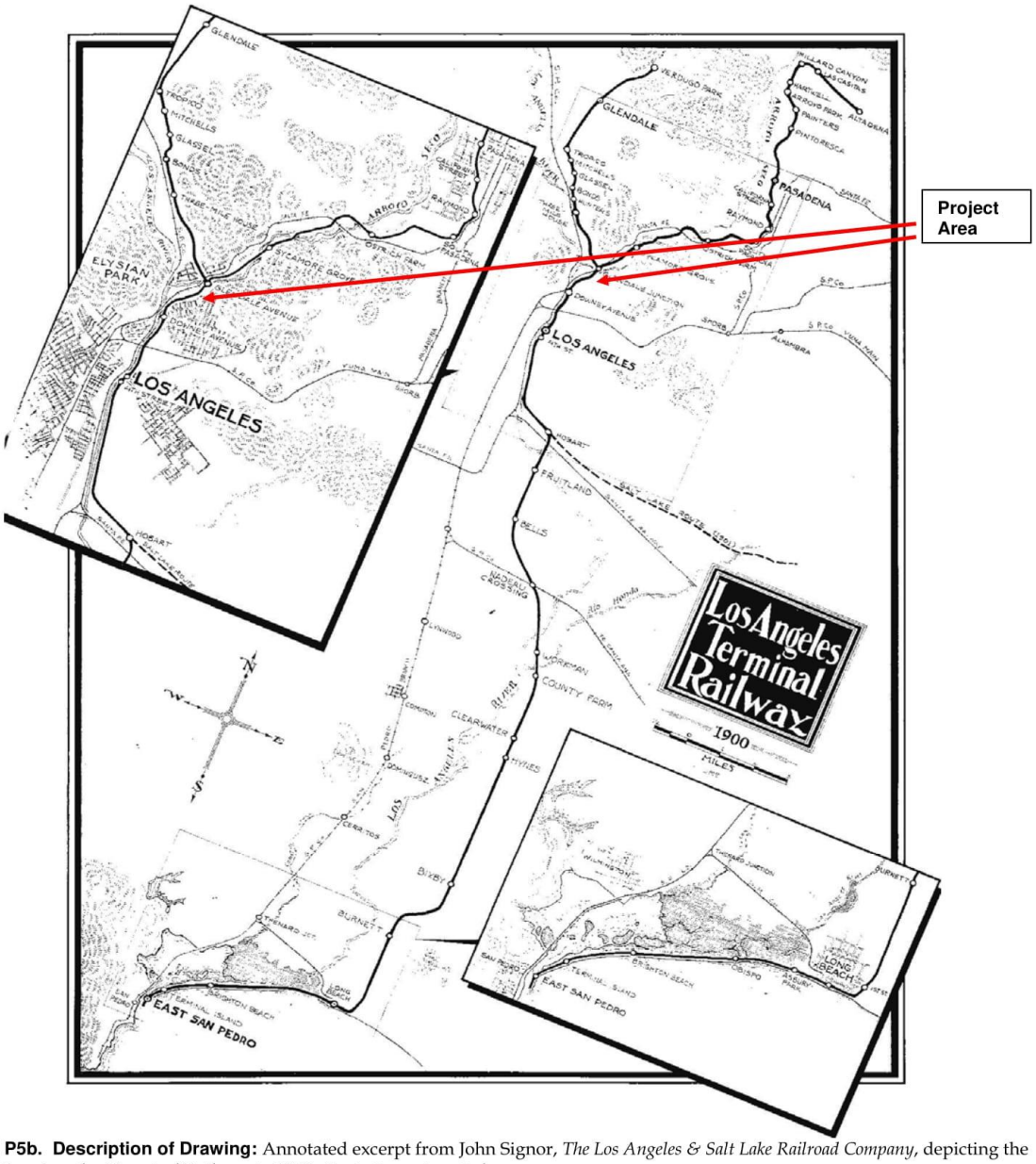
DPR 523L (1/95) ***Required information**

State of California — The Resources Agency DEPARTMENT OF PARKS AND RECREATION CONTINUATION SHEET	Primary # 19-186110 (Update) HRI# Trinomial #

Page 5 **of** 6 ***Resource Name or # (Assigned by recorder)** Union Pacific Railroad (No. 33, 34, and 100)

***Recorded by:** Francesca G. Smith and Caprice D. (Kip) Harper ***Date:** 05/24/07 ☒ Continuation ☐ Update

P5a. Drawing:



P5b. Description of Drawing: Annotated excerpt from John Signor, *The Los Angeles & Salt Lake Railroad Company*, depicting the Los Angeles Terminal Railway in 1900. Project area is noted.

DPR 523L (1/95) ***Required information**

State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LOCATION MAP

Primary # 19-186110 (Update)
HRI#
Trinomial

Page 6 of 6 *Resource Name or #: Union Pacific Railroad

*Map Name: USGS Los Angeles 7.5 Minute Topographic Quadrangle *Scale: 1:24,000 *Date of Map: 1966 (PR 1981; 1994)



DPR 523J (1/95) *Required information

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary # 19-186110 (Update)
HRI #
Trinomial
NRHP Status Code: 6Y, 6Z
Other Listings
Review Code Reviewer Date

***Resource Name or #:** Union Pacific Railroad segment at I-605 **Caltrans Map Reference No.:** 26
P1. Other Identifier:
***P2. Location:** ___ **Not for Publication** _X_ **Unrestricted**
***a. County** Los Angeles **County/Route/Postmile:**
***b. USGS 7.5' Quad:** Whittier **Date** 1965. rev. 1981 **T** ___ **;R** ___ **of** ___ **of Sec** ___ ; ___ **B.M.**
c. Address NA **City** Downey **Zip**
d. UTM::11 **Zone** 3392298 , ___ **mE/** 11810405 **mN**
***e. Other Locational Data** (APN #, etc.)
***P3a. Description:** (Briefly describe resource below)

This update form is for a 621-foot long segment of the Union Pacific Railroad (UPRR) in the Downey, California area. This segment is a single-track, standard gauge line, traveling on a slightly elevated ballast, directly below Interstate 605 or the San Gabriel River Freeway. The portion evaluated here includes the section that intersects with Hoxie Avenue, south of Nance Street. In addition to rails, ties, ballast, and metal perimeter fencing, this segment contains associated modern gates, signals, and lights at the Hoxie Avenue crossing (See continuation sheet).

***P3b. Resource Attibutes:** HP39. Other
****P4. Resources Present:** ___Building _x_Structure ___Object ___Site ___District ___Elements of District ___Other

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)



P5b. Description of Photo: Looking northwest from Hoxie Avenue (ICF, 3/26/2018)
***P6. Date Constructed/Age:** 1870s to present (Jones & Stokes, 1999)
_x_Historic ___Prehistoric ___Both
***P7. Owner and Address:**
Union Pacific Railroad
1400 Douglas Street
Omaha, NE 68179
***P8. Recorded by:**
Jessica B. Feldman
ICF
555 W. Fifth Street
Suite 3100
Los Angeles, CA 90013
***P9. Date Recorded:** 3/26/2018
***P10. Type of Survey:** ___Intensive ___Reconnaissance _X_Other
Describe: Section 106 Compliance

***P11. Report Citation:** HRER for the I-605 Corridor Improvement Project PA/ED, 2019
***Attachments:** ___NONE _X_Map Sheet _x_Continuation Sheet ___Building, Structure and Object Record ___Linear Resource Record ___Archaeological Record ___District Record ___Milling Station Record ___Rock Art Record ___Artifact Record ___Photograph Record ___Other (List):

State of California — The Resources Agency | Primary #: 19-186110 (Update)
DEPARTMENT OF PARKS AND RECREATION | HRI #/Trinomial
CONTINUATION SHEET

___Continuation X Update
Caltrans Map Reference No.: 26
Resource Identifier: Union Pacific Railroad segment at I-605 **County/Route/Postmile:**

Previous evaluations of the railroad line in 1999 and 2007 found that the physical components, such as tracks, ballast, and signal system, have been periodically upgraded over the past century, as a result of routine maintenance or system improvements. In 2007, the evaluator suggested that the entire railroad line, or perhaps the entire Los Angeles Branch of the UPRR, may be eligible for the National Register of Historic Places (NRHP) or the California Register of Historical Resources (CRHR); however, this small segment of a much larger potential linear historic resources lacks integrity within the historic context to be eligible for either the NRHP or the CRHR.

Under Criterion A of the NRHP, the integrity of design, materials, and workmanship is not as important as the integrity of location, setting, feeling, and association to convey the significance of the resource, within the period of significance. Previous documentation and evaluation of this segment of the UPRR established the period of significance as beginning in the late 1860s and continuing through 1905, when the tracks reached Los Angeles. Through review of historic aerials and United States Geological Survey maps, it can be established that while the location and association of this railroad segment appear to remain intact, the segment has lost integrity of setting and feeling. When originally constructed through this part of Los Angeles County, the surrounding countryside was primarily unsettled, and surrounded by cultivated and fallow lands. By the 1950s, housing developments were beginning to pop up along both sides of the San Gabriel River; however, the construction of Interstate 605 rapidly changed the landscape. As a result, the original character of the setting no longer resembles a rural, agricultural late 19th century landscape, not the least of which is the result of a multi-lane freeway being constructed over the tracks. Furthermore, the alteration of physical features in the immediate vicinity, in additional to the intrusion of modern railroad equipment, has diminished the integrity of feeling. Therefore, this small segment of the UPRR is not independently eligible under NRHP Criterion A or CRHR Criterion 1.

Under NRHP/CRHR Criterion B/2, there is no known direct association with any persons considered significant in national, state, or local history. Therefore, this segment of the UPRR is not independently eligible for the NRHP under Criterion B or the CRHR under Criterion 2.

As previously discussed, there is little, if any, direct physical evidence of the original mid- to- late-19th century railroad or associated features located within this transportation corridor and, as a result, it lacks integrity of design, materials, and workmanship. Survey of the corridor did not reveal that this small segment of the railroad displays any important engineering advancement, or creative or innovation design, or unusual construction methods. Therefore, it is not independently eligible for listing in the NRHP under Criterion C or the CRHR under Criterion 3.

Under NRHP Criterion D or CRHR Criterion 4, the railroad segment is not a significant or likely source of important information regarding history or prehistory. It is unlikely to yield any important data regarding original engineering or architectural designs or techniques that would help us understand the construction practices of the day. Therefore, this segment of the UPRR is not eligible for individual listing on the NRHP/CRHR under Criterion D/4.

Following the review of previous evaluations, additional research, and survey of the segment, ICF concurs with the finding that although the portions of the UPRR alignment could be eligible for the NRHP or the CRHR, the subject segment does not contribute to the larger property and lacks significance for eligibility independently. The segment of the UPRR is not a historic property for the purposes of Section 106 of the National Historic Preservation Act and is not a historical resource for the purposes of the California Environmental Quality Act. The property was not evaluated for local designation.

References:

Drury, George. *The Historical Guide to North American Railroads*. Kalmbach Books: Milwaukee, WI. 1985.

Cooley, David J. *California Railroad Maps, Union Pacific/BNSF Railway*. Sonrisa Publications: Auburn, WA. 2005.

Jones & Stokes (Ashkar, S.). *C-Los Angeles-A-1/Southern Pacific Railroad/Union Pacific Railroad*. California Department of Parks and Recreation Primary Record, Building, Structure and Object Record, et al. 1999.

Parsons (Smith, Francesca and Kip Harper). *Union Pacific Railroad (No. 33, 34, and 100)*. California Department of Parks and Recreation Primary Record, Building, Structure and Object Record, et al. 2007.

State of California — The Resources Agency | Primary #: 19-186110 (Update)
DEPARTMENT OF PARKS AND RECREATION | HRI #/Trinomial
CONTINUATION SHEET

____Continuation X Update

Caltrans Map Reference No.: 26

Resource Identifier: Union Pacific Railroad segment at I-605 **County/Route/Postmile:**



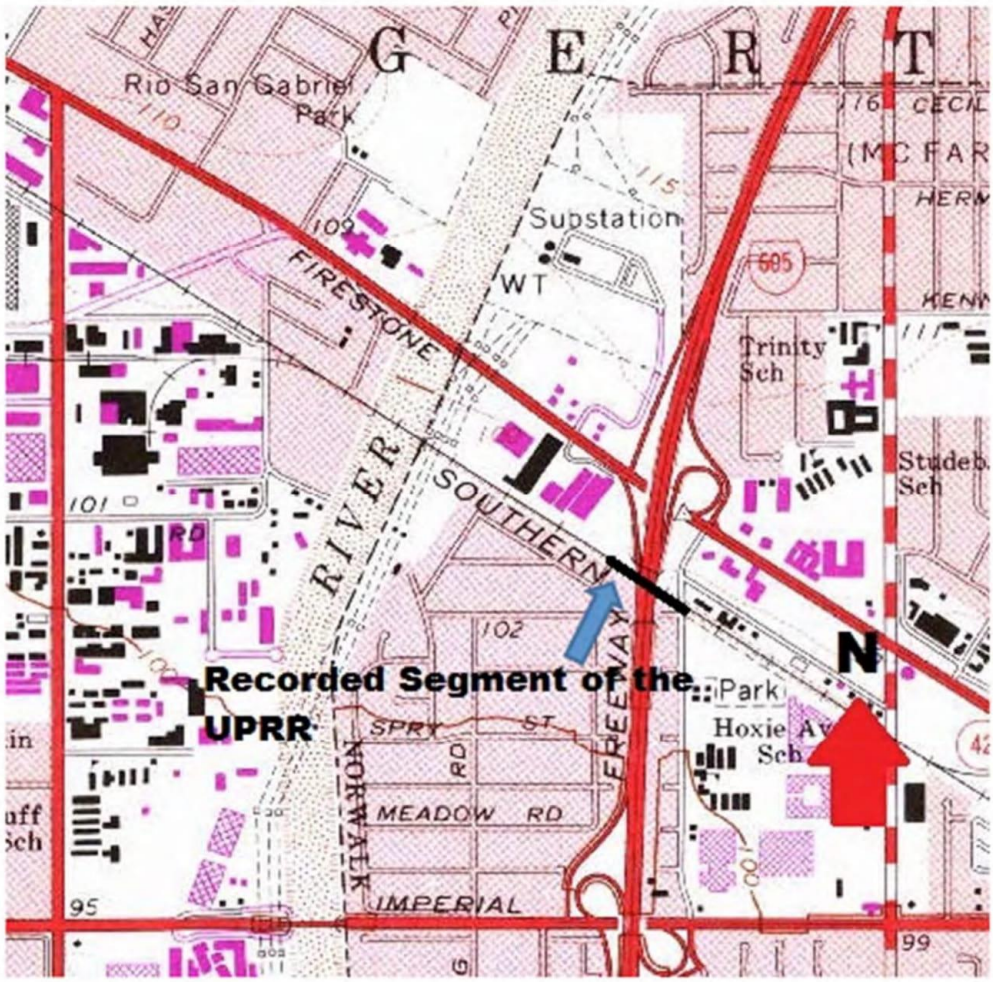
View looking south on Hoxie Avenue, south of Nance Street. ICF, June 27, 2017.

State of California — The Resources Agency DEPARTMENT OF PARKS AND RECREATION **LOCATION MAP**	Primary # HRI# Trinomial

Resource Identifier: Union Pacific Railroad segment at I-605 **Caltrans Map Reference No.:** 26

County/Route/Postmile:

Map Name: Whittier Quad *Scale: 1:24,000 *Date of Map: 1965, rev. 1981



Caltrans DPR 523J (1/95)
*Required information

Page 4 of 4

State of California - The Resources Agency	Primary#	19-186110 (Update)
DEPARTMENT OF PARKS AND RECREATION	HRI #	
	Trinomial	

CONTINUATION SHEET

Property Name: Union Pacific Railroad

Page 1 of 1

P3a. Description:

An update to the DPR record for Union Pacific Railroad (former Southern Pacific Railroad) (P-19-186110) was recorded by Jessica B. Feldman, ICF, on March 26, 2018. The update was prepared as part of the Historical Resources Evaluation Report (HRER) for the I-605 Corridor Improvement Project (CIP) in Los Angeles County and documented the segment of the linear resource within the Area of Potential Effects (APE) for the project. The recommended status code for the segment was 6Y, 6Z. The HRER was subsequently reviewed by the State Historic Preservation Officer (SHPO). In a letter dated July 11, 2019, SHPO did not concur with the determination of ineligibility for the segment and recommended that the Union Pacific Railroad (P-19-186110) as a whole should be assumed eligible for the National Register of Historic Places for purposes of the I-605 Corridor Improvement Project only.

B12. References:

GPA Consulting and ICF International. *Historical Resources Evaluation Report for the I-605 Corridor Improvement Project*. March 2019. Prepared for Metro and Caltrans.

Polanco, Julianne. *Julianne Polanco, Office of Historic Preservation to Kelly Ewing-Toledo, Caltrans: Determinations of Eligibility for the Proposed Interstate 605 Corridor Improvement Project, Los Angeles County, CA*. Letter dated July 11, 2019.

B14. Evaluator: Jenna Kachour, GPA Consulting. Date of evaluation: (Update) July 25, 2019.

DPR 523L (9/2013)

LA11993

Ty. Hist Survey(17)
Quad. Long Beach (6613)
South Gate (6612)
Los Angeles (1103)

Title **FINDING OF NO ADVERSE EFFECT**

Bdy. Road Construction (4) pgs 58

FOR THE

PROPOSED INTERSTATE 710 CORRIDOR PROJECT BETWEEN OCEAN BOULEVARD AND THE STATE ROUTE 60 INTERCHANGE

POST MILE 4.9/24.9 OF INTERSTATE 710
LOS ANGELES COUNTY, CALIFORNIA

PROJECT NO. 0700000443
EA: 24990

Sites: 0

Prepared by: Andrea Galvin

Au For Laura O'Neill
Architectural Historian
Fi Galvin Preservation Associates, Inc.
231 California Street
El Segundo, CA 90245

Reviewed by:

Noah Stewart, PQS
Principal Architectural Historian
Ag Caltrans District 7
100 South Main Street, Suite 100
Los Angeles, CA 90012

Approved by: for Teledo

for Gary Iverson, Office Chief
Environmental Cultural Studies Branch
Caltrans District 7
100 South Main Street, Suite 100
Los Angeles, CA 90012

Da **July 2012**

LA-11993

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2. DESCRIPTION OF THE UNDERTAKING....4
3. PUBLIC PARTICIPATION....6
4. DESCRIPTION OF HISTORIC PROPERTIES....9
5. APPLICATION OF THE CRITERIA OF ADVERSE EFFECT....15
6. CONCLUSIONS....24

ATTACHMENTS:

A: Project Maps
Project Vicinity Map
Project Location Map
B: Correspondence
C: Exhibits
Exhibit 1: Dale's Donuts Right-of-Way Acquisition
Exhibit 2: Patata Segment Realignment
Exhibit 3: Noakes Segment of the Union Pacific Railroad
Exhibit 4: Boulder Dam-Los Angeles 287.5 kV Transmission Line Cable and Tower Replacement

1. INTRODUCTION

The California Department of Transportation (Caltrans), in cooperation with the Los Angeles County Metropolitan Transportation Authority (Metro), the Gateway Cities Council of Governments (GCCOG), the Southern California Association of Governments (SCAG), the Ports of Los Angeles (POLA) and Long Beach (POLB), and the Interstate 5 Joint Powers Authority (I-5 JPA), proposes to widen Interstate 710 (I-710) from Ocean Blvd. in the city of Long Beach north to State Route 60 (SR-60) (refer to project vicinity and location maps in Attachment A). Caltrans, Metro, GCCOG, SCAG, POLA, POLB, and the I-5 JPA are collectively referred to as the I-710 Funding Partners. The existing I-710 mainline generally consists of eight general-purpose (GP) lanes north of Interstate 405 (I-405) and six GP lanes south of I-405. Five alternatives are under consideration for the proposed undertaking. These include: Alternative 1, the No Build Alternative; Alternative 5A, which involves freeway widening of up to 10 GP lanes; Alternative 6A, which involves constructing 10 GP lanes plus a four-lane freight corridor; Alternative 6B, which includes 10 GP lanes plus a zero-emissions four-lane freight corridor; and Alternative 6C, which includes 10 GP lanes plus a four-lane freight corridor tolled. Alternatives 5A, 6A, 6B, and 6C also include improvements to 42 local arterial intersections.

Because this project will be constructed using Federal funds, it is subject to compliance with Section 106 of the National Historic Preservation Act. It is subject to review by Caltrans on behalf of the Federal Highway Administration (FHWA) as governed by the July 1, 2007 *Memorandum Of Understanding Between The Federal Highway Administration and The California Department of Transportation Concerning the State of California's Participation in the Surface Transportation Project Delivery Pilot Program codified at 23 United States Code [USC] 327(a)(2)(B)*, whereby, FHWA has assigned, and Caltrans has assumed, all of the United States Department of Transportation (USDOT) Secretary's responsibilities for environmental review, consultation, or other such actions pertaining to the review or approval under certain environmental laws, including Section 106 of the National Historic Preservation Act of 1966, as amended, 16 USC 470(f) et seq.

This Finding of Effect (FOE) report was prepared in accordance with the January 1, 2004, *Programmatic Agreement Among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act as it Pertains to the Administration of the Federal-Aid Highway Program in California* (Caltrans Section 106 PA [PA]) and the First and Second Addenda to the PA that took effect September 28, 2007.

Compliance activities to date include the following: A Historic Property Survey Report (HPSR) (LSA Associates, Inc., February 2012) and Historical Resources Evaluation Report (HRER) (Galvin Preservation Associates, February 2012) were prepared for the proposed undertaking. As part of these efforts, the Area of Potential Effects (APE) was established, and several properties within the APE were evaluated for inclusion in the National Register of Historic Places (National Register) using the established criteria. Because the project consists of improvements both along the I-710 Corridor and to non-contiguous arterial intersections, the project APE contains multiple parts: one for the I-710 Corridor (HPSR, Attachment A, Map 3) and additional sections for the arterial intersections (HPSR, Attachment A, Map 4). The APE was designed to include the areas that could potentially be affected, either directly or indirectly, by the proposed undertaking. In total, the APE included 201 properties that were evaluated for National Register eligibility. These properties included 161 buildings and 5 bridges located within the I-710 Corridor APE and 35 buildings located within the Arterial Intersection APEs in accordance with the Caltrans Section 106 PA. They were documented and evaluated using California

Department of Parks and Recreation (DPR) 523 form sets. The results of the evaluations are summarized in the HPSR.

Of the 201 evaluated properties, one building was identified as eligible for the National Register:

Name/Identifier	Address/Location	Description	Year Built	Criteria
Dale's Donuts	4502 E. Alondra Blvd., Compton APN: 7301-017-001	1-3 Story Comm. Bldg.	1955	C

APN = Assessor's Parcel Number

The HPSR concluded that Dale's Donuts appears to be eligible under Criterion C at a local level of significance as a rare example of Programmatic Architecture. Dale's Donuts was constructed in 1955, which is the building's period of significance. It was one of 10 locations in the now-defunct Big Donut Drive-In chain founded by Russell C. Wendell, a donut machine salesman. He hired architect Henry J. Goodwin to design the prototype for the stores, only four of which survive. The other survivors are located in Inglewood, Gardena, and Bellflower.

As part of the preparation of the HPSR, several records searches were conducted. They identified three properties within the APE that were previously evaluated as eligible for listing in the National Register and one property that was listed on a local historic register. None of these properties were reevaluated as part of the HPSR, but potential effects to each are addressed in this FOE. The three National Register properties are:

Name/Identifier	Address/Location	Description	Year Built	Criteria
C-Los Angeles-A-1 (19-186110); referred to as the Patata Segment	Over I-710 and Los Angeles River north of the Firestone Blvd. overpass, parallel with Patata St., in the city of South Gate	Segment of the Union Pacific Railroad (UP Railroad) and Southern Pacific Railroad	1870s	A & B
C-Los Angeles-A-1 (19-186112); referred to as the Noakes Segment	Under I-710 between I-5 and Washington Blvd., parallel with Noakes St., in the city of Commerce	Segment of the UP Railroad and Southern Pacific Railroad	1870s	A & B
Boulder Dam-Los Angeles 287.5 kV Transmission Line; referred to as the Firestone Segment	Over I-710 south of the Firestone Blvd. overcrossing in the city of South Gate	Segment of 270-mile power line stretching from the Boulder Dam to Los Angeles	1935-1936	A & C

One building (the South Gate Library at 8680 California Ave.), with its associated Works Progress Administration (WPA) tile mosaic, is listed on the local register for the City of South Gate. It is a historical resource for the purposes of the California Environmental Quality Act (CEQA) but it does not meet the eligibility requirements for the National Register and is, therefore, not a historic property for the purposes of Section 106. It was also evaluated as part of the current study for the California Register of Historical Resources (California Register) and determined to not meet the eligibility criteria for the California Register. As a result, it is not addressed further in this report. Because it is listed on a local register, it is a historical resource pursuant to CEQA; therefore, the CEQA impacts regarding this resource are addressed in the Environmental Impact Report (EIR) for this project.

Pursuant to 36 Code of Federal Regulations (CFR) 800.5(a), Caltrans, on behalf of FHWA, has applied the Criteria of Adverse Effect to the four historic properties located within the APE. As part of this process, Caltrans has taken into account all correspondence and feedback resulting from ongoing consultation with the public and interested parties. Following is a summary of the effects of the proposed undertaking on historic properties:

Name/Identifier	Effect Finding
Dale's Donuts	Not Adverse – right-of-way take of non-contributing element.
C-Los Angeles-A-1 (19-186110); Patata Segment	Not Adverse – relocation of one non-contributing segment of large railroad line; will not adversely affect the significance, integrity, or eligibility of the line as a whole.
C-Los Angeles-A-1 (19-186112); Noakes Segment	Not Adverse – introduction of a new visual element to the setting, which has already been altered and modernized over time, of a non-contributing segment of large railroad line; will not adversely affect the significance, integrity, or eligibility of the line as a whole.
Boulder Dam-Los Angeles 287.5 kV Transmission Line; Firestone Segment	Not adverse – elevation of one segment of cables to a new height and replacement of two transmission towers; will not adversely affect the significance, integrity, or eligibility of the line as a whole.

In applying the Criteria of Adverse Effect, Caltrans, on behalf of FHWA, proposes a Finding of No Adverse Effect for the undertaking as a whole. Caltrans (on behalf of FHWA) seeks concurrence from the State Historic Preservation Officer (SHPO) on this finding, pursuant to 36 CFR 800.5(c) and Section 106 PA Stipulation X.B(1).

2. DESCRIPTION OF THE UNDERTAKING

LOCATION

The proposed undertaking is known as the I-710 Corridor Project (undertaking, project). It includes the portion of I-710 (6 or 8 lanes) from Ocean Blvd. in Long Beach to SR-60, a distance of approximately 18 miles (HPSR Attachment A, Map 2). The project traverses portions of the cities of Bell, Bell Gardens, Carson, Commerce, Compton, Cudahy, Downey, Huntington Park, Lakewood, Long Beach, Los Angeles, Lynwood, Maywood, Paramount, Signal Hill, South Gate, and Vernon, and portions of unincorporated Los Angeles County, all within Los Angeles County, California. Specifically, the linear project extends from a terminus at 33° 45′ 53.69″ North (N) latitude by 118° 12′ 5.33″W longitude (Township (T) 5 South (S), Range (R) 13 West (W) north to 34° 01′ 49.07″N latitude by 118° 10′ 16.66″W longitude (T2S, R12W). Large portions of the I-710 Corridor Project are not within the Public Land Survey System, so specific section information is lacking. The project study area is depicted on the *Long Beach, South Gate,* and *Los Angeles, California* 7.5-minute series United States Geological Survey (USGS) topographic maps (HPSR, Attachment A, Map 2). It is generally characterized by densely developed urban lands developed with a wide variety of property types, including: single- and multifamily housing; commercial, office, manufacturing, and industrial buildings; railroad segments and related facilities; portions of the Los Angeles River; highway segments; and recreational buildings.

PROJECT DESCRIPTION

I-710 (also known as the Long Beach Freeway) is a major north/south interstate freeway connecting the city of Long Beach to central Los Angeles. Within the I-710 Corridor Project study area, the freeway serves as the principal transportation connection for goods movement between the POLA/POLB shipping terminals and the Burlington Northern Santa Fe/Union Pacific Railroad (BNSF/UP Railroad) rail yards in the cities of Commerce and Vernon and destinations along I-710, as well as destinations north and east of I-710. Several alternatives are under consideration for the proposed project. These include: Alternative 1, the No Build Alternative; Alternative 5A, which involves freeway widening of up to 10 GP lanes; Alternative 6A, which involves constructing 10 GP lanes plus a four-lane freight corridor; Alternative 6B, which includes 10 GP lanes plus a zero-emissions four-lane freight corridor; and Alternative 6C, which includes 10 GP lanes plus a four-lane freight corridor tolled. Alternatives 5A, 6A, 6B, and 6C also include improvements to 42 local arterial intersections. This FOE evaluates effects for all aspects of the proposed project alternatives, including widening I-710 to 10 GP lanes next to four separated freight movement lanes and improvements to 42 associated arterial intersections. In the areas specifically relating to historic properties, the proposed project includes the following work:

- Road widening and associated right-of-way acquisition from the Dale's Donuts parcel along E. Alondra Blvd. in the city of Compton (see Exhibit 1);
- Demolition of two existing railroad bridges, realignment of a segment of track, and construction of two new railroad bridges at the Patata Segment of the UP Railroad line in the city of South Gate (see Exhibit 2);
- Widening of I-710, including installation of footings and piers, at the Noakes Segment of the UP Railroad line in the city of Commerce (At this stage of design, no exhibit is available to illustrate the ultimate placement of the footings; however, the supporting piers will avoid the rail lines because rail service cannot be disrupted during construction.); and

- Replacement of two transmission towers and elevation of a segment of cables at the Firestone Segment of the Boulder Dam-Los Angeles 287.5 kV Transmission Line over I-710 south of Firestone Blvd. in the city of South Gate (see Exhibit 3).

APE DELINEATION

Because the project consists of improvements both along the I-710 Corridor, as well as to non-contiguous intersections, the project APE contains several parts, one for the I-710 Corridor (HPSR, Attachment A, Map 3), and additional sections for the arterial intersections (HPSR, Attachment A, Map 4). The entire APE for the I-710 Corridor Project was established in consultation with Noah M. Stewart, Caltrans Professionally Qualified Staff (PQS) Architectural History; and Abdi Saghafi, Caltrans Project Manager, on December 20, 2011 (HPSR, Attachment A, Map 3). The APE was delineated to include all properties that could potentially be directly or indirectly affected by the proposed undertaking.

The areas of direct effects include the areas where physical impacts will occur. These are generally limited to the proposed and existing right-of-way, as well as areas where utilities will be relocated, and include the horizontal and vertical limits (ranging from a maximum height of 100 feet [freight corridor construction] to a maximum depth of 125 feet [drilling for borings and bridge piles]) associated with ground-disturbing activities.

The areas of indirect effects extend beyond those of the direct effects and incorporate areas that may be indirectly affected by visual, audible, or atmospheric intrusions; shadow effects; vibrations from construction activities; or change in access or use. The areas of indirect effects generally include all properties that are adjacent to the proposed right-of-way unless they are undeveloped. In most cases, the APE includes only the properties adjacent to the proposed right-of-way and/or temporary construction easements (TCEs), but additional parcels may be included where there are proposed new bridges, bridges that are being widened or replaced, or construction of new elevated features such as ramps and the freight corridor. Exceptions include properties that are buffered by topographic features, large parking and/or landscaped areas, or buildings on other properties. The complete APE extends around the entirety of those parcels where the built environment will be indirectly affected.

3. PUBLIC PARTICIPATION

Local historical societies and local governments were identified and invited to participate in the Section 106 process in accordance with 36 CFR §800.3(f)(1). On September 30, 2009, the I-710 Corridor project team sent letters to the consulting parties and other individuals and organizations likely to have knowledge of or concerns regarding historical properties in the area. The purpose of the letters was to seek information and identify any issues related to the undertaking's potential effects on historic properties (36 CFR §800.4 (a)(3)). Following is a list of organizations contacted and a summary of their comments.

Government Agencies:

- City of Bell Planning Department (Dennis Tarango, Director of Building & Planning, 6330 Pine Ave., Bell, CA 90201): No response was received.
- City of Bell Gardens Community Development and Planning Division (Carmen Morales, Interim Community Development Director, 7100 S. Garfield Ave., Bell Gardens, CA 90201): No response was received.
- City of Bell Gardens Cultural Heritage Board (Marta Solano, 7100 S. Garfield Ave., Bell Gardens, CA 90201): No response was received.
- City of Carson Economic Development and Planning Division (Sheri Repp-Loadsman, Planning Manager, 701 E. Carson St., Carson, CA 90745): No response was received.
- City of Commerce Community Development and Planning Division (Robert Zarrilli, Director, 2535 Commerce Wy., Commerce, CA 90040): Alex Hamilton, Assistant Director of Community Development for the City of Commerce, responded via telephone on October 29, 2009. Mr. Hamilton indicated the City does have criteria for local landmark designation; however, there are no properties listed or designated as historic resources at this time. He indicated that the Citadel and the train station may be on State or Federal lists of significance; however, both properties are at least 0.25 mile from the I-710 Corridor. He also noted that the Hobart Yard rail tower is a known resource outside of Commerce in the vicinity of either Vernon or East Los Angeles; however, that resource is located outside of the I-710 Corridor Project APE.
- City of Compton Planning and Economic Development Planning Division (Gay K. Morris, Interim Planning Director, 205 S. Willowbrook Ave., Compton, CA 90220): No response was received.
- City of Long Beach Development Services and Planning Bureau (Lynette Ferenczy, 333 W. Ocean Blvd., 4th Floor, Long Beach, CA 90802): Ms. Ferenczy responded via email on October 9, 2009, and on November 12, 2009. In her initial email, she requested detailed maps of the APE. Preliminary APE maps of the Long Beach area were sent to Ms. Ferenczy on October 16, 2009. The maps sent showed the Long Beach section of the project in detail. A follow-up email was sent by Ms. Ferenczy on November 12, 2009, stating that there are no cultural resources located within the project APE; however, she did list nearby historic resources and a historic district located near but outside the APE.
- County of Los Angeles Regional Planning (Jon Sanabria, Acting Director of Planning, 320 W. Temple St., 13th Floor, Los Angeles, CA 90012): No response was received.

- City of Lynwood Development Services Department (Karen Figueredo, Planning Assistant, 11330 Bullis Rd., Lynwood, CA 90262): No response was received.
- City of Monterey Park Development Services Department Planning Division (Jim Basham, Planning Manager, 320 W. Newmark Ave., Monterey Park, CA 91754): No response was received.
- City of Monterey Park Historic Heritage Commission (Harry Panagiotes, 320 W. Newmark Ave., Monterey Park, CA 91754): No response was received.
- City of Paramount Community Development (Joe Perez, Community Development Director, 16400 Colorado Ave., Paramount, CA 90723): No response was received.
- City of South Gate Community Development and Redevelopment Planning Division (Steve Lefever, Director of Community Development, 8650 California Ave., South Gate, CA 90280): Mr. Lefever sent a response via email on October 6, 2009. He stated that to the best of the City's knowledge, there are no "cultural resources" (i.e., prehistoric or historic archaeological sites, buildings, structures, or objects; unique ethnic cultural assets; or existing religious or sacred sites) within the I-710 Corridor Project boundaries.
- City of Vernon Community Services Planning Division (Sergio Canales, Planning Assistant, 4305 Santa Fe Ave., Vernon, CA 90058): No response was received.

Historical Societies and Other Interested Parties:

- Bellflower Heritage Society (16601 Civic Center Dr., Bellflower, CA 90706): No response was received.
- Long Beach Heritage (Mary Kay Knottage, Executive Director, Post Office Box 92521, Long Beach, CA 90809): John Thomas, President of Long Beach Heritage, responded to the letter via email on October 8, 2009. Mr. Thomas requested that Long Beach Heritage be added to the distribution list for the Draft Environmental Impact Report (DEIR) and other documents. Mr. Thomas' contact information was sent to the appropriate project managers and Long Beach Heritage was added to the distribution list.
- Historical Society of Long Beach (Julie Bartolotto, Executive Director, 4260 Atlantic Ave., Long Beach, CA 90807): No response was received.
- Historical Society of Monterey Park (781 S. Orange Ave., Monterey Park, CA 91754): No response was received.
- Historical Society of Southern California (Post Office Box 93487, Pasadena, CA 91120): No response was received.
- Los Angeles Conservancy (Mike Buhler, Director of Advocacy, 523 W. 6th St., Ste. 826, Los Angeles, CA 90014): No response was received.

Please refer to HPSR Attachment F for copies of correspondence. For a discussion of the Native American consultation, please refer to Attachment E.

In addition to the outreach letters that were sent to interested parties, several coordination and public meetings were held throughout the environmental process. Agency consultation and public participation for this project was accomplished through a variety of formal and informal methods, including an extensive multi-tiered community participation process with numerous public meetings and interagency coordination meetings.

A Notice of Preparation/Notice of Intent (NOP/NOI) was published on August 20, 2008, that provided a background of the project, the purpose and need, a brief description of the proposed alternatives, information on scoping meeting locations, and how to provide comments on the project. Twenty-five comments were received from agencies and the public; however, none of the comments addressed a concern for historic resources.

Public scoping meetings were held on September 9, 10, and 11, 2008, from 6:30 p.m. to 8:30 p.m. at Rowan Elementary School in East Los Angeles, Progress Park in the City of Paramount, and Cabrillo High School in the City of Long Beach, respectively. Several methods of notification were used in addition to the publication of the NOP and NOI to notify the public of the scoping period and meetings: a newsletter, email, public notices (Los Angeles Times, Long Beach Press Telegram, Mundo LA, Los Angeles Eastside Sun, and Los Angeles Watts Times), and the project website. Approximately 50 people each attended the September 9 and 10, 2008, public scoping meetings, and approximately 60 people attended the September 11, 2008, public scoping meeting. Spanish translators were at all three public scoping meetings, in addition to a Khmer translator at the scoping meeting in Long Beach.

The public scoping meetings included exhibit stations and presentations explaining the purpose of scoping, the project background, the project study area, the need and purpose of the I-710 Corridor Project, project alternatives, and key environmental issues to be addressed in the Draft EIR/EIS.

A total of 32 verbal comments was received at the scoping meetings, as well as 10 written comments. Key issues submitted by individuals included primarily air quality impacts, noise impacts, aesthetics, community impacts, environmental justice, alternatives, and public transportation. Of all the public meetings that were held, only one comment pertaining to historic resources was received, and the question pertained to how human burials encountered during construction would be handled. Because no major concerns were raised by the public regarding historic resources, no additional outreach was performed for Section 106 purposes aside from the initial outreach letters to interested parties.

4. DESCRIPTION OF HISTORIC PROPERTIES

To identify historic properties within the project APE, several research strategies were employed. These included consultation with local governmental agencies and interested parties, field surveys, records searches, and traditional research using primary and secondary sources. The research resulted in the identification of four historic properties within the APE that are eligible for listing in the National Register:

Name/Identifier	Address/Location	Description	Year Built	Criteria
Dale's Donuts	4502 E. Alondra Blvd., Compton APN: 7301-017-001	1-3 Story Comm. Bldg.	1955	C
C-Los Angeles-A-1 (19-186110); referred to as the Patata Segment	Over I-710 and Los Angeles River north of the Firestone Blvd. overpass, parallel with Patata St., in the city of South Gate	Segment of the Union Pacific Railroad (UP Railroad) and Southern Pacific Railroad	1870s	A & B
C-Los Angeles-A-1 (19-186112); referred to as the Noakes Segment	Under I-710 between I-5 and Washington Blvd., parallel with Noakes St., in the city of Commerce	Segment of the UP Railroad and Southern Pacific Railroad	1870s	A & B
Boulder Dam-Los Angeles 287.5 kV Transmission Line; referred to as the Firestone Segment	Over I-710 south of the Firestone Blvd. overcrossing in the city of South Gate	Segment of 270-mile power line stretching from the Boulder Dam to Los Angeles	1935-1936	A & C

LA-11993

DALE'S DONUTS



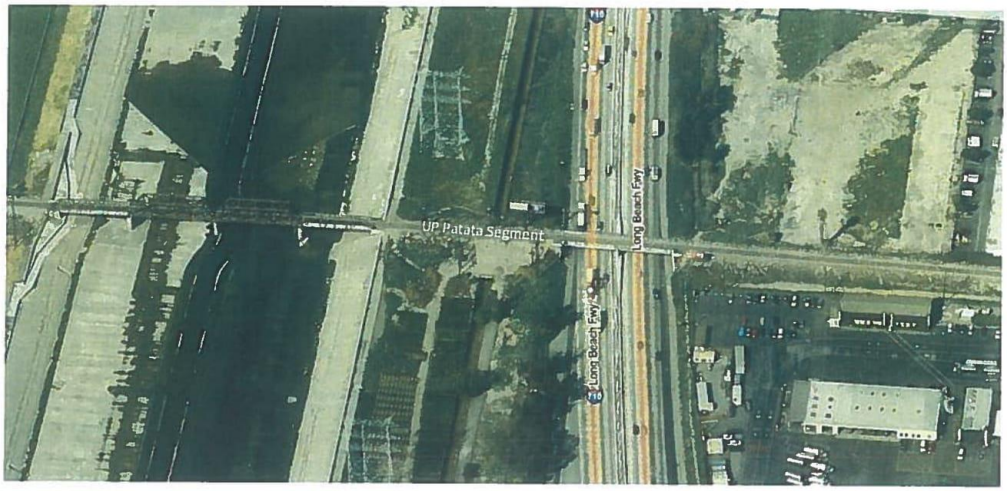
Dale's Donuts is located at the southeast corner of E. Alondra Blvd. and Atlantic Ave. in the city of Compton. It is an example of Programmatic Architecture that consists of a 32.5-foot donut on the roof of a one-story commercial building. The donut is constructed of rolled steel bars covered with gunite. "Dale's Donuts" is painted on it in black letters. The commercial building is one-story in height, rectangular in shape, and sheathed in stucco. The roof is gently sloped with projecting eaves. Canted windows from which customers order and receive their donuts are located on the west elevation and wrap around the corners.

Dale's Donuts appears eligible for listing in the National Register in the context of architecture. It appears to be significant at the local level under Criterion C as a rare example of Programmatic Architecture. Its period of significance is 1955, the year it was constructed. Its boundaries are defined by its parcel boundaries. The building was one of ten locations in the now-defunct Big Donut Drive-In chain founded by Russell C. Wendell, a donut machine salesman. He hired architect Henry J. Goodwin to design the prototype store, of which only four survive. The other surviving buildings are located in Inglewood, Gardena, and Bellflower.

Programmatic Architecture is closely associated with southern California and is generally related to roadside architecture because it was intended to catch the eye of passing motorists. In the Programmatic canon, buildings took the forms of the products or services provided by the businesses they housed. Examples include hot dog stands in the shape of hot dogs and pharmacies in the shape of a mortar and pestle. The heyday of the style was the mid-1920s through the mid-1930s. By the 1950s, however, the style had changed from a focus on building shapes to a focus on signs. In the case of the Big Donut

Drive-In (now Dale's Donuts), the subject product is represented by the giant rooftop donut that essentially functions as the sign.

C-LOS ANGELES-A-1 (19-186110): PATATA SEGMENT[1]



The Patata Segment is a segment of the UP Railroad route in the Los Angeles area that crosses over I-710 and the Los Angeles River north of the Firestone Blvd. overpass, parallel with Patata St., in the city of South Gate. Originally part of the Southern Pacific Railroad, the UP Railroad route as a whole was identified as eligible for the National Register in a report prepared by Jones and Stokes in 1999: *Cultural Resources Inventory Report for Williams Communications, Inc. Proposed Fiber Optic Cable System Installation Project, Los Angeles to Anaheim, Los Angeles and Orange Counties*.

The current UP Railroad route in the Los Angeles area consists of standard gauge lines. It is part of the larger UP Railroad system. Numerous associated features include railroad stations, sidings, spurs, and rail yards. The original Southern Pacific Railroad through the Los Angeles area was constructed in the 1870s and ran south from Los Angeles through Watts and Compton to Wilmington, and east from Los Angeles through Alhambra, San Gabriel, Puente, Pomona, and on through Colton before heading toward Yuma. Another Southern Pacific line headed southeast from Watts through Norwalk and Buena Park to Santa Ana. The Southern Pacific operated for over 100 years, acquiring several smaller railroads as it grew. In the 1990s, UP Railroad acquired all of Southern Pacific's holdings and continues to operate them to date.

Portions of the UP Railroad route are additions to the first transcontinental railroad. Other portions were instrumental in the development of Los Angeles as a major business center. The modern UP Railroad system is made up of other, often smaller, historic railroads that helped to form the economy and population of southern California. UP Railroad lines enabled the transportation of goods to ports and the migration of large numbers of people. The railroad is also associated with a number of important historic figures, railroad tycoons Collis P. Huntington, Leland Stanford, Charles Crocker, and Mark Hopkins,

[1] The majority of this section was excerpted from the DPR form set for C-Los Angeles-A-1 (19-186110), which was prepared as part of *Cultural Resources Inventory Report for Williams Communications, Inc. Proposed Fiber Optic Cable System Installation Project, Los Angeles to Anaheim, Los Angeles and Orange Counties*, prepared by Jones and Stokes, 1999.

known as the Big Four. Therefore, the Jones and Stokes report concluded that the UP Railroad route in the Los Angeles area appears to be eligible for listing in the National Register under Criteria A and B at the state level. The period of significance identified in the report is 1869 to the present. Its boundaries include the extent of railroad right-of-way. However, despite the previous determination that this railroad is significant to present, this period of significance is much too broad and was not supported by the context. Although the railroad has had an impact on the region for a long period of time, a more appropriate period of significance for this resource would be more closely tied to its reasons for significance - its associations with the early development of Los Angeles and Southern California (Criterion A) and with the Big Four (Criterion B). Therefore, a more appropriate period of significance would be from 1869, when the railroad line was first constructed, until 1926, when the railroad reached its peak. By 1926, the Southern Pacific Railroad operated over 1,164 miles of track in the Southern California region, having absorbed several smaller railroad lines including the San Pedro Railroad (1874) and the Pacific Electric Railroad (1911). By this date, the infrastructure for these major lines had already been established. With the proliferation of the automobile by the end of the 1920s, the railroad was no longer the most predominant means of transporting goods, and the Southern California area was primarily established by this period. For its association with the Big Four, a more appropriate period of significance would be 1869, when the railroad line was first constructed, until 1900, which was the date of Huntington's death. He was the last of the Big Four.

The Patata Segment was originally part of the southeasterly line from Watts to Santa Ana. It is a 0.8-mile segment of a single line of track, consisting of wood ties with metal tie plates and rails. The rails are continuously welded, rather than bolted, which suggests that they were installed sometime after 1930. Additionally, some of the rails have date stamps from 1948, 1953, 1954, and 1989, further demonstrating that they are not from the period of significance. The segment crosses I-710 via a concrete bridge and the Los Angeles River via a steel Warren Truss bridge. The concrete bridge over I-710 was erected when the interstate was constructed in 1957. The steel truss bridge was built in 1938. It replaced a previous bridge, which was washed out by the 1938 Los Angeles River Flood. At around the same time, the larger segment of the line from Alameda Street to Eastern Avenue was shifted north to accommodate the new bridge, as well as a new spur to the south. Due to realignment and numerous alterations, the Patata Segment is a non-contributing segment of the larger UP Railroad Route.

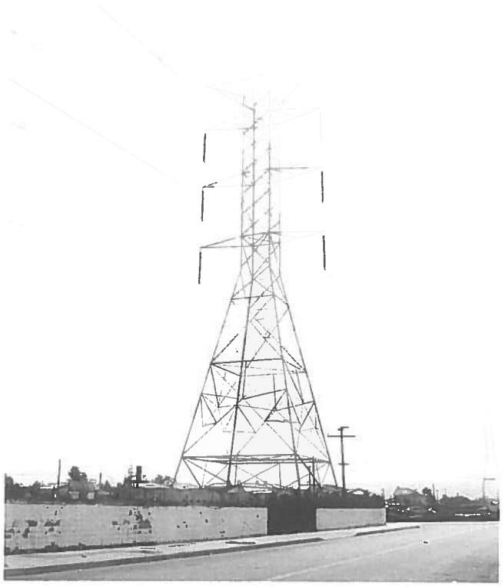
C-LOS ANGELES-A-1 (19-186112): NOAKES SEGMENT



As another segment of the UP Railroad Route in the Los Angeles area, the context and significance for the Noakes Segment are identical to those discussed for the Patata Segment. The period of significance from 1869 to 1926 is also the same. The UP Railroad line was identified as eligible for the National Register in the report prepared by Jones and Stokes in 1999: *Cultural Resources Inventory Report for Williams Communications, Inc. Proposed Fiber Optic Cable Alignment Between Los Angeles and Riverside, Los Angeles and Riverside Counties*.

The Noakes Segment appears to have been constructed sometime between 1940 and 1948, according to historic USGS topographic maps, and was originally part of a line that ran from Los Angeles to Pomona and areas east. The Noakes Segment consists of multiple lines of track and several track sidings. The tracks and sidings appear to be standard gauge and constructed of wood ties with metal tie plates and rails. Since it was constructed after the end of the period of significance, it is not a contributing element of the larger UP Railroad Route.

BOULDER DAM-LOS ANGELES 287.5 KV TRANSMISSION LINE: FIRESTONE SECTION[1]



The Boulder Dam-Los Angeles 287.5 kV Transmission Line consists of two parallel electrical transmission circuits carried on steel lattice towers running approximately 270 miles from the Hoover Dam (formerly Boulder Dam) to Century Receiving Station near Watts in Los Angeles County. The Transmission Line is a historic district in the form of a linear resource. It is composed of several contributing elements, such as cables, single and double circuit towers that carry the cables, access roads serving the towers, two switching stations, and two transformer stations. The segment of the line that is located within Los Angeles County is 40 miles long. It does not include an access road, single circuit towers, or switching stations. Rather, it consists of cables, double circuit towers, and one transformer station – the Century Receiving Station. The Firestone Segment of the Transmission Line is located within the APE. It consists of a series of double circuit towers and cables that cross I-710 just south of Firestone Blvd. in the city of South Gate.

The Transmission Line as a whole was identified as eligible for the National Register under Criteria A and C in a document prepared by Stephen Van Wormer and Christy Dolan of KEA Environmental for the U.S. Department of the Interior in 1999: *National Register of Historic Places Registration Form: Boulder Dam-Los Angeles 287.5 kV Transmission Line*. The eligibility of the portion in Los Angeles County was confirmed in a subsequent report prepared by Noah M. Stewart of Caltrans District 7 in 2008: *Historic Resources Evaluation Report: Interstate Route 10-605 Interchange Improvement, 07-LA-10/605 PM 31.2/20.9, EA 24540K*. It is significant under Criterion A for its association with the construction of the Hoover Dam and the industrial, economic, and urban development that occurred in metropolitan Los Angeles from the mid-1930s through the 1940s. The Transmission Line is also significant under Criterion C for its unique engineering and structural characteristics within the context of development of point-to-point high power transmission in California. Its period of significance is 1936 to 1953. The boundary of the entire line includes the transmission corridor from its beginning at the Hoover Dam on the Nevada side of the Colorado River to the Century Receiving Station near Watts, California.

[1] The majority of this section was excerpted from the DPR form set for the Boulder Dam-Los Angeles 287.5 kV Transmission Line, which was prepared as part of *Historic Resources Evaluation Report: Interstate Route 10-605 Interchange Improvement, 07-LA-10/605 PM 31.2/20.9, EA 24540K*, prepared by Noah M. Stewart of Caltrans District 7, 2008.

5. APPLICATION OF THE CRITERIA OF ADVERSE EFFECT

Caltrans has applied the Criteria of Adverse Effect to historic properties within the APE. Caltrans has considered all views concerning such effects that have been provided by consulting parties and the public, as per 36 CFR 800.5(a).

According to 36 CFR 800.5(a)(1), an Adverse Effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association.

Examples of adverse effects on historic properties include, but are not limited to:

(i) Physical destruction of or damage to all or part of the property;

(ii) Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access, that is not consistent with the Secretary of the Interior's Standards for the Treatment of Historic Properties (36 CFR part 68) and applicable guidelines;

(iii) Removal of the property from its historic location;

(iv) Change of the character of the property's use or of physical features within the property's setting that contributes to its historic significance;

(v) Introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features;

(vi) Neglect of a property that causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to an Indian tribe or Native Hawaiian organization;

(vii) Transfer, lease, or sale of property out of Federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance.

The proposed project includes widening of I-710 and associated intersection, bridge, and utilities improvements. It has the potential to affect four National Register eligible properties. Following is an analysis of the undertaking's effects on each property.

DALE'S DONUTS



The proposed project includes right-of-way acquisition along E. Alondra Blvd. at its intersection with Atlantic Ave. in the city of Compton. Dale's Donuts is located on the southeast corner of this intersection (see Attachment C, Exhibit 1). A narrow section of the Dale's Donuts parcel along E. Alondra Blvd. averaging eight feet in width will be taken and converted to sidewalk and street (see Exhibit 1). The narrow section currently consists of paved parking. Converting it to sidewalk and street will result in the removal of some, but not all, of the property's paved parking. As such, the proposed project will result in physical damage to part of the property. This change will

not affect, either directly or indirectly, any of the characteristics of the property that qualify it for inclusion in the National Register, nor will it diminish its integrity to the degree that it is no longer eligible for the National Register, as outlined below.

Character-defining Features

The character-defining features of Dale's Donuts include: the simple rectangular plan, gently pitched roof, overhanging eaves, stucco exterior walls, canted aluminum storefront windows, prominent corner location, and most notably, the large donut-shaped rooftop sign.

Location

Dale's Donuts will not be moved or relocated as part of the proposed project, so its integrity of location will not be affected.

Design

The proposed project does not include any physical changes to the Dale's Donuts building or to any of its character-defining features; it will affect the paved parking area only. Therefore, it will not directly or indirectly affect the property's integrity of design.

Setting

Because the project involves right-of-way acquisition, it will alter the setting of Dale's Donuts. However, this change will be minor and will not alter or destroy any of the property's character-defining features. It is limited to an eight-foot segment of the parcel along E. Alondra Blvd. The segment currently consists of sidewalk and paving. It will continue to consist of sidewalk and paving as part of the proposed project; it will just be relocated about eight feet south. Therefore, while the project will affect the historic property's setting, this effect will be minor and will not diminish the property's integrity to the degree that it is no longer eligible for the National Register.

Materials

The project does not include any changes to the materials that characterize the property. The only change in materials will be the removal and replacement of some asphalt paving and concrete sidewalk, which are not character-defining. Therefore, the proposed project will not affect the historic property's integrity of materials.

Workmanship

The proposed project does not include any physical changes to the Dale's Donuts building or to any of its character-defining features. Therefore, it will not affect the historic property's integrity of workmanship.

Feeling

The proposed right-of-way acquisition will not affect the property's feeling as a Programmatic commercial building from the mid-1950s, because it will not have a physical effect on any of its character-defining features and it will have only a very minor impact on its setting.

Association

The property is eligible under Criterion C for its architecture, not for its association with particular persons or events. As such, association is not an applicable aspect of integrity and it will not be adversely affected by the proposed project.

In conclusion, the undertaking will affect Dale's Donuts through acquisition of some of the property's paved parking and conversion of the land to sidewalk and street. This change will involve some minor physical alteration to a non-character-defining portion of the property. It will affect the property's setting, but it will not reduce its historic integrity to a degree that it is no longer eligible for the National Register.

With regard to other potential effects, the proposed project does not include any of the following: restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access, that is not consistent with the Secretary of the Interior's Standards; removal of the property from its historic location; change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance; introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features; neglect of the property that causes its deterioration; or transfer, lease, or sale out of Federal ownership or control. As a result, the proposed undertaking will have no adverse effect on the historic property.

C-LOS ANGELES-A-1 (19-186110): PATATA SEGMENT

The undertaking includes realigning a small non-contributing segment, the Patata Segment, of the UP Railroad line to the north, by approximately 70 feet. This small section of track, roughly 4,225 feet (0.8 mile) long, will be realigned and reconstructed to match the existing rail line (see Attachment C, Exhibit 2). The new section will be joined with the existing line at its east and west ends. The purpose of realigning the Patata Segment is to make way for a new surface street connecting Atlantic Ave. on the west side of I-710 with Garfield Ave. on the east side.

In the process of realignment, two existing bridges will be removed and two new bridges will be constructed. One bridge crosses I-710 (South Gate Underpass [UP]); the other crosses the Los Angeles River (UP Railroad Warren Double Truss Bridge). Neither of the existing bridges had been previously evaluated as eligible for the National Register before the preparation of the HPSR for this project. Both were evaluated in the HPSR as not eligible for the following reasons:

- The South Gate UP Bridge does not appear to be eligible as an individual property as it is an ordinary steel girder bridge that is not directly associated with any significant events, patterns, or persons and does not embody the distinctive characteristics of a type, period, or method of construction. It is not eligible as a contributing feature of the UP Railroad line, because it is not an original element of the line; rather, it was constructed in 1957 as part of the construction of I-710.
- The UP Railroad Warren Double Truss Bridge does not appear to be eligible as an individual property as it is an ordinary steel truss bridge that is not directly associated with any significant events, patterns, or persons and does not embody the distinctive characteristics of a type, period, or method of construction. It is not eligible as a contributing feature of the UP Railroad line, because it is not an original element of the line; rather, it was constructed in 1938 and replaced an earlier river crossing.

The proposed project includes realigning the Patata Segment to the north by approximately 70 feet, which will result in the physical removal of the segment from its current location. However, its current location

does not date from within the period of significance for the UP Railroad line as a whole (1869–1926). Rather, the Patata Segment was realigned to its current location sometime between 1934 and 1942, according to historic USGS topographic maps. Further, this segment of railroad line has been substantially altered by the replacement of the truss bridge over the Los Angeles River in 1938, the addition of the I-710 freeway undercrossing in 1957, and the replacement of several metal ties and other materials. As such, the Patata Segment does not retain sufficient integrity to contribute to the entire line and is, therefore, a non-contributing element of the larger UP Railroad line. The minor realignment of this non-contributing segment of track will not reduce the historic integrity of the UP Railroad line as a whole to a degree that it is no longer eligible for the National Register. The track will continue to be operational and will continue to convey its historic significance as outlined below.

Character-defining Features

Character-defining features of the UP Railroad line include the following: original track locations and alignments; standard gauge tracks consisting of wood ties, metal rails, metal plates; rail yards; track sidings; spurs; stations and other railroad buildings; and original bridges and trestles.

Location

The proposed project involves relocation of an 0.8-mile non-contributing section of the much larger UP Railroad line. At its peak in 1926, the company operated 1,164 miles of track throughout the Los Angeles area alone. As such, the project will affect the location of only a small non-contributing segment of a very large linear resource. It will not affect the location of the resource as a whole. The alteration of this one section of the line does not constitute an adverse effect, because it alone will not reduce the integrity of the linear resource in its entirety to the point that it is no longer eligible for the National Register.

Design

The proposed project does not include any changes to the design of the line as a whole. The line in this particular section consists of a single line of standard gauge track made of metal rails and wood ties. The new track that replaces it will be realigned, but it will continue to consist of a single line of standard gauge track with metal rails and wood ties. The project will not reduce the integrity of design for the resource as a whole to the point that it would no longer be eligible for inclusion in the National Register.

Setting

Because the project involves replacing two bridges that support the Patata Segment, it will alter the segment's setting. However, these elements are non-original and do not contribute to the significance or integrity of the line as a whole. The setting has already changed tremendously from the opening of the railroad, with the realignment of the segment, replacement of the bridge over the river, the introduction of the I-710 freeway, and the surrounding development. As such, the setting is not one of the more important aspects of integrity for this resource. Therefore, this change will not affect the historic setting of the UP Railroad line in its entirety, and it does not have the ability to reduce the integrity of the linear resource to the point that it is no longer eligible for the National Register.

Materials

The project will not adversely affect the materials that characterize the linear resource as a whole. The existing Patata Segment was realigned sometime between 1934 and 1942 and consists of metal rails and plates with wood ties that have been replaced over time. This is evidenced by the date stamps on the ties themselves. These replacement materials are used consistently along the UP Railroad line. The new,

relocated Patata Segment will continue to utilize metal rails and plates with wood ties. While these materials will be new, they will be replacing non-original materials, and they will be consistent with the materials along the rest of the UP Railroad line. The project will not reduce the integrity of materials for the resource as a whole to the point that it is no longer eligible for inclusion in the National Register.

Workmanship

The proposed project will not adversely affect the workmanship of the linear resource as a whole. The Patata Segment is non-original and has already had its materials replaced over time. Therefore, additional replacement will not constitute a loss of workmanship or reduce the integrity of the linear resource as a whole to the point that it is no longer eligible for the National Register.

Feeling

The feeling of the UP Railroad line as a whole will not be affected by the proposed project. The feeling of the line in this location has already been affected by the realignment of the Patata Segment between 1934 and 1942, the introduction of the 1957 overcrossing, and the channelization of the Los Angeles River and adjacent development. Additionally, feeling is not one of the more important aspects of integrity for this resource. The linear resource as a whole will be affected only minimally by the changes to its environment caused by the realignment. These changes will not reduce the integrity of the linear resource to the point that it is no longer eligible for the National Register.

Association

The UP Railroad line was associated with Southern Pacific Railroad, UP Railroad, the Big Four railroad tycoons, and the development of many southern California communities. Realignment of one small non-contributing segment (less than 1 mile of the 1,164 miles of line within the Los Angeles area) of the larger line (that runs to Yuma, Arizona, and then to the east coast) will not adversely affect the line's ability to convey its association and will not reduce its integrity of association to the point that it is no longer eligible for the National Register.

In conclusion, the proposed undertaking will only affect the small non-contributing Patata Segment of the vast UP Railroad line and will not cause an adverse effect on the linear resource as a whole. The realignment and new construction will not result in a reduction of the integrity of the UP Railroad line in its entirety to a degree that it is no longer eligible for the National Register.

With regard to other potential effects, the proposed project does not include: restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, or provision of handicapped access, that is not consistent with the Secretary of the Interior's Standards; change of the character of the property's use or of physical features within the property's setting that contributes to its historic significance; introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features; neglect of the property that causes its deterioration; or transfer, lease, or sale out of Federal ownership or control. Therefore, the proposed undertaking will have no adverse effect on the linear resource.

C-LOS ANGELES-A-1 (19-186112): NOAKES SEGMENT

The proposed undertaking includes widening of I-710, including installation of footings and piers, over the non-contributing Noakes Segment in the city of Commerce (see Attachment C, Exhibit 3). Widening will require new footings strategically placed around the existing tracks. The supporting piers will avoid the rail lines because rail service cannot be disrupted during construction. The new footings will affect the

segment by introducing a new visual element; however, this new element will not diminish the integrity of the entire UP Railroad line's significant historic features as outlined below.

Character-defining Features

Character-defining features of the UP Railroad line include the following: original track locations and alignments; standard gauge tracks consisting of wood ties, metal rails, metal plates; rail yards; track sidings; spurs; stations and other railroad buildings; and original bridges and trestles.

Location

The proposed project involves widening I-710 over the non-contributing Noakes Segment. No track segments or track sidings will be realigned or relocated to facilitate the road widening. Therefore, neither the location of the segment or of the line as a whole will be affected.

Design

The proposed project does not include any changes to the design of the segment or of the line as a whole. No tracks or sidings will be realigned, replaced, or otherwise altered. Therefore, neither the design of the segment or of the line as a whole will be affected.

Setting

Because the project involves adding new footings around the existing tracks, it will affect the setting of the Noakes Segment by introducing a new visual element. However, the Noakes Segment dates from after the end of the period of significance for the line as a whole, and its setting has already been significantly altered over time by the original construction of I-710 and by other modern construction in the vicinity. As such, the visual effect of the new footings represents a minor change to a non-contributing part of the larger line, which will not affect the historic setting of the UP Railroad line as a whole, and does not have the ability to reduce the integrity of the linear resource to the point that it is no longer eligible for the National Register.

Materials

The proposed project does not include any changes to the Noakes Segment's materials. Therefore, the integrity of materials of the line will not be affected.

Workmanship

The proposed project does not include any changes to the Noakes Segment's existing design or materials. As a result, it will not affect the workmanship of the line as a whole.

Feeling

The only change resulting from the proposed project will be the introduction of a new visual element to the already altered setting of the Noakes Segment. As a result, the feeling of the UP Railroad line as a whole will not be reduced to the point that it is no longer eligible for the National Register.

Association

The UP Railroad line was associated with Southern Pacific Railroad, UP Railroad, the Big Four railroad tycoons, and the development of many southern California communities. The proposed project includes introducing a new visual element to a non-contributing part of the line. It does not include any work that would diminish the ability of the line as a whole to convey this association. Therefore, the association of the line as a whole will not be affected.

In conclusion, the proposed undertaking will affect the setting of the non-contributing Noakes Segment by introducing a new visual element. However, this change will be minor and will not affect the integrity of the UP Railroad line as a whole. Consequently, the proposed project does not include any of the following potential adverse effects: physical destruction or damage to all or part of the property; restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access, that is not consistent with the Secretary of the Interior's Standards; removal of the property from its historic location; change of the character of the property's use or of physical features within the property's setting that contributes to its historic significance; introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features; neglect of the property that causes its deterioration; or transfer, lease, or sale out of Federal ownership or control. Therefore, the proposed undertaking will have no adverse effect on the linear resource.

BOULDER DAM-LOS ANGELES 287.5 kV TRANSMISSION LINE: FIRESTONE SECTION

The proposed project will affect the segment of the Boulder Dam-Los Angeles 287.5 kV Transmission Line within the APE that crosses over I-710 just south of Firestone Blvd. in the city of South Gate, referred to as the Firestone Segment. The cables of the Firestone Segment will be raised 55 feet vertically to accommodate a 55-foot increase in the height of the freeway due to the proposed elevated freight corridor (Alternatives 6A/B/C). Two transmission towers will be replaced to meet the new cable height requirement with tubular steel poles or lattice steel towers similar to the existing towers (see Attachment C, Exhibit 4). It is anticipated that although the new towers will be similar to the existing towers, they would be distinguishable from the existing so as not to create a false sense of historical development. The segment of cables that will be raised is approximately 850 to 1,000 feet long – quite small in relation to the overall linear resource, which is 270 miles long.

Because the proposed project includes removing and replacing two towers and some cables, it will result in physical destruction of part of the larger Transmission Line property. However, the Firestone Segment is just one small contributing segment of the 270-mile line. While the proposed project will affect the integrity of the individual segment, it will not reduce the historic integrity of the Transmission Line as a whole to a degree that it is no longer eligible for the National Register as outlined below.

Character-defining Features

Character-defining features of the Boulder Dam-Los Angeles 287.5 kV Transmission Line include the following: transmission cables; single and double circuit towers which carry the cables; access roads serving the towers; two switching stations; and two transformer stations.

Location

The proposed project will not alter the geographic location of either the Firestone Segment or the Transmission Line as a whole. The cables will cross I-710 at the same point, just at a higher elevation. As such, the location of the segment and of the line as a whole will not be affected. The project will not

reduce the integrity of location for the resource as a whole to the point that it would no longer be eligible for inclusion in the National Register.

Design

The proposed project will alter the design of the segment by replacing the existing towers and altering the height of the cables. Currently, the towers reflect the design of engineering from the period of time that they were constructed. After the proposed heightening of the towers near the I-710 freeway, the overall line will still be reflective of that engineering. The proposed change affects the small Firestone Segment only and does not affect the line as a whole. Such limited replacement and elevation change will not reduce the integrity of the linear resource in its entirety to the point that it is no longer eligible for the National Register.

Setting

The proposed project will alter the setting of the Firestone Segment by introducing a wider roadway; however, this change will not affect the Transmission Line's integrity of setting to the degree that it is no longer eligible for listing in the National Register, because I-710 is not an original aspect of the historic setting.

Materials

The proposed project includes replacement of two towers and some cable segments, so it will affect the materials in the Firestone Segment; however, these changes will affect the small Firestone Segment only and will not affect the line as a whole. Such limited replacement will not reduce the integrity of the linear resource in its entirety to the point that it is no longer eligible for the National Register. Additionally, the new cables will be very similar to the existing cables. Thus, while the cables will be new, they will be consistent with the cables along the rest of the Transmission Line. The design for the new towers is yet to be determined, but they will either be tubular steel poles or steel lattice towers.

Workmanship

The proposed project will not adversely affect the workmanship of the linear resource as a whole, which reflects the engineering techniques from the period of construction; it will only affect the workmanship of the Firestone Segment in particular. Loss of integrity of workmanship in this small segment alone will not reduce the integrity of the linear resource as a whole to the point that it is no longer eligible for the National Register.

Feeling

The feeling of the Transmission Line as a whole will not be affected by the proposed project. The feeling of the Firestone Segment will be affected by the changes to its design, materials, and workmanship, but these changes do not have the ability to reduce the integrity of the linear resource in its entirety to the point that it is no longer eligible for the National Register.

Association

The Transmission Line was associated with the construction of the Hoover Dam and the development of modern Los Angeles. The proposed project will not adversely affect the line's ability to convey this association because the changes will be limited to two out of approximately 2,700 towers. These changes

are minimal in relation to the linear resource as a whole and will not reduce its integrity of association to the point that it is no longer eligible for the National Register.

In conclusion, the proposed undertaking will affect only the Firestone Segment of the Boulder Dam-Los Angeles 287.5 kV Transmission Line, not the linear resource as a whole. Although the replaced towers would result in the elevation of the cable and the replacement of two towers, the new towers will be compatible and distinguishable from the existing. It is a minor change that will not result in a reduction of the integrity of the Transmission Line in its entirety to a degree that it is no longer eligible for the National Register. The proposed changes could be considered to be compatible with the Secretary of the Interior's Standards for Rehabilitation as the property will be used as it was historically; the historic character of the property will be retained and preserved; and the alteration of the overall features, spaces, and spatial relations that characterize the property will be preserved. The new towers will be compatible with the historic towers but will not create a false sense of historical development.

With regard to other potential effects, the proposed project does not include any of the following: removal of the property from its historic location; change of the character of the property's use or of physical features within the property's setting that contributes to its historic significance; introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features; neglect of the property that causes its deterioration; or transfer, lease, or sale out of Federal ownership or control. Therefore, the proposed undertaking will have no adverse effect on the Boulder Dam Transmission Line.

6. CONCLUSIONS

Caltrans, in cooperation with Metro, GCCOG, SCAG, POLA, POLB, and I-5 JPA, proposes to widen I-710 from Ocean Blvd. in the city of Long Beach north to SR-60. In an HPSR prepared in February 2012, Caltrans identified four historic properties that could potentially be affected by the proposed undertaking. Caltrans has applied the Criteria of Adverse Effect to these properties and has considered any views concerning such effects that have been provided by consulting parties and the public, as per 36 CFR 800.5(a). Following is a summary of effects:

Name/Identifier	Effect Finding
Dale's Donuts	Not Adverse – right-of-way take of non-contributing element.
C-Los Angeles-A-1 (19-186110); Patata Segment	Not Adverse – relocation of one non-contributing segment of large railroad line; will not adversely affect the significance, integrity, or eligibility of the line as a whole.
C-Los Angeles-A-1 (19-186112); Noakes Segment	Not Adverse – introduction of a new visual element to the setting, which has already been altered and modernized over time, of a non-contributing segment of large railroad line; will not adversely affect the significance, integrity, or eligibility of the line as a whole.
Boulder Dam-Los Angeles 287.5 kV Transmission Line; Firestone Segment	Not adverse – elevation of one segment of cables to a new height and replacement of two transmission towers; will not adversely affect the significance, integrity, or eligibility of the line as a whole.

Therefore, pursuant to 36 CFR 800.5(c) and Caltrans Section 106 PA Stipulation X.B(1), Caltrans, on behalf of FHWA applied the Criteria of Adverse Effect and found that the undertaking would result in a finding of no adverse effect.

LA-11993

FOE ATTACHMENT A

PROJECT VICINITY MAP
PROJECT LOCATION MAP

LA-11993



FIGURE 1

I-710 Corridor Project
07-LA-710- PM 4.9/24.9 EA 249900

Project Vicinity Map

LA-11993

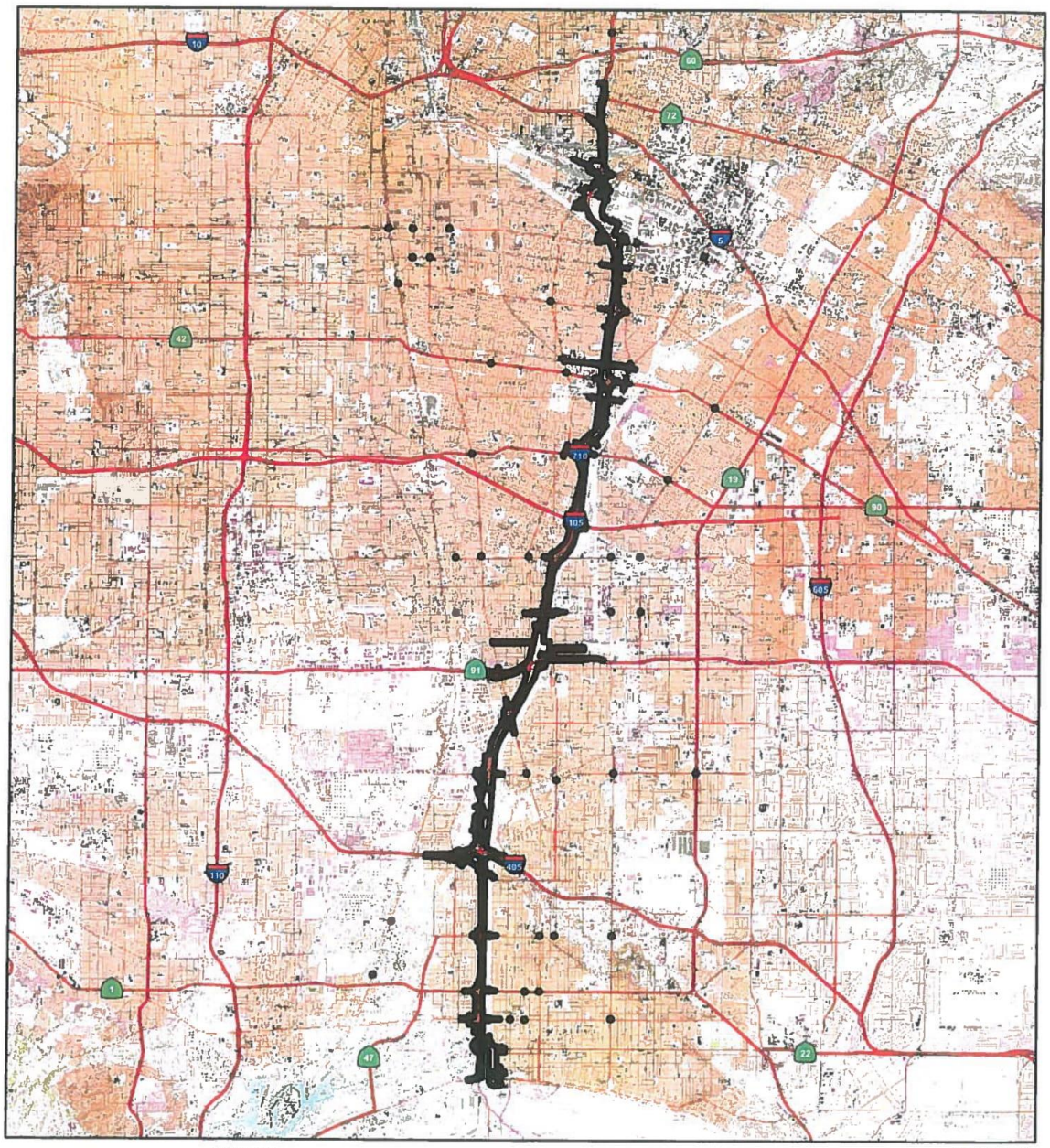


FIGURE 2

SOURCE: USGS 7.5' Quad. LONG BEACH ('81), SOUTH GATE ('81), LOS ANGELES ('81)
I:\URS0801A\GIS\Cultural\Proj_Loc_Map.mxd (4/12/12)

I-710 Corridor Project
07-LA-710- PM 4.9/24.9 EA 249900
Project Location Map

LA-11993

FOE ATTACHMENT B

CORRESPONDENCE

LA-11993

HISTORIC CONSULTATION

Historic consultation was conducted with the groups and individuals listed below. A example of the letter and map mailed to these contacts, as well as the responses, are attached.

Bellflower Heritage Society
16601 Civic Center Drive
Bellflower, CA 90706
tel. 562-866-6609

Dennis Tarango
Director of Building & Planning
Planning Department
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Carmen Morales
Interim Community Development Director
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Marta Solano
Cultural Heritage Board
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srepp@carson.ca.us

1

LA-11993

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Interim Planning Director
Planning and Economic Development, Planning Division
City of Compton
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Lynette Ferenczy
Long Beach Development Services, Planning Bureau
City of Long Beach
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Karen Figueredo
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Jim Basham
Planning Manager
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2

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Joe Perez
Community Development Director
Community Development
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Paramount, CA 90723
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Steve Lefever
Director of Community Development
Community Development/Redevelopment, Planning Division
City of South Gate
8650 California Avenue
South Gate, CA 90280
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Sergio Canales
Planning Assistant
Community Services, Planning Division
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Julie Bartolotto
Executive Director
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3

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Historical Society of Monterey Park
781 S. Orange Avenue
Monterey Park, CA 91754
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Historical Society of Southern California
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hssc@socalhistory.org

Mary Kay Knottage
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preservation@lbheritage.org

Mike Buhler
Director of Advocacy
Los Angeles Conservancy
523 W. Sixth Street, suite 826
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tel. 213-623-2489
mbuhler@laconservancy.org

Jon Sanabria
Acting Director of Planning
Department of Regional Planning
Los Angeles County
320 W. Temple Street, 13th floor
Los Angeles, CA 90012
tel. 213-974-6411

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LSA

LSA ASSOCIATES, INC.
1500 IOWA AVENUE, SUITE 200
RIVERSIDE, CALIFORNIA 92507

951.781.9310 TEL
951.781.4277 FAX

OTHER OFFICES,
IRVINE
PT. RICHMOND
SAN LUIS OBISPO
PALM SPRINGS
FORT COLLINS

BERKELEY
ROCKLIN
SOUTH SAN FRANCISCO
CARLSBAD
FRESNO

September 30, 2009

Bellflower Heritage Society
16601 Civic Center Drive
Bellflower, California 90706

Subject: Historic Consultation for the Interstate 710 Corridor Project, Los Angeles County, California (LSA Project No. URS0801)

To Whom It May Concern:

The California Department of Transportation (Caltrans) District 7, in cooperation with the Los Angeles County Metropolitan Transportation Authority, the Gateway Cities Council of Governments, the Port of Los Angeles, the Port of Long Beach, the Southern California Association of Governments, and the Interstate 5 Joint Powers Authority is studying project alternatives to make safety and capacity improvements to the Interstate 710 (I-710) freeway. The analysis includes the preparation of an Environmental Impact Report/Environmental Impact Statement (EIR/EIS) that will evaluate the potential environmental impacts that the proposed freeway improvements might have if they were to be constructed. The project generally extends along I-710 from Ocean Boulevard in the City of Long Beach to State Route 60.

LSA Associates, Inc. (LSA) is preparing the EIR/EIS, including cultural resource studies, for the I-710 Corridor project. The project area includes the I-710 freeway and its interchanges with freeways and local arterial highways as shown on the attached map. Section 106 of the National Historic Preservation Act of 1966 (NHPA) requires that federally regulated undertakings, such as the I-710 Corridor project, consider the direct and indirect effects they may have on historic properties. Historic evaluations are currently underway for historic resources. Pursuant to Section 36 CFR Part 800.3(e), LSA is soliciting your comments regarding any cultural resources that may exist within the project limits (refer to attached map).

LA-11993

LSA ASSOCIATES, INC.

If you have any comments or information on cultural resources in the I-710 Corridor project area, please contact me by October 30, 2009. I can be reached at the above address and telephone number or by e-mail at Casey.Tibbet@lsa-assoc.com.

Sincerely,

LSA ASSOCIATES, INC.

Casey Tibbet

Casey Tibbet
Cultural Resources Manager

Attachment: Map

cc: I-710 Funding Partners
I-710 Technical Advisory Committee
Jack Waldron, URS
Rob McCann, LSA

LA-11993


Rosemead
Monterey Park
South El Monte
Los Angeles
East Los Angeles
Montebello
Vernon
Pico Rivera
Commerce
Maywood
Huntington Park
Bell
West Whittier-Los Nietos
Walnut Park
Florence-Graham
Cudahy
Bell Gardens
Whittier
Santa Fe Springs
South Gate
Westmont
Lynwood
South Whittier
Willowbrook
Downey
Norwalk
Gardena
Compton
Paramount
Bellflower
Cerritos
Artesia
Lakewood
La Palma
Carson
West Carson
Hawaiian Gardens
Cypress
Signal Hill
Long Beach
Lomita
Los Alamitos
Rossmoor
Port of Long Beach
Port of Los Angeles
Seal Beach
I-710 Corridor Project
I-710 General Project Area
SOURCE: ESRI (2005); TBM (2007)

LA-11993

Casey Tibbet

From: Steve Lefever [slefever@sogate.org]
Sent: Tuesday, October 06, 2009 5:08 PM
To: Casey Tibbet
Cc: Sonia Shah; Alvaro Betancourt; Mohammad Mostahkami; Bryan Cook
Subject: Response - Historic Consultation for the I-710 Corridor Project, Los Angeles County, California (LSA Project No. URS0801)

The City of South Gate has received your letter, dated September 30, 2009, soliciting our comments regarding any cultural resources that may exist within the project limits. Our comments are below:

The properties within the I-710 project boundaries, that are also within the jurisdiction of the City of South Gate, are highly urbanized and to a great degree developed with long standing utility, manufacturing, and related industrial uses. To the best of the City's knowledge there are no "cultural resources" , i.e. prehistoric, or historic archaeological sites, buildings, structures, or objects; unique ethnic cultural assets; or existing religious or sacred sites within the project boundaries.

Should you need further clarification or have additional questions, please do not hesitate to contact me at 323-563-9566

Steve Lefever
Director of Community Development
City of South Gate
8650 California Avenue
South Gate, CA 90280
323-563-9566 (o)
323-567-0725 (f)
slefever@sogate.org
www.cityofsouthgate.org\

Information from ESET NOD32 Antivirus, version of virus signature database 4485 (20091006)

The message was checked by ESET NOD32 Antivirus.

http://www.eset.com

10/7/2009

LA-11993

From: jthomas @dslextreme.com [jthomas@dslextreme.com]
Sent: Thursday, October 08, 2009 8:23 AM
To: Casey Tibbet
Subject: 710 Coridor Project
Hello.
Please add Long Beach Heritage to the distribution list for the DEIR and other documents.
Thank you.
John Thomas
President
Long Beach Heritage

LA-11993

Nicole Collum

From: Andrea Galvin
Sent: 2009-11-17 11:30 AM
To: Nicole Collum
Subject: FW: Response - Historic Consultation for the I-710 Corridor Project, Los Angeles County, California (LSA Project No. URS0801)

President
Galvin Preservation Associates Inc.
1611 S. Pacific Coast Hwy., Suite 104
Redondo Beach, CA 90277
(310) 792-2690
(310) 792-2696 (fax)
(310) 796-6520 (mobile)
andrea@galvinpreservation.com

Thank you for choosing Galvin Preservation Associates Inc. (GPA) for your preservation planning needs. We appreciate your business.....

From: Casey Tibbet [mailto:casey.tibbet@lsa-assoc.com]
Sent: Wednesday, October 07, 2009 11:06 AM
To: Andrea Galvin
Subject: RE: Response - Historic Consultation for the I-710 Corridor Project, Los Angeles County, California (LSA Project No. URS0801)

Actually, it was a thank you email.

Casey Tibbet, M.A.
Architectural Historian/Historian

LSA Associates, Inc.
1500 Iowa Avenue, Suite 200
Riverside, CA 92507
(951) 781-9310 Office
(951) 781-4277 Fax
casey.tibbet@lsa-assoc.com

From: Andrea Galvin [mailto:andrea@galvinpreservation.com]
Sent: Wednesday, October 07, 2009 10:48 AM
To: Casey Tibbet
Subject: RE: Response - Historic Consultation for the I-710 Corridor Project, Los Angeles County, California (LSA Project No. URS0801)

Thank you, Casey. And I assume that you followed up with a thank you letter to them? I will keep this for the HRER.

-A

President
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(310) 792-2690
(310) 792-2696 (fax)

1

LA-11993

(310) 796-6520 (mobile)
andrea@galvinpreservation.com

Thank you for choosing Galvin Preservation Associates Inc. (GPA) for your preservation planning needs. We appreciate your business.....

From: Casey Tibbet [mailto:casey.tibbet@lsa-assoc.com]
Sent: Wednesday, October 07, 2009 10:03 AM
To: Andrea Galvin
Cc: Debbie McLean; Jayna Goodman
Subject: FW: Response - Historic Consultation for the I-710 Corridor Project, Los Angeles County, California (LSA Project No. URS0801)

Hi Andrea,

Below is the first response we've had to our historic consultation.

Casey Tibbet, M.A.
Architectural Historian/Historian

LSA Associates, Inc.
1500 Iowa Avenue, Suite 200
Riverside, CA 92507
(951) 781-9310 Office
(951) 781-4277 Fax
casey.tibbet@lsa-assoc.com

From: Steve Lefever [mailto:slefever@sogate.org]
Sent: Tuesday, October 06, 2009 5:08 PM
To: Casey Tibbet
Cc: Sonia Shah; Alvaro Betancourt; Mohammad Mostahkami; Bryan Cook
Subject: Response - Historic Consultation for the I-710 Corridor Project, Los Angeles County, California (LSA Project No. URS0801)

The City of South Gate has received your letter, dated September 30, 2009, soliciting our comments regarding any cultural resources that may exist within the project limits. Our comments are below:

The properties within the I-710 project boundaries, that are also within the jurisdiction of the City of South Gate, are highly urbanized and to a great degree developed with long standing utility, manufacturing, and related industrial uses. To the best of the City's knowledge there are no "cultural resources" , i.e. prehistoric, or historic archaeological sites, buildings, structures, or objects; unique ethnic cultural assets; or existing religious or sacred sites within the project boundaries.

Should you need further clarification or have additional questions, please do not hesitate to contact me at 323-563-9566

Steve Lefever
Director of Community Development
City of South Gate
8650 California Avenue
South Gate, CA 90280
323-563-9566 (o)
323-567-0725 (f)
slefever@sogate.org
www.cityofsouthgate.org\

2

LA-11993

_____ Information from ESET NOD32 Antivirus, version of virus signature database 4485 (20091006)
_____

The message was checked by ESET NOD32 Antivirus.

http://www.eset.com

3

LA-11993

Great! Please let me know if you have any comments or questions.

Casey Tibbet, M.A.
Architectural Historian/Historian
Senior Cultural Resources Project Manager

LSA Associates, Inc.
1500 Iowa Avenue, Suite 200
Riverside, CA 92507
(951) 781-9310 Office
(951) 781-4277 Fax
casey.tibbet@lsa-assoc.com

From: Lynette Ferenczy [mailto:Lynette.Ferenczy@longbeach.gov]
Sent: Monday, October 19, 2009 12:54 PM
To: Casey Tibbet
Subject: RE: Historic consult for 710 corridor project

Thanks. I received the maps today.

Lynette
Lynette Ferenczy
Planner

LONG BEACH DEVELOPMENT SERVICES
333 West Ocean Blvd.
Long Beach, CA 90802
T: 562.570.6273
F: 562.570.6068
http://lbds.longbeach.gov/

"Casey Tibbet" <casey.tibbet@lsa-assoc.com>

10/19/2009 09:15 AM

To "Lynette Ferenczy" <Lynette.Ferenczy@longbeach.gov>
cc
Subject RE: Historic consult for 710 corridor project

Hi Lynette,

1

LA-11993

You should receive the draft map in the mail today. Please let me know if you do not have it by 5:00.

Thanks,

Casey Tibbet, M.A.
Architectural Historian/Historian
Senior Cultural Resources Project Manager

LSA Associates, Inc.
1500 Iowa Avenue, Suite 200
Riverside, CA 92507
(951) 781-9310 Office
(951) 781-4277 Fax
casey.tibbet@lsa-assoc.com

From: Lynette Ferenczy [mailto:Lynette.Ferenczy@longbeach.gov]
Sent: Monday, October 12, 2009 8:02 AM
To: Casey Tibbet
Subject: RE: Historic consult for 710 corridor project

Thanks
Lynette Ferenczy
Planner

LONG BEACH DEVELOPMENT SERVICES
333 West Ocean Blvd.
Long Beach, CA 90802
T: 562.570.6273
F: 562.570.6068
http://lbds.longbeach.gov/

"Casey Tibbet" <casey.tibbet@lsa-assoc.com>

10/09/2009 06:12 PM

To "Lynette Ferenczy" <Lynette.Ferenczy@longbeach.gov>
cc

Subject RE: Historic consult for 710 corridor project

2

LA-11993

Hi Lynette,

I have been out of the office all day and will be out most of Monday, but I will get something to you next week.

Casey Tibbet, M.A.
Architectural Historian/Historian

LSA Associates, Inc.
1500 Iowa Avenue, Suite 200
Riverside, CA 92507
(951) 781-9310 Office
(951) 781-4277 Fax
casey.tibbet@lsa-assoc.com

From: Lynette Ferenczy [mailto:Lynette.Ferenczy@longbeach.gov]
Sent: Friday, October 09, 2009 3:24 PM
To: Casey Tibbet
Subject: Historic consult for 710 corridor project

Hi,

Do you have any maps that you could forward showing these areas in detail?

Thanks so much
Lynette Ferenczy
Planner

3

LA-11993

LONG BEACH DEVELOPMENT SERVICES
333 West Ocean Blvd.
Long Beach, CA 90802
T: 562.570.6273
F: 562.570.6068
http://lbds.longbeach.gov/

4

LA-11993

Nicole Collum

From: Andrea Galvin
Sent: 2009-11-17 11:31 AM
To: Nicole Collum
Subject: FW: Historic consult for 710 corridor project

President
Galvin Preservation Associates Inc.
1611 S. Pacific Coast Hwy., Suite 104
Redondo Beach, CA 90277
(310) 792-2690
(310) 792-2696 (fax)
(310) 796-6520 (mobile)
andrea@galvinpreservation.com

Thank you for choosing Galvin Preservation Associates Inc. (GPA) for your preservation planning needs. We appreciate your business.....

From: Casey Tibbet [mailto:casey.tibbet@lsa-assoc.com]
Sent: Wednesday, October 14, 2009 11:48 AM
To: Lynette Ferenczy
Cc: mark.christoffels@longbeach.gov; Rob McCann; Jayna Goodman; Andrea Galvin
Subject: RE: Historic consult for 710 corridor project

Hi Lynette,

In response to your request for a map, at the end of the week we will be mailing you a copy of the preliminary draft Area of Potential Effects (APE) map for the Long Beach area.

The draft map is based on the initial geometric plans prepared by URS. Mark Christoffels, the City's representative on the I-710 Technical Advisory Committee, has received and reviewed copies of these geometric plans.

Please let me know if you have any questions.

Thank you again for participating in this historic consultation process.

Casey Tibbet, M.A.
Architectural Historian/Historian
Senior Cultural Resources Project Manager

LSA Associates, Inc.
1500 Iowa Avenue, Suite 200
Riverside, CA 92507
(951) 781-9310 Office
(951) 781-4277 Fax
casey.tibbet@lsa-assoc.com

From: Lynette Ferenczy [mailto:Lynette.Ferenczy@longbeach.gov]
Sent: Monday, October 12, 2009 8:02 AM

LA-11993

LSA
LSA ASSOCIATES, INC.

TELEPHONE CONVERSATION RECORD

Date: October 29, 2009 Staff: Casey Tibbet

Project Number: URS0801 Project Name: I-710 Corridor Project

Subject: Historic Consultation – City of Commerce

Contact

Name: Alex Hamilton

Title: Assistant Director, Community Development Department

Organization: City of Commerce

Phone Number:

Notes

Mr. Hamilton called in response to the historic consultation letter that was mailed to the City of Commerce on September 30, 2009. He indicated that the City does have criteria for landmark designation, but does not have any locally listed or designated historic resources. He noted that the Citadel and the train station may be on State or Federal lists of significance, but they are both at least 0.25 mile from the I-710 corridor. He also noted that the Hobart Yard rail tower is a known resource outside of Commerce in the vicinity of either Vernon or East LA, but that it is definitely outside of the project APE.

01/23/06 «G:\WP11\template\NOTES.WPD»

LA-11993

CITY OF LONG BEACH

DEPARTMENT OF DEVELOPMENT SERVICES
333 West Ocean Blvd., 5th Floor Long Beach, CA 90802 (562) 570-6194 FAX (562) 570-6068
PLANNING BUREAU/CURRENT PLANNING DIVISION

November 12, 2009

LSA Associates, Inc.
Co/ Casey Tibbett
1500 Iowa Avenue
Riverside, CA 92507

Re: Historic Consultant for the Interstate 710 Corridor Project, Los Angeles County LSA Project No. URS0801

Dear Casey:

This letter is in response to your correspondence dated September 30, 2009, regarding the preparation of an EIR assessing potential environmental impacts on cultural resources within the City of Long Beach associated with the proposed freeway improvements.

There are no landmarks or historic districts within the proposed project limits as shown on the maps dated September 30, 2009. However, there are landmarks and historic districts near the proposed project. The Masonic Hall building located at 5351-5353 Long Beach Boulevard and the Pressburg Residence located at 167 East South Street are both City landmark buildings. The Drake Park/Willmore City Historic district can be found on sheets 3, 4 and 5 of 75 of the aerial photographs and is located between 4th Street and Anaheim Street with the western boundary on Loma Vista Drive. In addition, if any building will be demolished as a result of this project over forty-five (45) years old these structures shall be surveyed for potential historic significance.

Indirect effects such as construction noise, traffic, dust, aesthetics, air quality and lighting may have a negative impact on the historic resources within the areas noted above.

Should you have any questions regarding these recommendations please contact me at (562) 570-6273.

Sincerely,

Lynette Ferenczy
Planner

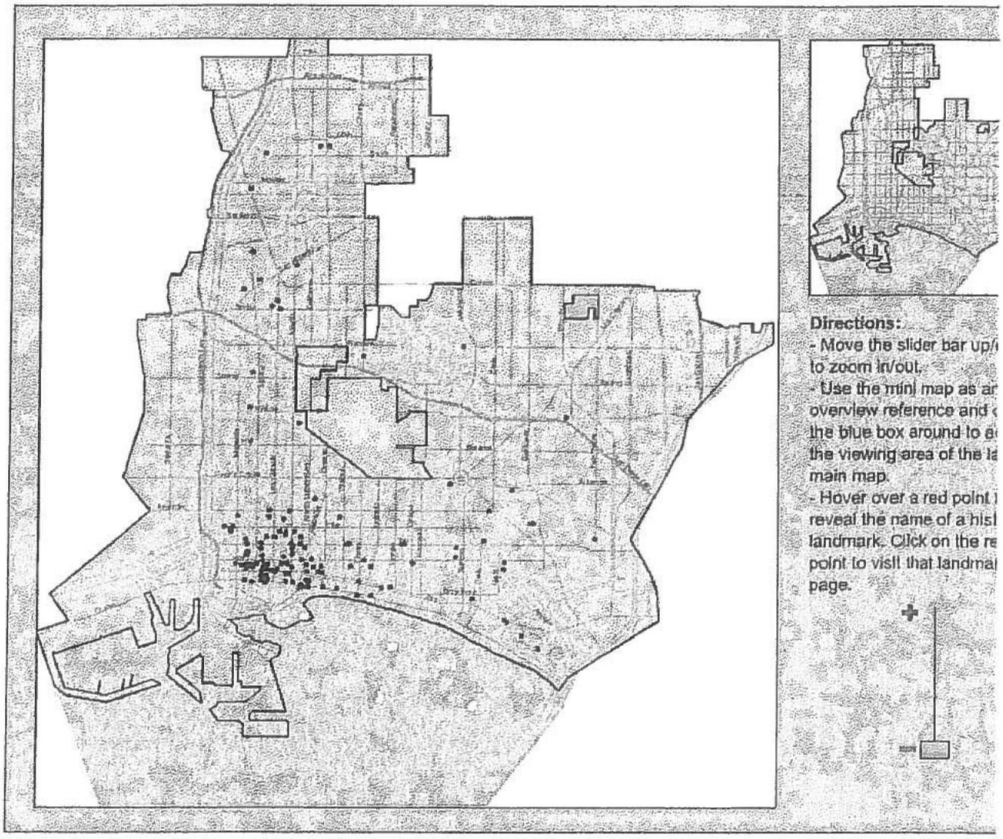
DB/lf
Attachments: DrakePark/Willmore City Historic District
Historic Landmark Map

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LA-11993

Historic Landmarks Flash Map

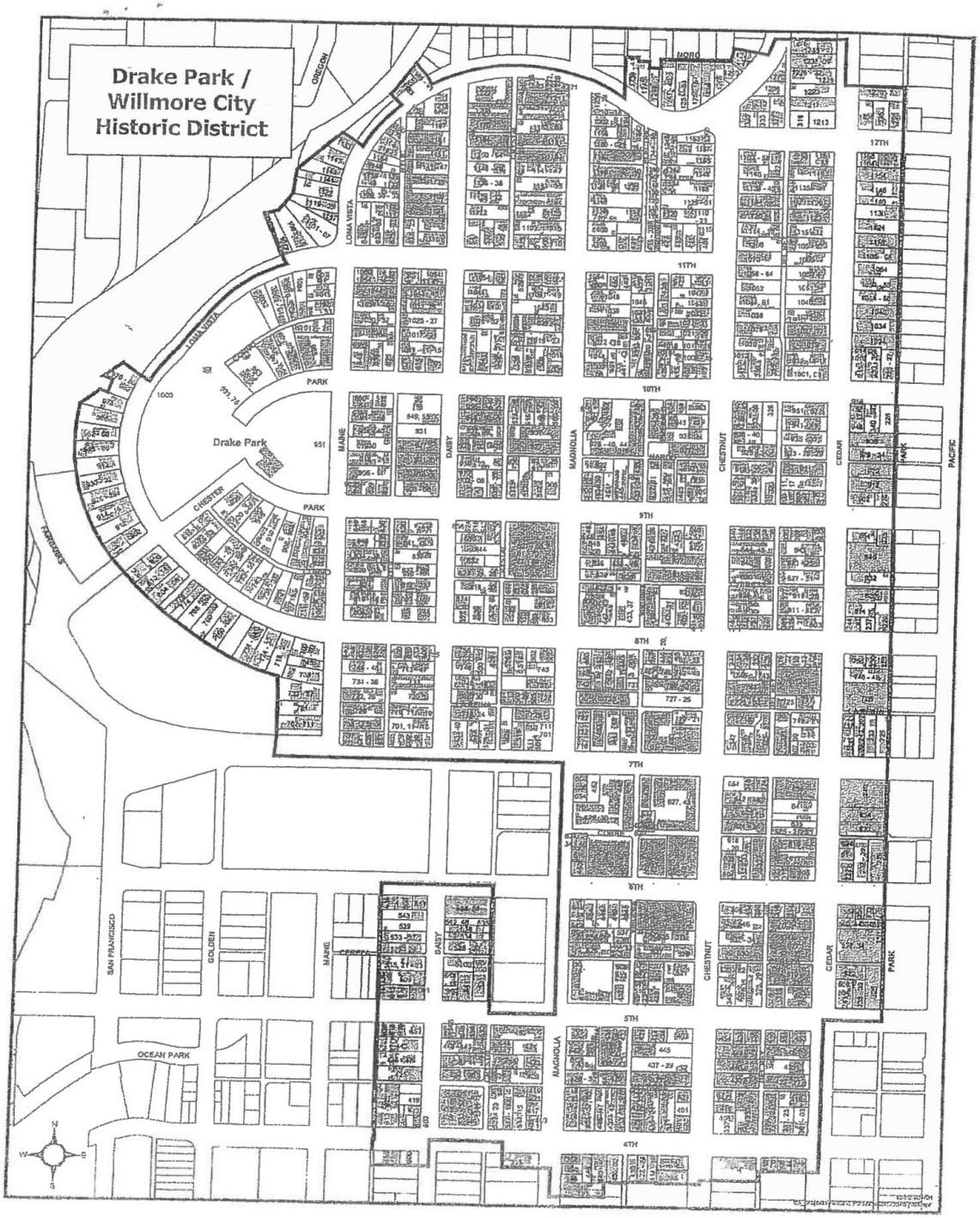
Page 1 of 1



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LA-11993


Drake Park / Willmore City Historic District
Drake Park
PARK
LOMA VISTA
OREGON
MORO
12TH
11TH
10TH
9TH
8TH
7TH
6TH
5TH
4TH
MAINE
DAISY
MAGNOLIA
CHESTNUT
CEDAR
PACIFIC
CHESTER
FERGUSON
SAN FRANCISCO
GOLDEN
OCEAN PARK

LA-11993

FOE ATTACHMENT C

EXHIBIT 1- DALE'S DONUTS
EXHBIT 2- PATATA SEGMENT
EXHBIT 3- NOAKES SEGMENT
EXHIBIT 4- BOULDER DAM LA TRANSMISSION LINE

LA-11993

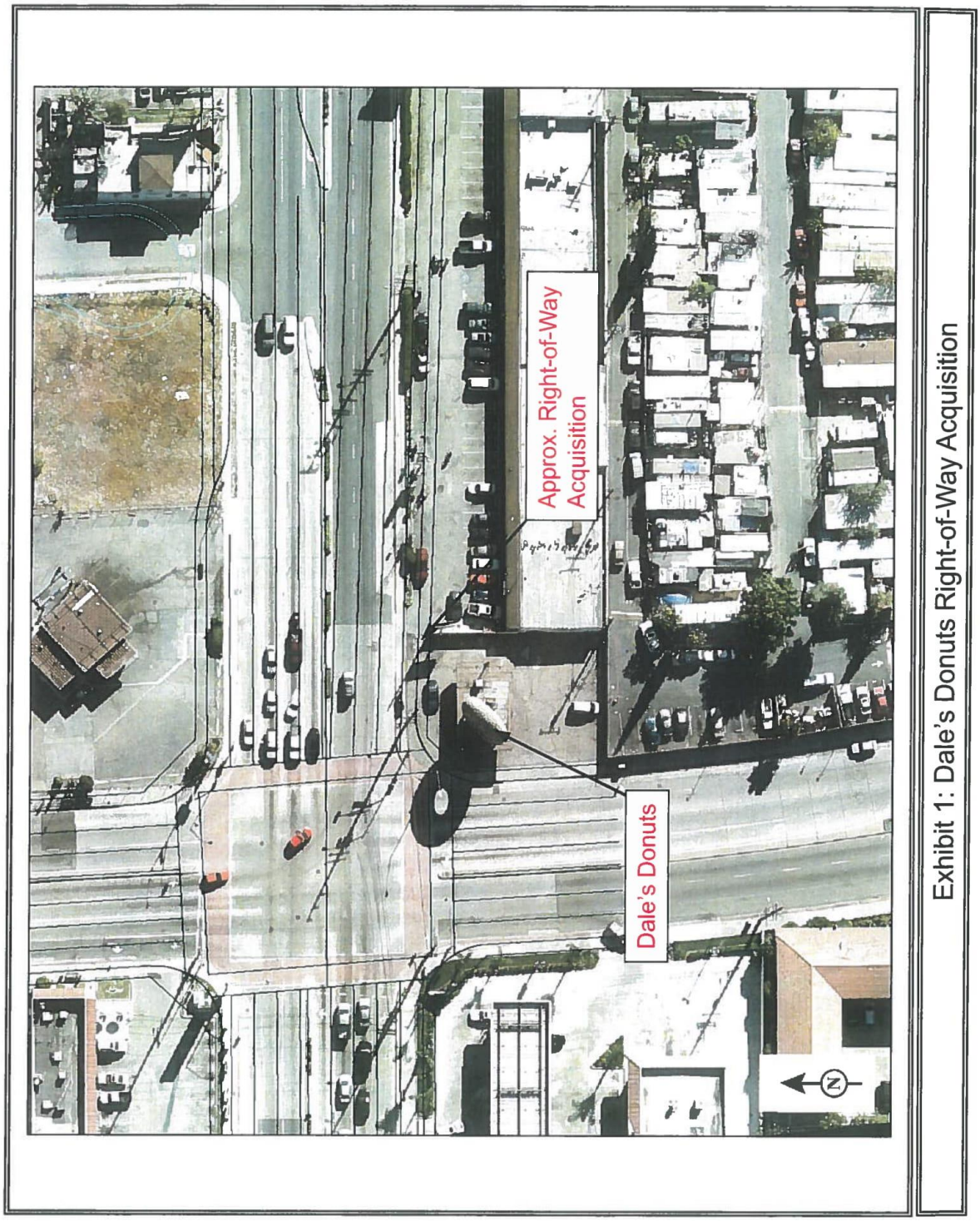


Exhibit 1: Dale's Donuts Right-of-Way Acquisition

LA-11993

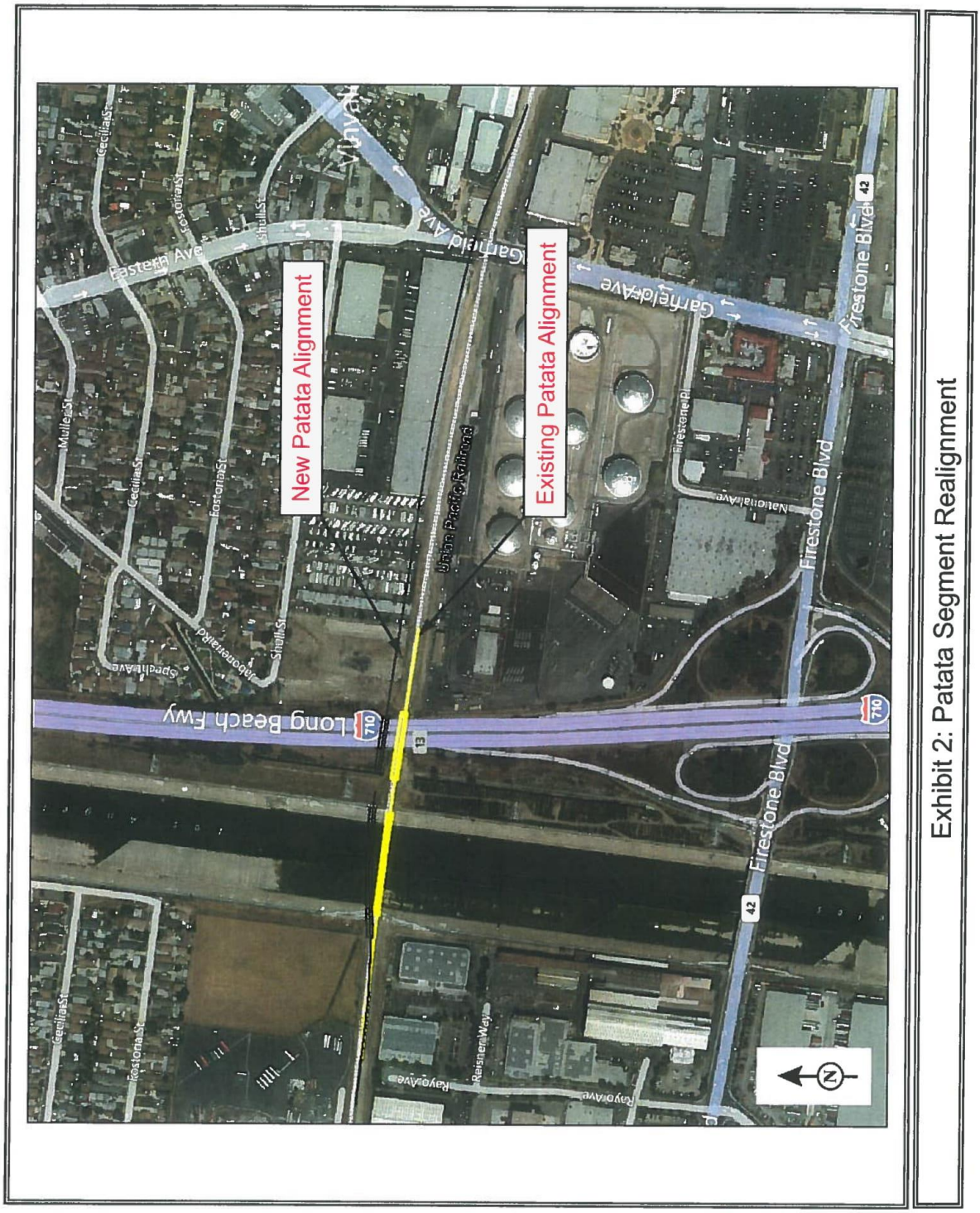


Exhibit 2: Patata Segment Realignment

LA-11993

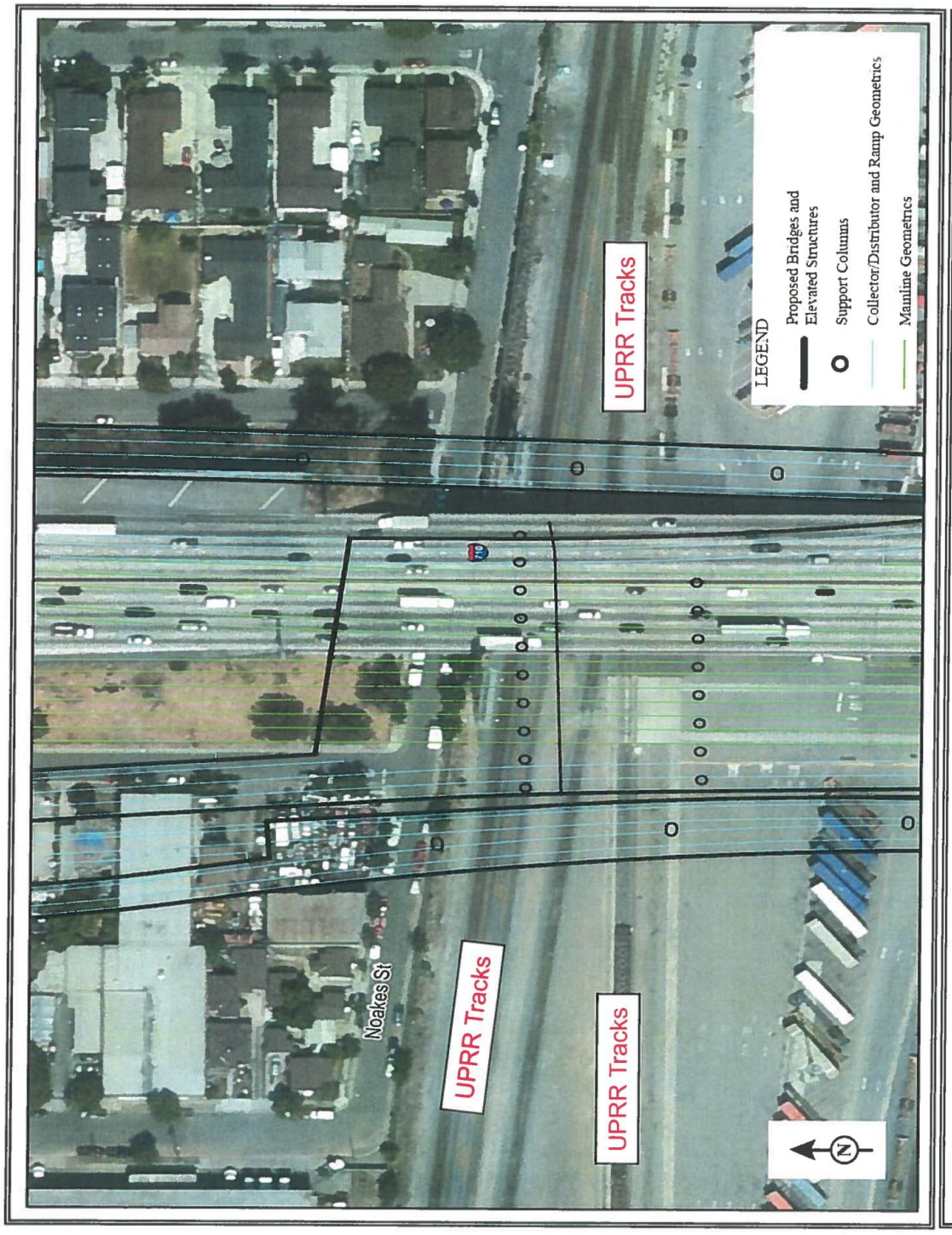


Exhibit 3: Noakes Segment under I-710 Widening

LA-11993

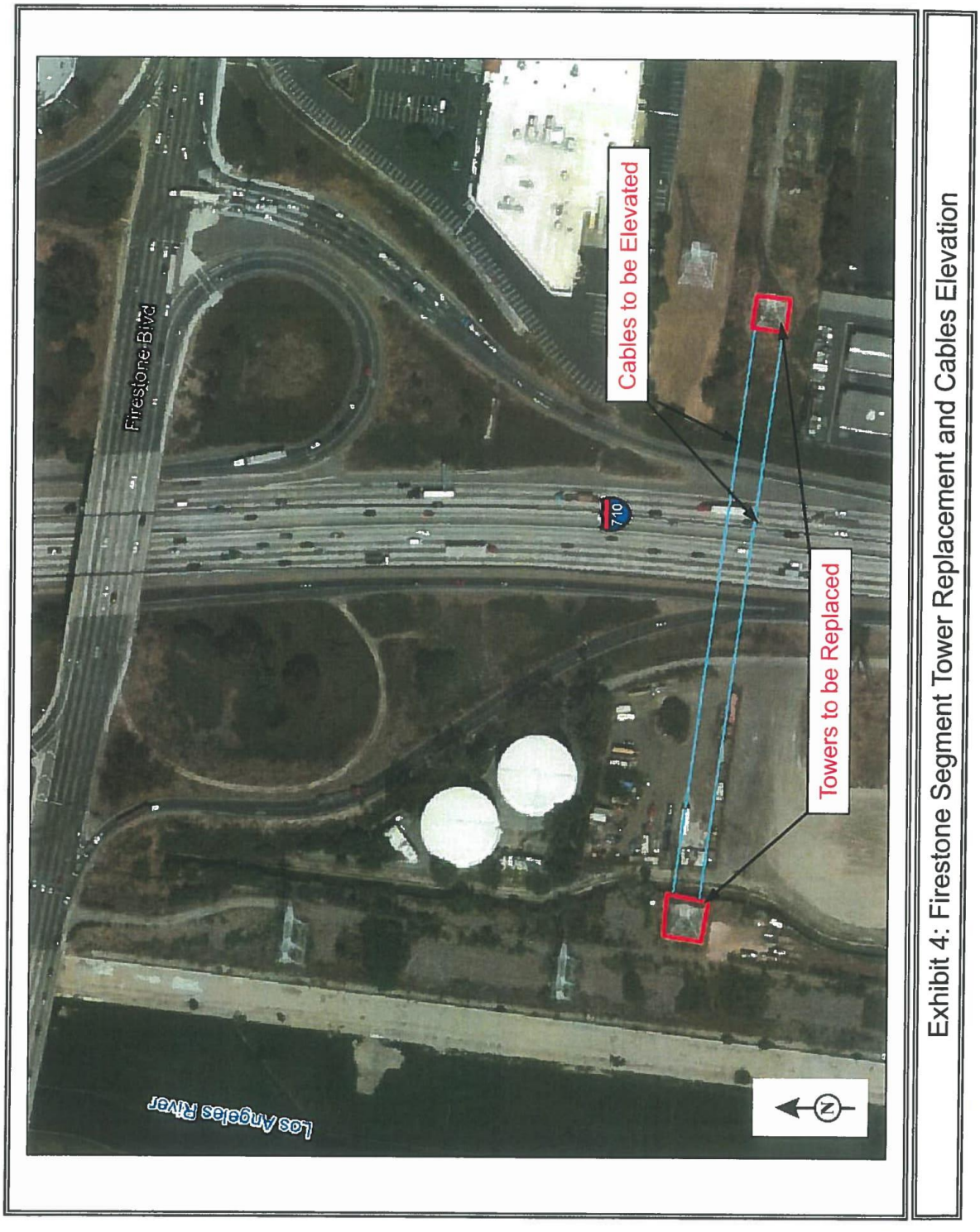


Exhibit 4: Firestone Segment Tower Replacement and Cables Elevation

LA-11993

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY Edmund G. Brown Jr. Governor

DEPARTMENT OF TRANSPORTATION
DIVISION OF ENVIRONMENTAL ANALYSIS, MS 27
1120 N STREET
P. O. BOX 942874
SACRAMENTO, CA 94274-0001
PHONE (916) 653-7507
FAX (916) 653-7757
TTY 711

Flex your power!
Be energy efficient!

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AUG 17 2012
OHP

August 15, 2012

Mr. Milford Wayne Donaldson, FAIA
State Historic Preservation Officer
Office of Historic Preservation
1725 23rd Street, Suite 100
Sacramento, CA 95816

07-LA-710
PM 4.9/24.9
710 Corridor Project

FHWA 120307B

Attention: Susan Stratton

Subject: Finding of **No Adverse Effect** without Standard Conditions for the Interstate 710 Corridor Project Between Ocean Boulevard and the State Route 60 Interchange, Los Angeles County– Section 106, and Section 4(f) Compliance

Dear Mr. Donaldson:

The California Department of Transportation (Caltrans) is continuing consultation with the State Historic Preservation Officer (SHPO) for the above referenced undertaking. This consultation is being undertaken in accordance with the January 1, 2004 Federal-Aid Highway Programmatic Agreement (PA). Caltrans, as assigned by the Federal Highway Administration (FHWA) is continuing consultation as a federal agency. We are consulting with you under Stipulation X.B.1 of the PA, which requires consultation with the SHPO regarding findings of No Adverse Effect **without** standard conditions.

As detailed in the attached Finding of No Adverse Effect, Caltrans, in conjunction with the Los Angeles County Metropolitan Transportation Authority (Metro), the Gateway Cities Council of Governments (GCCOG), the Southern California Association of Governments (SCAG), the Ports of Los Angeles (POLA) and Long Beach (POLB), and the Interstate 5 Joint Powers Authority (I-5 JPA), collectively known as the I-710 Corridor Project Funding Partners, propose improvements along the I-710 corridor from Ocean Boulevard in the City of Long Beach to State Route 60 (SR-60). In addition to the no build alternative, four build alternatives (5A, 6A, 6B, and 6C) that include highway widening and improvements to 42 local arterial intersections are still being considered. Caltrans has assessed the effects for all aspects of each of the proposed build alternatives.

The February 2012 Historic Property Survey Report (HPSR) identified three properties previously determined eligible for the National Register and evaluated 201 additional built-environment properties for eligibility. No archaeological resources were identified within the Area of Potential Effects (APE), which is documented in Attachment A to the HPSR. Consultation with your office resulted in the identification of four historic properties within the APE of the Undertaking:

LA-11993

1) Dale's Donuts- assumed eligible for purposes of the undertaking under Criterion C (6/18/12)
2) Union Pacific Railroad, Patata Segment- eligible under Criteria A & B (1999)[i]
3) Union Pacific Railroad, Noakes Segment- eligible under Criteria A & B (1999)
4) Boulder Dam-Los Angeles 287.5kV Transmission Line- eligible under Criteria A & C (1999)

Caltrans applied the Criteria of Adverse Effect set forth in 36 CFR 800.5(a)(1) as prescribed in Stipulation X.A of the PA. Caltrans finds that there will be no adverse effects from the undertaking because the undertaking will not alter, directly or indirectly, any of the characteristics that qualify any of the four properties as eligible for the National Register.

Pursuant to stipulation X.B.1 of the PA, Caltrans requests your concurrence with our finding of **No Adverse Effect without Standard Conditions** for this undertaking. We look forward to receiving your written response within 30 days of your receipt of this submittal in accordance with stipulation X.B.1.b of the PA.

Regarding Section 4(f) of the United State Department of Transportation Act, Caltrans, as assigned by FHWA, intends to make a *de minimis* finding for Section 4(f) use of each of the historic properties based on your concurrence in the Section 106 No Adverse Effect finding pursuant to Section 6009(a) of SAFETEA-LU. Please note that if no response is received within 30 days of receipt of this submittal, the lack of response together with the written PA will be considered written concurrence in the Section 106 determination and will be the basis for the *de minimis* impact findings for purposes of Section 4(f).

If you have any questions or require additional information, please contact Todd Jaffke at (916) 654-3567 or todd.jaffke@dot.ca.gov or Noah M. Stewart at 213-897-2601 or noah.stewart@dot.ca.gov.

Thank you very much for your assistance.

Sincerely,

ANMARIE MEDIN, Chief
Cultural Studies Office
Division of Environmental Analysis

Enclosure: *Finding of No Adverse Effect for the Proposed Interstate 710 Corridor Project Between Ocean Boulevard and the State Route 60 Interchange, Los Angeles County, California.*

cc: Todd Jaffke-HQ, Noah Stewart-D-7

[i] Although the Patata and Noakes Patata segments are contributing resources to the Union Pacific Railroad, an eligible historic property, prior documents for this project and correspondence to and from SHPO have counted these contributing segments as separate historic properties, i.e. four historic properties instead of three, for which one historic property has two contributing resources.

LA-11993

STATE OF CALIFORNIA – THE NATURAL RESOURCES AGENCY
EDMUND G. BROWN, JR., *Governor*

OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION
1725 23rd Street, Suite 100
SACRAMENTO, CA 95816-7100
(916) 445-7000 Fax: (916) 445-7053
calshpo@parks.ca.gov
www.ohp.parks.ca.gov

September 20, 2012

Reply To: FHWA120307B

Anmarie Medin, Chief
Cultural Studies Office
Division of Environmental Analysis, MS 27
PO Box 942874
Sacramento, CA 94274-001

Re: Finding of Effect for the Interstate 710 (I-710) Corridor Project between Ocean Boulevard (PM 4.9) and the Interchange State Route 60(PM 24.9), Los Angeles County, California

Dear Mr. Iverson:

Thank you for consulting with me about the subject undertaking in accordance with the *Programmatic Agreement Among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act, as it Pertains to the Administration of the Federal-Aid Highway Program in California* (PA).

I have previously commented on Caltrans efforts to identify and evaluate historic properties for this undertaking.

Caltrans has determined that the undertaking will not adversely affect Dale's Donuts (assumed eligible), Patata Segment and Noakes Segments of the Union Pacific Railroad, or Boulder Dam-Los Angeles 287.5kV Transmission Line.

Given the restrictions of an urbanized environment, Caltrans has made little effort to identify or consider archaeological properties for this undertaking. Knowledge of the overarching sensitivity of the subsurface APE is limited.

Pursuant to 36 CFR 800.5(c), I concur with Caltrans' finding of No Adverse Effect, with the condition that an archaeological monitor be present during all ground disturbing activities.

If you agree with the condition that I have proposed, please evidence your agreement by signing the signature block below. Please return the letter to me as soon as possible. Alternatively, you may provide me with a separate letter concurring in the proposed conditions.

LA-11993

Thank you for considering historic properties during project planning. I look forward to continuing this consultation. If you have any questions, please contact Kathleen Forrest of my staff at (916) 445-7022 or email at kforrest@parks.ca.gov.

Sincerely,

Susan K Stratton for

Milford Wayne Donaldson, FAIA
State Historic Preservation Officer

AGREED_____ DATE:_____
Anmarie Medin
Chief, Cultural Studies Office

Temp. Biblio # Z0001

VN 2504
LA 8255
OR 3373

CONFIDENTIAL – NOT FOR PUBLIC DISTRIBUTION*

Title **CULTURAL RESOURCES FINAL REPORT OF MONITORING AND FINDINGS FOR THE QWEST NETWORK CONSTRUCTION PROJECT, STATE OF CALIFORNIA**

Type: I) Arch. Survey
II) Monitoring
12) Site revisit / Assessments

Area: 1431 linear miles

Prepared for

Dev. 21) Pipeline / cable
5) Utilities

Agency: **Qwest Communications**
1801 California St.
Denver, Colorado 80202
(303) 992-1400

Pg: 653

Quads:
1412 White Ledge Peak
Pitas Point 1413
1414 Ventura
1403 Saticoy
1142 Oxnard
1141 Camarillo
1393 Moorpark 1404 Santa Paula
1394 Simi Valley West
1383 Santa Susana (formerly Simi Valley East)
1384 Oat mtn.
1121 Canoga Park
1112 Van Nuys
1111 Burbank
1894 Lebec
1893 Frazier mtn. 1382 Val Verde
1641 Black Mtn. 1381 Newhall
1632 Liebre Mtn. 1112 Van Nuys
1633 Whitaker Peak 1373 San Fernando
1634 Warm Springs Mtn. 894 Los Alamitos

Prepared by

Arch Firm **SWCA ENVIRONMENTAL CONSULTANTS**
3840 Rosin Court, Suite 130
Sacramento, California 95834
(916) 565-0356
www.swca.com

SWCA Project No. 10715-180

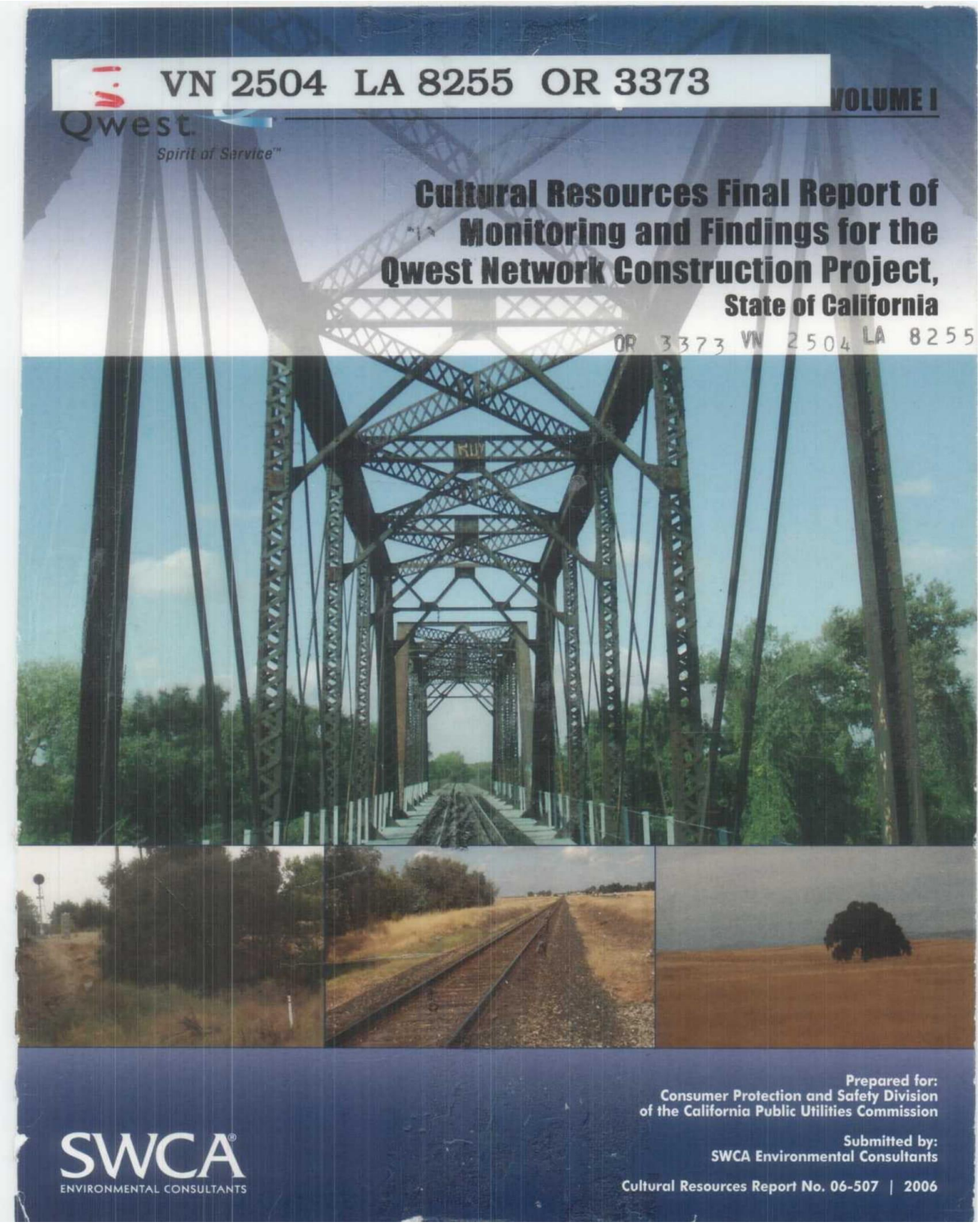
SWCA Cultural Resources Report Database No. 06-507

DA: December 2006

892 South Gate 883 Anaheim
893 Long Beach 901 Inglewood
Whittier 891 Venice 902
Hollywood 1114

Los Angeles 1103
Orange 884
Newport Beach 712
Tustin 711
El Toro 702
San Juan Capistrano 703
Dana Pt. 522
San Clemente 521

***This report contains information on sensitive cultural resources and thus is confidential and not for public distribution. The legal authority to restrict cultural resources is pursuant with California Government Code 6254**


VN 2504 LA 8255 OR 3373
VOLUME I
Qwest
Spirit of Service™
Cultural Resources Final Report of Monitoring and Findings for the Qwest Network Construction Project, State of California
OR 3373 VN 2504 LA 8255
Prepared for:
Consumer Protection and Safety Division
of the California Public Utilities Commission
Submitted by:
SWCA Environmental Consultants
SWCA
ENVIRONMENTAL CONSULTANTS
Cultural Resources Report No. 06-507 | 2006

SWCA
ENVIRONMENTAL CONSULTANTS
Sound Science. Creative Solutions.

Sacramento Office
3840 Rosin Court, Suite 130
Sacramento, CA 95834
Tel 916.565.0356 Fax 916.565.0757
www.swca.com

VN 2504
LA 8255
OR 3373

February 6, 2007

South Central Coastal Information Center
University of California, Fullerton
Department of Anthropology
800 North State College Boulevard
Post Office Box 6846
Fullerton, CA 92834-6846

Re: Final Report of Monitoring and Findings for the Qwest Network Construction Project

Enclosed are the specific chapters listed in Table 1 from our final report on the project referenced above. The project covers the cultural resources investigation for the maintenance (replacement and repair) of fiber optic cable within the Qwest network backbone throughout the state of California. The backbone includes approximately 1,431 linear miles of existing belowground fiber optic cable, extending from the Oregon to the Arizona border, and runs along major railroad and highway corridors. For purposes of the investigation, the California network backbone was divided into 36 segments, each covered by a separate chapter. Each of those chapters was designed as stand-alone reports and includes background information, methods, and findings of the cultural resources program for the segment. In total, the report covers the period from January 2000 to May 2004, encompasses 36 of California's 58 counties, and is being filed with nine of the CHRIS information centers.

Table 1. Chapters Provided to South Central Coastal Information Center

Chapter No.	Chapter Title	Segment No.	California Counties
1	Introduction		
2	Statewide Natural and Cultural Setting		
22	Southern Coastal Segment	20	Los Angeles, San Luis Obispo, Santa Barbara, and Ventura
27	Lebec – San Fernando Segment	25	Kern and Los Angeles
28	Firestone Park – Long Beach Segment	26	Los Angeles
29	Los Angeles – Anaheim Segment	27	Los Angeles and Orange
30	Slauson Ring Segment	28	Los Angeles
31	Burbank – Los Angeles Segment	29	Los Angeles
32	Anaheim – San Clemente Segment	30	Orange
39	Summary and Recommendations		
40	Acronyms		
41	References Cited		

Page 1 of 2

SWCA
ENVIRONMENTAL CONSULTANTS

To consolidate the information provided by the various CHRIS searches and provide an easily accessible record of the data, each of 2,790 previously recorded cultural resources was plotted on USGS 7.5-Minute quadrangles. The series of maps for this extensive linear project are provided as figures at the end of each segment chapter, and identify each known resource as one of four types: linear, prehistoric, historic, or protohistoric and/or multi-component. Note that the maps are keyed to the segment number, rather than the chapter number.

Survey crews relocated a total of 79 previously recorded archaeological sites along segments 20, 25, and 29 (see Table 1) within the project area-of-potential effect (APE; a swath of land straddling the fiber optic line and extending 15 meters to either side). A table within the survey findings section for Chapters 22, 27, and 31 summarizes the condition of each relocated site. None of the relocated resources was impacted by Qwest.

No previously unknown cultural resource sites, artifacts, or objects were identified during the pedestrian survey along the entire Qwest California network backbone, or monitoring of maintenance activities within 13 of the 36 segments, including segments 20 and 27. Monitoring did not occur on the remaining 23 segments, including segments 25–26 and 28–30 because no maintenance activities were scheduled along those rights-of-way (ROWs).

Enclosed is a form letter, acknowledging receipt of the enclosed final report. Please date, sign, and return in the enclosed stamped, self-addressed envelope.

Thank you for returning the enclosure. Please let me know if you have any questions or concerns regarding the enclosed documents.

Sincerely,

Nancy E. Sikes, Ph.D., RPA
Principal Investigator – Cultural Resources
nsikes@swca.com

Enclosure: Acknowledgment form and stamped, self-addressed envelope

ACKNOWLEDGMENTS

Archaeological projects are always a team effort, and a project of this scope requires an outstanding group of professionals. This report is the culmination of seven years of work and dedication by numerous individuals. I would like to acknowledge the tremendous effort of the individuals who directly or indirectly contributed to this report.

First, I would like to thank the archaeologists who participated in surveying the 1,431 miles of backbone and spent countless months far from home: Brad Brown, Paul Shen-Brown, William Brown, Todd Folmer, Keith Hamm, Lori Harrington, Susan Kintscher, Mark Lowe, Harry Moyer, Josie Salas, Mark Sullivan, Dean Tye, and George Zeimens.

Secondly, SWCA Environmental Consultants would like to thank the Qwest Legal/Regulatory team for their assistance and guidance on this project: Matt Middlebrooks Jr. and Lynn Stang of Qwest (in-house counsel); Mark Fogelman, Sara E. Leeper, and Kathryn A. Fugere of Steefel, Levitt & Weiss (outside counsel).

SWCA also extends our gratitude to Jack Shives of Qwest Communications for providing the dedication and oversight to ensure the completion of this document.

Additionally, SWCA Environmental Consultants would like to thank the multiple Native American groups for their assistance, insight, and guidance on this project; we are grateful for the services provided.

A special acknowledgement goes to Dr. Nancy Sikes whose tireless efforts are recognized and appreciated.

The following SWCA personnel participated in this project:

Cindy Arrington, Project Manager, Coauthor
Bryon Bass, Coauthor
Joan Brown, Peer Review
Chris Corey, Coauthor
Trina Demirer, Microsoft® Excel Specialist
Russ Gatlin, Senior Technical Editor, Quality Control
Rafael Gutierrez, GIS Specialist
Heidi Hill, Graphics Specialist
Kevin Hunt, Coauthor
Christina Lincoln, Project Accountant
Danny Liu, Document Reviewer
Steve O'Neil, Coauthor
Catherine Pruett, Coauthor
Tony Sawyer, Coauthor
Nancy Sikes, Principal Investigator, Primary Author
Kimm Thompson, Technical Editor
Michael Tuma, Natural Setting Coauthor
Leslie Wagner, Natural Setting Coauthor
Alex Wesson, Assistant Project Manager, Coauthor

Unfortunately, a comprehensive list would be far too long and inevitably incomplete. My heartfelt thanks are offered to everyone who contributed to this project.



Cindy Arrington
Project Manager

ABSTRACT

Qwest Communications International Inc. retained SWCA Environmental Consultants to complete this Final Report of Monitoring and Findings for the Qwest Network Construction Project.

This report presents the results of a cultural resources investigation for the maintenance (replacement and repair) of fiber optic cable within the Qwest network backbone throughout the state of California. The backbone includes approximately 1,431 linear miles of existing belowground fiber optic cable, extending from the Oregon to the Arizona border, running along major railroad and highway corridors. The California network backbone was divided into 36 segments for this investigation, which included literature searches, Sacred Lands searches, pedestrian survey, relocation of previously recorded archaeological sites, and monitoring of routine maintenance of existing backbone lines. The records searches and fieldwork were conducted between January 3, 2000 and May 7, 2004. Segment record searches revealed that 2,790 cultural resources have been previously recorded within a quarter and/or half-mile radius of the linear project corridor. Each of these resources has been plotted on USGS 7.5-Minute quadrangles, and labeled as linear, prehistoric, historic, or protohistoric and/or multi-component. Except for one federally listed site which is not within the area of potential effect, no other Sacred Lands are presently known in the immediate project area. The entire Qwest California network backbone was intensively surveyed; attempts were made to relocate previously recorded archaeological resources within 20 segments. Of 221 known resources that were relocated, Qwest impacted none. No attempt was made to relocate known sites in 16 segments where the corridor is confined solely to the railroad berm and existing utility corridors. Monitoring of maintenance activities on 13 segments followed individual Mitigation and Monitoring Plans prepared for each segment. Although such plans were in place for all 36 segments, no maintenance activities were scheduled for 23 segments. Only one known archaeological site was encountered during maintenance activity; impacts to this previously disturbed (by railroad and highway construction) resource were non-substantial. No previously unknown cultural resources were identified during the fieldwork, and no evidence of human remains was discovered. No adverse impacts to cultural resources resulted from installation of the fiber optic lines or maintenance activities on the entire Qwest California network backbone.

NOTE: *The following tables cover all chapters in the complete document, however, only the chapters relevant to the area covered by this CHRIS center are enclosed.*

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1. INTRODUCTION

1.1 CONTRACTING INFORMATION

Qwest Communications International Inc. (Qwest) retained SWCA Environmental Consultants (SWCA) to complete the Final Report of Monitoring and Findings for the Qwest Network Construction Project. The report covers the cultural resources investigation for the maintenance (replacement and repair) of fiber optic cable within the Qwest network "backbone" throughout the state of California. The existing California backbone includes approximately 1,431 linear miles of fiber optic plant. The investigation included literature searches, Sacred Lands searches, pedestrian survey, relocation of previously recorded archaeological sites, and monitoring of routine maintenance of existing lines along the network backbone.

This document reports on the background, methods, and findings of the cultural resources program for the Qwest Network Construction Project. Cultural resources include archaeological and historical objects, sites and districts, historic buildings and structures, cultural landscapes, and sites and resources of concern to local Native American and other ethnic groups. Cultural resources may be found on the ground surface or buried beneath the surface.

The California Public Utilities Commission (CPUC) is the designated Lead Agency for this project. The project is subject to the provisions of the California Environmental Quality Act (CEQA).

1.2 PURPOSE OF THIS UNDERTAKING

1.2.1 California Environmental Quality Act

The current study was completed under the provisions of CEQA. Public Resources Code (PRC) Section 5024.1, Section 15064.5 of the Guidelines, and Sections 21083.2 and 21084.1 of the Statutes of CEQA were also used as the basic guidelines for the cultural resources study (Governor's Office of Planning and Research 1998). PRC Section 5024.1 requires evaluation of historical resources to determine their eligibility for listing on the California Register of Historical Resources (CRHR). The purposes of the register are to maintain listings of the state's historical resources and to indicate which properties are to be protected from substantial adverse change (Office of Historic Preservation 1997). The criteria for listing resources on the California Register were expressly developed to be in accordance with previously established criteria developed for listing on the National Register of Historic Places (NRHP).

According to PRC Section 5024.1(c)(1-4) a resource is considered *historically significant* if it meets at least one of the following criteria:

(1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
(2) Is associated with the lives of persons important in our past;
(3) Embodies the distinctive characteristics of a type, period, region or method of installation, or represents the work of an important creative individual, or possesses high artistic values; or
(4) Has yielded, or may be likely to yield, information important in prehistory or history.

Under CEQA, if an archeological site is not an historical resource but meets the definition of a "unique archeological resource" as defined in PRC Section 21083.2, then it should be treated in accordance with the provisions of that section. A unique archaeological resource is defined as follows:

> An archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:
>
> (1) Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
> (2) Has a special and particular quality such as being the oldest of its type or the best available example of its type.
> (3) Is directly associated with a scientifically recognized important prehistoric or historic event or person.

Resources that neither meet any of these criteria for listing on the CRHR nor qualify as a "unique archaeological resource" under CEQA PRC Section 21083.2 are viewed as not significant. Under CEQA, "A nonunique archaeological resource need be given no further consideration, other than the simple recording of its existence by the lead agency if it so elects" [PRC Section 21083.2(h)].

1.2.2 Cultural Resources Protocols

The Qwest project is subject to specific Cultural Resources Protocols, numbered 1 through 11, prepared to ensure Qwest's compliance with a Mitigated Negative Declaration (MND) under CPUC regulatory authority. The CPUC and the Native American Heritage Commission (NAHC) approved the Qwest Fiber Optic Project Cultural Resources Protocols in February 2000.

Qwest is proud of its record of responsible environmental and cultural resources stewardship and was an enthusiastic participant in the development of the Cultural Resources Protocols for this statewide project. In addition, to the greatest extent possible, Qwest followed the preferred approach; namely to avoid ground disturbance activities within Environmentally Sensitive Areas (ESAs) and cultural resources during all maintenance activities.

The Protocols set forth a program for the identification and protection of known cultural resources within project rights of way (ROWs), and for the identification, assessment, and treatment of cultural resources that might be encountered in the course of project activities. Protocols 1 through 6 were generally applied during project planning; Protocols 7 through 11 were applied immediately prior to, during, or at the conclusion of the routine maintenance program. The protocols are listed in Table 1-1; the document containing the protocols is provided as Appendix A.

This report satisfies the requirements of Protocol 11: Final Report of Monitoring and Findings. The format of this report follows Archaeological Resource Management Reports (ARMR): Recommended Contents and Format (Office of Historic Preservation 1990).

Table 1-1. Qwest Project Cultural Resources Protocols

Protocol Number	Protocol Title
1	Records Search and Data Adequacy Analysis
2	Native American Consultation
3	Archaeological Inventory and Site Recording
4	Site Boundary, Integrity or Significance Testing
5	Mitigation Monitoring Plan
6	Pre-Construction Data Recovery
7	Protection of Environmentally Sensitive Areas
8	Archaeological Monitoring and Native American Observation
9	Addressing Unanticipated Discoveries during Project Activity
10	Discovery of Human Bone
11	Final Report of Monitoring and Findings

1.3 PROJECT DESCRIPTION AND OVERVIEW

The proposed project entails the routine maintenance, including replacement and repair, of fiber optic cable within the existing Qwest network "backbone" within the state of California. The California backbone includes approximately 1,431 linear miles of fiber optic plant, between Oregon and Mexico (Figure 1-1). For this project, the California network backbone was divided into 36 segments, detailed below.

Approximately 80 percent of Qwest's backbone system is within existing railroad right of ways (ROWs), generally within 3.4 meters (11 feet) from the centerline of the railroad track at the toe of the railroad berm. Additionally, the vast majority of the backbone lines were constructed in areas that were highly disturbed by previous construction for railroads, highways, and other utility lines, as well as by general urban development.

Qwest's existing fiber optic cables are approximately 2.3 centimeters (0.9 inches) in diameter. Cables are protected by conduit/innerduct that is approximately 10–15 centimeters (4–6 inches) in diameter. The conduit/innerduct is made of polyvinyl chloride (PVC) or other similar inert material (i.e., HDPE [high-density polyethylene]). The majority of these cables were originally installed in the railroad ROWs utilizing a rail plow, which is a track-mounted plow powered by locomotives that lays the conduit in a 10- to 15-centimeter (4- to 6-inch) wide and approximately 122-centimeter (48-inch) deep trench. The trench was generally cut within 3.4 meters (11 feet) off the centerline of the track. Where the use of rail-mounted plows was not possible, dozer-mounted rigs were sometimes used. When plows were not practical, trenching machines and backhoes were then utilized.

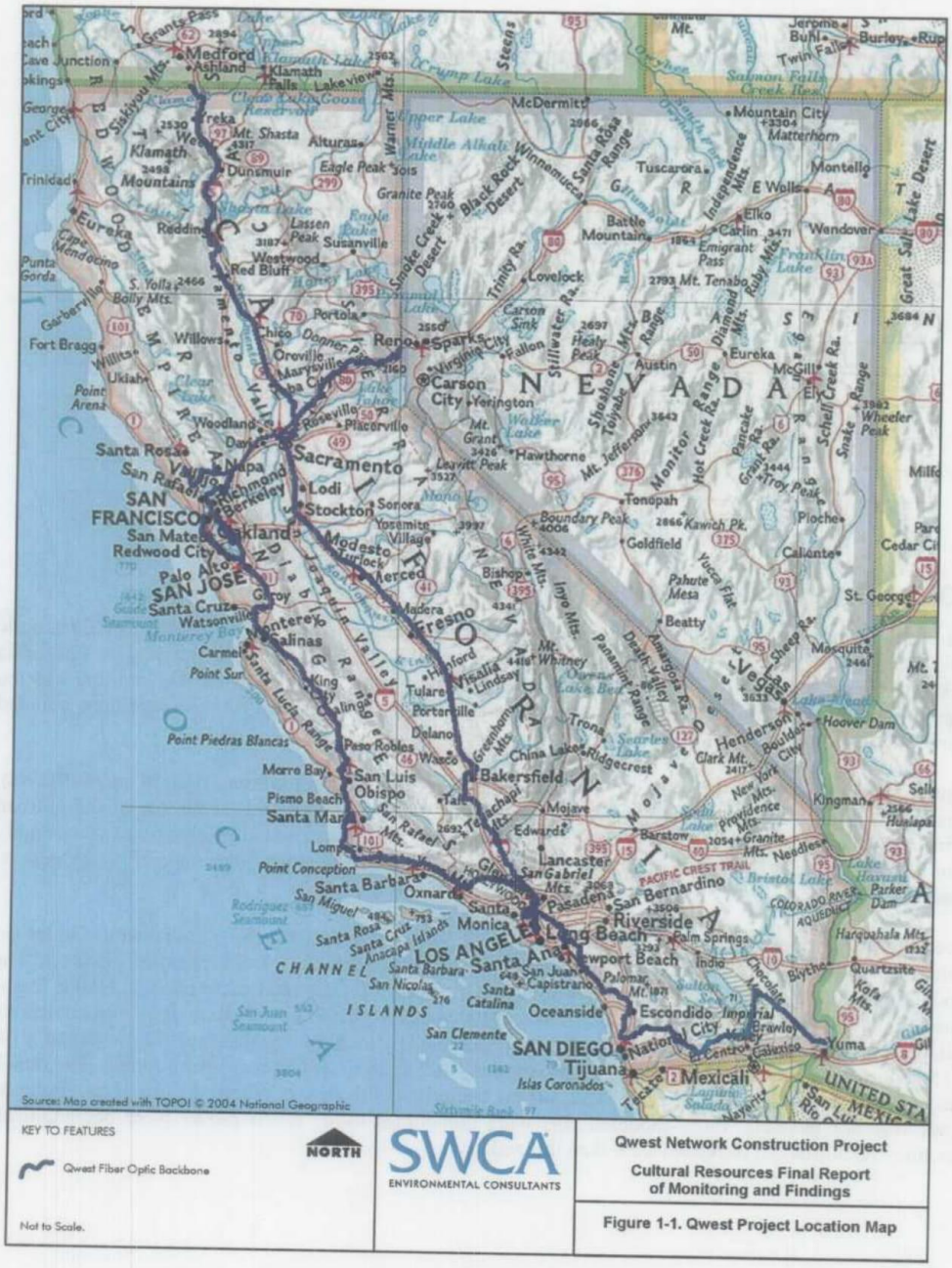


Figure 1-1. Project Location Map

Conduit was placed at a depth of approximately 122 centimeters (48 inches) and access boxes were installed periodically and placed in holes roughly 1.5 meters wide, 3.0 meters long, and 1.2–1.8 meters deep (5 feet wide, 10 feet long, and 4–6 feet) deep. The holes were used to access the conduit to pull the cable through, and for maintenance and repair of the line. Construction often included directional boring to place lines beneath difficult areas such as railroad, highway, and river and stream crossings, as well as ESAs. The boring technique does not disturb the surface of the ground except for small areas 1.2 by 1.8 meters (4 feet by 6 feet) where drilling equipment must enter and exit. Line markers (posts) were placed at necessary points, generally to a depth of 0.5 meters (1.5 feet).

The routine maintenance of the existing lines was expected to consist primarily of replacement and repair of fiber optic cable or cable markers, without replacement of existing conduit. Cable is generally repaired and replaced by accessing the existing conduit through handholes or manholes built at the time of original construction. Handholes and manholes are concrete or fiberglass vaults, set below grade or at grade, respectively. Old cable is pulled and new cable installed and spliced through the openings provided by these vaults. Maintenance may also require the excavation of new assist holes at unpredictable intervals along the conduit alignment (on average, about four per mile), which are used to free the cable when it becomes snagged during pulling or replacement. Assist holes may also be used for splicing or testing of cable. Routine maintenance included replacement and repair of customer hookups, which ranged between 0.6–50 meters (2–164 feet) outward from the railroad ROWs.

Routine maintenance may involve the hand clearing of brush from the immediate vicinity of handholes and assist holes, limiting ground disturbance to a small area around each hole. Wherever possible, replacement markers will be installed at the same location as the original markers, so no new soil disturbance is involved. Cable markers will also be installed, if they are lacking. In urban areas, cable markers are present only where the line is within a railroad right of way, and placed at 153-meter (500-foot) intervals.

When accessing existing cable for maintenance (pulling, splicing, testing, repair, or replacement) through handholes or assist holes, fiber is mechanically pulled from the existing conduit and mechanically replaced, using equipment mounted on a backhoe positioned adjacent to the hole. To access an existing handhole, the 46-centimeter (18-inch) cover of previously deposited soil immediately over the handhole cover, which was used to bury the handhole at the time of construction, is removed with a small mechanical excavator such as a backhoe or by hand. The cover of the hole is then lifted to provide access to existing conduit. The previously deposited spoils will be removed and then replaced over the handhole at the conclusion of the activity. Manholes are maintained at grade in paved areas and access requires only removal of the steel cover.

Assist holes may be excavated along the line, as needed, to assist the progress of the cable during repair or replacement. Sometimes the cable becomes snagged, and assist holes are excavated on the alignment above the existing conduit to access the snagged conduit and assist in pulling the cable. An assist hole may also be excavated to splice or test cable. Assist hole openings may range between 5-10 feet long and two feet wide above the original trench. The holes are excavated to the depth of the conduit, usually 48 inches. Then a puller, which is mounted on a backhoe adjacent to the alignment, is used to assist the progress of the new fiber through the conduit. After the pulling operation is complete, the conduit is resealed. The assist hole is then backfilled with the excavation spoils. The locations of assist holes cannot be predicted in advance, but four holes per mile are average intervals. Soil disturbance for assist holes consists primarily of re-excavation of previously deposited trench spoils. Some possible intrusion into adjacent trench sidewalls may also occur.

Maintenance protocols do not apply during emergency repairs of cable or conduit, which are made in immediate response to accidents or unforeseen disruptions of service resulting from floods, landslides,

etc. Such service disruptions could be hazardous to public health and safety if not responded to immediately. Emergency repairs may include testing, splicing, or replacement through handholes or assist holes. However, as soon as possible after an emergency has been resolved, maintenance protocols will be applied to that location.

1.4 PROJECT LIMITS AND MAPS

Initial construction of the Qwest network included some 1,431 miles of backbone line (Figure 1-1). The long axis of the main backbone line in the state of California extends approximately through the center of the state, mostly through the Central Valley area and roughly in a north-south direction from border to border. In addition, a branch extends northeastward from Sacramento to the Nevada border; another branch extends generally westward from Sacramento to the Bay Area. A third branch extends from the Bay Area southward to Los Angeles, mostly following the coast. Joining in Los Angeles, the main backbone line follows the coast to near the southern border of the state before turning easterly to reach the border with the state of Arizona. In total, the backbone crosses through 36 of California's 58 counties within the state (Figure 1-2).

The backbone line runs along major railroad and highway corridors. Line placement was designed to serve as much of California's metropolitan area as possible, while minimizing the distance required to reach those areas. From an environmental perspective, the backbone encounters most of the diverse ecological zones found in the state, ranging from mountains to coastal regions, through numerous foothills, valleys, parklands, and riparian areas interspersed with a wide variety of ecological niches.

For purposes of the investigation, the California network backbone was divided into 36 segments. The beginning and end of each segment is listed in Table 1-2. The segments are listed in approximate geographic order from north to south, beginning at the Oregon – California border and ending at the California – Arizona border. The final column in the table lists the counties crossed by the backbone within each segment (also see Figure 1-1).

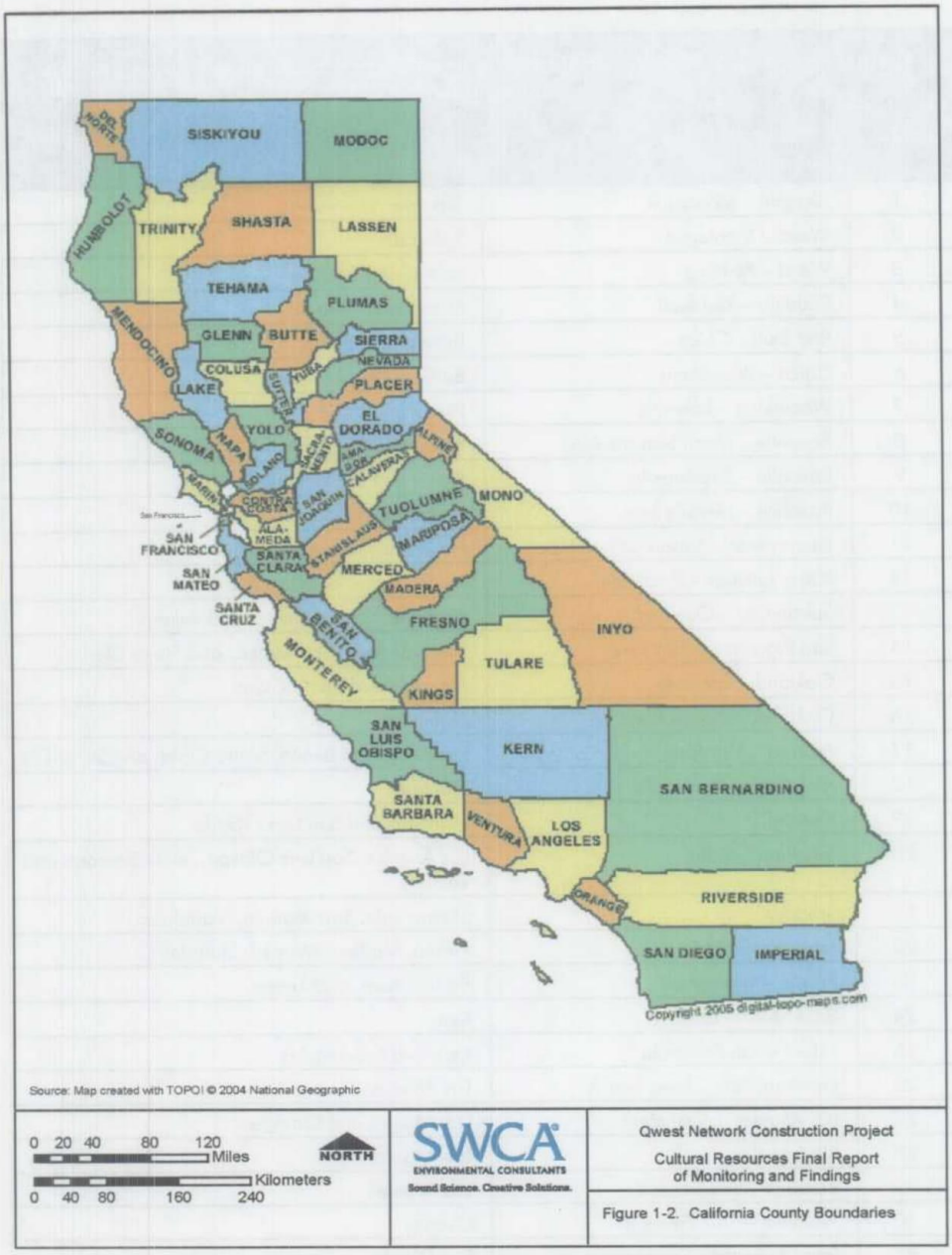


Figure 1-2. California County Boundaries

Table 1-2. List of 36 Qwest Backbone Segments and Counties Covered by this Investigation

Segment No.	Segment Name	California Counties
1	Oregon – Montague	Siskiyou
2	Weed – Montague	Siskiyou
3	Weed – Redding	Shasta and Siskiyou
4	Redding – Red Bluff	Shasta and Tehama
5	Red Bluff – Chico	Butte and Tehama
6	Chico – Wheatland	Butte, Sutter, and Yuba
7	Wheatland – Roseville	Placer and Yuba
8	Roseville – North Sacramento	Placer and Sacramento
9	Roseville – Sacramento	Placer and Sacramento
10	Roseville – Nevada Line	Nevada and Placer
11	Sacramento – Suisun City – Napa	Napa, Solano, and Yolo
12	Napa Junction – Petaluma	Marin, Napa, and Sonoma
13	Suisun City – Oakland	Alameda, Contra Costa, and Solano
14	San Francisco – San Jose	San Francisco, San Mateo, and Santa Clara
15	Oakland – San Jose	Alameda and Santa Clara
16	Oakland – Dassell Road	Alameda
17	Aromas – San Jose	Monterey, San Benito, Santa Clara, and Santa Cruz
18	King City – Watsonville	Monterey
19	Coastal	Monterey and San Luis Obispo
20	Southern Coastal	Los Angeles, San Luis Obispo, Santa Barbara, and Ventura
21	Stockton	Sacramento, San Joaquin, Stanislaus
22	Turlock – Fresno	Fresno, Madera, Merced, Stanislaus
23	Fresno – Bakersfield	Fresno, Kern, and Tulare
24	Bakersfield – Lebec	Kern
25	Lebec – San Fernando	Kern and Los Angeles
26	Firestone Park – Long Beach	Los Angeles
27	Los Angeles – Anaheim	Los Angeles and Orange
28	Slauson Ring	Los Angeles
29	Burbank – Los Angeles	Los Angeles
30	Anaheim – San Clemente	Orange
31	San Clemente – Oceanside	San Diego
32	Oceanside – Escondido	San Diego

Table 1-2. List of 36 Qwest Backbone Segments and Counties Covered by this Investigation

Segment No.	Segment Name	California Counties
33	Escondido – San Diego	San Diego
34	San Diego – Alpine	San Diego
35	Alpine	Imperial and San Diego
36	Yuma	Imperial

1.5 PROJECT PERSONNEL

1.5.1 California Public Utilities Commission

The Consumer Protection and Safety Division of the CPUC was identified as the contact available throughout the Qwest Network Construction project for notification of a discovery.

1.5.2 Qwest Archaeological Project Manager

Cindy Arrington, M.S., RPA was identified as the Qwest Archaeological Project Manager for this project. Throughout the project, her responsibilities included (1) working closely with the Cultural Resource Specialist (defined below) to develop plans to avoid and reduce cultural resources impacts; (2) ensuring that qualified archaeological monitors and Native American observers were present on site during the construction and maintenance activities, as recommended by the protocols; (3) ensuring that the line workers were aware of the monitoring requirements and of their responsibilities regarding cultural resources; and (4) ensuring that any necessary archaeological mitigation was carried out prior to commencement of the maintenance activity.

1.5.3 Cultural Resources Specialist (CRS)

Three qualified individuals, who met the requirements specified in the General Conditions section of the Cultural Resources Protocols, served as Cultural Resources Specialists (CRS) for this project (Table 1-3). The minimum requirements included a graduate degree specializing in archaeology and professional experience. Each CRS was responsible for staffing and supervising lead archaeological monitors and a staff of archaeological monitors, as well as Native American observers. The CRS was also responsible for determining when archaeological monitors and Native American observers were deemed appropriate, depending on the sensitivity of the project segment. In addition, the CRS or archaeological Monitor (see below) was responsible for flagging or otherwise delineating Environmentally Sensitive Areas (ESAs), including a 15-foot buffer zone around cultural resources, within four days prior to maintenance activities. The responsibilities of the CRS also extended to review of the Daily Monitoring Logs and Site Condition Record prepared by the archaeological monitors (see below).

Table 1-3. Designated Cultural Resources Specialists

Cultural Resources Specialists	Highest Degree/RPA Status *	Segment Coverage
Cindy Arrington	M.S., RPA	All
George Zeimens	M.A., RPA	Central California
Lori Harrington	M.A., RPA	Northern California

* Member of the Register of Professional Archaeologists (RPA)

1.5.4 Archaeological Monitors

In compliance with the General Conditions section of the Cultural Resources Protocols, qualified lead archaeological monitors (Table 1-4) and a staff of archaeological monitors (Table 1-5) were available to monitor for cultural resources for this project. Responsibilities of the lead archaeological monitor included routine coordination with the construction foreman and Native American observer regarding the work schedule. Archaeological monitors were responsible for being onsite during all work in sensitive areas, for making spot checks if the area were designated for intermittent monitoring, and for completing Daily Monitoring Logs. The archaeological monitor or CRS was responsible for flagging or otherwise delineating ESAs, including a 15-foot buffer zone around cultural resources, within four days prior to maintenance activities. The archaeological monitor was also responsible for completing a Site Condition Record immediately after removal of such flagging or other protective marker.

Table 1-4. Lead Archaeological Monitors

Lead Archaeological Monitor	Highest Degree/RPA Status *	Segment
Keith Hamm	B.A.	Northern California
Mark Lowe	B.A.	Southern California
George Zeimens	M.A., RPA	Central California

* Member of the Register of Professional Archaeologists (RPA)

Table 1-5. Archaeological Monitors

Archaeological Monitors	Highest Degree/RPA Status *
Bradbury Brown	B.A.
William Brown	B.A.
Todd Folmer	B.A.
Susan Kintscher	B.A.
Harry Moyer	B.A.
Joise Salas	B.A
Paul Shen-Brown	M.A., RPA
Mark Sullivan	M.A., RPA
Dean Tye	B.A.

* Member of the Register of Professional Archaeologists (RPA)

1.5.5 Native American Observer

Native American observers were hired on a subconsultant basis; each met the requirements specified in the General Conditions section of the Cultural Resources Protocols. They accompanied the archaeological monitor(s) on site when a Native American observer was deemed appropriate, depending on the sensitivity of the project segment. The responsibilities of each Native American observer included monitoring and providing input to the archaeological monitor regarding the significance of any findings. If any human remains were encountered, the observer would also have ensured the remains were respectfully treated in the absence of the Most Likely Descendant.

1.6 CULTURAL RESOURCES SENSITIVITY TRAINING

All Qwest personnel received training in field identification of potential cultural resources. The workforce was also briefed and cautioned on the legal and/or regulatory implications of knowingly destroying cultural resources or removing artifacts, human remains, bottles, and other cultural materials from the site of initial discovery. The training program emphasized actions to be taken immediately in the event of the unanticipated discovery of cultural resources or human remains. Workforce training materials were prepared and available for CPUC review.

1.7 REPORT ORGANIZATION

This technical report covers the monitoring and findings of the cultural resources investigation completed for the Qwest Network Construction project. It is divided into 41 chapters, the two early chapters presenting the background information on the planned undertaking, followed by 36 chapters, each covering a specific segment of the project along the approximately 1,431 linear miles of the Qwest network backbone within the state of California. The final chapter provides summary recommendations for the entire project. Two appendices provide supporting data, including the cultural resources protocols under which this investigation was conducted and records regarding consultation with Native American groups.

This chapter presents the general contract information on the planned undertaking, its regulatory setting relative to the cultural environment, and its description and location within the state of California. Chapter 2 provides an overview of the natural setting of the entire project, including climate, elevation, vegetation communities, wildlife, and geomorphic provinces, plus an overview of the cultural setting for the entire project, including prehistoric, ethnographic, and historic periods. The natural and cultural overviews in Chapter 2 are broad and generalized since each covers the state of California; more detailed regional and/or local overviews are presented in the chapters following, which also detail the fieldwork and findings on individual segments of the Qwest network.

This section of Chapter 1 outlines the organization of this aerially extensive technical report. As noted above, during the project preparation and fieldwork phases, Qwest's backbone network was organized into 36 linear segments, as listed in Table 1-2. Chapters 3–38 are organized according to Segment Nos. 1–36. The contents of each chapter on the individual segments are outlined below.

The final chapter of this report (Chapter 39) provides summary recommendations for the entire project. That chapter is followed by the references cited (Chapter 40) and a comprehensive list of acronyms (Chapter 41) used throughout this document.

The two appendices include:

- Appendix A – the Qwest Fiber Optic Project Cultural Resources Protocols submitted to the CPUC on 16 February 2000 by Woodward Clyde (later URS Corporation).
- Appendix B – a sample of the letters sent to the NAHC requesting a Sacred Lands file search and a current Native American contact list; and a table listing contact dates and responses. Details regarding the nature of individual responses are provided in Chapters 3–38.

1.8 CONTENTS OF CHAPTERS 3–38

Chapters 3–38, each covering one of the 36 linear segments, have each been designed as a "stand-alone" report. As such, each includes the following information:

- Introduction to the Project
- Segment Description
- Setting – Natural and Cultural
- Previous Research – Literature Search and Native American Consultation
- Fieldwork – Methods and Findings
- Discussion
- Recommendations

Each segment chapter will be filed with the appropriate Information Center maintained by the California Historical Resources Information System (CHRIS). Chapters 1 (Introduction), 2 (Natural and Cultural Setting for the Project), 39 (Summary Recommendations), 40 (References Cited), and 41 (Acronym List) will be included with the segment chapters submitted to the CHRIS centers.

1.8.1 Introduction to the Project

This section in Chapters 3–38 reviews the contracting information and the nature of the project, introduces the CPUC as the Lead Agency under CEQA, summarizes the Cultural Resources Protocols, introduces project personnel and their roles, notes all Qwest personnel received cultural resources training, and describes the project-driven division of the 1,431-mile California network backbone into 36 manageable segments.

1.8.2 Segment Description

The Segment Description section in Chapters 3–38 summarizes the location of each segment, including the counties and major cities it passes through, and its start and end points; whether each segment route is along railroad ROWs and/or specific roadways; and the names of the applicable U.S. Geological Survey (USGS) 7.5-Minute Quadrangles.

A segment location map is provided within the body of Chapters 3–38, along with a series of 1:24,000 maps at the end of each segment chapter.[1]

[1] NOTE: All figures in Chapters 3–38 are labeled according to segment number, not chapter number.

1.8.3 Setting – Natural and Cultural

The Setting section in Chapters 3–38 provides an overview of the natural and cultural setting for the region specific to each segment. Within the natural setting section is a brief summary of physiographic features, geomorphic province, elevation, climate, and current land uses, followed by a review of vegetation communities within the area of the segment and the natural resources within each community that likely would have been harvested by the area's prehistoric occupants, including wildlife species common to the specified vegetation communities.

Within the cultural setting section are three overviews for the segment route – prehistoric, ethnographic, and historic. The prehistoric overview discusses the evidence for human occupation in the segment region between approximately 12,000–10,000 years ago up until historic contact between A.D. 1769 and the early 1800s, depending on geographic location within the state. The Native American groups that historically occupied all or various portions of each segment route are identified in the ethnographic overview section, and their territory, linguistic affiliation, culture, subsistence and settlement practices, impact of historic contact, and current status are presented. The historic overview gives a brief summary of post-contact history for the state, covering the Spanish Period (1769–1822), Mexican Period (1822–1848), and American Period (1848–present), but is focused on the history of each county and major city or community crossed by the specific segment.

1.8.4 Previous Research

The Previous Research section in Chapters 3–38 details the methods and findings of a literature search and Native American consultation for each segment, conducted in compliance with Cultural Resources Protocols 1 and 2.

1.8.4.1 California Historical Resources Information System

Cultural resources records searches were performed at the relevant Information Centers of the California Historical Resources Information System (CHRIS) for segments 1–36 between January 3 and August 8, 2000. The review included a quarter or half-mile radius of each segment. The CHRIS includes 12 separate Information Centers, divided by region, each of which includes specific counties. The backbone traverses the jurisdictions of 10 Information Centers, listed in Table 1-6, roughly arranged from north to south, which were contacted for this project.

As specified in Chapters 3–38, in addition to official maps and records, the Information Centers routinely consulted the following sources of information as part of the record searches:

- National Register of Historic Places – Listed Properties
- California Register of Historical Resources
- California Inventory of Historical Resources
- California State Historical Landmarks
- California Points of Historical Interest
- Directory of Properties in the Historical Resources Inventory (Office of Historic Preservation)
- Caltrans State and Local Bridge Surveys

The findings of the records searches are specified for each segment in Chapters 3–38. Information presented includes the approximate percent of the segment area subject to intensive archaeological investigation, the cultural resources previously recorded within the search radius, the number of known

archaeological sites that contain prehistoric or historic burials, and the potential of known sites to contain burials. A summary of any significant resources, including California Historic Landmarks and those listed on the NRHP and/or CRHR, is also included in this section.

The series of 1:24,000 maps at the end of Chapters 3–38 show the previously recorded cultural resources along each segment, as provided by each CHRIS records search. As noted in the figure legends, the labeled resources are identified as one of four types: linear, prehistoric, historic, or protohistoric and/or multi-component.

Table 1-6. CHRIS Information Centers Contacted for the Qwest Network Project

Information Center	Counties Covered
Northwest Information Center Sonoma State University Rohnert Park, CA	Alameda, Colusa, Contra Costa, Del Norte, Humboldt, Lake, Marin, Mendocino, Monterey, Napa, San Benito, San Francisco, San Mateo, Santa Clara, Santa Cruz, Solano, Sonoma, and Yolo
Northeast Information Center California State University, Chico Chico, CA	Butte, Glenn, Lassen, Modoc, Plumas, Shasta, Sierra Siskiyou, Sutter, Tehama, and Trinity
North Central Information Center California State University, Sacramento Sacramento, CA	Amador, El Dorado, Nevada, Placer, Sacramento, and Yuba
Central California Information Center California State University, Stanislaus Turlock, CA	Alpine, Calaveras, Mariposa, Merced, San Joaquin, Stanislaus, and Tuolumne
Central Coastal Information Center University of California, Santa Barbara Santa Barbara, CA	San Luis Obispo and Santa Barbara
Southern San Joaquin Valley Information Center California State University, Bakersfield Bakersfield, CA	Fresno, Kern, Kings, Madera, and Tulare
San Bernardino Archaeological Information Center San Bernardino County Museum Redlands, CA	San Bernardino
South Central Coastal Information Center California State University, Fullerton Fullerton, CA	Los Angeles, Orange, and Ventura

Table 1-6. CHRIS Information Centers Contacted for the Qwest Network Project

Information Center	Counties Covered
South Coastal Information Center San Diego State University San Diego, CA	San Diego
Southeast Information Center Imperial Valley College Desert Museum Ocotillo, CA	Imperial

1.8.4.2 Native American Consultation

Native American consultation on each segment included a request to the NAHC for a Sacred Lands File search and current Native American contact list. Letters subsequently were sent to the listed groups and individuals on the contact lists, asking for any information they possessed concerning local sacred lands and other cultural resources within the segment area. The NAHC contacts were made aware of the maintenance activity, comments were solicited, and closing dates for inquiries were made explicit in the contact letters sent out. If there was no response to the letter, a telephone call was made to each individual or representative in a timely manner. The requests, NAHC responses, and letters addressed to the contact lists for segments 1–36 were accomplished between January 13 and May 19, 2000.

The findings subsection on this topic for segments 1–36 includes whether Native American cultural resources are present in the immediate area, a summary of responses to the letters addressed to the contact list and the follow-up telephone calls, and any requests for a consultation with Qwest management. If a consultation was requested, the findings include when a meeting was held, what groups were represented, and the number of individuals that attended.

Appendix B presents one sample each of the request letters addressed to the NAHC and of the Native American consultation letters sent to each individual/group provided on the NAHC contact lists for Segments 1–36. The appendix also includes a table listing contact dates and responses for each segment.

1.8.5 Fieldwork – Methods and Findings

The Fieldwork section in Chapters 3–38 details the methods and findings of intensive pedestrian surveys, including limited visits to known sites, and monitoring of maintenance activities conducted in compliance with Cultural Resources Protocols 5, 7, 8, 9, and 10.

Fieldwork was conducted for segments 1–36 between the spring of 2000 and winter of 2001. All fieldwork was conducted under the supervision of a Cultural Resources Specialist (CRS), who supervised lead archaeological monitors and a staff of archaeological monitors, as well as Native American observers.

1.8.5.1 Survey

An intensive pedestrian survey was conducted for Segments 1–36 to identify any historic/prehistoric sites or features that may have been encountered during the installation of the fiber optic lines. The survey area consisted of a swath of land straddling the fiber optic line and extending 15 meters to either side. This area was considered the area of potential effect (APE) for Qwest backbone construction. During the field

survey, an attempt was made to locate known sites within the APE, based on the CHRIS records searches, and to identify any previously unrecorded cultural resources.

The findings of the pedestrian survey are specified for each segment in Chapters 3–38. Information presented includes when the survey was conducted, if any previously unrecorded or newly identified cultural resource sites, artifacts, or objects were located, a summary of the condition of any previously recorded cultural resources relocated within the APE, and the extent of impacts, if any, upon cultural resources resulting from Qwest backbone construction and construction-related activities.

1.8.5.2 Monitoring

A Mitigation and Monitoring Plan (MMP) was prepared in accordance with Cultural Resources Protocol 5 for each segment between April and August 2000. The MMPs noted that Qwest would be performing maintenance on an existing line only; no new trenching was foreseen. The proposed maintenance activity would consist of the re-excavation of pre-existing assist holes to perform maintenance or upgrades on the fiber-optic line. These excavations might take place at four points per linear mile. The MMPs concluded that it was possible that some previously undisturbed soil might be disturbed during re-excavation.

Based on the information gathered from the records searches, the MMP noted the percent of the route outside the ROW not subject to prior survey; if there was a low, moderate, or high probability that sites within the search radius might contain burials; whether the presence of human remains along this segment was considered likely; and the possibility that previously unknown cultural resources might be discovered during maintenance activities. The MMP also considered whether there could be potentially adverse impacts to any sites located adjacent to, or possibly overlapping, the project corridor, or if previously undisturbed soils might be displaced at re-excavation points.

Each MMP for segments 1–36 then made recommendations for monitoring within the segment. Such recommendations always included: (1) whether an archaeological monitor or would not be present when any maintenance is performed along the project corridor; and (2) whether a Native American observer would or would not be present when any maintenance is performed along the project corridor. If known sites had been mapped within or relatively close to the ROW, a MMP made additional recommendations. These might include: (1) the area of the project corridor where the known archaeological site(s) is located would be avoided as much as possible; and (2) if disturbance to a known archaeological site is unavoidable during maintenance, the site would be assessed for significance prior to any excavation of existing handholes and assist holes.

The findings of the monitoring program for each segment are presented in Chapters 3–38. The dates monitoring was conducted and if any previously unrecorded or newly identified cultural resource sites, artifacts, or objects were located are summarized. For some segments, no maintenance activities occurred so no monitoring was performed. Examples of daily monitoring logs are included as exhibits within a number of segment chapters. These demonstrate the attention to detail maintained throughout this project by the CRSs, lead archaeological monitors, and archaeological monitors.

1.8.6 Discussion and Recommendations

Chapters 3–38 each conclude with Discussion and Recommendations sections. The discussion section summarizes the results of the CHRIS records search for the segment, whether cultural resources had been previously recorded within the project corridor, if the presence of human remains was considered likely, and whether previously unknown cultural resources or human remains were discovered during the pedestrian survey or monitoring program.

Recommendations for Segments 1–36 note that the potential remains for the existence of buried archaeological materials within the project area, and that should cultural resources be encountered by Qwest construction and/or management crews during future disturbance for maintenance of fiber-optic cable and related infrastructure, or should new construction occur within the state of California, work in the area must be halted and a qualified archaeologist should be notified immediately to evaluate the resource(s) encountered. Further, Qwest would adhere to the specific Cultural Resources Protocols, numbered 1 through 11, which were prepared to ensure Qwest's compliance under CPUC regulatory authority, discussed above (and see Appendix A).

2. STATEWIDE NATURAL AND CULTURAL SETTING

This chapter reviews the natural and cultural setting for the Qwest network backbone project. The setting is both comprehensive and extensive since the California backbone includes approximately 1,431 linear miles of fiber optic plant, beginning at the California–Oregon border and ending at the California–Arizona border, with branch lines along the Pacific coast and extending to the Nevada border (Figure 1-1).

From an environmental perspective, the backbone encounters most of the diverse ecological zones found in the state, ranging from mountains to coastal regions, through numerous foothills, valleys, parklands, and riparian areas interspersed with a wide variety of ecological niches. The natural environment of the state is reviewed in the first section of this chapter. The review includes discussion of California's climate, vegetation communities, wildlife, and geomorphic provinces – fundamental elements of the environment that would have been important to subsistence and settlement practices, by aboriginal as well as later occupants of the state. An understanding of the scope and diversity of California's natural setting is part of our interpretative foundation for understanding the patterns and complexity present within California's prehistoric archaeological record. The natural setting of the state also has an important bearing on our understanding of the numbers and diversity of native Californian groups encountered at historic contact, as well as of the pattern of economic and population growth of the state during the historic era.

The cultural setting of the state is reviewed in the second section of this chapter. The review is presented in chronological sequence in three parts – as prehistoric, ethnographic, and historic overviews. The extent of each overview is necessarily complex because of the linear scope of this project.

The section on California prehistory is organized as two fundamental schemes. The first summarizes the division of the state into eight major archaeological regions, which roughly reflect the state's geomorphic provinces; Segments 1–36 traverse seven of the archaeological regions. The second organizational scheme refers to the major chronological frameworks developed over the past century to understand cultural changes within California, but seeks to simplify this overview by categorizing prehistoric material culture according to a series of three broad temporal periods that reflect similar cultural characteristics throughout the state. Following the introduction of the temporal framework, the characteristic traits of each period are highlighted and summarized, focusing on the portions of the state traversed by the Qwest network backbone.

The ethnographic section presents a brief history of the recordation of native cultures, and then introduces the 20 groups whose traditional lands are crossed by the Qwest California network backbone. The ensuing discussion touches on language groupings and the similarities of subsistence practices, settlement patterns, technology, material culture, social organization, and religious beliefs, using examples from the 20 groups. Ethnographic descriptions of material culture are an invaluable source of information used to interpret the archaeological record; the linguistic data are helpful in reconstructing the timing and migration of populations prior to contact. The section ends with a short overview of the devastating effect of contact after 1769 and a discussion of today's improved economic status and political policies.

The final section of the cultural setting in this chapter is an overview of the history of California. Post-contact history is generally divided into three specific periods: the Spanish Period (1769–1822), Mexican Period (1822–1848), and American Period (1848–present). Earlier exploration between 1529 and 1769 of Alta (Upper) California was limited to only brief visits by Spanish, Russian, and British mariners; inland

exploration and settlement began in earnest in 1769 with establishment by the Spaniards of a mission and presidio in San Diego. Post contact history also includes a brief Russian Period (1809–1841) centered upon the fur trade and establishment of Fort Ross in today's Sonoma County. The end of the section brings us to a brief summary of California's current population and economy.

2.1 Natural Setting for California

Prior to the historic era, California's natural setting contained rich biotic communities and a wealth of natural resources that were available for exploitation by indigenous populations. Its climate was suitable for a variety of settlement and economic practices, and the flora and fauna of the area provided sufficient resources for the numerous hunter–gatherer groups, including food from hunting, gathering, and fishing activities, as well as materials used for making structures, utilitarian items such as tools and baskets, soaps, teas, medicines, ornaments, ceremonial items, clothing, and canoes made of tule or wood. Geologic formations throughout the state also provided resources for chipped-stone tools, milling implements, and other items. Indigenous groups throughout the state would have adapted to local patterns of natural resource availability, which would have influenced their exploitative strategy, settlement location, and population size. Thus understanding the diversity of California's natural setting is part of the foundation used for interpreting the archaeological record and understanding the patterns and complexity of California's prehistory, as well as of the later ethnographic and historic periods.

2.1.1 Climate

California's climate is predominantly classified as Mediterranean because most of the state experiences mild, wet winters and warm, dry summers (Holland and Kiel 1995). The Pacific Ocean forms the western boundary of the state and regulates climate throughout the state, but particularly along the coast. East of the Sierra Nevada, the mountains and deserts exhibit a Continental climate as a result of the Sierra Nevada and Cascade Range rain shadow, which creates a harsh, arid environment. Cold arctic or alpine climates occur at the highest elevations of the Sierra Nevada and Cascade Range. These climate types are defined by regional conditions that vary due to elevation, topography, and latitude.

California's latitude range (between 32.5 and 42 degrees north) and the variation in topography across the state influence the different precipitation, temperature, wind, and other climate patterns that occur in the state (Holland and Kiel 1995). In general, temperature tends to decrease at more northern latitudes and higher elevations, and precipitation tends to increase at higher elevations. The length of the growing season also tends to decrease at higher elevations and more northern latitudes. Mean temperatures in the summer months range from highs of 15 degrees C (60 degrees F) along the north coast to 47 degrees C (116 degrees F) in the Mojave Desert (Moratto 1984). Mean low temperatures in January range from -13 degrees C (8 degrees F) in the Sierra Nevada to 4 degrees C (40 degrees F) in the desert regions. Precipitation ranges dramatically across the state based on elevation, topography, and latitude. The hot desert climates in the southeast receive less than 5 cm (2 inches) of rain annually, whereas the moist, temperate climates of the northwest receive more than 250 cm (100 inches) per year.

2.1.2 Vegetation Communities and Wildlife

Climate plays an important role in the establishment of vegetation communities across the state. California's variation in latitude, topography, and elevation influence the local climate patterns and the diverse assemblage of plant species across the state (Holland and Keil 1995). California has three floristic provinces (California, Great Basin, and Sonoran) separated generally by the Sierra Nevada and Cascade Range. These provinces are characterized by similar climates, flora, and history. As a result of the

variation in habitats throughout the state, California has the most diverse flora (approximately 5,867 species) in all of temperate North America. Approximately 81 percent of the species are found in the California Floristic Province. The Great Basin and Sonoran Floristic Provinces are more arid and harsher environments and contain lower species diversity.

Vegetation communities contain an assemblage of plant species and are often characterized by a dominant species or multiple co-dominant species (Holland and Keil 1995). These communities were formed by natural events (evolution and dispersal patterns) in combination with changes in climate, fire, soils, topography, and in some areas, humans. In California, the vegetation communities can generally be grouped into tree-dominated, shrub-dominated, and herb-dominated community types, which include coniferous forest and woodland, woodlands, chaparral, scrubland, desert scrubland, valley and foothill grasslands, and wetlands (Table 2-1; Figure 2-1). These types are further classified into more specific vegetation communities based on the dominant plants. More localized classifications of each community are available at the species assemblage level or series, but this level of classification is too complex to discuss in terms of the entire state. Descriptions of the different community types and representative flora and fauna from each community are provided below.

Table 2-1. Vegetation Communities of California

Community Types	Vegetation Communities (Habitats)
Coniferous Forest and Woodland	Coniferous forest, mixed evergreen forest, coastal woodland
Woodlands	Southern woodland, foothill woodland, oak woodland, coastal woodland, desert riparian, riparian scrub/woodland
Chaparral	Chaparral
Scrubland	Coastal scrubland, scrubland
Desert Scrubland	Desert scrubland
Valley and Foothill Grasslands	Valley and foothill grassland, prairie
Wetlands and Open Water	Freshwater marshland, brackish marshland, seasonal wetland, alkali meadow
Agriculture	Historically grasslands, wetlands, and woodlands; now farmland, orchards, and pastures
Other	Developed, barren, and other non-vegetated communities

Note: Community types correspond to Figure 2-1.
Sources: Moratto 1984; Miles and Goudey 1998; Holland and Keil 1995

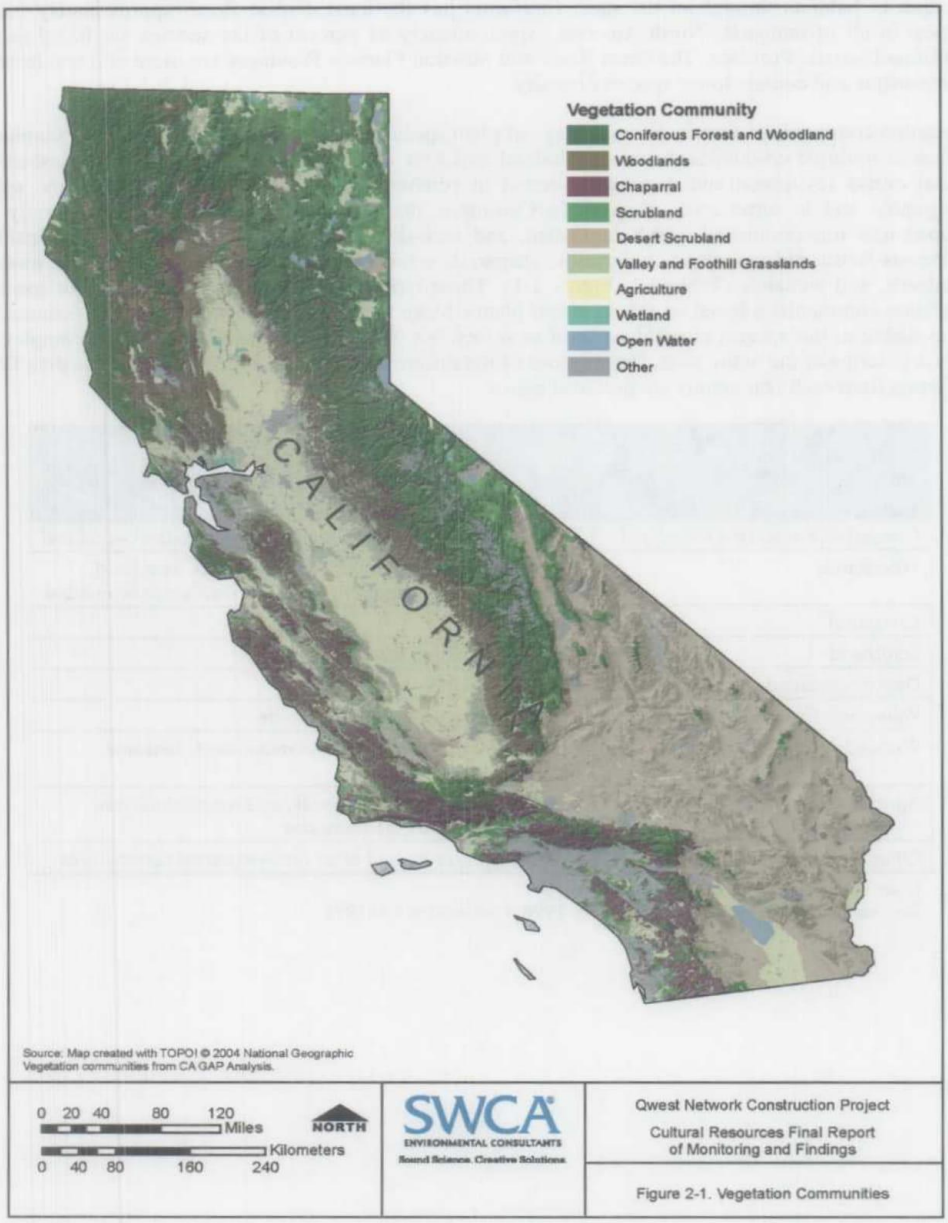


Figure 2-1. Vegetation Communities

2.1.2.1 Coniferous Forests and Woodlands

Coniferous forests and woodlands are dominated by evergreen trees, such as Ponderosa pine (*Pinus ponderosa*), Coulter pine (*Pinus coulteri*), cypress (*Cupressus* spp.), and Douglas-fir (*Pseudotsuga menziesii*) (Holland and Keil 1995). Forests tend to have a continuous canopy formed by fairly dense, tall trees. Woodlands tend to be less dense and contain smaller trees. The understory varies depending on the density of the canopy. Shade-tolerant shrubs, such as thimbleberry (*Rubus parviflorus*), huckleberry (*Vaccinium* spp.), and Oregon-grape (*Berberis nervosa*), dominate denser stands, whereas herbs and shrubs that are not shade-tolerant dominate the understory of open-spaced canopies. Coniferous forests and woodlands occur in the foothills and higher elevations of the mountain ranges across the state.

A variety of wildlife species utilize coniferous forests and woodlands. Historically, the grizzly bear (*Ursus arctos horribilis*) occupied a variety of habitats throughout the state, including coniferous forests. Prior to the nineteenth century, the grizzly bear was estimated to have a population of 10,000 bears, but now it is considered extirpated from the state (Moratto 1984). Mammals that occur in coniferous forests and woodlands include deer (*Odocoileus* spp.), California bighorn sheep (*Ovis canadensis californiana*), Sierra Nevada red fox (*Vulpes vulpes*), wolverine (*Gulo gulo*), fisher (*Martes pennanti*), and rodents (Mayer and Laudenslayer 1988). Representative birds include game birds, great horned owl (*Bubo virginianus*), red-tailed hawk (*Buteo jamaicensis*), spotted owl (*Strix occidentalis*), bald eagle (*Haliaeetus leucocephalus*), peregrine falcon (*Falco peregrinus*), northern goshawk (*Accipiter gentilis*), prairie falcon (*Falco mexicanus*), California condor (*Gymnogyps californianus*), blue grouse (*Dendragapus obscurus*), great gray owl (*Strix nebulosa*), and pine marten (*Martes martes*). Typical reptiles and amphibians include salamanders, ensatina (*Ensatina eschscholtzi*), Siskiyou Mountains salamander (*Plethodon stormi*), southern rubber boa (*Charina bottae umbratica*), and red-legged frog (*Rana aurora draytoni*).

2.1.2.2 Woodlands

Woodlands include a variety of communities that generally have an open canopy and smaller trees with a shrub- or herb-dominated understory (Holland and Keil 1995). Oak woodlands are dominated by various oak trees and occur in the foothills across the state. They tend to be unique to the state and contain many endemic oak trees, such as blue oak (*Quercus douglasii*), leather oak (*Q. durata*), valley oak (*Q. lobata*), and interior live oak (*Q. wislizenii*). Much of the oak woodlands in the Central Valley have been converted to agricultural uses since the 1900s. Riparian woodlands tend to occur along lakes, rivers, streams, and other drainages, including intermittent and ephemeral washes in arid areas. They typically contain deciduous trees, such as cottonwoods (*Populus* spp.), willows (*Salix* spp.), and sycamore (*Platanus racemosa*), with a varying density understory. Desert woodlands occur at elevations just above the desert scrubland communities in the more arid portions of the state. These woodlands are dominated by a mixture of desert shrubs and small trees adapted to arid conditions, such as Joshua tree (*Yucca brevifolia*), pinyon pine (*Pinus edulis*), and juniper (*Juniperus* spp.).

A variety of wildlife species utilize woodlands. Mammals that occur in woodland communities include black bear (*Ursus americanus*), mule deer (*Odocoileus hemionus*), Sierra Nevada red fox, western gray squirrels (*Sciurus griseus*), California ground squirrels (*Spermophilus beecheyi*), and woodrat (*Neotoma* spp.) (Mayer and Laudenslayer 1988). Representative birds include scrub jay (*Aphelocoma* spp.), yellow-billed magpie (*Pica nuttalli*), crow (*Corvus brachyrhynchos*), raven (*C. corax*), barn owl (*Tyto alba*), red-tailed hawk, red-shouldered hawk (*Buteo lineatus*), cactus wren (*Campylorhynchus brunneicapillus*), wild turkey (*Meleagris gallopavo*), mountain quail (*Oreortyx pictus*), pinyon jay (*Gymnorhinus cyanocephalus*), and bushtit (*Psaltriparus minimus*). Typical reptiles and amphibians include gopher snake (*Pituophis melanoleucus*), western rattlesnake (*Crotalus viridis*), rubber boa (*Charina bottae*), southern rubber boa, alligator lizard (*Elgaria* spp.), desert night lizard (*Xantusia vigilis*), ensatina, and relictual slender salamander (*Batrachoseps relictus*).

2.1.2.3 Chaparral

The chaparral community is a type of scrubland that is characterized by stiffly branching, evergreen shrubs with thick, leathery leaves and hard wood (Holland and Keil 1995). Chaparral communities range from slopes and foothills of mountains to valleys in southern California. Dominant shrubs vary depending on soil, climate, and elevation, and undergrowth is typically sparse, especially in mature stands. Common chaparral shrubs include manzanita (*Arctostaphylos* spp.), chamise (*Adenostoma fasciculatum*), ceanothus (*Ceanothus* spp.), mountain-mahogany (*Cercocarpus betuloides*), and scrub oak (*Quercus berberidifolia*).

A variety of wildlife species utilize chaparral communities. Typical mammals include mountain lion (*Puma concolor*), bobcat (*Felis rufus*), coyote (*Canis latrans*), raccoon (*Procyon lotor*), mule deer, desert cottontail (*Sylvilagus audubonii*), brush rabbits (*Sylvilagus bachmani*), pocket gopher (*Thomomys* spp.), dusky-footed woodrat (*Neotoma fuscipes*), California vole (*Microtus californicus*), porcupine (*Erethizon dorsatum*), long-tailed weasel (*Mustela frenata*), and striped skunk (*Mephitis mephitis*). Representative birds include mountain quail, California quail (*Callipepla californica*), hawks (*Buteo* spp.), and western scrub jay (*Aphelocoma californica*). Typical reptiles include California kingsnake (*Lampropeltis getula californiae*), Pacific gopher snake (*Pituophis catenifer catenifer*), and western fence lizard (*Sceloporus occidentalis*).

2.1.2.4 Scrubland

Scrubland communities are dominated by shrub species and vary from dense, continuous stands to open stands with dense, herbaceous undergrowth (Holland and Keil 1995). Coastal scrub communities follow the coast and are dominated by coyote bush (*Baccharis pilularis*) and tree lupine (*Lupinus arboreus*) in the north and California sagebrush (*Artemisia californica*), sage (*Salvia* spp.), and California buckwheat (*Eriogonum fasciculatum*) in the south. Sagebrush scrublands occur primarily along the eastern slopes of the Sierra Nevada and are dominated by Great Basin sagebrush (*Artemisia tridentata*) or other sagebrush species. Other scrubland communities consist of a mixture of shrubs and generally occur in the foothills and lower elevations across the state.

A variety of wildlife species utilize scrublands. Mammals that occur in scrubland communities include pika (*Ochotona princeps*), broad-footed mole (*Scapanus latimanus*), white-tailed jackrabbit (*Lepus townsendii*), mountain pocket gopher (*Thomomoys monticola*), mountain sheep (*Ovis canadensis*), mule deer, pronghorn (*Antilocapra americana*), jackrabbits (*Lepus* spp.), least chipmunk (*Eutamias minimus*), kangaroo rats (*Dipodomys* spp.), badger (*Taxidea taxus*), Morro Bay kangaroo rat (*Dipodomys heermanni morroensis*), and kit fox (*Vulpes macrotis*) (Mayer and Laudenslayer 1988). Representative birds include blue grouse, mountain bluebird (*Sialia currucoides*), northern goshawk, gray flycatcher (*Empidonax wrightii*), Brewer's blackbird (*Euphagus cyanocephalus*), green-tailed towhee (*Pipilo chlorurus*), peregrine falcon, black-tailed gnatcatcher (*Polioptila melanura*), chukar (*Alectoris chukar*), burrowing owl (*Athene cunicularia*), rock wren (*Salpinctes obsoletus*), sage grouse (*Centrocercus urophasianus*), and mourning dove (*Zenaida macroura*). Typical reptiles and amphibians include western fence lizard and Santa Cruz long-toed salamander (*Ambystoma macrodactylum croceum*).

2.1.2.5 Desert Scrubland

Desert scrublands dominate the deserts and arid environments of southern and eastern California (Holland and Keil 1995). This community type is adapted to harsh climatic conditions, and most species are drought-tolerant. Desert scrublands are classified by the dominant plant species. Blackbush (*Coleogyne ramosissima*) scrub occurs in transmontane areas at mid-elevation ranges. Creosote bush (*Larrea tridentata*) scrub occurs in the hot deserts of southeastern California. Saltbush (*Atriplex* spp.) scrub has

adapted to high salt-content soils, particularly around ancient lakes and on broad desert plains. Other desert scrublands contain mixtures of these species as well as other common desert shrubs and succulents, such as Mormon tea (*Ephedra* spp.), white bursage (*Ambrosia dumosa*), beavertail cactus (*Opuntia basilaris*), yucca (*Yucca* spp.), and agave (*Agave* spp.).

A variety of wildlife species, primarily rodents and reptiles, utilize desert scrublands. Mammals that occur in desert scrubland communities include kit fox, coyote, bobcat, various pocket mice and kangaroo rats, Mojave ground squirrel (*Spermophilus mohavensis*), pallid kangaroo mouse (*Microdipodops pallidus*), and chisel-toothed kangaroo rat (*Dipodomys microps*) (Mayer and Laudenslayer 1988). Typical reptiles include a variety of lizards and snakes, zebra-tailed lizard (*Callisaurus draconoides*), long-nosed leopard lizard (*Gambelia wislizenii*), desert tortoise (*Gopherus agassizii*), desert iguana (*Dipsosaurus dorsalis*), and common kingsnake (*Lampropeltis getulus*). The San Emigdio blue butterfly (*Plebulina emigdonis*), black-throated sparrow (*Amphispiza bilineata*), toads (*Bufo* spp.), and Couch's spadefoot (*Scaphiopus couchii*) also utilize desert scrublands.

2.1.2.6 Valley and Foothill Grasslands

Grasslands are dominated by various species of grasses and are also referred to as prairies or steppes (Holland and Keil 1995). Grasslands also form the understory or undergrowth of forests, woodlands, and scrublands. Historically, grasslands dominated the San Joaquin, Sacramento, and Salinas Valleys, but they have been converted to agricultural uses or otherwise been altered by humans throughout the state. Native bunchgrass communities contain perennial bunch grasses, such as purple needlegrass (*Nassella pulchra*) and nodding needlegrass (*N. cernua*), as well as various native perennial and annual grasses. Valley and southern coastal grasslands are dominated by introduced species, such as wild oats (*Avena* spp.), bromes (*Bromus* spp.), foxtail barley (*Hordeum murinum*), annual ryegrass (*Lolium multiflorum*), and fescue (*Vulpia* spp.). Northern coastal grasslands have also been affected by human disturbances and consist of various native and introduced perennial bunch grasses, such as bent grass (*Agrostis* spp.), California brome (*Bromus carinatus*), bluegrass (*Poa* spp.), purple needle grass, and perennial barley (*Hordeum brachyantherum*).

A variety of wildlife species utilize valley and foothill grasslands. Mammals that occur in grassland communities include San Joaquin kit fox (*Vulpes macrotis mutica*), coyote, Roosevelt elk (*Cervus elaphus*), black-tailed deer (*Odocoileus hemionus columbianus*), fringe-tailed bat (*Myotis thysanodes*), big brown bat (*Eptesicus fuscus*), striped skunk, badger, black-tailed jackrabbit (*Lepus californicus*), brush rabbit, California ground squirrel, Botta's pocket gopher (*Thomomys bottae*), Townsend mole (*Scapanus townsendii*), coast mole (*S. orarius*), western harvest mouse (*Reithrodontomys megalotis*), California vole, long-tailed vole (*Microtus longicaudus*), and Oregon vole (*M. oregoni*) (Mayer and Laudenslayer 1988). Representative birds include northern harrier (*Circus cyaneus*), American kestrel (*Falco sparverius*), black-shouldered kite (*Elanus axillaris*), red-tailed hawk, peregrine falcon, prairie falcon, burrowing owl, barn owl, short-eared owl (*Asio flammeus*), turkey vulture (*Cathartes aura*), horned lark (*Eremophila alpestris*), western meadowlark (*Sturnella neglecta*), western kingbird (*Tyrannus verticalis*), Say's phoebe (*Sayornis saya*), barn swallow (*Hirundo rustica*), savannah sparrow (*Passerculus sandwichensis*), grasshopper sparrow (*Ammodramus savannarum*), and western bluebird (*Sialia mexicana*). Typical reptiles include western fence lizard, common garter snake (*Thamnophis sirtalis*), western rattlesnake, and western terrestrial garter snake (*Thamnophis elegans*).

2.1.2.7 Wetlands and Open Water

Wetlands and open water areas occur throughout the state and are often contained within other vegetation communities. Several types of wetlands occur in California, including freshwater and saltwater (brackish)

marshes, seasonal marshes, seasonal wetland swales, vernal pools, and wet meadows (Holland and Keil 1995). Open water areas include lakes, rivers, streams, channels, and other water features that are not overgrown with vegetation. Throughout the Central Valley, marshlands have been drained for agricultural uses. Marshlands and coastal wetland areas around bays have been impacted by development and water quality degradation. Construction of dams along rivers has also created large bodies of water that were not present during the prehistoric or ethnohistoric era. Channels throughout the state were created in the past century to distribute water to various urban areas.

Salt marshes primarily occur along the coast. They are adapted to saline and submergent conditions and consist of low-growing herbaceous perennial plants, such as saltgrass (*Distichlis spicata*), pickleweeds (*Salicornia* spp.), sea-blite (*Suaeda* spp.), and shoregrass (*Monanthochloe littoralis*). Freshwater marshes occur in slow-moving or stagnant shallow water and consist mostly of perennial monocots adapted to saturated or submergent conditions. Typical freshwater marsh species include cattails (*Typha* spp.), tule (*Scirpus* spp.), rush (*Juncus* spp.), sedge (*Carex* spp.), and spike-rush (*Eleocharis* spp.).

Seasonal wetlands and vernal pools occur in depressed areas, often in grassland and woodland communities. These wetlands are dominated by annual herbaceous species that are tolerant of seasonal moisture patterns, such as goldfields (*Lasthenia* spp.), foxtail (*Alopecurus* spp.), water starwort (*Callitriche* spp.), orcuttia (*Orcuttia* spp.), and woolyheads (*Psilocarphus* spp.). Wet meadows are similar to grasslands and freshwater marshes. They are often seasonally saturated and consist of perennial grasses, sedges, and rushes with a mixture of forbs.

A wide variety of wildlife species utilize wetlands and open water communities throughout the state. Typical mammals include island foxes (*Urocyon littoralis*), river otters (*Lontra canadensis*), raccoons, mink (*Mustela vison*), muskrat (*Ondatra zibethicus*), beaver (*Castor canadensis*), shrews, bats, and mice, including the endangered salt marsh harvest mouse (*Reithrodontomys raviventris*) endemic at San Francisco Bay, as well as the harbor seal (Mayer and Laudenslayer 1988). Representative birds include bald eagle, gulls, terns, sea ducks, ospreys (*Pandion haliaetus*), ravens, waterfowl, American coot (*Fulica americana*), herons, belted kingfisher (*Ceryle alcyon*), American dipper (*Cinclus mexicanus*), swallows, swifts, flycatchers, California and light-footed clapper rails (*Rallus longirostris obsoletus* and *R. l. levipes*), California black rail (*Laterallus jamaicensis coturniculus*), Virginia rail (*Rallus limicola*), salt marsh yellowthroat (*Geothlypis trichas sinuosa*), Belding's savannah sparrow (*Passerculus sandwichensis beldingi*), three subspecies of the song sparrow (*Melospiza melodia*) at San Francisco Bay, hawks (including the northern harrier), marsh wren (*Cistothorus palustris*), yellow-headed blackbird (*Xanthocephalus xanthocephalus*), and red-winged blackbird (*Agelaius phoeniceus*). Reptiles and amphibians that occur in wetlands or open water include Santa Cruz long-toed salamander, black toad (*Bufo exsul*), Pacific tree frog (*Pseudacris (=Hyla) regilla*), western toad (*Bufo boreas*), and striped racer (*Masticophis lateralis*). Six species of trout (brown, cutthroat, golden, rainbow, eastern brook, and mackinaw) inhabit streams of the Sierra Nevada. Lost River sucker (*Deltistes luxatus*), shortnosed sucker (*Chasmistes brevirostris*), Owens River pupfish (*Cyprinodon radiosus*), Owens tui chub (*Siphateles bicolor snyderi*), Lahontan cutthroat trout (*Oncorhynchus clarki henshawi*), and Paiute cutthroat trout (*O. c. seleniris*) occur in streams in sagebrush scrubland communities.

Prior to 1900, tule elk (*Cervus nannodes*) were abundant in marshy areas, but hunting and loss of habitat are the likely causes of reduced populations (Moratto 1984). Fur seal (*Callorhinus ursinus*) and sea otter (*Enhydra lutris*) used to inhabitat the coast, but their populations have also been reduced due to hunting. Salmon (*Oncorhynchus* spp.) were numerous prior to the 1870s, but their populations have declined due to overfishing, water diversions, pollution, and sedimentation (habitat modification), particularly along the Sacramento River.

2.1.3 Geomorphic Provinces

California's vast area of land encompasses 409,755 km^2 (157,207 mi^2) and 11 geomorphic provinces (Table 2-2) that are characterized by distinctive land forms, geology, and hydrology (Figure 2-2) (Moratto 1984). Each province provided important resources for indigenous Californians, such as valuable rocks for producing stone tools and stone bowls, among other items, minerals, game animals, plants, and water. Native Americans would have been knowledgeable about the area's microclimate, wildlife movement patterns, seasonal resource availability, and ideal locations for obtaining necessary resources.

The last column of Table 2-2 shows that Segments 1–36 of the Qwest network backbone lie within nine of California's 11 geomorphic provinces. The two geomorphic provinces not encompassed by the project are the Modoc Plateau and Great Basin in the northeastern corner and along the central-eastern border of the state. In Chapters 3–38, reference is made at the beginning of the natural setting overview section to the geomorphic province or provinces traversed by the individual segment.

This section provides an overview of the natural setting of each geomorphic province as it relates to the area's prehistory and history. Information for this section is based on *California Archeology* by Michael J. Moratto (1984:7–19), unless cited otherwise.

Table 2-2. Geomorphic Provinces of California

Geomorphic Province	Approximate Land Area	Elevation Range	Segment No.
Klamath Mountains	31,000 km^2	60-2,700 meters	1–4
Cascade Range	16,000 km^2	600-4,200 meters	1
Modoc Plateau	20,000 km^2	900-3,000 meters	
Great Basin	40,000 km^2	300-4,300 meters	
Sierra Nevada	84,000 km^2	60-4,400 meters	10
Great Central Valley	50,000 km^2	0-600 meters	4–11, 21–24
Coast Ranges	75,000 km^2	0-2,400 meters	12–20
Transverse Ranges	16,000 km^2	0-3,500 meters	25–28
Mojave Desert	50,000 km^2	85 meters below to 2,400 meters above	36
Colorado Desert (Salton Trough)	7,000 km^2	70 meters below to 670 meters above	35–36
Peninsular Ranges	20,000 km^2	90-3,500 meters	20, 27, 29–35

Note: Geomorphic provinces correspond to Figure 2-2.
Sources: Moratto 1984; Miles and Goudey 1998.

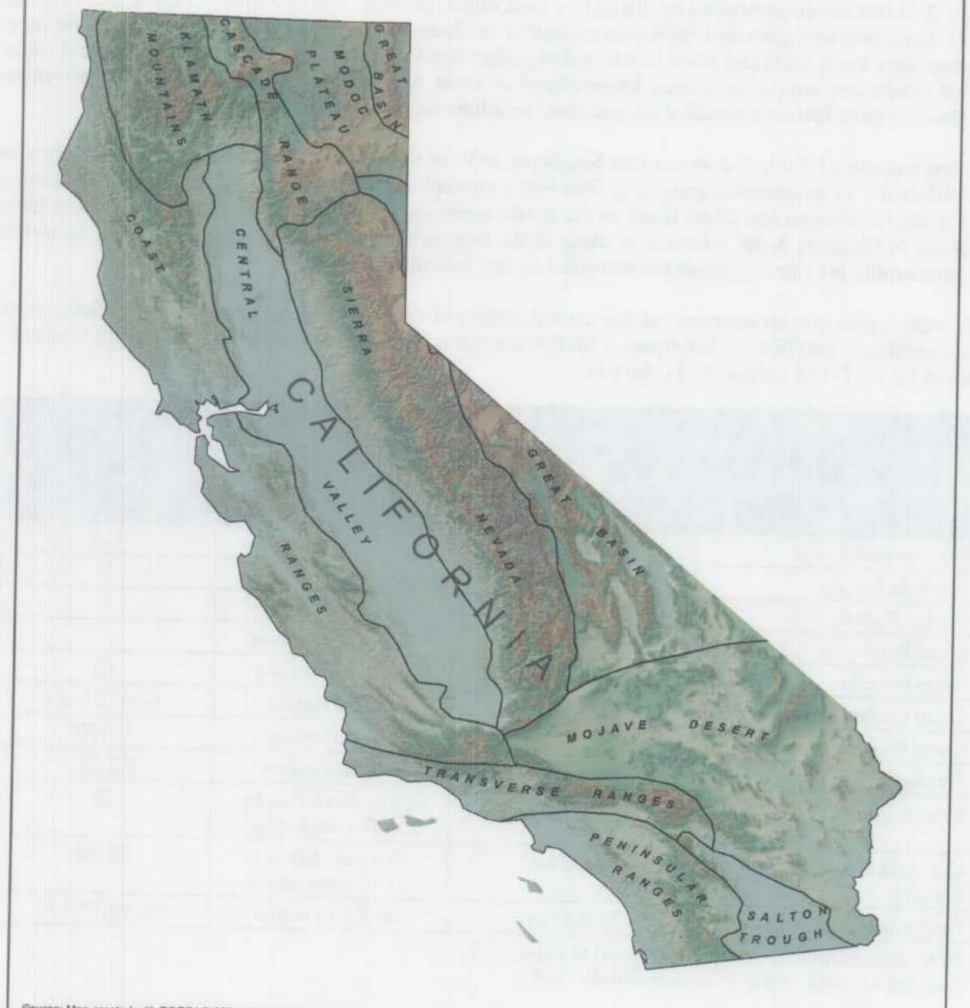


Figure 2-2. Geomorphic Provinces

2.1.3.1 Klamath Mountains

The Klamath Mountains are located in the northwestern portion of the state as part of an outlying mountain range of the northern Sierra Nevada. Volcanic extrusives of the Cascade Range and Modoc Plateau and the northern extreme of the Central Valley link the two mountain ranges. Elevations along the Klamath Mountains range from 60-2,700 meters (200-9,000 feet) msl (Miles and Goudey 1998). The mountains occupy an area of approximately 31,000 km^2 and contain an extensive pattern of faults that create several streams as part of the Klamath-Trinity River system. The riverine and upland resources of the Klamath Mountains provided a wealth of resources for prehistoric, ethnohistoric, and historic populations.

Vegetation communities in the Klamath Mountains include coniferous forests and woodlands, oak woodlands, chaparral, grasslands, and wetlands (Miles and Goudey 1998). Typical mammals that occur in these habitat types include Roosevelt elk, black-tailed deer, black bear, mountain lion, coyote, bobcat, ringtail (*Bassariscus astutus*), marten (*Martes americana*), fisher, and river otter. Representative birds include eagles, hawks, owls, peregrine falcon, osprey, and ruffed grouse (*Bonasa umbellus*), and sensitive birds include marbled murrelet (*Brachyramphus marmoratus*) and northern spotted owl (*Strix occidentalis caurina*). Anadromous fish, such as coho salmon (*Oncorhynchus kisutch*), steelhead (*O. mykiss*), and chinook salmon (*O. tshawytscha*), occur in the streams and rivers.

2.1.3.2 Cascade Range

The Cascade Range is located in the northern portion of the state between the Klamath Mountains and Modoc Plateau. The Cascade Range extends approximately 240 km into California from British Columbia, Washington, and Oregon to the north. Elevations range from 600-4,200 meters (2,000-14,000 feet) msl (Miles and Goudey 1998). Mt. Lassen (3,187 meters) and Mt. Shasta (4,317 meters) are two of the highest peaks in the Cascade Range. Both are volcanic peaks with basalt outcrops that were prized by Native Americans for making chipped-stone tools. Rivers and streams in the mountains follow alluvial or weak bedrock channels and drain into the Klamath and Sacramento Rivers to the west and into basins in the Modoc Plateau to the east (Miles and Goudey 1998). Major rivers in the Cascade Range include the Pit and McCloud Rivers, which flow into the Sacramento River.

Vegetation communities in the Cascade Range include coniferous forests and woodlands, sagebrush scrublands, grasslands, riparian woodlands, and wetlands (Miles and Goudey 1998). Typical mammals that occur in these habitat types include black-tail and mule deer, mountain lion, coyote, bobcat, yellow-bellied marmot (*Marmota flaviventris*), marten, fisher, Sierra Nevada red fox, wolverine, and porcupine. Birds include eagles, hawks, owls, woodpeckers, falcons, osprey, quail, northern goshawk, blue grouse, and two sensitive birds: the California spotted owl (*Strix occidentalis occidentalis*) and northern spotted owl.

2.1.3.3 Modoc Plateau

The Modoc Plateau is located in the northern portion of the state between the Cascade Range and the Great Basin. Elevations along the Modoc Plateau range from 900-3,000 meters (3,000-9,900 feet) msl (Miles and Goudey 1998). The volcanic platform that forms the plateau is an extension of the Columbia Plateau in Oregon, Washington, and Idaho. The topography of the plateau reflects its volcanic nature and includes a variety of lava flows and fissures, ridges, small cinder cones, and basalt plains. Like the Cascade Range, basalt from the Modoc Plateau was used by Native Americans for chipped-stone tools. Lakes are predominant in the northern portion of the plateau, where slow-moving streams drain into large basins. Streams in the southern portion drain into the Pit River, a tributary of the Sacramento River. The

lake and river environments provided a key place for prehistoric and ethnohistoric settlement and economic activities.

Vegetation communities on the Modoc Plateau include coniferous forests and woodlands, sagebrush scrublands, grasslands, riparian woodlands, and wetlands (Miles and Goudey 1998). Typical mammals that occur in these habitat types include mule deer, pronghorn, black bear, mountain lion, coyote, bobcat, yellow-bellied marmot, wolverine, jack rabbit (*Lepus californicus*) and porcupine. Birds include eagles, hawks, owls, woodpeckers, falcons, osprey, quail, sage grouse, and two sensitive species: California and spotted owls (western part). Wetlands are important resting, feeding and nesting areas for migrating waterfowl. Mountain sheep and sharp-tailed grouse (*Tympanuchus phasianellus*) historically occurred in this province.

2.1.3.4 Great Basin

The Great Basin, or Basin and Range province, follows the eastern boundary of the state in the extreme northeast corner adjacent to Modoc Plateau and east of the Sierra Nevada. Elevations along the province range from 300-4,300 meters (1,000-14,200 feet) msl (Miles and Goudey 1998). This province covers a vast area of land from the Cascade Range and Sierra Nevada in California to the Rocky Mountains in Colorado. Topography of the Basin and Range is defined by a series of parallel north-south trending fault-block ranges (horsts) and intervening basins (grabens). The Surprise and Owens Valleys in California display typical characteristics of the Basin and Range province. Streams drain into basins and end in saline lakes or sinks with no hydrologic connection to the ocean or other major rivers. The arid climate of the land affected the settlement and subsistence patterns of prehistoric and ethnohistoric, as well as historic, populations, although prior to 7,500 years ago, lakes and grasslands dominated the landscape and provided a lush environment for hunter-gatherers.

Vegetation communities include scrublands and grasslands with coniferous forests and woodlands at higher elevations and some riparian woodlands and wetlands around lakes and major streams (Miles and Goudey 1998). Typical mammals that occur in these habitat types include mule deer, desert bighorn sheep (*Ovis canadensis nelsoni*), desert kit fox (*Vulpes macrotis arsipus*), mountain lion, bobcat, coyote, jackrabbits, chipmunks, spotted skunk (*Spilogale gracilis*), spotted bat, ground squirrels, kangaroo rat, and white footed mouse (*Peromyscus leucopus*). Historically, pronghorn and mountain sheep were common in this province. More recently, pronghorn have become limited to a few reintroduced herds, and mountain sheep can be found on a few high mountains. Birds include eagles, hawks, owls, northern goshawk, nighthawks, common poorwill (*Phalaenoptilus nuttallii*), quail, roadrunners, finches, warblers, orioles, sage grouse, sparrows, and gnatcatchers. Mono Lake provides habitat for a wide variety of shorebirds and migrating waterfowl, and it contains the second largest California gull (*Larus californicus*) rookery in the world. Reptiles include desert tortoise, chuckwalla (*Sauromalus obesus*), sagebrush lizard (*Sceloporus graciosus*), desert horned lizard (*Phrynosoma platyrhinos*), western fence lizard, and several species of rattlesnakes.

2.1.3.5 Sierra Nevada

The Sierra Nevada is a magnificent mountain range that extends 650 kilometers along the eastern border of the state. The western slope of the mountain range is gentle compared to the abrupt wall along the eastern slope. Elevation range along the Sierra Nevada is from 60-4,400 meters (200-14,495 feet) msl (Miles and Goudey 1998). The loftiest mountain peak in the lower 48 states is Mt. Whitney, at 4,418 meters. Within California, the Sierra Nevada contains more than 500 peaks over 3,000 meters high. River valleys connect the foothills to high-altitude passes, which provided corridors for movement between the western and eastern slopes and allowed Native Americans to trade goods in the mountain passes. The

western slope has high annual precipitation (less than 50 centimeters in the low hills and more than 180 centimeters in the high hills), whereas the eastern slope is shadowed by the mountain crest and has low annual precipitation (less than 25 centimeters per year). Snowfall contributes a large amount to the rivers of the Sierra Nevada, and the rivers' annual discharge is more than 30 million acre-feet, which accounts for almost half of California's total runoff.

Vegetation communities in the Sierra Nevada include coniferous forest and woodlands, oak woodlands, scrublands, grasslands, riparian woodlands, and wetlands (Miles and Goudey 1998). Typical mammals that occur in these habitat types include black-tail and mule deer, black bear, mountain lion, coyote, bobcat, red fox, gray fox (*Urocyon cinereoargenteus*), ringtail, weasels (*Mustela* spp.), skunks, badger, mountain sheep, yellow-bellied marmot, marten, fisher, wolverine, porcupine, squirrels, cottontails, jack rabbits, and kangaroo rats. Former inhabitants included grizzly bear and pronghorn antelope. Grizzly bear, native to the western slope, became extinct in 1924. Common birds include turkey vultures, falcons, eagles, hawks, owls, osprey, herons, quail, kingfisher, mourning dove, mockingbird, woodpeckers, scrub jay, stellar jay (*Cyanocitta stelleri*), raven, western meadowlark, finches and sparrows. The sensitive California spotted owl also occurs in this province. Species that have been recently introduced to this region include turkey, beaver, and chukar.

2.1.3.6 Great Central Valley

The Great Central Valley dominates the landscape of central California. This valley covers approximately 50,000 km^2 and is surrounded by the Sierra Nevada, Siskiyou Range, Tehachapi Range, and Coast Ranges. Elevations along the valley range from 0-600 meters (0-2,000 feet) msl (Miles and Goudey 1998). The Sutter Buttes in the Sacramento Valley display the highest elevation, at roughly 600 meters high. Major rivers originate in the surrounding mountain ranges and traverse the Great Central Valley. The Sacramento River drains the northern half of the valley (Sacramento Valley), and the San Joaquin River drains the southern half (San Joaquin Valley). The two rivers converge at the Sacramento–San Joaquin Delta, near the Mokelumne River, and flow into Suisun Bay. During the prehistoric and ethnohistoric periods, as well as the historic era, settlements were established along the numerous rivers and near the lush wetlands of the Great Central Valley.

Vegetation communities include oak and riparian woodlands, grasslands, and wetlands (Miles and Goudey 1998). Typical mammals that occur in these habitat types include mule deer, black-tailed deer, coyote, muskrat, beaver, ground squirrels, cottontails, jack rabbits, kangaroo rats, and the endangered kit fox. Mammals that historically occupied the Great Central Valley include grizzly bear, wolf (*Canis lupus*), tule elk, and pronghorn antelope. Tule elk herds have been reestablished in some southern parts of the province. Common birds include hawks, golden eagle, owls, white-tailed kite (*Elanus leucurus*), quail, mourning dove, mockingbird, scrub jay, gulls, herons, crows, western meadow lark, finches, sparrows, roadrunners (southern part), and the introduced Chinese ringneck pheasant (*Phasianus colchicus*). The province contains wetlands that are important feeding and resting areas for migrating waterfowl, and many waterfowl species are year-round residents.

2.1.3.7 Coast Ranges

The Coast Ranges, consisting of the North and South Coast Ranges, follow the western border of California along the Pacific Ocean, north of the Transverse Ranges. Elevations along the Coast Ranges range from 0-2,400 meters (0-8,100 feet) msl (Miles and Goudey 1998), with peaks rarely rising above 1,800 meters. San Francisco Bay demarcates the division between the North and south Coast Ranges. The North Coast Range tends to have higher rising peaks and more spectacular topography. In contrast, the South Coast Range contains rounded hills and ridges, as consequence of increased erosion. The Coast

Ranges contain a series of small ranges and valleys as a result of extreme folding and faulting. In addition to streams in the Coast Ranges, hills, lakes, the seashore, and large coastal estuaries, such as Humboldt, San Francisco, and Monterey Bays, provided desired locations for settlement during the prehistoric and ethnohistoric periods.

Vegetation communities in the Coast Ranges include coniferous forest and woodlands, oak and riparian woodlands, chaparral, scrublands, grasslands, and wetlands (Miles and Goudey 1998). Typical mammals that occur in the North Coast Range include Roosevelt elk, black-tailed deer, tule elk, mule deer, black bear, mountain lion, coyote, bobcat, ringtail, raccoon, skunks, marten, fisher, and river otter. Common birds in the North Coast Range include eagles, hawks, owls, peregrine falcon, herons, osprey, and a variety shorebirds and waterfowl along the coastal part of the section. Sensitive birds in the North Coast Range include marbled murrelet and northern spotted owl. Streams and rivers are used by anadromous fish, such as trout and salmon.

Typical mammals that occur in the South Coast Range include mule deer, pronghorn, tule elk, coyote, bobcat, weasel, fox, skunk, opossum (*Didelphis virginiana*), ground squirrel, and kangaroo rat. Common birds include turkey vultures, hawks, eagles, owls, quail, mourning dove, mockingbird, scrub jay, gulls, herons, egrets, flycatchers, swallows, crows, ravens, finches, and sparrows. The California condor is being reintroduced in the southern part of the Coast Range. Birds of concern include the brown pelican (*Pelecanus occidentalis*), lesser tern (*Sterna minuta*), osprey, black rail (*Laterallus jamaicensis*), clapper rail (*Rallus longirostris*), marbled murrelet, spotted owl, and bank swallow (*Riparia riparia*). Reptiles and amphibians include the western rattlesnake, common and western aquatic garter snakes (*Thamnophis couchii*), northern and southern alligator lizards (*Elgaria coerulea* and *E. multicarinata*), and several species of salamanders and frogs. Marine and shore species include sea otter, sea lions, seals, brown pelicans, gulls, cormorants, terns, and various shore birds. Introduced species includes small populations of fallow deer (*Dama dama*) and barbary sheep (*Ammotragus lervia*), Andean condor (*Vultur gryphus*), and feral pigs (*Sus scrofa*), which are common in large portions of the province.

2.1.3.8 Transverse Ranges

The Transverse Ranges trend east to west from the coast inland to the Mojave Desert and Salton Trough. The Transverse Ranges are similar to the Coast Ranges because they contain a series of smaller, narrow ranges and valleys. Elevations along the Transverse Ranges range from 0-3,500 meters (0-11,500 feet) msl (Miles and Goudey 1998). The Transverse Ranges continue into the Pacific Ocean, where they form the Channel Islands (Anacapa, San Miguel, Santa Cruz, Santa Barbara, and Santa Rosa islands). Peaks in the Transverse Ranges are some of the highest in southern California; the San Antonio Peak rises 3,072 meters high, and the San Gorgonio Mountain rises 3,500 meters high. Streams in the Transverse Ranges do not produce a large amount of runoff, except during major storm events, when they flood for a short period. The seashore, estuaries, and hills provided a variety of resources for prehistoric populations.

Vegetation communities in the Transverse Ranges include coniferous forest, oak and riparian woodlands, scrublands, chaparral, grasslands, and wetlands (Miles and Goudey 1998). Typical mammals that occur in these habitat types include mule deer, pronghorn, bighorn sheep, coyotes, bobcat, mountain lion, fox, skunk, raccoon, opossum, kangaroo rat, and ground squirrel. Turkey vultures, hawks, eagles, jays, owls, herons, egrets, quail, mourning dove, mockingbird, flycatchers, swallows, gulls, crows, finches, sparrows, and ravens are common birds. Birds of concern include the brown pelican, lesser tern, osprey, black rail, clapper rail, California gnatcatcher (*Polioptila californica*), cactus wren, Bell's vireo (*Vireo bellii*), and savannah sparrow. Reptiles and amphibians include the western rattlesnake, common garter snake, alligator lizards, foothill and mountain yellow-legged frog (*Rana boylii* and *R. muscosa*), orange-throated whiptail (*Cnemidophorus hyperythrus beldingi*), California mountain kingsnake (*Lampropeltis zonata*),

and several species of salamanders and frogs. Marine and shore species include sea lions, seals, brown pelicans, gulls, cormorants, terns, and various shore birds.

2.1.3.9 Mojave Desert

The Mojave Desert is a vast province covering approximately 50,000 km^2 in the southeastern portion of the state. This arid desert is surrounded by the Sierra Nevada, Transverse Ranges, Peninsular Ranges, and the desolate Yuma and Colorado Deserts. Elevations in the Mojave Desert range from 85 meters below msl to 2,400 meters above msl (280 feet below sea level to 7,900 feet above sea level) (Miles and Goudey 1998). Desert playas, or dry lakes, collect runoff after rainstorms and provide evidence of historic lakes that provided water sources for prehistoric people. Small hills occur throughout the Mojave Desert, and prominent ranges are more common to the east near the Colorado River. Intermittent streams occur throughout the desert and carry water following major rain events.

Vegetation communities in the arid Mojave Desert include coniferous woodlands, riparian woodlands, desert scrublands, and occasionally wetlands in moist areas (Miles and Goudey 1998). Typical mammals that occupy these habitat types include desert bighorn sheep, desert kit fox, coyote, spotted skunk, spotted bat, black-tailed jackrabbit, ground squirrels, kangaroo rat, and white footed mouse. Common birds include eagles, hawks, owls, quail, roadrunners, finches, warblers and orioles. Typical reptiles include desert tortoise, several species of rattlesnakes, and chuckwalla.

2.1.3.10 Colorado Desert (Salton Trough)

The Colorado Desert in California is also known as the Salton Trough. It is a depressed block of land covering approximately 7,000 km^2 in the southern portion of the state between forks of the San Andreas Fault. Elevations in the Colorado Desert range from 70 meters below msl to 670 meters above msl (230 feet below sea level to 2,200 feet) (Miles and Goudey 1998). The Colorado Desert is now an arid and desolate region, although throughout the Holocene a series of lakes collectively referred to as Lake Cahuilla covered the area. Lake Cahuilla was formed by the western diversion of the Colorado River into the Salton Trough when natural sediment barriers blocked the river's flow south to the Gulf of California. Remnants of the ancient lake are visible in today's playas, travertine deposits, and weathered beach terraces. Today's Salton Sea is technically an agricultural drainage reservoir that receives 90 percent of its inflow from runoff. After periodic episodes of infilling and recession, Lake Cahuilla is believed to have receded for the last time around A.D. 1580, with a brief inundation in the mid to late 1600s (Waters 1983; Laylander 1995; Buckles and Krantz 2005). The southern end of the Colorado Desert extends through Mexico and into the Gulf of Mexico. After the final desiccation of Lake Cahuilla, which had provided an abundance of resources to Native American groups, permanent villages were established on the valley floor, supported by large walk-in wells and inhabited into the Contact Period.

Vegetation communities in the Colorado Desert include desert scrublands, riparian woodland and scrublands, and occasionally wetlands in moist areas (Miles and Goudey 1998). Typical mammals that occupy these habitat types include desert bighorn sheep, desert kit fox, coyote, spotted skunk, spotted bat, black-tailed jackrabbit, ground squirrels, kangaroo rat, and white footed mouse. Common birds includes eagles, hawks, owls, quail, white-winged dove (*Zenaida asiatica*), roadrunners, finches, warblers and orioles. The Salton Sea provides habitat for a wide variety of waterfowl and shorebirds. Reptiles include several species of rattlesnakes.

2.1.3.11 Peninsular Ranges

The Peninsular Ranges follow the full length (1,200 km) of the Baja California peninsula, including San Diego County. Elevations along the Peninsular Ranges range from 90-3,300 meters (300 to 11,500 feet) msl (Miles and Goudey 1998), and the tallest peak in the mountain range is San Jacinto Peak at 2,393 meters high. Rivers drain into the bays and Pacific Ocean; however, they do not typically convey large volumes of water due to the low amount of precipitation. Major rivers include the Santa Margarita, San Luis Rey, and San Diego. Common features used by Native American groups in the Peninsular Ranges included sheltered bays and lagoons, open coast, broad river terraces, and steep upland terrain.

Vegetation communities in the Peninsular Ranges include coniferous forest, oak and riparian woodlands, scrublands, chaparral, grasslands, and wetlands (Miles and Goudey 1998). Typical mammals that occupy these habitats include mule deer, pronghorn, bighorn sheep, coyotes, bobcat, mountain lion, fox, skunk, raccoon, opossum, kangaroo rat, and ground squirrel. Turkey vultures, hawks, eagles, mourning dove, mockingbird, gulls, crows, finches, sparrows, jays, quail, owls, herons, egrets, flycatchers, swallows, and ravens are common birds. Birds of concern include the brown pelican, lesser tern, osprey, black rail, clapper rail, California gnatcatcher, cactus wren, Bell's vireo, and savannah sparrow. Reptiles and amphibians include the western rattlesnake, common garter snake, alligator lizards, foothill and mountain yellow-legged frog, orange-throated whiptail, California mountain kingsnake, and several species of salamanders and frogs. Marine and shore species include sea lions, seals, brown pelicans, gulls, cormorants, terns and various shore birds.

2.2 CULTURAL SETTING FOR CALIFORNIA

The physiographic, climatic, floristic, and faunal data presented in the previous section set the stage for human adaptations in California. In addition, the ways that humans met the challenges of a changing environment are important to understanding how they utilized different ecological zones through time. The following sections provide contexts for evaluating the significance of cultural resources. Research for the state of California is placed into a chronological context and summarized – provided by prehistoric, ethnographic, and historic overviews.

2.2.1 Prehistoric Overview

2.2.1.1 Archaeological Regions and Subregions within California

In his seminal work organizing and synthesizing the complex and diverse prehistory of California, Moratto (1984, 2004) divided the state into eight major archaeological regions. These divisions are not precise reflections of the archaeological record, but were undertaken mainly as an arbitrary organizational approach (Moratto 1984:xxix). As evidenced in Figure 2-3, reproduced from Moratto (1984:Fig. 1), the divisions roughly reflect the state's 11 geomorphic provinces in scope, reviewed above under the Natural Setting Overview (Figure 2-2). Six of the archaeological regions are further divided into subregions. These divisions serve the California archaeological community as a broad partitioning of the prehistoric record into manageable pieces, and will be used as a reference point throughout the chapters that follow.

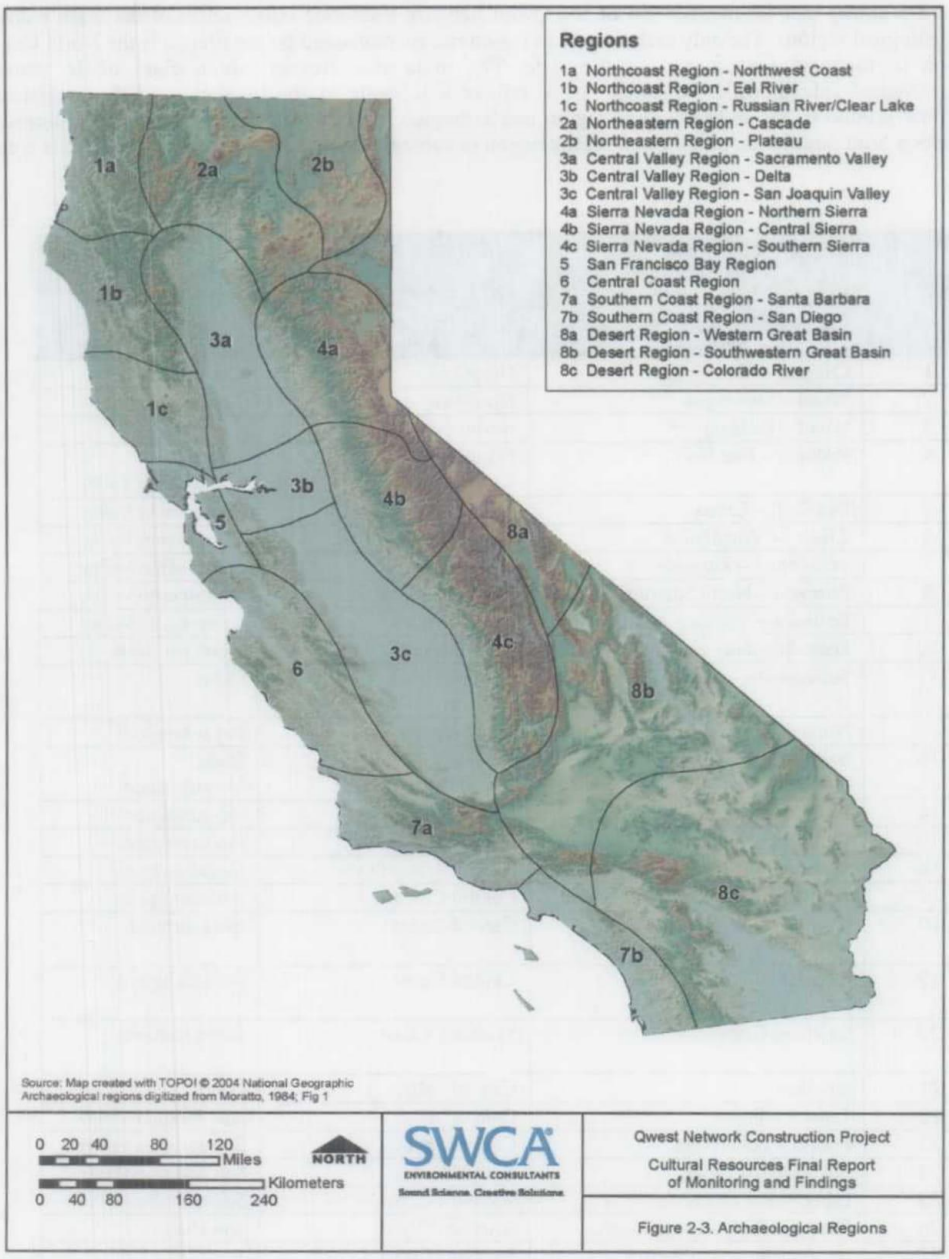


Figure 2-3. Archaeological Regions

Table 2-3 shows that Segments 1–36 of the Qwest network backbone cover seven of the eight named archaeological regions. The only archaeological region not encompassed by the project is the North Coast Region in the northwestern part of the state. The route also crosses within eight of 16 named archaeological subregions. In Chapters 3–38, reference is made at the beginning of the prehistoric overview section to the archaeological region and subregion traversed by the segment. Each summary includes a brief description of the extent of the region or subregion, by county or general geographic area.

Table 2-3. Archaeological Regions and Subregions within California

Segment No.	Segment Title	Archaeological Region	Archaeological Subregion
1	Oregon – Montague	Northeast	Cascade
2	Weed – Montague	Northeast	Cascade
3	Weed – Redding	Northeast	Cascade
4	Redding – Red Bluff	Northeast Central Valley	Cascade Sacramento Valley
5	Red Bluff – Chico	Central Valley	Sacramento Valley
6	Chico – Wheatland	Central Valley	Sacramento Valley
7	Wheatland – Roseville	Central Valley	Sacramento Valley
8	Roseville – North Sacramento	Central Valley	Sacramento Valley
9	Roseville – Sacramento	Central Valley	Sacramento Valley
10	Roseville – Nevada Line	Sierra Nevada	Northern Sierra
11	Sacramento – Suisun City – Napa	Central Valley	Delta
12	Napa Junction – Petaluma	San Francisco Bay	(no subregion)
13	Suisun City – Oakland	Central Valley San Francisco Bay	Delta (no subregion)
14	San Francisco – San Jose	San Francisco Bay	(no subregion)
15	Oakland – San Jose	San Francisco Bay	(no subregion)
16	Oakland – Dassell Road	San Francisco Bay	(no subregion)
17	Aromas – San Jose	Central Coast	(no subregion)
18	King City – Watsonville	Central Coast	(no subregion)
19	Coastal	Central Coast	(no subregion)
20	Southern Coastal	Southern Coast	Santa Barbara
21	Stockton	Central Valley	Delta
22	Turlock – Fresno	Central Valley	San Joaquin Valley
23	Fresno – Bakersfield	Central Valley	San Joaquin Valley
24	Bakersfield – Lebec	Central Valley	San Joaquin Valley
25	Lebec – San Fernando	Southern Coast	Santa Barbara
26	Firestone Park – Long Beach	Southern Coast	San Diego
27	Los Angeles – Anaheim	Southern Coast	San Diego
28	Slauson Ring	Southern Coast	San Diego
29	Burbank – Los Angeles	Southern Coast	San Diego

Table 2-3. Archaeological Regions and Subregions within California

Segment No.	Segment Title	Archaeological Region	Archaeological Subregion
30	Anaheim – San Clemente	Southern Coast	San Diego
31	San Clemente – Oceanside	Southern Coast	San Diego
32	Oceanside – Escondido	Southern Coast	San Diego
33	Escondido – San Diego	Southern Coast	San Diego
34	San Diego – Alpine	Southern Coast	San Diego
35	Alpine	Desert	Colorado River
36	Yuma	Desert	Colorado River

2.2.1.2 Prehistoric Period Cultural Framework for California

California cultural history has been documented to span as much as 13,000 years (e.g., Johnson et al. 2002). Within the archaeological regions and subregions described above, numerous chronological sequences have been devised over the past century to understand cultural changes within California (e.g., D.B. Rogers 1929; M. Rogers 1939, 1945; Heizer 1949, 1958; Beardsley 1954; Wallace 1955, 1978; Meighan 1959; Warren 1968, 1984; Ragir 1972; Frederickson 1973, 1974, 1994a, 1994b; King 1981, 1990; Bennyhoff and Fredrickson 1969; Hughes 1994). Prehistoric material culture has been categorized according to broad "periods," narrower "horizons," and regionally based "patterns," "traditions," or "complexes" that define technological, economic, social, and ideological elements over long periods of time and large areas. Smaller units of patterns are referred to as "aspects" and "phases," which emphasize more local features.

Division of California prehistory into broad periods does not imply cultural uniformity within these divisions across the state or even within regions (e.g., Fredrickson 1994a:99–103). Within the broad temporal periods, there is variety in technological features, economy and exchange systems, and social organization and complexity, as well as in the timing of and responses to environmental shifts in regions and subregions throughout the state. Nor are broad periods or regional patterns, traditions and complexes precise static representations; the borders between these cultural divisions should be considered more dynamic, reflecting the movement of peoples and interaction of neighboring groups throughout California prehistory.

Figure 2-4 and Figure 2-5 illustrate the major chronological frameworks developed for northern and central California, and for southern California, respectively. Two timescales are included in the figures, years before present (B.P.) (where the "present" is 1950) and calendar dates (years B.C./A.D.), as well as geologic era. Subdivisions within each chronological sequence represent substantive shifts in the prehistoric economy or stylistic elements of the material culture. Comparison of Figure 2-4 and Figure 2-5 shows that names for periods, patterns, or traditions rely substantially on regional or local terminology, typically stemming from the name of a site, a location, or the dominant tool type.

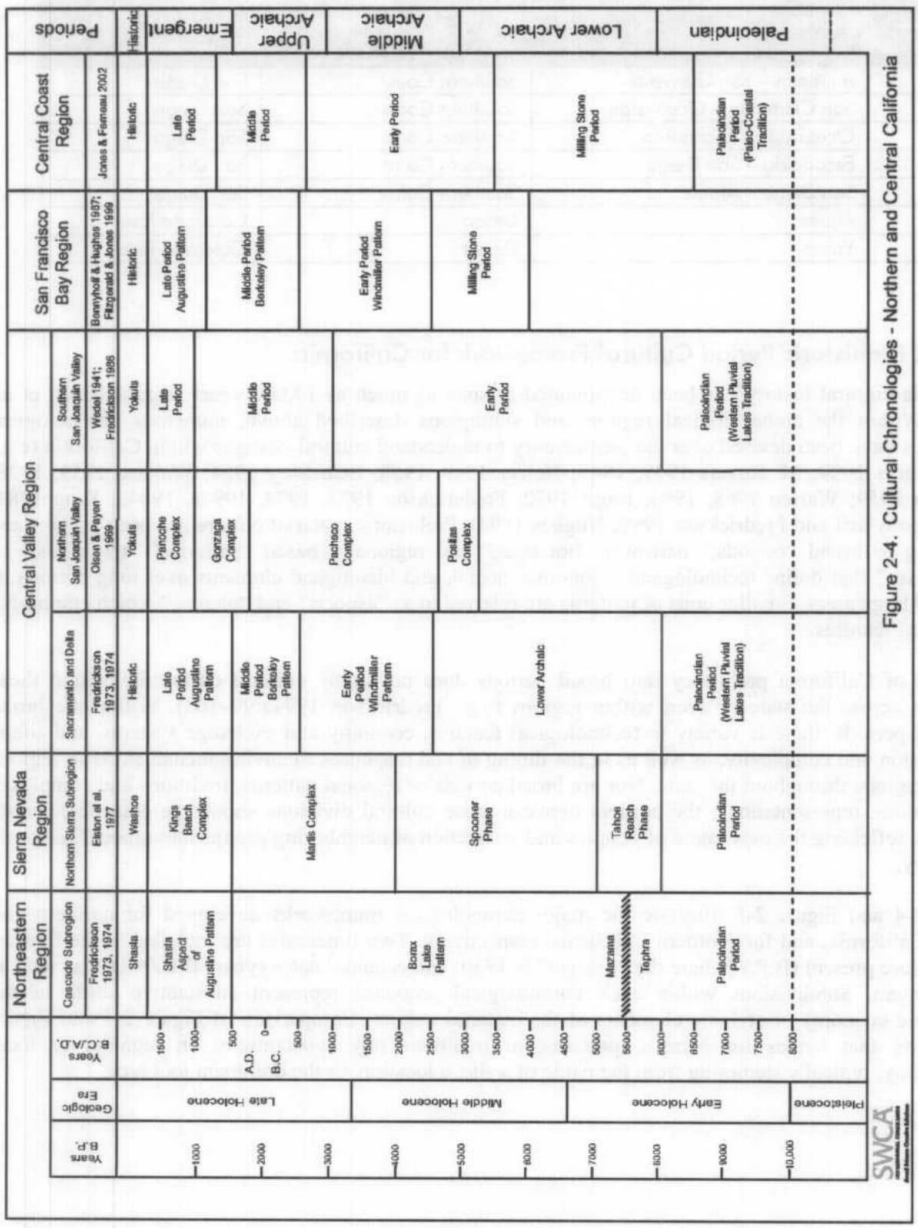


Figure 2-4. Cultural Chronologies - Northern and Central California

Figure 2-4. Cultural Chronologies – Northern and Central California

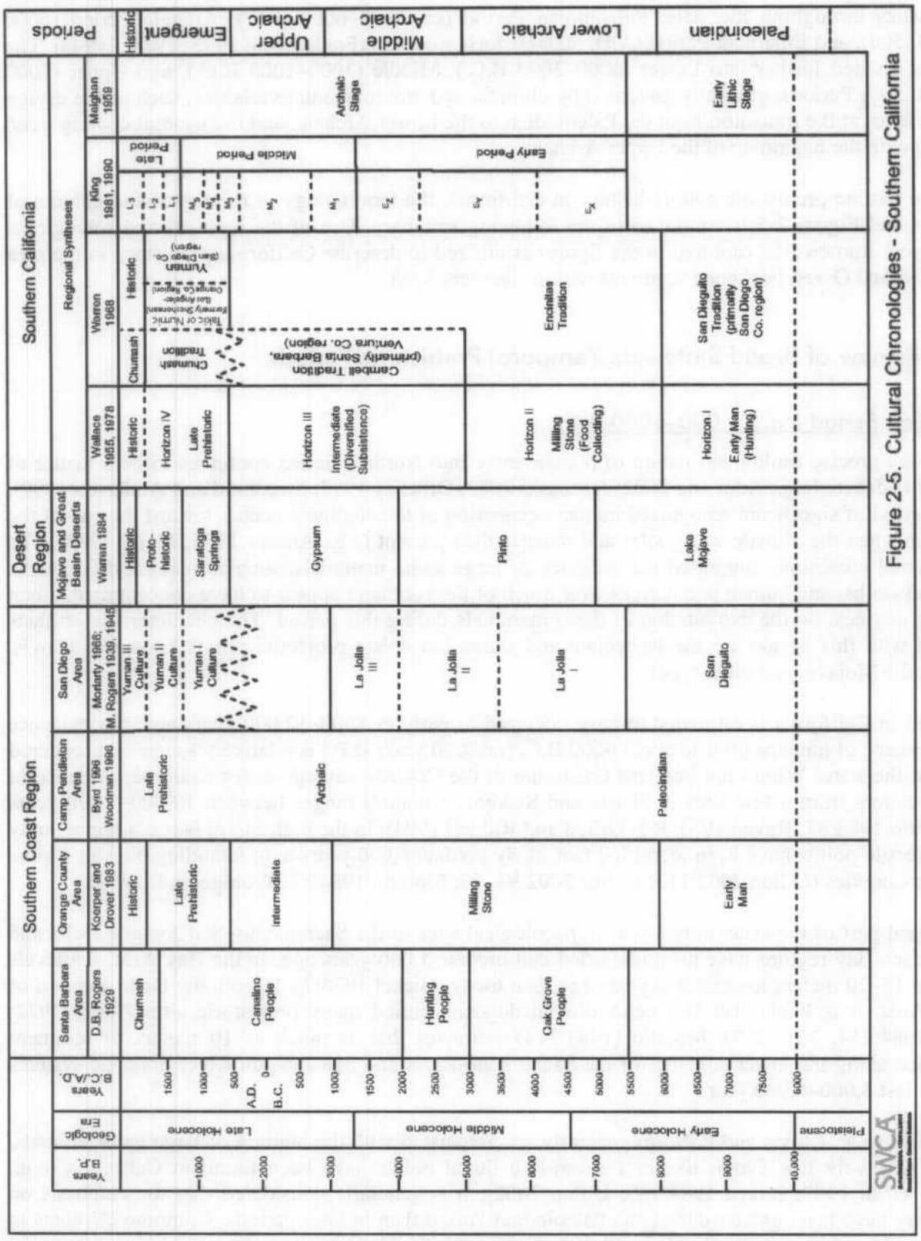


Figure 2-5. Cultural Chronologies - Southern California

As shown in the right-hand column of Figure 2-4 and Figure 2-5, prehistoric material culture in California may also be categorized according to a series of three broad temporal periods that reflect similar cultural characteristics throughout the state: Paleoindian Period (ca. 9000–6000 B.C.), Archaic Period (6000 B.C.–A.D. 500), and Emergent Period (A.D. 500–Historic Contact) (Fredrickson 1973, 1974, 1994a). The Archaic is divided further into Lower (6000–3000 B.C.), Middle (3000–1000 B.C.), and Upper (1000 B.C.–A.D. 500) Periods, generally governed by climatic and environmental variables, such as the drying of pluvial lakes at the transition from the Paleoindian to the Lower Archaic, and the general cooling trend associated with the beginning of the Upper Archaic.

In order to outline prehistoric culture history in California, the terminology in the right-hand column of Figure 2-4 and Figure 2-5 is employed in the following summary. Use of the regional and subregional chronological frameworks captured in the figures is utilized to describe California prehistory in the area of the individual Qwest backbone segments within Chapters 3–38.

2.2.1.3 Review of Broad Statewide Temporal Prehistoric Periods

Paleoindian Period (ca. 11,000–6000 B.C.)

Although the precise timing and nature of human entry into North America continues to be a matter of considerable debate (e.g., Adovasio 2002; Jablonski 2002; Dillehay 1997; Swedlund and Anderson 1999), the first period of significant recognized human occupation of the continent occurs toward the end of the Pleistocene when the climate was cooler and moister than present (e.g., Antevs 1955; Major 1988). The environmental conditions supported the presence of large game mammals, such as mammoths, camels, and ground sloths, and human populations over much of the continent appear to have concentrated, albeit to varying degrees, on the exploitation of these mammals during this period. The characteristic artifacts associated with this period are the lanceolate and fluted lanceolate projectile points known as Clovis, Folsom, Lake Mojave, and other types.

Occupation in California is estimated to have occurred as early as 8000–12,000 years ago, but evidence for the presence of humans prior to about 6000 B.C. (or 8000 years B.P.) is relatively sparse and scattered throughout the state. Within northeastern California in the Cascade subregion, for example, evidence of hunter–gatherers from a few sites in Shasta and Siskiyou Counties ranges between 10,500–7,500 years ago (Moratto 1984:87; Raven 1984:465; Dillon and Riddell 1994). In the high Sierra Nevada region, only a few projectile points have been identified that likely predate 6,000 years ago, including ones in Alpine and Placer Counties (Dillon 2002:113; Justice 2002:94–95; Moratto 1984:87; Wohlgemuth 1984).

In the central part of the state, only a few archaeological sites in the Sacramento–San Joaquin Delta and San Francisco Bay regions have been identified that predate 5,000 years ago. In the Bay Area, sea levels were some 15–20 meters lower 8,000 years ago than today (Bickel 1978:7). In both the Delta and part of the Bay Area, it is likely that Holocene alluvial deposits buried many prehistoric sites (Ragir 1972; Moratto 1984:214, 221, 277). Moratto (1984:214) estimates that as much as 10 meters of sediment accumulated along the lower stretches of the Sacramento River and San Joaquin River drainage systems during the last 5,000–6,000 years.

Fluted points (e.g., Clovis and Folsom) generally are associated with the hunting of large game animals. Although relatively few Clovis-like or Folsom-like fluted points have been found in California (e.g., Erlandson et al. 1987; Raven 1984:465; Dillon 2002), it is generally considered that the emphasis on hunting may have been greater during the Paleoindian Period than in later periods. Common elements in Paleoindian Period sites, for example, include leaf-shaped bifacial projectile points and knives, stemmed or shouldered projectile points, scrapers, engraving tools, and crescents (Warren 1967:177). Also, at sites

like Pleistocene Lake Tulare in the southern San Joaquin Valley, fauna contemporaneous with Paleoindian Period lithics include extinct forms of ground sloths, elephants, camels, horses, and bison (Dillon 2002:116).

Other resources certainly were exploited as part of the subsistence strategy of mobile groups of hunters and gatherers during this period. Recent data from Paleoindian sites in California indicate that the economy was a diverse mixture of hunting and gathering, with a major emphasis on Pleistocene lakeshores in the now arid areas of southern California, the western Great Basin, and alongside California's eastern border along the Cascade-Sierra Nevada uplift (see Moratto 1984:90-92) and on aquatic resources in many coastal areas (e.g., Jones 1991; Jones et al. 2002).

Paleoindian Period sites located on or near the shores of former pluvial lakes and marshes or along old stream channels have been described as part of the Western Pluvial Lakes Tradition (WPLT), first defined by Bedwell (1970). Leaf-shaped points and knives, crescents, and scrapers typically characterize the artifact assemblages found during this period near Pleistocene lakeshores in California, indicating a dependence on hunting various animals and fowling. Moratto (1984:92) subsumed numerous local California patterns (e.g., San Dieguito Complex, Lake Mojave Period) under the overarching WPLT in order to reduce terminological confusion, but the literature on California prehistory typically references the Paleoindian Period, Early Man Period, or San Dieguito Complex, rather than the WPLT.

Examples of WPLT sites are found in the southern San Joaquin Valley and inland San Diego County. In the southern San Joaquin Valley, a large number of fluted points have been collected from surface sites on the Pleistocene lakeshores of Buena Vista, Kern, and Tulare Lakes in today's Kern and Kings Counties (Moratto 1984:99; Dillon 2002:116). Deeply buried points have also been recovered, dated to approximately 8,000 years ago, from a Buena Vista Lake site (Fredrickson and Grossman 1977). The Witt site (CA-KIN-32) is atypical since over 275 fluted points have been collected at this site since the 1950s (Riddell and Olsen 1969; Osborne and Sutton 1993). In San Diego County, dates from the C. W. Harris site (CA-SDI-149), which is the local type site for definition of the San Dieguito Complex (Warren 1968), establish that the occupation occurred between 7430 and 6140 B.C.

Distinct from the WPLT, a Paleo-Coastal Tradition was proposed over three decades ago (E. Davis et al. 1969) and recently referenced to highlight the distinctive marine and littoral focus identified within the southern California coastal archaeological record during the Paleoindian Period (e.g., Moratto 1984:104; Mason and Peterson 1994:57–58; Jones et al. 2002). At coastal sites, there is abundant evidence that marine resources such as fish, sea mammals, and shellfish were exploited during the Paleo-Coastal Tradition. Recent research, for example, indicates there are some 75 sites older than 7500 B.P. on the southern and central California coast (e.g., Erlandson 1991; Erlandson and Colten 1991; Rick et al. 2001:609; Johnson et al. 2002; Moratto 1984).

The earliest accepted dates for occupation in southern California are from two of the Northern Channel Islands, located off the coast from Santa Barbara. On San Miguel Island, Daisy Cave clearly establishes the presence of people in this area about 10,000 years ago (Erlandson 1991:105). On Santa Rosa Island, human remains have been dated from the Arlington Springs site to approximately 13,000 B.P. (Johnson et al. 2002). In what is now Orange County, there are sites dating to 9,000–10,000 years ago (Mason and Peterson 1994:55-57; Macko 1998a:41). In addition, initial radiocarbon dates recently obtained by SWCA from a deeply buried archaeological site in southern Orange County, 5.5 kilometers (3.4 miles) from the coast, indicate an occupation as early as 11,000 B.P. (SWCA unpublished).

Subsistence patterns shifted around 6000 B.C. coincident with the gradual desiccation associated with the onset of the Altithermal, a warm and dry period that lasted for about 3,000 years (Antevs 1955). After 6000 B.C. during the Archaic Period (Lower, Middle, and Upper) and later Emergent Period, a greater

emphasis was placed on plant foods, as well as smaller animals. Although the climate within the variant geomorphic provinces within California probably varied both over space and time subsequent to the Altithermal (Moratto 1984:548), likely the coast was not affected as much as the interior ecological communities (Erlandson 1997:4).

Lower Archaic Period (6000–3000 B.C.)

A substantially greater number of sites throughout California have been identified to the Lower Archaic Period compared to the Paleoindian Period. As a result of climatic changes and the drying of pluvial lakes, subsistence strategies shifted to an increased emphasis on plant resources, as evidenced by an abundance of handstones and milling stones. During this period, people practiced a mixed procurement strategy of both game animals and plant parts, with the addition of seeds. The mixed exploitation of a wide range of natural resources ties into a seasonal foraging strategy.

In southern California, this period is generally referred to as the Milling Stone Period (Wallace 1955, 1978), with sites common in the southern California coastal region between Santa Barbara and San Diego, and at many near-coastal and inland locations. The Lower Archaic/Milling Stone Period is characterized by an ecological adaptation to collecting, and by the dominance of the principal ground stone implements generally associated with the horizontal motion of grinding small seeds; namely, milling stones (metates, slabs) and handstones (manos, mullers), which are typically shaped. Milling stones occur in large numbers for the first time, and are even more numerous near the end of this period.

The Lower Archaic Period is also defined by large, simple core and flake tools, and large side-notched projectile points. As testified by their toolkits and shell middens in coastal sites, people during this period practiced a mixed food procurement strategy. Subsistence patterns varied somewhat as groups became better adapted to their regional or local environments.

Milling Stone Period sites are common in both coastal and inland settings in central and southern coastal California, dating as early as 8,500 years ago. The larger sites usually contain extensive midden deposits, possible subterranean pit houses, and cemeteries (Glassow et al. 1988:68, Erlandson 1994:46). With an artifact assemblage dominated by milling slabs and handstones, the Cross Creek site (CA-SLO-1797) in San Luis Obispo County appears to be the oldest recorded mainland shell midden site, and the first coastal residential site to yield pre-8,000 year old dates (Fitzgerald 2000:58). Although sites have been identified along the Santa Barbara coastline (D.B. Rogers 1929:256; Erlandson 1994:39–40), typical Milling Stone tools are not common on contemporaneous Channel Island sites, possibly reflecting an alternate, insular resource exploitation (Erlandson 1994:47).

During this period in northeastern and northwestern California, as well as the southeastern desert region of the state during a moister period between 4500–3500 B.C., characteristic artifacts include wide-stem projectile points, milling stones, and handstones (Fredrickson 1984:493; Warren 1984:412). At the Squaw Creek site (CA-SHA-475) in Shasta County, milling stones increase in number within the stratified deposits after 5000 B.C. (Raven 1984:449). Recent research in the Bay Area at sites in the Santa Clara Valley and peninsula coast of Santa Cruz County (e.g., Fitzgerald 1993; Fitzgerald and Jones 1999; Hylkema 2002:233–235) also suggests the cultural assemblages in the few early Middle Holocene sites have commonalities with Milling Stone Period sites described for coastal southern California. The artifact assemblages in the Bay Area sites, with dates as early as 4100 B.C., have large numbers of handstones and milling slabs, as well as core and flake tools. Other sites discovered at depths of nearly 23 meters in the Bay Area (e.g., BART site CA-SFR-28), date as early as 3710 B.C., but have few artifacts associated with human skeletal remains (Bickel 1978; Moratto 1984:266–267).

Due to the amount of alluvial deposition, only a few archaeological sites in the Sacramento Valley and Sacramento–San Joaquin Delta areas predate 5,000 years ago. One of the few Early Holocene age sites in the region, for example, has cultural deposits approximately two meters below the surface (Meyer and Rosenthal 1998). In the Los Vaqueros area in eastern Contra Costa County, the Lower Archaic Period assemblage at CA-CCO-637 includes milling slabs and handstones, dated as early as 8,500 years ago. In the southern San Joaquin Valley, the artifact assemblage at a stratified shell midden site (CA-KER-116) on the shores of Buena Vista Lake in Kern County also has commonalities with Wallace's Milling Stone Period (see Fredrickson 1986). Excavated during several periods, artifacts include handstones, milling stones, and flake scrapers (Wedel 1941; Fredrickson and Grossmann 1977; Schiffman and Garfinkel 1981).

Middle Archaic (3000–1000 B.C.)

During the Middle Archaic Period, there is a pronounced trend toward greater adaptation to regional or local resources. For example, the remains of fish, land mammals, and sea mammals are increasingly abundant and diverse in sites along the central and southern California coast. Related chipped stone tools suitable for hunting are more abundant and diversified; larger knives, a variety of flake scrapers, and drill-like implements are common during this period. Projectile points include large side-notched, stemmed, and lanceolate or leaf-shaped forms. Bone tools, including awls, are more numerous than in the preceding period, and the use of asphaltum adhesive is more common.

Mortars and pestles become more common during the Middle Archaic Period, gradually replacing handstones and slabs as milling implements. Mortars and pestles first appear in the archaeological record throughout California near the end of the Lower Archaic Period about the time of the transition from the Early to Middle Holocene between 5000–4000 B.C. (Erlandson and Colten 1991:1). Hopper mortars and stone bowls, including steatite vessels in the central and southern coastal areas, also enter the toolkit during the Middle Archaic Period. This shift appears to be a correlate of a diversification in subsistence resources.

Many archaeologists believe the change in milling implements – from handstones and slabs to mortars and pestles – signals a shift away from the processing and consuming of hard seed resources to the increasing importance of the acorn (e.g., Glassow et al. 1988; True 1993). It has also been argued that mortars and pestles may have been used initially to process roots (e.g., tubers, bulbs, and corms associated with marshland plants), with acorn processing beginning at a later point in prehistory (Glassow 1997:86) and continuing to historic contact. In the southwest desert regions of the state, Warren (1984:419) has suggested that mortars and pestles were used to process mesquite pods.

There is an increase in the number of sites attributable to the Middle Holocene or Middle Archaic Period, particularly in the Sacramento Valley, Sacramento–San Joaquin Delta and Bay Area, where alluvial deposition or sea level has prohibited discovery of many sites dating prior to this time period. Windmiller Pattern sites in the greater Sacramento Valley–Delta region (Beardsley 1954; Heizer 1949; Bennyhoff and Fredrickson 1969; Fredrickson 1973, 1974) and Bay Area (e.g., Gerow with Force 1968; Hylkema 2002:244) indicate people practiced a mixed procurement strategy of both game and wild plants, with the addition of acorns and/or seeds, as part of a seasonal foraging pattern.

An extensive series of shoreline midden deposits within California's central coast signify an increase in occupation of the open coast during the Middle Archaic Period (Jones 1995; Jones and Waugh 1995, 1997). Central and southern coastal peoples fished with bone hooks, including bipointed bone gorge hooks, and hunted land and sea mammals. At inland sites, in addition to plant foods, the subsistence system included many other food resources, such as deer, elk, pronghorn, rabbits, waterfowl, and fish.

Numerous faunal remains have been documented at Windmiller Pattern sites in the Sacramento Valley and Delta areas, along with large quantities of projectile points, angling hooks, and baked clay artifacts possibly used as net or line sinkers (Fredrickson 1973; Heizer 1949; Ragir 1972). Impressions of twined basketry, as well as bone tools, also have been found in Central Valley sites.

During the Middle Archaic Period, there is some evidence for population growth, particularly on the mainland coast and the Channel Islands. The archaeological record also witnesses an increase in non-utilitarian objects of art, ritual, and decoration. At Windmiller Pattern sites in the Central Valley, for example, artifact assemblages include ground and polished charmstones, and shell beads. Mainly rectangular bead types (*Haliotis* and *Olivella*) were produced during this period in the Santa Barbara Channel area (King 1981, 1990).

Shell beads and obsidian are hallmarks of the trade and exchange networks that flourished on the central and southern California coasts. Beginning at the end of the Lower Archaic or Milling Stone Period, the archaeological record indicates there was a substantial increase in the abundance of obsidian from distant inland areas at sites in the central and southern coastal areas that continued to increase during the Middle Archaic (King 1981, 1990; Jones and Waugh 1997:124–126). In the central and southern coastal areas, artifact assemblages also include steatite from the Channel Islands. In central and southern California sites, shell beads, obsidian tools, and quartz crystals, among other items, are evidence for the beginning of long-distance exchange networks.

Upper Archaic Period (1000 B.C. – A.D. 500)

During the transition from the Middle to Upper Archaic Period, about the same time as the transition from the Middle to Late Holocene around 1500–1000 B.C., there is a diversification in technology, subsistence, and ornaments with a change in sociopolitical complexity, development of wealth-based status distinctions, and more complex exchange systems during the Upper Archaic (Fredrickson 1974:fig. 3, 1994a:fig. 9.1; Erlandson and Colten 1991:2). A seasonal round settlement pattern was still followed, but large, permanently occupied settlements, particularly in coastal areas, appear to have been the norm by the end of the period. Sites on the coast emphasized a reliance on shellfish and fish, as well as plant resources. Throughout the archaeological record, an increase in mortars and pestles, along with a decrease in handstones and milling slabs is interpreted as a shift to a greater reliance on acorns as a dietary staple.

The Upper Archaic in central and southern California is characterized by an increase in the numbers and types of shell beads and personal ornaments, as well as numerous types of bone tools. Diagnostic artifacts include stone effigies, charmstones, stone pipes, and new bead types, including a shift from rectangular to circular *Haliotis* and *Olivella* beads seen in the Santa Barbara Channel area. Artifact assemblages also include large contracting-stemmed projectile points, occasional concave-base points, bone tools, milling slabs and handstones, bowl mortars, pestles, and a suite of *Olivella* bead types. In the southeastern desert region of the state, this period is also characterized by the presence of split-twig figurines, which are commonly preserved in caves (Warren 1984:416–417). Also, in higher elevations of the northern Sierra, there is a firmly dated association with unique "Central Sierra Abstract Style" or Style 7 rock art sites within this period (Elsasser and Gortner 1991:361; Foster et al. 2002). Style 7 petroglyph sites are distributed within the Feather, American, Bear, Truckee, and Yuba River drainages, and occur within four counties, including Nevada, Placer, Plumas, and Sierra. The sites range in elevation from 1,408–2,329 meters (4,620–7,640 feet). In some areas near the end of this period, smaller size projectile points indicate the beginning of bow and arrow technology.

The archaeological record during the Upper Archaic Period consists of numerous large shell midden/mounds at coastal and inland sites in central and southern California. Large accumulations of

shellfish remains, or "shell mounds," formed over hundreds, or even thousands, of years through accretion at village sites that were reused seasonally or year-round. In the Bay Area, this period has been called the "golden age of shell mound communities" of the Berkeley Pattern (Lightfoot and Luby 2002:276). People practiced a maritime hunting and gathering economy at central and southern coastal, Channel Island, and Bay Area sites. Unlike coastal areas in northern and southern San Diego County, many shell midden sites in the central part of the county were abandoned when coastal lagoon resources decreased due to sedimentation (Miller 1966; Gallegos et al. 1987, 1992) At Central Valley inland sites located near or in the vicinity of fresh and brackish water, the presence of large shell middens demonstrates that occupants made intensive use of all available aquatic resources.

One of the better-known sites of this period is the Emeryville shell mound (CA-ALA-309), located just south of Berkeley in Alameda County and excavated in 1902 by Max Uhle (Uhle 1907). One of the largest mounds in the Bay Area with an estimated size of at least 100 by 300 meters, the stratified deposits reach a maximum depth of nearly 10 meters (Moratto 1984:227–228). The lower Upper Archaic Period levels contained flexed burials associated with artifacts such as pointed bone implements, chert bifaces, perforate charmstones, red ochre, and a predominance of bay oyster shells (Moratto, 1984:229).

The notable appearance of the circular shell fishhook between 1000–500 B.C. during the Upper Archaic Period (King 1981, 1990; Jones and Klar 2005:466), foreshadowed the complex maritime technology that proliferated in central and southern coastal California during the following Emergent Period. The presence of grooved stone net weights and pitted stones, as well as circular shell fishhooks as part of Upper Archaic fishing technology, along with a dietary focus on marine resources is consistent with the location of shoreline sites. As demonstrated by the artifact assemblage from inland sites, hunting also remained an important aspect of food procurement during this period (Fredrickson 1973:125–126).

Trade and exchange continues to be a significant part of the Upper Archaic Period economy. Obsidian from distant inland areas continues its presence at central and southern coastal sites, as well as southwestern desert sites. Steatite from the Channel Islands and marine shell beads from the Pacific coast remain important trade items for the long-distance networks. Southwest desert sites also contain shell beads from the Gulf of California.

In addition to the exchange networks, migration may have attributed to the spread of distinctive cultural patterns during the Upper Archaic Period. For example, artifact assemblages and radiocarbon dating of sites from this period suggest that the Berkeley subsistence pattern may have developed in the San Francisco Bay region and later spread to surrounding coastal locales and into central California. Moratto (1984:211, 279) suggests the pattern is related to the expansion of Utian language family (Miwok and Costanoan) populations throughout the Bay Area and to the northern central coast, Sacramento Valley, and Sierran foothills.

Mortuary practices during the Upper Archaic Period are dominated by interment, sometimes beneath cairns, but a few cremations have been found at Berkeley Pattern sites in the Central Valley. In the Bay Area, numerous shell mounds contain hundreds of burials as well as ceremonial items, house floors, hearths and storage pits, indicating they were used as burial, ceremonial, and residential places (Lightfoot 1997:131–136; Lightfoot and Luby 2002:276–277). On the central coast, there is little evidence of formal cemeteries like those found in the Bay Area, although burials within residential middens have been recovered (Jones and Ferneau 2002:217). Grave goods include *Olivella* shell and steatite beads, bone tubes and whistles, drilled steatite tube and pebble ornaments, abalone ornaments, charmstones, bowl mortars, and small projectile points.

Emergent Period (A.D. 500–Historic Contact)

The Emergent Period (also commonly referred to as the Late Prehistoric Period) is characterized by a number of changes in subsistence, foraging, and land use patterns, which in most areas begins to reflect the use pattern known from historic period Native American groups. A substantial increase in the intensity of subsistence exploitation, including fishing, hunting of both land and sea mammals, and gathering (particularly the acorn), evidenced in the archaeological record correlates directly with population growth (Moratto 1984:211–214).

During this period, an increase in sedentism led to the development of social stratification, accompanied by a shift to elaborate ceremonial and social organization, including status differentiation and the rise of secret societies and cults and associated traits. The magnitude of non-dietary *Olivella* shells in coastal sites during this period, coupled with a concomitant increase of the shells in mortuary contexts throughout central California during this period, attests to the rise of both exchange networks and status differentiation, with coastal peoples supplying the shells to the interior groups. During the Emergent Period, the full development of Chumash culture in the Santa Barbara Channel area, one of the most economically and socially complex hunting and gathering groups in North America, occurred (King 1981, 1990; Arnold 1987). Class differentiation, inherited chieftainship, and religious beliefs developed along with a dramatic increase in population.

Population size, the number of settlements, and the size of villages typically increased during this period (Wallace 1955:223). In southern California, large populations and, in places, high population densities are characteristic, with some coastal and near-coastal settlements containing as many as 1,500 people. Many larger settlements were permanent villages, where people resided year-round; village populations may also have increased seasonally. Permanent inland settlements were supported by various natural resources, including deer and elk, smaller game animals, and plants. In southern California, these inland villages were economically allied with the larger coastal villages. To the north, along the central coast and Bay Area, many of the large shell mound villages of the Upper Archaic were apparently no longer favored residential places. Emeryville shell mound (CA-ALA-309) in the Bay Area, for example, was abandoned sometime before A.D. 1500 (Lightfoot and Luby 2002:271–272).

Temporally diagnostic shell beads and small, finely worked projectile points help identify Emergent Period sites throughout California. With the variety and intensity of resource exploitation, there was a concomitant increase in the diversity and complexity of material culture, demonstrated by more classes of artifacts. One of the hallmarks of the Emergent Period is the replacement of the atlatl and dart by the bow and arrow. The recovery of a greater number of small, finely chipped projectile points, usually stemless with convex or concave bases, indicates an increased utilization of bow and arrow technology for hunting. Arrow shaft straighteners made of steatite have also been recovered from more southern sites. Chipped stone implements also included drills and scrapers.

Emergent Period food processing and cooking items include shaped mortars and pestles, hopper mortars, and steatite cooking vessels and containers. A greater emphasis is placed on the procurement and processing of vegetal foods, especially acorns, as evidenced in the increase of milling tools, especially the mortar and pestle. Additional items include a variety of bone tools, including fishhooks and bone awls used for producing coiled baskets. Baskets, both coiled and twined, were used for domestic and ceremonial purposes. There is also an increased use of asphaltum for waterproofing and as an adhesive, and an increased presence of smaller bone and shell circular fishhooks, harpoons, and perforated stones during this period. Utilitarian items made from shell include fishhooks as well as abalone shell dishes.

Pottery is found in California sites for the first time during the Emergent Period. Cosumnes Brownware is present in some parts of the Central Valley, and most likely developed from the prior baked clay industry.

In California's southeast desert region, pottery appears ca. A.D. 800–1050 along the Lower Colorado River. Local ceramic types, such as Tizon Brown Ware are being produced after A.D. 950 in the Colorado Desert area, with painted pottery and Colorado Buff Ware after A.D. 1500.

By A.D. 1000, fired clay smoking pipes and ceramic vessels begin to appear at some sites in southern California (Meighan 1954; Warren 1984). The scarcity of pottery in coastal and near-coastal sites implies ceramic technology was not well developed in that area, or that ceramics were obtained by trade with neighboring groups to the south and east. The lack of widespread pottery manufacture is usually attributed to the high quality of tightly woven and watertight basketry that functioned in the same capacity as ceramic vessels.

A complex maritime technology proliferated in central and southern coastal California during the Emergent Period, preceded during the Upper Archaic Period by the appearance of circular shell fishhooks between 1000–500 B.C. (Jones and Klar 2005:466). Archaeological evidence during the Emergent Period includes the appearance of compound bone fishhooks between A.D. 300–900 and the development of the wooden plank canoe (*tomolo*) by at least A.D. 400–700 (Arnold 1995; Kennett 1998:357; King 1990:87-88; Rick et al. 2002; Jones and Klar 2005:466). Hand-hewn plank canoes, sewn together with cordage and then sealed with asphaltum, were "a uniquely sophisticated craft for prehistoric North America" (Jones and Klar 2005: 461). The canoes were used extensively for travel and trade between the Channel Islands and the mainland.

The introduction of shell fishhooks and plank canoes, their subsequent modifications, and the increased use of other capture devices such as nets appear to have led to a substantial focus on fishing in most coastal areas. A seasonal round settlement pattern was still followed, but large, permanently occupied settlements, particularly in coastal areas, appear to have been the norm by A.D. 1200 (Kennett 1998). Fishing continued to increase in importance during this period and along with sea mammals, waterfowl, and shellfish supported villages of nearly 1,000 individuals clustered along the central and southern coasts.

In addition to utilitarian items, Emergent Period sites contain beautiful and complex objects of utility, art, and decoration. There is an increase in the number of personal ornaments made from shell, bone, and stone, such as drilled whole *Chione* (venus clam) and drilled abalone flanged tubular tobacco pipes. Steatite effigies become more common, with *Pecten* shell rattles common in middens. In the Chumash sphere, bowls, pestles, pipes, and stone tubes were inlaid with shell beads and engraved; also bowls, pipes, and ornaments were commonly manufactured from Channel Island steatite.

Most of the rock art found today in the Chumash sphere is thought to date to this period. The Chumash rock paintings are "the most interesting and spectacular in the United States (Grant 1978a:517), and are found in Santa Barbara and San Luis Obispo Counties, and as far inland as the southwest corner of Kern County in interior Chumash (Emigdiano dialect) ethnographic territory. The rock paintings – mostly pictographs comprised of polychrome abstract designs and some petroglyphs – reach a high degree of development in the Carrizo Plain in southeastern San Luis Obispo County.

Exchange networks, with the use of clamshell disk beads as a form of currency, expanded during this period. Exchange items included magnesite, steatite, *Olivella* beads, and obsidian. Shell beads continue to be a primary medium of exchange, and are common in high status burials. Compared to the Archaic Period, the use and occurrence of shell beads with burials blossomed. In the Central Valley and Bay Area, the source of obsidian shifted closer, with Napa Valley as the primary source in contrast to that obtained from the Sierra Nevada (Bodie Hills and Casa Diablo) during the Berkeley Pattern (Lightfoot and Luby 2002:280).

Mortuary practices during the Emergent Period are more elaborate and include cremation and interment, with abundant grave goods. In the Central Valley burials are flexed, some with pre-interment burning of offerings in a grave pit, with cremation of high-status individuals (Fredrickson 1973:127–129; Moratto 1984:211). In the Chumash sphere in the Santa Barbara Channel area, characteristic mortuary practices include burial in crowded cemeteries. Burials are normally flexed, placed face down, and oriented toward the north or west (Warren 1968:5). The interments are typically marked by vertical pieces of whalebone, and have abundant grave goods, such as ornaments, effigies, and utensils. High status graves were opulently decorated and marked by tall, inscribed poles.

The changes in subsistence, foraging, and land use patterns seen at the beginning of the Emergent Period have been attributed to migration and expansion in many areas of the state. For example, the Augustine Pattern of central northern California, the Bay Area, Sacramento Valley and Delta, may represent the southward expansion of Wintu populations into the Sacramento Valley, after which the Patwin apparently expanded into the Bay Area (Moratto 1984:211–216, 283). In contrast, based on stylistic changes in artifacts, particularly shell beads and ornaments, from Santa Barbara Channel burial assemblages, King (1981, 1990) interprets the continuity in development of artifacts as an indication that Chumash culture developed locally over the last 7500 years, or since the Lower Archaic Period.

To the south of the Chumash sphere in Los Angeles, Orange, and San Diego Counties, the seemingly abrupt changes in material culture, burial practices, and subsistence focus found at the beginning of the Emergent Period are considered the result of a major migration to the coast of peoples from the Great Basin region (Nevada, Utah, and eastern California) to the east. In Los Angeles and Orange Counties, the introduction of cremation, pottery, and small triangular arrow points represent the migration of Takic-speaking peoples (Uto-Aztecan language group) (Warren 1968; formerly the "Shoshonean wedge"). Modern Gabrielino (now referred to as Tongva), Juaneño (now Acjachemen), and Luiseño in this region are considered the descendants of these populations that settled along the California coast during this period or perhaps somewhat earlier. In the San Diego region, in addition to the small triangular and triangular side-notched points similar to those found in the desert regions in the Great Basin and Lower Colorado River, Colorado River pottery and the introduction of cremation in the archaeological record suggests a strong influence from the Colorado Desert region and likely ancestral Quechan or Yuman-speaking groups (Warren 1968).

Within the Colorado Desert region, small projectile points, a change from extended inhumations to cremations, the introduction of pottery, networks of trail systems (with pot-drops and trail-side shrines), and the late introduction of small-scale agriculture characterize this period in general. The start of small-scale agriculture along the Lower Colorado River was likely influenced by outside groups. The subsistence and settlement patterns in this area were also influenced by the periodic episodes of infilling and recession of ancient Lake Cahuilla, believed to have receded for the last time around A.D. 1580, with a brief inundation in the mid to late 1600s (Waters 1983; Laylander 1995; Buckles and Krantz 2005). Stone fish traps and fish bone are associated with the final desiccation of the lake, after which permanent villages were established on the valley floor, supported by large walk-in wells, as well as extensive mesquite groves.

The catalyst or catalysts for the rise of emergent complexity within California during this period continue to be a topic of debate, as evidenced by the title and contributions to a recent volume edited by Erlandson and Jones (2002). Proposed catalysts have included shifts in the environment and the intensity of acorn exploitation, among others (see discussion in Jones 2002:7). The intensity of acorn exploitation (collecting, processing, storing, cooking) as the catalyst for increased cultural complexity was the basis for an argument presented nearly 20 years ago by Basgall (1987) and Bouey (1987). A few years later in her study of the Santa Barbara Channel area, Arnold (1992, 1997) concluded that the negative effect of a decline in marine productivity around A.D. 1150–1250 resulted in an increase in the production of trade

goods and craft specialization, leading to permanent class differentiation within the Chumash sphere. Likely, dry conditions during the Medieval Climatic Anomaly (MCA), which produced droughts across the West between about A.D. 650–850 and A.D. 1150–1250 (Jones et al. 1999), are related to the abandonment of the shell mound villages as primary residential locations on the central coast, which began around A.D. 700 in the Bay Area (Lightfoot and Luby 2002:277, 279). Like other areas, reorganized settlement strategies focused on a dispersed pattern, with the establishment of both coastal and interior habitation areas, coincided with the exploitation of seasonally available resources.

The end of the Emergent Period is recognized by the close of the eighteenth century or by the middle of the nineteenth century, when the Spanish mission system and subsequent historic events had their greatest effect on native California populations. As discussed in the following section, many interior groups were spared from direct contact with non-indigenous peoples until the early 1800s.

2.2.2 Ethnographic Overview

By the time of Spanish colonization in A.D. 1769, California was already the home of approximately 300,000 indigenous people, comprising a complex of cultures that encompassed 74 languages and perhaps 500 distinct ethnic groups (Moratto 1984:xxvii; Mithun 2001). Population density among these mainly sedentary, complex hunter-gatherer groups varied, depending mainly on availability and dependability of local resources, with the highest density of people in the Santa Barbara Channel area and the least in the southwest desert region. The effect of Spanish settlement and missionization in California marks the beginning of a devastating disruption of native culture and lifeways, with forced population movements, loss of land and territory (including traditional hunting and gathering locales), enslavement, and decline in population numbers from disease, malnutrition, starvation, and violence.

2.2.2.1 Synopsis of Ethnographic Records

With notable exceptions such as Father Boscana (1933 [1846]; Harrington 1934), neither the Spanish military and political rulers nor the Franciscan missionaries made a focused effort to leave a written record of the cultures of the native peoples they encountered in Alta (Upper) California (Heizer 1978a:6). We do have some information from military staff journals, mission reports, and baptismal records, but not until the Gold Rush era in the mid-1800s were descriptive accounts of indigenous cultures specifically written. These newspaper and journal articles then precipitated an era of recordation by anthropologists and ethnographers. By this time, however, the native population is estimated to have been 100,000, a two-thirds reduction from the 1769 estimate at contact. Twenty years later, journalist Stephen Powers began publishing a series of articles on his visits to groups in the northern two-thirds of California. At that time, the indigenous Californian population estimate was only about 16 percent of those present 100 years before.

Another 20 years passed before ethnographers associated with the University of California at Berkeley would begin to study and publish a series of monographs on tribal ethnographies, linguistics, folklore, and archaeology, among other topics. The most monumental work of this period, the *Handbook of the Indians of California* by Alfred L. Kroeber, was begun in 1901, completed in 1917, and published in 1925 (Kroeber 1925). Kroeber's work and that of the University series he inspired, published from 1903 to 1964, stand today as a mammoth achievement. These publications also stand as a tribute to Kroeber's realization that time to complete an ethnographic record was rapidly expiring – over 150 years of acculturation since 1769 had "almost completely erased even the memory of precontact cultures" (Heizer 1978a:9).

Beginning in 1965, the Smithsonian Institution envisioned publishing a 20-volume set of the prehistory, history, and cultures of native peoples of North America. The series would incorporate and summarize previous knowledge, with chapters focused on specific groups. Planning began for a volume on California in 1971, with volume 8 of the series published in 1978. Within the chapters of the California volume of the *Handbook of North American Indians* are descriptions of about 60 tribes, including their environmental setting, territorial boundaries, language classification, culture, population estimates, and history of exploration and settlement (Heizer 1978b:1). Along with Kroeber (1925), this volume is an invaluable source of ethnographic information on native Californian cultures.

2.2.2.2 Native American Groups along Qwest Backbone

Twenty Native American groups historically occupied the lands traversed by the Qwest network backbone. These groups are listed in Table 2-4, organized by segment number, generally running from north to south within the state. The chapters for Segments 1–36 provide detailed ethnographic overviews for the group or groups relevant to the segment covered by each chapter.

Table 2-4. Native American Groups along Qwest Backbone

Native American Group	General Area within California	Language Family	Language Stock (Superfamily)	Segment No.
Shasta	North-central	Shastan	Hokan	1–3
Wintu	North-central	Wintuan	Penutian	3
Nomlaki	North-central	Wintuan	Penutian	4–5
Konkow	North-central	Maiduan	Penutian	5–6
Nisenan	Central-eastern	Maiduan	Penutian	6–10
Washoe	Northern Sierra	Washoe	Isolate	10
Plains Miwok	Central	Utian (Miwokan subfamily)	Penutian	11, 21
Patwin	Central	Wintuan	Penutian	11–13
Coast Miwok	Central coast	Utian (Miwokan subfamily)	Penutian	12
Costanoan (Ohlone)	Central coast	Utian (Costanoan subfamily)	Penutian	13–18
Salinan	Central coast	Salinan	Isolate	19
Chumash	Southern coastal	Chumashan	Isolate	19, 20, 25
Gabrielino (Tongva)	Southern coastal	Uto-Aztecan (Takic branch)		20, 25–30
Northern Valley Yokuts	Central	Yokuts	Penutian	22
Southern Valley Yokuts	South-central	Yokuts	Penutian	23–24
Tataviam	Southern coastal	Uto-Aztecan (Takic branch)		25
Juaneño (Acjachemen)	Southern coastal	Uto-Aztecan (Takic branch)		30–31
Luiseño	Southern coastal	Uto-Aztecan (Takic		31–33

Table 2-4. Native American Groups along Qwest Backbone

Native American Group	General Area within California	Language Family	Language Stock (Superfamily)	Segment No.
		branch)		
Ipai, Tipai, and Kumeyaay (Diegueño Ethnic Nation)	Southern extent	Yuman-Cochimi (California-Delta Yuman branch)		33–36
Quechan (formerly Yuma)	Southeast	Yuman-Cochimi (River Yuman branch)		36

The location of the 20 groups listed in the table may be found in Table 2-4. The figure shows the boundaries of over 60 Native American groups, as drawn from Kroeber (1925:inside cover) and the Smithsonian *Handbook* volumes on California (Heizer, ed. 1978:ix) and the Great Basin (d'Azevedo, ed. 1986:ix). The groups whose lands are traversed by the Qwest backbone are mainly concentrated in the Great Central Valley, central and southern coast, and southern reaches of the state north of the border with Mexico. Outlying groups included here are the Washoe in the northern Sierra on the eastern border with Nevada and the Shasta immediately south of the Oregon border.

2.2.2.3 Linguistic Diversity

Two columns in Table 2-1 – language family and language stock – are a snapshot of the linguistic diversity of groups within California in general, and that of the groups traversed by the backbone network in particular. Within California, there are several unrelated proposed language stocks (or superfamiles), including Hokan and Penutian listed in the table, which have related language families. Several languages, including Chumashan, Salinan, and Washoe, have recently been described as isolates that have no close relatives and no demonstrated connections to other languages (Mithun 2001). Two of the language families listed in the table, Uto-Aztecan and Yuman-Cochimi, have no stock or superfamily classifications.

Archaeologists, ethnographers, and linguists use language patterns to reconstruct likely migrations and to estimate the timing of such population movements within the state. For example, the southward expansion of the Wintuan language family into the Sacramento Valley and then the Bay Area may be represented in the archaeological record around A.D. 500 (Moratto 1984:211–214, 283). Similarly, the migration of Takic-speaking populations (Uto-Aztecan language group) is associated with abrupt changes in the archaeological record (i.e., material culture, burial practices, subsistence focus) found around A.D. 500 at the beginning of the Emergent Period in today's Los Angeles and Orange Counties and the Colorado Desert (Warren 1968). Modern Gabrielino/Tongva, Juaneño/Acjachemen, and Luiseño are considered descendants of these people, who moved westward from the Great Basin region (Nevada, Utah, and eastern California). In contrast, based on the isolation of the Chumashan language and the archaeological record, it appears that Chumash culture developed locally over the last 7500 years in the Santa Barbara Channel area (King 1981, 1990), although recent work suggests a Polynesian connection between A.D. 400–800 (Jones and Klar 2005).

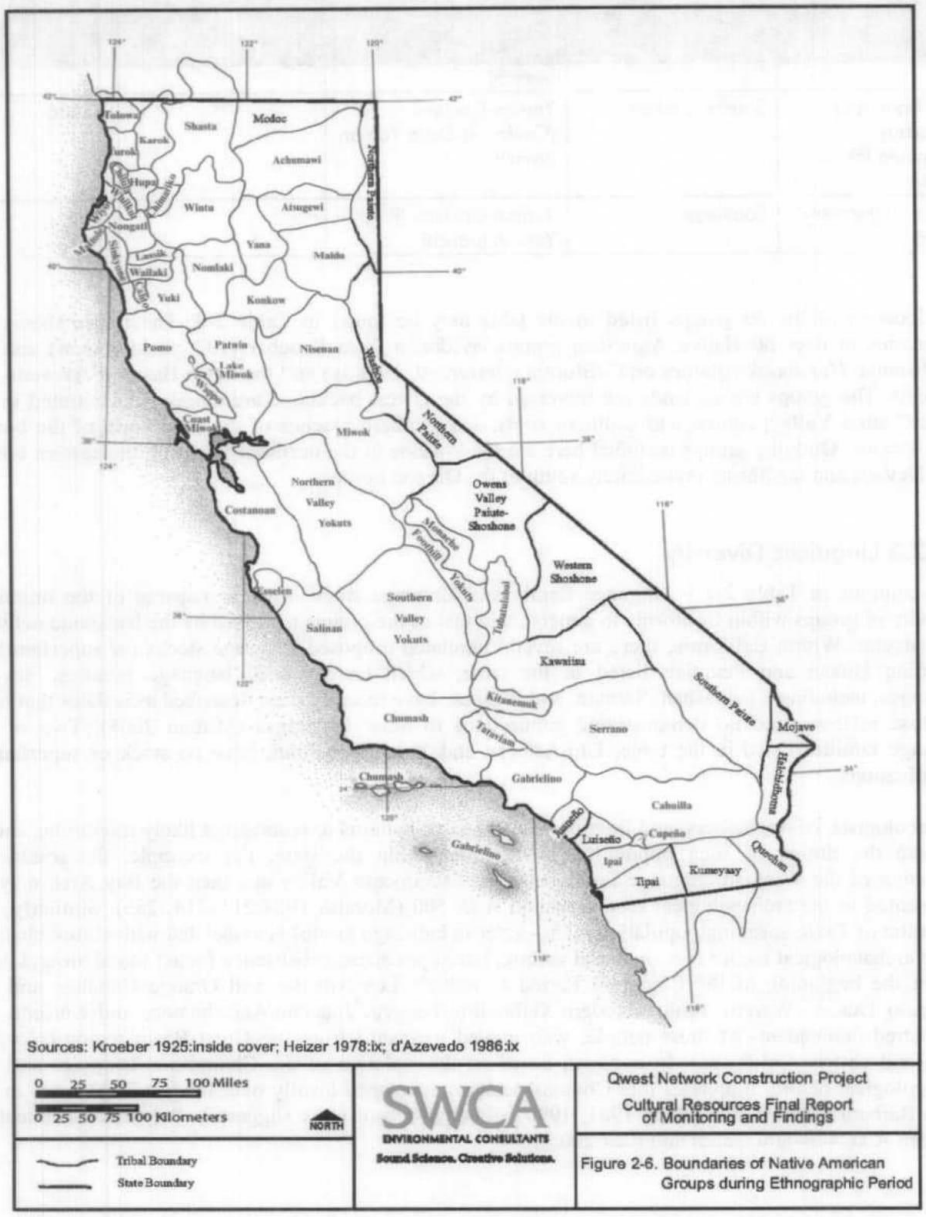


Figure 2-6. Boundaries of Native American Groups during Ethnographic Period

2.2.2.4 Traditional Lifeways and Material Culture

Although the Qwest network backbone traverses a number of geomorphic provinces and environmental settings within the state, the 20 native Californian groups listed in Table 2-4 share similar subsistence practices, settlement patterns, technology, material culture, social organization, and religious beliefs. The following is a summary of these characteristics and the effect of contact after 1769; more detailed descriptions are provided in the ethnographic sections within Chapters 3-38.

At historic contact, the fundamental economy of each of these complex hunter-gatherer groups was one of subsistence fishing, hunting, and collecting plant foods. Like most California Native Americans, the majority relied on the acorn as a dietary staple. Exceptions included those inhabiting the southern desert areas, the Quechan and Kumeyaay who depended on mesquite, the interior Tataviam who relied on yucca, and the southern and eastern Washoe who depended on pine nuts. In addition to the plant staples, a rich variety of large and small mammals such as deer, antelope and rabbits, plant parts such as greens, nuts, seeds and berries, waterfowl and other birds, fresh-water and salt-water fish, marine mammals, shellfish, reptiles, and insects were consumed. Contribution of the various resources to the diet depended on geographic location, as well as seasonal availability. Northern and central interior groups, for example, depended on fall salmon runs, whereas coastal groups relied on marine resources.

Indigenous Californians did not practice agriculture, except for the groups living near the lower Colorado River, including the Diegueño (includes Ipai, Tipai, and Kumeyaay) and Quechan. The Diegueño and Quechan are best described as both agriculturists and gatherers. Their crops included maize, beans, squash, and melons, which did not need much attention and freed them to collect other plants, fish, and hunt. Like coastal groups, they also fired grasslands to improve the grass seed harvest, which improved forage for deer and antelope.

To gather, collect, and process food resources, ethnographic records describe the use of a wide array of tools, implements, and enclosures. These included the bow and arrow, traps and snares, nets, and rock blinds for hunting land mammals and birds. Duck decoys, such as those made by the Washoe, were used to lure waterfowl to hunting blinds. Harpoons, nets, hooks and lines were used to capture fish and marine mammals. A variety of finely woven baskets served for collecting, processing, and cooking foods. Sealed with asphaltum, cooking baskets were watertight, and replaced the need for ceramic vessels in the majority of the state. The southeast desert groups near the Colorado River, including the Diegueño and Quechan, as well as the Cahuilla, Cupeno, Luiseño, and Serrano, manufactured pottery. Other groups located between the Southern Valley Yokuts and Owens Valley Paiute-Shoshone also made a simpler type of pottery.

The majority of the 20 groups along the Qwest backbone used a type of watercraft for fishing and coastal or inland travel. The Shasta in the north used dugout canoes, while the Chumash and Gabrielino/Tongva on the southern coast manufactured sea-going wooden plank canoes capable of carrying six to 14 people, which they also used for transport and trade between the Channel Islands and the mainland. With the exception of the Konkow, where the rivers were too swift for watercraft, the other groups listed in the table made rafts or canoes from tule reeds. The Washoe also used cedar bark rafts for lake fishing.

The informal journals and dairies of the early explorers and trappers give descriptive accounts of large villages arrayed along the southern California coast. As described by a member of the 1769 Portolá expedition, the population of the Chumash village near today's city of Ventura, for example, was at least 900; other villages held closer to 1,000 people. In addition to coastal settlements, the various Native American groups established permanent villages along interior waterways and near lakes and wetlands. Villages varied in size, mainly depending on the availability of local resources. As resources became seasonally available, some people would also move to temporary encampments in favored collecting

areas. Many of the larger coastal villages, particularly within Chumash and Gabrielino/Tongva territory, served as trade centers.

Village structures varied depending on availability of construction material. To the north and in the Sierras, trees were used to construct rectangular gabled or conical plank or bark houses, and simple bark structures for seasonal harvests. Moving southward, permanent houses were generally semi-subterranean and covered by thatch or earth, with temporary shelters made from brush. Many seasonal shelters were also thatched with grass and tule. In the desert areas, conical homes were made with tule matting. On the southern coast, large, rectangular or circular houses, which were covered with tule mats or animal skins in the rainy season, could hold at least 60 people. Throughout the state, acorns were typically stored in above ground granaries, and other structures included large, semi-subterranean assembly or ceremonial halls, menstrual huts, and sweatlodges.

Trade and exchange networks among California's Native American groups were a significant part of their economy and social organization. Clamshell disk beads were used as a form of currency. Two clam species were used to manufacture this currency; one at Bodega Bay within Coast Miwok territory was used to supply northern groups. The second species was used by central and southern groups, and could be gathered along the coast between Morro Bay and San Diego, although the Island Chumash were major suppliers. Traded commodities included obsidian, steatite, beads, acorns, animal skins, and dried fish, among other items. The Gabrielino/Tongva controlled the supply of Santa Catalina Island soapstone or steatite, which was easily carved into bowls, vessels, pipes, effigies, and cooking slabs. Unlike other stone, this valuable trade item did not crack when heated. Channel Island Gabrielino/Tongva and Chumash also traded shell beads, shell, dried fish, and otter and seal skins in return for acorns, pine nuts, deer and rabbit skins, bows and arrows, and obsidian from coastal groups. Coastal groups obtained many of these items in trade with inland groups in exchange for steatite, shell beads, and dried fish. Obsidian was supplied by inland groups from sources in the northeast corner of the state, in Napa Valley, and along the Sierra Nevada.

The social organization of indigenous Californians varied throughout the state. In the north, Shasta and Wintu villages held recognized territories; there was a religious ceremonial leader and a separate headman whose main function was as a mediator. Among the Nisenan, the role of headman was often hereditary. Further south among the central groups, the Costanoan and Coast and Plains Miwok were organized as tribelets, with as many as 300-500 people; villages and satellite villages controlled collecting territories. In the Sierras, the Washoe were divided into multigenerational, local groups with a hereditary headman. Political units among the Yokuts are best described as tribes, each with 300 people or more, that controlled specific lands and were governed by a headman. To the south, bands of kinship groups with a hereditary chief controlled band territory within the Diegueño ethnic nation, although Quechan clans, also led by a hereditary chief, cooperated in tribe-wide projects.

The most socially complex groups were located along the southern California coast and included the Chumash, Gabrielino/Tongva, Juaneño/Acjachemen, and Luiseño. Kroeber (1925:621) considered the Tongva "… to have been the most advanced group south of Tehachapi, except perhaps the Chumash. They were certainly the wealthiest and most thoughtful…." Tongva society was organized along patrilineal non-localized clans, which consisted of several lineages, each with their own ceremonial leader. The chief of the entire clan was the leader of the primary lineage, and one or two clans generally made up the population of a village. The society was not distinctly stratified, but two general classes of individuals, elites and commoners, were recognized. Three heirarchical social classes were present among the Juaneño/Acjachemen and Luiseño. These included an elite class consisting of chiefly families, lineage heads, and other ceremonial specialists; a "middle class" of established and successful families; and, finally, people of disconnected or wandering families and war captives (Bean 1976:109–111). A clan chief conducted community rites and regulated ceremonial life in conjunction with a council of elders,

and a hereditary village chief held an administrative position that combined and controlled religious, economic, and warfare powers. Ritual specialists and shamans also maintained hereditary membership on the council.

Chumash society was also divided into three classes; an upper class consisting of the chief, canoe builders and owners, and *'antap* society members; a middle class with about half the population; the lower class with social outcasts and unproductive individuals (McCall and Perry 1986:40). The hereditary chief of each village performed both political and religious ceremonial duties; large villages had three to four chiefs, one of whom would be the head chief. Chumash society also was organized into craft guilds whose members, mainly from the upper class, had strong economic advantages and included canoe builders, bead makers, basketry weavers, woodworkers, and weapon producers (Miller 1988:108).

The Chumash in particular are well known for their material culture, which included highly decorated utilitarian tools and ceremonial items, as well as rock art. Carved steatite items included bowls decorated with beads, medicine tubes, effigies, beads, pipes, and charmstones. Rock paintings occur at sheltered locations near the coastal Santa Barbara area and inland to the farthest reaches of the Chumash sphere in Kern County. In the interior region inhabited by the Cuyama Chumash, archaeological and ethnographic evidence strongly suggest a Chumash affiliation with the Carrizo Plain rock art, where the rock paintings—mostly pictographs comprised of polychrome abstract designs and some petroglyphs—reach a high degree of development. The remote location of the majority of Chumash rock art suggests the paintings may represent shrines or sacred spots.

At the time of Spanish contact, religious practices among native Californian groups varied. Many of the central groups practiced the *Kuksu* cult, primarily a ceremonial and dance organization, with a powerful shaman as the leader. Log drums, flutes, rattles, and whistles accompanied the elaborate ceremonial dances. On the southern coast among the Takic-speaking groups, the basis of Acjachemen, Luiseño and Tongva religious life was the *Chinigchinich* cult, described in detail by Father Boscana, a priest at Mission San Juan Capistrano (Boscana 1933; Harrington 1934). Chinigchinich, the last of a series of heroic mythological figures, gave instruction on laws and institutions, taught people how to dance, and later withdrew into heaven where he rewarded the faithful and punished those who disobeyed his laws. The Chinigchinich religion seems to have been relatively new when the Spanish arrived, and may have been influenced by Christianity.

Beginning in 1870, the messianic Ghost Dance movement, started by a Paiute shaman in western Nevada, spread to include most central and northern California groups. This movement was based on a vision predicting an apocalyptic future in which all whites would be destroyed, the dead would return to life, and the world would be returned to native peoples. The Ghost Dance was most accepted by groups whose culture was devastated after the initial period of Spanish colonization and mission building along the coast. Coastal groups, whose culture was destroyed early in the Mission Period, were least affected by the movement since their way of life had long been re-formed. The popularity of the Ghost Dance declined when the predicted apocalypse never materialized, but the movement did revitalize groups and create intertribal bonds.

Mortuary practices among the native Californian groups varied between internment and cremation. Cremation was the standard practice in the southernmost part of the state as far north as the mainland Tongva. Like the Chumash, and groups east of the Chumash, island Tongva practiced internment. Continuing northward, the majority of central California groups practiced cremation, while northern groups preferred interment. Although some groups had separate cemetery areas, Chumash village cemeteries were the most formal, marked by entryways and tall painted poles or whalebone. Beneath stone, wood or bone grave markers, personal objects, such as effigies, steatite pipes, bowls, ollas and beads, were interred with the deceased.

2.2.2.5 Effect of Historic Contact

As discussed further under the following Historic Overview section and in the individual ethnographic overviews in Chapters 3-38, Native American groups living along the coast were the first to experience colonization and conversion to Christianity, beginning at the start of the Spanish Period in 1769. The first Spanish settlement and mission was established in Diegueño ethnic territory in today's San Diego, and the last of the series of 21 missions established in 1823 as far north as today's Sonoma County in Southern Pomo lands. With forced removal from their traditional lands and lifeways to settlement at the Spanish missions, pueblos, or ranchos, the effect of colonization on the culture of coastal groups was disruptive and devastating. Foreign diseases also substantially reduced their numbers. Estimates for coastal populations suggest a reduction from 72,000 in 1770 to only 18,000 by 1830 (Cook 1978).

Initially, Spanish colonization did not directly affect groups in the interior of the state, but as coastal refugees fled inland, expeditions were mounted to capture the runaways and punish those that sheltered them. During the following Mexican Period, large ranchos were granted in the interior to Mexican citizens (*Californios*), beginning in 1822. With trappers and mountain men given permission by the Mexican government to enter California, most groups in the interior of the state had encountered non-indigenous peoples by the early 1800s. A series of epidemics between 1830 and 1837 had the most dramatic affect on inland groups. The epidemics swept through the Sacramento Valley and San Joaquin Valley; thousands of people died and entire communities were exterminated, with 75 percent of the population in the Central Valley estimated to have perished (Cook 1955).

Some groups, like the Washoe in the high Sierra, escaped the infectious epidemics and had little to no contact with Europeans until the 1849 Gold Rush. The 1848 discovery of gold in Valley Nisenan territory in today's El Dorado County brought thousands of miners and settlers to California, resulting in an economic boom and statehood by 1850, but the effect on the lives of indigenous Californians was tragic. Accompanying the waves of immigrants were the continued loss of land and territory, including hunting and gathering lands, further introduction and concentration of diseases, violence, malnutrition, and starvation for the native peoples. This explosive spread of foreign diseases, populations, economy, and languages nearly extinguished native languages and sociocultural systems (Castillo 1978). In ten short years between 1845 and 1855, Cook (1978) estimates California's native population was reduced by 100,000 to only 50,000 people; by 1900 there were only 20,000 or less than seven percent of the pre-contact number.

Records indicate that for the first hundred years, many native Californian groups actively fought to prevent their colonization, conversion, and conquest. Among the 20 groups whose traditional lands are traversed by the Qwest network backbone, the first to protest were the Diegueño who revolted against the Spanish soldiers and priests in 1775. Hundreds of warriors from villages between the Pacific Coast and the Yuha Desert combined forces and coordinated a night attack. The Quechan and other River and Delta Yuman groups successfully kept the Spanish and Mexican military out of their lands. In 1781, the Quechan (formerly known as the Yuma) attacked and destroyed the settlement and mission established six months earlier in their territory, killing the Arizona-based missionaries and nearly a hundred others. Plains Miwok fought transport to Mission San José in the 1820s, attacked Mexican coastal settlements with neighboring Yokuts in the 1830s, and skirmished with Captain John Sutter at Calaveras in 1846. The Chumash fought for and gained control of three missions in their territory in 1824, while many fled into the interior. In the more rugged northern part of the state, the Shasta played a prominent role in the Rogue River Indian wars, which lasted from 1850 to 1857.

Leaders of some California's native groups signed a series of statewide treaties between 1850-1852, which offered reservations in return for forfeiting title to the rest of the state. Neither the state nor federal government ratified these treaties. Native peoples were also denied state citizenship, voting rights, or the

right to testify in court. After establishment by the federal government of an Indian Affairs Superintendent in 1854, a few reserves were established in the state, including ones at Fort Tejón in the southern San Joaquin Valley, Nome Lackee near Colusa, and Round Valley and Mendocino Reserve in Mendocino County. In 1863, the Konkow and Nomlaki were among the peoples forcibly marched to the Round Valley Reservation, a two-week, hot, dry trek with few provisions or water. The cause of the Modoc War of 1873 was the attempted removal of this northeast California group to the Klamath Reservation in Oregon, part of a plan to remove all California natives to a handful of reservations.

Additional lands were granted to native Californians around the state, but with far less acreage compared to their traditional territories. Beginning in 1873, parcels were finally set aside in southern California, but not in Los Angeles and Orange Counties due in part to the value of coastal real estate. Between 1958 and 1970, however, 23 of the rancherias and reservations were terminated under a new federal policy. Seventeen were subsequently reinstated, and today many tribes continue to pursue reversal of their termination status. Among the 20 groups whose traditional lands are crossed by the Qwest backbone route, six still seek lands and federal recognition. These include the Costanoan, Gabrielino/Tongva, Juaneño/Acjachemen, Salinan, Shasta, and Tataviam.

Despite the loss of their traditional lands and the near destruction of their culture, California's native peoples are increasingly placing great value on tribal traditions, and encouraging retention of their languages and ceremonies. These developments have nurtured leaders who defend and fight for tribal rights. One outcome of their increasing sophistication was the establishment of the Native American Heritage Commission (NAHC), created by the state legislature in 1978, which works as a liaison between state, federal, and tribal governments. The NAHC helps protect burials and sacred places, as well as access to government lands to harvest plants used for basketry and ceremonial purposes.

More recently, many California tribes are achieving economic progress through the establishment of gaming businesses on their lands. In addition, recognition of their role in state and local affairs is evidenced by the passage in September 2004 of Senate Bill (SB) 18 (Government Code §65352.3), which requires cities and counties to contact and consult with California's Native American tribes when adopting or amending a General Plan or Specific Plan or when designating land as open space. Effective March 1, 2005, SB 18 is designed to protect Native American cultural places or traditional cultural properties (TCPs) that may be impacted by proposed amendments, adoptions, or open space designations.

2.2.3 Historic Overview

Post-contact history for the state of California is generally divided into three specific periods: the Spanish Period (1769–1822), the Mexican Period (1822–1848), and the American Period (1848–present). Russian traders and the establishment of Fort Ross in today's Sonoma County also influenced post-contact history for a short period (1809–1841).

2.2.3.1 Spanish Period (1769–1822)

Within the territory claimed by Spain, exploration between 1529 and 1769 of Alta (Upper) California was limited. During this nearly 250-year span, there were only brief visits by Spanish, Russian, and British explorers to the area that would become the State of California. In 1542, an expedition led by Juan Rodríguez Cabrillo sailed along the coast of California, but did not explore the interior. Sixty years later in 1602, another voyage led by Sebastián Vizcaíno discovered and named Monterey Bay, sailing as far north as Cape Mendocino. Inland exploration was not attempted until 1769 when Lt. Colonel Gaspar de Portolá led an overland expedition from San Diego to Monterey. Portolá's expedition in the spring of 1769 marks the official beginning by the Spanish Empire to claim Alta California through conquest and

colonization. Spanish settlement in California also marks the beginning of the related and devastating disruption of the culture of indigenous Californians.

Portolá established the first Spanish settlement in Alta California at San Diego in 1769. With Father Junipero Serra, Portolá also founded the first – Mission San Diego de Alcala – of 21 missions that would be built within Alta California by the Spanish and the Franciscan Order between 1769 and 1823 (Figure 2-7). Portolá then continued north, reaching San Francisco Bay on October 31, 1769. Later expeditions to Alta California by Pedro Fages (1772), who was seeking a site for a mission, and Juan Bautista De Anza (1776), who was seeking a site for a presidio and mission, explored the land east of San Francisco Bay and viewed the vast plains of the Central Valley to the east (Grunsky 1989:2–3). The motivations for Spanish colonization were several, but historians attribute the sudden urgency of settlement to the perceived threat to Spanish hegemony in northwest North America by the presence of Russian settlements in Alaska (Rolle 1978:54-56). At that time, Russian outposts were expanding and beginning to look southward. In response to this threat, the Spanish Viceroy in Baja California instructed Portolá to establish a presidio (fort) in Monterey.

The name California was derived from the name for a character in a popular Spanish novel, the Amazon Queen Calafia who ruled a fabulous island. This romantic novel by Garcí Ordonez de Montalvo, *Las Sergas de Esplandian* or *The Exploits of Esplandian*, was published in 1510. The name was given initially to Baja (Lower) California, the land lying north and west of Mexico, and later its northern counterpart, to Alta California. Alta California was considered the northern extension of New Spain, as Mexico was known in its time as part of the Spanish Empire.

By the end of the eighteenth century, the Spaniards had ultimately established four presidios in Alta California. These were located at San Diego (1769), Monterey (1770), and San Francisco (1776), and Santa Barbara (1782) (Figure 2-7). The final and northernmost Spanish mission (San Francisco Solano de Sonoma) was founded in 1823 by Padre Jose Altimira in the Sonoma Valley, at what is now the town of Sonoma. This site was chosen as part of the effort by the Spanish to deter the Russians from moving into the interior lands north of San Francisco. By 1812, the Russians had already established a settlement at Fort Ross, on the coast approximately 70 miles from San Francisco.

In 1808, Spanish Lieutenant Gabriel Moraga led the first expedition into the Sacramento Valley and traveled northward along the Sacramento River. The expedition was scouting for new mission locations and also searching for runaway Indian neophytes from the coastal missions. They traveled south as far as the Merced River and also explored parts of the American, Calaveras, Cosumnes, Feather, Mokelumne, and Stanislaus Rivers to the north. In 1817, the final Spanish expedition into the interior of Alta California was lead by Luis Arguello, who traveled up the Sacramento River, past the future site of the city of Sacramento to the mouth of the Feather River, before returning to the coast (Beck and Haase 1974:18, 20; Grunsky 1989:3–4).

The 21 missions established during the Spanish Period were constructed paralleling the California coastline between San Diego and Sonoma, within 14 of today's 58 counties (Table 2-5; Figure 2-7). The missions contained churches, workshops, storehouses, soldiers' barracks, and quarters for Native American neophytes. These new converts were used as labor, establishing and nurturing the mission orchards, gardens, vineyards, and pastures. Approximately 30 miles or a day's ride by horseback typically separated the missions. The connecting roadway became known as "El Camino Real." Today's Interstate 5 between San Diego and Los Angeles and Highway 101 between Los Angeles and Petaluma generally follow "The King's Highway." By 1871, pueblos or towns were established near two of the missions that later became the thriving cities of Los Angeles and San Jose.

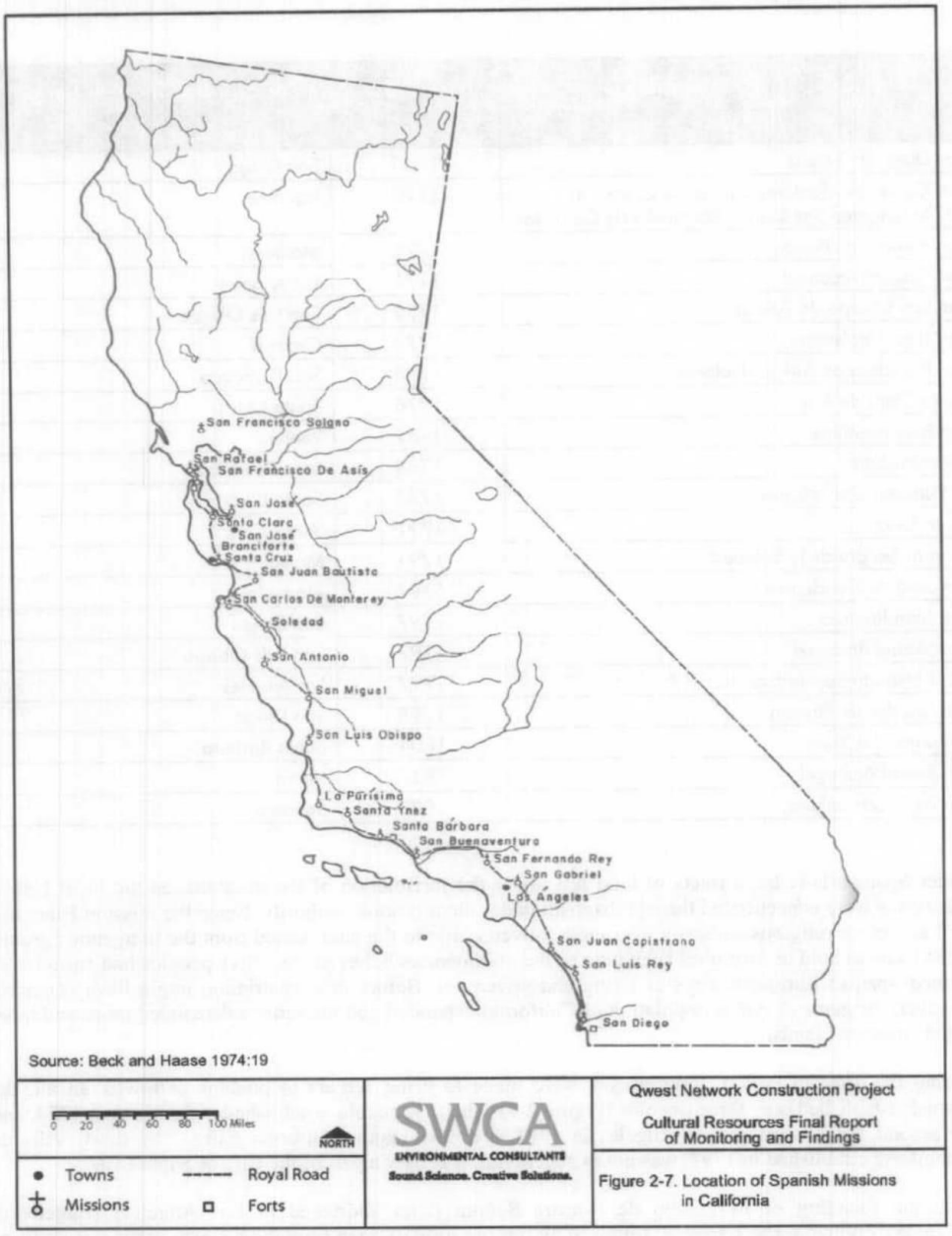


Figure 2-7. Location of Spanish Missions in California

Table 2-5. Franciscan Missions established in California during the Spanish Period

Mission	Year Established	California County
San Diego de Alcalá	1769	San Diego
San Carlos de Monterey (moved to Carmel in 1771; renamed San Carlos Borromeo de Carmelo)	1770	Monterey
San Antonio de Padua	1771	Monterey
San Gabriel Arcángel	1771	Los Angeles
San Luis Obispo de Tolosa	1772	San Luis Obispo
San Juan Capistrano	1776	Orange
San Francisco de Asís (or Dolores)	1776	San Francisco
Santa Clara de Asís	1776	Santa Clara
San Buenaventura	1782	Ventura
Santa Bárbara	1786	Santa Barbara
La Purísima Concepción	1787	Santa Barbara
Santa Cruz	1791	Santa Cruz
Nuestra Señora de la Soledad	1791	Monterey
San José de Guadalupe	1797	Alameda
San Juan Bautista	1797	San Benito
San Miguel Arcángel	1797	San Luis Obispo
San Fernando Rey de España	1797	Los Angeles
San Luis Rey de Francia	1798	San Diego
Santa Inés (or Ynez)	1804	Santa Barbara
San Rafael Arcángel	1817	Marin
San Francisco Solano	1823	Sonoma

Under Spanish law, large tracts of land fell under the jurisdiction of the missions, as the local Native Americans were concentrated through baptism under the missions' authority. Since the mission friars had civil as well as religious authority over their converts, title to the land passed from the indigenous groups to the friars to hold in trust until such time as the missionaries believed the native peoples had sufficiently learned Spanish European ways of living and governing. Before this repatriation might have occurred, however, the *gente de razón* population of California expanded and the settlers demanded more and more of the "mission" lands.

During the Spanish Period, inducements were made to bring settlers to pueblos or towns. In all, the Spanish established only three pueblos (Figure 2-7). The first pueblo, established at San José in 1777, and the second, established at Los Angeles in 1781, are now major California cities. The third, Villa de Branciforte established in 1797, was not as successful; it is now a part of the City of Santa Cruz.

With the founding of El Pueblo de Nuestra Señora (later shortened to Los Angeles) (Engelhardt 1927a:48), civilian settlers arrived, followed by retiring military men from the Spanish garrisons. Some of the soldiers were also given vast tracts of land to start farms and ranches. The growth of large cattle and agricultural ranchos at such an early period in this region gave Native Americans an option to partake of

the new socio-economic regime beyond the Franciscan mission system. The small colonial population needed Native American labor to help run the large ranchos (Engelhardt 1927b:9). Men worked as *vaqueros* and women ground corn and prepared food for the workers and the large, isolated colonial families. As one outcome of this employment, Native Americans moved the locations of their villages in order to meet the labor demands of different ranchos. The overall effect of the Spanish Period on indigenous Californians, however, was devastating. Removed from their traditional lands and lifeways and living in Spanish settlements at the missions, pueblos, or ranchos, their numbers were also decimated by foreign diseases.

2.2.3.2 Russian Period (1809–1841)

Concurrent with Spanish exploration, Alaska-based Russians started exploring the northern California coast with the goal of hunting otter and seal and feeding their Alaskan colonies. Russian traders began exploiting Pomo territory and established friendly relations with the Coast Miwok at Bodega Bay in 1809 (Bean and Theodoratus 1978:299). The Russian–American Fur Company established the first Russian settlement in 1811–1812 at Fort Ross north of San Francisco in today's Sonoma County. Fort Ross was established to protect the lucrative Russian fur trade in maritime species. The fort was also an agricultural colony, intended to grow produce for their Alaskan colonies.

Within Kashaya Pomo ethnohistoric territory, Fort Ross is about 40 kilometers (25 miles) west of the Qwest network backbone route. To the south, Bodega Bay served as one of the ports for Fort Ross. Hence, the Russians also established a presence in the lands historically occupied by the Coast Miwok.

Unlike the Spanish, Russian policy was one of non-intervention and cooperation with indigenous Californians. As a result, about 100 Pomo were employed as laborers on their agricultural colony, and between 1811 and 1825, many Pomo learned to speak Russian and adopted aspects of Russian culture. There was also some intermarriage. The Russians withdrew from California in 1841 after the failure of their agricultural colony and the depletion of the local sea otter population, combined with the change in international politics (Schuyler 1978:75).

2.2.3.3 Mexican Period (1822–1848)

New Spain (Mexico) revolted against the Spanish crown in 1822. After the Revolution of 1822, all Spanish holdings in North America (including both Alta and Baja California) became part of the new Republic of Mexico. With the Mexican period, an era of extensive land grants was begun, in contrast to the Spanish colonization through missions and presidios. Most of the land grants to Mexican citizens in California (*Californios*) were in the interior, granted to increase the population away from the more settled coastal areas where the Spanish had concentrated their settlements. In total, about 500 land grants were awarded during the 25 years of Mexican rule over California (Hoover et al. 2002:xiii).

With the opening by Mexico of California to Americans after the 1822 revolution, the fur trappers, also known as "mountain men," began exploring west of the Sierra Nevada Mountains. The first trapper to enter California was Jedediah Smith, whose small party trapped and explored along the Sierra Nevadas in 1826. They entered the Sacramento Valley in 1827, traveling along the Cosumnes and American Rivers and camping near modern-day Sacramento (Grunsky 1989:9–11). In the late 1820s and 1830s, other fur trappers and mountain men, some with the Hudson's Bay Company, also entered California. By the mid-1840s, a number of American settlers had arrived in California via overland routes.

Between 1830 and 1833, large numbers of the indigenous population in the Sacramento and San Joaquin Valleys died from disease, likely introduced by the American trappers and/or the local Mexican

population. The disease exterminated whole tribes along the American, Merced, Tuolumne, and Yuba Rivers (Cook 1955). In 1837, the Central Valley was hit by a second epidemic, which further decimated indigenous Californians. The issuance of numerous land grants, accompanied by population increases, contributed to the continuing introduction of foreign diseases for which Native Americans had no immunity.

The process of secularization of mission lands began shortly after the declaration of Mexican independence, with full secularization accomplished in 1834–1836. In 1825, the Mexican government freed the Native American neophytes from mission control. The government attempted to oversee the transformation of the neophytes from dependent laborers to independent citizens, but Mexican land policies did not adequately protect their interests. Many of the Native American neophytes left the missions and returned to traditional lands that had not yet been colonized, while others found work with the large cattle ranchos that were being carved out of the mission lands.

In the vicinity of today's City of Sacramento, a number of land grants were issued, beginning in 1833 with John Rogers Cooper, a British sea captain who married into an established *Californio* family (Grunsky 1989:14). Captain John Sutter received the two largest land grants in the Sacramento Valley. In 1839, Sutter founded a trading and agricultural empire called *New Helvetia*, which was headquartered at Sutter's Fort near the divergence of the Sacramento and American Rivers, in Valley Nisenan territory.

Lt. Colonel John C. Frémont of the U.S. Mounted Rifles lead overland expeditions into California in 1844, and again in 1845 and 1846. In May of 1846 he captured Sutter's Fort, made Sutter a prisoner, and encouraged an American uprising (Hoover et al. 2002:xiv). That same year, the Bear Flag of the California Republic was raised in the town of Sonoma, and several attempts of American conquest continued through the end of the year. The skirmishes culminated in the surrender of Governor Pío Pico and General José María Flores to Frémont on January 13, 1847. Frémont had captured the pueblo of Santa Barbara with 300 men he led through San Marcos Pass over the Santa Ynez Mountains.

2.2.3.4 American Period (1848–Present)

Victory in the Mexican–American War (1846–1848) resulted in Mexico releasing its northern territories (now the states of California, Arizona, Colorado, New Mexico, and part of Utah) to the United States under the Treaty of Guadalupe Hidalgo in 1848. Even though California became a territory of the United States, the full impact of "Americanization" would not occur until the discovery of gold in 1848.

The discovery of gold on the American River by James Marshall at Sutter's Mill near Coloma in today's El Dorado County was soon acknowledged worldwide. People traveled to the gold fields by land or sea from eastern U.S. states, Mexico, Chile, Europe, and China, among other countries, drawn by the tales of large nuggets and easy pickings. Miners prospected along the western slope of the Sierra Nevada from the Feather River south to the Tuolumne River drainage. Gold was also discovered in other parts of the state, such as along three northwestern rivers (Klamath, Trinity, Shasta), the upper Kern River, and Placerita Canyon in today's Los Angeles County.

One year after the discovery of gold at Sutter's Mill – now a National Historic Landmark within Marshall Gold Discovery State Historic Park – nearly 90,000 people had journeyed to the gold fields of California, and a portion of Sutter's Mexican land grant became the bustling Gold Rush boomtown of Sacramento. Largely as a result of the 1849 Gold Rush, California became the 31st state in 1850. By 1853, the population of the state exceeded 300,000 and in 1854, Sacramento became the state capital. Known today as the "Golden State," California continues to pay tribute to its Gold Rush heritage.

The gold found in the stream gravels of foothill rivers had been eroded from geologic formations (Tertiary gravels), from gold-bearing quartz veins common in the western foothills (Harden 1998:172). As the surface gold (i.e., placer gold) disappeared along the rivers and other waterways, mining shifted in the early 1850s toward more industrialized methods of extraction, including hydraulic and dredge mining. At Malakoff Diggings State Historic Park in Nevada County visitors can view the huge cliffs that formed from washing away entire mountains. Hydraulic mining was outlawed in the 1880s, although dredge mining continued at a smaller scale than during the Gold Rush in the western Sierra foothills into the 1950s. Extensive dredge tailings in Sacramento and Placer Counties along the American River, among others, bear witness to this environmentally destructive mining method.

The Gold Rush not only resulted in a vast population increase but also resounded in an economic boon, particularly for the new port cities of Sacramento, San Francisco, and Stockton. In addition to its central location to the mining district in the foothills, Sacramento served as a river transportation hub after Sutter began a steamer service, and the city had 12 stage lines by 1853. Sacramento was also the westernmost point of the Pony Express (1860–1861) and the terminal of the first California railroad, the Sacramento Valley line, which ran 22 miles east to Folsom (Beck and Haase 1974:51, 53, 68). South of Sacramento in San Joaquin County, Stockton grew around the Port of Stockton, begun as a supply and shipping center operating to serve gold miners flooding into the area. Ships today still deliver cargo to the port by a channel constructed in the mid-1800s in the Sacramento–San Joaquin Delta, the meeting point of the two large rivers that drain the northern and southern halves of the great Central Valley. Established on the coast where the waters of the Delta flow through the Carquinez Strait into the Bay, San Francisco also served as a major port of entry for the thousands of immigrants who sought riches in the California gold fields.

Outside the city ports, enterprising individuals and businesses met the increasing demand of the miners for commodities and food. The demand boosted the expansion and success of the agriculture industry, as well as an increase in ranching and raising of beef and dairy cattle, sheep, pigs, chickens, and turkeys to feed the thousands of hungry miners. This period also prompted the manufacture of all types of goods and clothing, production of lumber, the ore processing industry, and the beginning of a fishing industry.

The discovery of gold and the ensuing migrations had a devastating impact on the lives of indigenous Californians in the Central Valley and all along the foothills of the Sierra Nevadas. The mass introduction and concentration of diseases, the loss of land and territory, including traditional hunting and gathering locales, violence, malnutrition, and starvation accompanied the tens of thousands of gold seekers. With the focus on gold, treatment of native peoples by miners, settlers, ranchers, businessmen, and government officials was one of extreme discrimination. Such treatment is documented throughout the state and the various ranches and enterprises. With the loss of lives, estimated by 1900 to have less than seven percent of the precontact population remaining, the plan was to remove all remaining natives to a handful of reservations. Although additional rancherias and reservations were subsequently established, many groups are without land and are not federally recognized.

The Gold Rush cities of Sacramento and San Francisco survived numerous natural disasters. Prior to construction of an extensive levee system along the Sacramento and American Rivers, Sacramento experienced several early devastating floods and fires. Early Sacramento was flooded so many times that its buildings were raised twelve feet. From 1850 to 1851, San Francisco experienced six devastating fires, and the first of several earthquakes in October 1868. The famous earthquake of 1906 caused extensive damage and loss of life. Since the water mains were broken by seismic activity, the fires that broke out throughout the city could not be contained for several days.

The multi-ethnic character of the state today is one result of the Gold Rush, plus later industries. San Francisco was home to a large Chinese population in the 1850s to 1870s. They had come, along with

other immigrants from throughout the world, seeking their fortune in the gold fields. Many stayed to build the railroads and to provide labor in agriculture or other economic mainstays. Partly because of their success and cultural isolation, anti-Chinese sentiment led to U.S. congressional passage in 1882 of laws barring their immigration (Hoover et al. 2002:366). Many of their commercial and social centers, called "Chinatowns," from this time period were destroyed in the 1906 San Francisco earthquake and subsequent fires.

With the completion of the transcontinental railroad in 1869, thousands of new settlers and immigrants poured into the state during the second half of the nineteenth century. California was fast becoming a national leader in the production of agricultural products. The vast Central Valley's fertile soil, combined with numerous irrigation canals, promoted the growth of large amounts of fruits, vegetables, and nuts, as well as vineyards (introduced early in the Spanish and Mexican Periods), livestock (cattle and sheep), and field crops, such as hay, cotton, rice, and barley. The economy of both the Sacramento and San Joaquin Valleys is largely based on agriculture.

At the time of its acceptance as a state in 1850, California had 27 counties. By 1907, the number of counties totaled today's 58 (Chapter 1 Figure 1-2). The original 27 counties were subdivided and increased, reflecting the continuing migration of peoples into the state during just a half-century. As noted in Chapter 1, the Qwest network backbone crosses through 36 of California's counties, listed in Table 1-2.

In addition to yellow gold, California's natural wealth also takes the form of "black gold." Native Californians had long used asphaltum to make watertight baskets for cooking and to seal many types of implements. Oil strikes were made as early as 1880 in Los Angeles and Ventura Counties. With the paving of streets and the advent of the automobile at the turn of the century, the market for California's petroleum products rapidly expanded. The state led the nation in the production of oil between 1903 and 1936. Oil production and refining became increasingly significant to the state's economy. Natural gas production is also important; visitors today can see the "grasshoppers" or horse-head oil pumps that dot the great Central Valley. In more recent years, offshore oil wells have boosted California's petroleum industry.

In the early to mid-1900s, population growth in California accelerated due to industry associated with both world wars, as well as emigration from the Midwest "dust bowl" states during the Great Depression. Immigrants were particularly drawn to the Central Valley and the Los Angeles basin, and many new towns were established that reflected the multi-ethnic origins of their inhabitants. Los Angeles County became one of the most densely occupied areas in the U.S., with ranches and farms transformed into residential subdivisions surrounding commercial and industrial centers. Hollywood's development into the entertainment capital of the world and southern California's booming aerospace industry were also key factors in the growth of the county and the state.

After the U.S. entered World War II, the defense industry in California burgeoned. There were hundreds of Army, Air Force, Navy, and Marine installations advertising for employees throughout the nation. Like the Gold Rush era, population in the state rapidly expanded. The San Francisco Bay Area and the Los Angeles Basin, in particular, grew exponentially. While thousands of people migrated to the state, others were discriminated against as one consequence of entry into the war. In February 1942, evacuation began for hundreds of people of Japanese ancestry to inland war relocation centers due to the bombing of Pearl Harbor by the Japanese government and the perceived threat to national security posed by Japanese-Americans. Approximately 120,000 Japanese and Japanese-Americans, many of them U.S. citizens, were displaced throughout the west coast on short notice by a presidential order. Today, Manzanar National Historic Site in Inyo County stands as a reminder of this episode in U.S. history.

California is currently identified with being at the forefront of addressing state and national social issues. In his Pulitzer Prize-winning novel *Grapes of Wrath*, for example, John Steinbeck chronicled the 1930s plight of many Dust Bowl refugees from Oklahoma and Arkansas that came to work in the San Joaquin Valley agricultural fields. The beginning of the farm workers labor movement and a protracted struggle to address wage and working conditions of farm labor workers also took place in Kern County when Filipino farm laborers organized a grape strike in Delano in 1965. The striking laborers formed a union, led by Cesar Chavez. Chavez later helped form the United Farmworker's Union and coordinated a non-violent grape boycott. The struggle caught the attention of national consumers, and in 1970, the grape boycott was successful in bringing improved conditions for California's farm workers. In the 1960s and 1970s, the University of California campus at Berkeley was the de facto headquarters for the Free Speech Movement that ushered in a period of acts of civil disobedience and political unrest. It became a gathering spot for political activists and members of the counterculture. University professors refused to sign loyalty oaths in the 1950s, and students protested the House Un-American Activities Commission's investigations into communism in the Bay Area in the 1960s. On-campus protests were large and vocal over the Viet Nam War throughout the 1960s and 1970s.

Today, California has a population approaching 34 million, making it the most populous state. Residents reflect the state's multi-ethnic origins and continued migration of peoples from around the globe. In the 2000 census, less than half of the respondents were non-Hispanic Caucasians, with 27 percent Hispanic or Latino, 12 percent Asian American and Pacific Islander, 7 percent African American, 5 percent Native American, and 5 percent biracial or multiracial (California 2006).

With continued growth, California remains a national leader in agriculture (fruit, vegetables, nuts, wine) and poultry production, ranching (cattle and sheep), aerospace and communications industries, as well as the film and entertainment business. In addition to its man-made parks like Disneyland, many federal parks, such as Yosemite, Redwood, and Kings Canyon-Sequoia, and state parks like Marshall Gold Discovery State Historic Park, as well as the weather, scenery, resorts, spas, and beaches, are draws for the state's tourism industry. The wealth of California's natural resources (e.g., lumber, petroleum deposits, minerals, fish) also continues to contribute to the state's growth and development.

22. SOUTHERN COASTAL SEGMENT

Qwest Communications International Inc. (Qwest) retained SWCA Environmental Consultants (SWCA) to complete the Cultural Resources Final Report of Monitoring and Findings for the Qwest Network Construction Project. The report covers the cultural resources investigation for the maintenance (replacement and repair) of fiber-optic cable within the Qwest network "backbone" throughout the state of California. The existing California backbone includes approximately 1,431 linear miles of fiber-optic network. The investigation included surveys, focused visits to previously recorded archaeological sites, and monitoring of routine maintenance of existing lines along the network backbone.

The California Public Utilities Commission (CPUC) is the designated Lead Agency for this project under the California Environmental Quality Act (CEQA). The Qwest project is subject to specific Cultural Resources Protocols, numbered 1 through 11, prepared to ensure Qwest's compliance under CPUC regulatory authority. The CPUC and the Native American Heritage Commission (NAHC) approved the Qwest Fiber Optic Project Cultural Resources Protocols in February 2000. Qwest is proud of its record of responsible environmental and cultural resources stewardship and was an enthusiastic participant in the development of the Cultural Resources Protocols for this statewide project. In addition, to the greatest extent possible, Qwest followed the preferred approach: namely, to avoid ground disturbance activities within Environmentally Sensitive Areas (ESAs) and cultural resources during all maintenance activities.

The Protocols set forth a program for the identification and protection of known cultural resources within project rights-of-way (ROWs) and for the identification, assessment, and treatment of cultural resources that might be encountered during project activities. Protocols 1 through 6 generally were applied during project planning; Protocols 7 through 11 were applied immediately prior to, during, or at the conclusion of the routine maintenance program. The document containing the Protocols is provided as Appendix A.

In compliance with the General Conditions section of the Cultural Resources Protocols, qualified lead archaeological monitors and a staff of archaeological monitors monitored for cultural resources for this project. The monitors, as well as Native American observers, worked under the supervision of a qualified Cultural Resource Specialist (CRS). The CRS also determined when a Native American observer was deemed appropriate, depending on the sensitivity of the project segment. In addition, all Qwest personnel received training in field identification of potential cultural resources, laws regarding the protection of cultural resources, and what actions to take immediately in the event of the unanticipated discovery of cultural resources or human remains.

For purposes of the investigation, the California network backbone was divided into 36 segments. This document reports on the background information, methods, and findings of the cultural resources program for the Southern Coastal segment (Segment #20 out of 36) of the California Qwest network backbone, as shown on the segment location map (Figure 20)[1]. Cultural resources include archaeological and historical objects, sites, and districts; historic buildings and structures; cultural landscapes; and sites and resources of concern to local Native American and other ethnic groups. Cultural resources may be found on the ground surface or buried beneath the surface.

[1] NOTE: All figures in this chapter are labeled according to segment number, not chapter number.

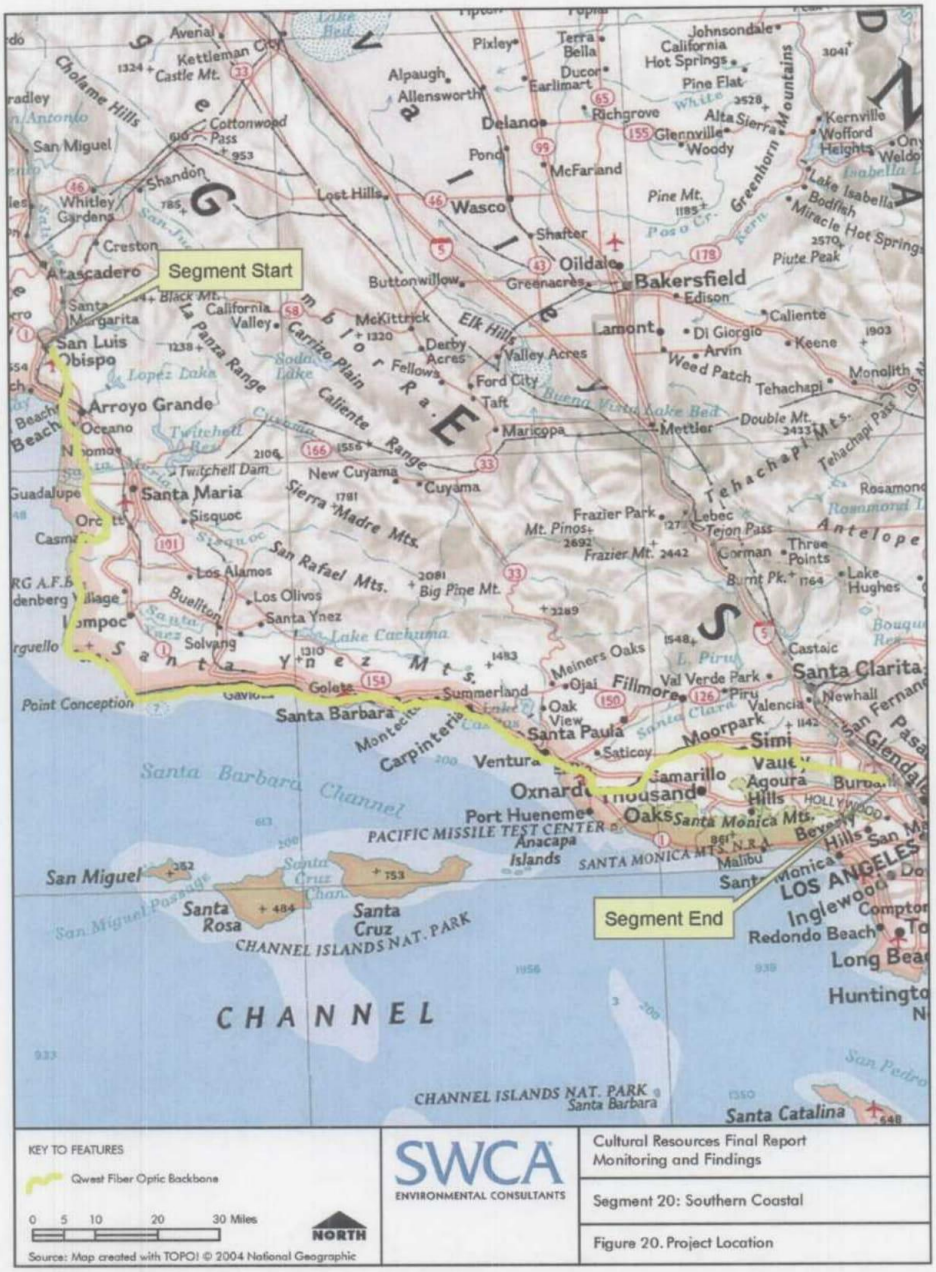


Figure 20. Segment Location Map

The Cultural Resources Final Report of Monitoring and Findings for the Qwest Network Construction Project, of which this document is a part, satisfies the requirements of Protocol 11: Final Report of Monitoring and Findings. The format of the Final Report and this chapter of that report follow *Archaeological Resource Management Reports (ARMR): Recommended Contents and Format* (Office of Historic Preservation 1990).

22.1 SEGMENT DESCRIPTION

The extensive Southern Coastal segment is along the Southern Pacific Railroad ROW within Los Angeles, San Luis Obispo, Santa Barbara, and Ventura Counties, California. The segment starts at the city of San Luis Obispo and ends at the city of Burbank. Within San Luis Obispo County, the ROW runs through or near the cities of Oceano, Pismo Beach, and Grover City. In Santa Barbara County, the ROW is between the San Luis Obispo County line and the Ventura County line. In Ventura County, the ROW runs between Rincon Point and the Los Angeles County line. In Los Angeles County, the ROW runs between the county line and Burbank. The network backbone in this area consists of a buried fiber-optic cable conduit, which can be accessed at four points per mile for maintenance and upgrading. Construction activity consists of the re-excavation of pre-existing handholes and assist holes to perform maintenance or upgrades on the fiber-optic line.

To access existing handholes, which are concrete or fiberglass vaults set below grade, the 18-inch cover of previously deposited soil immediately over the handhole cover is removed with a small mechanical excavator such as a backhoe or by hand. Assist hole openings are excavated to the depth of the conduit, up to 4 feet, and may range from 5 to 10 feet long and 2 feet wide. Then a backhoe-mounted puller adjacent to the alignment is used to assist the progress of the new fiber through the conduit. After the pulling operation is complete, the conduit is resealed and the assist hole backfilled with the excavation spoils. Soil disturbance for assist holes consists primarily of re-excavation of previously deposited trench spoils. Some possible intrusion into adjacent trench sidewalls also may occur.

The Southern Coastal segment is along the railroad ROW on the U.S. Geological Survey (USGS) 7.5-Minute Quadrangles listed in Table 22-1.

Table 22-1. Segment 20 USGS 7.5-Minute Quadrangles

Arroyo Grande NE	Moor Park	Santa Barbara
Burbank	Oat Mountain	Saticoy
Camarillo	Oceano	Simi Valley East
Canoga Park	Oxnard	Simi Valley West
Casmalia	Pismo Beach	Surf
Carpinteria	Pitas Point	Tajiguas
Dos Pueblos Canyon	Point Arguello	Tranquillon Mountain
Gaviota	Point Conception	Van Nuys
Goleta	Sacate	Ventura
Guadalupe	San Luis Obispo	White Ledge Peak
Lompoc Hills		

22.2 SETTING

22.2.1 Natural

The Southern Coastal segment is along the California coast, between San Luis Obispo and Burbank in San Luis Obispo, Santa Barbara, Ventura, and Los Angeles Counties. The segment follows the Santa Ynez Mountains, and the Southern Coast Range is to the east. It begins in the Coast Range geomorphic province and ends in the Peninsular Range province (Chapter 2, Figure 2-2). Elevations along the segment range between approximately 70–100 meters (230–330 feet) above msl.

The climate near the segment is characterized by warm, dry summers and mild, moist winters. Because the area falls within a coastal region, winters are typically warmer, and summers tend to be milder. Current winter temperatures have highs around 19 degrees Celsius (67 degrees Fahrenheit), and current summer temperatures have highs around 27 degrees Celsius (81 degrees Fahrenheit). When California initially was occupied, the climate was moister and cooler than today's Mediterranean climate (Major 1988).

Current uses along the segment include agriculture, development, recreation, and open space. Historically, the vicinity of the segment was characterized by vegetation communities that included riparian scrub/forest along drainages, coastal grasslands, and coastal scrub and chaparral in the hills (Chapter 2, Figure 2-1). With this mosaic of ecological communities, the area would have provided a very productive environment for its prehistoric occupants, one well suited to a hunting–gathering economy with a variety of water birds, small and large mammals, fish, reptiles, amphibians, and edible plant species. Following are descriptions of vegetation communities within the area of the segment and the natural resources within each community that likely would have been harvested by the area's prehistoric occupants.

22.2.1.1 Vegetation Communities

The following descriptions of vegetation communities are based upon data presented by Holland (1986), Holland and Keil (1995), and Sawyer and Keeler-Wolf (1995).

Riparian Scrub/Forest

Riparian scrub is a mid-successional stage community that typically matures into riparian forest; species composition between these habitat types, therefore, is very similar. Riparian forest can revert to riparian scrub through disturbances or frequent flooding events (Faber and Keller 1985). This community exists along streams and around seeps and springs and likely was located along local streams in the area during the area's prehistory. Many plants within this community (Table 22-2), as well as animals (Table 22-3) attracted to the water and vegetation, provided abundant subsistence resources for prehistoric and historic occupants.

Coastal Grassland

The grassland community in much of California has been converted to agricultural and other uses or has become dominated by non-native grasses, such as introduced bromes (*Bromus* spp.) and wild oats (*Avena* spp.). Historically, the grassland community contained a variety of resources. Seeds of many annual grasses would have been the primary resource of interest to prehistoric occupants, but blossoms, greens, and bulbs were also available, primarily during the spring. Coastal grasslands occur in a variety of forms

ranging from scattered perennial bunch grasses (typically *Nassella pulchra* or *N. lepida*) to stands dominated by native perennial grasses in an assemblage of geophytes (plants with underground bulbs or corms) and herbaceous annual species (Table 22-2). Wildlife species typical of grasslands and prairies are detailed in Table 22-3.

Coastal Scrub

Coastal scrub is characterized by a diversity of low, aromatic, drought-resistant deciduous shrubs and sub-shrub species. Seeds are the primary resource within the coastal sage scrub community, but edible stems, stalks, shoots, greens, roots, bulbs, and some berries also can be found. Resources of the coastal sage scrub community are primarily available in the spring. Coastal sage scrub often is distributed patchily throughout its range (O'Leary et al. 1992). Over a scale of several miles, it can be found in diverse habitat mosaics with other plant communities, particularly grassland and chaparral and oak/riparian woodland in more mesic areas. Coastal sage scrub may convert to chaparral or grassland, depending on slope, aspect, climate, fire history, and other physical factors and biological phenomena. Conversely, chaparral or grassland areas may convert to coastal sage scrub (Axelrod 1978; White 1995; O'Leary 1995; Allen et al. 1999). Characteristic plant and animal species that occur in coastal sage scrub habitat are included in Table 22-2 and Table 22-3, respectively.

Chaparral

Chaparral community occurs in the foothills near the segment. The chaparral community contains a mix of shrubs, such as manzanita (*Arctostaphylus* spp.), chamise (*Adenostoma fasciculatum*), buck brush (*Ceanothus cuneatus*), mountain lilacs (*Ceanothus* spp.), mountain-mahogany (*Cercocarpus betuloides*), and coffeeberry (*Rhamnus* spp.). Understory vegetation is sparse and limited to shade-tolerant herbs and ferns. Numerous shrub species occur in chaparral habitat, providing an abundance of seeds, berries, bulbs, shoots, and roots (Table 22-2). A diversity of animal species occurs within the chaparral community (Table 22-3).

Table 22-2. Segment 20 Plant Resources

Species	Scientific Name
Riparian Scrub/Forest Community	
Overstory Species	
Maples	*Acer* spp.
Alders	*Alnus* spp.
Fremont cottonwood	*Populus fremontii*
Mid-story Species	
Dogwoods	*Cornus* spp.
Arroyo willow	*Salix lasiolepis*
Willows	*Salix* spp.
Elderberries	*Sambucus* spp.

Table 22-2. Segment 20 Plant Resources	
Species	Scientific Name
Understory Species	
Mugwort	*Artemisia douglasiana*
Monkeyflowers	*Mimulus* spp.
California rose	*Rosa californica*
Blackberries	*Rubus* spp.
Snowberries	*Symphoricarpos* spp.
Coastal Grassland Community	
Grasses	
Fescues	*Festuca* spp.
Junegrass	*Koeleria macrantha*
Melic grasses	*Melica* spp.
Muhlies	*Muhlenbergia* spp.
Small-flowered needlegrass	*Nassella lepida*
Purple needlegrass	*Nassella pulchra*
Fescues	*Vulpia* spp.
Geophytes	
Onions	*Allium* spp.
Brodiaeas	*Brodiaea* spp.
Blue dicks	*Dichelostemma capitatum*
Blue-eyed grass	*Sisyrinchium bellum*
Herbaceous Plants	
Yellow fiddleneck	*Amsinckia menziesii*
Red maids	*Calandrinia ciliata*
Pussy paws	*Calyptridium* spp.
Suncups	*Camissonia* spp.
Owl's-clovers	*Castilleja* spp.
Blue-eyed Marys	*Collinsia* spp.
Cryptanthas	*Cryptantha* spp.
Delphiniums	*Delphinium* spp.
California poppy	*Eschscholzia californica*
Gilias	*Gilia* spp.
Everlastings	*Gnaphalium* spp.
Tarweeds	*Hemizonia* spp.
White tidy-tips	*Layia glandulosa*
Linanthus	*Linanthus* spp.
Lomatiums	*Lomatium* spp.
Lotus	*Lotus* spp.

Table 22-2. Segment 20 Plant Resources	
Species	**Scientific Name**
Lupines	*Lupinus* spp.
Microseris	*Microseris* spp.
Phacelias	*Phacelia* spp.
Popcorn flowers	*Plagiobothrys* spp.
California threadstem	*Pterostegia drymarioides*
Sanicles	*Sanicula* spp.
Checker mallow	*Sidalcea malvaeflora*
Clovers	*Trifolium* spp.
Sub-shrubs	
Milk vetches	*Astragalus* spp.
Buckwheats	*Eriogonum* spp.
Coastal Scrub Community	
California sage	*Artemisa californica*
Buckwheat	*Eriogonum* spp.
Yerba santa	*Eriodictyon* spp.
Tree lupine	*Lupinus arboreus*
Lupine	*Lupinus* spp.
Bracken fern	*Pteridium aquilinum*
Coffeeberry	*Rhamnus* spp.
Blackberry	*Rubus ursinus*
Purple sage	*Salvia leucophylla*
Black sage	*Salvia mellifera*
Figwort	*Scrophularia californica*
Chaparral Community	
Shrubs	
Chamise	*Adenostoma fasciculatum*
Manzanitas	*Arctostaphylos* spp.
Hoary-leaved ceanothus	*Ceanothus crassifolius*
Buck brush	*Ceanothus cuneatus*
Bigpod ceanothus	*Ceanothus megacarpus*
Mountain lilacs	*Ceanothus* spp.
Mountain mahogany	*Cercocarpus betuloides*
Scrub oak	*Quercus berberidifolia*
Coffeeberry, redberry	*Rhamnus* spp.
Gooseberries, currants	*Ribes* spp.
Vines	
Dodders	*Cuscuta* spp.

Table 22-2. Segment 20 Plant Resources	
Species	Scientific Name
Bedstraws	*Galium* spp.
Chaparral-peas	*Lathyrus* spp.

22.2.1.2 Typical Animal Resources

Wildlife species common to the vegetation communities in the vicinity of the Southern Coastal segment are detailed in Table 22-3.

Table 22-3. Segment 20 Common Animal Resources		
Species	Scientific Name	Communities
Amphibians		
Western toad	*Bufo boreas*	Riparian scrub/forest, Foothill woodland, Marshland
Reptiles		
California kingsnake	*Lampropeltis getula californiae*	Grasslands, Riparian scrub/forest, Scrublands, Chaparral, Foothill woodlands, Coniferous forests
Pacific gopher snake	*Pituophis catenifer catenifer*	Grasslands, Riparian scrub/forest, Scrublands, Chaparral
Western rattlesnake	*Crotalus viridis*	Scrublands, Grasslands, Foothill woodlands
Western fence lizard	*Sceloporus occidentalis*	Scrublands, Chaparral, Foothill woodlands, Coniferous forests
Upland Birds		
California quail	*Callipepla californica*	Grasslands, Scrublands, Chaparral, Foothill woodlands
Hawks	*Buteo* spp.	Grasslands, Chaparral, Foothill woodlands
Band tailed pigeon	*Patagioenas fasciata*	Coniferous forest
Western scrub jay	*Aphelocoma californica*	Chaparral, Foothill woodlands
Mockingbird	*Mimus polyglottos*	Scrublands, Chaparral, Foothill woodlands
Western meadowlark	*Sturnella neglecta*	Grasslands

Table 22-3. Segment 20 Common Animal Resources		
Species	Scientific Name	Communities
Mammals		
Desert cottontail	*Sylvilagus audubonii*	Grasslands, Scrublands, Chaparral, Foothill woodlands, Coniferous forests
Brush rabbits	*Sylvilagus bachmani*	Scrublands, Chaparral
Black-tailed jackrabbit	*Lepus californicus*	Grasslands, Scrublands
California ground squirrel	*Spermophilus beecheyi*	Grasslands
Western gray squirrel	*Sciurus griseus*	Riparian forest/scrub, Foothill woodlands, Coniferous forests
Pocket gopher	*Thomomys bottae*	Grasslands, Chaparral
Dusky-footed woodrat	*Neotoma fuscipes*	Scrublands, Chaparral, Foothill woodlands
California vole	*Microtus californicus*	Grasslands, Chaparral, Riparian scrub/forest, Foothill woodlands, Coniferous forests
Porcupine	*Erethizon dorsatum*	Chaparral, Riparian scrub/forest, Foothill woodlands, Coniferous forests
Coyote	*Canis latrans*	Grasslands, Scrublands, Chaparral, Riparian scrub/forest, Foothill woodlands, Coniferous forests
Gray fox	*Urocyon cinereoargenteus*	Grasslands, Scrublands, Chaparral, Riparian scrub/forest, Foothill woodlands, Coniferous forests
Raccoon	*Procyon lotor*	Grasslands, Chaparral, Riparian scrub/forest, Foothill woodlands, Coniferous forests
Long-tailed weasel	*Mustela frenata*	Grasslands, Chaparral, Riparian scrub/forest, Foothill woodlands, Coniferous forests
Badger	*Taxidea taxus*	Grasslands, Open woodlands
Striped skunk	*Mephitis mephitis*	Grasslands, Chaparral, Riparian scrub/forest, Foothill woodlands, Coniferous forests
Mountain lion	*Felis concolor*	Grasslands, Scrublands, Chaparral, Riparian scrub/forest, Foothill woodlands, Coniferous forests
Bobcat	*Lynx rufus*	Grasslands, Scrublands, Chaparral, Riparian scrub/forest, Foothill woodlands, Coniferous forests

Table 22-3. Segment 20 Common Animal Resources		
Species	Scientific Name	Communities
Mule deer	*Odocoileus hemionus*	Chaparral, Riparian scrub/forest, Foothill woodlands, Coniferous forests

22.2.2 Cultural

22.2.2.1 Prehistoric Overview

California prehistory is divided into three broad temporal periods that reflect similar cultural characteristics throughout the state: Paleoindian Period (ca. 9000–6000 B.C.), Archaic Period (6000 B.C. – A.D. 500), and Emergent Period (A.D. 500 – Historic Contact) (Fredrickson 1973, 1974, 1994a) (Chapter 2, Figure 2-5). The Archaic is further divided into Lower (6000–3000 B.C.), Middle (3000–1000 B.C.), and Upper (1000 B.C. – A.D. 500) Periods, generally governed by climatic and environmental variables, such as the drying of pluvial lakes at the transition from the Paleoindian to the Lower Archaic.

The Southern Coastal segment lies in what generally is described as the Santa Barbara subregion of the Southern Coast Archaeological Region, which is one of eight arbitrary organizational divisions of the state (Moratto 1984:Fig. 1) (Chapter 2, Figure 2-3). This subregion extends southward along the coast from Morro Bay to Santa Monica Bay, and includes southern San Luis Obispo County, all of Santa Barbara and Ventura Counties, northern Los Angeles County (excluding Antelope Valley in the northwest corner), and a small slice of southwest Kern County.

In southern California, researchers attempting to define local or subregional traditions have created numerous cultural chronologies using various nomenclatures (Moratto 1984). Nonetheless, these chronologies are more notable for their similarities than their differences and a concordance of the best-known chronologies for the region is presented in Figure xxx Chapter 2, Figure 2-5. Building on early studies and focusing on data synthesis, Wallace (1955, 1978) developed a prehistoric chronology for the southern California coastal region that is widely used today. Four stages are presented in Wallace's prehistoric sequence: Horizon I, Early Man; Horizon II, Milling Stone; Horizon III, Intermediate; and Horizon IV, Late Prehistoric. As noted by Moratto (1984:159), Wallace's (1955) synthesis lacked chronological precision due to the lack of absolute dates at the time of its creation, but remains generally valid today.

In addition to Wallace's classic summary, two other regional syntheses, developed by Warren (1968) and King (1981, 1990), will be referred to in the following discussion. These two increasingly specific syntheses are supported by a larger archaeological database for southern California, which includes the advent and increased use of radiocarbon dating after the 1950s.

Using the concepts of cultural ecology and cultural tradition, Warren (1968) proposed a series of six prehistoric traditions. Three of these traditions, the San Dieguito Tradition, Encinitas Tradition, and Campbell Tradition, correlated with Wallace's Horizons I, II, and, III. The Chumash Tradition, Takic Tradition (formerly "Shoshonean"), and Yuman Tradition are represented within Wallace's Horizon IV. As noted further, these ecologically based traditions are applicable to specific regions within southern California.

King (1981, 1990) later modified Wallace's (1955, 1978) sequence into three major periods of Chumash region prehistory: Early, Middle, and Late, each of which contains phases or subphases. King's synthesis is based on stylistic changes in artifacts, particularly shell beads and ornaments, from Santa Barbara Channel burial assemblages, and he interprets the continuity in development of artifacts as an indication that Chumash culture developed locally over the last 7,500 years. This chronological sequence is thus particularly relevant to archaeologists working in the Chumash sphere in the central California coast, centered on the greater Santa Barbara region.

Horizon I - Early Man/San Dieguito (ca. 10,000 – 6,000 B.C.)

When Wallace developed the Horizon I (Early Man) in the 1950s, there was little evidence of human presence on the southern California coast prior to 6000 B.C. Archaeological work in the intervening years has identified numerous sites older than this date including coastal and Channel Islands sites (e.g., Erlandson 1991; Johnson et al. 2002; Moratto 1984). The earliest accepted dates for occupation are from two of the Northern Channel Islands, located off the coast from Santa Barbara. On San Miguel Island, Daisy Cave clearly establishes the presence of people in this area about 10,000 years ago (Erlandson 1991:105). On Santa Rosa Island, human remains have been dated from the Arlington Springs site to approximately 13,000 years ago (Johnson et al. 2002).

Recent data from Horizon I sites indicate that the economy was a diverse mixture of hunting and gathering, with a major emphasis on aquatic resources in many coastal areas (e.g., Jones et al. 2002) and on Pleistocene lake shores in eastern San Diego County (see Moratto 1984:90-92). Although few Clovis-like or Folsom-like fluted points have been found in southern California (e.g., Erlandson et al. 1987), it is generally considered that the emphasis on hunting may have been greater during Horizon I than in later periods. Common elements in many San Dieguito Tradition sites, for example, include leaf-shaped bifacial projectile points and knives, stemmed or shouldered projectile points, scrapers, engraving tools, and crescents (Warren 1967:177). Subsistence patterns shifted around 6000 B.C. coincident with the gradual desiccation associated with the onset of the Altithermal, a warm and dry period that lasted for about 3000 years. After 6000 B.C., a greater emphasis was placed on plant foods and small animals.

Horizon II – Milling StonePeriod/Encinitas Tradition (6000–3000 B.C.)

The Milling StoneHorizon of Wallace (1955, 1978) and Encinitas Tradition of Warren (1968) (6000-3000 B.C.) are characterized by an ecological adaptation to collecting, and by the dominance of the principal ground stone implements generally associated with the horizontal motion of grinding small seeds; namely, milling stones (metates, slabs) and handstones (manos, mullers), which are typically shaped. Milling stones occur in large numbers for the first time, and are even more numerous near the end of this period. As testified by their toolkits and shell middens in coastal sites, people during this period practiced a mixed food procurement strategy. Subsistence patterns varied somewhat as groups became better adapted to their regional or local environments.

Wallace (1955, 1978) and Warren (1968) relied on several key coastal sites to characterize the Milling StoneHorizon and Encinitas Tradition, respectively. These include the Oak Grove Complex in the Santa Barbara region, Little Sycamore in southwestern Ventura County, Topanga Canyon in the Santa Monica Mountains, and at La Jolla in San Diego County. The Encinitas Tradition was proposed to extend southward into San Diego County where it apparently continued alongside the following Campbell Tradition, which occurred primarily in the Santa Barbara-Ventura County region beginning around 3000 B.C.

During the Milling StoneHorizon and Encinitas Tradition, stone chopping, scraping, and cutting tools are abundant, and generally made from locally available raw material. Projectile points, rather large and generally leaf-shaped, and bone tools, including awls, are generally rare. The large points are associated with the spear, and probably with an atlatl. Items made from shell, including beads, pendants, and abalone dishes, are generally rare. Evidence of weaving or basketry is present at a few sites. Cogged stones and discoidals are often purposefully buried, and are found mainly in sites along the coastal drainages from southern Ventura County southward, with a few specimens inland at Cajon Pass, and heavily in Orange County (Moratto 1984:149). Kowta (1969) attributes the presence of numerous scraper-planes in Milling Stonesites to the preparation of agave or yucca for food or fiber. The mortar and pestle, associated with the vertical motion of pounding foods, such as acorns, were introduced during the Milling StoneHorizon, but are not common.

Milling Stone Period sites are common in both coastal and inland settings in central and southern coastal California, dating as early as 8,500 years ago. The larger sites usually contain extensive midden deposits, possible subterranean house pits, and cemeteries (Glassow et al. 1988:68, Erlandson 1994:46). With an artifact assemblage dominated by milling slabs and handstones, the Cross Creek site (CA-SLO-1797) in San Luis Obispo County appears to be the oldest recorded mainland shell midden site, and the first coastal residential site to yield pre-8,000 year old dates (Fitzgerald 2000:58).

In the Santa Barbara region, Milling Stone sites occur on elevated landforms inland from the modern coast, with substantial midden deposits in many of the larger sites. A recent review (Glassow et al. 1988:68) concluded that the recorded sites in the Santa Barbara Channel area represent residential base camps, although smaller sites may yet be discovered. Although sites have been identified along the Santa Barbara coastline (D.B. Rogers 1929:256; Erlandson 1994:39–40), typical Milling Stone tools are not common on contemporaneous Channel Island sites, possibly reflecting an alternate, insular resource exploitation (Erlandson 1994:47). For example, shellfish remains, bird, fish and sea mammal bones dominate the material recovered from the approximately 8,000-year-old stratified deposits at Daisy Cave on San Miguel Island. Artifacts from the site include bipointed bone gorges, *Olivella* beads, and chipped stone tools, as well as twined sea-grass basketry and cordage (Connolly et al. 1995).

Characteristic mortuary practices during the Milling StoneHorizon or Encinitas Tradition include extended and loosely flexed burials, some with red ochre and few grave goods, such as shell beads and milling stones, interred beneath cobble or milling stone cairns. "Killed" milling stones, exhibiting holes, may occur in the cairns. Reburials are common in the Los Angeles County area, with flexed burials oriented to the north common southward in Orange and San Diego Counties.

King's Early Period (5500–1350 B.C.)

The Early Period (5500-1350 B.C.) of the central coast (King 1981, 1990) roughly corresponds to the Milling Stone Horizon and Encinitas Tradition, although the Early Period lasts longer. The Early Period is divided into three phases. The earlier Ex Phase is characterized by large flake and core tools, manos and metates, but has few bone or shell tools or beads. Mortar and pestles, probably used to process acorns from the plentiful oak trees in the Santa Monica Mountains region, were not widely used until the beginning of Phase Ey. Also during the later phases of King's Early Period, evidence of trade becomes pronounced. Artifact assemblages include steatite from the Channel Islands and obsidian from distant inland areas. Coastal peoples fished with bone hooks and hunted land and sea mammals. There is also evidence for population growth on the mainland coast and the Channel Islands, along with an increase in non-utilitarian objects of art, ritual, and decoration.

Horizon III – Intermediate/Campbell (3000 B.C. – A.D. 500)

Following the Millingstone, Wallace's Intermediate Horizon and Warren's Campbell Tradition in Santa Barbara, Ventura, and parts of Los Angles Counties, date from approximately 3000 B.C.-A.D. 500 and are characterized by a shift toward a hunting and maritime subsistence strategy, along with a wider use of plant foods. The Campbell Tradition (Warren 1968) incorporates David B. Rogers' (1929) Hunting Culture and related expressions along the Santa Barbara coast. In the San Diego region, the Encinitas Tradition (Warren 1968) and the La Jolla Culture (Moriarty 1966; M. Rogers 1939, 1945) persist with little change during this time.

During the Intermediate Horizon and Campbell Tradition, there is a pronounced trend toward greater adaptation to regional or local resources. For example, the remains of fish, land mammals, and sea mammals are increasingly abundant and diverse in sites along the California coast in the referenced region. Related chipped stone tools suitable for hunting are more abundant and diversified, and shell fishhooks become part of the toolkit during this period. Larger knives, a variety of flake scrapers, and drill-like implements are common during this period. Projectile points include large side-notched, stemmed, and lanceolate or leaf-shaped forms. Bone tools, including awls, are more numerous than in the preceding period, and the use of asphaltum adhesive is now common.

Mortars and pestles become more common during this period, gradually replacing manos and metates as milling stone implements. In addition, hopper mortars and stone bowls, including steatite vessels, appear to enter the toolkit at this time. This shift appears to be a correlate of a diversification in subsistence resources. Many archaeologists believe this change in milling stones signals a shift away from the processing and consuming of hard seed resources to the increasing importance of the acorn (e.g., Glassow et al. 1988; True 1993). It has been argued that mortars and pestles may have been used initially to process roots (e.g., tubers, bulbs, and corms associated with marshland plants), with acorn processing beginning at a later point in prehistory (Glassow 1997:86) and continuing to European contact.

Characteristic mortuary practices during the Intermediate Horizon and Campbell Tradition include fully flexed burials, placed face down or face up, and oriented toward the north or west (Warren 1968:2-3). Red ochre is common, and abalone shell dishes infrequent. Interments sometimes occurred beneath cairns or broken artifacts. Shell, bone and stone ornaments, including charmstones, are more common than in the preceding Encinitas Tradition. Some later sites include *Olivella* shell and steatite beads, mortars with flat bases and flaring sides, and a few small points.

King's Middle Period (1350 B.C.–A.D.1200)

King's (1981, 1990) central coast Middle Period lasted from approximately 1350 B.C.- A.D.1200, and is divided into five phases. This time period overlaps Wallace's (1955, 1978) Intermediate and Late Prehistoric Horizons, as well as Warren's (1968) Campbell, Encinitas, and Chumash Traditions. The Middle Period is characterized by an increase in the numbers and types of shell beads and personal ornaments. Diagnostic artifacts include stone effigies, charmstones, stone pipes, and new bead types. Stylistic changes include a shift from rectangular to circular *Haliotis* and *Olivella* beads.

Complex maritime technology also proliferated during this period. Notable introductions included circular shell fishhooks between 1000–500 B.C. (Jones and Klar 2005:466), the appearance of compound bone fishhooks between A.D. 300–900, and the development of the wooden plank canoe (*tomolo*) by at least A.D. 400-700 (Arnold 1995; Kennett 1998:357; King 1990:87-88; Rick et al. 2002; Jones and Klar 2005:466). Hand-hewn plank canoes, sewn together with cordage and then sealed with ashaltum, were "a uniquely sophisticated craft for prehistoric North America" (Jones and Klar 2005: 461). Jones and Klar also suggest the appearance of plank canoes and compound fishhooks may represent a Polynesian

connection between A.D. 400–800. These large canoes were used extensively for travel and trade between the Channel Islands and the mainland.

The introduction of shell fishhooks and plank canoes, their subsequent modifications, and the increased use of other capture devices such as nets appear to have led to a substantial focus on fishing in most coastal areas. A seasonal round settlement pattern was still followed, but large, permanently occupied settlements, particularly in coastal areas, appear to have been the norm by the end of the period (Kennett 1998). The atlatl and dart were replaced by the bow and arrow about A.D. 500, during the later phases of this period.

Horizon IV - Late Prehistoric (ca. A.D. 500–Historic Contact)

In the Late Prehistoric Horizon (Wallace 1955, 1978), which lasted from the end of the Intermediate (~A.D. 500) until European contact, there was an increase in the use of plant food resources in addition to an increase in land and sea mammal hunting. There was a concomitant increase in the diversity and complexity of material culture during the Late Prehistoric, demonstrated by more classes of artifacts. The recovery of a greater number of small, finely chipped projectile points, usually stemless with convex or concave bases, suggests an increased utilization of the bow and arrow rather than the atlatl and dart for hunting. Other items include steatite containers, circular shell fishhooks, perforated stones, arrow straighteners, and a variety of bone tools and personal ornaments. There is also an increased use of asphalt adhesive.

During the Late Prehistoric, sites contain beautiful and complex objects of utility, art, and decoration. Ornaments include drilled whole *Chione* and drilled abalone. Steatite effigies become more common, with *Pecten* shell rattles common in middens. Mortuary customs are elaborate, include cremation and interment, with abundant grave goods. Pottery and smoking pipes occur in some locations during this period. Most of the rock art found today in the Chumash sphere along (and inland of) the central coast is thought to date to this period.

In Warren's (1968) cultural ecological scheme, the period between A.D. 500 and European contact is divided into three regional patterns. The Chumash Tradition is present mainly in the region of Santa Barbara and Ventura Counties; the Takic or Numic Tradition in the Los Angeles and Orange Counties region; and the Yuman Tradition in the San Diego region.

The seemingly abrupt changes in material culture, burial practices, and subsistence focus at the beginning of the Late Prehistoric period are considered the result of a migration to the coast of peoples from inland desert regions to the east. In addition to the small triangular and triangular side-notched points similar to those found in the desert regions in the Great Basin and Lower Colorado River, Colorado River pottery and the introduction of cremation in the archaeological record are diagnostic of the Yuman Tradition in the San Diego region. This combination certainly suggests a strong influence from the Colorado Desert region. In Los Angeles and Orange Counties, similar changes (introduction of cremation, pottery, and small triangular arrow points) are considered the result of a Takic migration to the coast from inland desert regions. This Takic or Numic Tradition was formerly referred to as the "Shoshonean wedge" or "Shoshonean intrusion" (Warren 1968). This terminology, used originally to describe a Uto-Aztecan language group, is generally no longer employed in order to avoid confusion with ethnohistoric and modern Shoshonean groups who spoke Numic languages (Heizer 1978:5; Shipley 1978:88, 90). Modern Gabrielino/Tongva, Juaneño, and Luiseño in this region are considered the descendants of the prehistoric Uto-Aztecan, Takic-speaking populations that settled along the California coast during this period, or perhaps somewhat earlier.

After A.D. 500, a wealth of ornaments, ceremonial, and artistic items characterize the Chumash Tradition (Warren 1968) along the central coast and offshore islands. According to Warren, it seems likely that this culture developed from that present in that area during the Intermediate, and indeed from the Campbell Tradition. Ground stone items include bowls, mortars and pestles, balls, grooved stones, doughnut stones, stone beads, pendants, pipes, tubes, and mammal effigies. Projectile points, both large and small, were typically non-stemmed leaf-shaped, with convex or concave bases. Chipped stone implements also included drills and scrapers. Utilitarian objects were made from bone, including awls, fishhooks, whistles, and tubes, and from shell, including fishhooks and abalone shell dishes. Shell beads and ornaments were abundant, and bowls, pestles, pipes, and stone tubes were inlaid with shell beads and engraved. Bowls, pipes, and ornaments were commonly manufactured from steatite.

Characteristic mortuary practices during the Chumash Tradition include burial in crowded cemeteries. Burials are normally flexed, placed face down, and oriented toward the north or west (Warren 1968:5). The interments are typically marked by vertical pieces of whalebone, and have abundant grave goods, such as ornaments, effigies, and utensils.

King's Late Period (ca. A.D. 1200– Historic Contact)

Chumash society underwent widespread economic, social, and political change during a Middle-to-Late Period transition around A.D.1200 (e.g., Arnold 1992, 1993, 2001). Fishing increased in importance (Colten 1995), while competition over scarce resources lead to increased levels of disease and warfare (Lambert and Walker 1991). The so-called Chumash money bead, the *Olivella* callus cup, was introduced and trade between inland and coastal areas intensified. This increased importance of trade may have helped buffer local shortfalls of wild food resources. Island Chumash, for example, traded such items as beads, shell, and steatite in exchange for acorns, pine nuts, and obsidian from coastal groups, who in turn traded with groups further inland. Status differentiation is clearly apparent in the archaeological record during the Middle to Late transition, suggesting that these changes allowed for the construction and maintenance of the permanent elite that characterized the sociopolitical structure of Chumash society during the ethnohistoric era.

King (1981, 1990) divides the Late Period into three phases, which dated after A.D. 1200 and lasted until the Mission era. During this period, the full development of Chumash culture, one of the most economically and socially complex hunting and gathering groups in North America, occurred (Arnold 1987). Class differentiation, inherited chieftainship, and religious beliefs developed along with a dramatic increase in population. Objects of art and decoration are even more abundant during this period, with most of the rock art viewed today in Chumash territory probably dating to this period. Shell beads continue to be a primary medium of exchange, and are common in high status burials. Fishing continued to increase in importance during the Late Period and along with sea mammals, waterfowl, and shellfish supported villages of nearly 1,000 individuals clustered along the coast. Permanent inland settlements were supported by various natural resources, including deer and elk, smaller game animals, and plants. These inland villages were economically allied with the larger coastal villages. Characteristic mortuary practices in cemeteries are described above for the Chumash Tradition. In addition, high status graves were opulently decorated and marked by tall, inscribed poles.

22.2.2.2 Ethnographic Overview

The Southern Coastal segment runs parallel to the central California Pacific coastline extending southward from the city of San Luis Obispo, turning inland at the city of Ventura, and then traveling across the Oxnard Plain and through the Santa Monica Mountains until emerging into the San Fernando Valley and ending at Burbank in the east end of the valley. Two Native American groups historically

occupied the area (Kroeber 1925; Bean and Smith 1978; Greenwood 1978; Grant 1978a). The northern part of the segment is within a portion of Chumash lands; the southern part of the segment is within Gabrielino (Tongva) territory.

Chumash

The Southern Coastal segment starts within Chumash tribal territory just south of the Cuesta Pass, remaining in their lands through San Luis Obispo, Santa Barbara, and Ventura Counties until it leaves the Santa Monica Mountains. The term "Chumash" is derived from a Native American word, initially applied to the people living on Santa Cruz Island (King 1994a:6). Chumash now refers to the entire linguistic and ethnic group of societies that occupied the coast between San Luis Obispo and northwestern Los Angeles County, including the Santa Barbara Channel Islands, and inland to the western edge of the San Joaquin Valley. Neighboring groups included the Salinan to the north, the Southern Valley Yokuts and Tataviam to the east, and the Gabrielino (Tongva) to the south.

The Chumash spoke six closely related Chumashan languages, which have been divided into two broad groups—Northern Chumash (consisting only of Obispeño) and Southern Chumash (Purisimeño, Ineseño, Barbareño, Ventureño, and Island Chumash) (Mithun 2001:389). While Island Chumash was the most divergent of the five southern languages, Ventureño may have had the most internal variation with at least six distinct dialects. The Chumashan language currently is considered an isolate stock with a long history in the Santa Barbara region, and not part of the Hokan linguistic family (Mithun 2001:304).

At the time of Spanish contact in 1542 and again in 1769, the early accounts describe settlement along the Santa Barbara Channel coast as heavily populated. Estimates of total Chumash population for the initial contact period vary from 8,000–10,000 (Kroeber 1925:551) to 18,000–22,000 (Cook and Heizer 1965:21). For the Ventureño group, village estimates vary from 23 (Kroeber 1925:Plate 48) to 41 (King 2000:Map 1), with King estimating the village population in 1770 from 2,500–4,200. Diarists on the 1769 Portolá expedition described the village of *Shisholop* at the mouth of Santa Clara River near today's City of Ventura as a large and nicely laid out "rancheria" with 30 large houses, 15 canoes, and at least 900 people (Brown 2001:389, 397). Some coastal Barbareño Chumash villages near Goleta and Dos Pueblo were even larger, with over 1,000 inhabitants and 120 houses (Grant 1978a:510). Inland, the Spanish noted the villages were smaller, with from 100–500 occupants.

The Southern Coastal segment passes alongside many former Chumash settlements: *Tilhini* (near San Luis Obispo), *Kulalt qepe*, *Pismu'* (Pismo Beach), *Kasmali*, *'onoqto*, and *Xalam* in Obispeño and Purisimeño territory (Greenwood 1978:520); *Kumqaq*, *shisholop*, *Katatayut*, *'onomyo* (Gaviota Pass), *Michiyu*, *Tuxmu'*, *Shish uchi'*, *Kasil*, *K'ahu*, *Mikiw*, *juyamu*, *Heliyi*, *Saxpili*, *Helo'* (Goleta), *'alka'as*, *Mispu*, *Swetete*, *Shalawa*, *Sihelel* (Santa Barbara), *Tenekness*, *Kolok*, *Mishopshno* (Carpenteria), *Shukuw*, *Shishwashkui*, and *Mushum* in Ineseño and Barbareño lands; *Chwayik*, *Micqanaqan*, *Chikachkack*, and *Shisholop* (Ventura) and *Hipuk* (Westlake Village) in Ventureño lands (Grant 1978a:509).

Near the coast in the large, permanent Chumash villages, hemispherical dwellings covered by grass or tule mats were arranged in close groups. These were described as "spacious and fairly comfortable" by the Spanish, with light coming in through the top hole where smoke also could exit. In rainy weather, these holes were covered with animal skins. Houses were usually very large (15 meters in diameter) and "able to lodge 60 persons and more without hindrance" (Brown 2001:391). Inland, around Santa Clara, houses in smaller villages "resembled the rectangular, mat-covered houses of the adjacent Takic speakers but they had many artifacts of types the Spanish later described from the coast" (Grant 1978a:518). The houses "were sometimes partitioned into rooms by hanging mats," and in some areas people used wooden sleeping platforms raised off the ground covered with mats (McCall and Perry 1986:25). The chief's

house was often the largest because of his larger household and hospitality duties. The villages also contained storehouses, one or more subterranean sweat lodges, and a semi-circular dance ground and associated sacred ceremonial enclosure, with a nearby game field surrounded by low walls (McCall and Perry 1986:18-19). Satellite gathering or processing areas included earth ovens used to roast yucca and other foods, rock shelters, quarries, and bedrock mortars for processing acorns and similar plant resources (King 1994b:116).

Each Chumash village had a formal cemetery, generally separate from the village proper. Ethnographic records indicate that cemeteries were marked by tall painted poles and frequently had an entrance area where ceremonies were performed. Within the cemetery, stone, wood, or bone markers identified burial sites. Occasionally, individual burials were marked by painted boards; the markings indicated the occupation or clan of the deceased (Gamble et al. 2001:191). Prior to burial, a wake was held in a sacred enclosure. Individuals then were buried face down in a flexed position amidst personal objects, effigies, steatite pipes, bowls, ollas, beads, and other grave goods. Archaeological studies have identified separate sections for elite versus commoner families within the cemetery grounds (King 1969).

Chumash society was divided into three classes (McCall and Perry 1986:40). Upper class members held the important social and religious positions, including chief, canoe builders and owners, and members in the *'antap* society. The middle class contained about half the population, mainly hunters, gatherers, and general workers. Social outcasts and unproductive people populated the lower class. Unlike their southern neighbors, the Chumash did not have a lineage organization; most elite marriages were matrilocal.

Every village had a chief, or *wot*. The chief was usually male, but hereditary rights to this role were passed down matrilinealy (Johnson 1987). The *wot* had both political and religious ceremonial duties to perform; his assistant, the *paha*, helped officiate at rituals. Other officials known as *ksen* were "messengers who traveled from place to place, making announcements and gathering news for the *wot*" (McCall and Perry 1986:40). A large village usually had three to four chiefs, one of whom would be the head chief. This pattern was seen throughout Ventureño territory, as noted by the Portolá expedition for villages with populations of 100–500 people (Brown 2001:355, 389). Other portions of Chumash territory were organized into provinces, or groups of villages ruled by a single chief.

Chumash society also was organized into craft guilds. Different crafts were involved—canoe building, bead making, basketry making, woodworking, and weapon making were among them (Miller 1988:108). Being a guild member had strong economic advantages. Membership was primarily open to the upper class, and ranking members of the guilds were *'antap* society members. Specific crafts, such as money bead making, an exclusive Island Chumash product, held regional monopolies.

Chumash subsistence varied between coastal and inland resources, but like many indigenous Californian groups, the acorn was a dietary staple. Acorns were gathered in the autumn and stored in villages, where they were ground to a meal, leached, and then cooked daily. In addition to acorns—mainly from the coast live oak—other nuts, such as pine nuts and walnuts, were collected. Chumash diet also included cattail roots, fruits and pads from *Opuntia* cactus, and bulbs and tubers of plants such as amole (Miller 1988:89). Yucca stalks were harvested and roasted, and the buds and flowers also were gathered. Staples included small hard seeds of several annual and perennial plants such as grass, chia and other sages, and buckwheat. Seasonal resources included berries (blackberry, elderberry, grape, madrone, laurel, wild cherry), mushrooms, and cress.

Seeds were processed using various grinding implements (wooden and stone mortars, pestles, bedrock mortars, handstones). Tools used to gather plant foodstuffs consisted of several forms of gathering baskets, woven seed beaters, and sharpened digging sticks. A variety of basket styles were manufactured for the processing and serving of foods, for straining acorn meal, for leaching the meal, and for cooking

acorn meal and other foods in water-tight baskets (Miller 1988:49). Other baskets were made for storing grains, acorns, meal, prepared foods, and other natural resources. Carved steatite bowls, ollas, and comals also were used for cooking, and meals were served on wooden plates and bowls.

On the coast, the wooden plank canoe (*tomol*) was employed in the pursuit of marine mammals and fish. The *tomol* not only facilitated marine resource procurement but also facilitated an active trade network maintained by frequent crossings between the mainland and the Channel Islands. Seals, sea lions, otters, porpoises, and whales were hunted with harpoons. Deep-sea fish such as bonito, sea bass, halibut, barracuda, yellowtail, and shark were caught with hooks and lines, harpoons, and deep or shoreline nets. Both women and men shared the task of gathering shellfish. Digging sticks were used to procure some species of clams and scallops from the beach sands. Flat bone or wood wedges were used to pry mussels and abalone from the near-shore rocks.

Local Chumash populations captured mule deer, antelope, cottontail, jackrabbit, mice, and wood rats; mountain and valley quail, dove, and resident and migratory waterfowl, among other birds; and various types of reptiles, amphibians, and insects. Predators included mountain lion, coyote, bobcat, and fox. Larger animals, such as mule deer, coyote, and fox, were hunted with the bow and arrow; smaller game were captured with traps and snares. Hunting parties comprised up to eight people (Brown 2001:375). Individuals used throwing sticks to kill rabbits and hares; communal hunting groups used large nets and clubs.

Trade was an integral component of Chumash subsistence, and trade relationships among inland, coastal, and island groups were well established. Island Chumash traded beads, shell, fish bones, otter and seal skins, steatite, chert bifaces, and baskets, among other goods. In return, they received acorns, pine nuts, chia sage, deer and rabbit skins, bows and arrows, serpentine bowls, and obsidian from coastal groups. In turn, coastal Chumash traded with inland Chumash who traded with the Yokuts, Tataviam, Kitanemuk, and Gabrielino (Miller 1988:112). The trade network increased the diversity of goods available throughout Chumash territory, encouraged craft specialization, and established the coastal villages as middlemen. The coastal villages had access to the abundant marine resources, built and kept the boats that moved trade goods across the channel, and also made a profit with each exchange.

The Chumash are well known for their material culture, which included highly decorated utilitarian tools and ceremonial items, as well as rock art (Grant 1978a:517, 1978b:532). Carved steatite items included bowls decorated with beads, medicine tubes, effigies, beads, pipes, and charmstones. Rock paintings occur at sheltered locations near the coast and inland to the farthest reaches of the Chumash sphere. In the interior region inhabited by the Cuyama Chumash who spoke the Ineseño dialect, archaeological and ethnographic evidence strongly suggest a Chumash affiliation with the Carrizo Plain rock art, where the rock paintings—mostly pictographs comprised of polychrome abstract designs and some petroglyphs—reach a high degree of development. Despite being recognized as the location of the most extensive rock art, the Carrizo Plain area is among the least studied of Chumash regions. The remote location of the majority of Chumash rock art suggests the paintings may represent shrines or sacred spots.

Chumash religion was well developed and integrated into everyday life. Rituals and ceremonies were observed throughout the year; the most important was performed at the Winter Solstice, when a large festival was held in honor of the Sun. Astronomers carefully marked the shortest day of the year to know when to begin the rites and dances and also used the observation to recalibrate their calendar. The *Hutush* autumn harvest festival, a time of thanksgiving, celebrated the Earth Goddess as provider of all foods (McCall and Perry 1986:43-44). There were also initiation ceremonies for the young men into the mysteries of the religion, others for the first naming of children, for curing, and so forth. The *'antap* society, restricted to the upper class, was also the federation of shamans who controlled ceremonial observances.

The earliest European visits to the Chumash region began with the Cabrillo, Viscaino, and other naval explorers to the southern California coast in the 1500s. The first land expedition through the study area occurred in A.D. 1769 when Gaspar de Portolá led an overland expedition from the newly established settlement at San Diego to San Francisco Bay. The first permanent non-indigenous settlement in the general area occurred with the founding of Mission San Luis Obispo in 1771, and soon numerous troop and supply trains passed through Chumash lands on the way from San Diego to more northerly missions and outposts. Within Chumash lands, additional Franciscan missions were founded at La Purísima, Santa Ynez, Santa Barbara, San Buenaventura, and San Fernando. When the pueblo of Los Angeles was established in 1781, the Ventureño Chumash were recruited as labor.

The effect of mission influence upon local native populations was devastating. The dissolution of their culture alienated them from their traditional subsistence patterns, social customs, and marriage networks. European diseases, against which they had no immunity, reached epidemic proportions, and Chumash populations were decimated (Johnson 1987). The increase in agriculture and the spread of grazing livestock into their collecting and hunting areas made maintaining traditional lifeways increasingly difficult. Although most Chumash eventually submitted to the Spanish and were incorporated into the mission system, some refused to give up their traditional existence and escaped into the interior regions of the state, as refugees living with other tribes.

With the secularization of mission lands after 1834, traditional Chumash lands were distributed among grants to private owners. Only in the area of Mission Santa Barbara and Mission San Fernando del Rey were several small ranchos granted to neophytes of these missions, providing a secure home and gardens for a few people. Most Chumash managed to maintain a presence in the area into the early twentieth century as cowboys, farm hands, and town laborers. The Catholic Church provided some land near Mission Santa Ynez for ex-neophytes. This land eventually was deeded to the U.S. government in 1901 as a 127-acre reservation. This is the sole Chumash reservation, with a recent enrollment of only 158 people (California Indian Assistance Program 2003:144). Since the 1970s, Chumash descendants living in the City of Santa Barbara and the rural areas of San Luis Obispo, Santa Barbara, and Ventura Counties have formed social and political organizations to aid in cultural revitalization, to protect sacred areas and archaeological sites, and to petition for federal recognition. Today, the Santa Ynez Band of Chumash Indians is the only federally recognized Chumash tribe.

Gabrielino/Tongva

The Southern Coastal segment ends in the San Fernando Valley, bounded on the south by the Santa Monica Mountains and on the north by the foothills of the San Gabriel Mountains. This valley was historically occupied by the Western Tongva (Gabrielino) social group of Native Americans (Bean and Smith 1978). Tongva villages along the segment consist of *Momonga*, *Hukxa'oynga* (Chatsworth), and *Wiqanga* ("prickly pear cactus fruit," near Burbank in the Verdugo Hills) (McCawley 1996:39-40).

The name "Gabrielino" denotes those people who were administered by the Spanish from Mission San Gabriel, which included people from the Gabrielino proper, as well as other social groups (Bean and Smith 1978; Kroeber 1925). Therefore, in the post-contact period, the name does not necessarily identify a specific ethnic or tribal group. The names Native Americans in southern California used to identify themselves have, for the most part, been lost. Many contemporary Gabrielino identify themselves as descendents of the indigenous people living across the plains of the Los Angeles Basin and use the native term *Tongva* (King 1994a:12).

Tongva lands encompassed the greater Los Angeles Basin, including the inland valleys of San Fernando, San Gabriel, and Pomona, the Pacific Ocean coastal region from Topanga Canyon in the north to Newport

Bay in the south, and three Channel Islands, San Clemente, San Nicolas, and Santa Catalina (Bean and Smith 1978:538; Kroeber 1925:636; McCawley 1996). Inland, their territory was bounded on the north by the Chumash at Topanga Creek, and on the south by the Juaneño at Aliso Creek. To the east past the San Gabriel Mountains were the Vanyume Serrano, the mountain Serrano, and the Cahuilla. The southern boundary of Gabrielino territory at Aliso Creek was based on anthropological fieldwork conducted by Kroeber in 1907 (Kroeber 1925), and the Juaneño currently dispute this defined northern boundary of their lands with the Gabrielino.

The Gabrielino language, as well as that of the Juaneño and Luiseño to the south, was derived from the Takic family, part of the Uto-Aztecan linguistic stock, which can be traced to the Great Basin area (Mithun 2001:539). This language group represents an origin quite different from that of the Chumash to the north and the Ipai and Tipai further south. The language of the Ipai and Tipai is derived from the Hokan stock of the Yuman language family originating in the American Southwest. The Chumash language is unlike both the Hokan and Uto-Aztecan stocks and may represent a separate lineage (Mithun 2001:390). Linguistic analysis suggests that Takic-speaking immigrants from the Great Basin area began moving into southern California around 500 B.C. (Kroeber 1925:579). This migration may have displaced both Chumashan and Yuman speaking peoples, but the timing and extent of the migrations and their impact on indigenous peoples is not well understood.

The Gabrielino language consisted of two main dialects, Eastern and Western; the Western included much of the coast and the Channel Island population (King 2004). Lands of the Western group encompassed much of the western Los Angeles Basin and San Fernando Valley, northward along the coast to the Palos Verdes Peninsula (McCawley 1996:47).

Early historical records concerning the Tongva are available through Spanish voyages of exploration in the sixteenth century, and accounts by Spanish missionaries and colonists in the middle eighteenth century. The Spanish military and mission records are considerable. Other reports by agents of the United States Office of Indian Affairs date from the 1850s. Ethnographers were late on the scene and collected little information after 1900, the exception being John Harrington in the 1910s. Published ethnographies include Kroeber (1925), Johnston (1962), Bean and Smith (1978), and McCawley (1996).

Kroeber (1925:621) considered the Tongva "…to have been the most advanced group south of Tehachapi, except perhaps the Chumash. They certainly were the wealthiest and most thoughtful of all the Shoshoneans of the State, and dominated these civilizationally wherever contacts occurred." Tongva society was organized along patrilineal non-localized clans, a characteristic Takic pattern. Clans consisted of several lineages, each with their own ceremonial leader. The leader of the primary lineage was the chief of the entire clan. One or two clans generally made up the population of a village. Even though the Tongva did not have a distinctly stratified society, there were two general classes of individuals: elites and commoners. The elites consisted of primary lineage members, other lineage leaders (who maintained a separate ceremonial language), the wealthy, and the elite families of the various villages who commonly married among themselves. The commoner class contained those from "fairly well-to-do and long-established lineages" (Bean and Smith 1978:543). A third, lower class might be recognized as consisting of slaves taken in war and individuals, unrelated to the inhabitants, who drifted into the village. The chief, or *tómyaar*, always came from the primary lineage of the clan/village.

The Tongva established large, permanent villages in the fertile lowlands along rivers and streams, and in sheltered areas along the coast, stretching from the foothills of the San Gabriel Mountains to the Pacific Ocean. A total tribal population has been estimated of at least 5,000 (Bean and Smith 1978:540), but recent ethnohistoric work suggests a number approaching 10,000 seems more likely (O'Neil 2002). Several Tongva villages appear to have served as trade centers, due in large part to their centralized geographic position in relation to the Southern Channel Islands and to other tribes. These villages

maintained particularly large populations and hosted annual trade fairs that would bring their population to 1,000 or more for the duration of the event. *Puvunga* in Long Beach and *Swuangna* at San Pedro are examples of Tongva village trade centers.

Houses constructed by the Tongva were large, circular, domed structures made of willow poles thatched with tule that could hold up to 50 people (Bean and Smith 1978). Other structures served as sweathouses, menstrual huts, ceremonial enclosures, and probably communal granaries. Cleared fields for races and games, such as lacrosse and pole throwing, were created adjacent to Tongva villages (McCawley 1996:27). Archaeological sites comprised of villages with various sized structures have been identified.

The fundamental economy of the Tongva was one of subsistence gathering and hunting. The surrounding environment was rich and varied, and the tribe exploited mountains, foothills, valleys, deserts, riparian, estuarine, and open and rocky coastal eco-niches. Like the majority of native Californians, acorns were the staple food (an established industry by the time of the early Intermediate Period). Acorns were supplemented by the roots, leaves, seeds, and fruits of a wide variety of flora (e.g., islay, *Opuntia*, yucca, sages, and agave). Fresh-water and salt-water fish, shellfish, birds, reptiles, and insects, as well as large and small mammals, were also consumed. The Tongva are among several southern California native groups who were noted for periodically setting fire to the grassy plains and brush-covered hillsides to promote the growth of harvestable grass seeds, discourage the growth of chaparral, and create pasture for deer and antelope.

A wide variety of tools and implements were employed by the Gabrielinos to gather and collect food resources. These included bows and arrows, traps, nets, blinds, throwing sticks and slings, spears, harpoons, and hooks. Many plant foods were collected with woven seed beaters, several forms of burden baskets, carrying nets, and sharpened digging sticks, sometimes with stone weights fitted onto them. Groups residing near the ocean used ocean-going plank canoes (known as a *ti'at*) and tule balsa canoes for fishing (McCawley 1996:7). The ocean-going canoes were capable of holding six to fourteen people and were also used for travel and trade between the mainland and the Channel Islands. The tule balsa canoes were used for near-shore fishing.

Foods were processed with a variety of tools, including portable and bedrock mortars, pestles, basket hopper mortars, manos and metates, hammerstones and anvils, woven strainers and winnowers, leaching baskets and bowls, woven parching trays, knives, bone saws, and wooden drying racks. Food was consumed from a number of woven and carved wood vessels. The ground meal and unprocessed hard seeds were stored in large finely woven baskets, and the unprocessed acorns were stored in large granaries woven of willow branches and raised off the ground on platforms. Santa Catalina Island steatite was used to make comals, ollas, and cooking vessels that would not crack like regular stone under repeated firings (Kroeber 1925:629).

As part of the extensive exchange network, large amounts of steatite quarried on Santa Catalina Island were traded with numerous other groups on the coast and inland. In addition to cooking vessels, steatite was used to make effigies, ornaments, and arrow straighteners. Tongva obtained obsidian, acorns, and seeds, among other items, from inland Tataviam and Vanyume (Desert) Serrano in exchange for coastal resources, such as steatite, shell beads, and dried fish. The Tongva also traded with other coastal groups, exchanging large, baked clay pipes obtained from the Kumeyaay or Luiseño to the south and with the Chumash on their northern border.

At the time of Spanish contact, the basis of Tongva religious life was the Chinigchinich Cult, centered on the last of a series of heroic mythological figures. Chinigchinich gave instruction on laws and institutions, and he also taught the people how to dance, the primary religious act for this society. He later withdrew into heaven where he rewarded the faithful and punished those who disobeyed his laws (Kroeber

1925:637-638). The Chinigchinich religion seems to have been relatively new when the Spanish arrived; the religion was in the process of spreading south into the Southern Takic groups even as Christian missionization was taking place and may have been influenced by Christianity.

Deceased Tongva were either buried or cremated (Harrington 1942; McCawley 1996). McCawley (1996:157) states that "[i]nternment may have been the more standard practice on the Channel Islands and the mainland coast directly opposite, perhaps reflecting either the influence of Chumash mortuary practices or else a scarcity of fuel suitable for funeral pyres." During the Contact Period, cremation was the standard practice for the mainland Tongva. Cremation ashes have been found in archaeological contexts buried within stone bowls and in shell dishes (Ashby and Winterbourne 1966:27). Archaeological and ethnographic data describe a wide variety of grave offerings, including seeds, stone grinding tools, otter skins, baskets, wood tools, shell beads, bone and shell ornaments, and projectile points and knives. Offerings varied with the sex and status of the deceased. Graves were sometimes marked, and in the San Pedro area headstones or boards were etched with figures (Heizer 1968:fn. 66).

European contact with the Tongva occurred as early as 1542 with the Spanish expedition led by Juan Rodriguez Cabrillo, followed by Sebastián Vizcaíno in 1602, both of who visited Santa Catalina Island. Colonization of Tongva lands did not begin in earnest until after the inland expedition led by Gaspar de Portolá in 1769; by 1771, four missions had been constructed in the region, including Mission San Gabriel, located in Los Angeles County and founded in September 1771 (Engelhardt 1927a). The Franciscan missions, charged with converting the Native Americans to Christianity and with acculturating them to European society and economy, began relocating them to mission grounds.

Known as *reducción*, relocation and baptism initially involved the Eastern Gabrielino of the plains as far south as the Santa Ana River and west to the Los Angeles River. The missionaries later proselytized the Western Gabrielino living west of the Los Angeles River, on the southern Channel Islands, and the interior groups to the east and south. Between 1780 and 1794, the majority of people from the southeast region were baptized and removed to the mission (King 2004:Figs. 7 and 8). Mission San Fernando del Rey was founded in 1797, and its priests pushed into the lands of other tribes located to the north and west and also converted Tongva people along the Los Angeles River and its tributaries. While mission life did give indigenous Californians some skills needed to survive in a rapidly changing world, much traditional cultural knowledge was lost during this era, as populations were moved and decimated by introduced diseases for which the people had no immunity.

With the founding of the Pueblo of Los Angeles in December 1781, civilian settlers came into the region, soon followed by retiring military men and their families from the Spanish garrisons (Engelhardt 1927b:48-51). The soldiers were given vast tracts of land by Spanish authorities within traditional Tongva subsistence areas. The Native Americans (both neophytes from the disintegrating missions and *cimarrones*, or gentile Indians) were among those who worked on the large ranchos. After governmental control of California shifted to Mexico, the missions were formally secularized in 1834, and the extensive mission lands were divided into private land grants, claimed by the growing ranchero class. With the migration of farmers to southern California after the Mexican-American War of 1846, the local native population, who continued to work as laborers, was soon a minority that was often lumped together with the Mexican-American community. Many allied themselves with remaining Native American communities in the Tehachapi and San Bernardino Mountains.

In the early twentieth century, Tongva who still lived in San Gabriel neighborhoods near the old mission joined the Mission Indian Federation and sought redress from the federal government over lost lands. A generation later, partly as an outgrowth of the civil rights movement, Tongva started to form political organizations of their own to affect handling of ancestral remains discovered at construction sites and to seek federal acknowledgement of their tribe. There are currently five such organizations with total

membership approaching nearly a thousand people. They are still struggling to receive federal recognition.

22.2.2.3 Historic Overview

Post-contact history for the state of California generally is divided into three specific periods: the Spanish Period (1769–1822), the Mexican Period (1822–1848), and the American Period (1848–present). As discussed in more detail in Chapter 2 of this report, although there were brief visits by Spanish, Russian, and British explorers from 1529–1769, the beginning of Spanish settlement in California occurred in 1769 with a settlement at San Diego and the first (Mission San Diego de Alcala) of 21 missions established from 1769–1823. After the 1822 revolution by Mexico against the Spanish crown, the Mexican Period is marked by an extensive era of land grants, most of which were in the interior of the state, and by exploration by American fur trappers west of the Sierra Nevada Mountains.

With the signing of the Treaty of Guadalupe Hidalgo in 1848, ending the Mexican–American War, California became a territory of the United States. The discovery of gold in 1848 at Sutter's Mill near Sacramento and the resulting Gold Rush era influenced the history of the state and the nation. The rush of tens of thousands of people to the gold fields also had a devastating impact on the lives of indigenous Californians, with the introduction and concentration of diseases, the loss of land and territory (including traditional hunting and gathering locales), violence, malnutrition, and starvation. Thousands of settlers and immigrants continued to pour into the state, particularly after the completion of the transcontinental railroad in 1869.

With continued growth, California continues to be a national leader in agriculture and poultry production, ranching (cattle and sheep), aerospace and communications industries, as well as the film and entertainment business. The wealth of California's natural resources (e.g., lumber, petroleum deposits, minerals, fish) also continues to contribute to its growth and development.

San Luis Obispo County

European contact in the San Luis Obispo County region may have begun as early as 1587 with the visit of Pedro de Unamuno to Morro Bay, although some scholars have questioned this based on the ambiguity of Unamano's descriptions (Mathes 1968). A visit to the region in 1595 by Sebastian Rodriguez Cermeño is better documented (Jones et al. 1994). The earliest well-documented descriptions come from members of Gaspar de Portolá's land expedition, which passed through the region in 1769 (Squibb 1984). Early travelers in the region reported seeing no large Native American villages, such as those noted in the Santa Barbara area.

Mission San Luis Obispo de Tolosa was founded in 1772, the fifth of 21 missions established by the Spanish in California. Within the boundaries of today's city of San Luis Obispo, the mission has been carefully restored and is an excellent example of the period architectural style. The secularization of the missions during the Mexican Period resulted in approximately 500,000 acres of former mission lands being granted to Mexican citizens in San Luis Obispo County. The period of prosperity associated with the ranchos extended into the American Period, which began in 1846 when the county became a possession of the United States (San Luis Obispo 2006).

In 1869, Walter Murray founded the San Luis Obispo Tribune, providing locally based news for town and county residents (San Luis Obispo 2006). Roads were constructed throughout the county in the 1870s, primarily by Chinese laborers. In 1872, Captain John Harford began construction on the Pacific Coast Railway, which linked his wharf in the coastal town of Avila with San Luis Obispo.

During the southern California land boom of the 1880s, San Luis Obispo County was described as "the great butter and cheese belt of southern California," with affordable land priced between $18 and $25 per acre (Dumke 1944). By April 1887, an estimated 3,000 to 4,000 people inhabited the region, and land prices increased dramatically. In 1894, the Southern Pacific Railroad completed a line from San Jose to San Luis Obispo.

Port Harford was renamed Port San Luis in the early twentieth century, and oil from the Santa Maria and Taft-Coalinga fields was shipped from here beginning in 1907 and 1913, respectively. The California Polytechnic School was established in 1901 as a high school and eventually became California Polytechnic State University (Cal Poly). The county's agriculture and ranching production supplied U.S troops during World War I and helped its residents weather the Great Depression of the 1930s. At the start of World War II, the U.S. War Department transferred nearly 100,000 military personnel to bases at Camp San Luis, Camp Roberts, Morro Bay, and Cambria.

Today, San Luis Obispo County is an important agricultural area; many acres have been planted with wine grapes in recent years. The county's many beaches, state parks, and small-town atmosphere bring tourists from the nation and around the world. Hearst Castle, built by William Randolph Hearst from 1917 to 1947 in San Simeon, is a world-famous tourist attraction along the northern San Luis Obispo County coast.

City of San Luis Obispo

The town of San Luis Obispo was founded in 1856 and incorporated as early as 1876. Mission San Luis Obispo de Tolosa was the fifth mission in the California mission chain, and the town grew up around it. The mission grounds were founded along the side of a creek that is now lined with restaurants and shops in an open plaza. Several of the city's older buildings, including adobes dating to the Spanish mission era, have been preserved within the city and serve as residences, shops, and restaurants (Hoover et al. 2002:381). Highway 101 passes between the older part of the town and the newer commercial and residential areas to the west. The modern highway is built along the same route traveled by Juan Bautista de Anza's small expedition on their way to Monterey in 1774 (Hoover et al. 2002:380). The Cal Poly campus, adjacent to the city, attracts students from a wide variety of disciplines, but is best known for its agricultural program. The campus and student population give the city a casual college town atmosphere. The city serves as the county seat.

Santa Barbara County

The Cabrillo Expedition reached the Santa Barbara Channel in October 1542 and, after several tries, rounded Point Conception and sailed as far north as San Francisco Bay (Chesnut 1993). A second Spanish expedition, consisting of two ships under the command of Sebastian Vizcaino, arrived in the Santa Barbara area in 1602. In the 1760s, the Spanish government established a presidio and mission in Santa Barbara (Weber 1982, 1992). In 1789, the Mission La Purisima was established near present-day Lompoc, in the northern part of what became Santa Barbara County. Mexican independence from Spain and the ensuing secularization of mission properties resulted in the granting of numerous ranchos to private citizens. Approximately 40 of these land grants were made in Santa Barbara County (Tompkins 1976, 1987; Chesnut 1993; Avina 1973). Santa Barbara County's fertile valleys were ideal for the agriculture and ranching typical of the Mexican Period.

After American annexation, there followed a struggle to improve local transportation and communications with the rest of the country so that the area could economically develop. The county was incorporated on February 18, 1850, approximately seven months before California received statehood. The government built a lighthouse at Santa Barbara in 1856, and regular stagecoach routes began in the

early 1860s (southern California Writers' Project 1941). A toll road was built over San Marcos Pass in 1868. To facilitate coastal transportation of passengers and material, Stearns Wharf was built in 1872. The Southern Pacific Railroad connected to the Santa Barbara area from Ventura in 1887. The real estate boom of the 1880s in southern California only mildly affected Santa Barbara County, particularly outside the city (Dumke 1944).

In 1886, oil was successfully drilled at Summerland, and oil exploration in the Santa Maria Valley began in 1888 (County of Santa Barbara 2005). By 1900, the oil industry had recognized the potential of Santa Barbara County, and oil wells were developed from the Santa Maria Valley to the Santa Barbara Channel region during the twentieth century. World Wars I and II partly sustained the demand and production of the county's oil, which peaked in 1952 (County of Santa Barbara 2005).

In addition to agriculture, oil, and tourism, the creation of Vandenberg Air Force Base in 1957 was a crucial factor in the economic and population dynamics of Santa Barbara County. Vandenberg Air Force Base is located at former Camp Cooke, a U.S. Army armored and infantry training facility that began operation in 1941. Today, the county remains a tourist destination, with visitors to the missions and Chumash sites, as well as the wine-producing Santa Ynez Valley and miles of picturesque coastline.

City of Santa Barbara

The Spanish establishment of both a mission and presidio at Santa Barbara began the settlement of the future city. The mild climate and fertile land induced rancho development, and many rancho owners also maintained adobe "townhomes" in the pueblo of Santa Barbara, as did soldiers of the presidio. The city was incorporated on August 26, 1850.

A lighthouse was built in Santa Barbara in 1856, encouraging maritime traffic through the Santa Barbara Channel and to the city. Santa Barbara experienced its first real estate boom of the American Period during the late 1860s to early 1870s (Dumke 1944). After a period of relative depression, the city experienced a second boom in the late 1880s, spurred largely by the rumored and then realized completion of the Southern Pacific Railway to Santa Barbara (Dumke 1944).

Santa Barbara increasingly reflected the prevalent Victorian Era culture. With improved transportation, lumber was imported, and building techniques changed from the traditional adobes of previous periods to the woodframed buildings common throughout the country. The 1890 census showed the city with a population of 5,864 (southern California Writers' Project 1941). With regional access, the city became a regional urban center. Commerce grew, based on agricultural produce and industries such as petroleum. During this period, Santa Barbara also became a coastal resort community.

By 1901, Santa Barbara was connected with Los Angeles and San Francisco via the Southern Pacific Railroad (southern California Writers' Project 1941). In 1909, a teachers college was founded that became Santa Barbara State College (SBSC) in 1935. SBSC joined the University of California (U.C.) system in 1944 and officially became U.C. Santa Barbara in 1958.

Throughout the twentieth century and into current times, the city of Santa Barbara promotes and maintains its Spanish heritage. The city and county promote "slow growth" through stringent efforts to slow and reduce the impact of development. It is also known as a college town and tourist destination. As a result, the city of predominantly red-tiled roofs is one of the most expensive places to live in the United States, with the median home price exceeding one million dollars since June 2004.

Ventura County

Juan Rodriguez Cabrillo was the first European to land in Ventura County at the present-day city of Ventura, a location the local Chumash called *Šišolop*. Further contact did not occur until 1769, when Captain Gaspar de Portolá led an overland expedition from San Diego in search of Monterey Bay. Permanent settlement by non-indigenous peoples began in 1782 when Father Junipero Serra established Mission San Buenaventura at *Šišolop*. Franciscans at the mission systematically converted local native populations and then interior groups. By 1815, the Franciscans had effectively contacted most major aboriginal population centers in the county (Lopez 1988). By 1816, Mission San Buenaventura had 1,328 Native Americans living in the mission compound in cone-shaped homes made of tule grass.

In 1821, Don Raimundo Olivas moved from Los Angeles to occupy land on the Santa Clara River. Olivas eventually acquired 4,693 acres he named Rancho San Miguel and was formally granted the rancho by Mexican Governor Juan Bautista Alvarado in 1841. Approximately 20 ranchos were granted in Ventura County during the Mexican Period. During this same time and into the early American Period, prompted by the secularization of the missions, grain fields, row crops, and orchards replaced vast cattle ranches; then subdivisions were created to attract town dwellers to San Buenaventura (Schmidt and Schmidt 1994). Agriculture and ranching remained, however, the primary industries in future Ventura County well into the American Period. In 1873, the California State Legislature created Ventura County from a part of Santa Barbara County.

Construction of the Southern Pacific Railroad began in the 1860s to connect Los Angeles to Santa Barbara by way of Ventura. The first scheduled train arrived in the City of San Buenaventura in May 1887. Real estate sales and development increased dramatically. The Ojai, Santa Clara, and Simi Valleys also experienced the "boom" (Dumke 1944). Business was also increasing at Port Hueneme, providing an alternate means of commerce and reducing the county's tremendous reliance on the railway.

Around this same time, oil exploration and exploitation was beginning in the county, primarily near Santa Clara. An oil pipeline was completed from Santa Clara to Hueneme in July 1887 (Dumke 1944). The first attempt at commercial exploitation of the Ventura Avenue oilfield occurred in 1903 (Franks and Lambert 1985) when the Ventura County Power Company, later part of southern California Edison, sank seven shallow gas wells. It wasn't until 1920 when the Associated Oil Company began operations in the area that the proper equipment was used that could withstand the tremendous pressures. The introduction of rotary rigs in 1930 reduced the amount of gas wasted during drilling operation, and business began to boom (Franks and Lambert 1985). By 1929, the field was producing 90,000 barrels of oil per day (Stauch 1979) and the future course of oilfield expansion charted (Schmidt and Schmidt 1994).

Despite the county's relative isolation due to mountains, the population has grown steadily from the 1920s to the present. The completion of the Maricopa Highway in the 1920s, and Highway 101 over the Conejo Grade in 1959, contributed to the accessibility of the county (Ventura 2006). Today, much of Ventura County remains agricultural, but residential subdivisions and adjacent commercial centers increasingly occupy the valley and gradual hills.

City of San Buenaventura

The City of San Buenaventura, commonly called "Ventura," is the county seat. The city was incorporated in 1866 and includes the mission of the same name. The city was first connected by railway to Santa Barbara and Los Angeles in 1887. This provided a way to get agricultural products to large markets, as well as a way for potential settlers to visit the city. The "Boom of the Eighties" did not miss Ventura; the population of the city nearly doubled between 1886 and 1888, and numerous improvements were made

during this time (Dumke 1944). In the twentieth century, the city grew with the county. Today, the city is a tourist destination known for its mild climate, charming harbor, and great surfing locations.

Los Angeles County

The first European account of the area to become Los Angeles County was by Portuguese navigator João Rodrigues Cabrilho (Juan Rodriguez Cabrillo in Spanish), who led a Spanish expedition along the California coast in 1542–1543 (Chartkoff and Chartkoff 1984:252-253). Cabrillo noted the numerous campfires of the Gabrielino and thus named the area the "Bay of Smokes." Spain's presence in the region was only intermittent for approximately 200 years. Then, because of the possibility of territorial encroachment by the British and Russians from the north, Spanish Governor of Baja California Gaspar de Portolá was instructed to lead a land–sea expedition to colonize Alta (upper) California in the 1760s (Chartkoff and Chartkoff 1984:254-257).

On September 8, 1771, Fathers Pedro Cambón and Angel Somera established the Mission San Gabriel de Arcángel near the present-day city of Montebello (Johnson et al. 1972). In 1775, the mission was moved to its current location in San Gabriel due to better agricultural lands. This mission marked the first sustained European occupation of the Los Angeles County area. Mission San Gabriel, despite a slow start partially due to misconduct by Spanish soldiers, eventually became so prosperous it was known as "The Queen of the Missions" (Johnson et al. 1972).

The pueblo that eventually became the city of Los Angeles was established in 1781. During this period, Spain also deeded ranchos to prominent citizens and soldiers (though very few in comparison to the Mexican Period). Rancho San Pedro, one such rancho, was deeded to soldier Juan Jose Dominguez in 1784 and comprised 75,000 acres encompassing the modern South Bay region from the Los Angeles River on the east to the Pacific Ocean on the west (Dominguez Rancho Adobe Museum 2006).

The area that became Los Angeles County saw an increase in European settlement during the Mexican Period largely due to the many land grants (ranchos) to Mexican citizens by various governors. However, the Mexican Period for Los Angeles ended in early January 1847. Mexican forces fought combined U.S. Army and Navy forces in the Battle of the San Gabriel River on January 8 and in the Battle of La Mesa on January 9 (Nevin 1978). On January 10, leaders of the pueblo of Los Angeles surrendered peacefully after Mexican General Jose Maria Flores withdrew his forces. Shortly thereafter, newly appointed Mexican Military Commander of California Andrés Pico surrendered all of Alta California to U.S. Army Lieutenant Colonel John C. Fremont in the Treaty of Cahuenga (Nevin 1978).

Settlement of the Los Angeles region continued in the early American Period. The county was established on February 18, 1850, one of 27 counties established in the months prior to California becoming a state. Many ranchos in the county were sold or otherwise acquired by Americans, and most were subdivided into agricultural parcels or towns. Nonetheless, ranching retained its importance and, by the late 1860s, Los Angeles was one of the top dairy production centers in the country (Rolle 2003). By 1876, the county had a population of 30,000 (Dumke 1944:7).

In 1854, the U.S. Congress agreed to let San Pedro become an official port of entry. By the 1880s, the railroads had established networks throughout the county, resulting in fast and affordable shipment of goods, as well as a means to transport new residents to the booming region (Dumke 1944). New residents included many health-seekers drawn to the area by the fabled climate in the 1870s–1880s (Baur 1959).

Availability of fresh water has always been a concern for county residents. Many authors (e.g., Kahrl 1982; Mulholland 2000; Nadeau 1997; Reisner 1986) identified the control and management of water as the single most important factor in the development of southern California. As William Mulholland did

for the City of Los Angeles in 1913, the Metropolitan Water District of southern California (MWD), formed in the 1920s, secured water rights for many areas including portions of Los Angeles County not incorporated within the City of Los Angeles (Metropolitan Water District of southern California n.d.; Nadeau 1997). The formation of MWD began in 1924, when then Mayor of Pasadena Hiram W. Wadsworth initiated the formation of the Colorado River Aqueduct Association (Metropolitan Water District of southern California n.d.). Wadsworth, as president of this group representing 13 cities, pushed for the construction of an aqueduct similar to the Los Angeles–Owens Valley Aqueduct that would provide water from the Colorado River to thirsty southern California. This resulted in the incorporation of MWD in 1928 and the construction of the aqueduct, an engineering marvel that finally began delivering Colorado River water to MWD's member cities in 1941 and ultimately facilitated the incredible population growth that occurred in the region (Metropolitan Water District of southern California n.d.).

In the early to mid-1900s, population growth accelerated due to industry associated with both world wars, as well as emigration from the Midwest "dust bowl" states during the Great Depression. The county became one of the most densely occupied areas in the U.S. The county's mild climate and successful economy continued to draw new residents in the late 1900s, with much of the county transformed from ranches and farms into residential subdivisions surrounding commercial and industrial centers. Hollywood's development into the entertainment capital of the world, and southern California's booming aerospace industry, were key factors in the county's growth.

City of Burbank

Don José María Verdugo was granted the 36,403-acre Rancho San Rafael by Spanish Governor Pedro Fages in 1784 (Cowan 1956). This rancho and the 4,600-acre Rancho La Providencia (granted to Commandante J. Castro, Luis Arenas, and Vincente de la Ossa during the Mexican Period) covered most of present-day Burbank (Burbank Unified School District 1967). In 1845, the Battle of Providencia, also called the "Second Battle of Cahuenga Pass," took place at Rancho La Providencia. The battle resulted in the unpopular Mexican Governor Manuel Micheltorena being replaced by Pio Pico, who was highly popular with Californios even into the American Period (Burbank Unified School District 1967).

The first Americans to own land in the future Burbank were David W. Alexander and Alexander Bell, who purchased the Rancho La Providencia from Vincente de la Ossa for $1,500 in 1851 (Burbank Unified School District 1967). In 1857, Jonathan R. Scott traded his land in the La Cañada area, formerly part of the Verdugo family rancho, for 4,603 acres of the western portion of Rancho San Rafael. Today, this area is the business district of Burbank.

In 1867, Dr. David Burbank purchased the Rancho La Providencia and Scott's portion of Rancho San Rafael and combined them into one ranch, receiving clear title in 1871. Burbank was a dentist in the pueblo of Los Angeles, but soon became an established and successful sheep farmer. He shrewdly sold a right-of-way to the Southern Pacific Railroad for one dollar in 1873, and the first train passed through his property in 1874 (Burbank Unified School District 1967). In 1886, Burbank sold his ranch to a group of investors (including himself) who formed the Providencia Land and Water Company (Dumke 1944; City of Burbank 2006). The town of Burbank was laid out in April 1887, and the Providencia Land and Water Company advertised its 17,000 acres of town and surrounding farmland on the Southern Pacific line (Dumke 1944). Within one year, the town had a streetcar line, a sixty-room hotel, and over 250 residents (Dumke 1944). However, a depression struck the greater Los Angeles area in 1889, and land values tumbled. Burbank survived the following dry climatic period by farming and tapping natural underground water wells (Burbank Unified School District 1967).

The City of Burbank was incorporated in 1911, the same year the Pacific Electric Railroad was completed from Los Angeles to Burbank (Burbank Unified School District 1967). The city experienced a boom in the 1920s, with the addition of many new industries. Among these was the First National Studio (now Warner Brothers), which began the city's noted association with the motion picture industry, and Lockheed Aircraft Company, which after bankruptcy caused by the 1929 stock market crash, became the Lockheed Aircraft Corporation. The Burbank Airport began construction in 1929 and was touted as the "first $1 million airport in the U.S." (Burbank Unified School District 1967). From the 1920s through the 1950s, Burbank annexed 13 areas, increasing the incorporated area of the city to nearly 17 square miles (Burbank Unified School District 1967). World War II created growth for both the aerospace and the motion picture industries. In 1951, the National Broadcasting Company (NBC) opened its color television studios in Burbank (Burbank Unified School District 1967). Today, Burbank is well known as the location of many television and movie studios and for being a mixed-use community with a bustling commercial airport.

22.3 PREVIOUS RESEARCH

22.3.1 Literature Search

22.3.1.1 Methods

A cultural resources site and survey record search was conducted by the Central Coastal Information Center (CCIC) and South Central Coastal Information Center (SCCIC) of the California Historical Resources Information System (CHRIS) on August 8, 2000. Because the cable conduit already has been installed and no new construction will take place, only archaeological sites and surveys were requested; built environment resources (i.e., historic structures) were not requested. Site and survey information were requested for the linear project corridor and a 1/4-mile radius. Because some survey reports were very large, only bibliographic information on them was obtained.

In addition to official maps and records, the CCIC and SCCIC consulted the following information sources as part of their record search:

- National Register of Historic Places – Listed Properties
- California Register of Historical Resources
- California Inventory of Historical Resources
- California State Historical Landmarks
- California Points of Historical Interest
- Directory of Properties in the Historical Resources Inventory (Office of Historic Preservation)
- Caltrans State and Local Bridge Surveys

22.3.1.2 Findings

The results of the literature search are divided and discussed according to county, arranged from north to south, and covering San Luis Obispo, Santa Barbara, and Ventura Counties. All three counties have been intensively investigated for cultural resources. In Ventura County, the entire ROW had been previously surveyed. A literature search for the short portion of the Southern Coastal segment within Los Angeles County was performed for the Lebec to San Fernanco segment (Segment #25), and is discussed in this report in Chapter 27.

The series of 1:24,000 maps at the end of this chapter (Figure 20.1 through Figure 20.88) show the previously recorded cultural resources along the segment, as provided by the CHRIS records search. As noted in the figure legend, the labeled resources are identified as one of four types: linear, prehistoric, historic, or protohistoric and/or multi-component.

San Luis Obispo County

For the portion of the Southern Coastal segment within San Luis Obispo County, the literature search indicated that 48 cultural resources have been previously recorded within the 1/4-mile radius of the sement corridor (Table 22-4). Of these resources, 37 are prehistoric, six are historic, and one has prehistoric and historic components. Of the 37 prehistoric resources, five contain Native American burials, and 22 middens or occupation sites have a moderate to high probability of containing burials. No records were available for five of the resources, so whether they are prehistoric or historic sites is unknown.

Table 22-4. Segment 20 Corridor – Previously Recorded Cultural Resources in San Luis Obispo County

Site #	Site Type	Site Condition	USGS Quad	Recorded
CA-SLO-883	Prehistoric midden deposit and lithic debitage	Disturbed - graded and cut	Pismo Beach	Singer 1990
CA-SLO-968H	Historic house, adobe, midden deposit, refuse	Deterioration, but not disturbed	Pismo Beach	Singer 1990
CA-SLO-81	Shell scatter and lithic debitage	Disturbed - construction activities excavated	Pismo Beach	Osborne -
CA-SLO-832	Occupation site, rock outcrop, petroglyphs, mortar and adjacent midden	Disturbed - construction activities	Pismo Beach	Woodward 1981
CA-SLO-983	Shell scatter and lithic debitage	Disturbed - construction activities	Pismo Beach	Spanne and Gaittan 1979
CA-SLO-840	Midden deposit, with and lithic debitage	Disturbed - construction activities	Pismo Beach	Sawyer 1978
CA-SLO-842	Midden deposit	Disturbed - construction activities	Pismo Beach	Sawyer 1978
CA-SLO-987H	Historic refuse	Disturbed - construction activities	Pismo Beach	Osland 1980
CA-SLO-825	Midden deposit, with and lithic debitage	Disturbed - construction activities	Pismo Beach	Osland and Spanne 1980
CA-SLO-1494H	Historic ranch and adobes	Unknown	Arroyo Grande	Dills 1992
CA-SLO-1495H	Adobe, historic refuse	Unknown	Arroyo Grande	Dills 1992
CA-SLO-1496H	Adobe, historic refuse	Unknown	Arroyo Grande	Dills 1992

Table 22-4. Segment 20 Corridor – Previously Recorded Cultural Resources in San Luis Obispo County

Site #	Site Type	Site Condition	USGS Quad	Recorded
CA-SLO-1407	Prehistoric lithic debitage	Disturbed - construction activities	Arroyo Grande	Hoover 1974; Dills 1988, 1990
CA-SLO-1067	Prehistoric lithic debitage	Unknown	Arroyo Grande	Dills 1982
CA-SLO-415	Midden deposit and prehistoric lithic debitage	Disturbed- agricultural activities	Arroyo Grande	RJD-JRH 1958
CA-SLO-414	Prehistoric lithic debitage	Unknown	Arroyo Grande	RJD-JRH 1958
CA-SLO-651	Midden deposit with burials	Unknown	Arroyo Grande	Dills 1972
CA-SLO-125	Midden deposit with shell, burials, mortars, pestles	Disturbed - construction activities, excavations	Arroyo Grande	Bennyhoff 1953; RJD-JRH 1958
CA-SLO-353	Prehistoric lithic debitage, shell, mortars, and burials	Disturbed - construction activities	Arroyo Grande	Wadhams and Wadhams 1963
CA-SLO-1266	Prehistoric lithic debitage, shell, groundstone	Disturbed - construction activities	Arroyo Grande	Sawyer 1989
CA-SLO-396	Prehistoric lithic debitage, shell, groundstone	Unknown	Oceano	RJD, AWK, JRH
CA-SLO-843	Prehistoric lithic debitage, shell, groundstone	Unknown	Oceano	Sawyer 1978
CA-SLO-219	Midden deposit with shell	Unknown	Arroyo Grande	Hoover 1967
CA-SLO-218	Midden deposit with shell, lithic debitage, ground stone	Disturbed - construction activities	Oceano	Hoover 1967
CA-SLO-394	Prehistoric lithic debitage, shell, groundstone	Unknown	Arroyo Grande	RJD, AWK, JRH
CA-SLO-844	Midden deposit with shell	Unknown	Oceano	Sawyer 1978
CA-SLO-845	Midden deposit with shell	Disturbed - construction activities	Oceano	Sawyer 1978
CA-SLO-847	Midden deposit with shell	Disturbed - construction activities	Oceano	Sawyer 1978
CA-SLO-1065	Midden deposit with shell, lithic debitage	Disturbed - construction activities	Oceano	Spanne 1981
CA-SLO-404	Midden deposit with shell, lithic debitage	Disturbed - construction activities	Oceano	RJD, AWK, JRH
CA-SLO-1243	Midden deposit with shell	Good	Oceano	Dills 1988
CA-SLO-1242	Midden deposit with shell, lithic debitage	Good	Oceano	Dills 1988

Table 22-4. Segment 20 Corridor – Previously Recorded Cultural Resources in San Luis Obispo County

Site #	Site Type	Site Condition	USGS Quad	Recorded
CA-SLO-402	Midden deposit with diagnostic artifacts, groundstone,shell and burials	Disturbed - construction activities, excavation	Oceano	JRH 1958; Greenwood 1978; Peak 1999
CA-SLO-1269	Prehistoric lithic debitage	Unknown	Oceano	Spanne and Gaittan 1979
CA-SLO-403	Midden deposit with shell, lithic debitage, and groundstone	Disturbed - construction activities	Oceano	RJD, AWK, JRH 1958
CA-SLO 398	Midden deposit with shell, lithic debitage, and groundstone	Unknown	Oceano	RJD, AWK, JRH 1958
CA-SLO-399	Midden deposit with shell, lithic debitage, and groundstone	Unknown	Oceano	RJD, AWK, JRH 1958
CA-SLO-1168	Midden deposit with shell, lithic debitage	Stabilized sand dune - natural disturbance	Oceano	Waldron 1986
CA-SLO - 1256	Midden deposit with shell, lithic debitage	Disturbed - plowed	Oceano	Singer 1989
Cities 5	Unknown (No site record)	Unknown	Oceano	Unknown
Cities 3	Unknown (No site record)	Unknown	Oceano	Unknown
CA-SLO - 1189H	Shell scatter and historic refuse	Disturbed - plowed	Oceano	Gibson 1985
CA-SLO-615	Midden deposit with shell, lithic debitage	Disturbed - graded, excavated	Oceano	Gibson 1985; Deane 1971
CA-SLO-616	Midden deposit with shell, lithic debitage	Disturbed - agriculture	Oceano	Deane 1971
998	Unknown (No site record)	Unknown	Pismo Beach	Unknown
CA-SLO-754, CA-SLO-433	Prehistoric Village Site: lithics, shell midden, faunal bone, burials	Disturbed -road and other construction, arch. excavation	Oceano	Spanne 1981; Breschini 1983
Mac 5	Unknown (No site record)	Unknown	Oceano	Unknown
Mac 1	Unknown (No site record)	Unknown	Oceano	Unknown

Santa Barbara County

The literature search for the portion of the Southern Coastal segment within Santa Barbara County indicated that 517 cultural resources have been previously recorded within the 1/4-mile radius of the segment corridor (Table 22-5). Of this total, 454 are prehistoric, 32 are historic, and 27 are protohistoric

resources or known to contain both historic and prehistoric components; an additional 4 resources are unknown due to lack of adequate records. Of these resources, 61 are known to contain Native American burials. In addition, the Hammond Meadows Site (CA-SBA-1213), a Prehistoric Period and Protohistoric Period midden and village, is listed on the NRHP..

Table 22-5. Segment 20 Corridor – Previously Recorded Cultural Resources in Santa Barbara County

Site #	Site Type	Site Condition	USGS Quad	Recorded
CA-SBA-515	Prehistoric campsite	Unknown	Guadalupe	Jones 1901
CA-SBA-3389	Prehistoric lithic debitage	Disturbed - construction activities, grading, agriculture	Guadalupe	Glover and Sandler
CA-SBA-2094	Prehistoric lithic debitage	Disturbed - grazing	Guadalupe	Gonzales, Hawkins, Imwalle, and Easter 1987
CA-SBA-2697	Prehistoric lithic debitage	Unknown	Guadalupe	Barter, Ramirez, and Duff 1994
CA-SBA-1001	Prehistoric lithic scatter	Good	Casmalia	Spanne and Schuyler 1972
CA-SBA-1002	Prehistoric lithic scatter	Good	Casmalia	Spanne 1972
CA-SBA-1003	Prehistoric lithic scatter	Good	Casmalia	Spanne 1972
CA-SBA-1017	Prehistoric lithic scatter	Good	Casmalia	Spanne 1972
CA-SBA-1018	Prehistoric lithic scatter	Good	Casmalia	Spanne 1972
CA-SBA-1045	Prehistoric lithic scatter	Good	Casmalia	Spanne 1973
CA-SBA-1046	Prehistoric lithic scatter	Good	Casmalia	Spanne 1973
CA-SBA-1078	Prehistoric lithic scatter, shell, asphaltum	Weathered but good	Casmalia	Spanne 1973; Christensen, Dugger 1987
CA-SBA-1079	Prehistoric lithic scatter	Good	Casmalia	Spanne 1973
CA-SBA-1080	Prehistoric lithic and shell scatter	Good	Casmalia	Spanne 1973
CA-SBA-1709H	Prehistoric lithic and historic scatter	Good	Casmalia	Brown 1981
CA-SBA-3007	Prehistoric lithic scatter	Good	Casmalia	J. Paniagua 1995
CA-SBA-1729	Prehistoric lithic and shell scatter	Good	Casmalia	Brown et al. 1981

Table 22-5. Segment 20 Corridor – Previously Recorded Cultural Resources in Santa Barbara County

Site #	Site Type	Site Condition	USGS Quad	Recorded
CA-SBA-1738	Prehistoric lithic scatter	Good	Casmalia	Neff 1982
CA-SBA-1755	Prehistoric shell midden	Good	Casmalia	A. Schilz 1981
CA-SBA-1922	Prehistoric lithic debitage	Disturbed - underground cable	Casmalia	Estes and Oxford 1984
CA-SBA-1997	Prehistoric lithic scatter	Good	Casmalia	Bamforth 1985
CA-SBA-2096	Prehistoric lithic scatter	Good	Casmalia	Hawkins et al. 1987
CA-SBA-2098	Prehistoric lithic scatter	Good	Casmalia	Hawkins et al. 1987
CA-SBA-2163	Prehistoric lithic scatter and fire-cracked rock	Good	Casmalia	Christensen 1987
CA-SBA-2165H	Prehistoric midden and historic cement fragments	Good	Casmalia	Christensen 1987
CA-SBA-2168	Prehistoric lithic scatter and fire-cracked rock	Good	Casmalia	Christensen 1987
CA-SBA-2169	Prehistoric shell scatter	Good	Casmalia	Christensen 1987
CA-SBA-2348	Prehistoric shell midden	Fair – power cables, limited pothunting	Casmalia	Berry 1987
CA-SBA-2355	Prehistoric lithic scatter	Good	Casmalia	Jaffke, Kirkish 1990
CA-SBA-2476H	Historic debris scatter	Good – some plowing	Casmalia	Gibson 1990
CA-SBA-2477	Prehistoric lithic scatter	Good	Casmalia	Gibson 1990
CA-SBA-2479	Prehistoric lithic scatter	Good	Casmalia	Gibson 1990
CA-SBA-2568	Prehistoric lithic and shell scatter	Good	Casmalia	Osland and Berry 1992
CA-SBA-2645	Prehistoric lithic scatter	Good	Casmalia	Kirkish 1994
CA-SBA-2688	Prehistoric shell and lithic scatter	Good	Casmalia	Ramirez and Barter 1994
CA-SBA-2715H	Historic trash scatter	Good	Casmalia	Hines 1995
CA-SBA-2998	Prehistoric lithic scatter	Good	Casmalia	Dubin 1995
CA-SBA-3007	Prehistoric lithic scatter	Good	Casmalia	Paniagua 1995

Table 22-5. Segment 20 Corridor – Previously Recorded Cultural Resources in Santa Barbara County

Site #	Site Type	Site Condition	USGS Quad	Recorded
CA-SBA-3009	Prehistoric lithic scatter	Good	Casmalia	Dubin 1995
CA-SBA-3013	Prehistoric lithic scatter	Good	Casmalia	Sharpe 1995
CA-SBA-3014	Prehistoric lithic scatter	Good	Casmalia	Paniagua 1995
CA-SBA-3027	Prehistoric lithic scatter	Fair – erosion	Casmalia	Calicher 1995
CA-SBA-3030	Prehistoric lithic scatter	Good	Casmalia	Sharpe 1995
CA-SBA-3031	Prehistoric lithic scatter	Good	Casmalia	Sharpe 1995
CA-SBA-3053	Prehistoric lithic scatter	Good	Casmalia	Dubin 1995
CA-SBA-3055H	Historic ceramic and glass scatter	Good	Casmalia	Paniagua 1995
CA-SBA-3070	Prehistoric lithic scatter	Good	Casmalia	Calicher 1994
CA-SBA-3071	Prehistoric lithic scatter	Good	Casmalia	Calicher 1994
CA-SBA-3213	Prehistoric lithic scatter	Good	Casmalia	Unknown
CA-SBA-3216	Prehistoric lithic scatter	Good	Casmalia	Unknown
CA-SBA-3217	Prehistoric lithic scatter	Good	Casmalia	McDowell et al. 1995
CA-SBA-3218	Prehistoric lithic scatter	Good	Casmalia	McDowell et al. 1995
CA-Sba-3234	Prehistoric lithic scatter	Good	Casmalia	Locke et al. 1995
CA-SBA-3237	Prehistoric lithic scatter	Good	Casmalia	Locke et al. 1995
CA-Sba-3238	Prehistoric lithic scatter	Good	Casmalia	Locke et al. 1995
CA-SBA-3239	Prehistoric lithic scatter	Good	Casmalia	Locke et al. 1995
CA-SBA-3240	Prehistoric lithic scatter	Good	Casmalia	Locke et al. 1995
CA-SBA-3241	Prehistoric lithic scatter	Good	Casmalia	McDowell et al. 1995
CA-SBA-3242	Prehistoric lithic scatter	Good	Casmalia	McDowell et al. 1995

Table 22-5. Segment 20 Corridor – Previously Recorded Cultural Resources in Santa Barbara County

Site #	Site Type	Site Condition	USGS Quad	Recorded
CA-SBA-3243	Prehistoric lithic scatter	Good	Casmalia	McDowell et al. 1995
CA-SBA-3244	Prehistoric lithic scatter	Good	Casmalia	McDowell et al. 1995
CA-SBA-3276	Prehistoric lithic scatter	Good	Casmalia	Locke et al. 1995
CA-SBA-3285H	Prehistoric lithic scatter and historic fire ring	Good	Casmalia	Locke et al. 1995
CA-SBA-3286	Prehistoric lithic scatter	Good	Casmalia	Locke et al. 1995
CA-SBA-3287	Prehistoric lithic scatter	Good	Casmalia	Locke et al. 1995
CA-SBA-3294	Prehistoric lithic scatter	Good	Casmalia	McDowell et al. 1995
CA-SBA-3296	Prehistoric lithic scatter	Good	Casmalia	Locke et al. 1995
CA-SBA-3297	Prehistoric lithic scatter	Good	Casmalia	Locke et al. 1995
CA-SBA-3301H	Historic trash scatter	Good	Casmalia	Locke et al. 1995
CA-SBA-3307	Prehistoric lithic scatter	Good	Casmalia	Paniaqua 1995
CA-SBA-3320	Prehistoric lithic scatter	Good	Casmalia	Locke et al. 1995
CA-SBA-3330	Prehistoric lithic scatter	Good	Casmalia	Locke et al. 1995
CA-SBA-3331	Prehistoric lithic scatter	Good	Casmalia	Locke et al. 1995
CA-SBA-3332	Prehistoric lithic scatter	Good	Casmalia	Locke et al. 1995
CA-SBA-3376	Prehistoric lithic and shell scatter	Good	Casmalia	Gibson and Schuyler 1996
CA-SBA-3386	Historic trash deposit	Poor – deposit uncovered during construction	Casmalia	Neri and Sandler 1996
CA-SBA-3390	Prehistoric lithic scatter	Good	Casmalia	McIntosh and Sandler 1996
CA-SBA-3503	Prehistoric lithic scatter	Good	Casmalia	Ryan 1998
CA-SBA-401	Unknown No site record	Unknown	Casmalia	Unknown

Table 22-5. Segment 20 Corridor – Previously Recorded Cultural Resources in Santa Barbara County

Site #	Site Type	Site Condition	USGS Quad	Recorded
CA-SBA-707	Prehistoric lithic scatter	Good	Casmalia	Spann 1972, McDowell et al. 1995
CA-SBA-708	Prehistoric shell midden	Good – some erosion	Casmalia	Spanne and Rolf 1970
CA-SBA-722	Prehistoric lithic scatter	Good	Casmalia	Spanne 1971
CA-SBA-723	Prehistoric lithic scatter	Good	Casmalia	Spanne 1971
CA-SBA-724	Prehistoric lithic and shell scatter	Good	Casmalia	Spanne 1971
CA-SBA-725	Prehistoric lithic scatter	Good	Casmalia	Spanne 1971
CA-SBA-775	Prehistoric lithic scatter	Good	Casmalia	Spanne 1971
CA-SBA-776	Prehistoric lithic scatter	Good	Casmalia	Spanne 1971
CA-SBA-777	Prehistoric lithic scatter	Good	Casmalia	Spanne 1971
CA-SBA-965	Prehistoric shell and lithic scatter	Good	Casmalia	Schuyler and Spanne 1972
CA-SBA-966	Prehistoric shell scatter	Good	Casmalia	Spanne 1972
CA-SBA-985	Prehistoric shell and lithic scatter	Good	Casmalia	Spanne 1972
CA-SBA-986	Prehistoric shell and lithic scatter	Good	Casmalia	Spanne 1972
CA-SBA-987	Prehistoric lithic scatter	Good	Casmalia	Spanne 1972
CA-SBA-988	Prehistoric lithic debitage	Erosion	Casmalia	Spanne 1972
CA-SBA-990	Prehistoric shell and lithic scatter	Good	Casmalia	Spanne 1972
CA-SBA-991	Prehistoric lithic scatter	Good	Casmalia	Spanne 1972
CA-SBA-992	Prehistoric lithic scatter	Good	Casmalia	Spanne 1972
CA-SBA-142	Prehistoric shell midden	Poor – heavily impacted, development	Goleta	Lyon and Pierce 1959; Foster 1991
CA-SBA-143	Prehistoric shell midden	Poor – development	Goleta	Lyon 1959; Colten 1985
CA-SBA-2434	Prehistoric shell scatter	Fair – may be redeposit	Goleta	Foster and Romani 1991

Table 22-5. Segment 20 Corridor – Previously Recorded Cultural Resources in Santa Barbara County

Site #	Site Type	Site Condition	USGS Quad	Recorded
CA-SBA-1657	Prehistoric shell and lithic scatter	Good – some grazing; but development proposed	Goleta	Macko 1979
CA-SBA-2433	Prehistoric shell midden	Fair – development; may be redeposit.	Goleta	Foster and Romani 1991
CA-SBA-1745	Prehistoric shell midden	Fair, plus planned destruction from development	Goleta	Erlandson 1982
CA-SBA-54	Prehistoric shell midden	Good	Goleta	Rogers 1929; Schqartz 1957
CA-SBA-53	Prehistoric shell midden	Poor – 90% destroyed	Goleta	Harrison 1956; Rogers 1929
CA-SBA-2586	Prehistoric lithic scatter	Poor – along RR tracks	Goleta	Peak 1991
CA-SBA-1653	Prehistoric shell midden	Fair – disking, orchards, grazing	Goleta	Macko 1979
CA-SBA-1201	Prehistoric shell midden with extensive lithics	Fair – 30% destroyed by creek channelization	Goleta	Serena 1981
CA-SBA-55	Unknown	Unknown	Goleta	Unknown
CA-SBA-1655	Prehistoric shell and lithic scatter	Development proposed	Goleta	Macko 1979
CA-SBA-2585/H	Historic trash deposit	Excellent	Goleta	Schmidt 1993
CA-SBA-56	Prehistoric shell midden	Fair – agriculture	Goleta	Chartkoff, Kona, Chartkoff 1967; Wilcoxson and Erlandson 1981; Rogers 1927
CA-SBA-57	Prehistoric shell midden	Poor	Goleta	Wilcoxson and Erlandson 1981; Rogers 1927
CA-SBA-58	Prehistoric shell midden	Poor	Goleta	Rogers 1925; Craig 1979
CA-SBA-59	Prehistoric	Unknown	Goleta	Rogers 1929
CA-SBA-63	Prehistoric shell midden	Fair – agriculture	Goleta	Chartkoff, Kona, Chartkoff 1967; Wilcoxson and Erlandson 1981
CA-SBA-1703	Prehistoric lithic and shell scatter	Fair- damaged by stream channelization	Goleta	Wilcoxson and Erlandson 1981
CA-SBA-61	Prehistoric shell midden	Poor – most of site urbanized	Goleta	Chartkoff, Kona, Chartkoff 1967

Table 22-5. Segment 20 Corridor – Previously Recorded Cultural Resources in Santa Barbara County

Site #	Site Type	Site Condition	USGS Quad	Recorded
CA-SBA-60	Prehistoric shell midden – large village	Poor – whole site urbanized	Goleta	Chartkoff, Kona, Chartkoff 1967
CA-SBA-2153	Prehistoric shell and lithic scatter	Fair – may be secondary deposit	Goleta	Wilcoxson et al. 1987
CA-SBA-1539	Prehistoric shell midden	Planned development	Goleta	Erlandson and Heizen 1977
CA-SBA-1809	Prehistoric and historic scatter	Fair – plowed	Goleta	Rudolph 1983
CA-SBA-100	Prehistoric site	Unknown	Goleta	Rogers 1924
CA-SBA-1829/H	Historic trash scatter	Low – in a active field	Goleta	Roger Colten 1983
CA-SBA-39	Prehistoric and historic settlement	Fair – some construction disturbances	Goleta	Rogers 1924; Craig 1978
CA-SBA-1719	Historic scatter	Residential development planned	Goleta	Rudolph 1982
CA-SBA-1720	Prehistoric lithic scatter	Good	Goleta	Rudolph 1982
CA-SBA-138	Prehistoric milling station and rock art	Excellent	Goleta	Moore 1987
CA-SBA-116	Prehistoric lithic scatter	Disturbed by road construction	Goleta	KS, JH 1957
CA-SBA-139	Prehistoric shell midden	Very poor	Dos Pueblos Canyon	Rogers 1929; Miller 1961; Sheets 1991
CA-SBA-235	Prehistoric Isolate	Unknown	Dos Pueblos Canyon	Unknown
CA-SBA-2587/H	Prehistoric and historic artifact scatter	Fair	Dos Pueblos Canyon	Peak and Gerry 1991
CA-SBA-80	Prehistoric habitation	Unknown	Dos Pueblos Canyon	Rogers 1929
CA-SBA-81	Large Prehistoric Village Site: 13 house pits, cemetery, groundstone, beads, lithics	Unknown	Dos Pueblos Canyon	Rogers 1929
CA-SBA-1650	Prehistoric milling and lithic scatter	Good – disking and grazing	Dos Pueblos Canyon	Whitney 1978
CA-SBA-1803	Prehistoric shell and artifact scatter	Fair – erosion and road building	Dos Pueblos Canyon	Moss and Erlandson 1983
CA-SBA-230	Prehistoric shell midden	Good – road cut	Dos Pueblos Canyon	Ruth's UCAS Ms. 1
CA-SBA-79	Prehistoric shell midden	Unknown	Dos Pueblos Canyon	Rogers 1929

Table 22-5. Segment 20 Corridor – Previously Recorded Cultural Resources in Santa Barbara County

Site #	Site Type	Site Condition	USGS Quad	Recorded
CA-SBA-78	Prehistoric shell midden	Fair – cultivation, erosion	Dos Pueblos Canyon	Rogers 1929; Harrison 1959; Lyon 1959
CA-SBA-77	Prehistoric shell midden	Fair – erosion	Dos Pueblos Canyon	Schumacker 1877; Rogers 1925; WMH 1957
CA-SBA-144	Prehistoric shell midden	Good	Dos Pueblos Canyon	Lyon 1959
CA-SBA-2439	Prehistoric lithic and shell scatter	Poor	Dos Pueblos Canyon	Imwalle and Wilcoxon 1991
CA-SBA-2440	Prehistoric lithic scatter	Unknown	Dos Pueblos Canyon	Wilcoxon 1991
CA-SBA-1323	Prehistoric lithic scatter, shell, groundstone	Disturbed by development	Dos Pueblos Canyon	Imwalle and Wilcoxon 1991; Spanne 1974
CA-SBA-1322	Prehistoric lithic scatter & groundstone	Disturbed by development	Dos Pueblos Canyon	Imwalle and Wilcoxon 1991; Spanne 1974
CA-SBA-2441	Prehistoric lithic scatter, shell, groundstone	North half intact, south half severely disturbed	Dos Pueblos Canyon	Imwalle and Wilcoxon 1991
CA-SBA-2442/H	Historic structure remnants, mortared cobbles	Unknown	Dos Pueblos Canyon	Imwalle and Wilcoxon 1991
CA-SBA-76	Prehistoric village site, lithics, groundstone, shell, burials	Highly disturbed	Dos Pueblos Canyon	Spanne 1974; Swenson et al. 1984
CA-SBA-1673	Prehistoric lithic scatter, shell fish, bone, bowl frag	Disturbed by erosion	Dos Pueblos Canyon	Erlandson 1980
CA-SBA-1326	Prehistoric lithic scatter & mano	Highly disturbed by development	Dos Pueblos Canyon	Philip de Barros 1986; Ehmann et al. 1975
CA-SBA-106	Prehistoric occupation site with lithics & groundstone	Largely destroyed	Dos Pueblos Canyon	Heizer 1948
CA-SBA-75	Prehistoric shell and groundstone scatter	Disturbed by erosion & cultivation	Dos Pueblos Canyon	Miller 1961
CA-SBA-1674	Prehistoric lithic, shell, & bone scatter	Disturbed by erosion & historic activities	Dos Pueblos Canyon	Erlandson 1980
CA-SBA-73	Prehistoric village site	Good; some road cuts	Dos Pueblos Canyon	Swenson, Oslund Peterson 1984

Table 22-5. Segment 20 Corridor – Previously Recorded Cultural Resources in Santa Barbara County

Site #	Site Type	Site Condition	USGS Quad	Recorded
CA-SBA-72	Prehistoric shell midden	Good	Dos Pueblos Canyon	Rogers 1926; Spanne 1974; Ehmann and Perez 1975
CA-SBA-1672	Prehistoric site with midden, shell, lithics, bone	Highly disturbed by development	Dos Pueblos Canyon	Erlandson and Garnica 1979
CA-SBA-74	Prehistoric lithic & groundstone scatter	Highly disturbed	Dos Pueblos Canyon	Wells 1974; Miller 1961
CA-SBA-71	Prehistoric dance platform	Unknown	Dos Pueblos Canyon	Rogers 1929; Warren 1971; UCSB 1979
CA-SBA-1689	Prehistoric lithic & shell scatter	Disturbed by roadway	Dos Pueblos Canyon	Serena 1980
CA-SBA-3495	Prehistoric lithic and shell scatter	Highly disturbed by golf course	Dos Pueblos Canyon	Pfeiffer and Eerkens 1998
CA-SBA-70	Prehistoric habitation site	Unknown	Dos Pueblos Canyon	Rogers 1929
CA-SBA-1717	Prehistoric shell scatter	Fair – disking, development	Dos Pueblos Canyon	Pence 1981
CA-SBA-1715/H	Prehistoric shell scatter & hammerstone choppers	Disturbed by roadway	Dos Pueblos Canyon	Craig 1981; Pence 1981
CA-SBA-1093	Prehistoric shellfish scatter, Historic trash debris	Disturbed by development	Dos Pueblos Canyon	Craig, date unknown
CA-SBA-223	Prehistoric shell midden	Good – natural erosion only	Surf	Ruth 1951; Wubben 1979
CA-SBA-2348	Prehistoric shell midden	Disturbed – construction	Surf	Berry 1987
CA-SBA-534	Prehistoric lithic scatter	Good	Surf	Spanne and Rolff 1971
CA-SBA-536	Prehistoric lithic scatter	Good	Surf	Spanne and Rolff 1971
CA-SBA-549	Prehistoric lithic scatter	Good	Surf	Spanne and Rolff 1971
CA-SBA-678	Prehistoric lithic scatter	Good	Surf	Spanne and Rolff 1971
CA-SBA-679	Prehistoric lithic scatter	Good	Surf	Spanne and Rolff 1971
CA-SBA-680	Prehistoric lithic scatter	Fair – extensive wind erosion	Surf	Spanne and Rolff 1971

Table 22-5. Segment 20 Corridor – Previously Recorded Cultural Resources in Santa Barbara County

Site #	Site Type	Site Condition	USGS Quad	Recorded
CA-SBA-681	Prehistoric lithic scatter	Good	Surf	Spanne and Rolff 1971
CA-SBA-682	Prehistoric lithic scatter	Good	Surf	Spanne 1971
CA-SBA-683	Prehistoric lithic scatter	Good	Surf	Spanne 1971
CA-SBA-684	Prehistoric lithic scatter	Good	Surf	Spanne 1971
CA-SBA-690	Prehistoric shell and lithic scatter	Good	Surf	Spanne 1971
CA-SBA-692	Prehistoric shell midden	Fair – erosion	Surf	Spanne, Rolff 1971
CA-SBA-908	Prehistoric lithic scatter	Good	Surf	Spanne 1971
CA-SBA-931	Prehistoric lithic scatter	Good	Surf	Spanne 1972
CA-SBA-1039	Prehistoric lithic scatter	Good	Surf	Spanne 1973
CA-SBA-1040	Prehistoric shell midden	Good	Surf	Spanne 1973
CA-SBA-1041	Prehistoric lithic scatter	Good	Surf	Spanne 1973
CA-SBA-1053	Prehistoric lithic scatter	Good	Surf	Spanne 1973
CA-SBA-1054	Prehistoric lithic scatter	Good	Surf	Spanne 1973
CA-SBA-1055	Prehistoric lithic scatter	Good	Surf	Spanne 1973
CA-SBA-1056	Prehistoric lithic scatter	Good	Surf	Spanne 1973
CA-SBA-1057	Prehistoric lithic scatter	Good	Surf	Spanne 1973
CA-SBA-1058	Prehistoric lithic scatter	Good	Surf	Spanne 1973
CA-SBA-1125	Historic trash scatter	Good	Surf	Scupin 1974
CA-SBA-1128	Prehistoric lithic scatter	Good	Surf	Sawyer 1974
CA-SBA-1129	Prehistoric shell and faunal scatter	Good	Surf	Sawyer 1974
CA-SBA-1131	Prehistoric lithic scatter	Good	Surf	Sawyer and Gay 1974

Table 22-5. Segment 20 Corridor – Previously Recorded Cultural Resources in Santa Barbara County

Site #	Site Type	Site Condition	USGS Quad	Recorded
CA-SBA-1133	Prehistoric shell scatter	Good	Surf	Sawyer and Johnson 1974
CA-SBA-1134	Prehistoric lithic scatter	Good	Surf	Sawyer 1974
CA-SBA-1137	Prehistoric lithic scatter	Good	Surf	Sawyer 1974
CA-SBA-1139	Prehistoric isolate	Good	Surf	Sawyer 1974
CA-SBA-1140	Prehistoric lithic scatter	Planned road realignment	Surf	Johnson 1974
CA-SBA-1141	Prehistoric lithic scatter	Planned road realignment	Surf	Johnson 1974
CA-SBA-1166	Prehistoric lithic scatter	Fair	Surf	Spanne 1980
CA-SBA-1762	Prehistoric lithic scatter	Good	Surf	Schilz 1981
CA-SBA-1765	Prehistoric lithic scatter	Good	Surf	Schilz 1981
CA-SBA-1888	Prehistoric lithic scatter	Good	Surf	Gibson and Schuyler 1984
CA-SBA-1994	Prehistoric lithic scatter	Good	Surf	MacFarlane and Girstle 1985
CA-SBA-1996	Prehistoric lithic scatter	Good	Surf	MacFarlane and Gother 1985
CA-SBA-2431	Prehistoric lithic scatter	Good	Surf	Schmidt and Schmidt 1991
CA-SBA-2488/H	Historic glass scatter	Good	Surf	Gibson 1984
CA-SBA-2489	Prehistoric lithic scatter	Good	Surf	Gibson and Schuyler 1984
CA-SBA-2840	Prehistoric lithic scatter	Good	Surf	McDowell et al. 1995
CA-SBA-2877	Prehistoric lithic scatter	Good	Surf	McDowell et al. 1995
CA-SBA-2878	Prehistoric lithic scatter	Fair – RR runs through	Surf	McDowell et al. 1995
CA-SBA-2940	Prehistoric lithic scatter	Good	Surf	Paniaqua 1995
CA-SBA-2953	Prehistoric lithic scatter	Fair – roads run through	Surf	Calicher 1995
CA-SBA-3144	Prehistoric lithic scatter	Good	Surf	Calicher 1995

Table 22-5. Segment 20 Corridor – Previously Recorded Cultural Resources in Santa Barbara County

Site #	Site Type	Site Condition	USGS Quad	Recorded
CA-SBA-3146	Prehistoric lithic scatter	Good	Surf	Kennedy 1995
CA-SBA-3147	Prehistoric lithic scatter	Good	Surf	Frietze 1995
CA-SBA-3151	Prehistoric lithic scatter	Good	Surf	Frietze 1995
CA-SBA-3152	Prehistoric lithic scatter	Good	Surf	Frietze 1995
CA-SBA-3153	Prehistoric lithic scatter	Good	Surf	Calicher 1995
CA-SBA-3154	Prehistoric lithic scatter	Good	Surf	Schultz 1995
CA-SBA-3155	Prehistoric lithic scatter	Good	Surf	Paniaqua 1995
CA-SBA-3156	Prehistoric lithic scatter	Good	Surf	Frietze 1995
CA-SBA-3157	Prehistoric lithic scatter	Good	Surf	Kennedy 1995
CA-SBA-3346	Prehistoric lithic scatter	Good	Surf	McDowell et al. 1995
CA-SBA-3347	Prehistoric lithic scatter	Good	Surf	McDowell et al. 1995
CA-SBA-3418	Prehistoric lithic scatter	Good	Surf	McDowell 1996
CA-SBA-205	Prehistoric shell midden with burials	Good	Lompoc Hills, Tranquillon Mountain	McKinney and Fritsche 1963
P-42-003504 or CA-SBA-3504	Prehistoric lithic scatter	Good	Lompoc Hills	Romani and Larson 1999
P-42-000553 or CA-SBA-553	Historic Adobe ruin w/ midden deposits	Good	Lompoc Hills	DWL 1974
CA-SBA-1496	Prehistoric lithic and shell scatter	Good: natural cliff erosion	Point Conception	Wilcoxon and Neff 1977
P-42-001476 or CA-SBA-1476	Prehistoric shell midden	Mostly intact: partially bulldozed for RR.	Point Conception	Schiowitz 1976
P-42-001477 or CA-SBA-1477	Prehistoric lithic scatter and possible midden	Destruction due to future development of area	Point Conception	Hector and Ivie 1976
P-42-001478 or CA-SBA-1478	Prehistoric artifact scatter	Destruction due to future development of area	Point Conception	Rosen 1976

Table 22-5. Segment 20 Corridor – Previously Recorded Cultural Resources in Santa Barbara County

Site #	Site Type	Site Condition	USGS Quad	Recorded
P-42-000202 or CA-SBA-202	Prehistoric shell midden with artifact scatter	Destruction due to future development of area	Point Conception	Ivie and Villanueva 1976
P-42-001968 or CA-SBA-1968	Prehistoric lithic scatter	Poor: past trenching, plowing, and erosion	Point Conception	Erlandson 1985
P-42-001659 or CA-SBA-1659	Prehistoric lithic scatter	Poor: historic agricultural activities	Point Conception	Ancient Enterprises Inc. 1979
P-42-001522 or CA-SBA-1522	Prehistoric shell midden	Poor: erosion and activity of campers	Point Conception	King 1977
P-42-001505 or CA-SBA-1505	Prehistoric shell midden and lithic scatter	Poor: road over site	Point Conception	King and Henton 1977
P-42-001523 or CA-SBA-1523	Prehistoric shell midden and lithic scatter	Plowing and surface collecting by ranchers	Point Conception	King 1977
P-42-001503 or CA-SBA-1503	Prehistoric habitation shell midden	Poor: extensive erosion, and impact from near by development	Point Conception	Craig and King 1976
P-42-001500 or CA-SBA-1500	Prehistoric shell midden and lithic scatter	Destruction due to future development of area	Point Conception	Henton and Fenenga 1977
CA-SBA-542	Prehistoric shell scatter	Fair: historic agriculture activities	Point Conception	Greenwood and Foster 1984
CA-SBA-541	Prehistoric shell midden with burials	Fair: partially covered by SoPacRR fill	Point Conception	DWL 1950
CA-SBA-546	Prehistoric shell midden ALSO: Historic artifact scatter	Poor: impacted by development of roads in area	Point Conception	RHB 1950; Ivie and Villanueva 1977; Craig 1977
P-42-000545 or CA-SBA-545	Prehistoric midden and lithic debris	Future destruction due to development in area	Point Conception	RHB 1950; Craig 1977
CA-SBA-203	Protohistoric village site with burials	Partially destroyed for fill, partially preserved by alluvial soil	Point Conception	DWL 1951
P-42-001845 or CA-SBA-1845	Historic: remnant of Conception Railroad siding	Good	Point Conception	Quillen 1982
P-42-001912 or CA-SBA-1912	Prehistoric lithic scatter	Good	Point Conception	Moore 1985
CA-SBA-2595	Prehistoric Lithic Scatter	Unknown	Point Conception	Spanne 1968
P-42-001806 or CA-SBA-1806	Prehistoric shell midden and lithic scatter	Future expansion of access road will effect the site integrity	Point Conception	Kuffner and Wallof 1977

Table 22-5. Segment 20 Corridor – Previously Recorded Cultural Resources in Santa Barbara County

Site #	Site Type	Site Condition	USGS Quad	Recorded
P-42-001666 or CA-SBA-1666	Prehistoric shell midden and lithic scatter	Transected by Bixby Road, and erosion in area	Point Conception	Van Horn 1979
P-42-002014 or CA-SBA-2014	Prehistoric lithic scatter	Good	Point Conception	McDouglall and Sheets 1985
P-42-001664 or CA-SBA-1664	Prehistoric lithic scatter	Good: some erosion	Point Conception	Van Horn 1979
CA-SBA-638	Prehistoric lithic and shell scatter	Fair: erosion from seacliff claiming site	Tranquillon Mountain and Point Arguello	Spanne 1970
CA-SBA-2900	Prehistoric lithic and shell scatter	Fair: rodent and cattle disturbance	Tranquillon Mountain	Frietze 1994
CA-SBA-2910	Prehistoric quarry, chert debitage	Fair: rodent and cattle disturbance	Tranquillon Mountain	Frietze 1994
CA-SBA-634	Prehistoric lithic and shell scatter	Fair: erosion from seacliff claiming site	Tranquillon Mountain	Spanne 1969
CA-SBA-712	Prehistoric shell midden and lithic scatter	Half of site impacted by railroad construction	Tranquillon Mountain	Spanne 1969
CA-SBA-1542	Prehistoric chert quarry and lithic debris	Poor: impacted by dirt road and seaward erosion	Tranquillon Mountain	Craig 1977
CA-SBA-1561	Prehistoric lithic and shell scatter	Good	Tranquillon Mountain	Macko and Craig 1978
CA-SBA-1560	Prehistoric lithic and shell scatter	Good	Tranquillon Mountain	Macko and Craig 1978
CA-SBA-1544	Prehistoric shell midden and lithic scatter	Good	Tranquillon Mountain	Craig 1976
CA-SBA-1545	Prehistoric shell midden and lithic scatter, with burned rocks and shell	Good	Tranquillon Mountain	Craig 1976
CA-SBA-1559	Prehistoric lithic and shell scatter	Good	Tranquillon Mountain	Macko and Craig 1978
CA-SBA-1562	Prehistoric lithic and shell scatter	Good	Tranquillon Mountain	Macko and Craig 1978
CA-SBA-1546	Prehistoric shell midden and lithic scatter	Fair: cattle overgrazing	Tranquillon Mountain	Craig 1978
CA-SBA-1543	Prehistoric chert quarry and lithic debris and tools	Fair: construction of access road	Tranquillon Mountain	Craig 1978

Table 22-5. Segment 20 Corridor – Previously Recorded Cultural Resources in Santa Barbara County

Site #	Site Type	Site Condition	USGS Quad	Recorded
CA-SBA-1547	2 prehistoric shell middens and lithic scatter	Fair: construction of access road	Tranquillon Mountain	Craig 1978
CA-SBA-1117	Prehistoric shell midden and lithic scatter	Poor: road and railroad realignment	Tranquillon Mountain	Baylor 1974; Spanne 1983
CA-SBA-1118	Prehistoric shell midden and lithic scatter	Poor: dirt road and firebreak cut through site	Tranquillon Mountain	Johnson and Baylor 1974
CA-SBA-1116	Prehistoric shell midden	Poor: road and railroad realignment	Tranquillon Mountain	Baylor 1974
CA-SBA-630	Prehistoric lithic scatter	Good	Tranquillon Mountain	Spanne 1970
CA-SBA-632	Prehistoric lithic scatter	Good	Tranquillon Mountain	Spanne and Rolff 1970
CA-SBA-631	Prehistoric lithic scatter	Good	Tranquillon Mountain	Spanne 1970
CA-SBA-552	Prehistoric shell midden and lithic detritus	Good	Tranquillon Mountain	Pikling, Ruth and Lathrap 1950; Spanne 1970
CA-SBA-629	Prehistoric lithic scatter	Good	Tranquillon Mountain	Spanne 1970
P-42-000600 or CA-SBA-600	Prehistoric lithic scatter	Good	Tranquillon Mountain	Carbone 1994
P-42-000601 or CA-SBA-601	Prehistoric shell midden and lithic scatter	Good	Tranquillon Mountain	Spanne 1970
P-42-000208 or CA-SBA-208	Prehistoric occupational site and shell midden with burials	Fair: cultivation, road and railroad construction impact site	Tranquillon Mountain	Pilling and Lathrop 1950; Osland and Jaffke 1990
P-42-000209 or CA-SBA-209	Prehistoric village site	Poor: impact from construction on site	Tranquillon Mountain	Ruth, Pilling and Lathrop 1950
P-42-000949 or CA-SBA-949	Prehistoric shell midden	Good	Tranquillon Mountain	Spanne 1972
P-42-001111 or CA-SBA-1111	Prehistoric lithic scatter, historic artifact scatter	Fair: roads and railroad cut through site	Tranquillon Mountain	Gibson 1988; Sawyer 1974
P-42-002356 or CA-SBA-2356	Prehistoric chert quarry, lithic and shell scatter	Good	Tranquillon Mountain	Jaffke 1990

Table 22-5. Segment 20 Corridor – Previously Recorded Cultural Resources in Santa Barbara County

Site #	Site Type	Site Condition	USGS Quad	Recorded
P-42-002354 or CA-SBA-2354	Prehistoric shell midden and lithic scatter	Fair: rodent and cattle disturbance	Tranquillon Mountain	Jaffke 1990
P-42-002373 or CA-SBA-2373	Historical remains and associated artifacts of Sudden Depot circa 1901	Good	Tranquillon Mountain	Osland and Kirkish 1990
P-42-002372 or CA-SBA-2372	Prehistoric lithic scatter and historic debris	Fair: cultivated land and road cuts through site	Tranquillon Mountain	Osland and Kirkish 1990
P-42-000610 or CA-SBA-610	Prehistoric shell midden and lithic detritus	Good	Tranquillon Mountain	Spanne 1970
P-42-000207 or CA-SBA-207	Prehistoric village site and lithic quarry	Poor: future construction site	Tranquillon Mountain	Carbone 1994
P-42-000609 or CA-SBA-609	Prehistoric shell midden, habitation site, and quarry	Good: natural erosion and vandalism	Tranquillon Mountain	Spanne and Rolff 1970
P-42-000602 or CA-SBA-602	Prehistoric shell midden and lithic detritus	Fair: natural erosion and agriculture	Tranquillon Mountain	Spanne and Rolff 1970
P-42-000611 or CA-SBA-611	Prehistoric lithic and shell scatter	Fair: natural erosion and agriculture	Tranquillon Mountain	Spanne and Rolff 1970
P-42-000614 or CA-SBA-614	Prehistoric shell midden and lithic scatter	Destroyed by grading and widening of road	Tranquillon Mountain	Spane, Benson, and Geary 1970
P-42-000618 or CA-SBA-618	Prehistoric shell scatter	Good	Tranquillon Mountain	Unknown
P-42-000628 or CA-SBA-628	Prehistoric lithic scatter	Fair: erosion from seacliff claiming site	Tranquillon Mountain	Unknown
P-42-000633 or CA-SBA-633	Prehistoric shell and lithic scatter	Fair: erosion from seacliff claiming site	Tranquillon Mountain	Unknown
P-42-000626 or CA-SBA-626	Prehistoric shell and lithic scatter	Good	Tranquillon Mountain	Unknown
P-42-000769 or CA-SBA-769	Prehistoric shell and lithic scatter	Good: road cuts through site	Tranquillon Mountain	McDowell, Locke, Minas, and Stansberry 1994
P-42-000768 or CA-SBA-768	Prehistoric habitation site with shell and lithic scatter	Good: cattle grazing and road bisects site	Tranquillon Mountain	McDowell, Locke, Minas, and Stansberry 1994
P-42-003497 or CA-SBA-3497	Prehistoric lithic scatter and quarry	Fair	Tranquillon Mountain	Hawley, Locke, Easter, and Sharp 1998

Table 22-5. Segment 20 Corridor – Previously Recorded Cultural Resources in Santa Barbara County

Site #	Site Type	Site Condition	USGS Quad	Recorded
CA-SBA-2901	Prehistoric lithic scatter and quarry	Good	Tranquillon Mountain	Cayer 1994
CA-SBA-2902	Prehistoric lithic scatter	Fair: cattle grazing and seasonal water erosion	Tranquillon Mountain	Calicher 1994
CA-SBA-2914H	Historic standing cabin fallen cabin, and trash scatter	Poor: natural erosion and vandalism	Tranquillon Mountain	Kennedy 1994
CA-SBA-2903	Prehistoric lithic scatter	Good: agriculture and natural erosion	Tranquillon Mountain	Paniagua 1994
CA-SBA-2849	Prehistoric lithic and shell scatter	Good: water erosion	Tranquillon Mountain	McDowell, Locke, VanSchmus 1995
CA-SBA-2870	Prehistoric lithic and shell scatter	Good: cattle grazing	Tranquillon Mountain	McDowell, Locke, Minas, Stansberry, Van Schmus 1994
CA-SBA-2857	Prehistoric shell scatter	Good: cattle grazing	Tranquillon Mountain	McDowell, Locke, Minas, Stansberry 1994
CA-SBA-2868	Prehistoric shell scatter, hammerstone	Good: cattle grazing	Tranquillon Mountain	McDowell, Locke, Minas, Stansberry, Van Schmus 1994
CA-SBA-2852	Prehistoric rock pile feature	Fair: cliff erosion	Tranquillon Mountain	McDowell, Locke, Minas, Stansberry 1994
CA-SBA-2851	Prehistoric lithic scatter	Fair: cliff erosion	Tranquillon Mountain	McDowell, Locke, Minas, Stansberry 1994
CA-SBA-2853	Prehistoric lithic scatter	Fair: cliff erosion	Tranquillon Mountain	McDowell, Locke, Minas, Stansberry 1994
CA-SBA-2854	Prehistoric lithic scatter	Fair: cliff erosion	Tranquillon Mountain	McDowell, Locke, Minas, Stansberry 1994
CA-SBA-2855	Prehistoric lithic scatter	Fair: cliff erosion	Tranquillon Mountain	McDowell, Locke, Minas, Stansberry 1994
CA-SBA-2856	Prehistoric lithic scatter	Fair: cliff erosion	Tranquillon Mountain	McDowell, Locke, Minas, Stansberry 1994
CA-SBA-2850	Prehistoric shell scatter	Fair: seacliff erosion, cattle grazing, and rodent burrows	Tranquillon Mountain	McDowell, Locke, Van Wyke, and Van 1995
P-42-002210 or CA-SBA-2210	Prehistoric lithic and shell scatter	Good	Tranquillon Mountain	Gibson 1988

Table 22-5. Segment 20 Corridor – Previously Recorded Cultural Resources in Santa Barbara County

Site #	Site Type	Site Condition	USGS Quad	Recorded
P-42-002222 or CA-SBA-2222	Prehistoric shell scatter	Good	Tranquillon Mountain	Gibson 1988
CA-SBA-1149	Prehistoric Site: Early Period bifaces, points, debitage, groundstone ALSO: Historic Ranch Site: ceramics, glass, iron, brick, abalone shell	Slightly Disturbed – road construction, Space Shuttle construction, trenching, archaeological and geologic testing	Tranquillon Mountain	Spanne 1974, 1982; Spanne & Gibson 1988; Marmor 1988
CA-SBA-1112	Unknown No Site Record	Unknown	Tranquillon Mountain	Unknown
P-42-001878 or CA-SBA-1878	Prehistoric lithic and shell scatter	Good	Sacate	Duncan and Erlandson 1984
P-42-001881 or CA-SBA-1881	Prehistoric lithic scatter	Fair	Sacate	Erlandson and Cagle 1984
P-42-001808 or CA-SBA-1808	Prehistoric shell midden and lithic scatter	Poor: seacliff erosion and construction damage	Sacate	Kuffner and Wallof 1977
P-42-001658 or CA-SBA-1658	Prehistoric shell midden and lithic scatter	Good	Sacate	Craig and Horne 1979
P-42-002059 or CA-SBA-2059	Prehistoric lithic scatter and camp	Poor: trenching and construction activities on site	Sacate	Erlandson 1986
P-42-002119 or CA-SBA-2119	Prehistoric lithic scatter	Fair: Chevron trenching	Sacate	Erlandson 1987
P-42-001807 or CA-SBA-1807	Prehistoric shell midden	Poor: construction in area	Sacate	Peterson, Duncan, and Erlandson 1984
P-42-001492 or CA-SBA-1492	Prehistoric shell midden and burials	Fair	Sacate	Duncan 1984
P-42-001491 or CA-SBA-1491	Prehistoric shell midden and habitation site	Poor: past and future construction	Sacate	Henton and Macko 1977
P-42-001880 or CA-SBA-1880	Prehistoric lithic and shell scatter	Poor: seacliff erosion and construction damage	Sacate	Duncan 1984
P-42-001887 or CA-SBA-1887	Prehistoric and historic shell, bone, and lithic scatter	Good	Sacate	Cagle and Erlandson 1984
P-42-001879 or CA-SBA-1879	Prehistoric shell midden	Poor: natural erosion and seacliff erosion	Sacate	Duncan and Erlandson 1984

Table 22-5. Segment 20 Corridor – Previously Recorded Cultural Resources in Santa Barbara County

Site #	Site Type	Site Condition	USGS Quad	Recorded
P-42-000547 or CA-SBA-547	Prehistoric lithic and shell scatter	Fair: cultivated land	Sacate	Duncan 1984
P-42-001872 or CA-SBA-1872	Historic buildings: corrals, loading pens	Buildings updated or removed	Sacate	Duncan and Erlandson 1984
CA-SBA-1495	Prehistoric lithic and shell scatter	Poor: railroad construction and agriculture	Sacate	Neff and Wilcoxon 1977
CA-SBA-1494-A	Prehistoric shell midden with burials	Poor: seacliff erosion	Sacate	Duncan 1984
CA-SBA-1494-B	Protohistoric Chumash village	Poor: seacliff erosion	Sacate	Haley, Duncan, and Erlandson 1984
P-42-001877 or CA-SBA-1877	Prehistoric lithic scatter, historic trash scatter	Good	Sacate	Duncan, Haley, and Erlandson 1984
P-42-001873 or CA-SBA-1873	Prehistoric lithic scatter	Good	Sacate	Duncan and Erlandson 1984
P-42-001871 or CA-SBA-1871	Prehistoric lithic and shell scatter	Good	Sacate	Haley, Duncan, and Erlandson 1984
P-42-001493 or CA-SBA-1493	Prehistoric shell midden	Fair: modern trash litters the site	Sacate	Macko and Henton 1977
P-42-001204 or CA-SBA-1204	Prehistoric lithic and shell scatter, and milling stone cairn with burials	Poor: railroad and US 101 construction, and erosion	Gaviota	Erlandson 1981
P-42-001151 or CA-SBA-1151	Prehistoric lithic and shell scatter	Poor: railroad and US 101 construction	Gaviota	Johnson 1980
P-42-002149 or CA-SBA-2149	Prehistoric shell midden, habitation site, human remains	Good	Gaviota	King 1987
P-42-001914 or CA-SBA-1914	Prehistoric shell midden and lithic scatter	Fair: railroad construction	Gaviota	Hood 1985
P-42-001990 or CA-SBA-1990	Prehistoric artifact scatter	Poor: US 101 and roads on site, and trenching activity	Gaviota	Santoro, Toren and Hazeltine 1992
P-42-001979 or CA-SBA-1979	Prehistoric temporary camp with lithic scatter	Poor: All American pipeline through site	Gaviota	Santoro, Toren and Hazeltine 1992
P-42-001982 or CA-SBA-1982	Prehistoric artifact scatter and possible midden	Fair condition: site is buried	Gaviota	Pjerrou, Johnson, Lagreze, and Schmidt 1985

Table 22-5. Segment 20 Corridor – Previously Recorded Cultural Resources in Santa Barbara County

Site #	Site Type	Site Condition	USGS Quad	Recorded
P-42-002588 or CA-SBA-2588	Prehistoric shell midden	Poor: disturbed by erosions of track	Gaviota	Peak, Gerry, and Oglesby 1991
P-42-002038 or CA-SBA-2038	Prehistoric shell scatter and ground stones	Poor: public works activities	Gaviota	Webb 1985
P-42-001916 or CA-SBA-1916	Prehistoric lithic scatter with possible midden	Fair: railroad construction	Gaviota	Hood 1985
P-42-001969 or CA-SBA-1969	Prehistoric shell midden and habitation site with burials	Fair: seacliff erosion	Gaviota	Erlandson 1985
CA-SBA-1954	Prehistoric lithic scatter and habitation site	Fair	Gaviota	Santoro, Toren and Hazeltine 1991
CA-SBA-2753/H	Historic habitation site, prehistoric lithic scatter	Good: impacted by US 101 construction	Gaviota	Harmon 1988
P-42-002381 or CA-SBA-2381	Prehistoric lithic scatter	Poor: trenching for oil pipeline through the site	Gaviota	Santoro, Toren Hazeltine, and Easter 1992
P-42-001980 or CA-SBA-1980	Prehistoric temporary camp and artifact scatter	Poor: trenching for oil pipeline through the site	Gaviota	Santoro, Toren and Hazeltine 1991
P-42-001981 or CA-SBA-1981	Prehistoric artifact scatter	Good	Gaviota	Semnza, Lambert, Glover, and Imwalle 1985
P-42-001907 or CA-SBA-1907H	Historic house foundation and rubble	Good	Gaviota	Blakley 1985
P-42-001506 or CA-SBA-1506	Prehistoric lithic scatter	Poor: disturbance by construction in area	Gaviota	Wilcoxon 1974
P-42-001156 or CA-SBA-1156	Prehistoric lithic scatter	Fair	Gaviota	Erlandson 1980
P-42-001157 or CA-SBA-1157	Prehistoric shell midden and lithic scatter	Fair	Gaviota	Erlandson 1980
P-42-001915 or CA-SBA-1915	Prehistoric shell midden and lithic scatter	Poor: trenching and construction activities	Gaviota	Hood 1985
P-42-002190 or CA-SBA2190	Prehistoric lithic scatter, possible cultural deposit	Fair: railroad construction through site	Gaviota	Cooley 1988

Table 22-5. Segment 20 Corridor – Previously Recorded Cultural Resources in Santa Barbara County

Site #	Site Type	Site Condition	USGS Quad	Recorded
P-42-001555 or CA-SBA-1555	Historic and prehistoric artifact scatter	Good	Gaviota	Peterson, Duncan, and Erlandson 1984
P-42-001747 or ca-sba-1747	Prehistoric shell midden and associated burials	Good: public works in site area	Gaviota	Peterson 1984; Erlandson 1982
P-42-001952 or CA-SBA-1952	Prehistoric lithic scatter	Good	Gaviota	Clevenger and Cooley 1985
P-42-000093 or CA-SBA-93	Prehistoric shell midden with human bone fragments	Excellent	Gaviota	Unknown (Probably Rogers 1929)
CA-SBA-3395	Prehistoric Lithic Scatter: debitage, one mano, fire-cracked rock	Disturbed by road construction, grading, cultivation, erosion, gas line	Gaviota	Wilcoxon & Castillo 1995
CA-SBA-2082	Prehistoric Chert Quarry, debitage	Fair, some slopewash	Gaviota	York & Imwalle 1986
P-42-002028 or CA-SBA-2028	Prehistoric midden	Good	Gaviota	Erlandson and Cooley 1986
P-42-001870 or CA-SBA-1870	Prehistoric midden with human burials	Poor: seacliff erosion and construction	Gaviota	Macko and Brown 1984
P-42-000094 or CA-SBA-94	Prehistoric shell midden and habitation site	Site most likely destroyed by construction	Gaviota	Rogers 1929
P-42-002189 or CA-SBA-2189	Prehistoric shell midden, possibly material from site CA-SBA-94	Unknown if original deposit or from a different location	Gaviota	Cooley and Santoro 1988
P-42-000095 or CA-SBA-95	Prehistoric shell midden and habitation site	Poor: railroad cuts through site	Gaviota	Rogers 1929
P-42-002647 or CA-SBA-2647	Prehistoric lithic scatter	Good	Gaviota	Valentine-Maki and Ruiz 1994
P-42-002646 or CA-SBA-2646	Prehistoric lithic scatter	Poor: entire site bulldozed	Gaviota	Valentine-Maki and Ruiz 1994
P-42-001101 or CA-SBA-1101	Prehistoric lithic scatter	Poor: entire site bulldozed	Gaviota	Riddell 1971
P-42-001100 or CA-SBA-1100	Prehistoric seasonal habitation site	Poor: seacliff erosion and RR construction	Gaviota	Riddell 1971
P-42-000096 or CA-SBA-96	Prehistoric shell midden and lithic scatter	Fair	Gaviota	Hines, Rivers, and Wheeler 1989

Table 22-5. Segment 20 Corridor – Previously Recorded Cultural Resources in Santa Barbara County

Site #	Site Type	Site Condition	USGS Quad	Recorded
P-42-000097 or CA-SBA-97	Prehistoric shell midden and lithic scatter	Fair: partially cut through by railroad construction	Gaviota	Barter 1986
P-42-002088 or CA-SBA-2088	Prehistoric Site: chipped and groundstone lithics, faunal bone	Partially disturbed by grading for gas pipelines	Gaviota	Erlandson 1987
P-42-001913 or CA-SBA-1913	Prehistoric midden and lithic scatter	Poor: railroad construction through site	Gaviota	Hood 1985
P-42-002061 or CA-SBA 2061	Prehistoric lithic and shell scatter	Poor: trenching and railroad construction	Gaviota	Erlandson 1986
P-42-001675 or CA-SBA-1675	Prehistoric lithic and shell scatter	Poor: Pipeline and roads cut through site	Tajiguas	Santoro, Toren and Hazeltine 1992
P-42-001676 or CA-SBA-1676	Prehistoric lithic scatter	Poor: Pipeline, RR, US 101, and roads cut through the site	Tajiguas	Sheets 1991, de Barros 1986
P-42-001731 or CA-SBA-1731	Prehistoric habitation site with human bone isolates	Poor: completely covered by asphalt and dirt	Tajiguas	Neff 1982; Hines, Rivers, and Wheeler 1989
CA-SBA-1732/H	Historic scatter: white ceramic, iron, glass, and livestock frags.	Good	Tajiguas	Spanne and Weighill 1981
P-42-001733 or CA-SBA-1733	Historic adobe, prehistoric shell midden with human bone isolates	Good	Tajiguas	Spanne and Weighill 1982
P-42-001766 or CA-SBA-1766	Prehistoric shell midden with artifact scatter	Destroyed by construction of oil facility	Tajiguas	Stickel 1982
P-42-001899 or CA-SBA-1899	Prehistoric lithic and shell scatter	Good	Tajiguas	Macko, Berry, Buhler, and Sespe 1984
P-42-001900 or CA-SBA-1900	Prehistoric habitation site with human bone isolates	Poor: trenching and road cuts through site, once was a corral	Tajiguas	Hazeltine, Toren, and Easter 1992; Amme 1984
P-42-001901 or CA-SBA-1901	Prehistoric lithic and shell scatter	Good	Tajiguas	Amme 1984
P-42-001921 or CA-SBA-1921	Prehistoric shell midden and lithic tools	Poor: development of oil areas and related facilities on site	Tajiguas	Sheets 1991 Hood 1985
P-42-001986 or CA-SBA-1986	Prehistoric temporary camp and lithic scatter	Fair: access roads, cattle grazing, and ranch buildings	Tajiguas	Santoro, Toren and Hazeltine 1992

Table 22-5. Segment 20 Corridor – Previously Recorded Cultural Resources in Santa Barbara County

Site #	Site Type	Site Condition	USGS Quad	Recorded
P-42-001987 or CA-SBA-1987	Prehistoric temporary camp, lithic scatter and several manos	Good: except trenching has destroyed northern side of site	Tajiguas	Santoro, Toren and Hazeltine 1992
P-42-001988 or CA-SBA-1988	Historic and prehistoric artifact scatter, with bone frags.	Poor: highly disturbed site	Tajiguas	Santoro, Toren and Hazeltine 1992
P-42-002011 or CA-SBA-2011	Prehistoric lithic scatter and temporary camp	Poor: highly disturbed site	Tajiguas	Santoro, Toren and Hazeltine 1992
P-42-002254 orCA-SBA-2254	Prehistoric lithic scatter	Poor: south side removed for road, north side is orchard	Tajiguas	Sheets 1989
P-42-002283 or CA-SBA-2283	Standing corrugated "tin" building	Good	Tajiguas	Hines, Rivers, and Wheeler 1989
P-42-000081 or CA-SBA-81	Prehistoric habitation site with burials	Good	Tajiguas and Dos Pueblos Canyon	Rogers 1929
P-42-000082 or CA-SBA-82	Prehistoric village with burials	Good: evidence of looters	Tajiguas	Rogers 1929
P-42-000083 or CA-SBA-83	Prehistoric lithic scatter with human bone frags	Poor: seacliff erosion, RR cuts through site	Tajiguas	Sheets 1991; Rogers 1929
P-42-000084 or CA-SBA-84	Prehistoric village with 2 cemeteries	Poor: evidence of looting – potholes and screening debris	Tajiguas	Harrison 1957; Hines, Rivers and Wheeler 1989
P-42-000131 or CA-SBA-131	Prehistoric food processing site	Poor: US 101 and road cut through site	Tajiguas	Sheets 1991; de Barros 1986
P-42-000085 or CA-SBA-85	Prehistoric habitation site with burials	Fair	Tajiguas	Rogers 1928; Sheets 1991; de Barros 1986
P-42-000086 or CA-SBA-86	Prehistoric charcoal midden with burials	Fair: camp ground, bike trail, and railroad on site	Tajiguas	Rogers 1926; Hood 1985
P-42-000087 or CA-SBA-87	Prehistoric habitation site with burials	Good: buried underneath US 101 overpass fill	Tajiguas	Rogers 1929; Klug 1960; Hines 1989
P-42-000088 or CA-SBA-88	Prehistoric lithic scatter with cemetery	Poor: seacliff erosion destroyed at least 50% of site	Tajiguas	Hines 1989; Klug 1960; Rogers 1929
P-42-000089 or CA-SBA-89	Prehistoric site with many burials	Poor: railroad and US 101 run through site	Tajiguas	Rogers 1929

Table 22-5. Segment 20 Corridor – Previously Recorded Cultural Resources in Santa Barbara County

Site #	Site Type	Site Condition	USGS Quad	Recorded
P-42-000090 or CA-SBA-90	Prehistoric campsite	Poor: most of site destroyed by construction	Tajiguas	Rogers 1929; Toren and Hazeltine 1992
P-42-000091 or CA-SBA-91	Prehistoric shell midden	Fair: occupied house on top of mound, inset foundation	Tajiguas	McKinney 1962
P-42-000092 or CA-SBA-92	Possible prehistoric lithic scatter	Gone: destroyed by construction between 1929-86	Tajiguas	de Barros 1986; D'Altroy 1929
P-42-000108 or CA-SBA-108	Historic cemetery and prehistoric midden	Oak Grove cemetery cut through, midden disturbed by RR	Tajiguas	D'Altroy 1929; Hines, Rivers, and Wheeler 1989
P-42-000117 or CA-SBA-117	Prehistoric village and shell midden with human bone	Fair: some construction, buildings on site boundaries	Tajiguas	Hines, Rivers, and Wheeler 1989; Harrison 1957
P-42-000126 or CA-SBA-126	Prehistoric shell midden with burials	Poor: 75% destroyed for a parking lot	Tajiguas	Harrison 1973; Hines, Rivers and Wheeler 1989
P-42-000127 or CA-SBA-127	Prehistoric midden and habitation site	Gone: completely tilled and paved over for residences	Tajiguas	WMH and PL 1959; Hines, Rivers, and Wheeler 1989
P-42-001152 or CA-SBA-1152	Prehistoric lithic scatter	Poor	Tajiguas	Johnson 1980
P-42-000029 or CA-SBA-29	Prehistoric camp and cemetery "on landward end"	Poor: roads and buildings on site, erosion from sea	Santa Barbara	Rogers 1929
P-42-000018 or CA-SBA-18	Prehistoric habitation site with burials	Fair	Santa Barbara	Rogers 1929
P-42-000019 or CA-SBA-19	Prehistoric shell midden with burials	Poor	Santa Barbara	Rogers 1929
P-42-000020 or CA-SBA-20	Prehistoric shell midden with 2 cemeteries	Fair: buildings and roads near or on site	Santa Barbara	Snethkamp 1988
P-42-000023 or CA-SBA-23	Prehistoric shell midden	Oak Park facilities cover area	Santa Barbara	Cartkoff, Kona and Cartkoff 1967
P-42-000024 or CA-SBA-24	Prehistoric midden and lithic scatter	Fair: US 101 cuts through part of the site	Santa Barbara	Rogers 1929; Cartkoff, Kona and Cartkoff 1967
P-42-000026 or CA-SBA-26	Prehistoric midden and habitation site	Fair: roads and buildings on site	Santa Barbara	Rogers 1929

Table 22-5. Segment 20 Corridor – Previously Recorded Cultural Resources in Santa Barbara County

Site #	Site Type	Site Condition	USGS Quad	Recorded
P-42-000027 or CA-SBA-27	Protohistoric village midden with 2 cemeteries	Poor: "site almost completely gone"	Santa Barbara	Rogers 1923; Chartkoff and Kona 1967
P-42-000028 or CA-SBA-28	Historic adobe ruins and prehistoric midden, village, and cemetery	Fair: buildings on site	Santa Barbara	Rogers 1923; Chartkoff and Kona 1967
CA-SBA-133	Spanish presidio and chapel some standing	Fair: some restoration of standing buildings	Santa Barbara	Deetz 1962
CA-SBA-1213 "Hammond Meadows Site"	Prehistoric-Protohistoric midden and village	House construction, looting, lawn maintenance	Santa Barbara	Glassow 1972
P-42-001489 or CA-SBA-1489	Prehistoric milling stone station with lithic scatter	Fair: disturbance for grading for house	Santa Barbara	Erlandson and Macko 1980
P-42-001776 or CA-SBA-1776	Prehistoric shell midden and lithic scatter	Good	Santa Barbara	Erlandson and Moss 1982
P-42-001958 or CA-SBA-1958	Prehistoric shell and lithic scatter	Poor: gravel and asphalt on site	Santa Barbara	Macko and Rhodes 1985
P-42-001964 or CA-SBA-1964	Historic trash dump	Good	Santa Barbara	Wilcoxon and Peterson 1985
P-42-002145 or CA-SBA-2145H (8145-H on map)	Foundation of the Jose Leandro Gonzalez Adobe	Good	Santa Barbara	Toren 1987
P-42-002180 or CA-SBA-2180H	Historic trash dump	Fair	Santa Barbara	Michaels and Bettison 1987
P-42-002357 or CA-SBA-2357	Prehistoric artifact scatter	Fair: construction of US 101 on site	Santa Barbara	Wilcoxon and Harmon 1988
P-42-002388 or CA-SBA-2388H	Historic dump and brick cistern from house 1852-1930s	Fair	Santa Barbara	McDowell, Maschner and Snethkamp 1990
P-42-002576 or CA-SBA-2576H	Foundations of adobe buildings	Good	Santa Barbara	Toren 1992
P-42-002596 or CA-SBA-2596	Historic trashpits and fence posts	Poor: soil removed for fuel tank, parking lot on site	Santa Barbara	Toren and Hazeltine 1993
P-42-003505 or CA-SBA-3505H	Site of the Santa Barbara I Manufactured Gas Plant	Poor: excavations for basements removed soil	Santa Barbara	Denardo 1999

Table 22-5. Segment 20 Corridor – Previously Recorded Cultural Resources in Santa Barbara County

Site #	Site Type	Site Condition	USGS Quad	Recorded
CA-SBA-504	Prehistoric painted petroglyphs on sandstone	Poor: erosion of sandstone had degraded painting	Santa Barbara	Hyder and Oliver 1979; Steward 1929
CA-SBA-2178/H	Historic artifact scatter and Prehistoric lithic and shell scatter	Poor: Prehistoric component may be fill from a different location	Carpinteria	York and Haley 1988
CA-SBA-2183	Prehistoric shell scatter	Poor: creekside erosion and bulldozer	Capinteria	Wilcoxon and Moriarty 1988
CA-SBA-2179	Prehistoric habitation refuse	Poor: RR and US 101 cut through the site	Carpinteria	Haley and York 1988
CA-SBA-2205H	Historic trash dump circa 1900-1950s	Fair	Carpinteria	Haley 1988
CA-SBA-2206	Prehistoric lithic scatter	Poor: severe argilliturbation	Carpinteria	Haley 1988
CA-SBA-1722	Prehistoric artifact scatter	Poor: cultivated land	Carpinteria	Wilcoxon 1982
CA-SBA-1670/H	Historic trash and prehistoric artifact scatter	Poor: railroad cuts through site	Carpinteria	Perez 1979
CA-SBA-129	Prehistoric midden	Good: protected by orchard	Carpinteria	Ruby 1960
CA-SBA-1566	Prehistoric shell midden	Fair: damage from natural erosion	Carpinteria	Craig and Horne 1978
CA-SBA-1514	Prehistoric Occupation Site: midden, groundstone, chipped lithics	Disturbed – cultivation	Carpinteria	Wilcoxon 1977
CA-SBA-1856	Prehistoric midden with human isolate bones	Poor	Carpinteria	Finnerty 1984
CA-SBA-1182	Prehistoric shell and lithic scatter	Site for future development	Carpinteria	Wilcoxon 1980
CA-SBA-1202	Prehistoric lithic scatter	Entire site leveled for development	Carpinteria	Wilcoxon 1981; Bonner 1995
CA-SBA-1578/H	Foundation and fallen wall of Masini Adobe circa 1820	Good	Carpinteria	Elandson and Heinzen 1979
CA-SBA-6	Prehistoric shell midden with human remains	Mostly destroyed	Carpinteria	Spanne 1968; Haley and York 1988
CA-SBA-7	Prehistoric village with multiple cemeteries	Excellent	Carpinteria	Haley and York 1988; Woodward 1983

Table 22-5. Segment 20 Corridor – Previously Recorded Cultural Resources in Santa Barbara County

Site #	Site Type	Site Condition	USGS Quad	Recorded
CA-SBA-12	Prehistoric seasonal camp	Good	Carpinteria	Rogers 1929; Macko and Erlandson 1979
CA-SBA-13	Prehistoric midden with burials	Fair	Carpinteria	Rogers 1929; Glassow 1972
P-42-000014 or CA-SBA-14	Prehistoric food processing station with burials	Poor: cultivation and construction	Carpinteria	Klug 1929; Wilcoxon and Moriarty 1988
CA-SBA-16	Prehistoric milling station possibly human bone frags	Good	Carpinteria	Rogers 1928
4-SBA-17	Protohistoric Chumash village with shell midden and burials	Poor: erosion, RR and US 101 cut through the site	Carpinteria	Rogers 1929; Chartkoff and Kona 1967
CA-SBA-2918H	Historic foundation, nails and lumber	Over 50% has eroded into the ocean	Point Arguello	Kennedy 1994
CA-SBA-1908	Prehistoric lithic scatter	Poor	Point Arguello	Schilz 1984
CA-SBA-1686	Prehistoric deposit of chert debitage and tools	95% destroyed by construction ,one small section of site survives	Point Arguello	Serena 1981
CA-SBA-676	Historic farmstead foundation and trash deposit	Good	Point Arguello	Spanne and Rolff 1970
CA-SBA-674	Prehistoric lithic detritus scatter	Good	Point Arguello	Spanne and Rolff 1970
CA-SBA-673	Prehistoric lithic scatter	Poor: rapid seacliff erosion	Point Arguello	Spanne and Rolff 1970; Cayer 1994
CA-SBA-672	Prehistoric lithic and shell scatter	Poor: rapid seacliff erosion	Point Arguello	Spanne 1970
CA-SBA-671	Prehistoric lithic and shell scatter	Fair: seacliff erosion	Point Arguello	Spanne and Rolff 1970
CA-SBA-670	Prehistoric shell midden	Largely destroyed	Point Arguello	Spanne and Rolff 1970
CA-SBA-669	Prehistoric lithic and shell scatter	Fair: seacliff erosion	Point Arguello	Spanne 1970
CA-SBA-668	Prehistoric shell midden	Good	Point Arguello	Spanne 1970
CA-SBA-666	Prehistoric shell midden	Fair: seacliff erosion	Point Arguello	Spanne 1970
CA-SBA-662	Prehistoric shell midden with human remains	Fair: cable trench through site	Point Arguello	Spanne 1970

Table 22-5. Segment 20 Corridor – Previously Recorded Cultural Resources in Santa Barbara County

Site #	Site Type	Site Condition	USGS Quad	Recorded
CA-SBA-1120	Prehistoric food processing site	Good	Point Arguello	Sawyer 1974
CA-SBA-212	Prehistoric village	Poor: seacliff erosion has destroyed part of site	Point Arguello	Unknown 1951
CA-SBA-661	Prehistoric shell midden	Good	Point Arguello	Spanne and Spanne 1970
CA-SBA-654	Prehistoric shell midden	Heavy destruction due to construction	Point Arguello	Spanne and Spanne 1970
CA-SBA-653	Prehistoric lithic scatter	Mostly destroyed by railroad construction	Point Arguello	Spanne 1970
CA-SBA-652	Prehistoric shell midden possible human remains	Good	Point Arguello	Spanne 1970
CA-SBA-651	Prehistoric shell midden	Good	Point Arguello	Spanne 1970
CA-SBA-650	Prehistoric shell midden	Good	Point Arguello	Spanne 1970
CA-SBA-649	Prehistoric shell midden	Good	Point Arguello	Spanne 1970
CA-SBA-648	Prehistoric lithic scatter	Good	Point Arguello	Spanne 1970
CA-SBA-643	Prehistoric shell midden	Good	Point Arguello	Spanne 1970
CA-SBA-639	Prehistoric shell midden	Good	Point Arguello	Spanne 1970
CA-SBA-551	Prehistoric shell midden with burials	Good	Point Arguello	Spanne, Spanne, Spanne, and Spanne 1970
CA-SBA-555	Prehistoric shell midden	Good	Point Arguello	Spanne and Rolff 1970
CA-SBA-539	Prehistoric shell midden with burials	Largely destroyed by roads	Point Arguello	Spanne 1970; Lathrap, Pilling and Fenenga 1977
CA-SBA-530	Prehistoric shell midden with human remains	Fair: seaward erosion	Point Arguello	Spanne 1970
CA-SBA-210	Prehistoric occupation site with cemetery	Fair	Point Arguello and Tranquillion Mountains	Spanne 1970; Pilling, Ruth and Lathrap 1950
CA-SBA-2916	Prehistoric lithic scatter	Fair	Point Arguello	Paniagua 1994
CA-SBA-2920H	Historic dump site	Good	Point Arguello	Kennedy 1994

Table 22-5. Segment 20 Corridor – Previously Recorded Cultural Resources in Santa Barbara County

Site #	Site Type	Site Condition	USGS Quad	Recorded
CA-SBA-2917	Prehistoric lithic scatter	Good	Point Arguello	H. Calicher 1994
CA-SBA-2229	Prehistoric lithic and shell scatter	Good	Point Arguello	Driggers, Oxford, Castillo and Amann 1988
CA-SBA-2215	Prehistoric lithic scatter	Good	Point Arguello	Gibson 1988
CA-SBA-1126	Prehistoric lithic scatter	Good	Point Arguello	Gay 1974
CA-SBA-1124	Prehistoric lithic scatter and wine bottle	Good	Point Arguello	Carter 1974
CA-SBA-1122	Prehistoric shell scatter	Good	Point Arguello	Sawyer 1974
CA-SBA-1121	Prehistoric lithic scatter	Good	Point Arguello	Hardaker 1974
CA-SBA-1119	Prehistoric lithic and shell scatter	Good	Point Arguello	Baylor 1974
CA-SBA-1145	Historic house materials, prehistoric shell scatter	Fair: trenching through the site	Point Arguello	Sawyer 1974; Gibson 1988
CA-SBA-1110	Prehistoric shell midden	Good	Point Arguello	McCrary 1974
CA-SBA-1109	Prehistoric shell midden	Good	Point Arguello	McCrary 1974
CA-SBA-1108	Prehistoric lithic scatter	Good	Point Arguello	Sawyer 1974
CA-SBA-1105	Prehistoric shell and lithic scatter	Good	Point Arguello	Gay 1974; Gibson 1988
CA-SBA-1114	Prehistoric lithic scatter	Good	Point Arguello	Sawyer 1974
CA-SBA-1783	Prehistoric shell and lithic scatter	Fair: railroad cuts directly through site	Point Arguello	Spanne 1983; Gibson 1988
CA-SBA-2796	Prehistoric shell midden and lithic scatter	Good	Point Arguello	McVickar, Marshall, Seibach, and Armenta 1994
CA-SBA-2797	Prehistoric lithic and bone scatter	Good	Point Arguello	Davis and Carrillo 1994
CA-SBA-2795	Prehistoric lithic scatter	Poor: rodent activity and road on site	Point Arguello	York 1994
CA-SBA-2209	Prehistoric lithic scatter	Good	Point Arguello	Gibson 1988

Table 22-5. Segment 20 Corridor – Previously Recorded Cultural Resources in Santa Barbara County

Site #	Site Type	Site Condition	USGS Quad	Recorded
CA-SBA-2872	Historic glass and prehistoric lithic scatter	Poor: Cattle grazing	Point Arguello	McDowell, Locke, Minas, Stansberry, Van Schmus 1994
CA-SBA-211	Unknown	Poor: future base construction	Point Arguello	Ruth 1936; Ruth 1951
CA-SBA-1149	Historic ranch remains, Prehistoric lithic and shell scatter	Good	Point Arguello	Spannel 1979
CA-SBA-506	Prehistoric Isolate	Unknown	Point Arguello	Unknown
CA-SBA-507	Prehistoric Isolate	Unknown	Point Arguello	Unknown
CA-SBA-677	Prehistoric shell midden and lithic scatter	Fair--Erosion	Point Arguello	Spanne, Rolff 1970; Frietze 1994

Ventura County

The literature search for the portion of the Southern Coastal segment within Ventura County indicated that 67 cultural resources have been previously recorded within the 1/4-mile radius of the segment corridor (Table 22-6). Of these resources, 53 are prehistoric, 12 are historic, and 2 contain both prehistoric and historic components. Of the 53 prehistoric sites, 6 contain Native American burials, 2 of which (CA-VEN-241 and CA-VEN-1110) are within the project corridor. In addition, at least 15 more archaeological sites, 3 of which (CA-VEN-240, CA-VEN-644, and CA-VEN-789) are within the project corridor, have a moderate to high probability of containing burials.

Table 22-6. Segment 20 Corridor – Previously Recorded Cultural Resources in Ventura County

Site #	Site Type	Site Condition	USGS Quad	Recorded
Ca-Ven-62	Prehistoric Village Site	Highly Disturbed	White Ledge Peak	Bartlett 1972; Desgrandchamps 1979; Lopez 1988
Ca-Ven-768	Prehistoric Artifact Scatter	Highly Disturbed	White Ledge Peak	Macfarlane 1983
Ca-Ven-916	Burned Shale Outcrop	Good	White Ledge Peak	Dames & Moore 1991
Ca-Ven-28	Prehistoric midden, artifacts	Disturbed – cultivation	Pitas Point	Bergstrom and McKusick 1960
Ca-Ven-29	Prehistoric midden, lithics	Disturbed – cultivation	Pitas Point	Ruby and McKusick 1960

Table 22-6. Segment 20 Corridor – Previously Recorded Cultural Resources in Ventura County

Site #	Site Type	Site Condition	USGS Quad	Recorded
Ca-Ven-141	Prehistoric lithic scatter	Disturbed – Highway, railroad construction	Pitas Point	Boyer 1966
Ca-Ven-237	Prehistoric occupation site, shell midden, artifacts, burials	Disturbed – pothunting, erosion, cultivation	Pitas Point	King and Singer 1970
Ca-Ven-238	Prehistoric occupation site, midden, artifacts	Disturbed – erosion, cultivation	Pitas Point	King and Singer 1970
Ca-Ven-241	Prehistoric occupation site, shell midden, artifacts, burials	Highly Disturbed – R.R./pipeline construction, erosion	Pitas Point	King and Singer 1970; Wlodarski 1988
Ca-Ven-201	Prehistoric occupation site, midden, artifacts	Disturbed – cultivation, road construction	Pitas Point	King 1969
Ca-Ven-202	Prehistoric lithic scatter, artifacts	Disturbed – cultivation, road construction	Pitas Point	King 1969
Ca-Ven-240	Prehistoric occupation site, shell midden, artifacts	Disturbed –road/pipeline construction	Pitas Point	King and Bard 1970; York, Haley, Imwalle 1988
Ca-Ven-644	Prehistoric shell midden	Highly Disturbed – railroad, highway, road construction	Pitas Point	Desgrandchamp, Rondeau 1979, Imwalle 1988
Ca-Ven-917	Prehistoric lithic and shell scatter	Highly Disturbed – railroad construction	Pitas Point	York and Haley 1988
Ca-Ven-1110	Prehistoric occupation site, midden, burials	Highly Disturbed – railroad construction, erosion	Pitas Point	Johnson and Unzueta 1993
Ca-Ven-3	Prehistoric village site, lithics, midden, groundstone	Highly Disturbed - construction erosion, surface collection	Ventura	Eberhart 1948, 51; updated 1994
Ca-Ven-4	Prehistoric village site	Unknown	Ventura	Portola, Crespi 1769; Hoover, Rensch, 1948; Eberhart 1951
Ca-Ven-87/H	Historic Chinese artifacts, Mission-period foundations, Prehistoric artifacts	Disturbed – excavation, pothunting	Ventura	Engelhardt 1930; Greenwood 1966, 74, 75
Ca-Ven-196	Prehistoric Lithic Scatter	Destroyed – washed out, area covered by sea-wall	Ventura	Pritchard 1969, Lopez 1988

Table 22-6. Segment 20 Corridor – Previously Recorded Cultural Resources in Ventura County

Site #	Site Type	Site Condition	USGS Quad	Recorded
Ca-Ven-480/H	Historic Mission-period foundations, Prehistoric artifacts	Disturbed – excavation	Ventura	Engelhardt 1930; Lopez 1976
Ca-Ven-482/H	Historic WW II era foundations, gun emplacements, artifacts	Slightly disturbed – wave and wind erosion	Ventura	Marmor 1986
Ca-Ven-974/H	Historic Chinatown foundations, artifacts	Good	Ventura	Greenwood 1988
Ca-Ven-1071/H	Historic brick building, crawlspace w/ historic artifacts	Good	Ventura	Greenwood and Foster 1991
Ca-Ven-1109/H	Historic Railroad spur	Fair – rail removed, berm remains	Ventura, Matilija, Ojai	Macko 1993
Ca-Ven-1112/H	Historic structural remains, Mission period artifacts	Good – capped by parking lot	Ventura	Schmidt 1993
Ca-Ven-1289/H	Historic structural remains, Mission period, Native American artifacts,	Disturbed - construction	Ventura	Schmidt 1996
56-120026	Prehistoric shell concentration	Unknown	Ventura	Unrecorded
56-120027	Prehistoric shell concentration	Unknown	Ventura	Unrecorded
56-120028	Prehistoric shell concentration	Unknown	Ventura	Unrecorded
Ca-Ven-506	Prehistoric burial site, mortars, pestles, beads	Disturbed – grading, looting	Oxnard	Lopez and Brown 1977
Ca-Ven-666	Prehistoric lithic and shell scatter, groundstone	Highly Disturbed – road, utility construction, cultivation	Oxnard	Horne 1979
Ca-Ven-789	Prehistoric lithic and shell scatter, burial reported	Highly Disturbed – cultivation, tree removal	Oxnard	Wlodarski and Romani 1984

Table 22-6. Segment 20 Corridor – Previously Recorded Cultural Resources in Ventura County

Site #	Site Type	Site Condition	USGS Quad	Recorded
Ca-Ven-918	Prehistoric shell scatter	Disturbed – cultivation, road and Railroad	Oxnard	York and Haley 1988
Ca-Ven-228	Prehistoric lithic scatter	Good	Moorpark	King and Decker 1970
Ca-Ven-631	Prehistoric Lithic Scatter, groundstone	Disturbed – cultivation	Moorpark	Lopez 1979
Ca-Ven-661/H	Historic foundation, remnants of Blacksmith shop, historic artifacts	Fair	Moorpark	Callison 1980
Ca-Ven-864	Prehistoric Lithic and Shell Scatter	Disturbed – cultivation	Moorpark	Parker 1987
Ca-Ven-1089	Prehistoric Lithic, bone and Shell Scatter	Highly Disturbed – cultivation, Railroad, utiltity trenching	Moorpark	Neuenschwander and Olgesby 1991
Ca-Ven-IF8	Isolated Find: Prehistoric retouched flake	Found in creekbed – not in situ	Moorpark	Cagle 1991
Ca-Ven-95	Prehistoric Lithic Scatter, midden soil	Disturbed – highway construction, cultivation	Simi Valley West	Boyer and Craig 1967; Kuhn 1980
Ca-Ven-225	Prehistoric Lithic Scatter	Slightly Disturbed – dirt road runs through site	Simi Valley West	King and Decker 1970
Ca-Ven-226	Prehistoric Lithic Scatter, groundstone	Disturbed – dirt roads, highway construction	Simi Valley West	King and Singer 1970; Leonard 1975
Ca-Ven-227	Prehistoric Lithic Scatter, groundstone	Disturbed - highway construction	Simi Valley West	King and Decker 1970
Ca-Ven-340	Prehistoric Village Site, burials, groundstone	Disturbed - grading construction	Simi Valley West	Leonard 1975
Ca-Ven-341	Prehistoric Lithic Scatter	Disturbed – off-road-vehicle use	Simi Valley West	Leonard 1975; Pence 1976
Ca-Ven-342	Prehistoric Lithic Scatter	Disturbed – off-road-vehicle use	Simi Valley West	Leonard 1975
Ca-Ven-343	Prehistoric Lithic Scatter	Disturbed – off-road-vehicle use	Simi Valley West	Leonard 1975
Ca-Ven-344	Prehistoric Lithic Scatter, groundstone	Disturbed – Simi Freeway	Simi Valley West	Leonard 1975; Kuhn 1980

Table 22-6. Segment 20 Corridor – Previously Recorded Cultural Resources in Ventura County

Site #	Site Type	Site Condition	USGS Quad	Recorded
Ca-Ven-345	Prehistoric Lithic Scatter	Disturbed – Simi Freeway	Simi Valley West	Leonard 1974
Ca-Ven-643	Prehistoric Lithic Scatter	Mostly Destroyed – road & railroad construction	Simi Valley West	Pence 1979
Ca-Ven-693	Prehistoric Lithic Scatter	Disturbed – grading, road construction	Simi Valley West	Kuhn 1980
Ca-Ven-784	Prehistoric Lithic Scatter, groundstone	Disturbed - freeway construction	Simi Valley West	Romani, Romani, and Wlodarski 1984
Ca-Ven-898	Prehistoric Lithic Scatter, groundstone	Good	Simi Valley West	Huey, Romani, and Wlodarski 1987
Ca-Ven-1266/H	Historic dirt road	Fair	Simi Valley West	Knell and Becker 1995
Ca-Ven-1269/H	Historic barn structure	Fair	Simi Valley West	Knell 1995
56-001341	Prehistoric site, artifacts, midden, burned bone	Probably disturbed-construction, site capped by asphalt	Simi Valley West	Whitley 1996
Ca-Ven-510	Prehistoric Lithic Scatter	Disturbed – motorcycle race track	Simi Valley East	Maxwell 1977
Ca-Ven-511	Prehistoric rockshelter, lithics, groundstone, pictographs	Disturbed – dirt road, erosion	Simi Valley East	Maxwell 1977
Ca-Ven-550	Six Prehistoric rockshelters, midden, lithics, groundstone, leaching basins	Disturbed – dirt road, RR, construction, surface collection, erosion	Simi Valley East	Pence 1977; Kuhn 1980, 81; Wlodarski 1981
Ca-Ven-552	Prehistoric Lithic Scatter	Highly Disturbed – grading, cultivation	Simi Valley East	Singer, D'Altroy, Baksh 1978; Kelly 1989
Ca-Ven-562	Prehistoric Rockshelter and Bedrock Mortar	Disturbed – dirt roads, vandalism	Simi Valley East	Edberg 1977
Ca-Ven-655	Prehistoric Lithic Scatters, fire-cracked rock	Disturbed – Railroad, construction	Simi Valley East	Van Horn 1979
Ca-Ven-699	Prehistoric Rockshelter, Lithics	Disturbed – heavy use as movie set, campsite, surface collection, looting	Simi Valley East	Kuhn 1980

Table 22-6. Segment 20 Corridor – Previously Recorded Cultural Resources in Ventura County

Site #	Site Type	Site Condition	USGS Quad	Recorded
Ca-Ven-729	Prehistoric Lithic Scatter	Disturbed – Railroad, construction	Simi Valley East	Kuhn 1981
Ca-Ven-895/H	Historic Stagecoach Road Segment	Disturbed – graffitti on rocks, erosion, highway construction	Simi Valley East	Kuhn 1981
Ca-Ven-896/H	Historic Freight Road Segment, w/ unmortared rock retaining wall	Good	Simi Valley East	Kuhn 1981
Ca-Ven-1125/H	Historic artifact scatter w/ ceramics	Highly Disturbed	Simi Valley East	Rhodes and Miller 1993

22.3.2 Native American Consultation

22.3.2.1 Methods

The Native American Heritage Commission (NAHC) was contacted on March 1, 2000, to request a Sacred Lands file search and a current Native American contact list. The Commission's response, dated March 8, 2000, provided the names and addresses of 60 local Native American groups and individuals. Letters subsequently were sent on Mach 13, 2000, to the listed groups and individuals to determine if they have knowledge of culturally sensitive locations within the project area. If there was no response to the letter, a telephone call was made to each individual or representative on March 27, 2000. A table listing contact dates and responses is attached as Appendix B.

22.3.2.2 Findings

The reply from the NAHC states the search failed to indicate the presence of Native American cultural resources in the immediate project area. The records search results from the CHRIS indicate the Hammond Meadows Site (CA-SBA-1213) is listed on the NAHC Sacred Lands Inventory, as well as the NRHP noted above. The Hammond Meadows Site is within Santa Barbara County within 1/4-mile of the segment corridor.

Thirty telephoned responses were received to the letters addressed to the contact list; no responses were received to the follow-up telephone calls. A letter received from Susie Ruiz and Melissa Hernandez of the Ventureno Chumash stated that hey processed no new information regarding cultural resources in the project area. All responses expressed no specific concerns. Susie Ruiz representing the Ventureno Chumash of Oxnard/Ventura County also stated that Native American monitors were available, as needed.

A consultation with Native American groups was held April 4, 2000. Seventeen individuals attended, representing the Fernandino, Gabrieleno/Tongva, Santa Ynez Band of Chumash Indians, and Tataviam.

22.4 FIELDWORK

Fieldwork for the Southern Costal segment involved (1) pedestrian survey and limited visits to known sites and (2) monitoring of maintenance activities. No cultural resources were collected during the Qwest Network Construction Project.

The fieldwork was conducted under the supervision of a CRS, who supervised lead archaeological monitors and a staff of archaeological monitors, as well as Native American observers. Archaeological monitors were responsible for being on site during all work in sensitive areas, conducting spot checks if the area was designated for intermittent monitoring, and completing Daily Monitoring Logs. The CRS or archaeological monitor was responsible for flagging or otherwise delineating ESAs, including a 15-foot buffer zone around cultural resources, within four days prior to maintenance activities. The archaeological monitor was also responsible for completing a Site Condition Record immediately after removal of such flagging or other protective markers.

22.4.1 Survey

A pedestrian survey was conducted to identify any historic/prehistoric sites or features that may have been encountered during the installation of the fiber optic lines. The entire segment was subjected to intensive pedestrian survey for cultural resources. The survey area consisted of a swath of land straddling the fiber optic line and extending 15 meters to either side. This area was considered the area of potential effect (APE) for Qwest backbone construction.

22.4.1.1 Methods

The survey crew consisted of 14 archaeologists, and survey parties of one or two individuals. The survey parties were deployed to conduct surveys along the alignment. For safety, two-member survey parties were implemented in remote and inhospitable areas. Table 22-7 provides a list of key site investigation staff, along with their professional credentials.

Qualified archaeologists walked a single pedestrian transect on either side of the fiber optic backbone alignment. Exposures of native soil were closely inspected for cultural material, as were animal burrows and other disturbances affording limited subsurface visibility. An attempt was made to locate known sites within the APE, based on the CHRIS records searches. Field crews then recorded the extent of impacts upon cultural resources resulting from Qwest backbone construction and construction-related activities. During all site inspections, data was routinely gathered to update site records, based on current site conditions. The condition of all previously recorded cultural resources that survey crews could locate within the APE was recorded on Site Condition Record forms.

In addition to reporting on the condition of previously recorded sites, survey crew members were instructed to record any cultural resources not previously recorded and any impacts the resource may have suffered as a result of the Qwest backbone construction. The minimally acceptable level of documentation needed for a resource's inclusion in the Office of Historic Preservation's (OHP's) filing system can be met with the preparation of a California Department of Parks and Recreation (DPR) 523 series Primary Record and a Location Map. While the minimum level of documentation is designed to provide an initial record of all types of cultural resources, survey crews were instructed to fully document any previously unrecorded resources. Full documentation (although different for various types of resources) generally includes the preparation of the Primary Record and Location Map, but also an Archaeological Site Record, Artifact Record, Photograph Record, as well as a Sketch Map.

Table 22-7. Key Site Investigation Staff		
Key Staff	Highest Degree *	Years Experience
Cindy Arrington	M.S., RPA	10
Paul Shen-Brown	M.A., RPA	8
Lori Harrington	M.A., RPA	15
Mark Sullivan	M.A., RPA	26
George Zeimens	M.A., RPA	30
Bradbury Brown	B.A.	18
William Brown	B.A.	10
Todd Folmer	B.A.	11
Keith Hamm	B.A.	4
Susan Kintscher	B.A.	2
Harry Moyer	B.A.	5
Mark Lowe	B.A.	12
Joise Salas	B.A	3
Dean Tye	B.A.	5

* RPA = Member of the Register of Professional Archaeologists

22.4.1.2 Findings

The entire segment was surveyed by archaeologists Dean Tye, Paul Shen-Brown, and Mark Sullivan in the fall and winter of 2000. The pedestrian survey did not locate any previously unrecorded or newly identified cultural resource sites, artifacts, or objects.

The survey crew relocated 74 previously recorded archaeological sites (69 prehistoric and five historic) within the APE. The crew completed Site Condition Record forms for each known resource that was relocated. Table 22-8 summarizes the condition of each of these resources, none of which were impacted by Qwest.

Table 22-8. Segment 20 Condition of Relocated Archaeological Sites

***Resource Name or #** (Assigned by recorder) CA-SBA-553 **Quad:** Lompoc Hills ***Recorded by:** Paul Shen-Brown ***Date Recorded:** 12-20-00 ☐ Continuation ☒ Update The site was not visible on the surface, which means it was either completely buried or completely destroyed. Given the heavy vegetative covering and lack of evidence of construction or erosion, it is probably buried. Fiber-optic is in the berm of the railroad, and therefore it could not impact the site.
***Resource Name or #** (Assigned by recorder) CA-SBA-142 **Quad:** Goleta ***Recorded by:** Paul Shen-Brown ***Date Recorded:** 12-21-00 ☐ Continuation ☒ Update Site is in poor condition due to urbanization. The ROW is cut below original ground surface, so the fiber-optic line could not impact the site.

Table 22-8. Segment 20 Condition of Relocated Archaeological Sites

*Resource Name or # (Assigned by recorder) CA-VEN-1089 Quad: Moorpark *Recorded by: Paul Shen-Brown *Date Recorded 10-4-00 ☐ Continuation ☒ Update This site is highly disturbed by the railroad and utilities lines. It has been plowed on the north side and is in an orchard on the south. The site is also subject to erosion. The fiber-optic wire runs in the berm of the railroad, so it could not impact the site.
*Resource Name or # (Assigned by recorder) CA-VEN-917 Quad: Pitas Point *Recorded by: Paul Shen-Brown *Date Recorded 9-19-00 ☐ Continuation ☒ Update The site has been highly disturbed by the railroads and roads. The fiber-optic line runs through a deep berm, so it could not impact the site. The site is subject to erosion damage.
*Resource Name or # (Assigned by recorder) CA-VEN-644 Quad: Pitas Point *Recorded by: Paul Shen-Brown *Date Recorded 9-19-00 ☐ Continuation ☒ Update The site has been highly disturbed by Highway 101, the railroad, and roads. It is possible that the fiber-optic line may have impacted the site, but unlikely given the site's condition. Testing would be needed to assess this possibility. The site is subject to sheetwash, erosion of a small drainage, and collecting.
*Resource Name or # (Assigned by recorder) CA-VEN-1110 Quad: Pitas Point *Recorded by: Paul Shen-Brown *Date Recorded 9-19-00 ☐ Continuation ☒ Update This site is highly disturbed by the railroad and a frequented dirt road passing through the site. The fiber-optic line is in a cutbank below the original ground surface, so it is unlikely to have impacted the site. The site is subject to downcutting, sheetwash, and collecting, though there may be intact deposits on private land.
*Resource Name or # (Assigned by recorder) CA-VEN-789 Quad: Oxnard *Recorded by: Paul Shen-Brown *Date Recorded 10-4-00 ☐ Continuation ☒ Update The site was relocated as part of the Qwest fiber-optic backbone pedestrian survey. This site is highly disturbed by the railroad and cultivation. The fiber-optic line was on the opposite side of the track from the site boundary, so it could not disturb the site.
*Resource Name or # (Assigned by recorder) CA-VEN-918 Quad: Oxnard *Recorded by: Paul Shen-Brown *Date Recorded 10-4-00 ☐ Continuation ☒ Update The site is highly disturbed by the railroad, East Fifth Road, and cultivation. It is also subject to downcutting, sheetwash, and possibly collection. The fiber-optic line that runs through the area is disturbed by the railroad, so it is unlikely to have impacted the site. Testing would be needed to assess this possibility.
*Resource Name or # (Assigned by recorder) CA-VEN-141 Quad: Pitas Point *Recorded by: Paul Shen-Brown *Date Recorded 9-14-00 ☐ Continuation ☒ Update This site is highly disturbed by Highway 101, the railroad, and a heavily used dirt road passing through the site. The fiber-optic line runs on the opposite side of the track, outside the site boundaries. Access at the site on private land may contain intact deposits, but areas near the railroad are exposed to downcutting, sheetwash, and collecting.
*Resource Name or # (Assigned by recorder) CA-VEN-241 Quad: Pitas Point *Recorded by: Paul Shen-Brown *Date Recorded 9-14-00 ☐ Continuation ☒ Update This site is highly disturbed by the railroad, roads, and pipeline construction. It is possible that the fiber-optic line may have impacted the site, but given its current condition this is unlikely. Testing would be needed to evaluate this possibility. The site is subject to downcutting, sheetwash, and collecting.

Table 22-8. Segment 20 Condition of Relocated Archaeological Sites

*Resource Name or # (Assigned by recorder) CA-SBA-1878 Quad: Sacate *Recorded by: Paul Shen-Brown *Date Recorded 12-29-00 ☐ Continuation ☒ Update Mostly stabilized by vegetation. Well-worn path leads from road to shoreline, and presence of beer bottles and fishing wire suggests possibility of collecting. There was little surface visibility. Most of ROW is in a cutbank, placing the fiber-optic line below potential buried deposits. Downcutting of cutbanks is a threat to the resource.
*Resource Name or # (Assigned by recorder) CA-SBA-1881 Quad: Sacate *Recorded by: Paul Shen-Brown *Date Recorded 12-29-00 ☐ Continuation ☒ Update Few surface materials were visible. Though parts of the site are stabilized by vegetation, much of it is eroding into Canada Del Agua Caliente. Testing is needed to evaluate this possibility.
*Resource Name or # (Assigned by recorder) CA-SBA-1807 Quad: Sacate *Recorded by: Paul Shen-Brown *Date Recorded 9-14-00 ☐ Continuation ☒ Update Unable to gain access to the site; it is a private property.
*Resource Name or # (Assigned by recorder) CA-SBA-1879 Quad: Sacate *Recorded by: Paul Shen-Brown *Date Recorded 9-14-00 ☐ Continuation ☒ Update Unable to gain access to the site; it is a private property.
*Resource Name or # (Assigned by recorder) CA-SBA-1494 Quad: Sacate *Recorded by: Paul Shen-Brown *Date Recorded 9-12-00 ☐ Continuation ☒ Update Unable to gain access to the site; it is a private property.
*Resource Name or # (Assigned by recorder) CA-SBA-1872 Quad: Sacate *Recorded by: Paul Shen-Brown *Date Recorded 9-12-00 ☐ Continuation ☒ Update Unable to gain access to the site; it is a private property.
*Resource Name or # (Assigned by recorder) CA-SBA-1495 Quad: Sacate *Recorded by: Paul Shen-Brown *Date Recorded 9-12-00 ☐ Continuation ☒ Update Unable to gain access to the site; it is a private property.
*Resource Name or # (Assigned by recorder) CA-SBA-1887 Quad: Sacate *Recorded by: Paul Shen-Brown *Date Recorded 9-12-00 ☐ Continuation ☒ Update Unable to gain access to the site; it is a private property.
*Resource Name or # (Assigned by recorder) CA-SBA-1492 Quad: Sacate *Recorded by: Paul Shen-Brown *Date Recorded 9-12-00 ☐ Continuation ☒ Update Unable to gain access to the site; it is a private property.
*Resource Name or # (Assigned by recorder) CA-SBA-1493 Quad: Sacate *Recorded by: Paul Shen-Brown *Date Recorded 9-12-00 ☐ Continuation ☒ Update Unable to gain access to the site; it is a private property.
*Resource Name or # (Assigned by recorder) CA-SBA-18 Quad: Santa Barbara *Recorded by: Paul Shen-Brown *Date Recorded 12-29-00 ☐ Continuation ☒ Update The site has been destroyed by urbanization. The fiber-optic line is in a railroad fill, and therefore it could not impact the site.
*Resource Name or # (Assigned by recorder) CA-SBA-19 Quad: Santa Barbara *Recorded by: Paul Shen-Brown *Date Recorded 12-29-00 ☐ Continuation ☒ Update The site has been destroyed by urbanization. The fiber-optic line is in a railroad fill, and therefore it could not impact the site.

Table 22-8. Segment 20 Condition of Relocated Archaeological Sites

*Resource Name or # (Assigned by recorder) CA-SBA-24 Quad: Santa Barbara *Recorded by: Paul Shen-Brown *Date Recorded 12-29-00 ☐ Continuation ☒ Update The site has been destroyed by urbanization. Railroad ROW is in a cutbank, so the fiber-optic line would be below level of subsurface deposits. Downcutting may threaten surviving parts of the site near the railroad, if such deposits exist.
*Resource Name or # (Assigned by recorder) CA-SBA-1958 Quad: Santa Barbara *Recorded by: Paul Shen-Brown *Date Recorded 10-6-00 ☐ Continuation ☒ Update The site has been mostly covered with asphalt and landscape. It is therefore unlikely that the fiber-optic line could have impacted the site.
*Resource Name or # (Assigned by recorder) CA-SBA-82 Quad: Tajiguas *Recorded by: Paul Shen-Brown *Date Recorded 12-20-00 ☐ Continuation ☒ Update Most of the site was on private property. The area of the railroad ROW is subject to run-off and sheetwash. Cutbanks show heavy downcutting. Human, dog, and bicycle tracks suggest the possibility of collecting. The railroad ROW is cut below the original ground surface, so the fiber-optic line may be below buried deposits and therefore could do no damage. Downcutting of the cutbanks may destroy the information.
*Resource Name or # (Assigned by recorder) CA-SBA-86 Quad: Tajiguas *Recorded by: Paul Shen-Brown *Date Recorded 12-20-00 ☐ Continuation ☒ Update The site has been disturbed by the railroad and a campground and bike trail. It is in fair condition, being sealed in places under asphalt, but small numbers of visible surface remains suggests casual collecting by campers of Refugio Beach. The fiber-optic line is in railroad berm, and therefore it could not impact the site.
*Resource Name or # (Assigned by recorder) CA-SBA-88 Quad: Tajiguas *Recorded by: Paul Shen-Brown *Date Recorded 12-20-00 ☐ Continuation ☒ Update The site was mostly densely vegetated but filled with numerous bike/foot trails. Surface materials maybe collected by hikers at Refugio Beach. Much of the site was previously destroyed by seacliff erosion and flaking, which continues. Fiber-optic line is the berm of the railroad, and therefore it could not impact the site.
*Resource Name or # (Assigned by recorder) CA-SBA-89 Quad: Tajiguas *Recorded by: Paul Shen-Brown *Date Recorded 1-15-01 ☐ Continuation ☒ Update None of the ground surface between Highway 101 and the railroad berm had been disturbed by construction. The fiber-optic line runs through a very deep berm, and therefore it could not impact the site. Undisturbed areas are mostly stabilized by vegetation, but surface remains are threatened by erosion and collection.
*Resource Name or # (Assigned by recorder) CA-SBA-1731 Quad: Tajiguas *Recorded by: Paul Shen-Brown *Date Recorded 1-15-01 ☐ Continuation ☒ Update The site has been covered over by the railroad berm and a paved bicycle trail that stretches between Refugio and Capitan beaches. The fiber optic line runs within the berm, so it could not impact the site. In its current condition, the site is not eligible for NRHP status.
*Resource Name or # (Assigned by recorder) CA-SBA-1766 Quad: Tajiguas *Recorded by: Paul Shen-Brown *Date Recorded 12-20-00 ☐ Continuation ☒ Update Destroyed by oil facility. Although the ROW was on the original surface, no useful information could be obtained from this site due to the extent of previous disturbance.

Table 22-8. Segment 20 Condition of Relocated Archaeological Sites

*Resource Name or # (Assigned by recorder) CA-SBA-1921 Quad: Tajiguas *Recorded by: Paul Shen-Brown *Date Recorded 12-20-00 ☐ Continuation ☒ Update Previously recorded oil facilities were mostly gone, but Capitan beach extends its site. The ocean has eroded much of the site. Areas along the railroad ROW that were not covered by berm were subject to sheetwash. Bicycle trail between Capitan and Refugio Beach suggest the possibility of collecting. Qwest fiber-optic line is in the railroad berm, so it would not impact the site.
*Resource Name or # (Assigned by recorder) CA-VEN-643 Quad: Simi Valley West *Recorded by: Paul Shen-Brown *Date Recorded 10-4-00 ☐ Continuation ☒ Update The site has been largely destroyed by the railroad road construction, though intact deposits may exist north of the site. The fiber-optic line is in a very deep cutbank, so it could not impact the site. The site is subject to downcutting, sheetwash, possible collection, and vandalism (graffiti).
*Resource Name or # (Assigned by recorder) CA-VEN-550 Quad: Simi Valley East *Recorded by: Paul Shen-Brown *Date Recorded 12-28-00 ☐ Continuation ☒ Update This site has been highly disturbed by the railroad and dirt roads through it. In addition, it is subject to downcutting, sheetwash, and collecting. The fiber-optic line appears to run through fill, so it is unlikely that the line could have impacted the site. Testing would be needed to verify this conclusion.
*Resource Name or # (Assigned by recorder) CA-VEN-895H Quad: Simi Valley East *Recorded by: Paul Shen-Brown *Date Recorded 12-28-00 ☐ Continuation ☒ Update The part of this site that intersects with the railroad has been obliterated by creation of the ROW. Therefore, the fiber-optic line could not impact the site.
*Resource Name or # (Assigned by recorder) CA-VEN-896H Quad: Simi Valley East *Recorded by: Paul Shen-Brown *Date Recorded 12-28-00 ☐ Continuation ☒ Update The site remains in good condition. The road segment terminates at the railroad ROW, so that end of the segment was obliterated by construction of the ROW. The fiber-optic line could not therefore impact the site.
*Resource Name or # (Assigned by recorder) CA-SBA-1808 Quad: Sacate *Recorded by: Paul Shen-Brown *Date Recorded 12-29-00 ☐ Continuation ☒ Update Most of the area was stabilized by vegetative covering; little visible on the surface. Impeded by road, railroad, and seacliff erosion. Also presence of modern trash (esp. beer bottles) suggests possibility of collecting. Next to the site is in a deep cutbank, so the fiber optic-line is most likely below potential subsurface deposits.
*Resource Name or # (Assigned by recorder) CA-SBA-93 Quad: Gaviota *Recorded by: Paul Shen-Brown *Date Recorded 12-21-00 ☐ Continuation ☒ Update Unable to access most of the site;it was on private property. Area covered with dense vegetation. No surface indications visible near railroad tracks. The berms and cutbanks separating the fiber-optic line from the original ground surface make it unlikely to impact the site.
*Resource Name or # (Assigned by recorder) CA-SBA-94 Quad: Gaviota *Recorded by: Paul Shen-Brown *Date Recorded 12-21-00 ☐ Continuation ☒ Update Site destroyed by oil refinery. A few historic materials observed along the railroad. Numerous runnels and blowouts containing lithic debris observed along the railroad, but these materials are probably displaced from contact by erosion. ROW is cut below the original ground surface, so it is unlikely the fiber-optic line could impact the site.
*Resource Name or # (Assigned by recorder) CA-SBA-97 Quad: Gaviota *Recorded by: Paul Shen-Brown *Date Recorded 12-21-00 ☐ Continuation ☒ Update The site condition is fair. Most areas of the site are covered by heavy brush and other vegetation. A small road leading from Gaviota State Beach cuts the site.

Table 22-8. Segment 20 Condition of Relocated Archaeological Sites

*Resource Name or # (Assigned by recorder) CA-SBA-1151 Quad: Gaviota *Recorded by: Paul Shen-Brown *Date Recorded 12-21-00 ☐ Continuation ☒ Update The site condition is poor. Site is damaged by the railroad and Highway 101. Subject to erosion along Arroyo Hondo and possibly collecting by hikers from Vista Point. Most of the ROW is in a cutbank, so it is unlikely that the fiber-optic line could impact the site.
*Resource Name or # (Assigned by recorder) CA-SBA-1156 Quad: Gaviota *Recorded by: Paul Shen-Brown *Date Recorded 12-21-00 ☐ Continuation ☒ Update The site condition is fair. Mostly stabilized by vegetation; few surface indications are visible. It is near the access to a public beach, so there is a possibility of collection. Berm is very thin, but mostly just ballast on present ground surface.
*Resource Name or # (Assigned by recorder) CA-SBA-1157 Quad: Gaviota *Recorded by: Paul Shen-Brown *Date Recorded 12-21-00 ☐ Continuation ☒ Update The site condition is fair. Mostly stabilized by vegetation; few surface materials are visible. Proximity to access to the public beach suggests the possibility of collecting.
*Resource Name or # (Assigned by recorder) CA-SBA-1204 Quad: Gaviota *Recorded by: Paul Shen-Brown *Date Recorded 12-21-00 ☐ Continuation ☒ Update The site condition is poor. Did not assess areas between lanes of Highway 101. Other areas were damaged by the railroad and highway. The site is subject to erosion along Arroyo Hondo and possibly collecting by hikers from Vista Point. Some areas are densely vegetated. Handholes by railroads tracks were monitored with negative results. Most of the ROW is in a cutbank, so the fiber-optic line is unlikely to have impacted the site.
*Resource Name or # (Assigned by recorder) CA-SBA-1506 Quad: Gaviota *Recorded by: Paul Shen-Brown *Date Recorded 12-21-00 ☐ Continuation ☒ Update Unable to assess most of the site due to its being on private property. Area near the railroad ROW mostly stabilized by vegetation, though small drainages pass through. The site is near a public beach, so there is a possibility of collecting.
*Resource Name or # (Assigned by recorder) CA-SBA-1870 Quad: Gaviota *Recorded by: Paul Shen-Brown *Date Recorded 12-21-00 ☐ Continuation ☒ Update The condition of the site is poor. It is subject to erosion of seacliff and numerous runnels through the site. Hikers are observed in the area, which suggest the possibility of collecting. Much of the site was destroyed by oil facilities.
*Resource Name or # (Assigned by recorder) CA-SBA-1914 Quad: Gaviota *Recorded by: Paul Shen-Brown *Date Recorded 12-21-00 ☐ Continuation ☒ Update The condition of the site is poor although it is largely stabilized by vegetation. The site is subject to water erosion, and there are small footpaths with recent footprints suggesting the possibility of collecting.
*Resource Name or # (Assigned by recorder) CA-SBA-2189 Quad: Gaviota *Recorded by: Paul Shen-Brown *Date Recorded 12-21-00 ☐ Continuation ☒ Update The site was destroyed by the oil refinery; unable to determine if materials on the site were primary or secondary. The fiber-optic line is attached to the rail bridge running over the former area of the site, and therefore could have no impact.
*Resource Name or # (Assigned by recorder) CA-SBA-2588 Quad: Gaviota *Recorded by: Paul Shen-Brown *Date Recorded 12-20-00 ☐ Continuation ☒ Update There are no surface materials visible near the tracks. The site is in the railroad cutbank and is subject to erosion of the cutbank. Areas above the cutbank on both sides are densely vegetated. The fiber-optic line in the ROW is unlikely to have impacted the site.

Table 22-8. Segment 20 Condition of Relocated Archaeological Sites

*Resource Name or # (Assigned by recorder) CA-SBA-76 **Quad:** Dos Pueblos *Recorded by: Paul Shen-Brown *Date Recorded 1-15-01 ☐ Continuation ☒ Update The site has been highly disturbed by construction activities, roads, railroad, etc. The railroad runs through a cutbank, so the fiber-optic line could not disturb the site. If any intact deposits remain, they would be threatened by downcutting of the cutbank and possibly collection.
*Resource Name or # (Assigned by recorder) CA-SBA-78 **Quad:** Dos Pueblos *Recorded by: Paul Shen-Brown *Date Recorded 1-15-01 ☐ Continuation ☒ Update The railroad is in a cutbank and is bermed, and the fiber-optic line runs in the fill, so it could not impact the site. The site is eroding into Dos Pueblos Canyon and the Pacific Ocean and may be subject to collection.
*Resource Name or # (Assigned by recorder) CA-SBA-80 **Quad:** Dos Pueblos *Recorded by: Paul Shen-Brown *Date Recorded 1-15-01 ☐ Continuation ☒ Update The railroad is in a cutbank below the level of possible subsurface deposits; therefore, the fiber-optic line could not impact the site. The remainder of the site is on private land and could only be assessed from a distance. That part is currently used for grazing cattle, but there is a horse that may be partially on the site. Materials may be exposed by downcutting into the ROW where they are subject to collection (see site Condition Record for CA-SBA-2587H).
*Resource Name or # (Assigned by recorder) CA-SBA-106 **Quad:** Dos Pueblos *Recorded by: Paul Shen-Brown *Date Recorded 1-15-01 ☐ Continuation ☒ Update The site has been mostly destroyed by the railroad, Highway 101, and smaller roads. The railroad runs on a very high berm at the site, and the fiber-optic line is in the berm, so therefore it could not impact the site.
*Resource Name or # (Assigned by recorder) CA-SBA-144 **Quad:** Dos Pueblos *Recorded by: Paul Shen-Brown *Date Recorded 1-15-01 ☐ Continuation ☒ Update The railroad is bermed and runs through a cutbank, and the fiber-optic line runs through a fill; therefore, the fiber-optic line could not impact the site. Cut by the railroad and subject to downcutting and possible collecting. The road has been added over the southern end of the site since it was visited in 1959.
*Resource Name or # (Assigned by recorder) CA-SBA-1326 **Quad:** Dos Pueblos *Recorded by: Paul Shen-Brown *Date Recorded 1-15-01 ☐ Continuation ☒ Update The railroad is set on a very deep berm, and the fiber-optic line is in the berm; therefore, it could not impact the site. Most of the site has been destroyed by a beach resort, though intact deposits may still exist in the densely vegetated north end of the site.
*Resource Name or # (Assigned by recorder) CA-SBA-2441 **Quad:** Dos Pueblos *Recorded by: Paul Shen-Brown *Date Recorded 1-15-01 ☐ Continuation ☒ Update The railroad runs along a berm, and the fiber-optic line is in the berm, so it could not impact the site. The site is highly disturbed by the oil facilities and roads. Although the north side is partially stabilized by vegetation, it is subject to erosion around the margin of the railroad ROW and possibly to collection.
*Resource Name or # (Assigned by recorder) CA-SBA-2442H **Quad:** Dos Pueblos *Recorded by: Paul Shen-Brown *Date Recorded 1-15-01 ☐ Continuation ☒ Update Unable to locate the site, which suggest that either the site has been buried or destroyed. Testing would be required to evaluate the site further. No remains were visible in the railroad ROW.

Table 22-8. Segment 20 Condition of Relocated Archaeological Sites

*Resource Name or # (Assigned by recorder) CA-SBA-2587H Quad: Dos Pueblos *Recorded by: Paul Shen-Brown *Date Recorded 1-15-01 ☐ Continuation ☒ Update The site is in a deep cutbank, so the fiber-optic line could not impact any intact deposits that may exist. The site is subject to downcutting and sheetwash along the tracks. During the evaluation, collectors were encountered that claimed to have gathered numerous artifacts from the area, which would include site CA-SBA-1676, CA-SBA-82, CA-SBA-83, and CA-SBA-81. This was less than a week after severe rainstorms swept the entire coast.
*Resource Name or # (Assigned by recorder) CA-SBA-6 Quad: Carpenteria *Recorded by: Paul Shen-Brown *Date Recorded 12-29-00 ☐ Continuation ☒ Update The site has been destroyed by oil facilities. The boundary only skirts the railroad ROW, which is bermed. Therefore the fiber-optic line could not damage the site. It is no longer eligible for NRHP consideration.
*Resource Name or # (Assigned by recorder) CA-SBA-7 Quad: Carpenteria *Recorded by: Paul Shen-Brown *Date Recorded 12-29-00 ☐ Continuation ☒ Update The site has been destroyed by urbanization. The railroad ROW is bermed on fill, so the fiber-optic line could not impact the site. It is no longer eligible for NRHP consideration.
*Resource Name or # (Assigned by recorder) CA-SBA-12 Quad: Carpenteria *Recorded by: Paul Shen-Brown *Date Recorded 12-29-00 ☐ Continuation ☒ Update The site has been destroyed by urbanization. The railroad ROW is bermed on fill, so the fiber-optic line could not impact the site. It is not eligible for NRHP status.
*Resource Name or # (Assigned by recorder) CA-SBA-1670H Quad: Carpenteria *Recorded by: Paul Shen-Brown *Date Recorded 12-29-00 ☐ Continuation ☒ Update The condition of the site is poor. The site has been cut by the railroad. The fiber-optic line runs below the level of possible intact deposits, though area away from the railroad may contain intact deposits. The fiber-optic line could not affect the site. Area outside of the ROW is crossed by hiking paths, which suggests the possibility of collecting.
*Resource Name or # (Assigned by recorder) CA-SBA-2178H Quad: Carpenteria *Recorded by: Paul Shen-Brown *Date Recorded 12-29-00 ☐ Continuation ☒ Update The site appears to have been destroyed by the railroad, urbanization, and Lookout Park. The fiber-optic line is in the railroad berm; it therefore could not impact the site.
*Resource Name or # (Assigned by recorder) CA-SBA-2179 Quad: Carpenteria *Recorded by: Paul Shen-Brown *Date Recorded 12-29-00 ☐ Continuation ☒ Update The site has been disturbed by the railroad and berming around private property. There may be intact deposits below the private property. The fiber-optic line is in the berm of the railroad, and it could not impact the site.
*Resource Name or # (Assigned by recorder) CA-SLO-396 Quad: Oceano *Recorded by: Dean J. Tye *Date Recorded 1-15-01 ☐ Continuation ☒ Update There are two sets of railroad tracks on berm 10m wide. Three meters west of berm is a thick hedge, chain link fence, and R.V. Park. The Qwest line is on the east side of the ROW. Impact is unlikely.
*Resource Name or # (Assigned by recorder) CA-SLO-825 Quad: Pismo Beach *Recorded by: Dean J. Tye *Date Recorded 1-9-01 ☐ Continuation ☒ Update An R.V./mobile home dealership is on the site. This is the same one that impacted site CA-SLO-840.
*Resource Name or # (Assigned by recorder) CA-VEN-196 Quad: Pitas Point *Recorded by: Paul Shen-Brown *Date Recorded 9-19-00 ☐ Continuation ☒ Update This site has been destroyed by the railroad, road, and seawall. The fiber-optic line runs through the berm of the railroad, so it could not impact the site.

Table 22-8. Segment 20 Condition of Relocated Archaeological Sites

***Resource Name or #** (Assigned by recorder) CA-SLO-394 **Quad:** Arroyo Grande ***Recorded by:** Dean J. Tye ***Date Recorded** 1-15-01 ☐ Continuation ☒ Update There are two railroad tracks on a berm about 5m high and 10m wide. The Qwest line is at the bottom of the east edge of the berm, and the site is on the west side. There is a chain link fence 15m west of the berm, and on the other side is an R.V. Park. Impact on the site is unlikely.
***Resource Name or #** (Assigned by recorder) CA-SBA-1969 **Quad:** Gaviota ***Recorded by:** Paul Shen-Brown ***Date Recorded** 1-15-01 ☐ Continuation ☒ Update This site is eroding into the ocean and has been cut by the railroad. The fiber-optic line runs through the very deep berm, so it could not impact the site except possibly where the berm meets at the original ground surface.
***Resource Name or #** (Assigned by recorder) CA-SBA-1676 **Quad:** Gaviota ***Recorded by:** Paul Shen-Brown ***Date Recorded** 12-21-00 ☐ Continuation ☒ Update Most of the site is on private property. The site is damaged by the railroad, Highway 101, and other roads. Houses on the southern end of the site are near the coast. Area around the railroad ROW is subject to run-off and sheetwash. Human, dog, and bicycle tracks suggests the possibility of collection. Did not assess the site north of the highway. The railroad ROW is cut below the original ground surface, so it is probable that the fiber-optic line is below the level of potential buried deposits and could therefore do no damage. Downcutting of the cutbanks may be destroying information.
***Resource Name or #** (Assigned by recorder) CA-SBA-1990 **Quad:** Gaviota ***Recorded by:** Paul Shen-Brown ***Date Recorded** 1-9-01 ☐ Continuation ☒ Update The site condition is in poor condition and is damaged by the railroad and Highway 101. Qwest has 4 handholes in the southern toe of site. Artifacts were recorded and reburied. No diagnostic materials were observed, only common knapping debris.
***Resource Name or #** (Assigned by recorder) CA-SBA-1916 **Quad:** Gaviota ***Recorded by:** Paul Shen-Brown ***Date Recorded** 1-15-01 ☐ Continuation ☒ Update Although the site is mostly stabilized by vegetation, it is subject to downcutting along Canada de la Guilleruno, especially where the drainage empties into the Pacific. The fiber-optic line runs through the deep berm set by the railroad and therefore could not impact the site.
***Resource Name or #** (Assigned by recorder) CA-SBA-2753H **Quad:** Gaviota ***Recorded by:** Paul Shen-Brown ***Date Recorded** 1-15-01 ☐ Continuation ☒ Update The fiber-optic line is on the opposite side of the track from the site and is set in the railroad fill; therefore, the line could not impact the resource.
***Resource Name or #** (Assigned by recorder) CA-SBA-2586 **Quad:** Goleta ***Recorded by:** Paul Shen-Brown ***Date Recorded** 12-29-00 ☐ Continuation ☒ Update The site has been largely destroyed by urbanization as well as the railroad. Next to the site is now a parking lot. The fiber-optic line runs through the fill; it is therefore unlikely to have impacted the site.
***Resource Name or #** (Assigned by recorder) CA-SBA-39 **Quad:** Goleta ***Recorded by:** Paul Shen-Brown ***Date Recorded** 12-29-00 ☐ Continuation ☒ Update The site has been completely destroyed by urbanization. It is therefore unlikely that the fiber-optic line could have impacted the site.
***Resource Name or #** (Assigned by recorder) CA-SBA-54 **Quad:** Goleta ***Recorded by:** Paul Shen-Brown ***Date Recorded** 12-29-00 ☐ Continuation ☒ Update Most of the site has been plowed and seeded, destroying the site. Area already disturbed by the railroad, so the fiber-optic line could not impact the site.

Table 22-8. Segment 20 Condition of Relocated Archaeological Sites
*Resource Name or # (Assigned by recorder) CA-SBA-60 Quad: Goleta *Recorded by: Paul Shen-Brown *Date Recorded 12-29-00 ☐ Continuation ☒ Update The site has been destroyed by a golf course. Area of the site bordered by railroad is bermed, so the fiber-optic line could not impact the site.
*Resource Name or # (Assigned by recorder) CA-VEN-240 Quad: Pitas Point *Recorded by: Paul Shen-Brown *Date Recorded 9-19-00 ☐ Continuation ☒ Update The site is disturbed by the railroad, a pipeline, Highway 101, and roads. The fiber-optic line runs through the berm of the railroad, which contains previously displaced cultural materials. Areas of site on private land may contain intact deposits. Given the condition of the southern end of the site, the fiber-optic line could not impact previously undisturbed deposits.

22.4.2 Monitoring

22.4.2.1 Methods

In accordance with Protocol 5, a Mitigation and Monitoring Plan (MMP) was prepared in April 2000. The MMP noted that in this project corridor, Qwest would be performing maintenance on an existing line only. No new trenching was foreseen at this location. The proposed maintenance activity consisted of the re-excavation of pre-existing assist holes to perform maintenance or upgrades on the fiber-optic line. These excavations might take place at four points per linear mile. The MMP concluded that it was possible that some previously undisturbed soil might be disturbed during re-excavation.

Within a 1/4-mile of the proposed project corridor, 632 archaeological resources have been previously recorded. Of these resources, 48 are within San Luis Obispo County, 517 are within Santa Barbara County, and 67 are within Ventura County. Of these resources, 72 sites contain Native American burials and an additional 37 have a moderate to high probability of containing burials. In Ventura County, within the project corridor, two sites are known to contain burials and three sites have the potential to contain burials. The presence of human remains along this Southern Coastal segment was thus considered likely. Although much of the area has been surveyed, it is also possible that previously unknown cultural resources might be discovered during maintenance activities.

In view of the above information, the MMP made the following recommendations for monitoring within this study area:

- An archaeological monitor would be present when any maintenance is performed along this project corridor.
- A Native American observer would be present when any maintenance is performed along this project corridor.

The MMP for the Santa Barbara County portion of this Southern Coastal segment made one additional recommendation for monitoring within that county:

- Areas adjacent to known sites will be clearly marked as environmentally sensitive. These areas will be avoided if possible. If construction activity in these areas is unavoidable, the project Cultural Resource Specialist will determine whether monitoring constitutes sufficient mitigation or whether site testing is necessary.

22.4.2.2 Findings

An archaeological monitor was present for all maintenance activities performed by Qwest, including excavation of new assist holes, reopening of handholes/manholes, and fiber pulling, splicing, or replacement for the Southern Coastal segment. On 157 separate occasions cultural monitoring occurred between April 4, 2000 and June 20, 2001.

As a result of monitoring, archaeological monitors noted the cultural items listed in Table 22-9. All were located at or below the current surface in a previously disturbed context, which occurred prior to Qwest backbone activities. Since the items listed in the table were not in primary context, with unknown provenience and compromised integrity, they were not formally recorded and are provided here only for information regarding the monitoring program.

An example of the daily monitoring log for the Southern Coastal segment is included as part of this chapter (Exhibit 22-1 and Exhibit 22-2).

During the monitoring program for Segment 20, only one site (CA-SBA-1990) was found to have been encountered by Qwest during maintenance activity. This prehistoric site is recorded on the USGS 7.5-Minute Gaviota Quadrangle. On January 9, 2001, the archaeological monitor immediately halted the backhoe, examined the spoils, and assessed the impact to the site. Impacts to the resource were determined to be non-substantial. The disturbances initiated by Qwest were located in the southern portion of the site within an area that had already suffered substantial disruption from prior railroad and highway construction. Common knapping debris, consisting of three pieces of debitage, was encountered during Qwest maintenance activities in the site area. No diagnostic materials were observed, and all artifacts were reburied. The daily monitoring log documenting this event is included as part of this chapter as Exhibit 22-3 through Exhibit 22-5.

Table 22-9. Segment 20 Monitoring Results

Description	Location	Depth (cm)
Chert flake	In line	19
Chert flake	In Line	11
Dressed rectangular granitic stone fragments	In Line	Surface
Edison Company-Battery Oil bottle (1950s)	In line	15
Four spikes (iron)	In Line	150
Glass bottle, "Battery Oil"	In Line	Surface
Glass fragment (amber), weathered	In Line	140
One rail plate (iron)	In Line	150
Quartzite flake (red tertiary)	In Line	8
Railroad bedding cobble (Ballast)	In line	92
Railroad bedding cobble (Ballast)	In line	95
Sewer pipe	In line	137
Terra Cotta (clay) pipe fragment	In Line	150
Three railroad ties	In Line	150

QWEST FIBER OPTIC PROJECT

DAILY ARCHAEOLOGICAL MONITORING LOG

Date: 3-23-01 Monitor: Paul Shen-Brown Arr. on site: 7:00am Departed site: 2:00 pm

Hours billed (4 hr. minimum): 8 Construction foreman: Jody Leveth

Account for any hours on site when work not in progress (e.g. construction delay):

Action monitored (e.g. Utility Trench 3A): Setting handhole at 41+.05, trench to cement truck bore w/street bore.

Location (include start and stop if applicable): Solross, 12442

Construction methods and equipment in use: Digging w/ backhoes.

Soils and stratigraphy evident: **(describe in detail and illustrate typical profile on reverse;** note any inclusions of historic debris, evidence of fill, evidence of materials buried by sediment) attach additional pages as necessary:

Soils in both areas were fill and mixed deposits. One isolated find of a glass bottle was found in the southwest corner of the handhole pit appx. 3m from the centerline. 15 cmbs

Cultural resource findings (Describe any historic or prehistoric materials observed, including isolated artifacts, buried faunal remains, historic trash, evidence of cultural deposits. Attach continuation sheets, drawings, photo records, etc., as needed):

1 glass bottle, 4" high, labelled "BATTERY OIL", with a post mould mark (illustrated on continuation sheet)

Preliminary assessment of significance of find (if work continued, justify): Battery oil bottles are common finds along Railroad tracks and are unlikely to provide information significant to history.

Action taken at discovery (Who was notified? Was work stopped, and for how long? If work continued, what precautions were taken to avoid further impacts? Any samples collected? List on cont. sheet. Disposition of samples? **Photos? [attach record]**)

The bottle was collected and illustrated. Work was continually monitored by an archaeologist and a Native American monitor.

Additional comments, observations, recommendations: N/A

Photographs taken: yes (no)

Exhibit 22-1. Sample Segment 20 Daily Monitoring Log

QWEST FIBER OPTIC PROJECT

DAILY ARCHAEOLOGICAL MONITORING LOG CONTINUATION SHEET

Date: 3-23-01 Monitor: Paul Shen-Brown

1:1

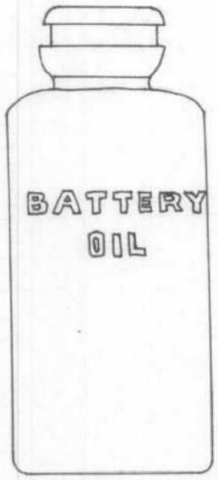


Exhibit 22-2. Sample Segment 20 Daily Monitoring Log

QWEST FIBER OPTIC PROJECT
DAILY ARCHAEOLOGICAL MONITORING LOG

Date: 9-21-00 Monitor: Paul Shaw-Brown Arr. on site: 7:00am Departed site: 5:00pm

Hours billed (4 hr. minimum): 10 Construction foreman: Don Snyder

Account for any hours on site when work not in progress (e.g. construction delay):

Action monitored (e.g. Utility Trench 3A): Scraping of 4 potential road beds, #s 17+03, 17+43, 17+73, 17+83 and 17+43

Location (include start and stop if applicable): Goleta Slide, at southern entrance of site CA-SBA-1990

Construction methods and equipment in use: Digging with backhoes

Soils and stratigraphy evident: **(describe in detail and illustrate typical profile on reverse**; note any inclusions of historic debris, evidence of fill, evidence of materials buried by sediment) attach additional pages as necessary:

South exposures and parts of east and west exposures showed 3 types of stratigraphy. Upper type is approx. .5 m bgs consisted of brown loamy sands. Next stratum below is a lenticular of white sandy material with some matrix, approx. 4 cm thick. Below is moist sandy clay to bottom of trench.

Cultural resource findings (Describe any historic or prehistoric materials observed, including isolated artifacts, buried faunal remains, historic trash, evidence of cultural deposits. Attach continuation sheets, drawings, photo records, etc., as needed):

No cultural materials (all project related), primarily cores and primary flakes representing early stages of reduction. All materials of chert, brown to black, some with brown, white or reddish bands. Never 1% of materials exposed.

Preliminary assessment of significance of find (if work continued, justify): Low, primarily due to previous disturbance caused by construction (railroad, tin mill, access roads, etc.). Also absence of diagnostic tools or cultural materials

Action taken at discovery (Who was notified? Was work stopped, and for how long? If work continued, what precautions were taken to avoid further impacts? Any samples collected? List on cont. sheet. Disposition of samples? **Photos? [attach record]**)

It was impossible to move the 4 trees elsewhere, as they had to connect to a previously laid conduit and the bottom is going to be constructed. Certainly was monitored very closely for signs of alluviation or more significantly significant artifacts

Additional comments, observations, recommendations: Only pot sherds north of 15 TSI retains some potential to contain undisturbed deposits

Photographs taken: yes (no)

Exhibit 22-3. Sample Segment 20 Daily Monitoring Log

QWEST FIBER OPTIC PROJECT

DAILY ARCHAEOLOGICAL MONITORING LOG CONTINUATION SHEET

Date: 9-01-03 Monitor: Rod Theis-Brown



1:1

Exhibit 22-4. Sample Segment 20 Daily Monitoring Log

QWEST FIBER OPTIC PROJECT

DAILY ARCHAEOLOGICAL MONITORING LOG **SOIL PROFILE**

Date: 9-01-00 Monitor: Rut Stein-Brown
Include scale and N arrow

South Wall

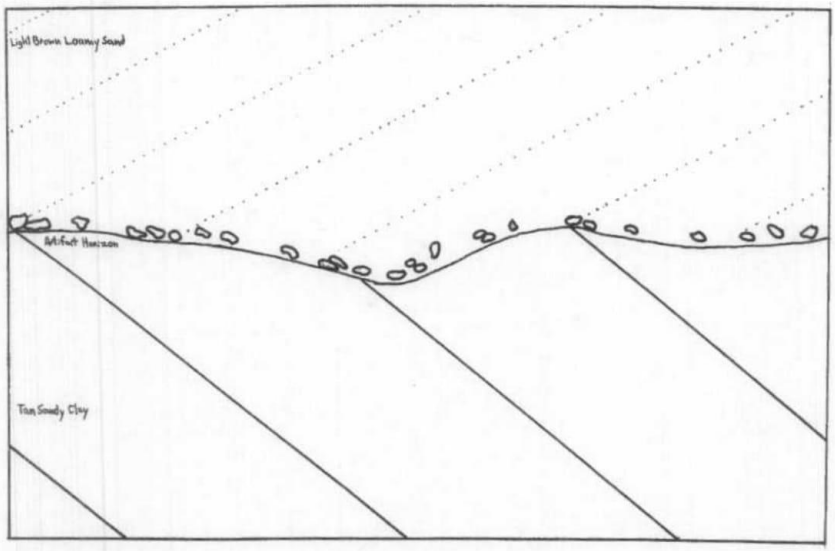


Exhibit 22-5. Sample Segment 20 Daily Monitoring Log

22.5 DISCUSSION

Prior to the current investigation, the majority of the Southern Coastal segment corridor had been investigated for cultural resources, with 632 cultural resources previously recorded within a 1/4-mile radius. In addition, 72 of the known archaeological sites contained Native American burials, and an additional 37 were considered to have a moderate to high probability of containing burials. Also, 1 archaeological site (CA-SBA-1213, the Hammond Meadows Site) is listed on the NAHC Sacred Lands Inventory and the NRHP. No previously unknown cultural resources were identified during the fieldwork reported here along the ROW. Although the presence of human remains was considered likely along this segment, no evidence of human remains was discovered during this project.

Under the oversight of a CRS, the specific Cultural Resources Protocols for this project were accomplished. Preparation of a MMP in compliance with Protocol 5 assured that known cultural resources would be avoided as feasible and impacts reduced by ensuring that any necessary archaeological mitigation was carried out prior to commencement of the maintenance activity. In compliance with Protocol 7, the literature search and subsequent fieldwork assured that identified cultural resources within the segment corridor were protected. Under Protocol 8, an archaeological monitor and Native American observer were present where appropriate. During the project, it was not necessary to implement Protocol 9, which describes the methods to be employed to address unanticipated discoveries and assure that cultural resources are protected by work stoppage and evaluation of the resource by the CRS or an archaeological monitor, since there were no unanticipated discoveries. Although it was not necessary to implement Protocol 10, that protocol describes the actions to be taken in the event of the discovery of human remains or suspected human remains.

22.6 RECOMMENDATIONS

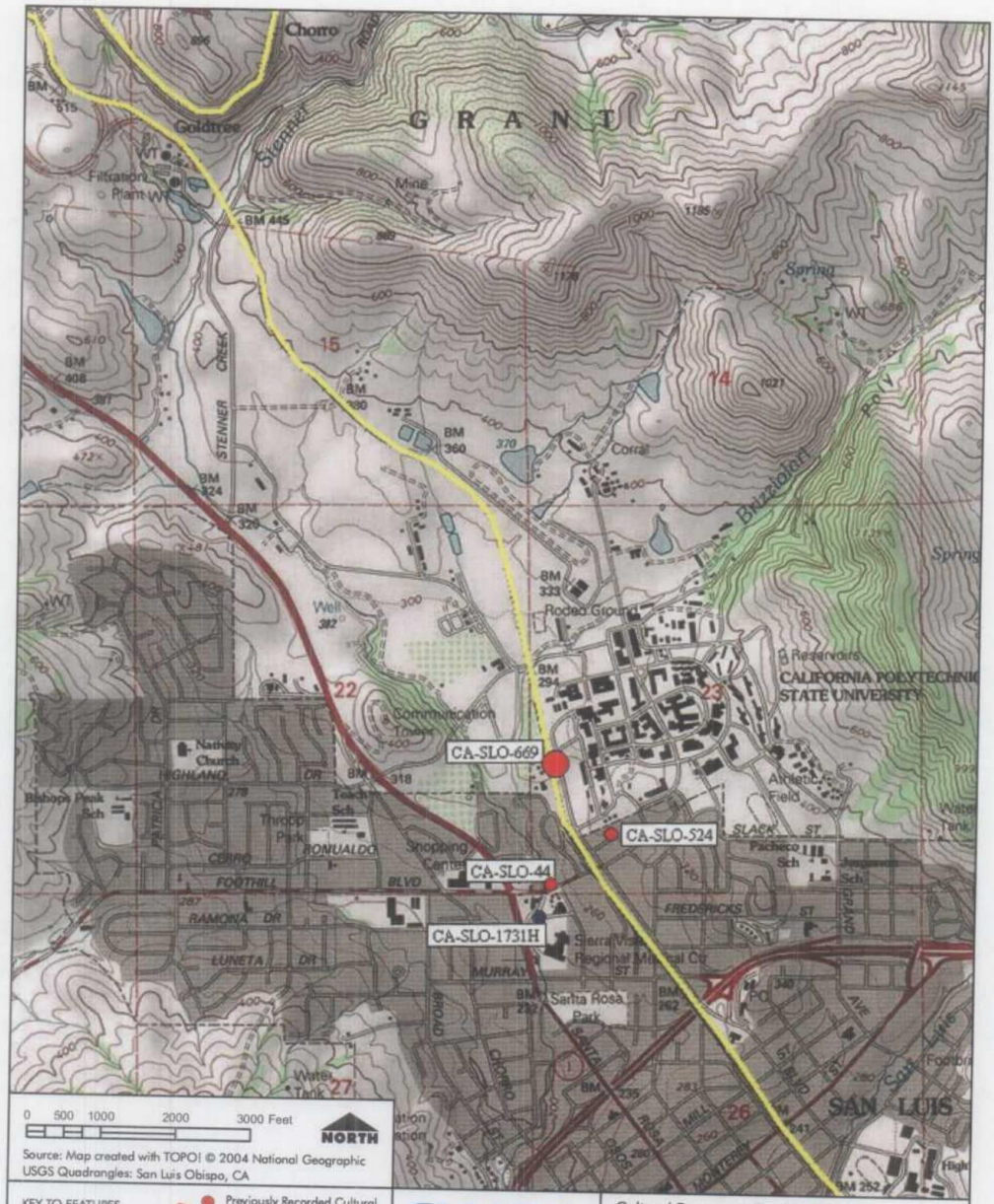
Given that the current field investigation was conducted along a railroad corridor and surface streets, efforts to locate and relocate cultural resources within the scope of this project have been sufficient per current U.S. Secretary of the Interior's professional standards and guidelines.

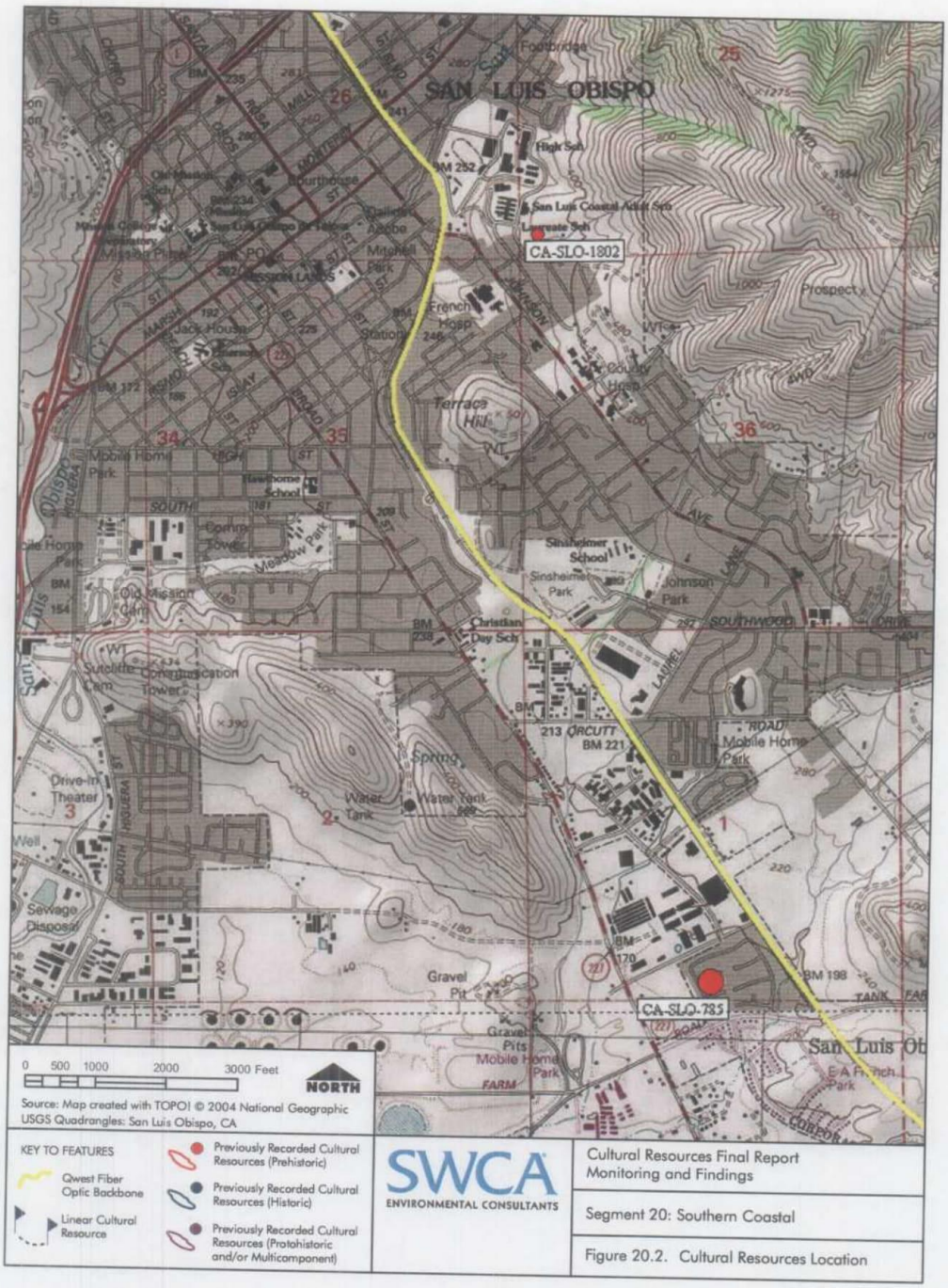
There remains, however, the potential for the existence of buried archaeological materials within this heavily disturbed project area. Prehistoric materials might include flaked stone tools, toolmaking debris, stone milling tools, fire-affected rock, animal bone shaped for use as tools, baked clay items, pottery, marine shell, or soil darkened by cultural activities (midden). Historic materials might include building remains, metal, glass, or ceramic artifacts or debris.

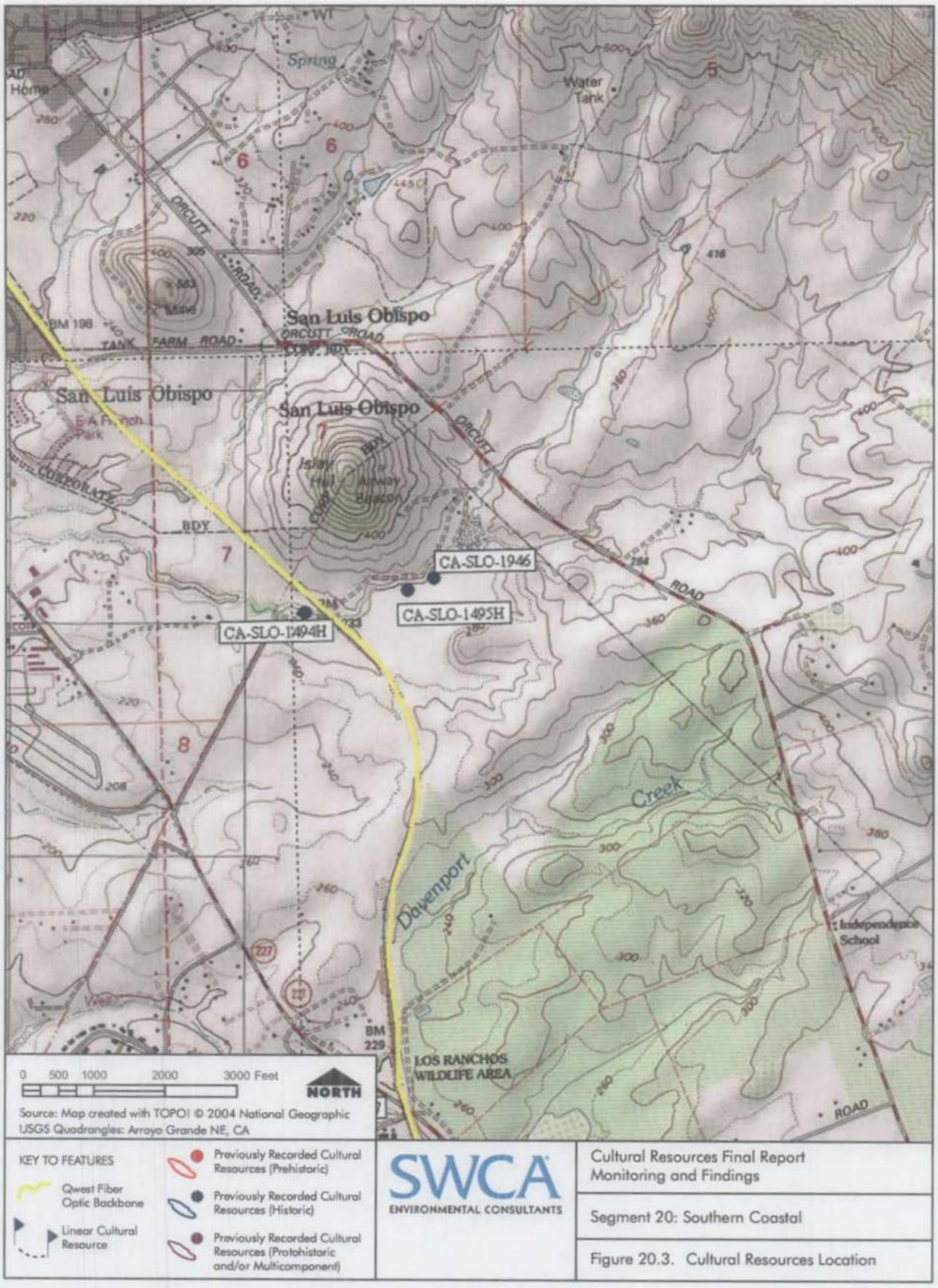
Should cultural resources be encountered by Qwest construction and/or management crews during future disturbance for maintenance of fiber-optic cable and related infrastructure, or should new construction occur within the state of California, work in the area must be halted and a qualified archaeologist should be notified immediately to evaluate the resource(s) encountered. Qwest would also adhere to the specific Cultural Resources Protocols, numbered 1 through 11, which were prepared to ensure Qwest's compliance under CPUC regulatory authority (see Appendix A).

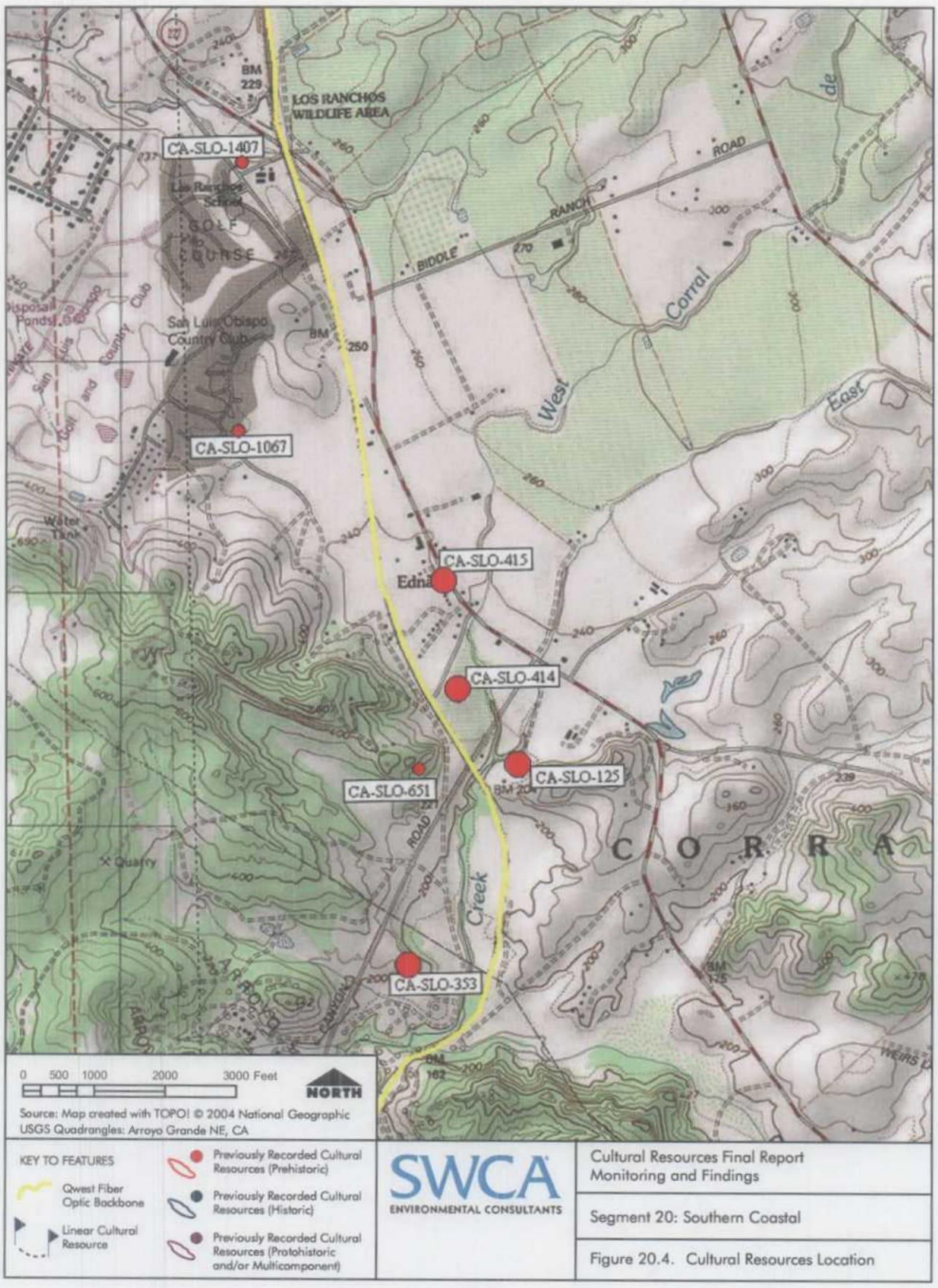
- Protocol Number 1: Records Search and Data Adequacy Analysis
- Protocol Number 2: Native American Consultation
- Protocol Number 3: Archaeological Inventory and Site Recording
- Protocol Number 4: Site Boundary, Integrity or Significance Testing
- Protocol Number 5: Mitigation Monitoring Plan
- Protocol Number 6: Pre-Construction Data Recovery

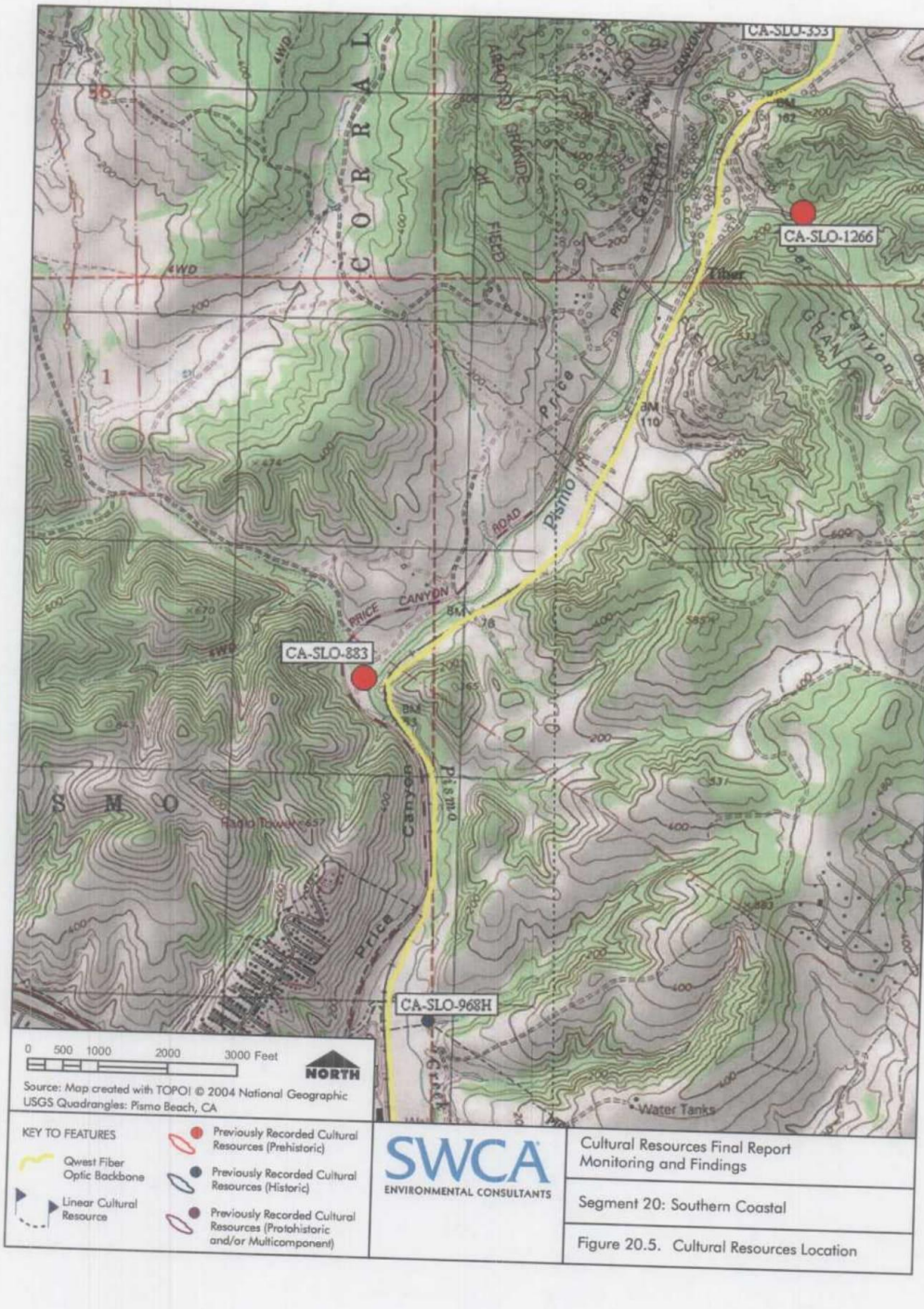
- Protocol Number 7: Protection of Environmentally Sensitive Areas
- Protocol Number 8: Archaeological Monitoring and Native American Observation
- Protocol Number 9: Addressing Unanticipated Discoveries during Project Activity
- Protocol Number 10: Discovery of Human Bone
- Protocol Number 11: Final Report of Monitoring and Findings


CA-SLO-669
CA-SLO-524
CA-SLO-44
CA-SLO-1731H
GRANT
CALIFORNIA POLYTECHNIC STATE UNIVERSITY
SAN LUIS
0 500 1000 2000 3000 Feet
NORTH
Source: Map created with TOPO! © 2004 National Geographic
USGS Quadrangles: San Luis Obispo, CA
KEY TO FEATURES
Qwest Fiber Optic Backbone
Linear Cultural Resource
Previously Recorded Cultural Resources (Prehistoric)
Previously Recorded Cultural Resources (Historic)
Previously Recorded Cultural Resources (Protohistoric and/or Multicomponent)
SWCA
ENVIRONMENTAL CONSULTANTS
Cultural Resources Final Report Monitoring and Findings
Segment 20: Southern Coastal
Figure 20.1. Cultural Resources Location

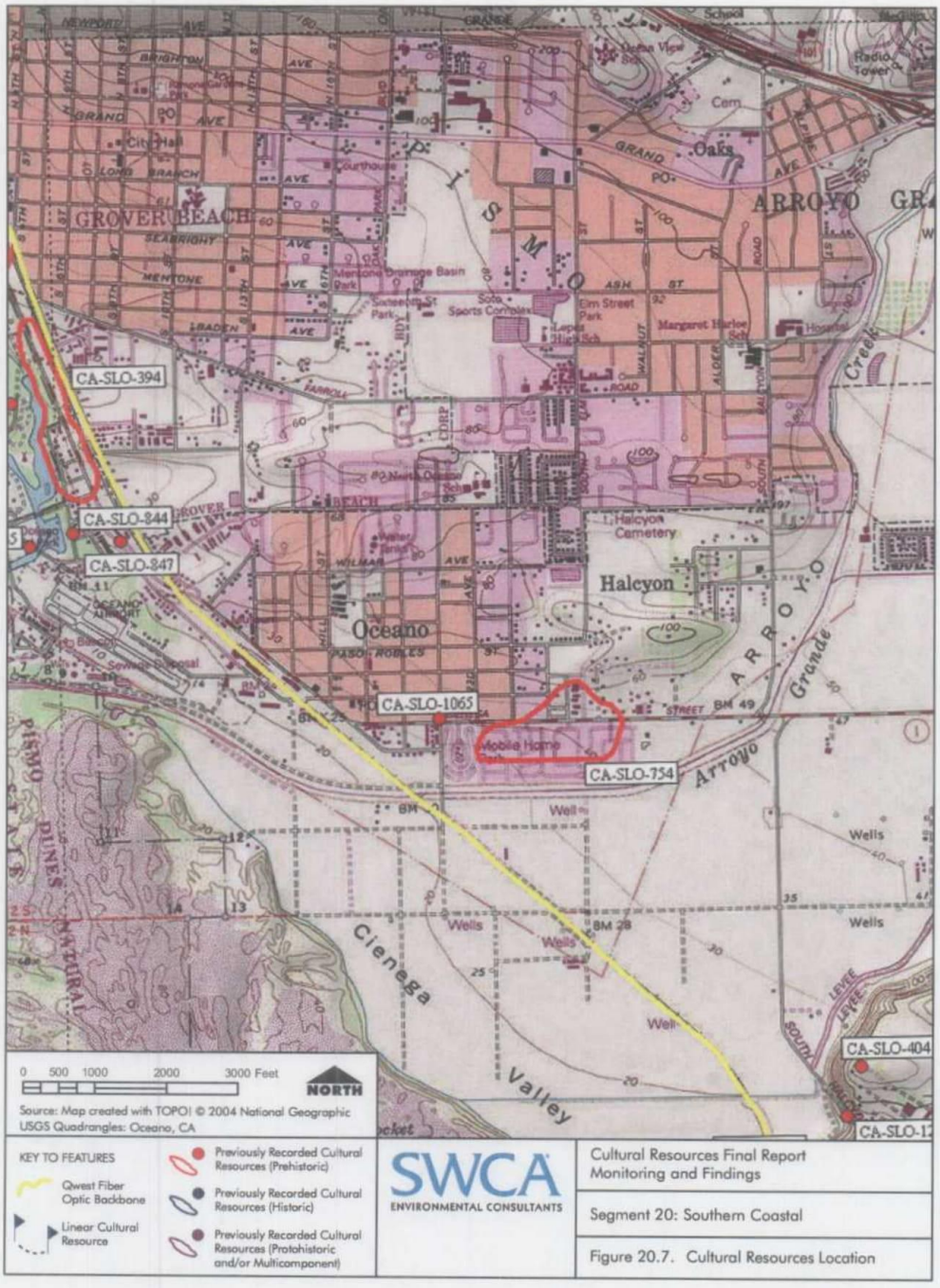

SAN LUIS OBISPO
CA-SLO-1802
CA-SLO-735
Terrace Hill
Prospect
Sinsheimer School
Sinsheimer Park
Johnson Park
Christian Day Sch
Mobile Home Park
Meadow Park
Drive-In Theater
Water Tank
Sewage Disposal
Gravel Pit
Gravel Pits Mobile Home Park
Old Mission Cem
Satellite Communication Tower
Spring
0 500 1000 2000 3000 Feet
NORTH
Source: Map created with TOPO! © 2004 National Geographic
USGS Quadrangles: San Luis Obispo, CA
KEY TO FEATURES
Qwest Fiber Optic Backbone
Linear Cultural Resource
Previously Recorded Cultural Resources (Prehistoric)
Previously Recorded Cultural Resources (Historic)
Previously Recorded Cultural Resources (Protohistoric and/or Multicomponent)
SWCA
ENVIRONMENTAL CONSULTANTS
Cultural Resources Final Report Monitoring and Findings
Segment 20: Southern Coastal
Figure 20.2. Cultural Resources Location

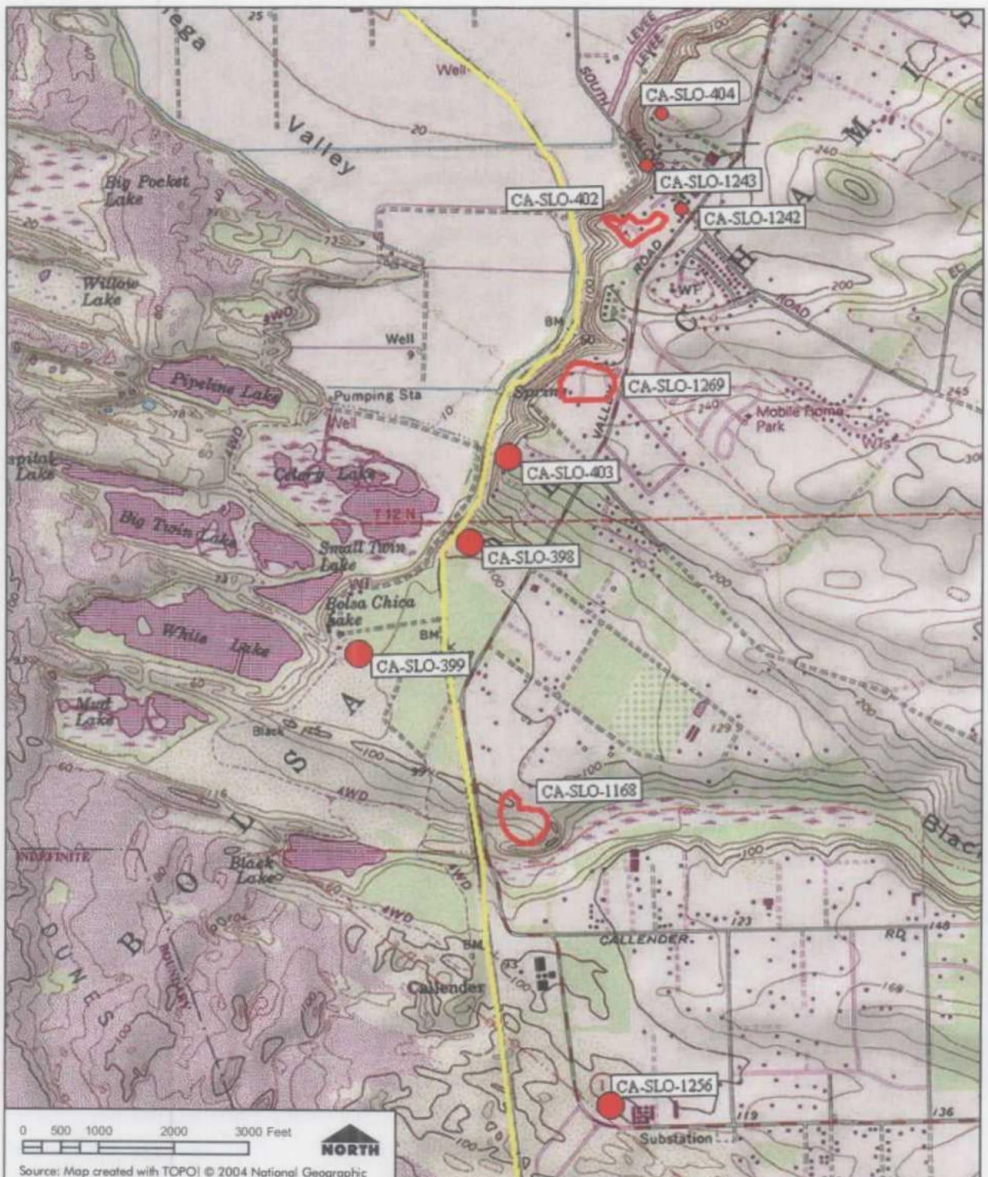

San Luis Obispo
San Luis Obispo
San Luis Obispo
CA-SLO-1946
CA-SLO-1495H
CA-SLO-1494H
Creek
Davenport
LOS RANCHOS WILDLIFE AREA
ROAD
0 500 1000 2000 3000 Feet
NORTH
Source: Map created with TOPO! © 2004 National Geographic
USGS Quadrangles: Arroyo Grande NE, CA
KEY TO FEATURES
Qwest Fiber Optic Backbone
Linear Cultural Resource
Previously Recorded Cultural Resources (Prehistoric)
Previously Recorded Cultural Resources (Historic)
Previously Recorded Cultural Resources (Protohistoric and/or Multicomponent)
SWCA
ENVIRONMENTAL CONSULTANTS
Cultural Resources Final Report
Monitoring and Findings
Segment 20: Southern Coastal
Figure 20.3. Cultural Resources Location

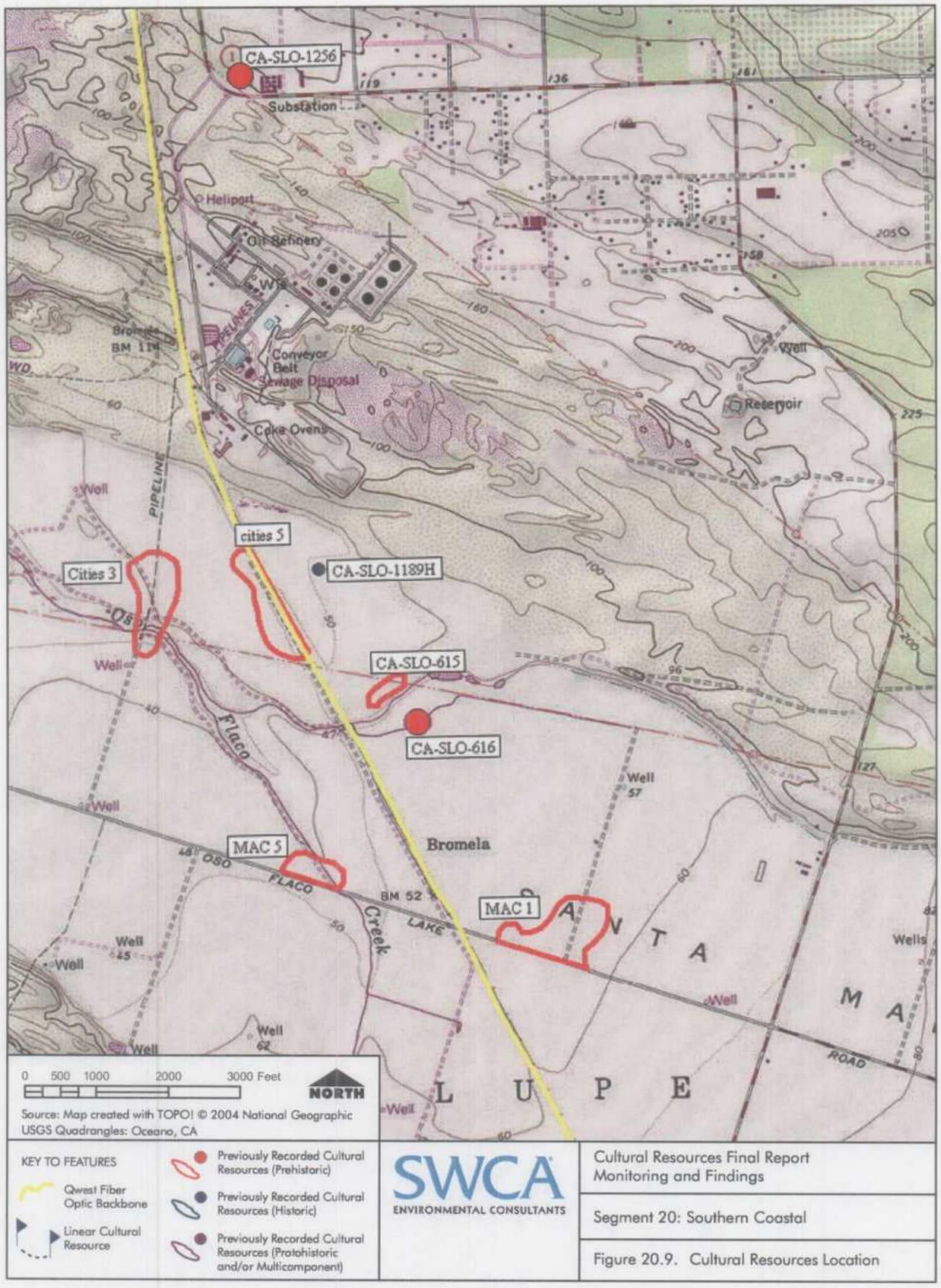

LOS RANCHOS WILDLIFE AREA
CA-SLO-1407
CA-SLO-1067
CA-SLO-415
CA-SLO-414
CA-SLO-125
CA-SLO-651
CA-SLO-353
San Luis Obispo Country Club
GOLF COURSE
BIDDLE RANCH ROAD
West Corral de Piedra
East
CORRAL CREEK
ROAD
Water Tank
Quarry
0 500 1000 2000 3000 Feet
NORTH
Source: Map created with TOPO! © 2004 National Geographic
USGS Quadrangles: Arroyo Grande NE, CA
KEY TO FEATURES
Qwest Fiber Optic Backbone
Linear Cultural Resource
Previously Recorded Cultural Resources (Prehistoric)
Previously Recorded Cultural Resources (Historic)
Previously Recorded Cultural Resources (Protohistoric and/or Multicomponent)
SWCA ENVIRONMENTAL CONSULTANTS
Cultural Resources Final Report Monitoring and Findings
Segment 20: Southern Coastal
Figure 20.4. Cultural Resources Location

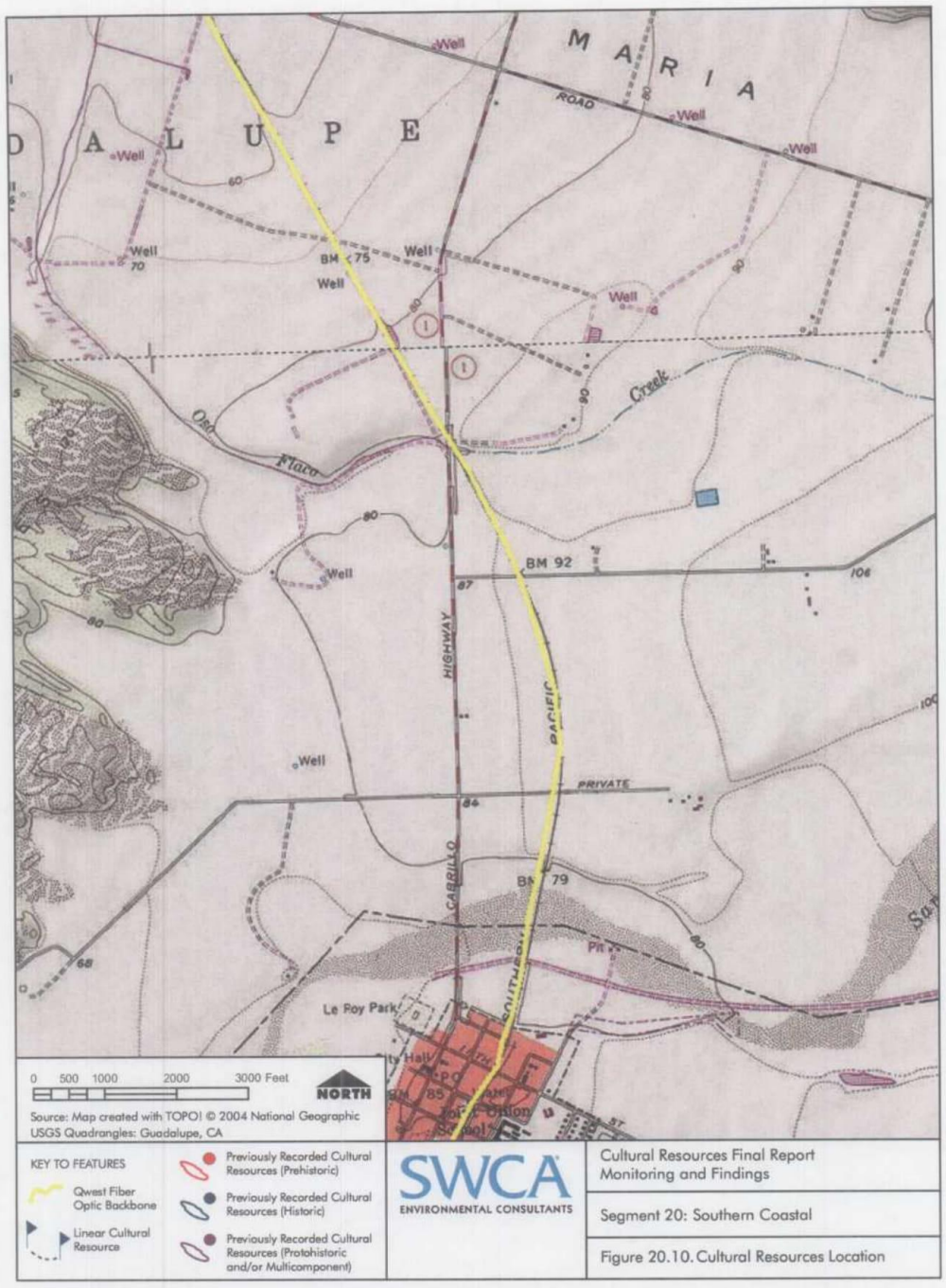

CA-SLO-353
CA-SLO-1266
CA-SLO-883
CA-SLO-968H
CORRAL
SMO
Price Canyon
Pismo
Water Tanks
0 500 1000 2000 3000 Feet
NORTH
Source: Map created with TOPO! © 2004 National Geographic
USGS Quadrangles: Pismo Beach, CA
KEY TO FEATURES
Qwest Fiber Optic Backbone
Linear Cultural Resource
Previously Recorded Cultural Resources (Prehistoric)
Previously Recorded Cultural Resources (Historic)
Previously Recorded Cultural Resources (Protohistoric and/or Multicomponent)
SWCA
ENVIRONMENTAL CONSULTANTS
Cultural Resources Final Report Monitoring and Findings
Segment 20: Southern Coastal
Figure 20.5. Cultural Resources Location

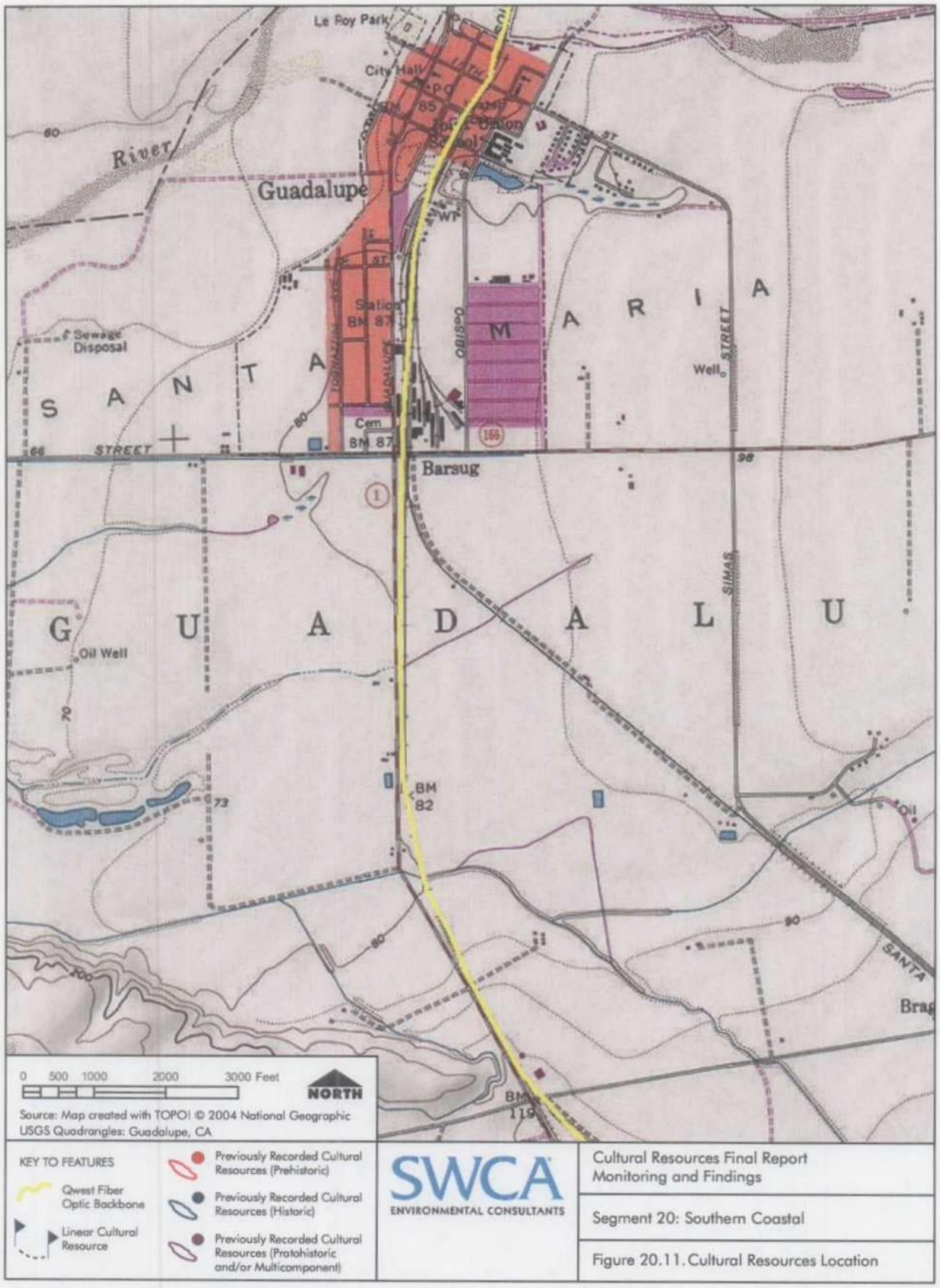

CA-SLO-968H
CA-SLO-81
CA-SLO-832
CA-SLO-983
PISMO BEACH
(BM 33)
CA-SLO-840
CA-SLO-998
CA-SLO-987H
CA-SLO-825
CA-SLO-438
CA-SLO-842
PISMO INVERTEBRATE RESERVE
GROVER BEACH
CA-SLO-396
CA-SLO-219
CA-SLO-843
CA-SLO-394
CA-SLO-218
0 500 1000 2000 3000 Feet
NORTH
Source: Map created with TOPO! © 2004 National Geographic
USGS Quadrangles: Pismo Beach, CA
KEY TO FEATURES
Qwest Fiber Optic Backbone
Linear Cultural Resource
Previously Recorded Cultural Resources (Prehistoric)
Previously Recorded Cultural Resources (Historic)
Previously Recorded Cultural Resources (Protohistoric and/or Multicomponent)
SWCA
ENVIRONMENTAL CONSULTANTS
Cultural Resources Final Report Monitoring and Findings
Segment 20: Southern Coastal
Figure 20.6. Cultural Resources Location

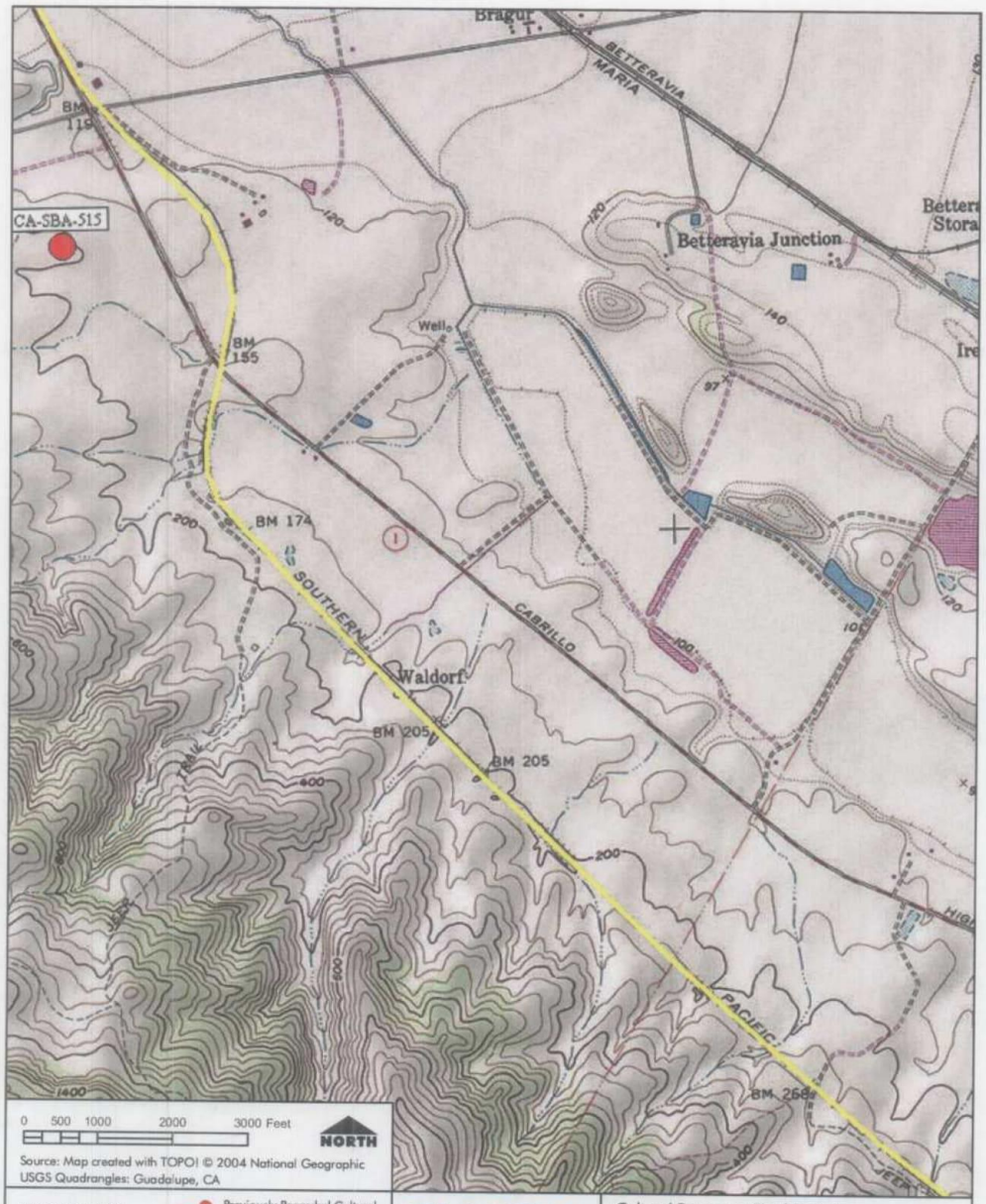

GROVER BEACH
Oceano
Halcyon
ARROYO GR
CA-SLO-394
CA-SLO-844
CA-SLO-847
CA-SLO-1065
CA-SLO-754
CA-SLO-404
Mobile Home
Halcyon Cemetery
Elm Street Park
Soto Sports Complex
Meadow Park
Scheeche St Park
Mentone Drainage Basin Park
Arroyo Grande Creek
Cienega Valley
Wells
0 500 1000 2000 3000 Feet
NORTH
Source: Map created with TOPO! © 2004 National Geographic
USGS Quadrangles: Oceano, CA
KEY TO FEATURES
Qwest Fiber Optic Backbone
Linear Cultural Resource
Previously Recorded Cultural Resources (Prehistoric)
Previously Recorded Cultural Resources (Historic)
Previously Recorded Cultural Resources (Protohistoric and/or Multicomponent)
SWCA
ENVIRONMENTAL CONSULTANTS
Cultural Resources Final Report Monitoring and Findings
Segment 20: Southern Coastal
Figure 20.7. Cultural Resources Location

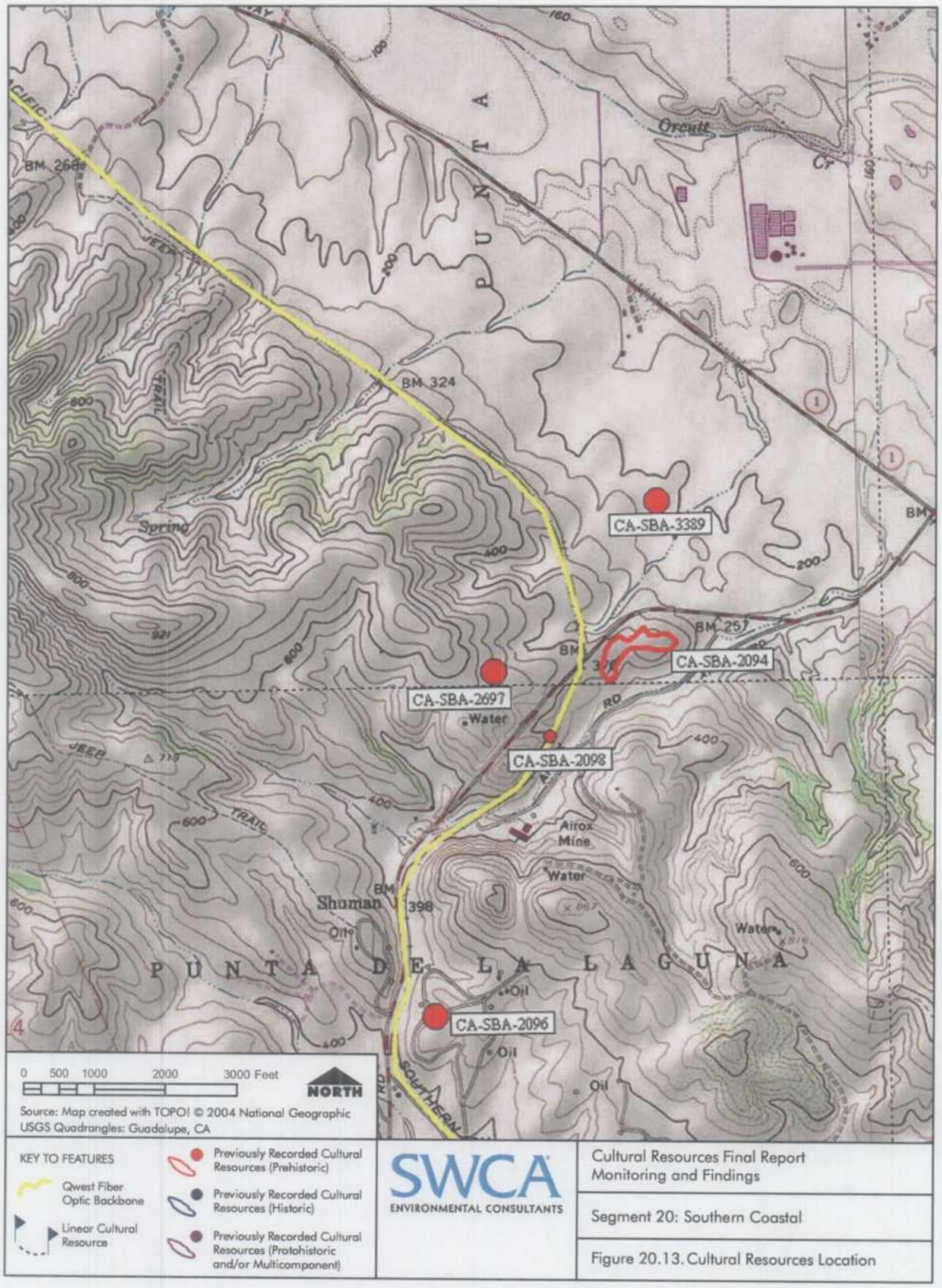

CA-SLO-404
CA-SLO-1243
CA-SLO-402
CA-SLO-1242
CA-SLO-1269
CA-SLO-403
CA-SLO-398
CA-SLO-399
CA-SLO-1168
CA-SLO-1256
Big Pocket Lake
Willow Lake
Pipeline Lake
Big Twin Lake
Small Twin Lake
Bolsa Chica Lake
White Lake
Mud Lake
Black Lake
Pumping Sta
Well
Mobile Home Park
Substation
Callender
0 500 1000 2000 3000 Feet
NORTH
Source: Map created with TOPO! © 2004 National Geographic
USGS Quadrangles: Oceano, CA
KEY TO FEATURES
Qwest Fiber Optic Backbone
Linear Cultural Resource
Previously Recorded Cultural Resources (Prehistoric)
Previously Recorded Cultural Resources (Historic)
Previously Recorded Cultural Resources (Protohistoric and/or Multicomponent)
SWCA
ENVIRONMENTAL CONSULTANTS
Cultural Resources Final Report
Monitoring and Findings
Segment 20: Southern Coastal
Figure 20.8. Cultural Resources Location

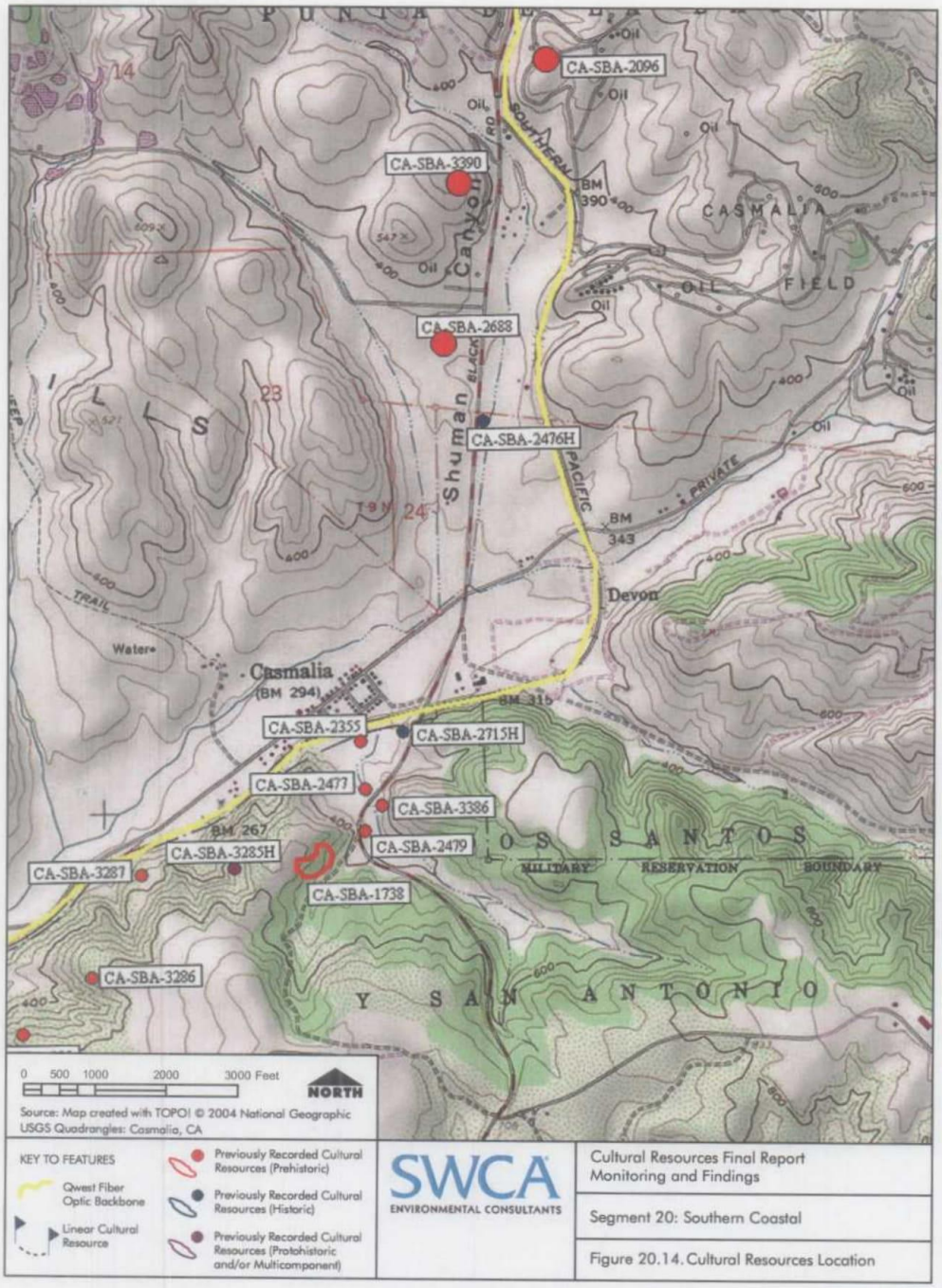

CA-SLO-1256
Substation
Heliport
Oil Refinery
Conveyor Belt
Sewage Disposal
Coke Ovens
Reservoir
PIPELINE
cities 5
Cities 3
CA-SLO-1189H
CA-SLO-615
CA-SLO-616
MAC 5
MAC 1
Bromela
Flaco
Creek
LAKE
ROAD
Well
0 500 1000 2000 3000 Feet
NORTH
Source: Map created with TOPO! © 2004 National Geographic
USGS Quadrangles: Oceano, CA
KEY TO FEATURES
Qwest Fiber Optic Backbone
Linear Cultural Resource
Previously Recorded Cultural Resources (Prehistoric)
Previously Recorded Cultural Resources (Historic)
Previously Recorded Cultural Resources (Protohistoric and/or Multicomponent)
SWCA
ENVIRONMENTAL CONSULTANTS
Cultural Resources Final Report Monitoring and Findings
Segment 20: Southern Coastal
Figure 20.9. Cultural Resources Location

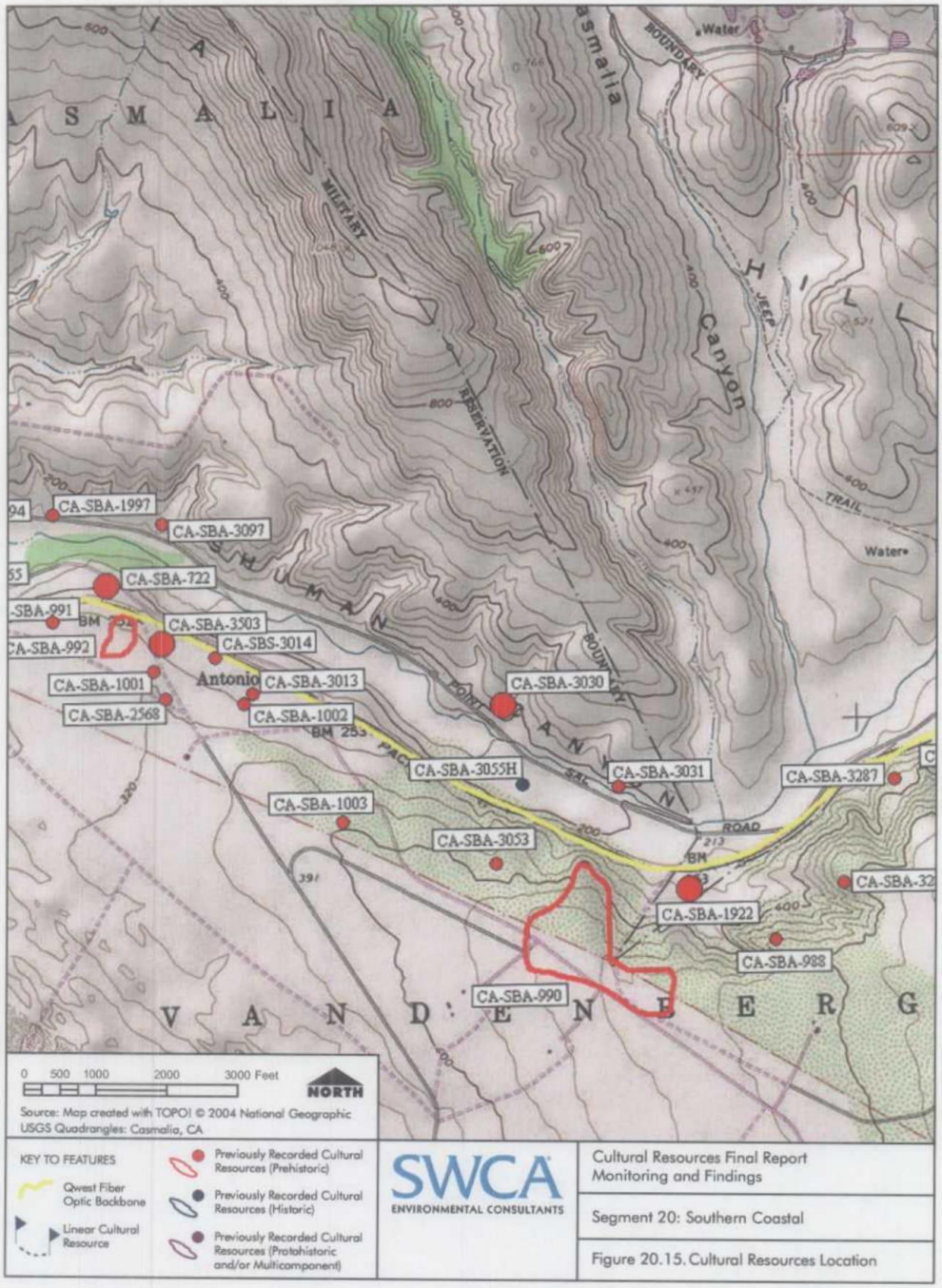

MARIA
ROAD
Well
BM 75
BM 92
BM 79
Creek
Olso
Maco
HIGHWAY
PACIFIC
SOUTHERN
GABRILLO
PRIVATE
Le Roy Park
Pit
0 500 1000 2000 3000 Feet
NORTH
Source: Map created with TOPO! © 2004 National Geographic
USGS Quadrangles: Guadalupe, CA
KEY TO FEATURES
Qwest Fiber Optic Backbone
Linear Cultural Resource
Previously Recorded Cultural Resources (Prehistoric)
Previously Recorded Cultural Resources (Historic)
Previously Recorded Cultural Resources (Protohistoric and/or Multicomponent)
SWCA
ENVIRONMENTAL CONSULTANTS
Cultural Resources Final Report
Monitoring and Findings
Segment 20: Southern Coastal
Figure 20.10. Cultural Resources Location


Le Roy Park
City Hall
River
Guadalupe
Sewage Disposal
Station
BM 87
Cem
BM 87
Barsug
Oil Well
BM 82
Well
STREET
SIMAS
SANTA
0 500 1000 2000 3000 Feet
NORTH
Source: Map created with TOPO! © 2004 National Geographic
USGS Quadrangles: Guadalupe, CA
KEY TO FEATURES
Qwest Fiber Optic Backbone
Linear Cultural Resource
Previously Recorded Cultural Resources (Prehistoric)
Previously Recorded Cultural Resources (Historic)
Previously Recorded Cultural Resources (Protohistoric and/or Multicomponent)
SWCA
ENVIRONMENTAL CONSULTANTS
Cultural Resources Final Report Monitoring and Findings
Segment 20: Southern Coastal
Figure 20.11. Cultural Resources Location

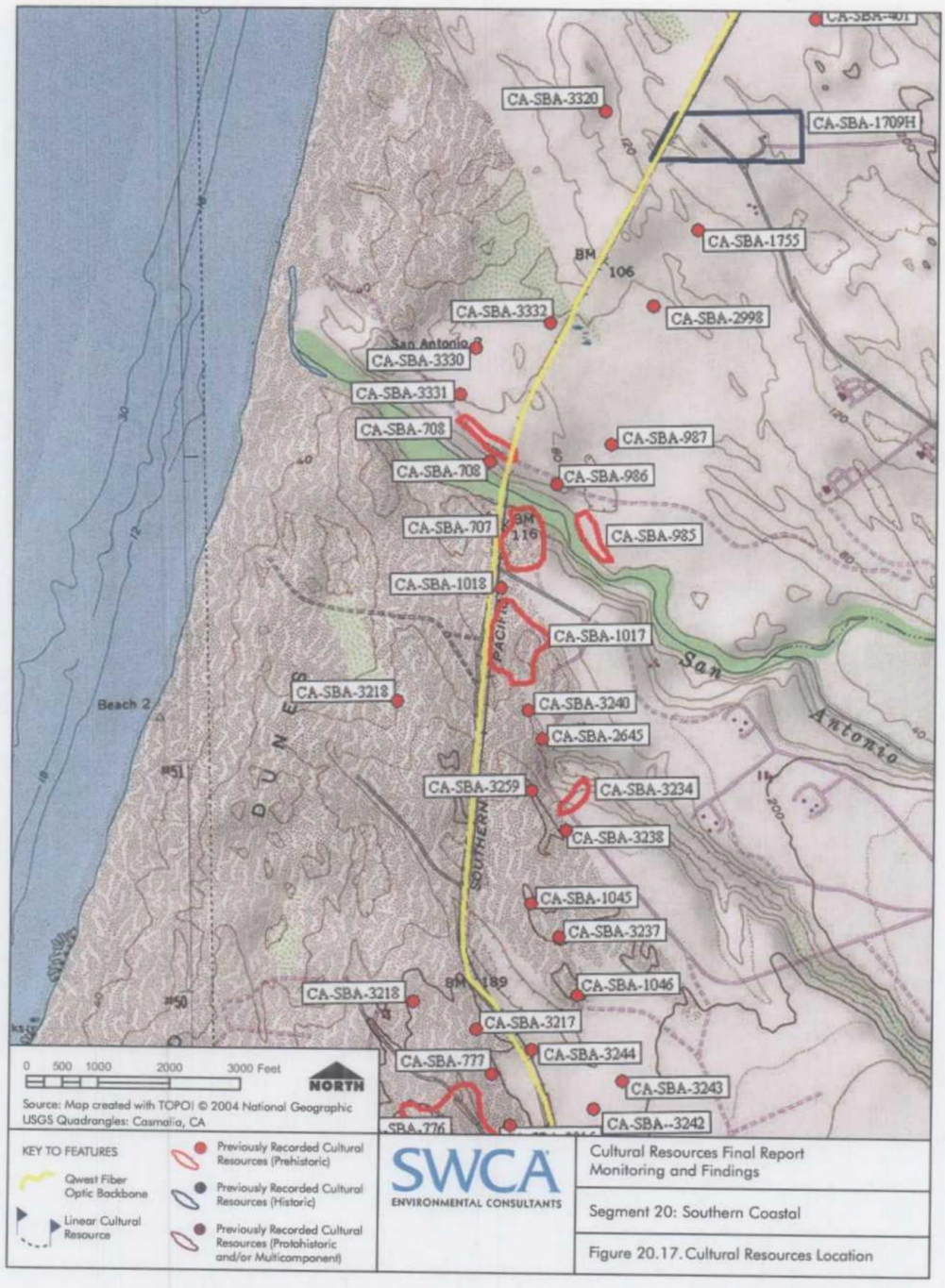

Bragur
BETTERAVIA
MARIA
BM 119
CA-SBA-515
Betteravia Junction
Wells
BM 155
BM 174
SOUTHERN
CABRILLO
Waldorf
BM 205
BM 205
PACIFIC
BM 268
0 500 1000 2000 3000 Feet
NORTH
Source: Map created with TOPO! © 2004 National Geographic
USGS Quadrangles: Guadalupe, CA
KEY TO FEATURES
Qwest Fiber Optic Backbone
Linear Cultural Resource
Previously Recorded Cultural Resources (Prehistoric)
Previously Recorded Cultural Resources (Historic)
Previously Recorded Cultural Resources (Protohistoric and/or Multicomponent)
SWCA
ENVIRONMENTAL CONSULTANTS
Cultural Resources Final Report Monitoring and Findings
Segment 20: Southern Coastal
Figure 20.12. Cultural Resources Location

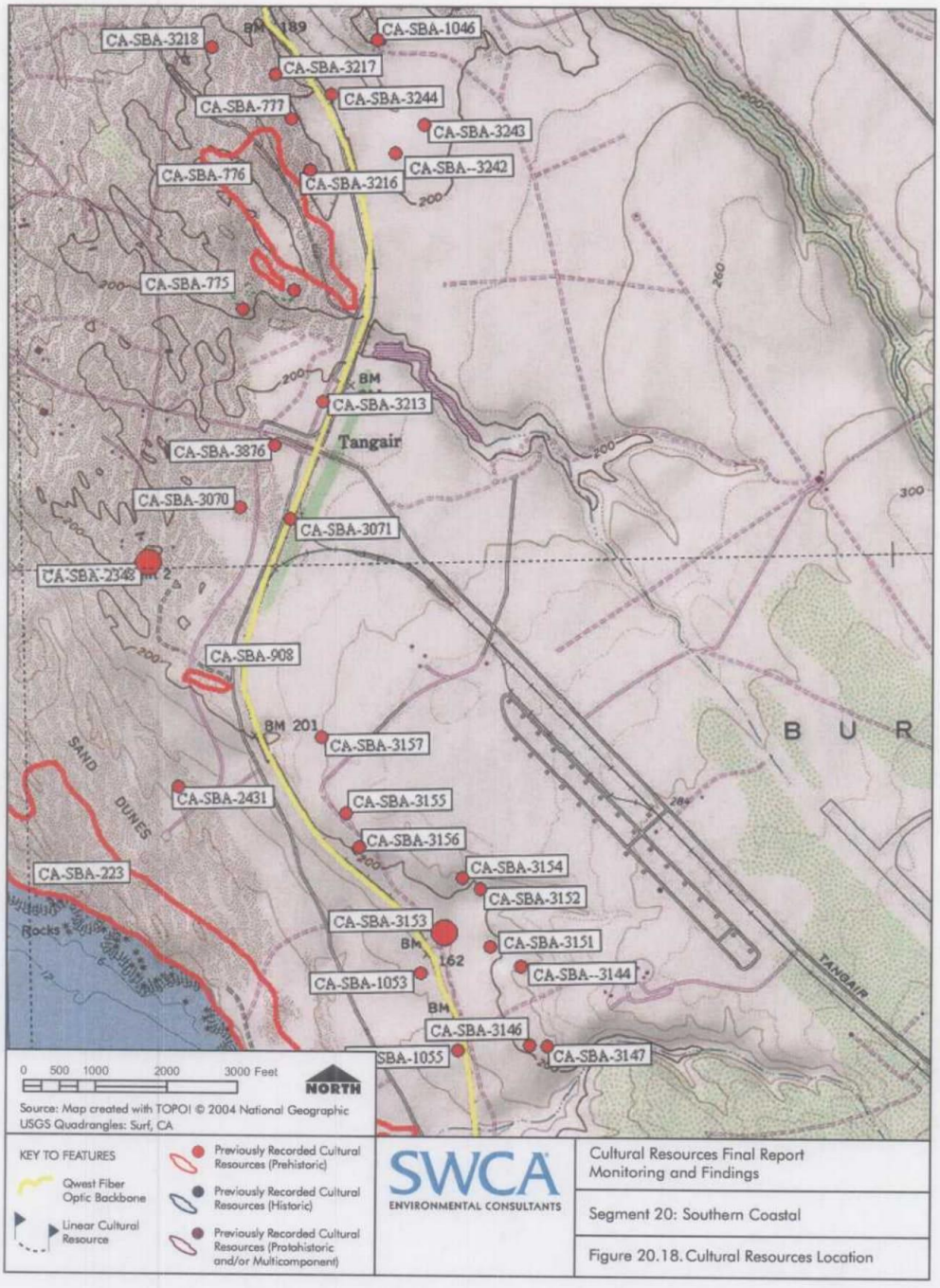

PUNTA DE LA LAGUNA
CA-SBA-3389
CA-SBA-2094
CA-SBA-2697
CA-SBA-2098
CA-SBA-2096
BM 324
BM 257
BM 398
Spring
Water
Airox Mine
Shuman
Oil
Orcutt
0 500 1000 2000 3000 Feet
NORTH
Source: Map created with TOPO! © 2004 National Geographic
USGS Quadrangles: Guadalupe, CA
KEY TO FEATURES
Qwest Fiber Optic Backbone
Linear Cultural Resource
Previously Recorded Cultural Resources (Prehistoric)
Previously Recorded Cultural Resources (Historic)
Previously Recorded Cultural Resources (Protohistoric and/or Multicomponent)
SWCA
ENVIRONMENTAL CONSULTANTS
Cultural Resources Final Report Monitoring and Findings
Segment 20: Southern Coastal
Figure 20.13. Cultural Resources Location

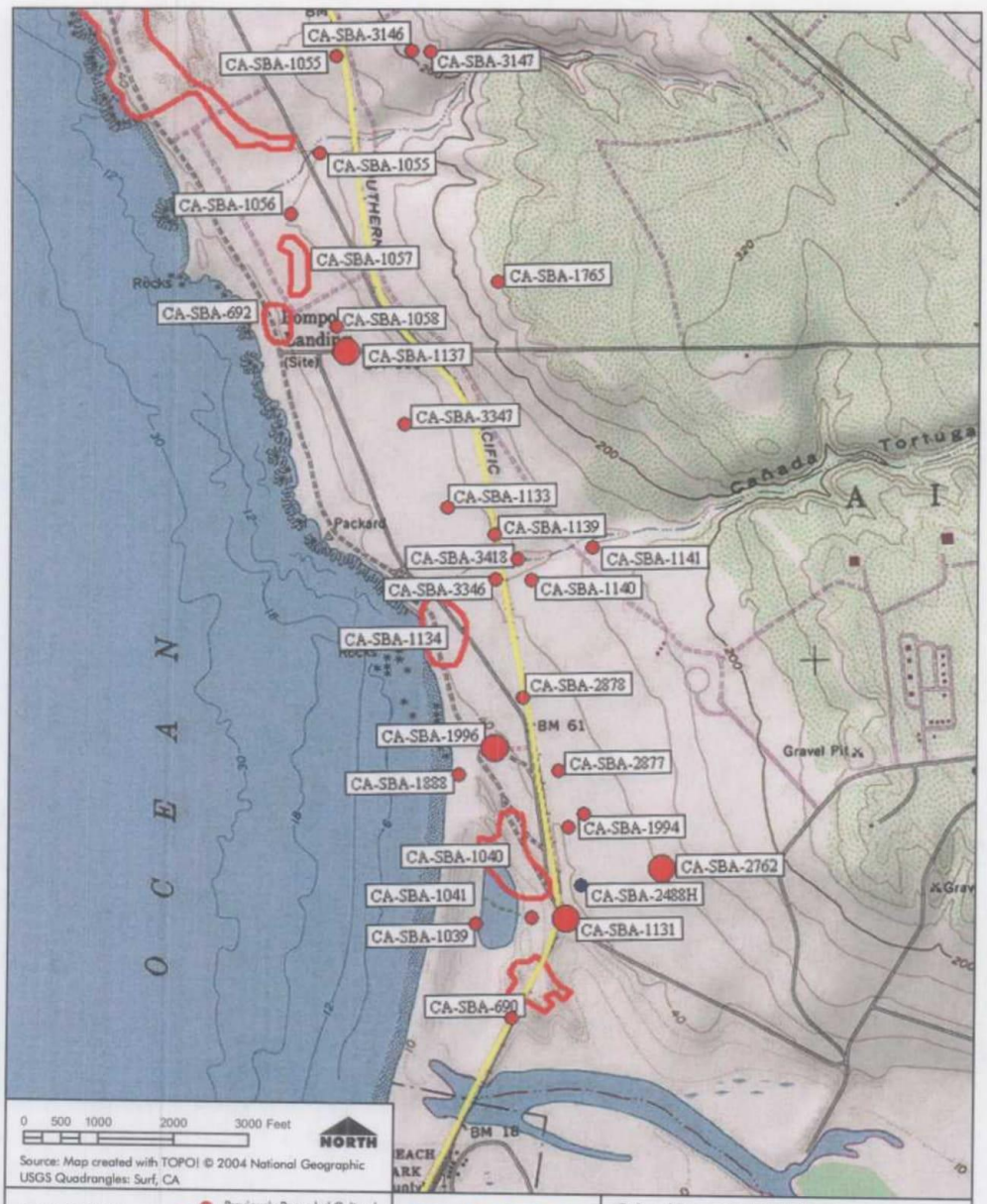

CA-SBA-2096
CA-SBA-3390
CA-SBA-2688
CA-SBA-2476H
CA-SBA-2355
CA-SBA-2715H
CA-SBA-2477
CA-SBA-3386
CA-SBA-2479
CA-SBA-3285H
CA-SBA-3287
CA-SBA-1738
CA-SBA-3286
Shuman Canyon
SOUTHERN PACIFIC
CASMALIA OIL FIELD
Devon
Casmalia (BM 294)
BM 390
BM 343
BM 315
BM 267
PRIVATE
TRAIL
Water
MILITARY RESERVATION BOUNDARY
0 500 1000 2000 3000 Feet
NORTH
Source: Map created with TOPO! © 2004 National Geographic
USGS Quadrangles: Casmalia, CA
KEY TO FEATURES
Qwest Fiber Optic Backbone
Linear Cultural Resource
Previously Recorded Cultural Resources (Prehistoric)
Previously Recorded Cultural Resources (Historic)
Previously Recorded Cultural Resources (Protohistoric and/or Multicomponent)
SWCA
ENVIRONMENTAL CONSULTANTS
Cultural Resources Final Report Monitoring and Findings
Segment 20: Southern Coastal
Figure 20.14. Cultural Resources Location

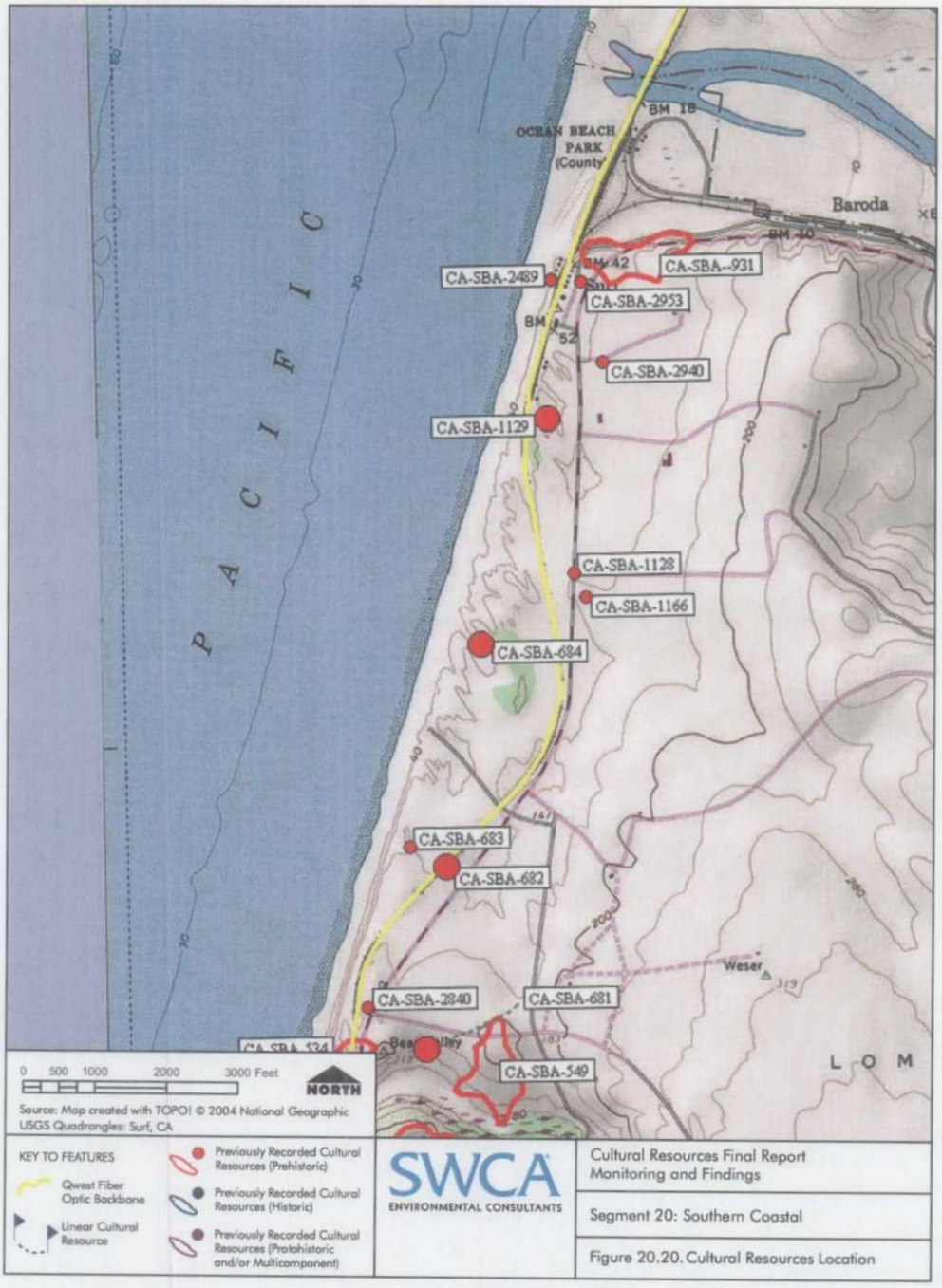

CA-SBA-1997
CA-SBA-3097
CA-SBA-722
CA-SBA-991
CA-SBA-3503
CA-SBS-3014
CA-SBA-992
CA-SBA-1001
CA-SBA-3013
CA-SBA-2568
CA-SBA-1002
CA-SBA-3030
CA-SBA-3055H
CA-SBA-3031
CA-SBA-3287
CA-SBA-1003
CA-SBA-3053
CA-SBA-1922
CA-SBA-988
CA-SBA-990
Asmalia Canyon
Water
0 500 1000 2000 3000 Feet
NORTH
Source: Map created with TOPO! © 2004 National Geographic
USGS Quadrangles: Casmalia, CA
KEY TO FEATURES
Qwest Fiber Optic Backbone
Linear Cultural Resource
Previously Recorded Cultural Resources (Prehistoric)
Previously Recorded Cultural Resources (Historic)
Previously Recorded Cultural Resources (Protohistoric and/or Multicomponent)
SWCA
ENVIRONMENTAL CONSULTANTS
Cultural Resources Final Report Monitoring and Findings
Segment 20: Southern Coastal
Figure 20.15. Cultural Resources Location

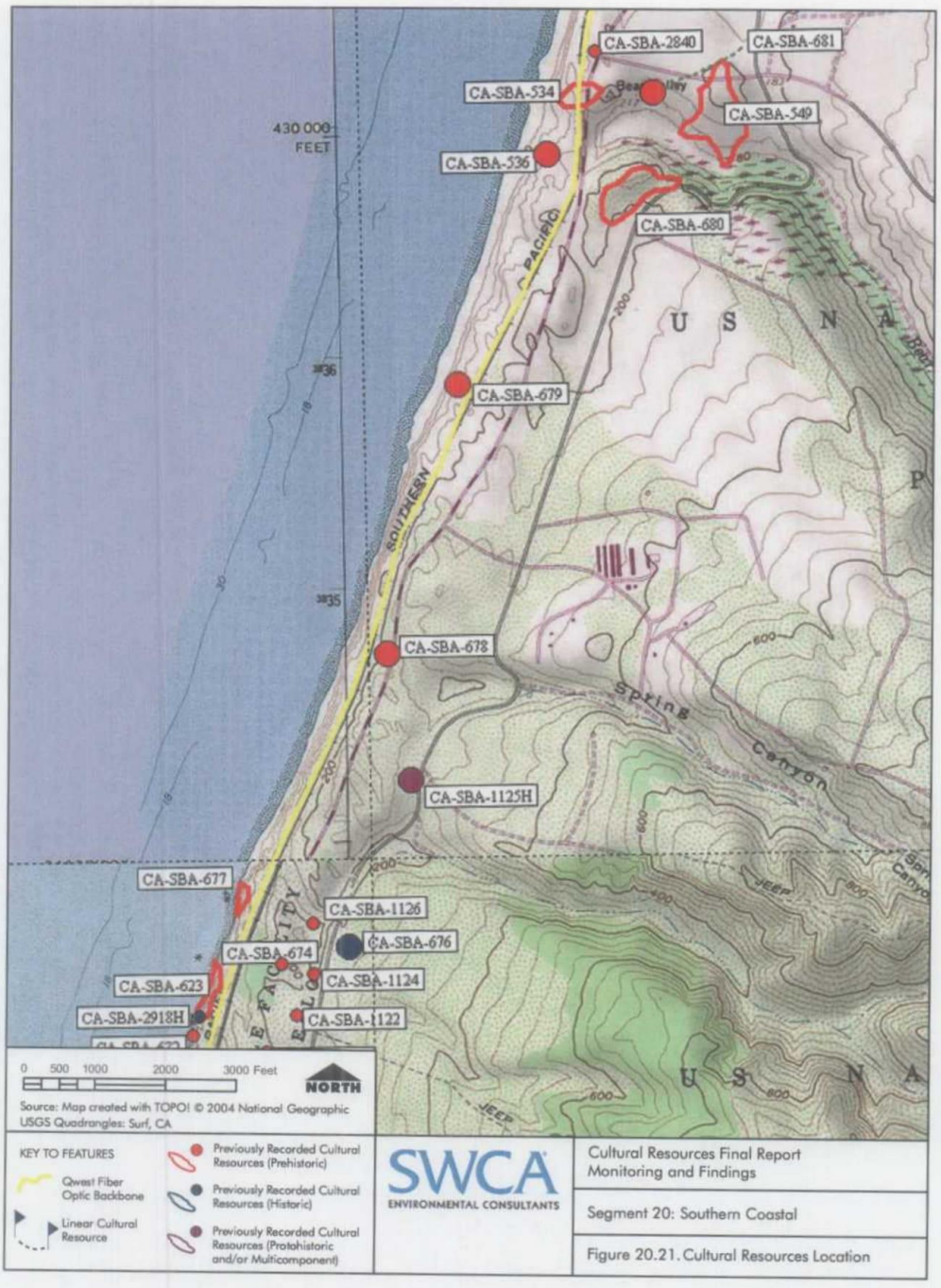

Schumann
CA-SBA-3294
CA-SBA-1997
CA-SBA-966
CA-SBA-725
CA-SBA-965
CA-SBA-3296
CA-SBS-3297
CA-SBA-991
CA-SBA-724
CA-SBA-732
CA-SBA-992
CA-SBA-1001
CA-SBA-2568
SAND DUNES
CA-SBA-3009
CA-SBA-1729
CA-SBA-3301H
CA-SBA-3007
SAN ANTONIO
Sand Dunes
CA-SBA-1080
CA-SBA-2169
CA-SBA-2168
CA-SBA-3307
CA-SBA-2163
Pond 2
CA-SBA-1079
CA-SBA-1078
TERRACE
Narlon
CA-SBA-2165H
CA-SBA-401
CA-SBA-1709H
AIR
0 500 1000 2000 3000 Feet
NORTH
Source: Map created with TOPO! © 2004 National Geographic
USGS Quadrangles: Casmalia, CA
KEY TO FEATURES
Qwest Fiber Optic Backbone
Linear Cultural Resource
Previously Recorded Cultural Resources (Prehistoric)
Previously Recorded Cultural Resources (Historic)
Previously Recorded Cultural Resources (Protohistoric and/or Multicomponent)
SWCA
ENVIRONMENTAL CONSULTANTS
Cultural Resources Final Report Monitoring and Findings
Segment 20: Southern Coastal
Figure 20.16. Cultural Resources Location

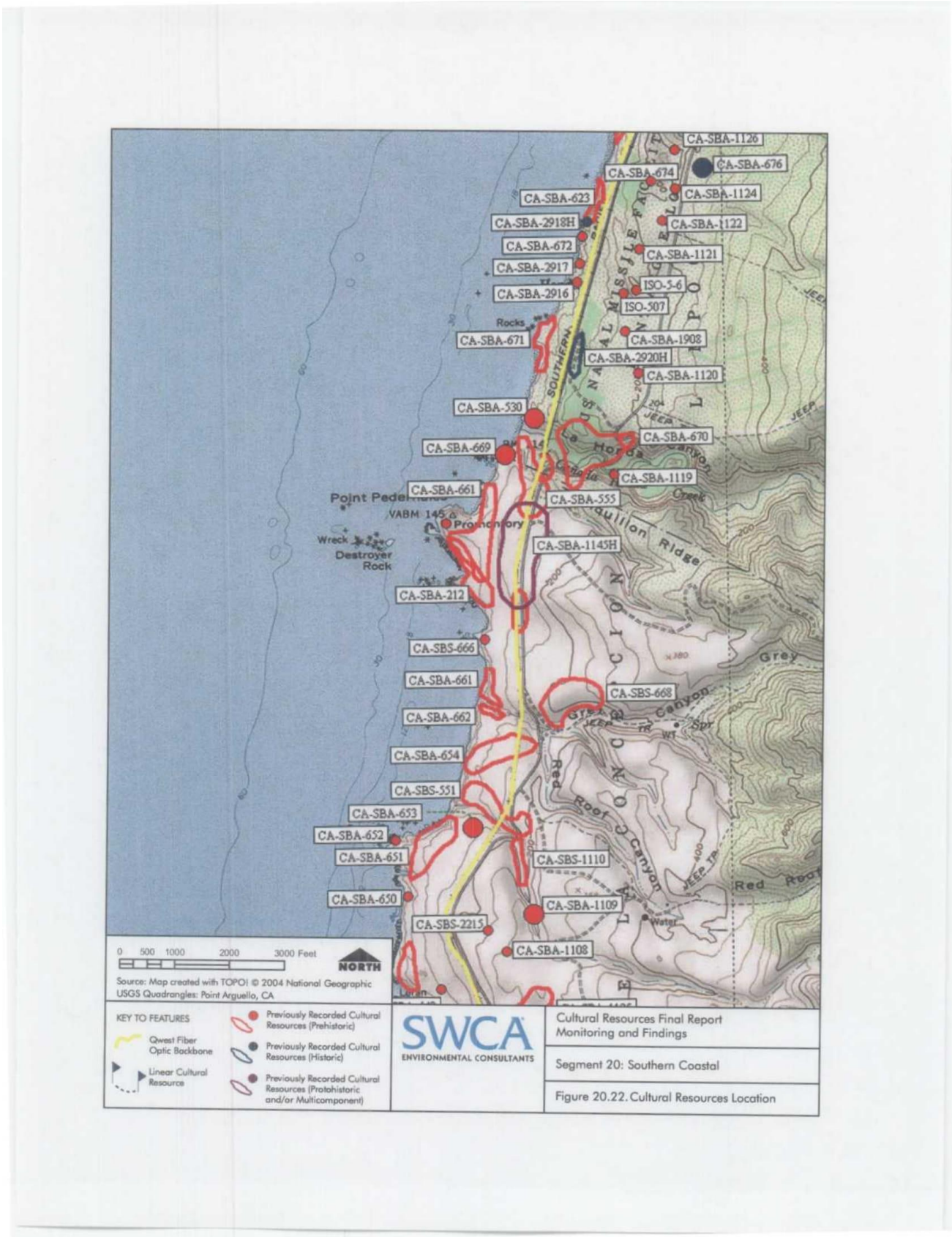

CA-SBA-3320
CA-SBA-1709H
CA-SBA-1755
BM 106
CA-SBA-3332
CA-SBA-2998
San Antonio
CA-SBA-3330
CA-SBA-3331
CA-SBA-708
CA-SBA-987
CA-SBA-708
CA-SBA-986
CA-SBA-707
BM 116
CA-SBA-985
CA-SBA-1018
CA-SBA-1017
CA-SBA-3218
CA-SBA-3240
CA-SBA-2645
Beach 2
#51
DUNE
CA-SBA-3259
CA-SBA-3234
CA-SBA-3238
SOUTHERN PACIFIC
CA-SBA-1045
CA-SBA-3237
CA-SBA-1046
CA-SBA-3218
BM 189
#50
CA-SBA-3217
CA-SBA-3244
CA-SBA-777
CA-SBA-3243
SBA-776
CA-SBA--3242
San Antonio
0 500 1000 2000 3000 Feet
NORTH
Source: Map created with TOPO! © 2004 National Geographic
USGS Quadrangles: Casmalia, CA
KEY TO FEATURES
Qwest Fiber Optic Backbone
Linear Cultural Resource
Previously Recorded Cultural Resources (Prehistoric)
Previously Recorded Cultural Resources (Historic)
Previously Recorded Cultural Resources (Protohistoric and/or Multicomponent)
SWCA
ENVIRONMENTAL CONSULTANTS
Cultural Resources Final Report Monitoring and Findings
Segment 20: Southern Coastal
Figure 20.17. Cultural Resources Location

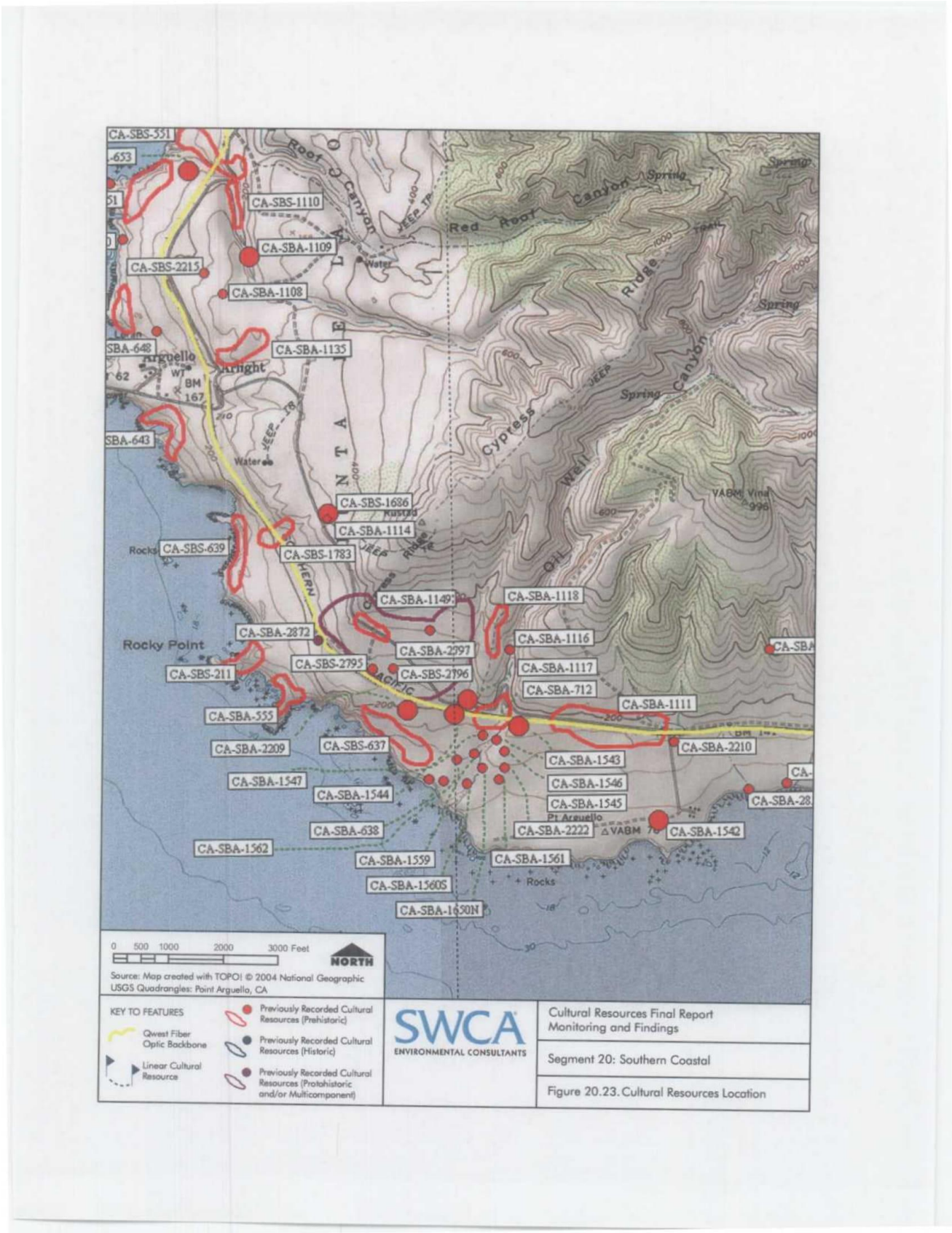

CA-SBA-3218
CA-SBA-1046
CA-SBA-3217
CA-SBA-3244
CA-SBA-777
CA-SBA-3243
CA-SBA-776
CA-SBA-3216
CA-SBA--3242
CA-SBA-775
BM
CA-SBA-3213
Tangair
CA-SBA-3876
CA-SBA-3070
CA-SBA-3071
CA-SBA-2348
CA-SBA-908
BM 201
CA-SBA-3157
SAND DUNES
CA-SBA-2431
CA-SBA-3155
CA-SBA-3156
CA-SBA-3154
CA-SBA-223
CA-SBA-3152
CA-SBA-3153
BM 162
CA-SBA-3151
CA-SBA-1053
CA-SBA--3144
BM
CA-SBA-3146
CA-SBA-1055
CA-SBA-3147
B U R
TANGAIR
0 500 1000 2000 3000 Feet
NORTH
Source: Map created with TOPO! © 2004 National Geographic
USGS Quadrangles: Surf, CA
KEY TO FEATURES
Qwest Fiber Optic Backbone
Linear Cultural Resource
Previously Recorded Cultural Resources (Prehistoric)
Previously Recorded Cultural Resources (Historic)
Previously Recorded Cultural Resources (Protohistoric and/or Multicomponent)
SWCA
ENVIRONMENTAL CONSULTANTS
Cultural Resources Final Report Monitoring and Findings
Segment 20: Southern Coastal
Figure 20.18. Cultural Resources Location


CA-SBA-3146
CA-SBA-1055
CA-SBA-3147
CA-SBA-1055
CA-SBA-1056
CA-SBA-1057
CA-SBA-1765
CA-SBA-692
CA-SBA-1058
CA-SBA-1137
CA-SBA-3347
CA-SBA-1133
CA-SBA-1139
CA-SBA-3418
CA-SBA-1141
CA-SBA-3346
CA-SBA-1140
CA-SBA-1134
CA-SBA-2878
CA-SBA-1996
CA-SBA-2877
CA-SBA-1888
CA-SBA-1994
CA-SBA-1040
CA-SBA-2762
CA-SBA-1041
CA-SBA-2488H
CA-SBA-1039
CA-SBA-1131
CA-SBA-690
Rocks
(Site)
Packard
Cañada Tortuga
BM 61
Gravel Pit
BM 18
OCEAN
0 500 1000 2000 3000 Feet
NORTH
Source: Map created with TOPO! © 2004 National Geographic
USGS Quadrangles: Surf, CA
KEY TO FEATURES
Qwest Fiber Optic Backbone
Linear Cultural Resource
Previously Recorded Cultural Resources (Prehistoric)
Previously Recorded Cultural Resources (Historic)
Previously Recorded Cultural Resources (Protohistoric and/or Multicomponent)
SWCA
ENVIRONMENTAL CONSULTANTS
Cultural Resources Final Report
Monitoring and Findings
Segment 20: Southern Coastal
Figure 20.19. Cultural Resources Location


PACIFIC
OCEAN BEACH PARK (County)
BM 18
Baroda
BM 10
BM 42
BM 52
CA-SBA-2489
CA-SBA--931
CA-SBA-2953
CA-SBA-2940
CA-SBA-1129
CA-SBA-1128
CA-SBA-1166
CA-SBA-684
CA-SBA-683
CA-SBA-682
CA-SBA-2840
CA-SBA-681
CA-SBA-549
Weser
L O M
0 500 1000 2000 3000 Feet
NORTH
Source: Map created with TOPO! © 2004 National Geographic
USGS Quadrangles: Surf, CA
KEY TO FEATURES
Qwest Fiber Optic Backbone
Linear Cultural Resource
Previously Recorded Cultural Resources (Prehistoric)
Previously Recorded Cultural Resources (Historic)
Previously Recorded Cultural Resources (Protohistoric and/or Multicomponent)
SWCA
ENVIRONMENTAL CONSULTANTS
Cultural Resources Final Report
Monitoring and Findings
Segment 20: Southern Coastal
Figure 20.20. Cultural Resources Location


CA-SBA-2840
CA-SBA-681
CA-SBA-534
CA-SBA-549
CA-SBA-536
CA-SBA-680
CA-SBA-679
CA-SBA-678
CA-SBA-1125H
CA-SBA-677
CA-SBA-1126
CA-SBA-676
CA-SBA-674
CA-SBA-1124
CA-SBA-623
CA-SBA-2918H
CA-SBA-1122
430 000 FEET
PACIFIC
SOUTHERN
Spring Canyon
JEEP
U S N A
0 500 1000 2000 3000 Feet
NORTH
Source: Map created with TOPO! © 2004 National Geographic
USGS Quadrangles: Surf, CA
KEY TO FEATURES
Qwest Fiber Optic Backbone
Linear Cultural Resource
Previously Recorded Cultural Resources (Prehistoric)
Previously Recorded Cultural Resources (Historic)
Previously Recorded Cultural Resources (Protohistoric and/or Multicomponent)
SWCA ENVIRONMENTAL CONSULTANTS
Cultural Resources Final Report Monitoring and Findings
Segment 20: Southern Coastal
Figure 20.21. Cultural Resources Location


CA-SBA-1126
CA-SBA-676
CA-SBA-674
CA-SBA-1124
CA-SBA-623
CA-SBA-2918H
CA-SBA-1122
CA-SBA-672
CA-SBA-1121
CA-SBA-2917
ISO-5-6
CA-SBA-2916
ISO-507
Rocks
CA-SBA-671
CA-SBA-1908
CA-SBA-2920H
CA-SBA-1120
CA-SBA-530
CA-SBA-670
CA-SBA-669
CA-SBA-1119
CA-SBA-661
CA-SBA-555
Point Pedernales
VABM 145
Promontory
Wreck
Destroyer Rock
CA-SBA-1145H
CA-SBA-212
CA-SBS-666
CA-SBA-661
CA-SBS-668
CA-SBA-662
CA-SBA-654
CA-SBS-551
CA-SBA-653
CA-SBA-652
CA-SBA-651
CA-SBS-1110
CA-SBA-650
CA-SBA-1109
CA-SBS-2215
CA-SBA-1108
Water
0 500 1000 2000 3000 Feet
NORTH
Source: Map created with TOPO! © 2004 National Geographic
USGS Quadrangles: Point Arguello, CA
KEY TO FEATURES
Qwest Fiber Optic Backbone
Linear Cultural Resource
Previously Recorded Cultural Resources (Prehistoric)
Previously Recorded Cultural Resources (Historic)
Previously Recorded Cultural Resources (Protohistoric and/or Multicomponent)
SWCA
ENVIRONMENTAL CONSULTANTS
Cultural Resources Final Report Monitoring and Findings
Segment 20: Southern Coastal
Figure 20.22. Cultural Resources Location

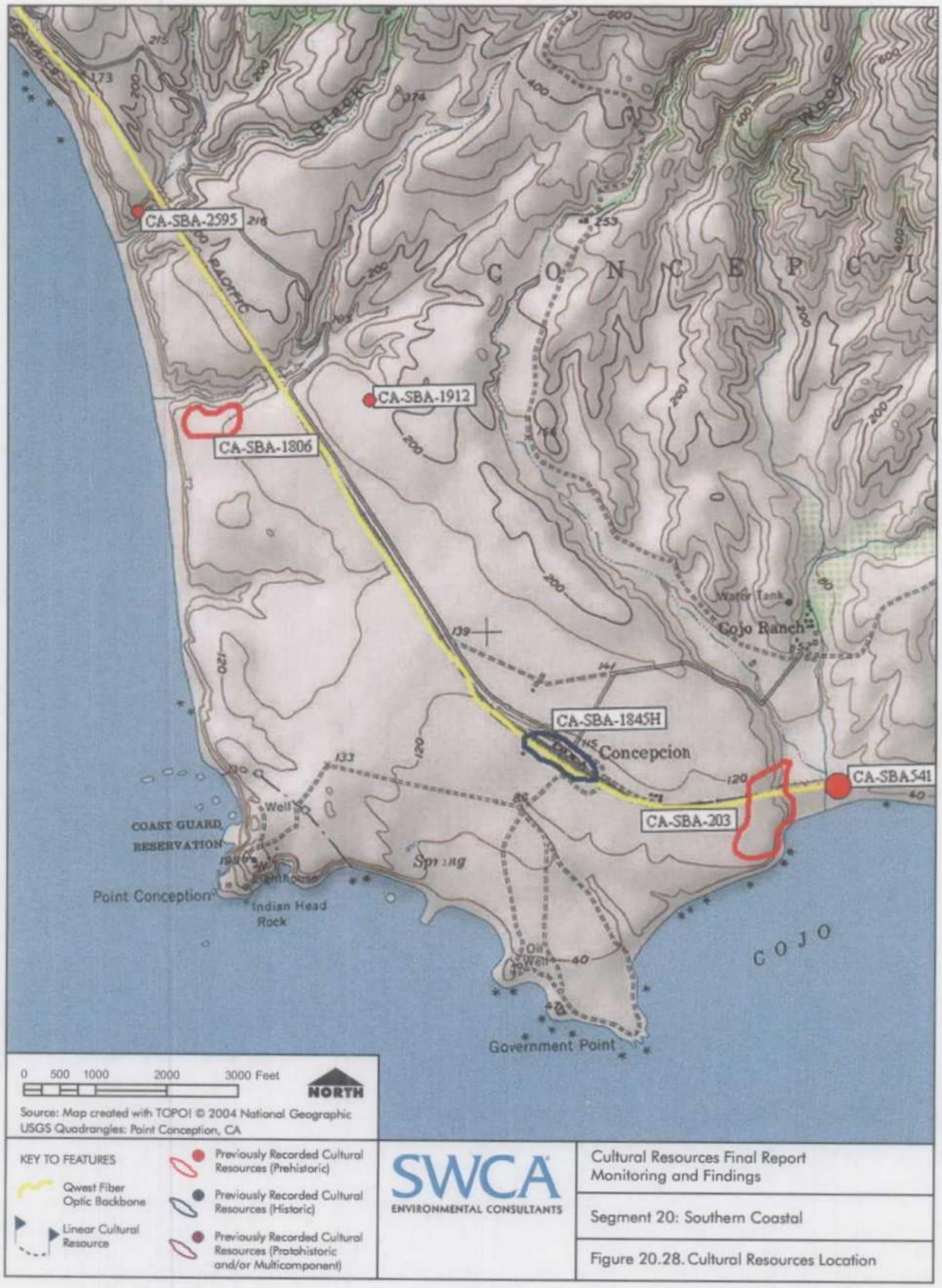

CA-SBS-551
CA-SBS-1110
CA-SBA-1109
CA-SBS-2215
CA-SBA-1108
CA-SBA-1135
SBA-648
Arguello
Wright
BM 167
SBA-643
Water
CA-SBS-1686
CA-SBA-1114
Rocks
CA-SBS-639
CA-SBS-1783
CA-SBA-1149
CA-SBA-1118
CA-SBA-2872
Rocky Point
CA-SBA-2797
CA-SBA-1116
CA-SBS-2795
CA-SBS-2796
CA-SBA-1117
CA-SBS-211
CA-SBA-712
CA-SBA-1111
CA-SBA-555
CA-SBA-2209
CA-SBS-637
CA-SBA-2210
CA-SBA-1543
CA-SBA-1547
CA-SBA-1546
CA-SBA-1544
CA-SBA-1545
Pt Arguello
CA-SBA-638
CA-SBA-2222
VABM
CA-SBA-1542
CA-SBA-1562
CA-SBA-1559
CA-SBA-1561
CA-SBA-1560S
Rocks
CA-SBA-1650N
Red Roof Canyon
Spring Canyon
Cypress Ridge
Oil Well
Pacific
0 500 1000 2000 3000 Feet
NORTH
Source: Map created with TOPO! © 2004 National Geographic
USGS Quadrangles: Point Arguello, CA
KEY TO FEATURES
Qwest Fiber Optic Backbone
Linear Cultural Resource
Previously Recorded Cultural Resources (Prehistoric)
Previously Recorded Cultural Resources (Historic)
Previously Recorded Cultural Resources (Protohistoric and/or Multicomponent)
SWCA
ENVIRONMENTAL CONSULTANTS
Cultural Resources Final Report
Monitoring and Findings
Segment 20: Southern Coastal
Figure 20.23. Cultural Resources Location

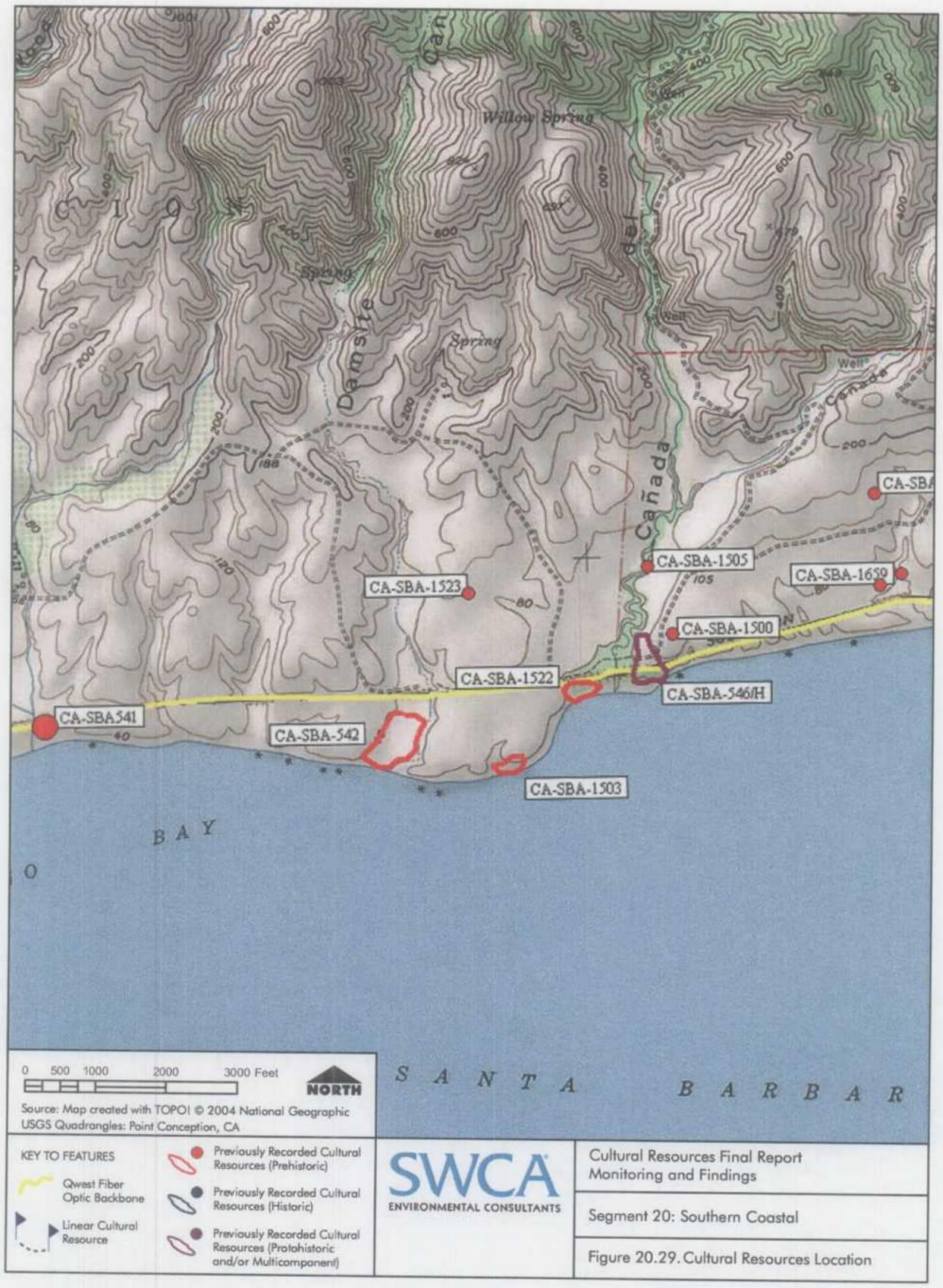

Wild Horse Peak
Wild Horse Flat
Spring
JEEP
TRAIL
RIDGE
PUNTA DEL
SUDDEN
FLATS
PACIFIC
SOUTHERN
Canada Agua Viva
Canada del Rodeo
Canada Los Ladrones
Water
BM Ladrones
CA-SBA-1112
CA-SBA-210
CA-SBA-552
CA-SBA-632
CA-SBA-769
CA-SBA-768
CA-SBA-2210
CA-SBA-634
CA-SBA-2850
CA-SBA-633
CA-SBA-631
CA-SBA-2856
CA-SBA-630
CA-SBA-629
CA-SBA-2855
CA-SBA-628
CA-SBA-2854
CA-SBA-2853
0 500 1000 2000 3000 Feet
NORTH
Source: Map created with TOPO! © 2004 National Geographic
USGS Quadrangles: Tranquillon Mountain, CA
KEY TO FEATURES
Qwest Fiber Optic Backbone
Linear Cultural Resource
Previously Recorded Cultural Resources (Prehistoric)
Previously Recorded Cultural Resources (Historic)
Previously Recorded Cultural Resources (Protohistoric and/or Multicomponent)
SWCA
ENVIRONMENTAL CONSULTANTS
Cultural Resources Final Report Monitoring and Findings
Segment 20: Southern Coastal
Figure 20.24. Cultural Resources Location

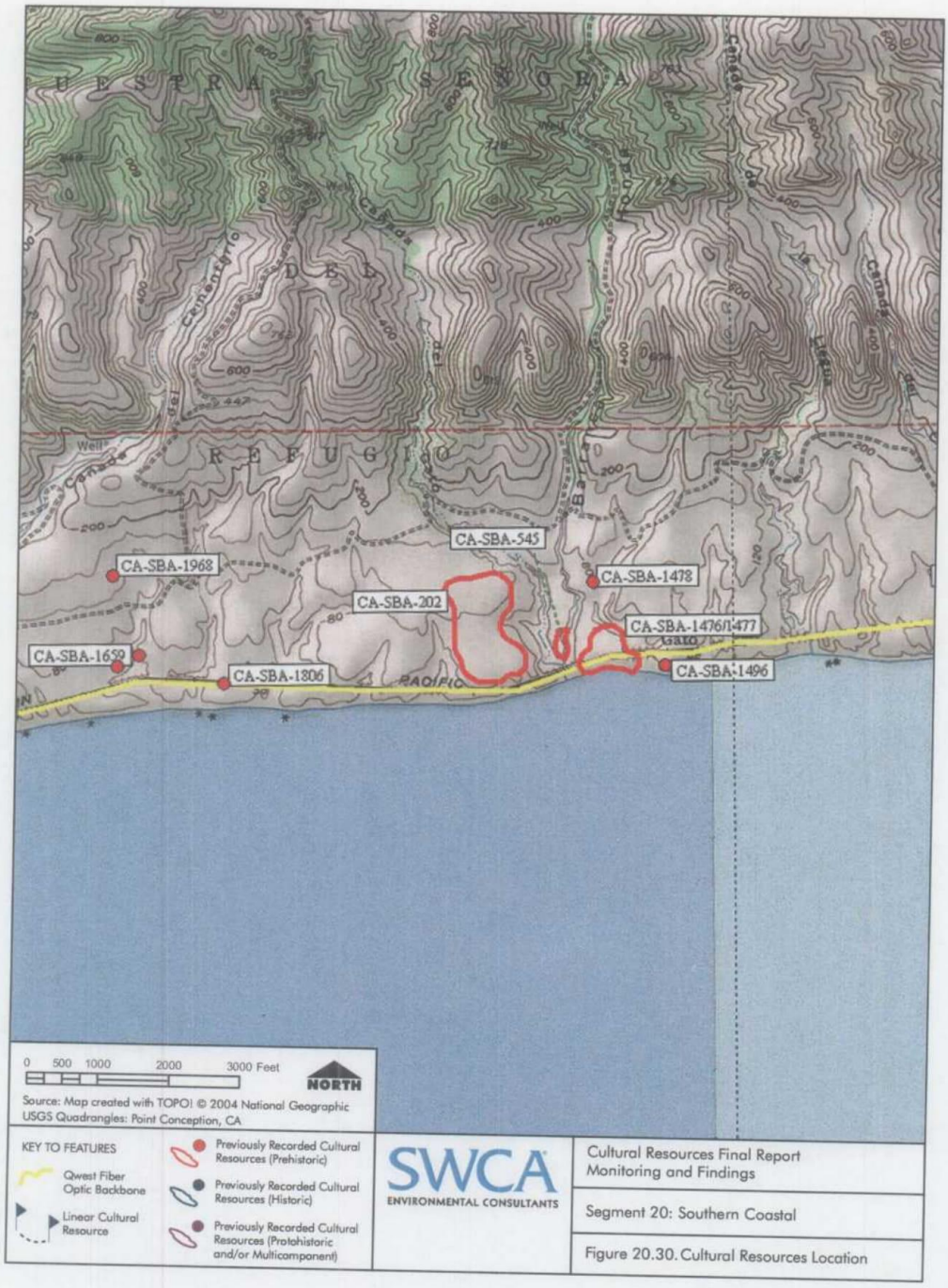

L A C O N C E P C I O N
Cañada
Spring
Round Hill
JEEP
TRAIL
CA-SBA-626
CA-SBA-2854
-SBA-628
CA-SBA-618
CA-SBA-2868
CA-SBA-2853
CA-SBA-2852
CA-SBA-2870
CA-SBA-2857
CA-SBA-614
CA-SBA-209
CA-SBA-2851
Flint 2
VABM 55
CA-SBA-611
CA-SBA-602
CA-SBS-2849
CA-SBA-2903
BM 88
CA-SBA-208
CA-SBA-2373H
CA-SBA-2914H
CA-SBA-620
0 500 1000 2000 3000 Feet
NORTH
Source: Map created with TOPO! © 2004 National Geographic
USGS Quadrangles: Tranquillon Mountain, CA
KEY TO FEATURES
Qwest Fiber Optic Backbone
Linear Cultural Resource
Previously Recorded Cultural Resources (Prehistoric)
Previously Recorded Cultural Resources (Historic)
Previously Recorded Cultural Resources (Protohistoric and/or Multicomponent)
SWCA
ENVIRONMENTAL CONSULTANTS
Cultural Resources Final Report
Monitoring and Findings
Segment 20: Southern Coastal
Figure 20.25. Cultural Resources Location

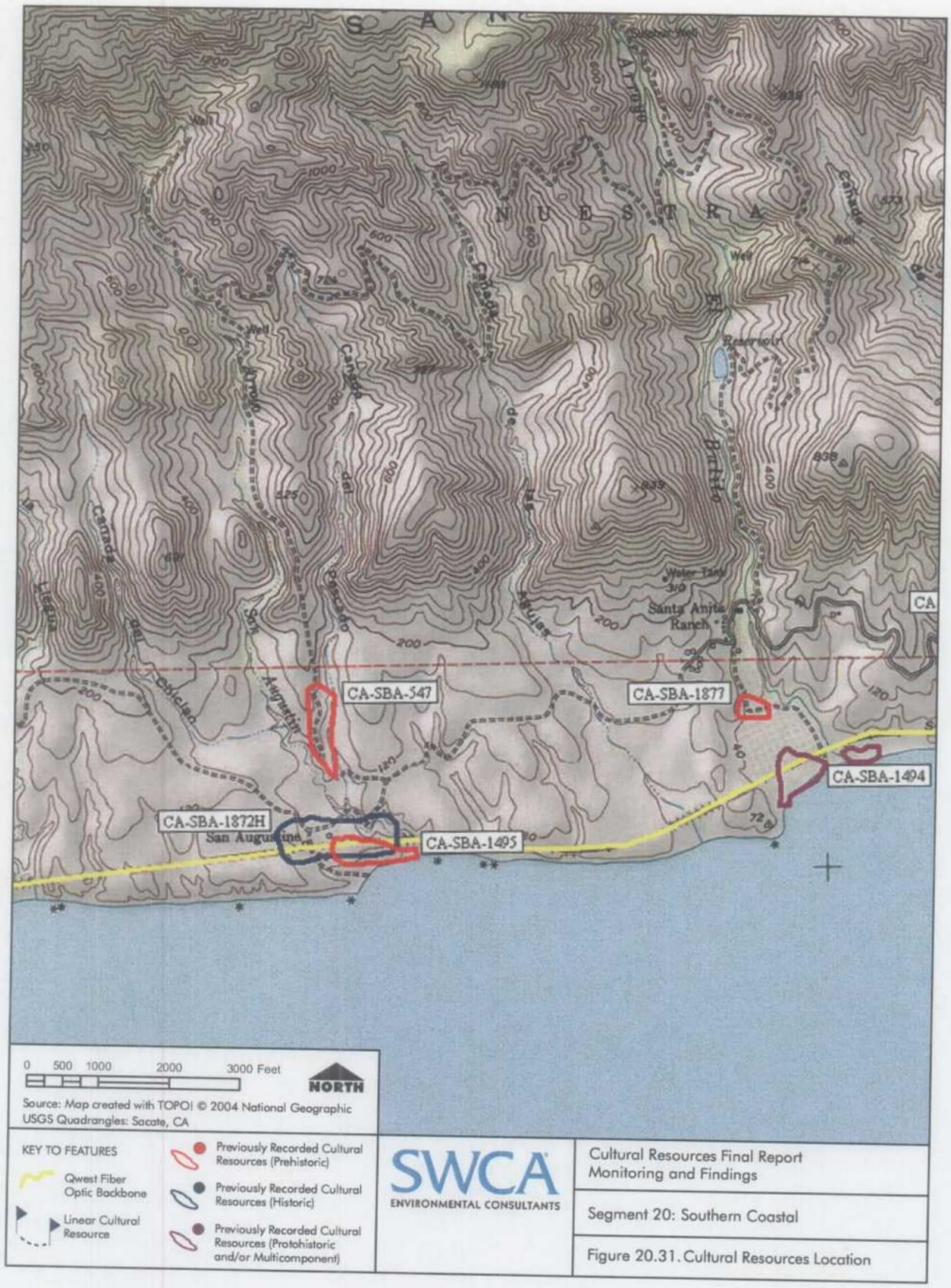

CA-SBA-949
CA-SBA-609
CA-SBA-2372
CA-SBA-2354
CA-SBA-2356
CA-SBA-202
CA-SBA-2901
CA-SBA-207
CA-SBA-3497
CA-SBA-601
CA-SBA-2910
CA-SBA-600
CA-SBA-2900
CA-SBA-533
Oak Mtn
VABM 2014
Spring
Canada del
Long Horn Canyon
Cherry Ridge
The Espada
VABM 378
Rocks
Water
PUNTA DE LA CONCEPCION
0 500 1000 2000 3000 Feet
NORTH
Source: Map created with TOPO! © 2004 National Geographic
USGS Quadrangles: Tranquillon Mountain, CA
KEY TO FEATURES
Qwest Fiber Optic Backbone
Linear Cultural Resource
Previously Recorded Cultural Resources (Prehistoric)
Previously Recorded Cultural Resources (Historic)
Previously Recorded Cultural Resources (Protohistoric and/or Multicomponent)
SWCA
ENVIRONMENTAL CONSULTANTS
Cultural Resources Final Report Monitoring and Findings
Segment 20: Southern Coastal
Figure 20.26. Cultural Resources Location

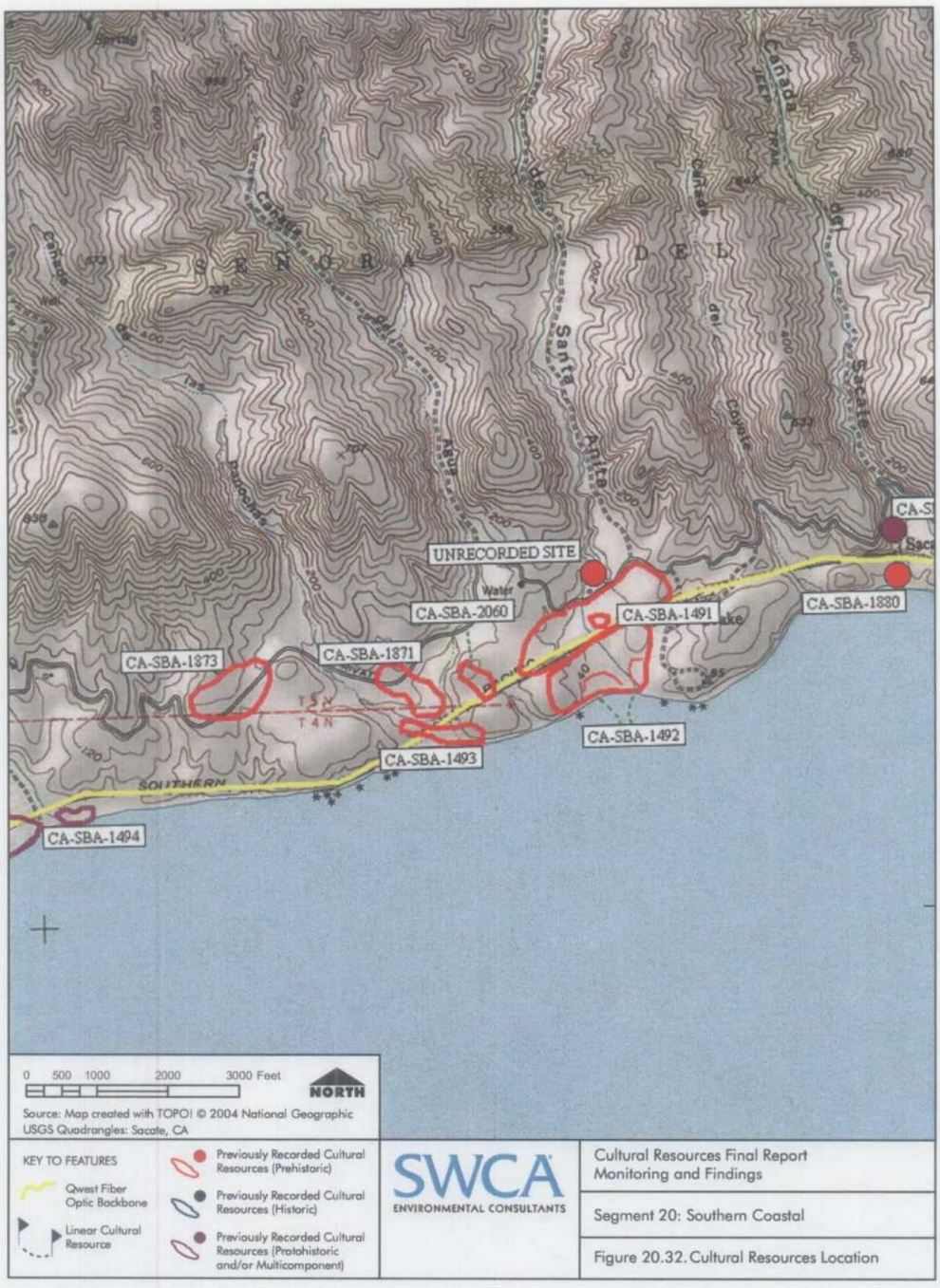

CA-SBA-2900
CA-SBA-533
CA-SBA-205
JALAMA BEACH COUNTY PARK
CA-SBA-3504
JALAMA CREEK (County)
SOUTHERN PACIFIC
PACIFIC OCEAN
Jalama
CA-SBA-2014
CA-SBA-1664
Oil Tank
Spring
CA-SBA-1666
CA-SBA-2595
0 500 1000 2000 3000 Feet
NORTH
Source: Map created with TOPO! © 2004 National Geographic
USGS Quadrangles: Point Conception, CA
KEY TO FEATURES
Qwest Fiber Optic Backbone
Linear Cultural Resource
Previously Recorded Cultural Resources (Prehistoric)
Previously Recorded Cultural Resources (Historic)
Previously Recorded Cultural Resources (Protohistoric and/or Multicomponent)
SWCA ENVIRONMENTAL CONSULTANTS
Cultural Resources Final Report Monitoring and Findings
Segment 20: Southern Coastal
Figure 20.27. Cultural Resources Location

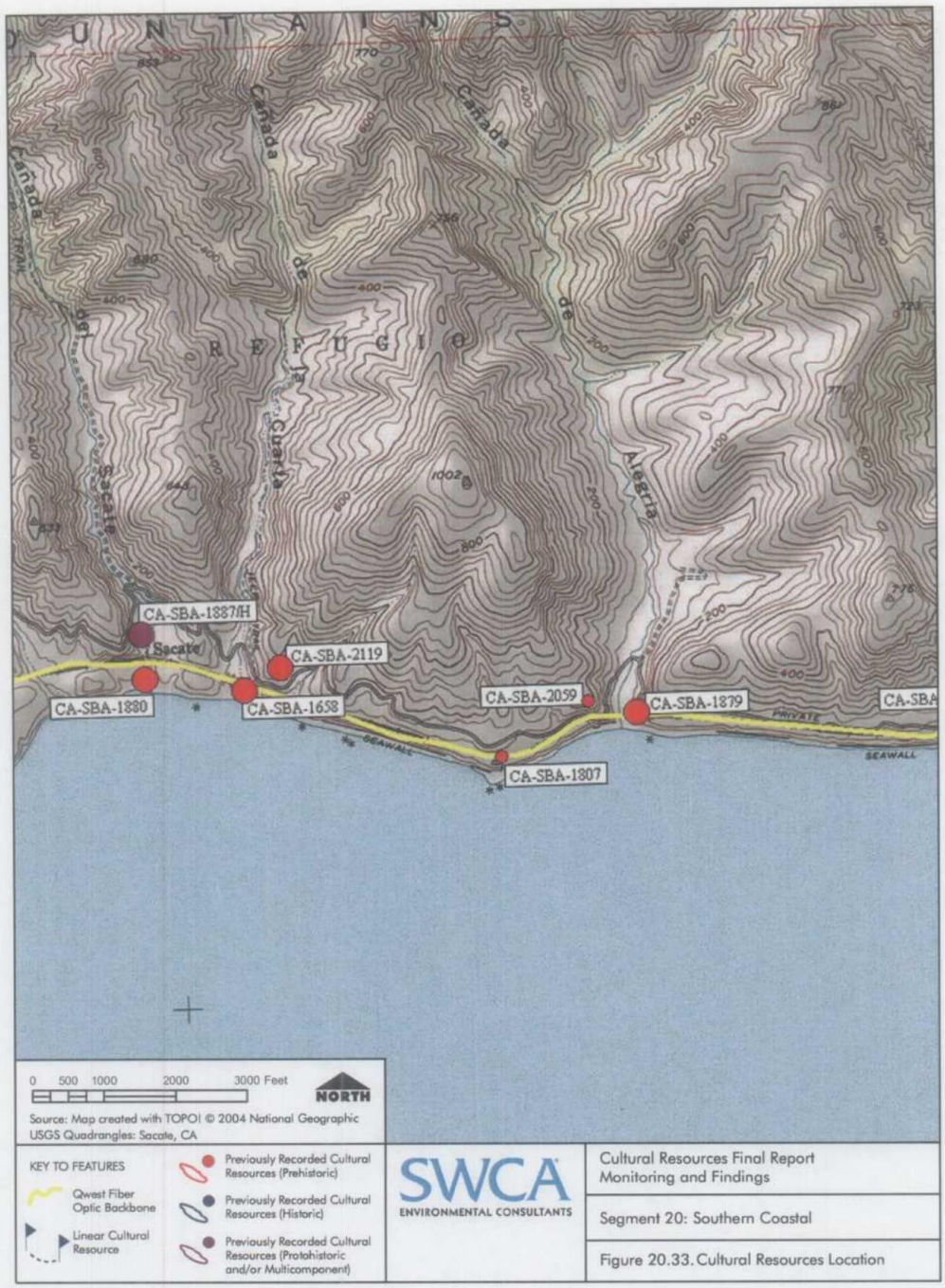

CA-SBA-2595
CA-SBA-1912
CA-SBA-1806
CA-SBA-1845H
CA-SBA-541
CA-SBA-203
C O N C E P C I
Cojo Ranch
Concepcion
COAST GUARD
RESERVATION
Point Conception
Indian Head
Rock
Government Point
C O J O
0 500 1000 2000 3000 Feet
NORTH
Source: Map created with TOPO! © 2004 National Geographic
USGS Quadrangles: Point Conception, CA
KEY TO FEATURES
Qwest Fiber Optic Backbone
Linear Cultural Resource
Previously Recorded Cultural Resources (Prehistoric)
Previously Recorded Cultural Resources (Historic)
Previously Recorded Cultural Resources (Protohistoric and/or Multicomponent)
SWCA
ENVIRONMENTAL CONSULTANTS
Cultural Resources Final Report
Monitoring and Findings
Segment 20: Southern Coastal
Figure 20.28. Cultural Resources Location


Willow Spring
Spring
Damsite
Spring
Cañada
Well
CA-SBA-1505
CA-SBA-1659
CA-SBA-1523
CA-SBA-1500
CA-SBA-1522
CA-SBA-546/H
CA-SBA541
CA-SBA-542
CA-SBA-1503
B A Y
S A N T A B A R B A R
0 500 1000 2000 3000 Feet
NORTH
Source: Map created with TOPO! © 2004 National Geographic
USGS Quadrangles: Point Conception, CA
KEY TO FEATURES
Qwest Fiber Optic Backbone
Linear Cultural Resource
Previously Recorded Cultural Resources (Prehistoric)
Previously Recorded Cultural Resources (Historic)
Previously Recorded Cultural Resources (Protohistoric and/or Multicomponent)
SWCA
ENVIRONMENTAL CONSULTANTS
Cultural Resources Final Report Monitoring and Findings
Segment 20: Southern Coastal
Figure 20.29. Cultural Resources Location

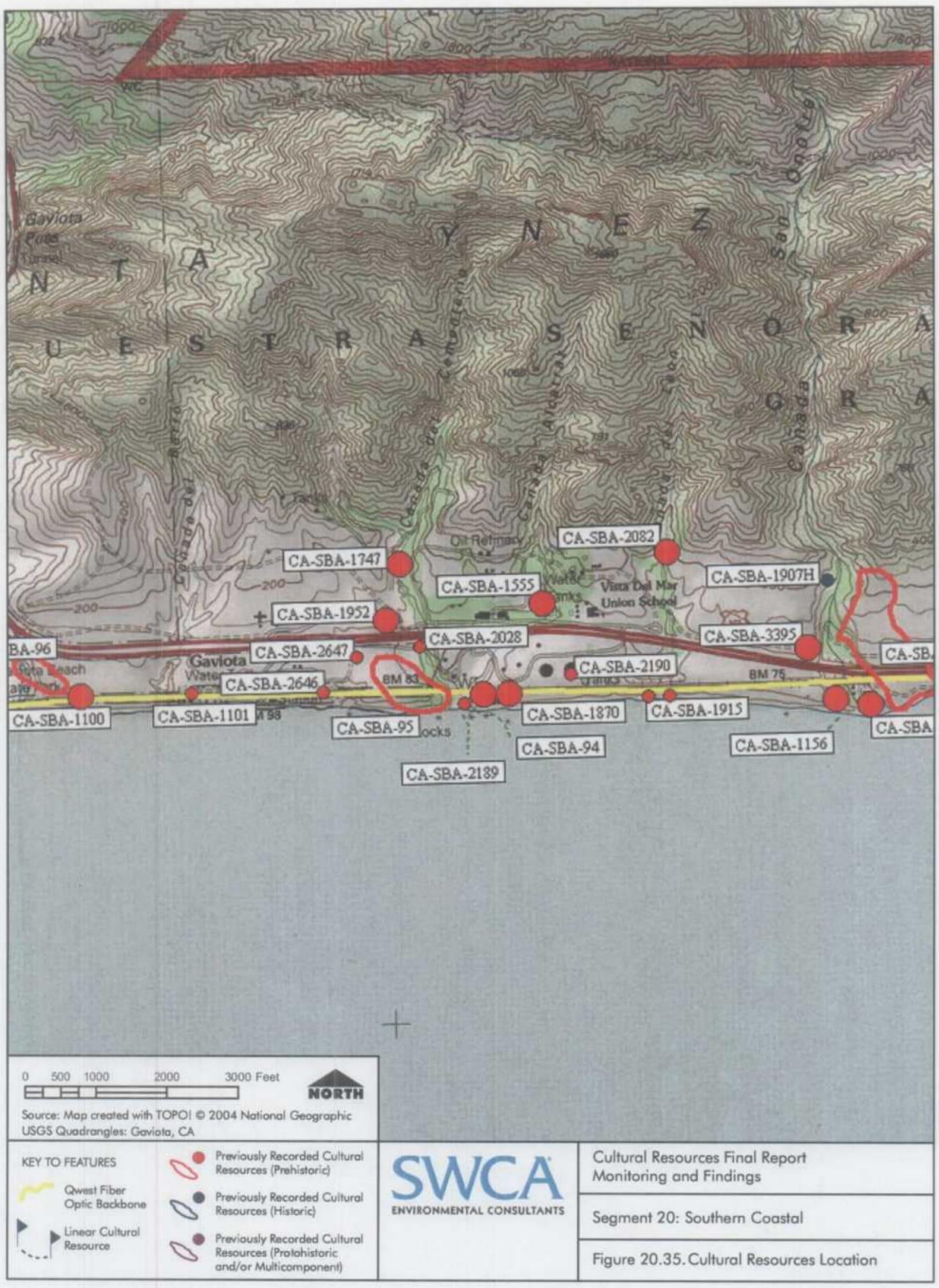

CA-SBA-1968
CA-SBA-545
CA-SBA-1478
CA-SBA-202
CA-SBA-1476/1477
CA-SBA-1639
CA-SBA-1806
CA-SBA-1496
0 500 1000 2000 3000 Feet
NORTH
Source: Map created with TOPO! © 2004 National Geographic
USGS Quadrangles: Point Conception, CA
KEY TO FEATURES
Qwest Fiber Optic Backbone
Linear Cultural Resource
Previously Recorded Cultural Resources (Prehistoric)
Previously Recorded Cultural Resources (Historic)
Previously Recorded Cultural Resources (Protohistoric and/or Multicomponent)
SWCA
ENVIRONMENTAL CONSULTANTS
Cultural Resources Final Report Monitoring and Findings
Segment 20: Southern Coastal
Figure 20.30. Cultural Resources Location

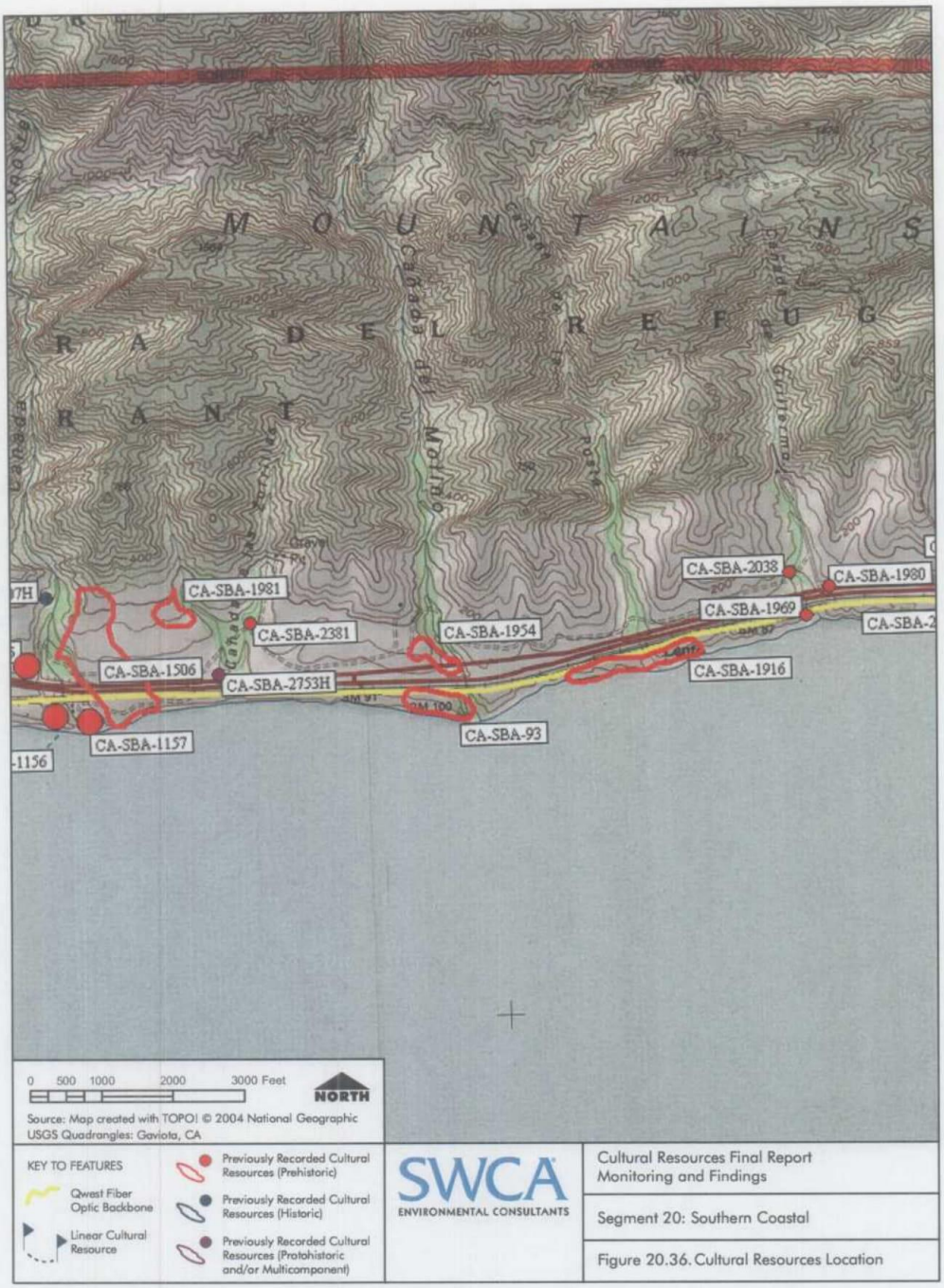

CA-SBA-547
CA-SBA-1877
CA-SBA-1494
CA-SBA-1872H
San Augustine
CA-SBA-1495
Santa Anita Ranch
0 500 1000 2000 3000 Feet
NORTH
Source: Map created with TOPO! © 2004 National Geographic
USGS Quadrangles: Sacate, CA
KEY TO FEATURES
Qwest Fiber Optic Backbone
Linear Cultural Resource
Previously Recorded Cultural Resources (Prehistoric)
Previously Recorded Cultural Resources (Historic)
Previously Recorded Cultural Resources (Protohistoric and/or Multicomponent)
SWCA
ENVIRONMENTAL CONSULTANTS
Cultural Resources Final Report Monitoring and Findings
Segment 20: Southern Coastal
Figure 20.31. Cultural Resources Location

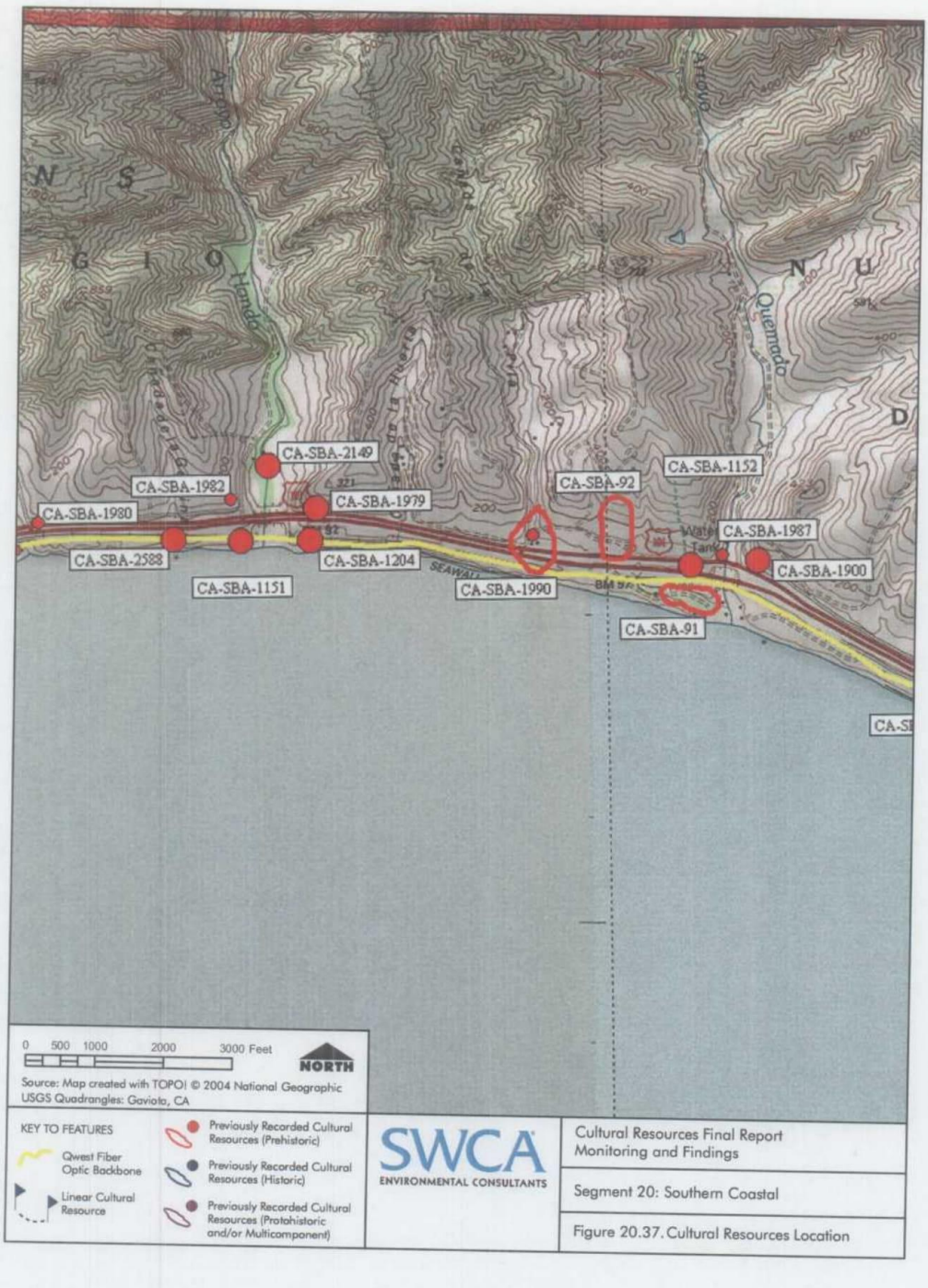

UNRECORDED SITE
CA-SBA-2060
CA-SBA-1491
CA-SBA-1830
CA-SBA-1873
CA-SBA-1871
CA-SBA-1492
CA-SBA-1493
CA-SBA-1494
T5N
T4N
SOUTHERN
Santa Ana
Canada
Water
0 500 1000 2000 3000 Feet
NORTH
Source: Map created with TOPO! © 2004 National Geographic
USGS Quadrangles: Sacate, CA
KEY TO FEATURES
Qwest Fiber Optic Backbone
Linear Cultural Resource
Previously Recorded Cultural Resources (Prehistoric)
Previously Recorded Cultural Resources (Historic)
Previously Recorded Cultural Resources (Protohistoric and/or Multicomponent)
SWCA
ENVIRONMENTAL CONSULTANTS
Cultural Resources Final Report
Monitoring and Findings
Segment 20: Southern Coastal
Figure 20.32. Cultural Resources Location

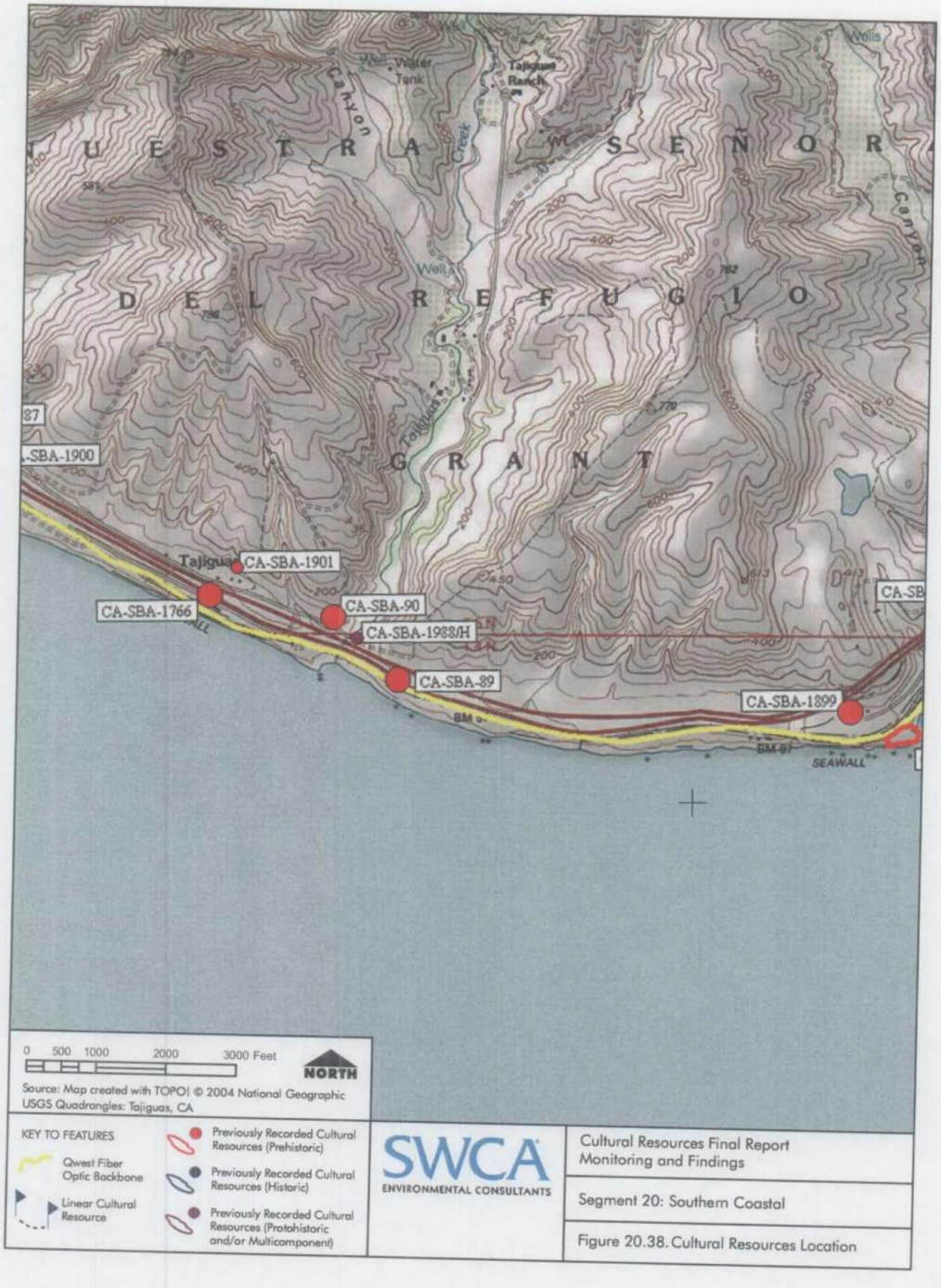

CA-SBA-1887/H
Sacate
CA-SBA-2119
CA-SBA-1880
CA-SBA-1658
CA-SBA-2059
CA-SBA-1879
CA-SBA-1807
SEAWALL
PRIVATE
0 500 1000 2000 3000 Feet
NORTH
Source: Map created with TOPO! © 2004 National Geographic
USGS Quadrangles: Sacate, CA
KEY TO FEATURES
Qwest Fiber Optic Backbone
Linear Cultural Resource
Previously Recorded Cultural Resources (Prehistoric)
Previously Recorded Cultural Resources (Historic)
Previously Recorded Cultural Resources (Protohistoric and/or Multicomponent)
SWCA
ENVIRONMENTAL CONSULTANTS
Cultural Resources Final Report Monitoring and Findings
Segment 20: Southern Coastal
Figure 20.33. Cultural Resources Location


CA-SBA-1878
CA-SBA-1881
CA-SBA-1808
CA-SBA-2061
CA-SBA-2088
CA-SBA-1913
CA-SBA-1914
CA-SBA-97
CA-SBA-96
CA-SBA-1100
SEAWALL
PRIVATE
GAVIOTA
STATE PARK
Gaviota Pass Tunnel
Gaviota Beach State Park
Port Orford (Site)
Cañada Caliente
TRAIL
JEEP
0 500 1000 2000 3000 Feet
NORTH
Source: Map created with TOPO! © 2004 National Geographic
USGS Quadrangles: Gaviota, CA
KEY TO FEATURES
Qwest Fiber Optic Backbone
Linear Cultural Resource
Previously Recorded Cultural Resources (Prehistoric)
Previously Recorded Cultural Resources (Historic)
Previously Recorded Cultural Resources (Protohistoric and/or Multicomponent)
SWCA
ENVIRONMENTAL CONSULTANTS
Cultural Resources Final Report Monitoring and Findings
Segment 20: Southern Coastal
Figure 20.34. Cultural Resources Location

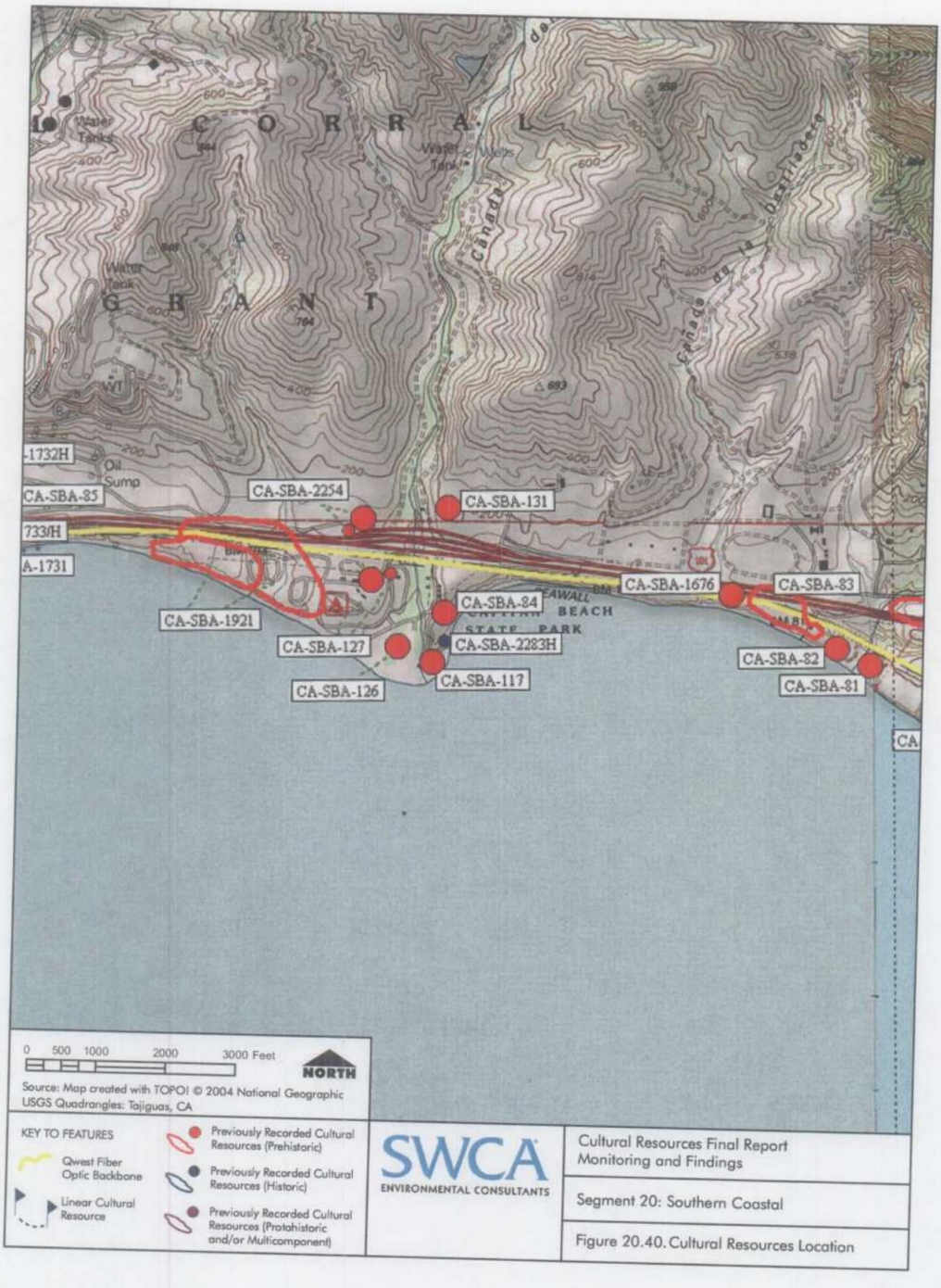

CA-SBA-1747
CA-SBA-2082
CA-SBA-1907H
CA-SBA-1555
CA-SBA-1952
CA-SBA-2028
CA-SBA-3395
CA-SBA-2647
CA-SBA-2190
CA-SBA-2646
CA-SBA-1100
CA-SBA-1101
CA-SBA-95
CA-SBA-1870
CA-SBA-1915
CA-SBA-94
CA-SBA-1156
CA-SBA-2139
Gaviota
Vista Del Mar Union School
Oil Refinery
BM 83
BM 75
0 500 1000 2000 3000 Feet
NORTH
Source: Map created with TOPO! © 2004 National Geographic
USGS Quadrangles: Gaviota, CA
KEY TO FEATURES
Qwest Fiber Optic Backbone
Linear Cultural Resource
Previously Recorded Cultural Resources (Prehistoric)
Previously Recorded Cultural Resources (Historic)
Previously Recorded Cultural Resources (Protohistoric and/or Multicomponent)
SWCA
ENVIRONMENTAL CONSULTANTS
Cultural Resources Final Report Monitoring and Findings
Segment 20: Southern Coastal
Figure 20.35. Cultural Resources Location


MOUNTAINS
RANCHO DEL REFUGIO
CA-SBA-1981
CA-SBA-2381
CA-SBA-1506
CA-SBA-2753H
CA-SBA-1157
CA-SBA-1954
CA-SBA-93
CA-SBA-2038
CA-SBA-1980
CA-SBA-1969
CA-SBA-1916
0 500 1000 2000 3000 Feet
NORTH
Source: Map created with TOPO! © 2004 National Geographic
USGS Quadrangles: Gaviota, CA
KEY TO FEATURES
Qwest Fiber Optic Backbone
Linear Cultural Resource
Previously Recorded Cultural Resources (Prehistoric)
Previously Recorded Cultural Resources (Historic)
Previously Recorded Cultural Resources (Protohistoric and/or Multicomponent)
SWCA
ENVIRONMENTAL CONSULTANTS
Cultural Resources Final Report
Monitoring and Findings
Segment 20: Southern Coastal
Figure 20.36. Cultural Resources Location


CA-SBA-2149
CA-SBA-1982
CA-SBA-1980
CA-SBA-1979
CA-SBA-2588
CA-SBA-1204
CA-SBA-1151
CA-SBA-92
CA-SBA-1152
CA-SBA-1987
CA-SBA-1900
CA-SBA-1990
CA-SBA-91
Arroyo Hondo
Quemado
SEAWAY
0 500 1000 2000 3000 Feet
NORTH
Source: Map created with TOPO! © 2004 National Geographic
USGS Quadrangles: Gaviota, CA
KEY TO FEATURES
Qwest Fiber Optic Backbone
Linear Cultural Resource
Previously Recorded Cultural Resources (Prehistoric)
Previously Recorded Cultural Resources (Historic)
Previously Recorded Cultural Resources (Protohistoric and/or Multicomponent)
SWCA
ENVIRONMENTAL CONSULTANTS
Cultural Resources Final Report Monitoring and Findings
Segment 20: Southern Coastal
Figure 20.37. Cultural Resources Location


Water Tank
Tajiguas Ranch
Canyon
Creek
Wells
Canyon
Well
Tajiguas
-SBA-1900
Tajiguas
CA-SBA-1901
CA-SBA-1766
CA-SBA-90
CA-SBA-1988/H
CA-SBA-89
CA-SBA-1899
SEAWALL
0 500 1000 2000 3000 Feet
NORTH
Source: Map created with TOPO! © 2004 National Geographic
USGS Quadrangles: Tajiguas, CA
KEY TO FEATURES
Qwest Fiber Optic Backbone
Linear Cultural Resource
Previously Recorded Cultural Resources (Prehistoric)
Previously Recorded Cultural Resources (Historic)
Previously Recorded Cultural Resources (Protohistoric and/or Multicomponent)
SWCA
ENVIRONMENTAL CONSULTANTS
Cultural Resources Final Report Monitoring and Findings
Segment 20: Southern Coastal
Figure 20.38. Cultural Resources Location

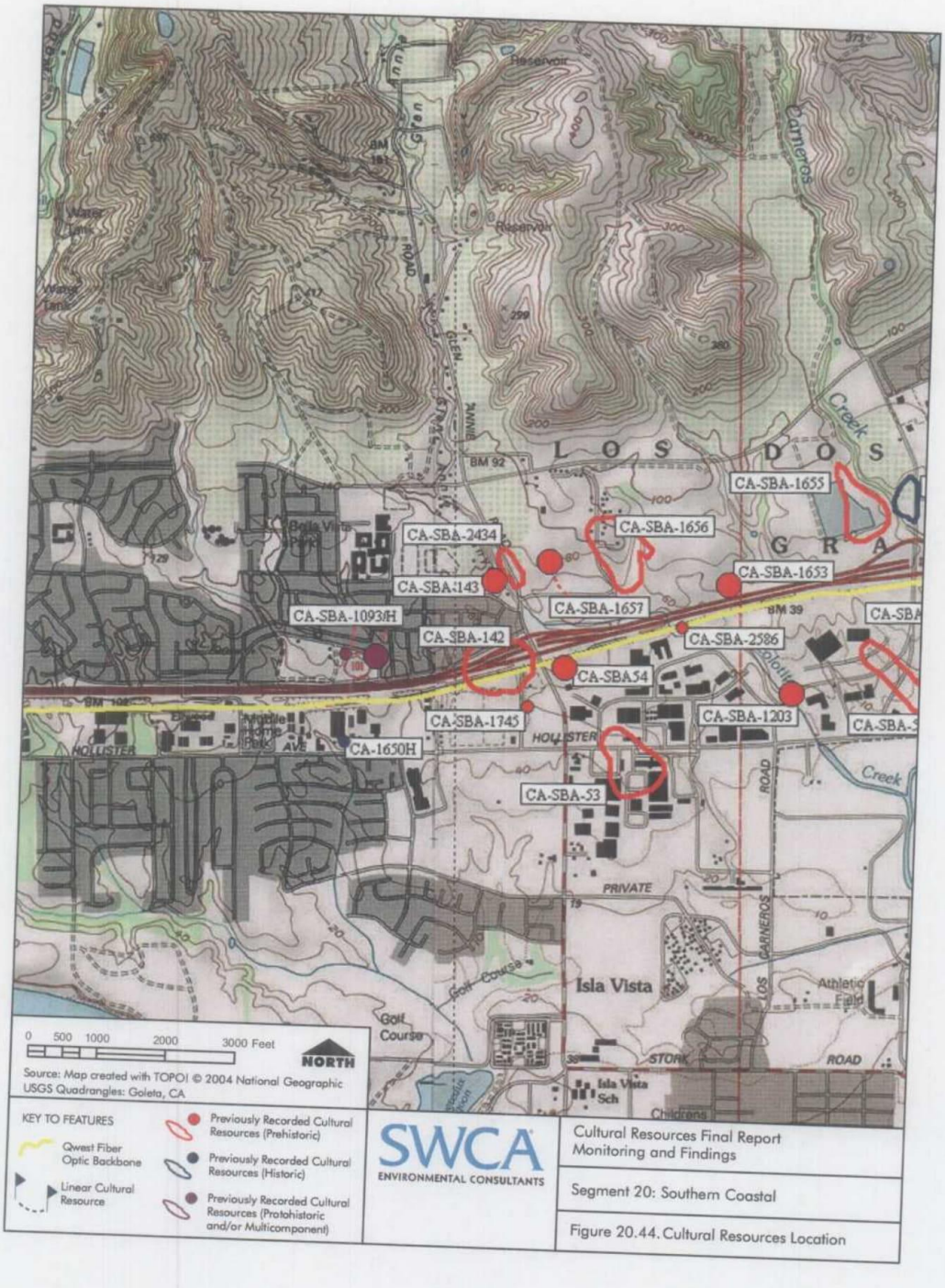

CA-SBA-87
CA-SBA-86
CA-SBA-88
CA-SBA-2011
CA-SBA-1899
CA-SBA-Q675
CA-SBA-1986
CA-SBA-108/H
CA-SBA-1732H
CA-SBA-85
CA-SBA-1733/H
CA-SBA-1731
REFUGIO BEACH STATE PARK
SEAWALL
Water Tanks
Oil Sump
0 500 1000 2000 3000 Feet
NORTH
Source: Map created with TOPO! © 2004 National Geographic
USGS Quadrangles: Tajiguas, CA
KEY TO FEATURES
Qwest Fiber Optic Backbone
Linear Cultural Resource
Previously Recorded Cultural Resources (Prehistoric)
Previously Recorded Cultural Resources (Historic)
Previously Recorded Cultural Resources (Protohistoric and/or Multicomponent)
SWCA
ENVIRONMENTAL CONSULTANTS
Cultural Resources Final Report
Monitoring and Findings
Segment 20: Southern Coastal
Figure 20.39. Cultural Resources Location

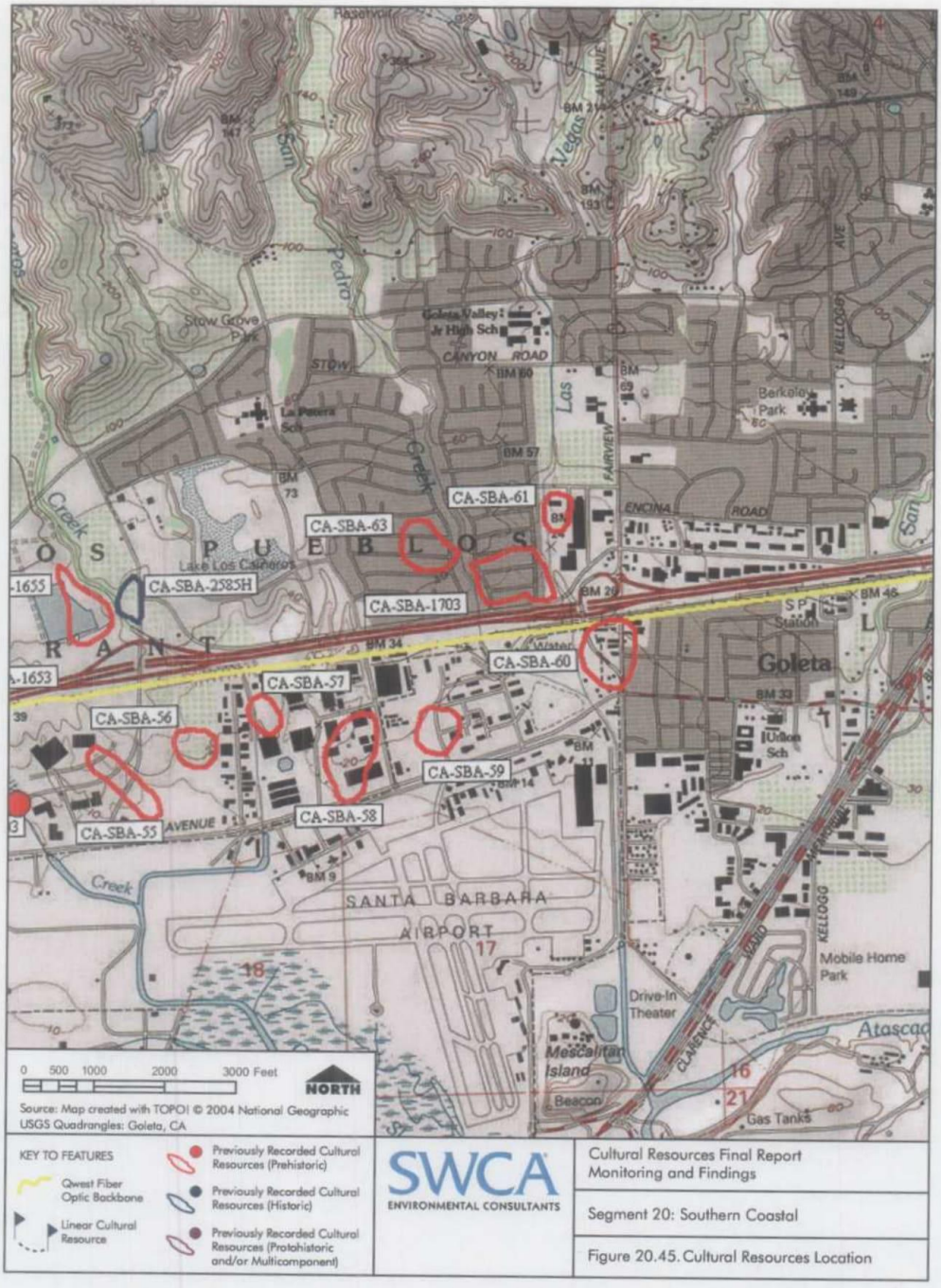

CORRAL
GRANT
Water Tanks
Water Tank
Wells
Oil Sump
CA-SBA-85
CA-SBA-2254
CA-SBA-131
CA-SBA-1676
CA-SBA-83
CA-SBA-84
CA-SBA-1921
CA-SBA-127
CA-SBA-2283H
CA-SBA-82
CA-SBA-126
CA-SBA-117
CA-SBA-81
SEAWALL BEACH STATE PARK
0 500 1000 2000 3000 Feet
NORTH
Source: Map created with TOPO! © 2004 National Geographic
USGS Quadrangles: Tajiguas, CA
KEY TO FEATURES
Qwest Fiber Optic Backbone
Linear Cultural Resource
Previously Recorded Cultural Resources (Prehistoric)
Previously Recorded Cultural Resources (Historic)
Previously Recorded Cultural Resources (Protohistoric and/or Multicomponent)
SWCA
ENVIRONMENTAL CONSULTANTS
Cultural Resources Final Report Monitoring and Findings
Segment 20: Southern Coastal
Figure 20.40. Cultural Resources Location

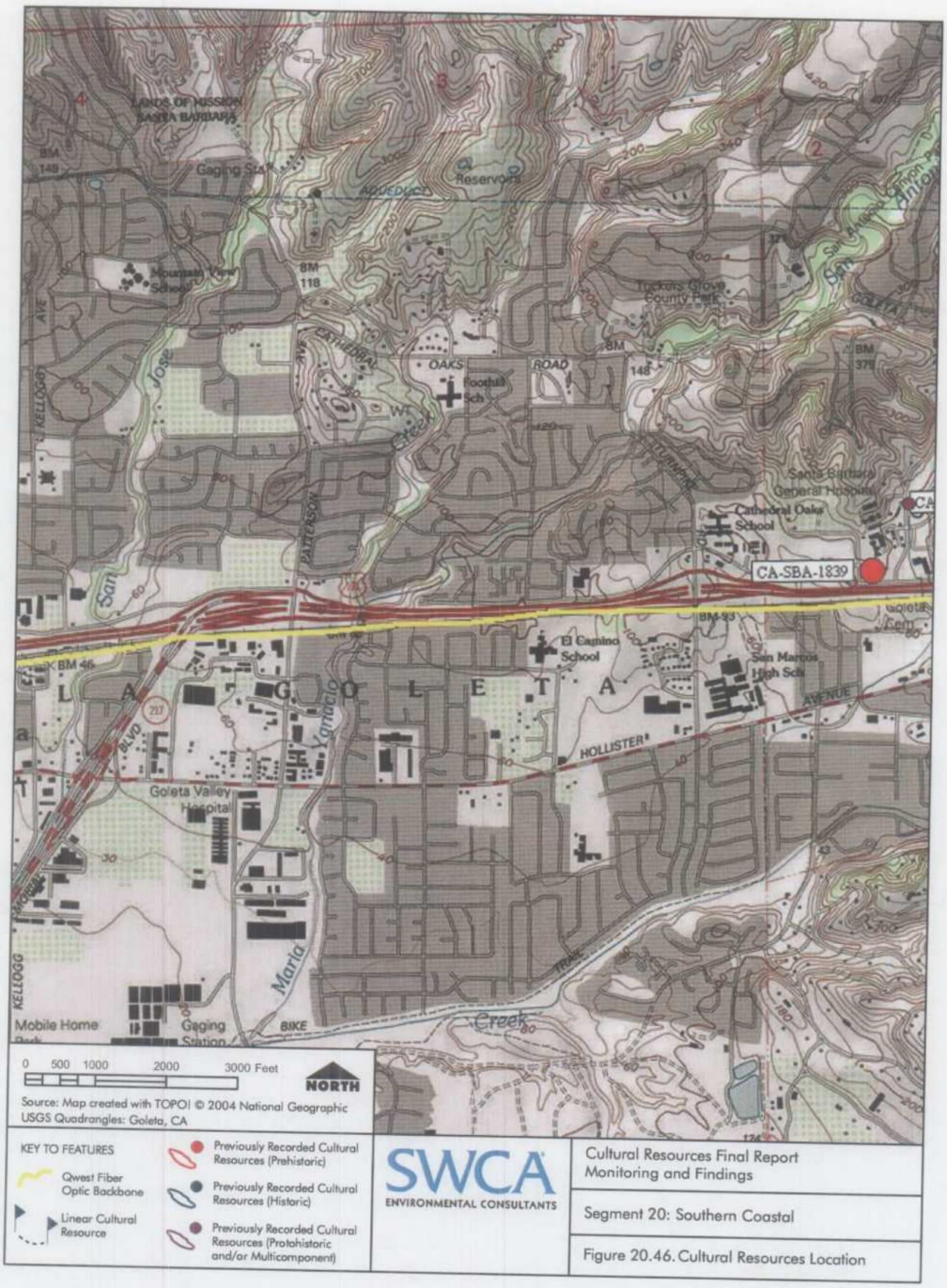

CA-SBA-83
CA-SBA-139
CA-SBA-235
BA-82
CA-SBA-81
CA-SBA-1650
CA-SBA-2587/H
CA-SBA-80
CA-SBA-230
CA-SBA-1803
CA-SBA-78
0 500 1000 2000 3000 Feet
NORTH
Source: Map created with TOPO! © 2004 National Geographic
USGS Quadrangles: Dos Pueblos Canyon, CA
KEY TO FEATURES
Qwest Fiber Optic Backbone
Linear Cultural Resource
Previously Recorded Cultural Resources (Prehistoric)
Previously Recorded Cultural Resources (Historic)
Previously Recorded Cultural Resources (Protohistoric and/or Multicomponent)
SWCA
ENVIRONMENTAL CONSULTANTS
Cultural Resources Final Report Monitoring and Findings
Segment 20: Southern Coastal
Figure 20.41. Cultural Resources Location

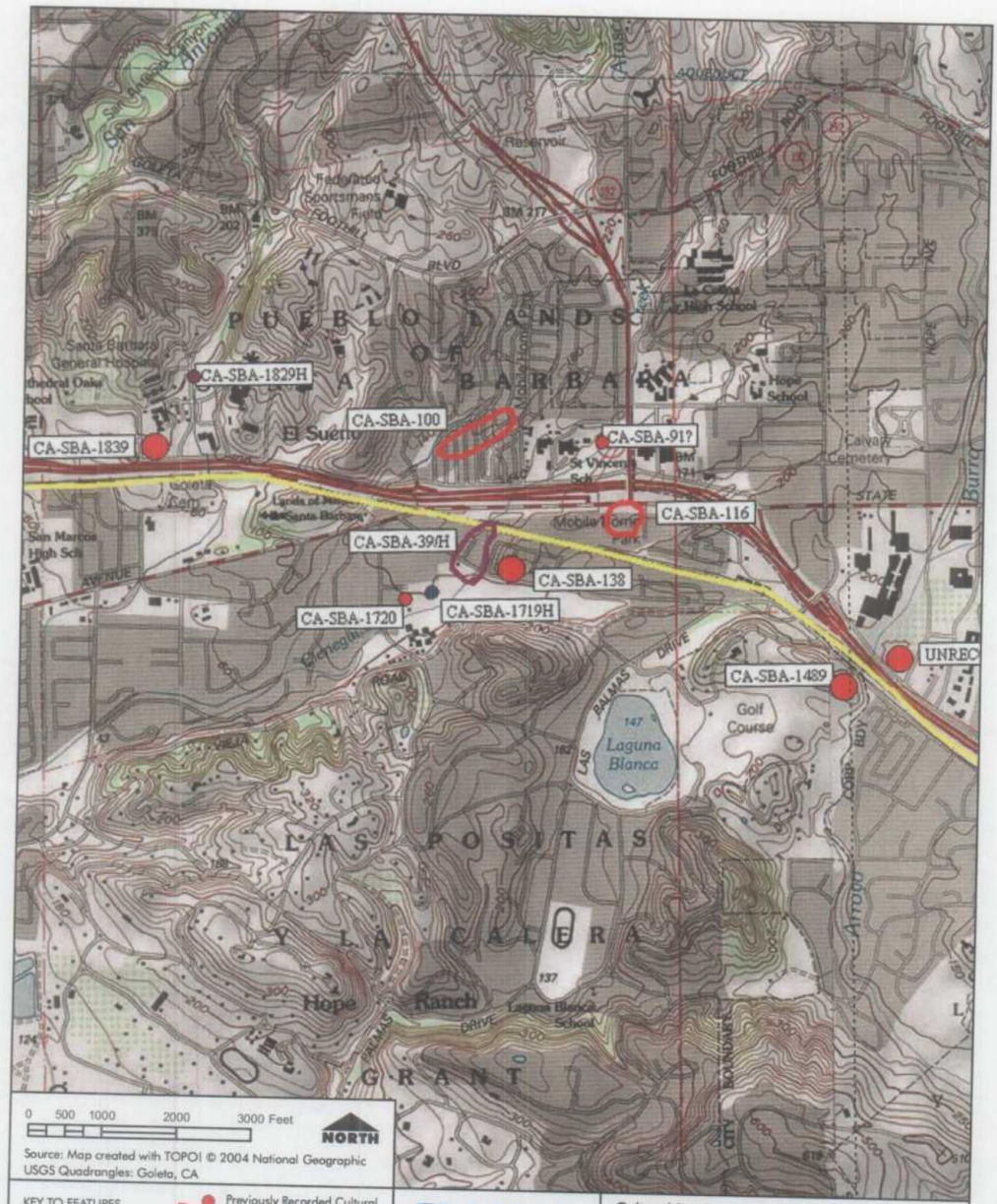

CA-SBA-79
CA-SBA-144
Naples
CA-SBA-77
CA-SBA-1322
CA-SBA-2439
CA-SBA-2440
CA-SBA-1323
CA-SBA-2441
Oil Wells
0 500 1000 2000 3000 Feet
NORTH
Source: Map created with TOPO! © 2004 National Geographic
USGS Quadrangles: Das Pueblos Canyon, CA
KEY TO FEATURES
Qwest Fiber Optic Backbone
Linear Cultural Resource
Previously Recorded Cultural Resources (Prehistoric)
Previously Recorded Cultural Resources (Historic)
Previously Recorded Cultural Resources (Protohistoric and/or Multicomponent)
SWCA
ENVIRONMENTAL CONSULTANTS
Cultural Resources Final Report Monitoring and Findings
Segment 20: Southern Coastal
Figure 20.42. Cultural Resources Location

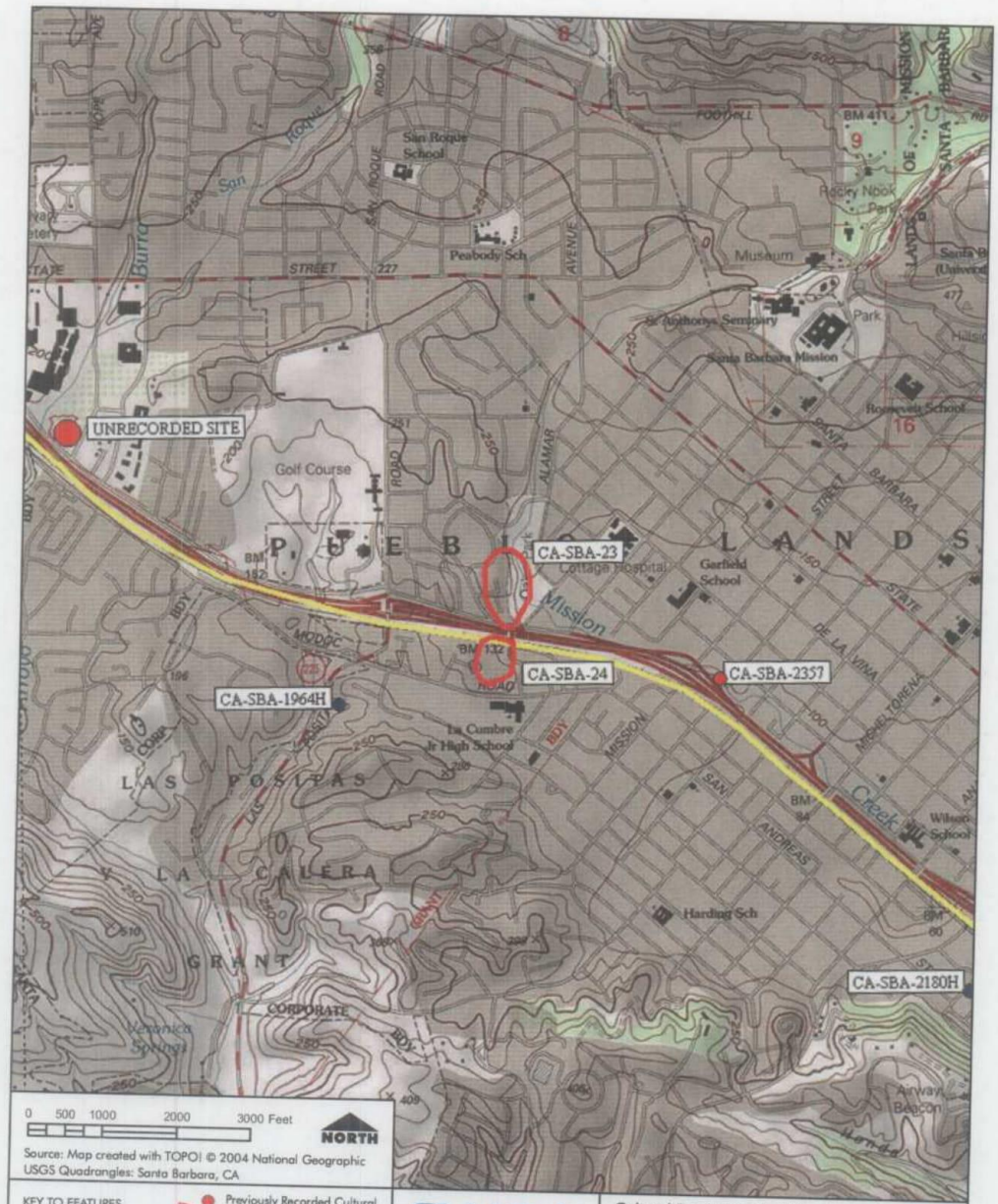

CA-SBA-2442H
CA-SBA-1326
CA-SBA-75
CA-SBA-106
CA-SBA-176
CA-SBA-74
CA-SBA-1717
CA-SBA-90
CA-SBA-71
CA-SBA-1681
CA-SBA-76
CA-SBA-1633
CA-SBA-1674
CA-SBA-73
CA-SBA-72
Oil Well
Oil Well
0 500 1000 2000 3000 Feet
NORTH
Source: Map created with TOPO! © 2004 National Geographic
USGS Quadrangles: Dos Pueblos Canyon, CA
KEY TO FEATURES
Qwest Fiber Optic Backbone
Linear Cultural Resource
Previously Recorded Cultural Resources (Prehistoric)
Previously Recorded Cultural Resources (Historic)
Previously Recorded Cultural Resources (Protohistoric and/or Multicomponent)
SWCA
ENVIRONMENTAL CONSULTANTS
Cultural Resources Final Report Monitoring and Findings
Segment 20: Southern Coastal
Figure 20.43. Cultural Resources Location

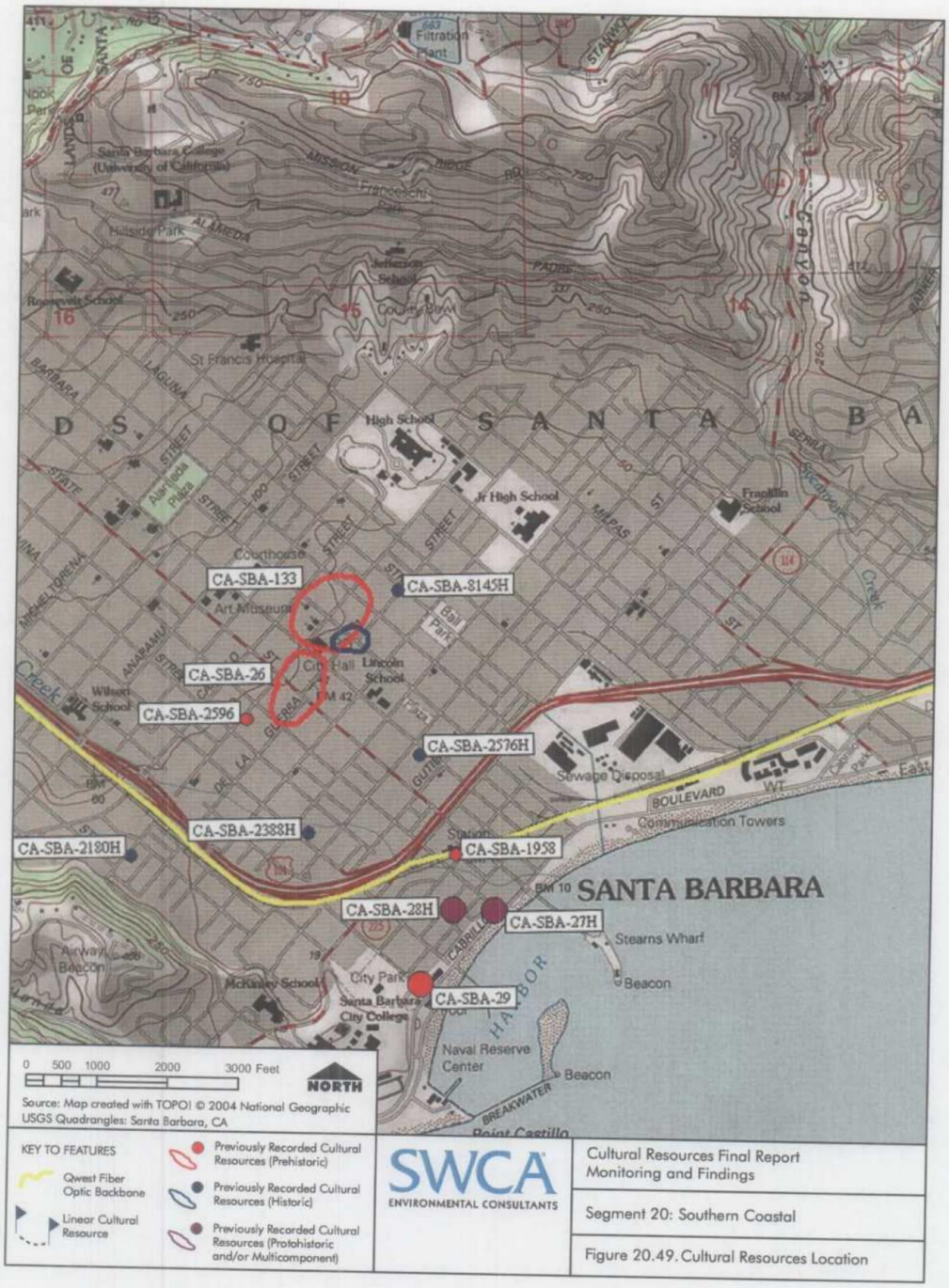

CA-SBA-1655
CA-SBA-1656
CA-SBA-2434
CA-SBA-1653
CA-SBA-143
CA-SBA-1657
CA-SBA-1093/H
CA-SBA-142
CA-SBA-2586
CA-SBA54
CA-SBA-1745
CA-SBA-1203
CA-1650H
CA-SBA-53
Isla Vista
Golf Course
Reservoir
Carneros
Creek
HOLLISTER
PRIVATE
ROAD
0 500 1000 2000 3000 Feet
NORTH
Source: Map created with TOPO! © 2004 National Geographic
USGS Quadrangles: Goleta, CA
KEY TO FEATURES
Qwest Fiber Optic Backbone
Linear Cultural Resource
Previously Recorded Cultural Resources (Prehistoric)
Previously Recorded Cultural Resources (Historic)
Previously Recorded Cultural Resources (Protohistoric and/or Multicomponent)
SWCA
ENVIRONMENTAL CONSULTANTS
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Segment 20: Southern Coastal
Figure 20.44. Cultural Resources Location


CA-SBA-61
CA-SBA-63
CA-SBA-2585H
CA-SBA-1703
CA-SBA-60
CA-SBA-57
CA-SBA-56
CA-SBA-59
CA-SBA-58
CA-SBA-55
Goleta
SANTA BARBARA AIRPORT
Mobile Home Park
Drive-In Theater
Mescaltan Island
Beacon
Gas Tanks
Atascad
Lake Los Carneros
Stow Grove Park
CANYON ROAD
ENCINA ROAD
AVENUE
Creek
0 500 1000 2000 3000 Feet
NORTH
Source: Map created with TOPO! © 2004 National Geographic
USGS Quadrangles: Goleta, CA
KEY TO FEATURES
Qwest Fiber Optic Backbone
Linear Cultural Resource
Previously Recorded Cultural Resources (Prehistoric)
Previously Recorded Cultural Resources (Historic)
Previously Recorded Cultural Resources (Protohistoric and/or Multicomponent)
SWCA
ENVIRONMENTAL CONSULTANTS
Cultural Resources Final Report Monitoring and Findings
Segment 20: Southern Coastal
Figure 20.45. Cultural Resources Location


CA-SBA-1839
Goleta Valley Hospital
Cathedral Oaks School
El Camino School
San Marcos High Sch
Foothill Sch
Tucker's Grove County Park
Gaging Station
Mobile Home
Reservoir
0 500 1000 2000 3000 Feet
NORTH
Source: Map created with TOPO! © 2004 National Geographic
USGS Quadrangles: Goleta, CA
KEY TO FEATURES
Qwest Fiber Optic Backbone
Linear Cultural Resource
Previously Recorded Cultural Resources (Prehistoric)
Previously Recorded Cultural Resources (Historic)
Previously Recorded Cultural Resources (Protohistoric and/or Multicomponent)
SWCA ENVIRONMENTAL CONSULTANTS
Cultural Resources Final Report Monitoring and Findings
Segment 20: Southern Coastal
Figure 20.46. Cultural Resources Location


CA-SBA-1829H
CA-SBA-1839
CA-SBA-100
CA-SBA-91?
CA-SBA-116
CA-SBA-39/H
CA-SBA-138
CA-SBA-1720
CA-SBA-1719H
CA-SBA-1489
UNREC
Laguna Blanca
Golf Course
Hope Ranch
PUEBLO LANDS OF SANTA BARBARA
LAS POSITAS Y LA CALERA GRANT
0 500 1000 2000 3000 Feet
NORTH
Source: Map created with TOPO! © 2004 National Geographic
USGS Quadrangles: Goleta, CA
KEY TO FEATURES
Qwest Fiber Optic Backbone
Linear Cultural Resource
Previously Recorded Cultural Resources (Prehistoric)
Previously Recorded Cultural Resources (Historic)
Previously Recorded Cultural Resources (Protohistoric and/or Multicomponent)
SWCA
ENVIRONMENTAL CONSULTANTS
Cultural Resources Final Report Monitoring and Findings
Segment 20: Southern Coastal
Figure 20.47. Cultural Resources Location

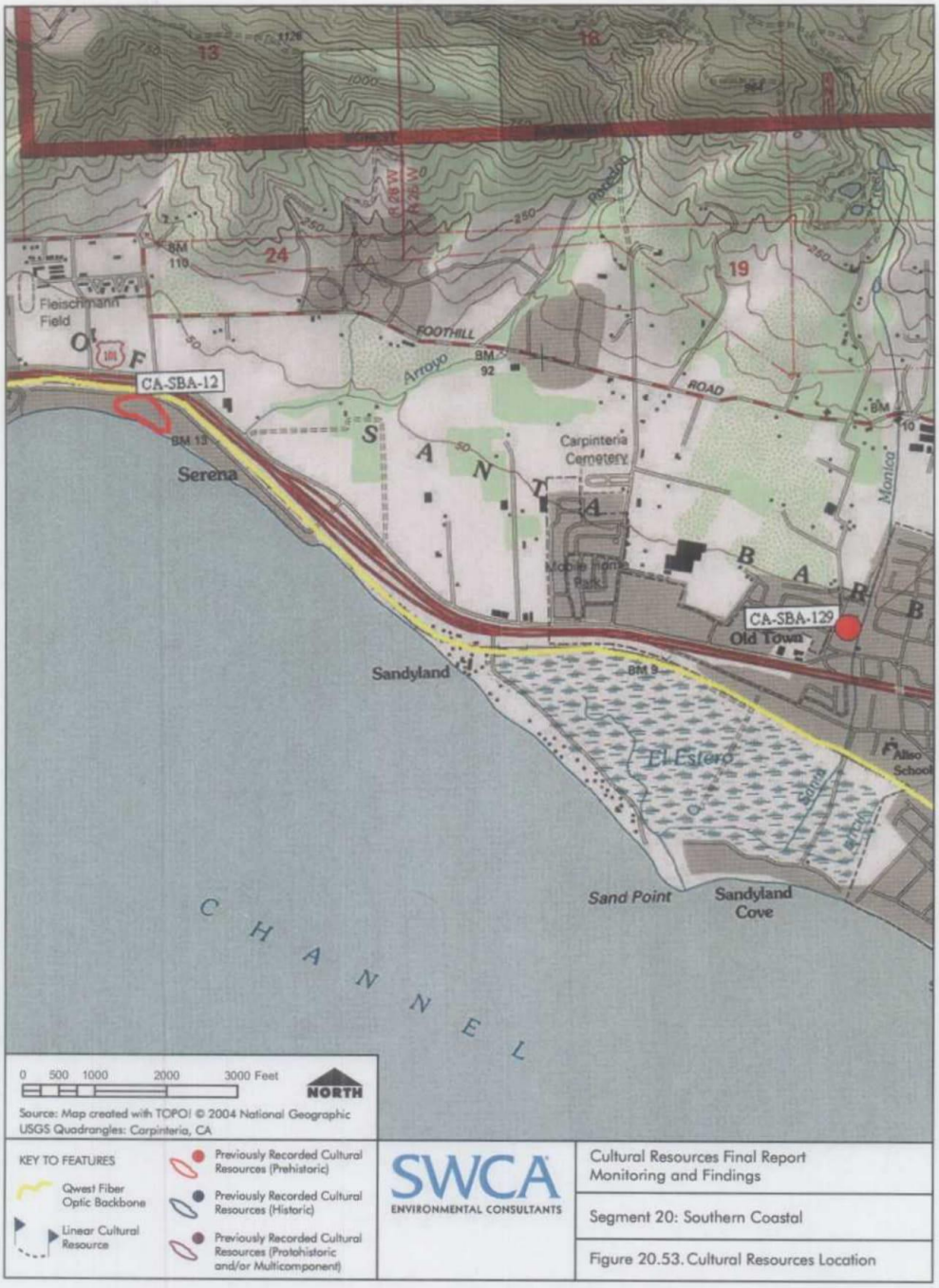

UNRECORDED SITE
CA-SBA-23
CA-SBA-24
CA-SBA-2357
CA-SBA-1964H
CA-SBA-2180H
Golf Course
Cottage Hospital
Garfield School
La Cumbre Jr High School
Harding Sch
Peabody Sch
San Roque School
Museum
Park
Santa Barbara Mission
Roosevelt School
Wilson School
Airway Beacon
Mission Creek
Veronica Springs
PUEBLO LANDS
LAS POSITAS
LA CALERA
GRANT
0 500 1000 2000 3000 Feet
NORTH
Source: Map created with TOPO! © 2004 National Geographic
USGS Quadrangles: Santa Barbara, CA
KEY TO FEATURES
Qwest Fiber Optic Backbone
Linear Cultural Resource
Previously Recorded Cultural Resources (Prehistoric)
Previously Recorded Cultural Resources (Historic)
Previously Recorded Cultural Resources (Protohistoric and/or Multicomponent)
SWCA
ENVIRONMENTAL CONSULTANTS
Cultural Resources Final Report Monitoring and Findings
Segment 20: Southern Coastal
Figure 20.48. Cultural Resources Location

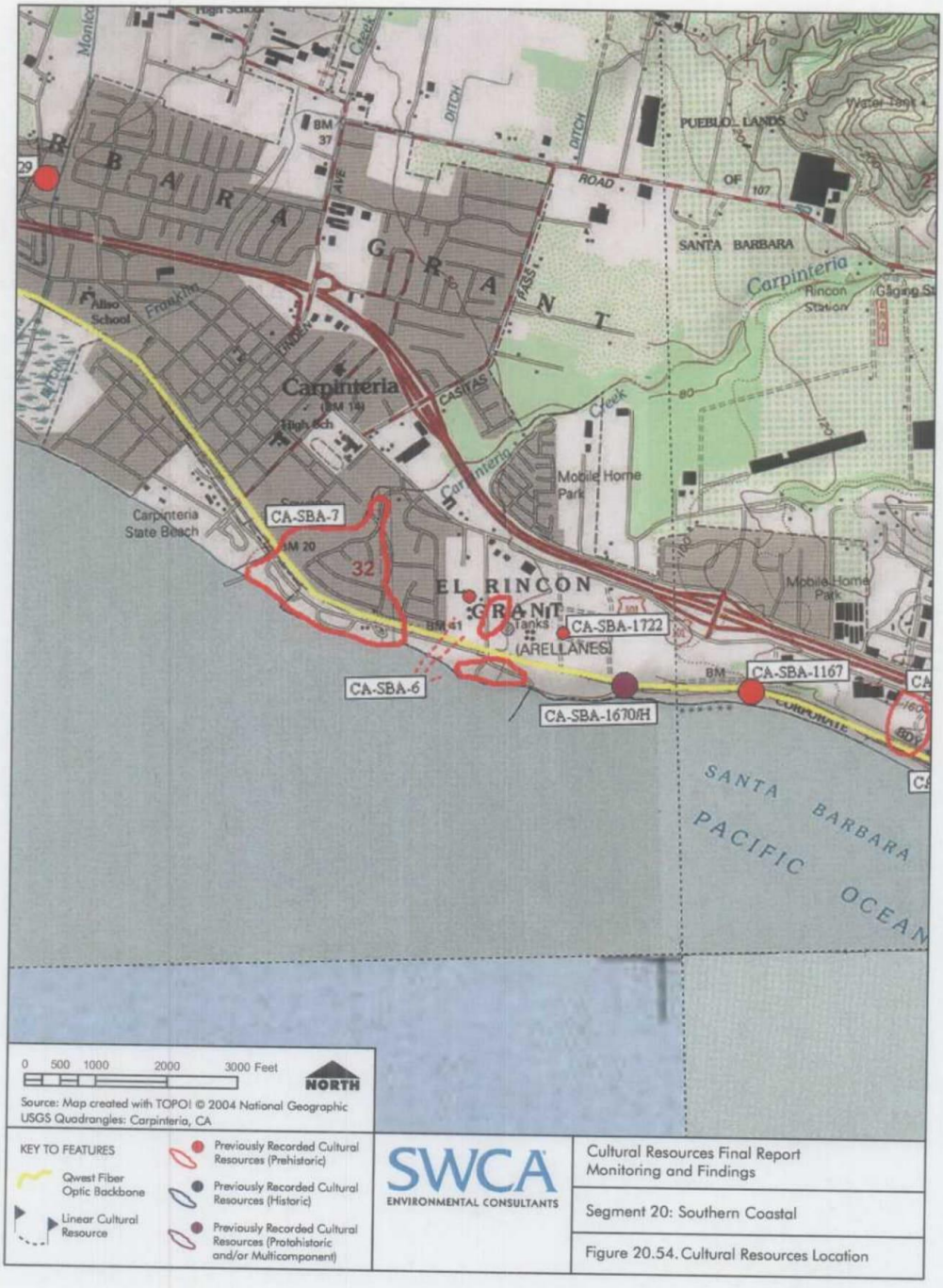

CA-SBA-133
CA-SBA-8145H
CA-SBA-26
CA-SBA-2596
CA-SBA-2576H
CA-SBA-2388H
CA-SBA-2180H
CA-SBA-1958
CA-SBA-28H
CA-SBA-27H
CA-SBA-29
SANTA BARBARA
Stearns Wharf
Beacon
Naval Reserve Center
Beacon
City Park
Santa Barbara City College
McKinley School
Airway Beacon
Courthouse
Art Museum
City Hall
Lincoln School
Wilson School
Jr High School
High School
Franklin School
St Francis Hospital
Santa Barbara College (University of California)
Hillside Park
Jefferson School
Roosevelt School
Filtration Plant
Sewage Disposal
Communication Towers
Station
Creek
0 500 1000 2000 3000 Feet
NORTH
Source: Map created with TOPO! © 2004 National Geographic
USGS Quadrangles: Santa Barbara, CA
KEY TO FEATURES
Qwest Fiber Optic Backbone
Linear Cultural Resource
Previously Recorded Cultural Resources (Prehistoric)
Previously Recorded Cultural Resources (Historic)
Previously Recorded Cultural Resources (Protohistoric and/or Multicomponent)
SWCA
ENVIRONMENTAL CONSULTANTS
Cultural Resources Final Report Monitoring and Findings
Segment 20: Southern Coastal
Figure 20.49. Cultural Resources Location


Cold Spring School
SYCAMORE CANYON ROAD
BOUNDARY
CORPORATE
PRIVATE
EUCALYPTUS
ALSTON
B A R B A R A G R A N T
Montecito Country Club
Andree Clark Bird Refuge
CA-SBA-1776
Dwight Murphy Park
CA-SBA-20
Santa Barbara Cemetery
East Beach
Cabrillo Pavilion
CA-SBA-1776
R 27 W
R 26 W
Manning Park
School for Girls
0 500 1000 2000 3000 Feet
NORTH
Source: Map created with TOPO! © 2004 National Geographic
USGS Quadrangles: Santa Barbara, CA
KEY TO FEATURES
Qwest Fiber Optic Backbone
Linear Cultural Resource
Previously Recorded Cultural Resources (Prehistoric)
Previously Recorded Cultural Resources (Historic)
Previously Recorded Cultural Resources (Protohistoric and/or Multicomponent)
SWCA
ENVIRONMENTAL CONSULTANTS
Cultural Resources Final Report
Monitoring and Findings
Segment 20: Southern Coastal
Figure 20.50. Cultural Resources Location

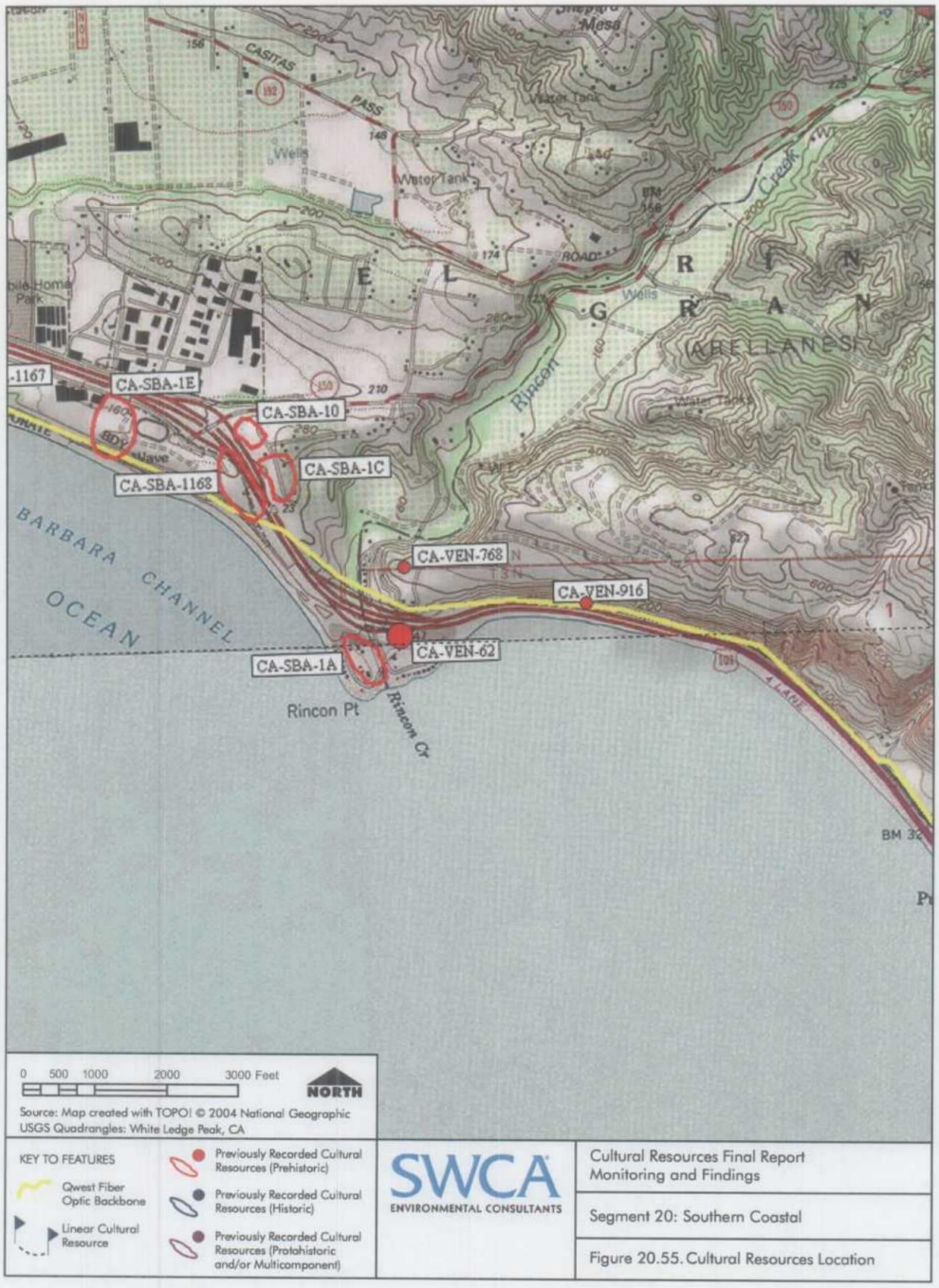

Montecito
Oak Creek
Ysidro Creek
San Ysidro Creek
Montecito
Union Sch
School for Girls
Valley Club
Romero
Crane Country Day School
Summerland
Ortega Hill
Water Tank
Oil Wells
Fernald Point
CA-SBA-18
CA-SBA-19
CA-SBA-1776
CA-SBA-17
CA-SBA-2179
CA-SBA-1578H
CA-SBA-2183
CA-SBA-16
CA-SBA-2178H
SANT
0 500 1000 2000 3000 Feet
NORTH
Source: Map created with TOPO! © 2004 National Geographic
USGS Quadrangles: Carpinteria, CA
KEY TO FEATURES
Qwest Fiber Optic Backbone
Linear Cultural Resource
Previously Recorded Cultural Resources (Prehistoric)
Previously Recorded Cultural Resources (Historic)
Previously Recorded Cultural Resources (Protohistoric and/or Multicomponent)
SWCA
ENVIRONMENTAL CONSULTANTS
Cultural Resources Final Report Monitoring and Findings
Segment 20: Southern Coastal
Figure 20.51. Cultural Resources Location


CA-SBA-1514
CA-SBA-2206
CA-SBA-1202
CA-SBA-2205H
CA-SBA-1182
CA-SBA-13
CA-SBA-1856
CA-SBA-1566
Loon Point
Serena Park
Ortega
Summerland
Fleischmann Field
Toro Canyon Reservoir
Gravel Pit
Water Tank
Garrapata Creek
Romero
BM 472
BM 116
BM 129
BM 70
BM 42
GREENWELL AVENUE
ROAD
Track
VALLEY
0 500 1000 2000 3000 Feet
NORTH
Source: Map created with TOPO! © 2004 National Geographic
USGS Quadrangles: Carpinteria, CA
KEY TO FEATURES
Qwest Fiber Optic Backbone
Linear Cultural Resource
Previously Recorded Cultural Resources (Prehistoric)
Previously Recorded Cultural Resources (Historic)
Previously Recorded Cultural Resources (Protohistoric and/or Multicomponent)
SWCA ENVIRONMENTAL CONSULTANTS
Cultural Resources Final Report Monitoring and Findings
Segment 20: Southern Coastal
Figure 20.52. Cultural Resources Location


13
18
24
19
Fleischmann Field
FOOTHILL
ROAD
Arroyo
BM 92
CA-SBA-12
BM 13
Serena
SANTA BARBARA
Carpinteria Cemetery
Mobile Home Park
CA-SBA-129
Old Town
Sandyland
BM 9
El Estero
Sand Point
Sandyland Cove
CHANNEL
Monica
Adams
0 500 1000 2000 3000 Feet
NORTH
Source: Map created with TOPO! © 2004 National Geographic
USGS Quadrangles: Carpinteria, CA
KEY TO FEATURES
Qwest Fiber Optic Backbone
Linear Cultural Resource
Previously Recorded Cultural Resources (Prehistoric)
Previously Recorded Cultural Resources (Historic)
Previously Recorded Cultural Resources (Protohistoric and/or Multicomponent)
SWCA
ENVIRONMENTAL CONSULTANTS
Cultural Resources Final Report Monitoring and Findings
Segment 20: Southern Coastal
Figure 20.53. Cultural Resources Location


SANTA BARBARA
Carpinteria
EL RINCON GRANT
(ARELLANES)
CA-SBA-7
CA-SBA-6
CA-SBA-1722
CA-SBA-1670/H
CA-SBA-1167
Carpinteria State Beach
Mobile Home Park
PUEBLO LANDS
SANTA BARBARA PACIFIC OCEAN
0 500 1000 2000 3000 Feet
NORTH
Source: Map created with TOPO! © 2004 National Geographic
USGS Quadrangles: Carpinteria, CA
KEY TO FEATURES
Qwest Fiber Optic Backbone
Linear Cultural Resource
Previously Recorded Cultural Resources (Prehistoric)
Previously Recorded Cultural Resources (Historic)
Previously Recorded Cultural Resources (Protohistoric and/or Multicomponent)
SWCA
ENVIRONMENTAL CONSULTANTS
Cultural Resources Final Report Monitoring and Findings
Segment 20: Southern Coastal
Figure 20.54. Cultural Resources Location

VN 2504
LA 8255
OR 3373



VN 2504
LA 8255
OR 3373




VN 2504
LA 8255
OR 3373
CA-VEN-241
CA-VEN-201
CA-VEN-917
CA-VEN-202
CA-VEM-28
CA-VEN-29
CA-VEN-240
CA-VEN-9
Park No 5
Sea Cliff
Park No 4
BM 31
Oil Sump
Park No 3
Pitas Po
0 500 1000 2000 3000 Feet
NORTH
Source: Map created with TOPO! © 2004 National Geographic
USGS Quadrangles: Pitas Point, CA
KEY TO FEATURES
Qwest Fiber Optic Backbone
Linear Cultural Resource
Previously Recorded Cultural Resources (Prehistoric)
Previously Recorded Cultural Resources (Historic)
Previously Recorded Cultural Resources (Protohistoric and/or Multicomponent)
SWCA ENVIRONMENTAL CONSULTANTS
Cultural Resources Final Report Monitoring and Findings
Segment 20: Southern Coastal
Figure 20.57. Cultural Resources Location

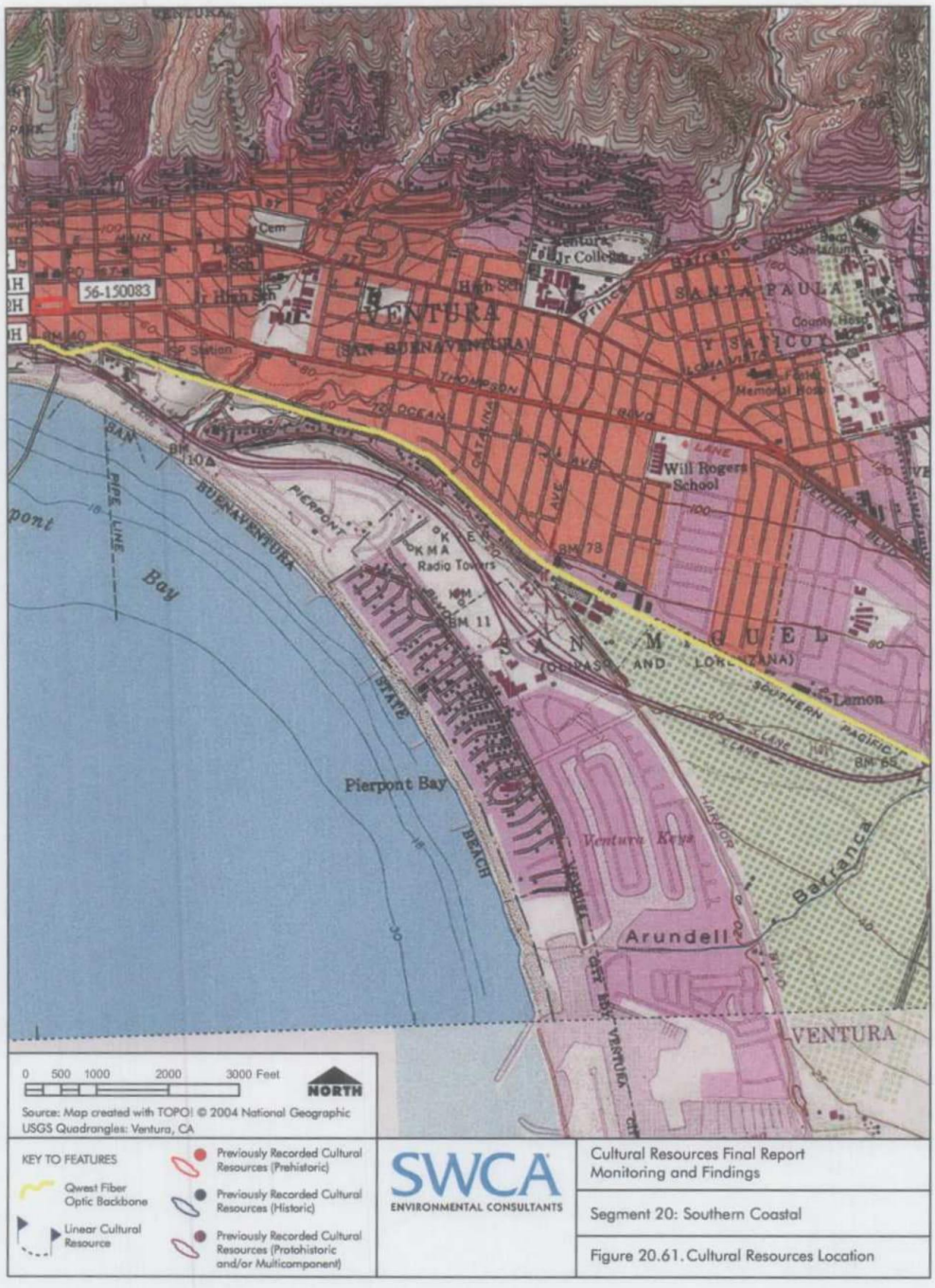

VN 2504
LA 8255
OR 3373
CA-VEN-237
CA-VEN-238
CA-VEN-274
A-VEN-240
CA-VEN-967
Park No 3
Pitas Point
BM 17
BM 14
Dulah
OIL WELLS
Oil Tanks
Airway Beacon
0 500 1000 2000 3000 Feet
NORTH
Source: Map created with TOPO! © 2004 National Geographic
USGS Quadrangles: Ventura, CA
KEY TO FEATURES
Qwest Fiber Optic Backbone
Linear Cultural Resource
Previously Recorded Cultural Resources (Prehistoric)
Previously Recorded Cultural Resources (Historic)
Previously Recorded Cultural Resources (Protohistoric and/or Multicomponent)
SWCA
ENVIRONMENTAL CONSULTANTS
Cultural Resources Final Report Monitoring and Findings
Segment 20: Southern Coastal
Figure 20.58. Cultural Resources Location

VN 2504
LA 8255
OR 3373

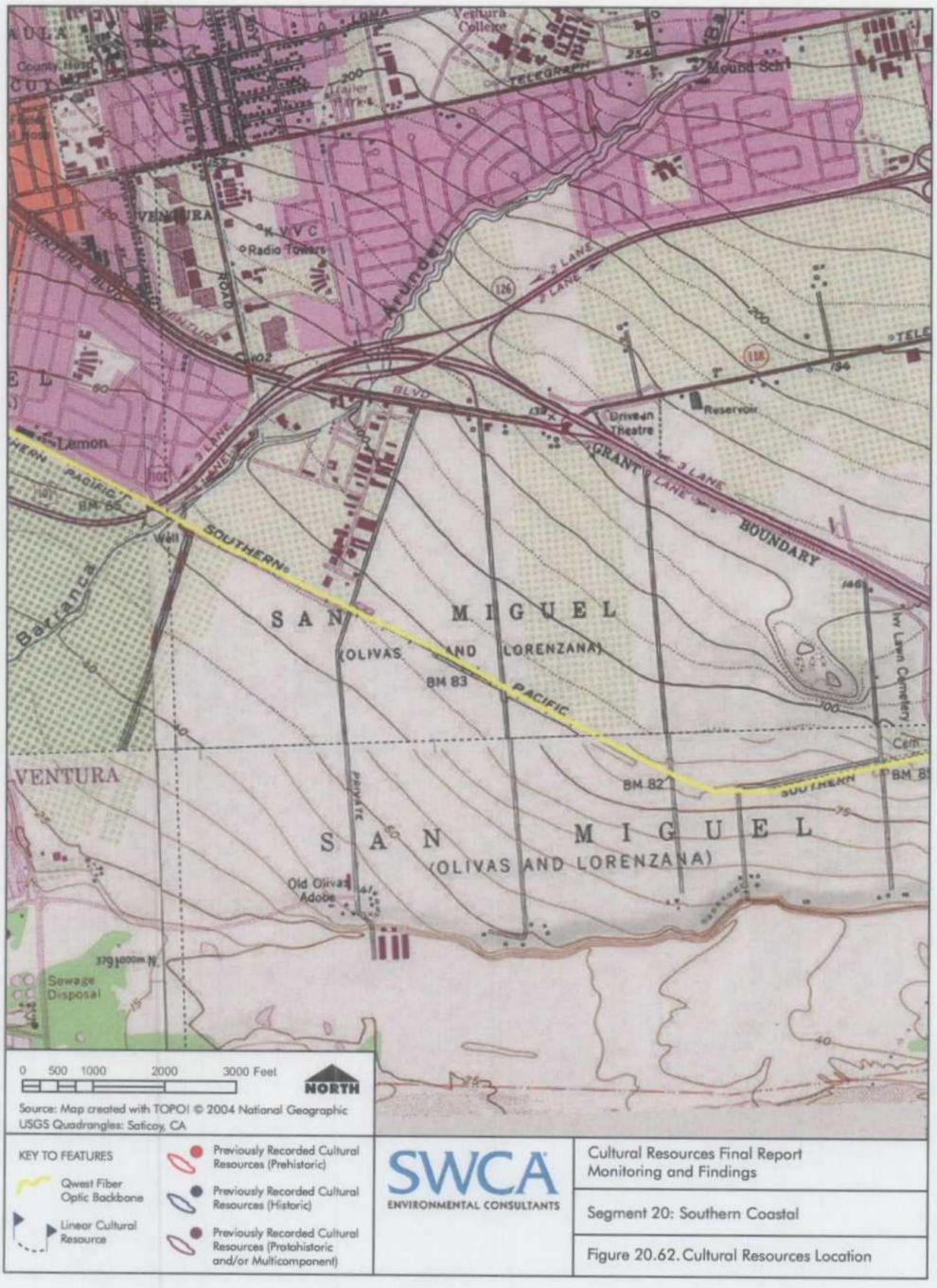



VN 2504
LA 8255
OR 3373
56-120027
56-1200026
56-1200028
CA-VEN-961
CA-VEN-4
CA-VEN-87H
CA-VEN-974H
CA-VEN-785
CA-VEN-1071H
CA-VEN1289H
CA-VEN-1112H
56-15008
CA-VEN-1222H
CA-VEN-480H
CA-VEN-342
CA-VEN-3
Babe Ruth Field
Sewage Disposal
Pierpont
CHANNEL
0 500 1000 2000 3000 Feet
NORTH
Source: Map created with TOPO! © 2004 National Geographic
USGS Quadrangles: Ventura, CA
KEY TO FEATURES
Qwest Fiber Optic Backbone
Linear Cultural Resource
Previously Recorded Cultural Resources (Prehistoric)
Previously Recorded Cultural Resources (Historic)
Previously Recorded Cultural Resources (Protohistoric and/or Multicomponent)
SWCA ENVIRONMENTAL CONSULTANTS
Cultural Resources Final Report Monitoring and Findings
Segment 20: Southern Coastal
Figure 20.60. Cultural Resources Location

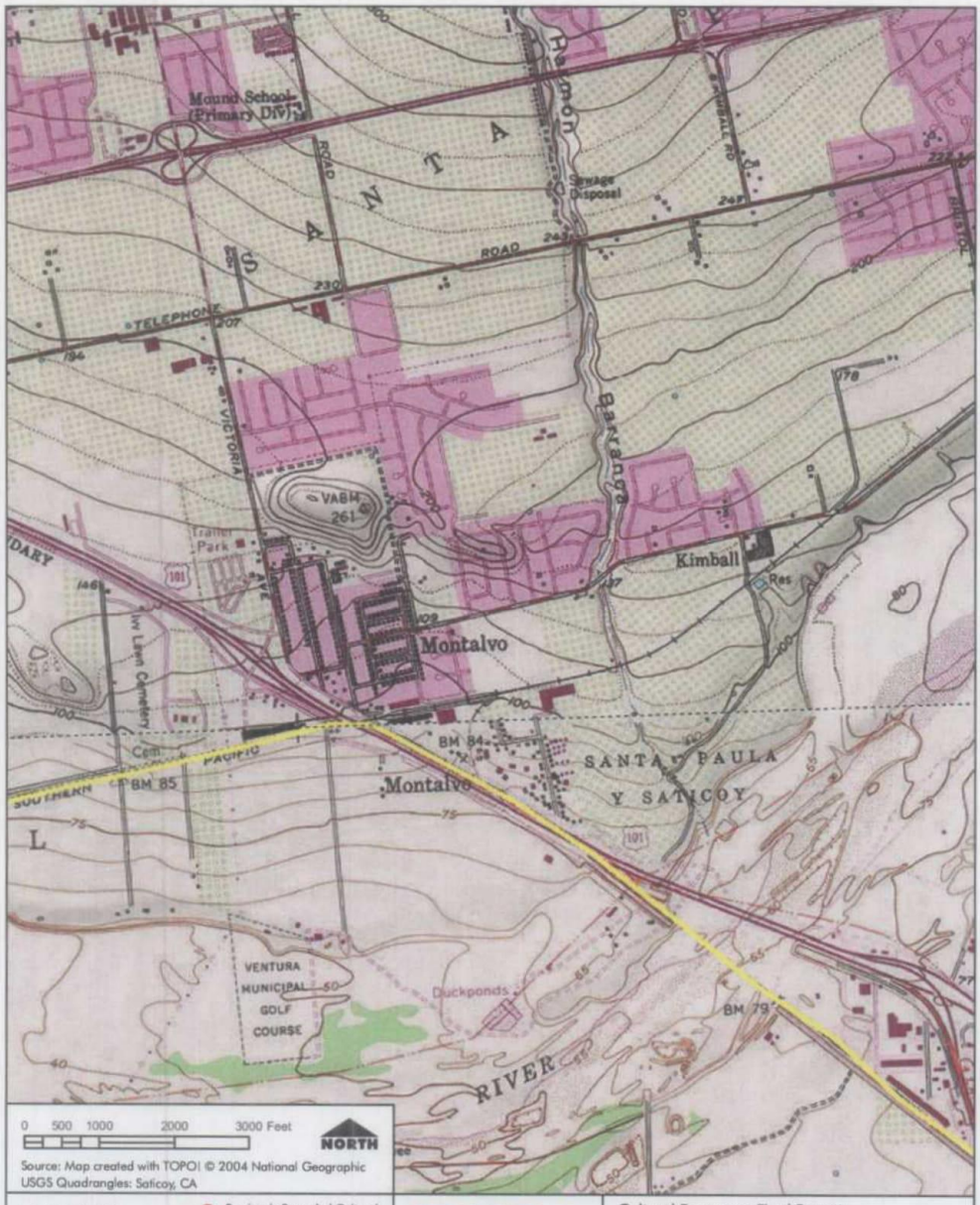
VN 2504
LA 8255
OR 3373



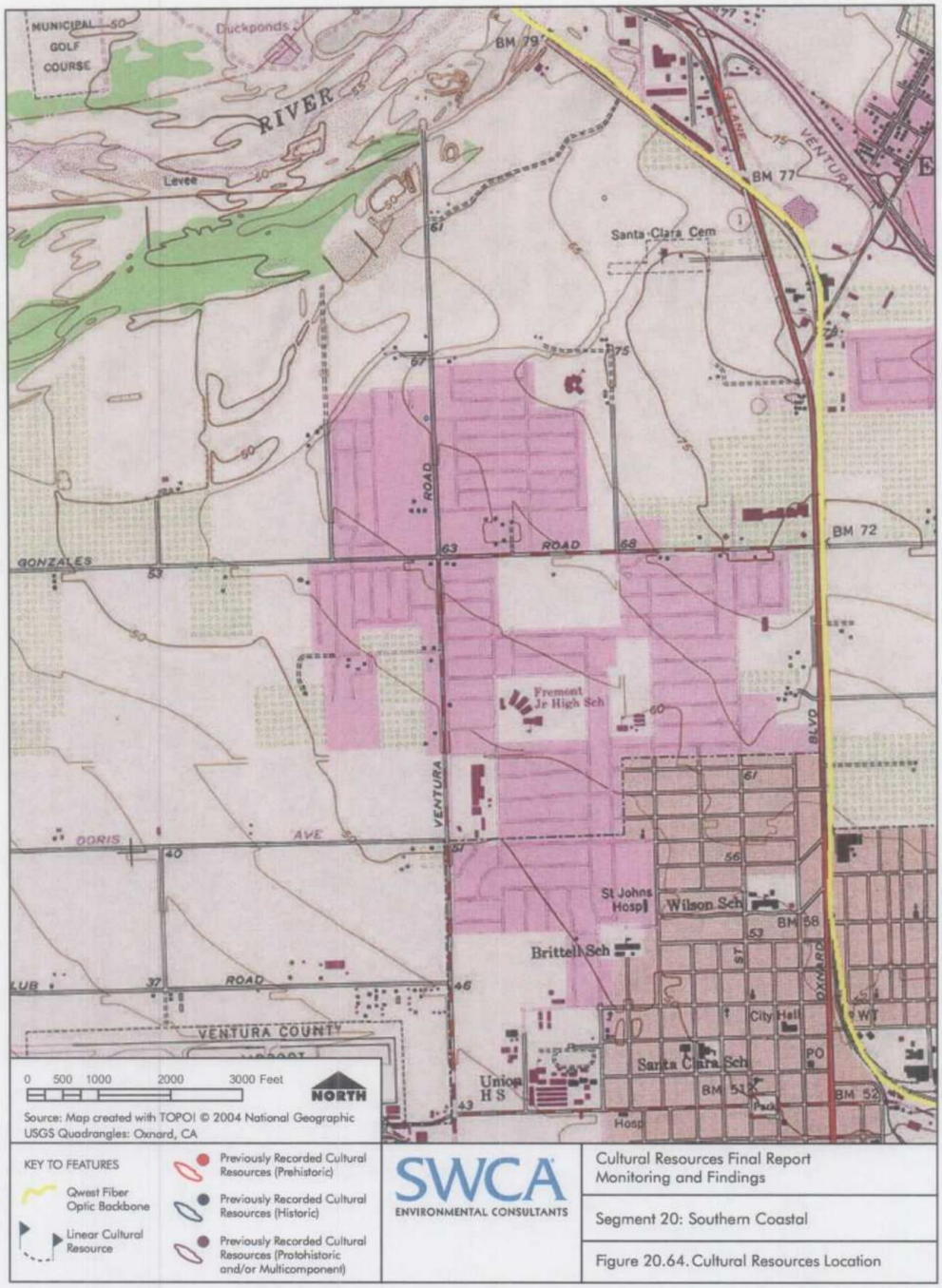
VN 2504
LA 8255
OR 3373



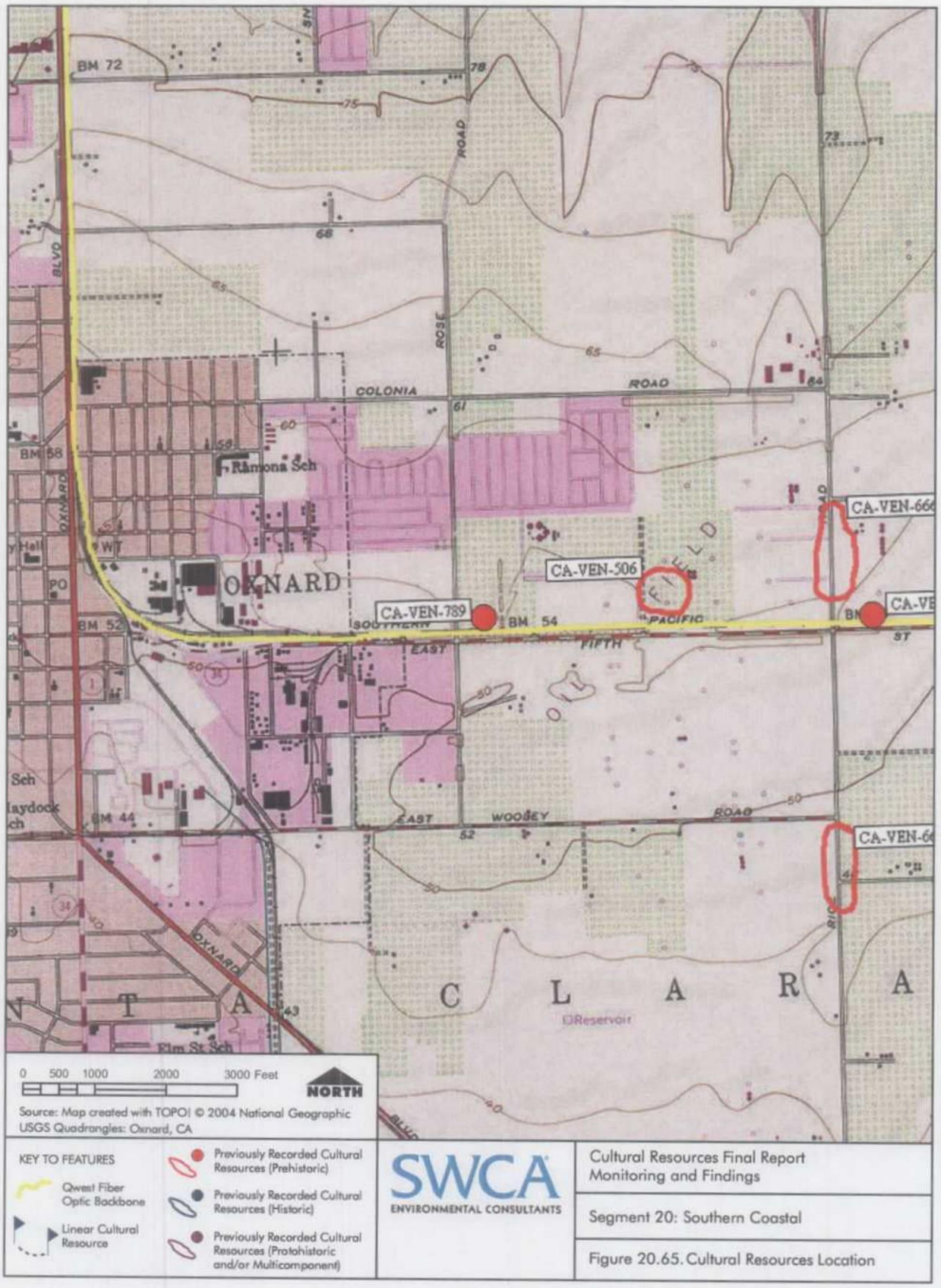
VN 2504
LA 8255
OR 3373



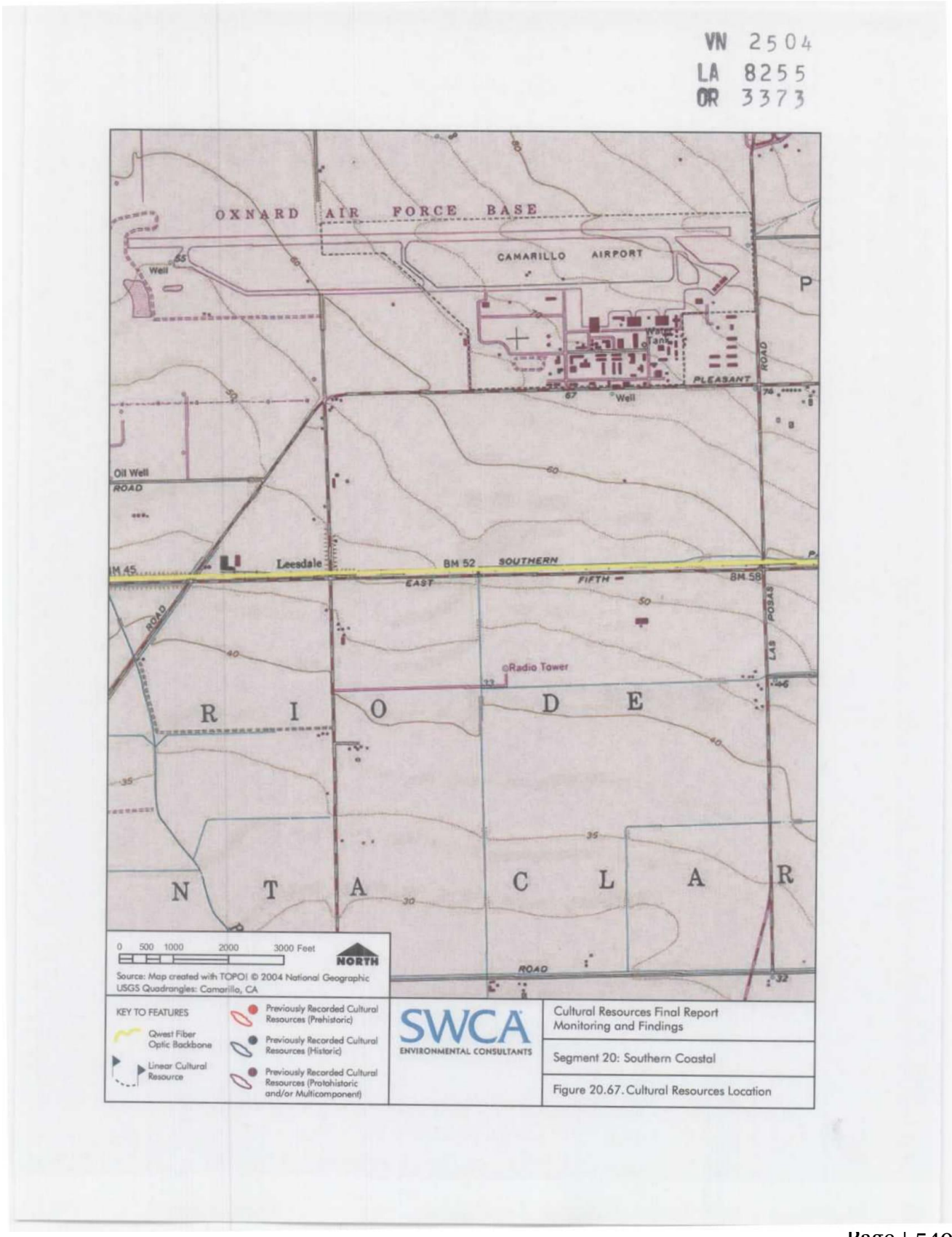
VN 2504
LA 8255
OR 3373



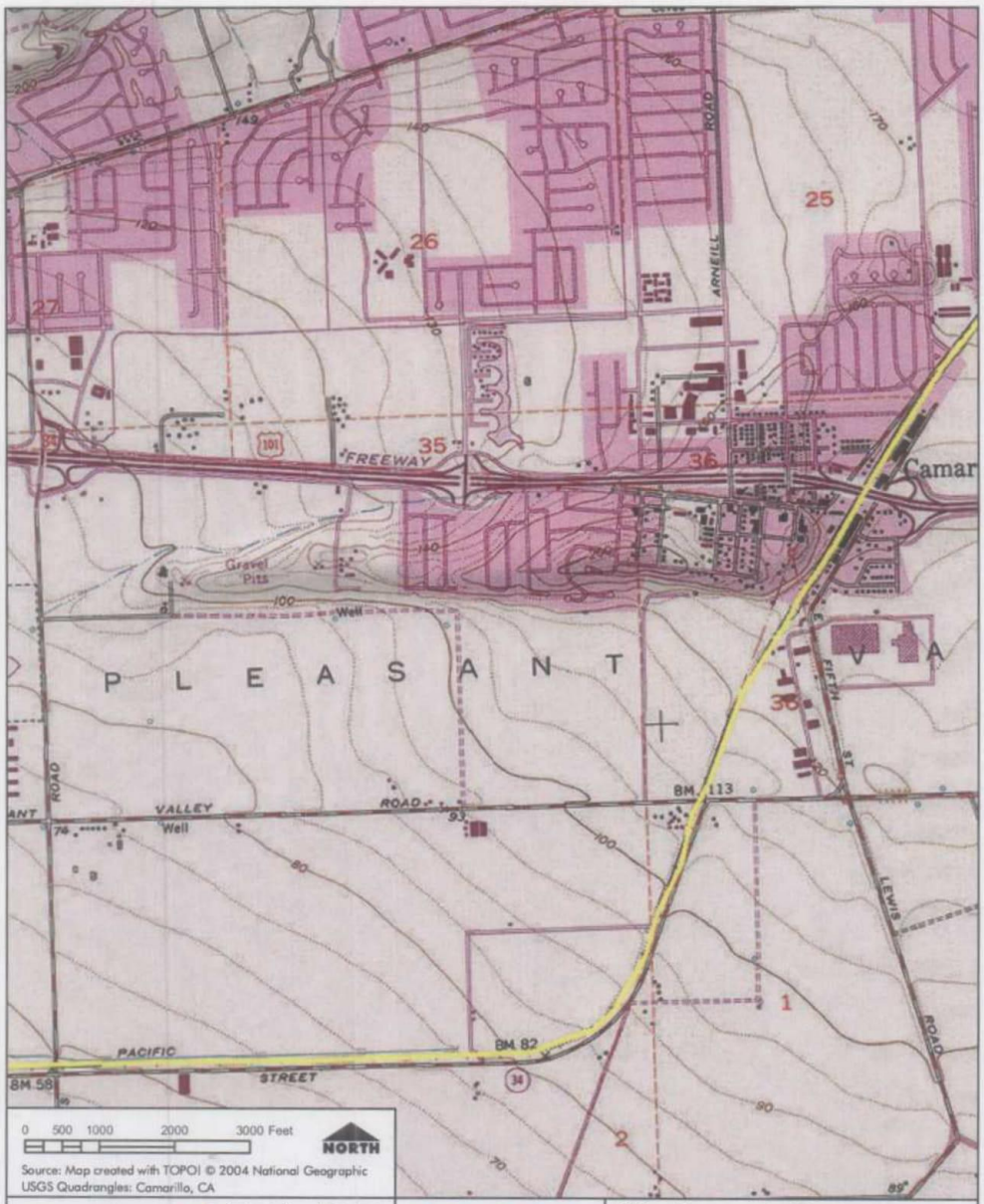
VN 2504
LA 8255
OR 3373



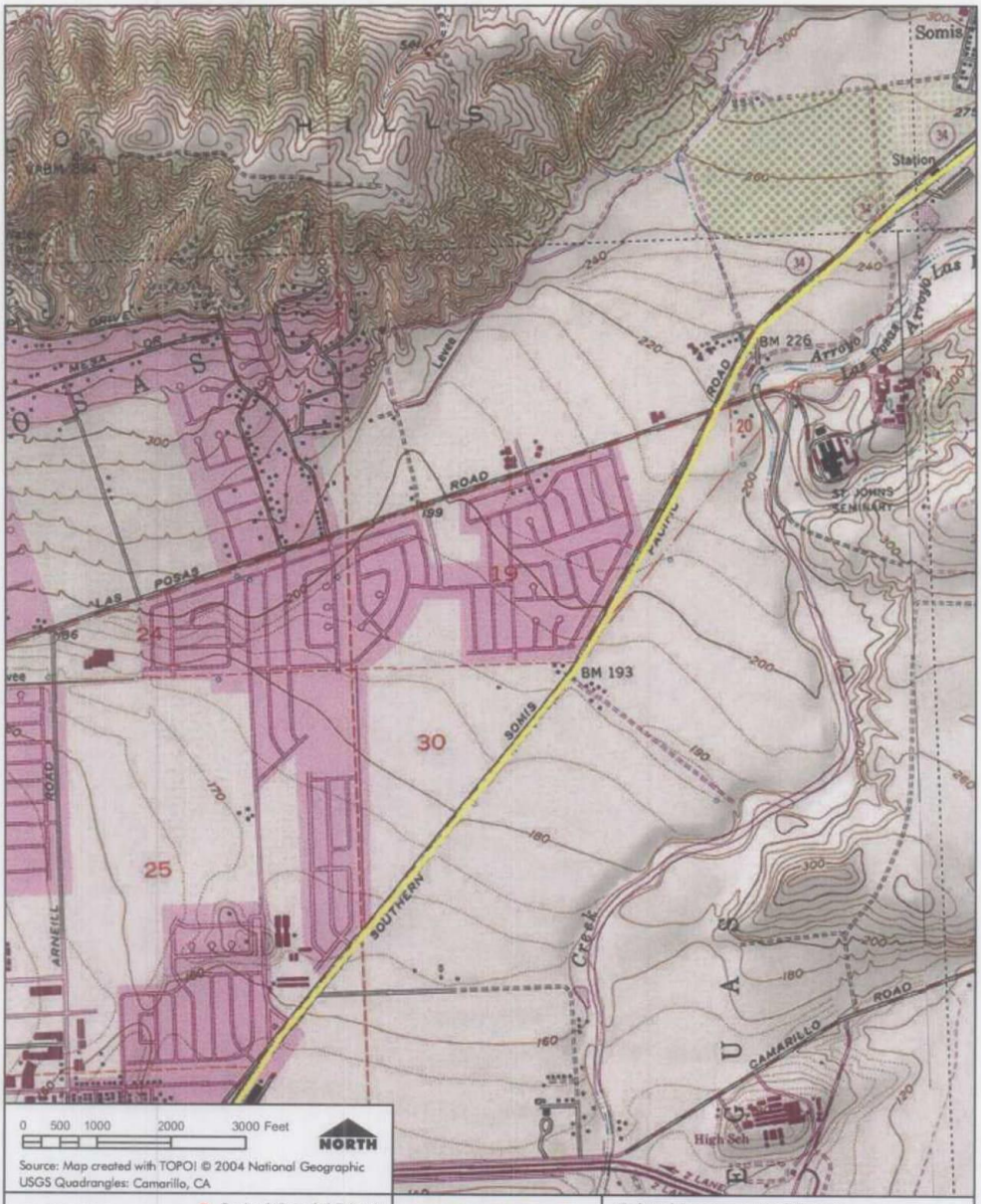

VN 2504
LA 8255
OR 3373
CA-VEN-666
CA-VEN-918
CA-VEN-665
STURGIS ROAD
Well
Oil Well
Oil Derrick
BM 45
WOLFF
VALLEY
ROAD
PLEASANT
R A
S A N
0 500 1000 2000 3000 Feet
NORTH
Source: Map created with TOPO! © 2004 National Geographic
USGS Quadrangles: Oxnard, CA
KEY TO FEATURES
Qwest Fiber Optic Backbone
Linear Cultural Resource
Previously Recorded Cultural Resources (Prehistoric)
Previously Recorded Cultural Resources (Historic)
Previously Recorded Cultural Resources (Protohistoric and/or Multicomponent)
SWCA
ENVIRONMENTAL CONSULTANTS
Cultural Resources Final Report Monitoring and Findings
Segment 20: Southern Coastal
Figure 20.66. Cultural Resources Location


VN 2504
LA 8255
OR 3373
OXNARD AIR FORCE BASE
CAMARILLO AIRPORT
Well
Water Tank
PLEASANT ROAD
Well
Oil Well
ROAD
Leesdale
BM 52
SOUTHERN PACIFIC
EAST FIFTH
BM 58
ROAD
Radio Tower
LAS POSAS
R I O D E
N T A C L A R
ROAD
0 500 1000 2000 3000 Feet
NORTH
Source: Map created with TOPO! © 2004 National Geographic
USGS Quadrangles: Camarillo, CA
KEY TO FEATURES
Qwest Fiber Optic Backbone
Linear Cultural Resource
Previously Recorded Cultural Resources (Prehistoric)
Previously Recorded Cultural Resources (Historic)
Previously Recorded Cultural Resources (Protohistoric and/or Multicomponent)
SWCA
ENVIRONMENTAL CONSULTANTS
Cultural Resources Final Report Monitoring and Findings
Segment 20: Southern Coastal
Figure 20.67. Cultural Resources Location

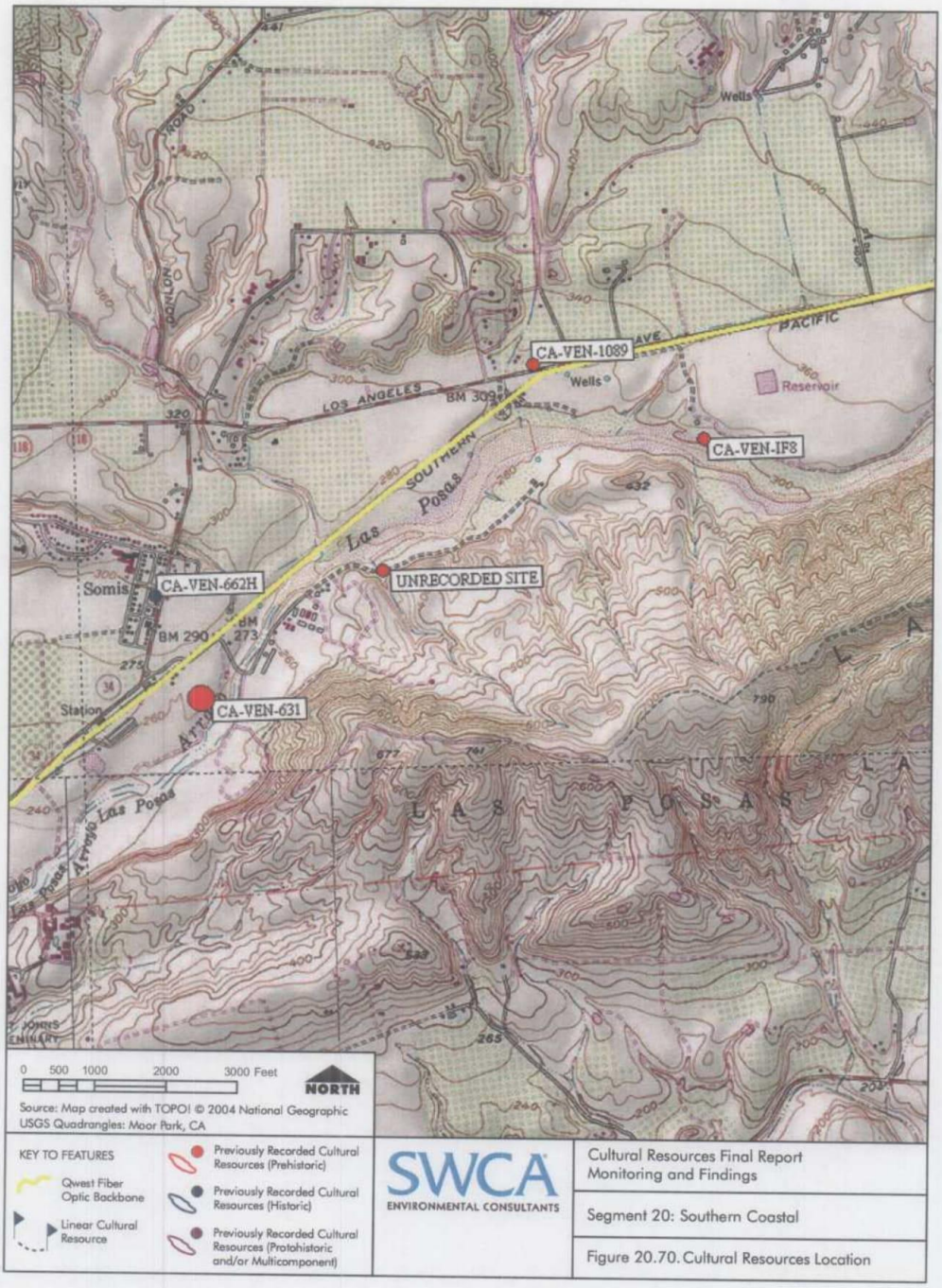
VN 2504
LA 8255
OR 3373

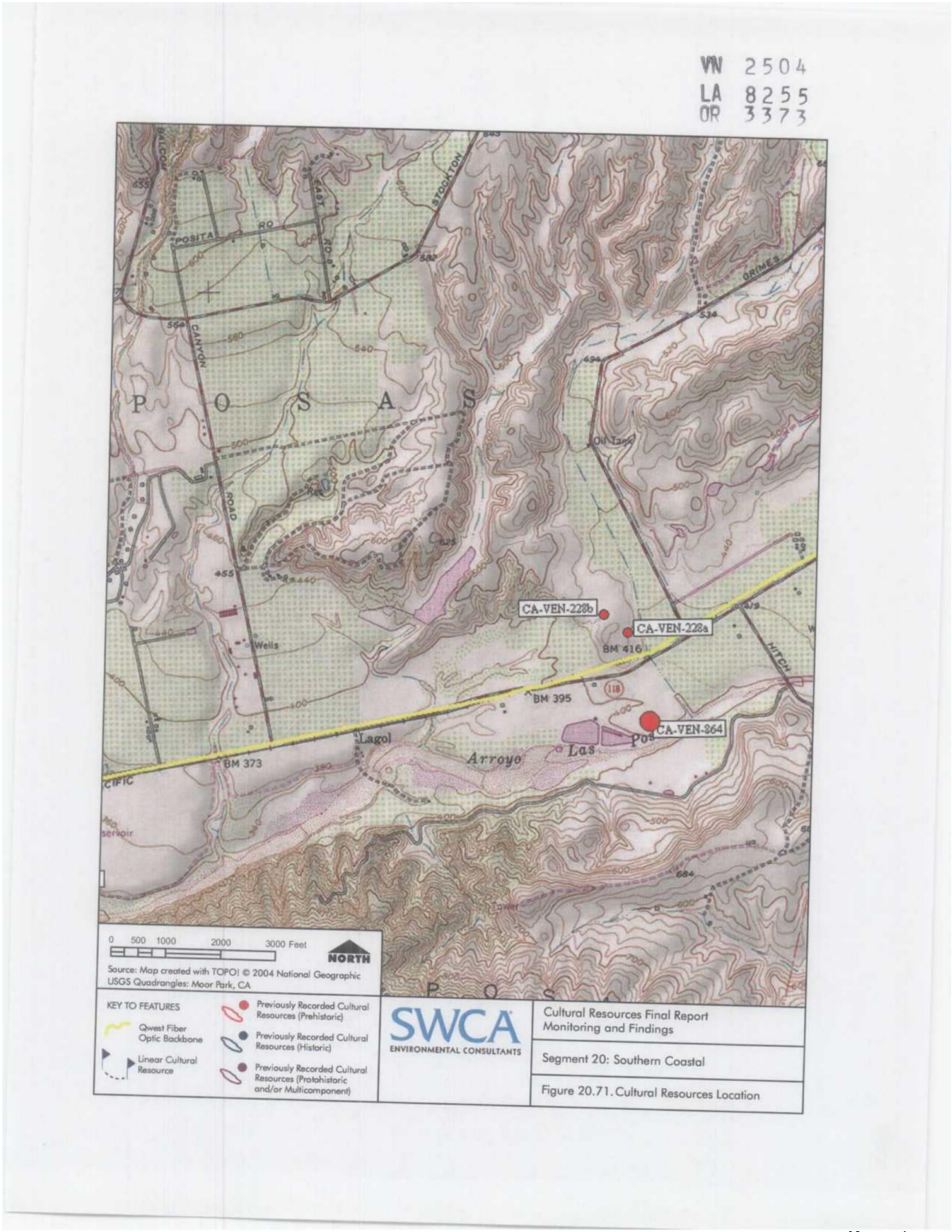


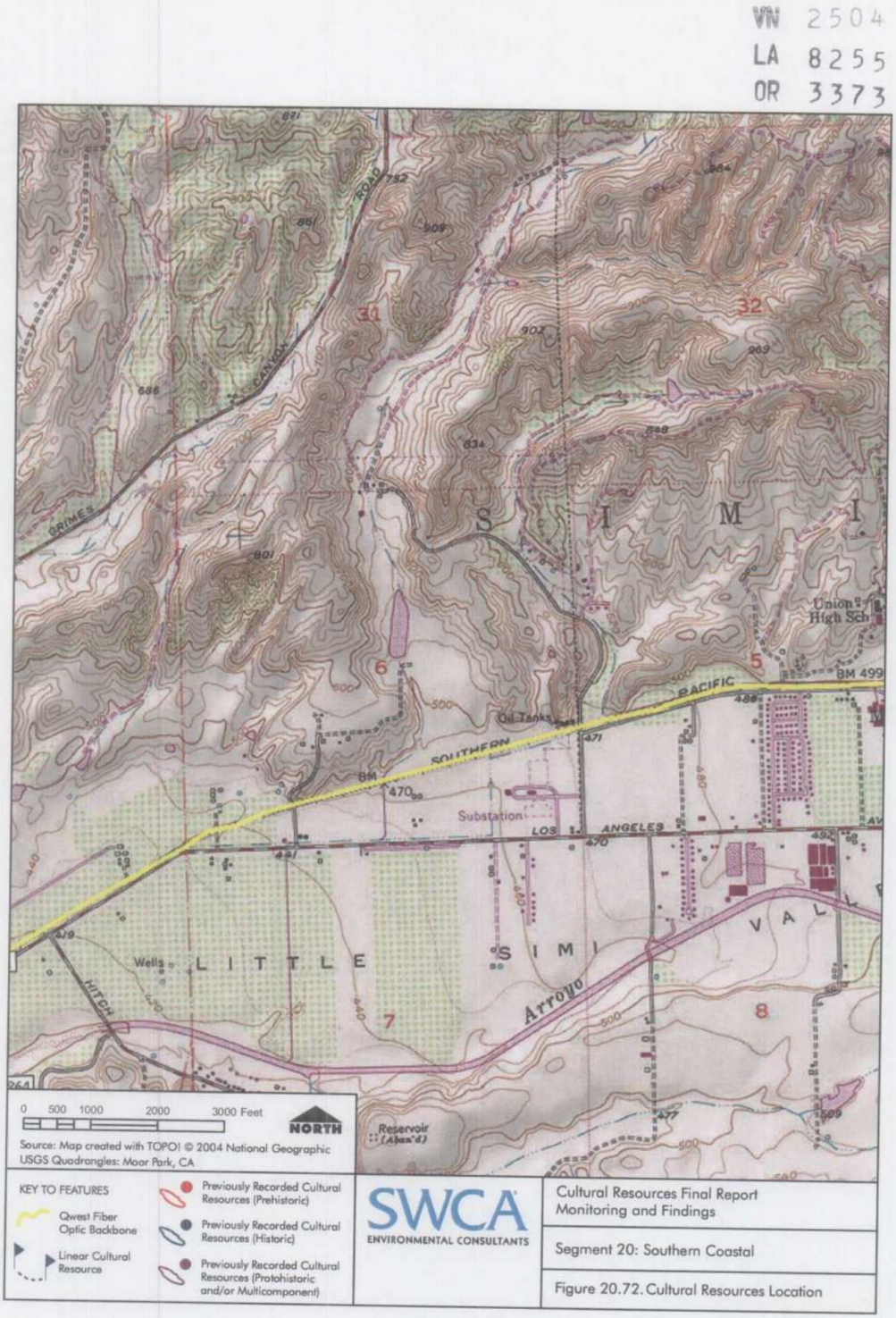
VN 2504
LA 8255
OR 3373



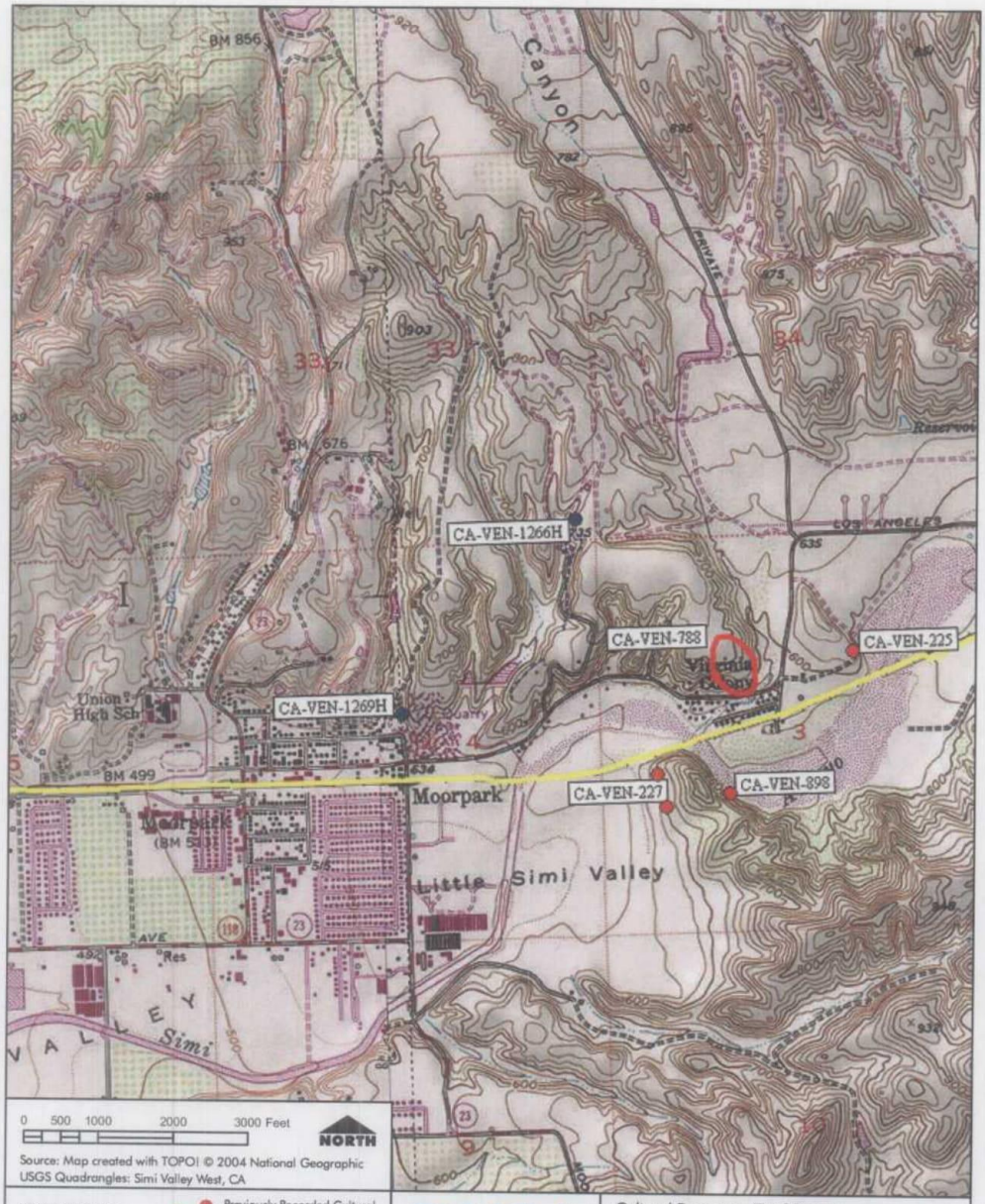
VN 2504
LA 8255
OR 3373



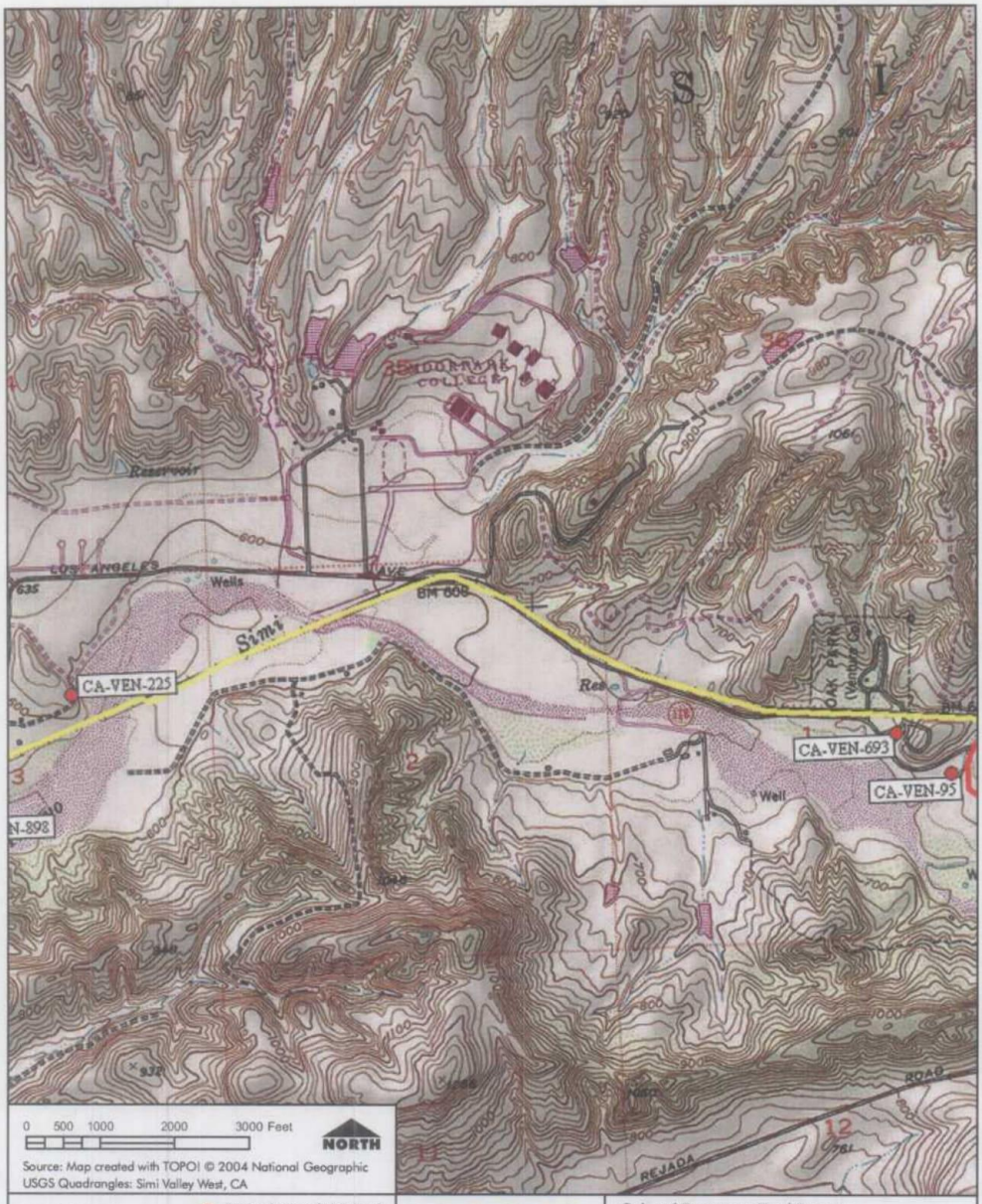

VN 2504
LA 8255
OR 3373
POSITA RD
STOCKTON
CANYON
ROAD
GRIMES
Wells
CA-VEN-228b
CA-VEN-228a
BM 416
BM 395
CA-VEN-364
BM 373
Lagol
Arroyo
Las
0 500 1000 2000 3000 Feet
NORTH
Source: Map created with TOPO! © 2004 National Geographic
USGS Quadrangles: Moor Park, CA
KEY TO FEATURES
Qwest Fiber Optic Backbone
Linear Cultural Resource
Previously Recorded Cultural Resources (Prehistoric)
Previously Recorded Cultural Resources (Historic)
Previously Recorded Cultural Resources (Protohistoric and/or Multicomponent)
SWCA
ENVIRONMENTAL CONSULTANTS
Cultural Resources Final Report Monitoring and Findings
Segment 20: Southern Coastal
Figure 20.71. Cultural Resources Location

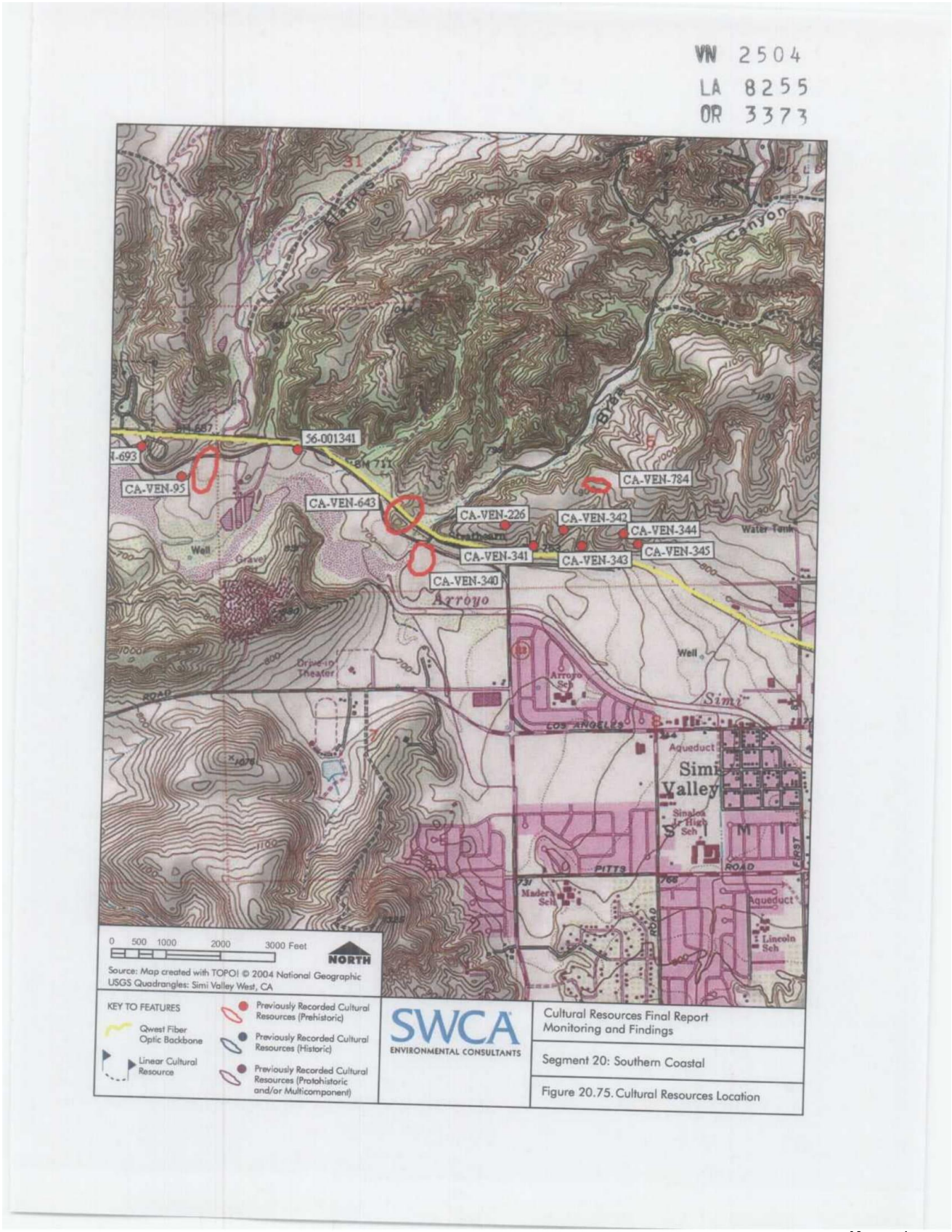

VN 2504
LA 8255
OR 3373
SIMI
LITTLE SIMI VALLEY
PACIFIC SOUTHERN
LOS ANGELES
Substation
Oil Tanks
Union High Sch
BM 499
BM 470
Wells
Reservoir
Arroyo
HITCH
CRIMES
CANYON
ROAD
0 500 1000 2000 3000 Feet
NORTH
Source: Map created with TOPO! © 2004 National Geographic
USGS Quadrangles: Moor Park, CA
KEY TO FEATURES
Qwest Fiber Optic Backbone
Linear Cultural Resource
Previously Recorded Cultural Resources (Prehistoric)
Previously Recorded Cultural Resources (Historic)
Previously Recorded Cultural Resources (Protohistoric and/or Multicomponent)
SWCA
ENVIRONMENTAL CONSULTANTS
Cultural Resources Final Report Monitoring and Findings
Segment 20: Southern Coastal
Figure 20.72. Cultural Resources Location

VN 2504
LA 8255
OR 3373

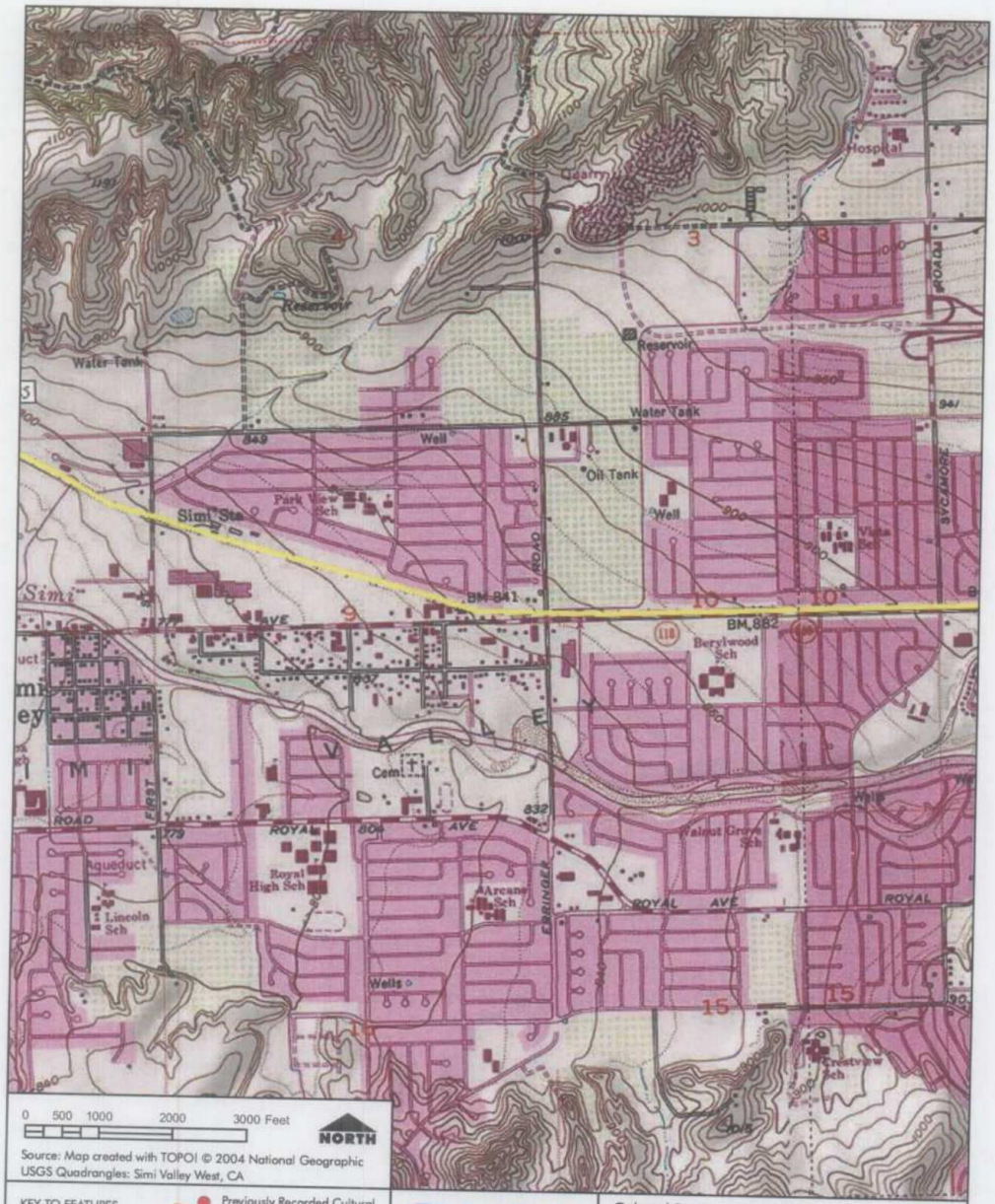


VN 2504
LA 8255
OR 3373

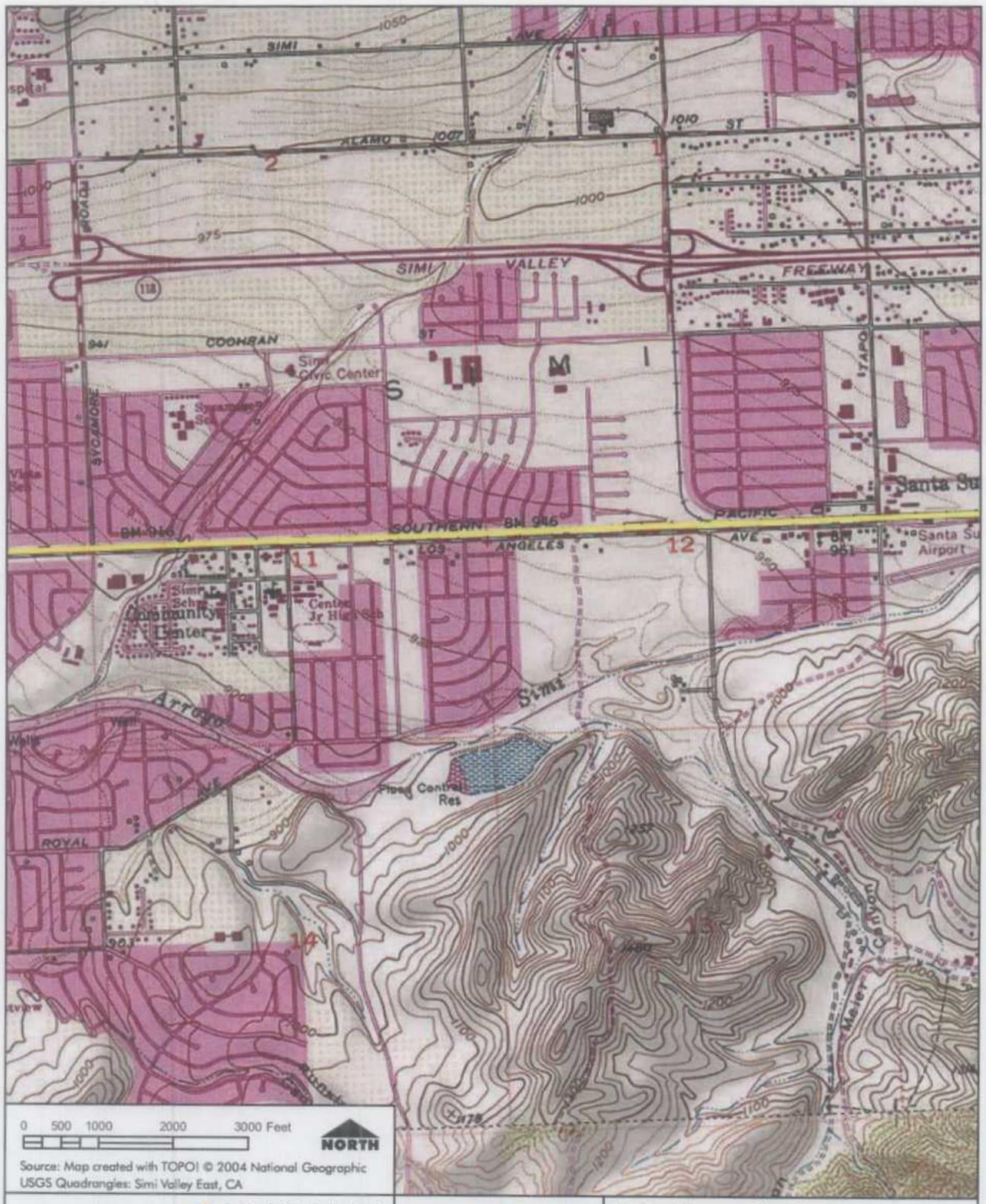



VN 2504
LA 8255
OR 3373
56-001341
CA-VEN-95
CA-VEN-643
CA-VEN-226
CA-VEN-784
CA-VEN-342
CA-VEN-344
CA-VEN-345
CA-VEN-341
CA-VEN-343
CA-VEN-340
Arroyo
Simi
Simi Valley
Aqueduct
Water Tank
Well
Gravel
Drive-in Theater
Arroyo Sch
Lincoln Sch
PITTS ROAD
FIRST
0 500 1000 2000 3000 Feet
NORTH
Source: Map created with TOPO! © 2004 National Geographic
USGS Quadrangles: Simi Valley West, CA
KEY TO FEATURES
Qwest Fiber Optic Backbone
Linear Cultural Resource
Previously Recorded Cultural Resources (Prehistoric)
Previously Recorded Cultural Resources (Historic)
Previously Recorded Cultural Resources (Protohistoric and/or Multicomponent)
SWCA
ENVIRONMENTAL CONSULTANTS
Cultural Resources Final Report Monitoring and Findings
Segment 20: Southern Coastal
Figure 20.75. Cultural Resources Location

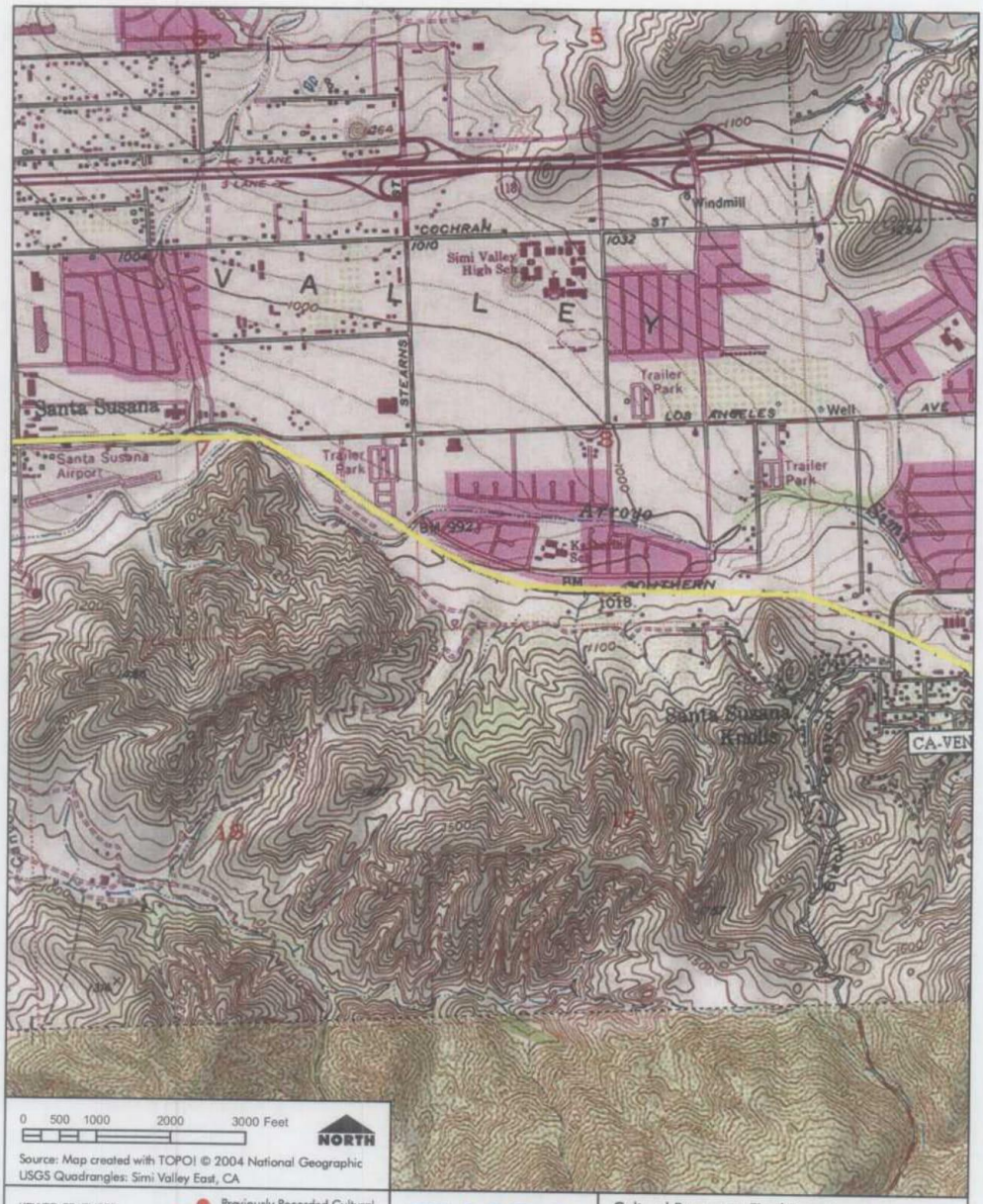
VN 2504
LA 8255
OR 3377



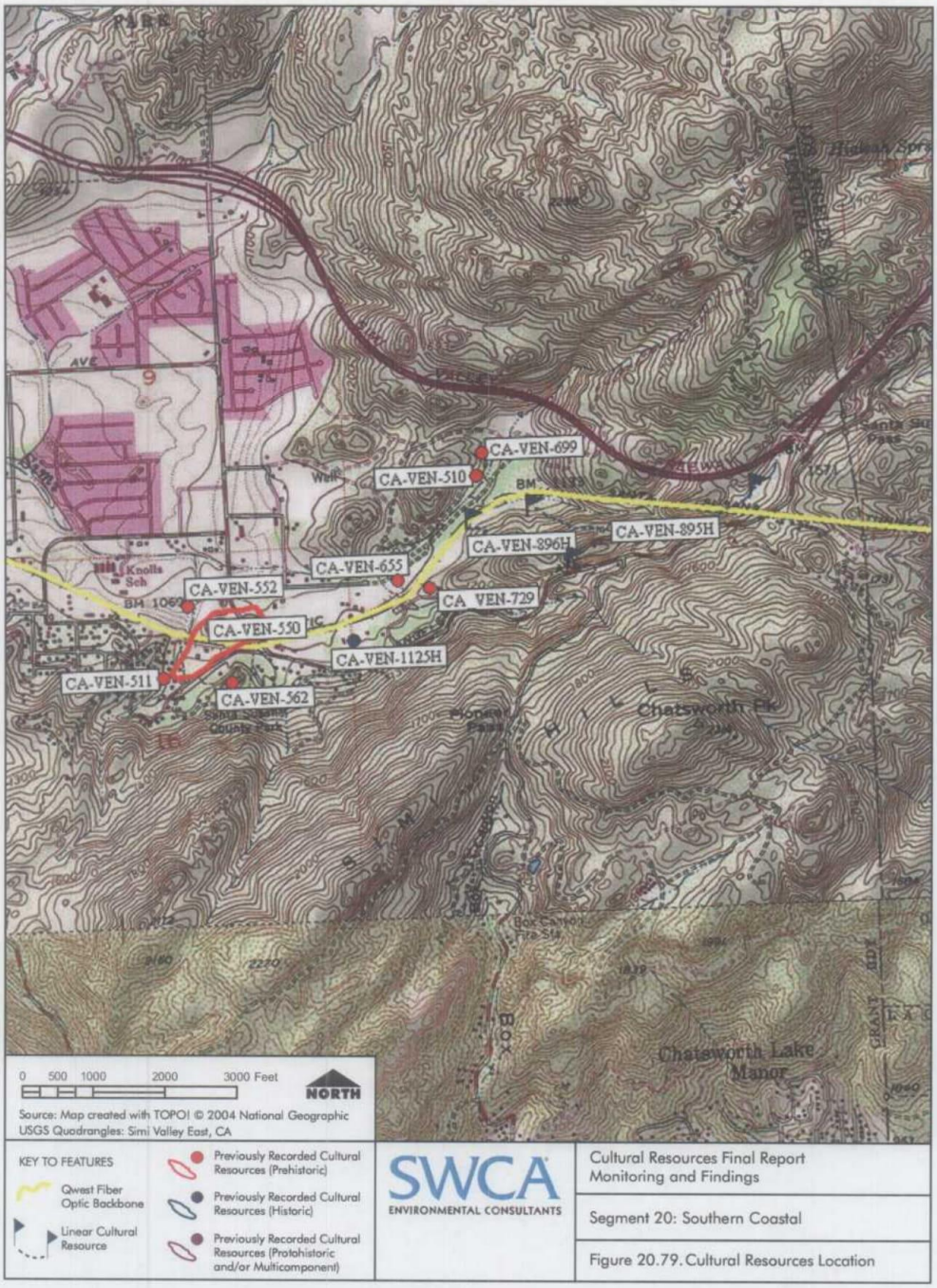
VN 2504
LA 8255
OR 3373



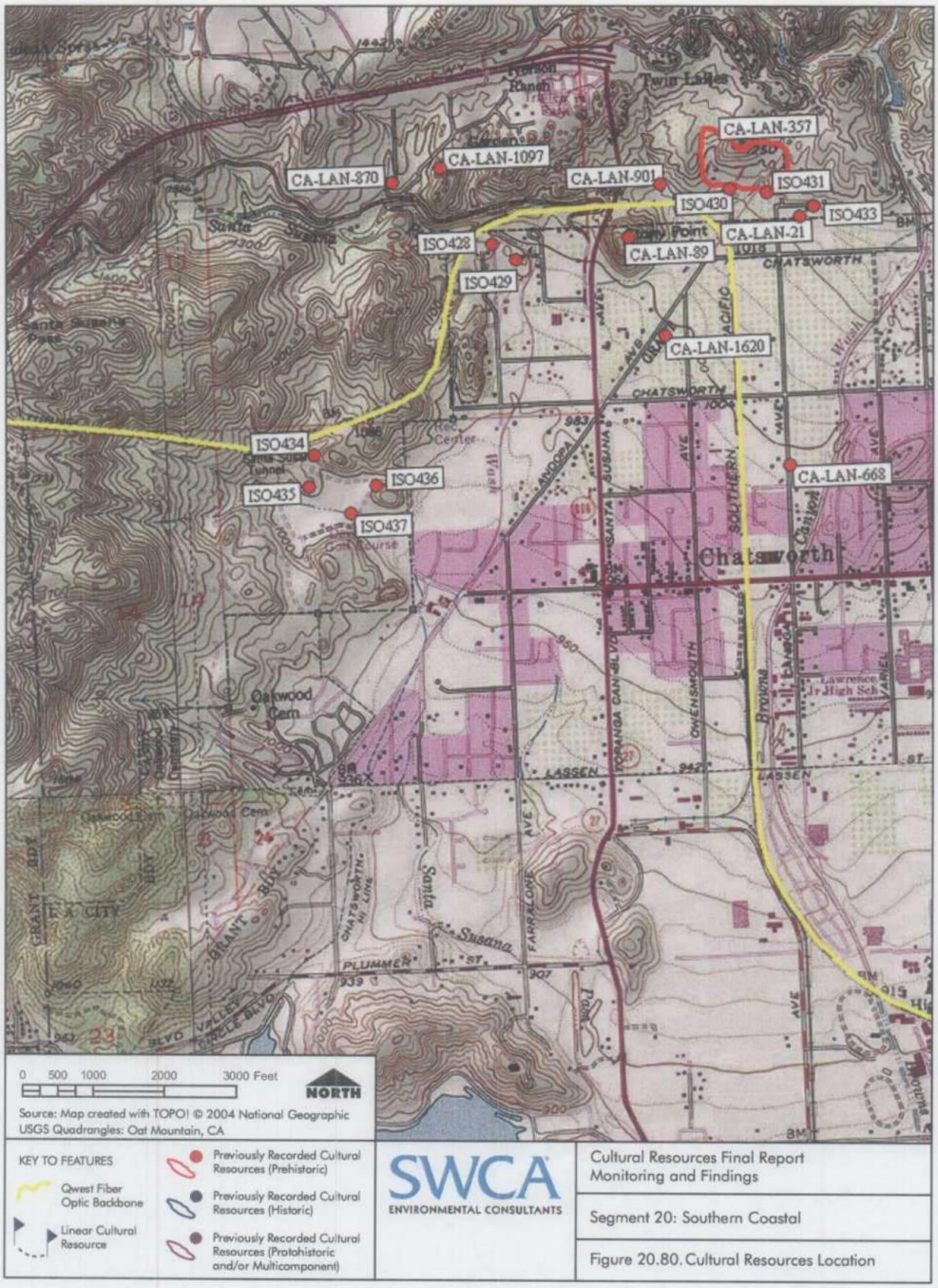
VN 2504
LA 8255
OR 3373



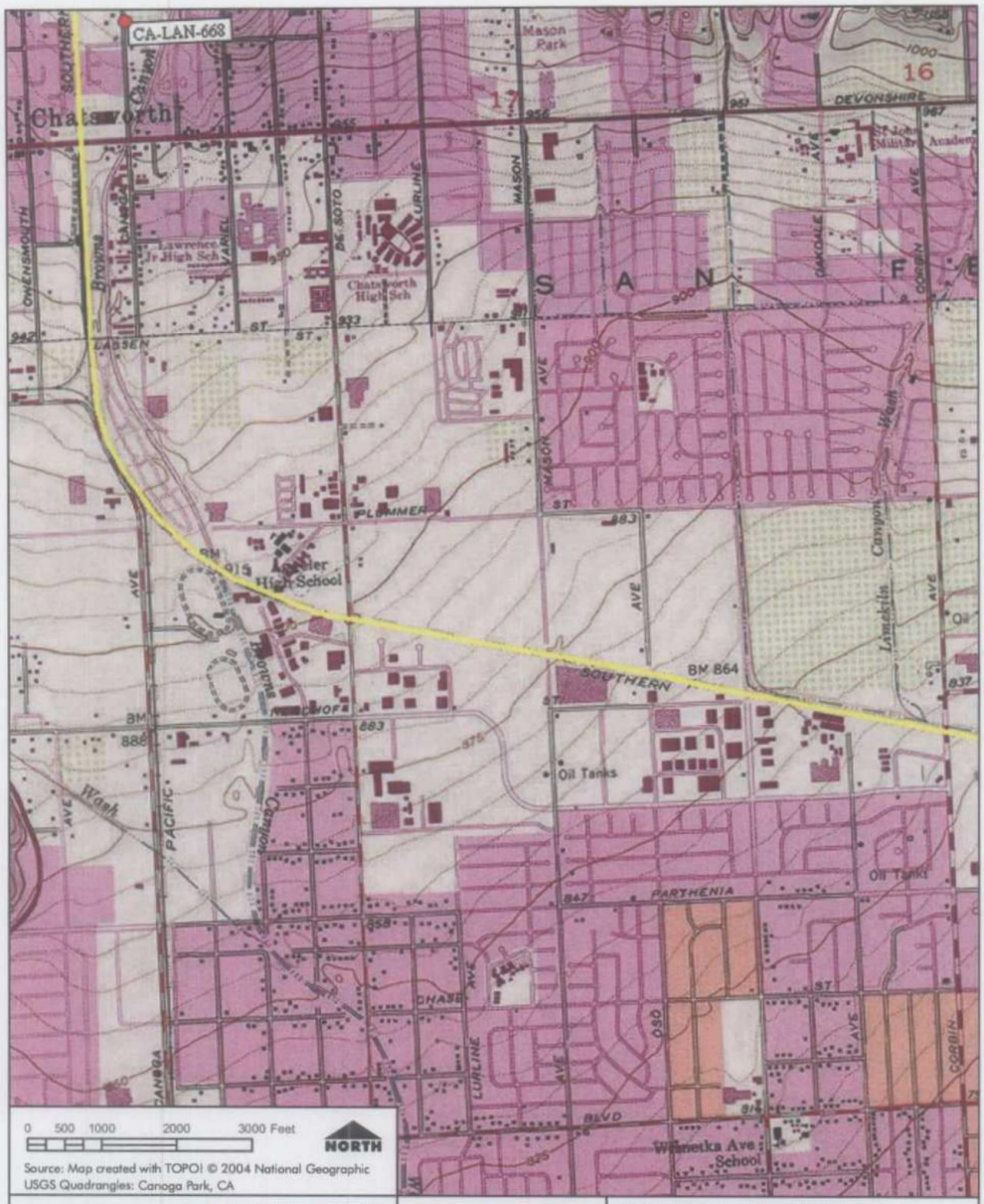
VN 2504
LA 8255
OR 3373



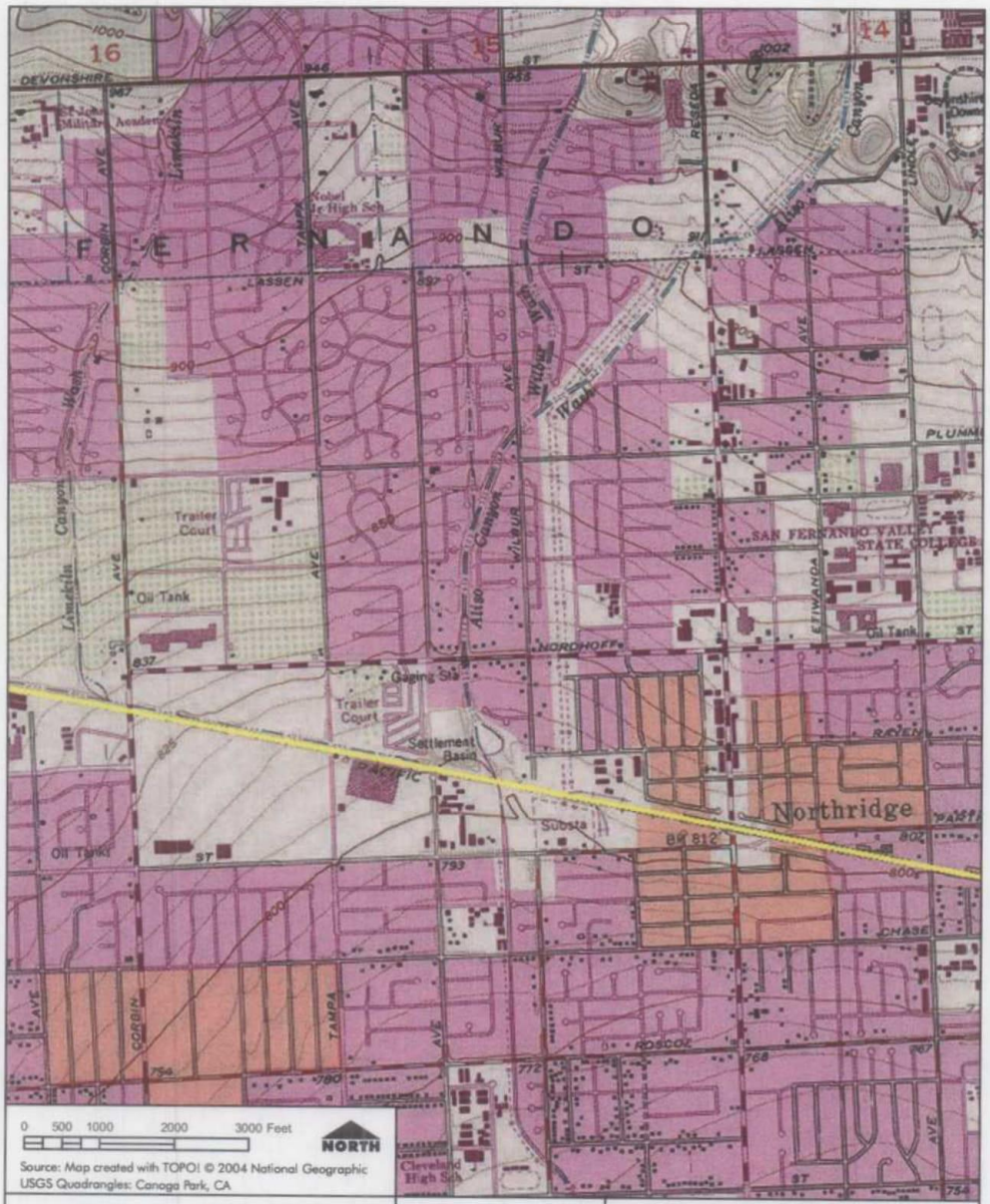
VN 2504
LA 8255
OR 3373



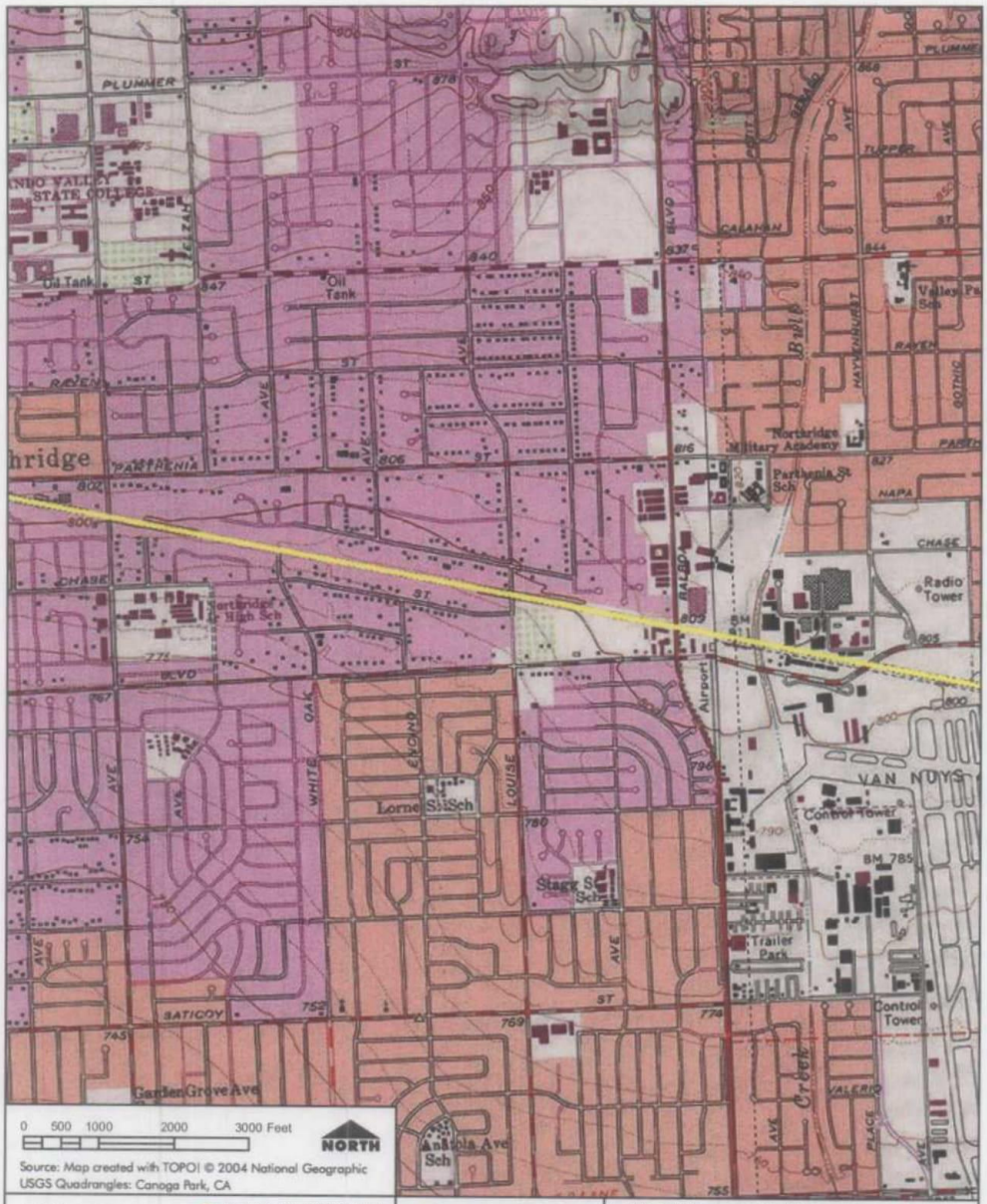
VN 2504
LA 8255
OR 3373



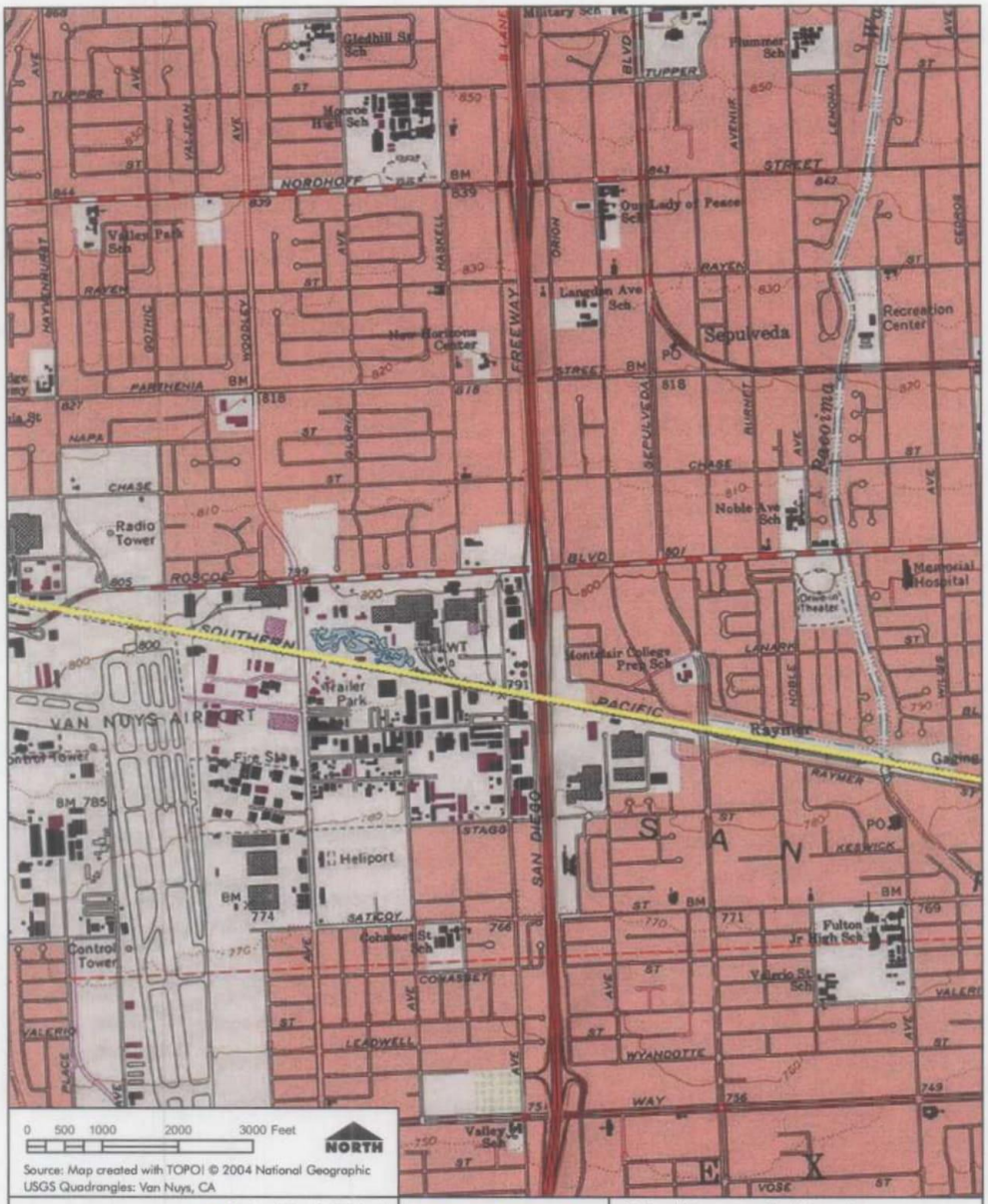
VN 2504
LA 8255
OR 3373



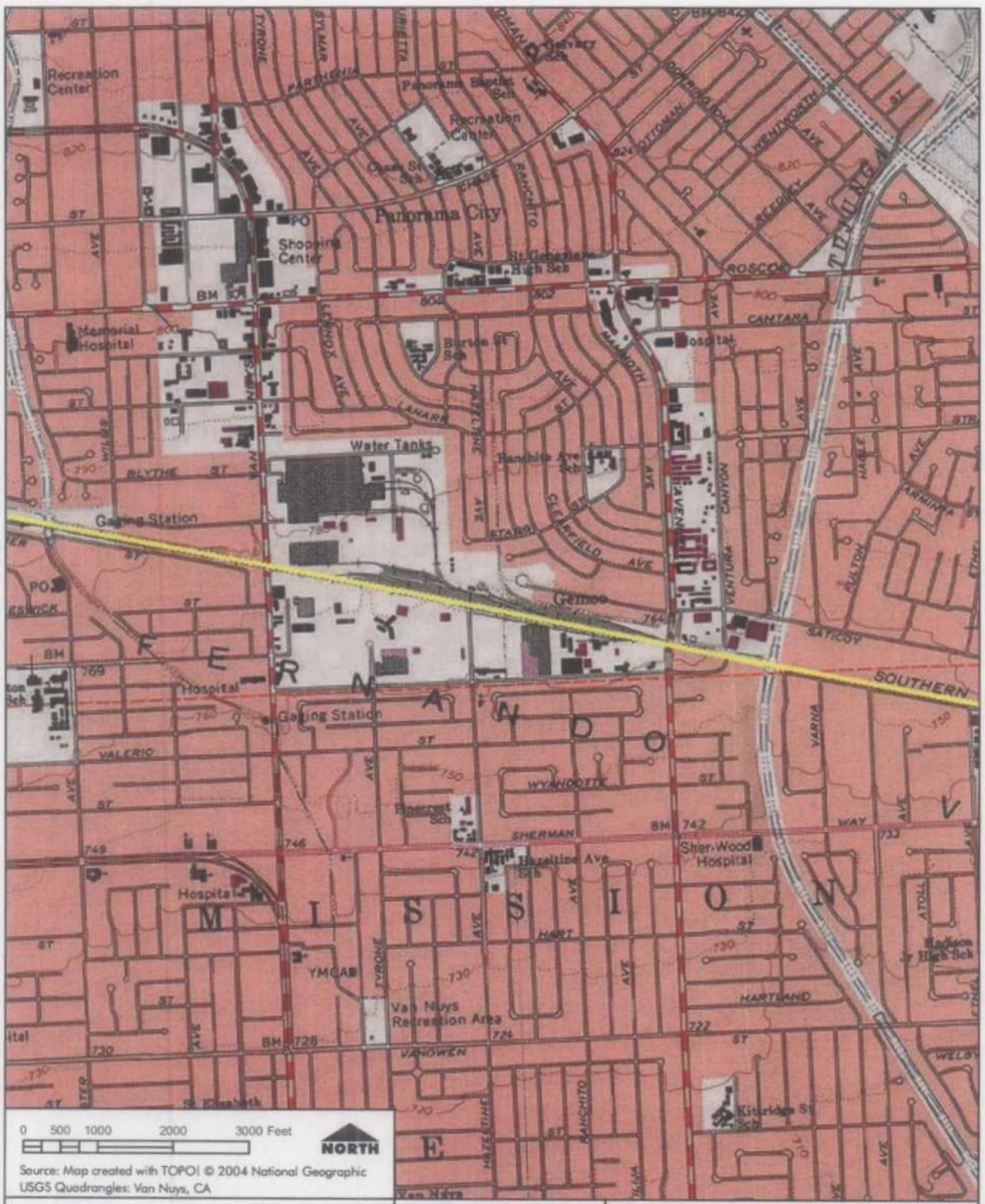
VN 2504
LA 8255
OR 3373



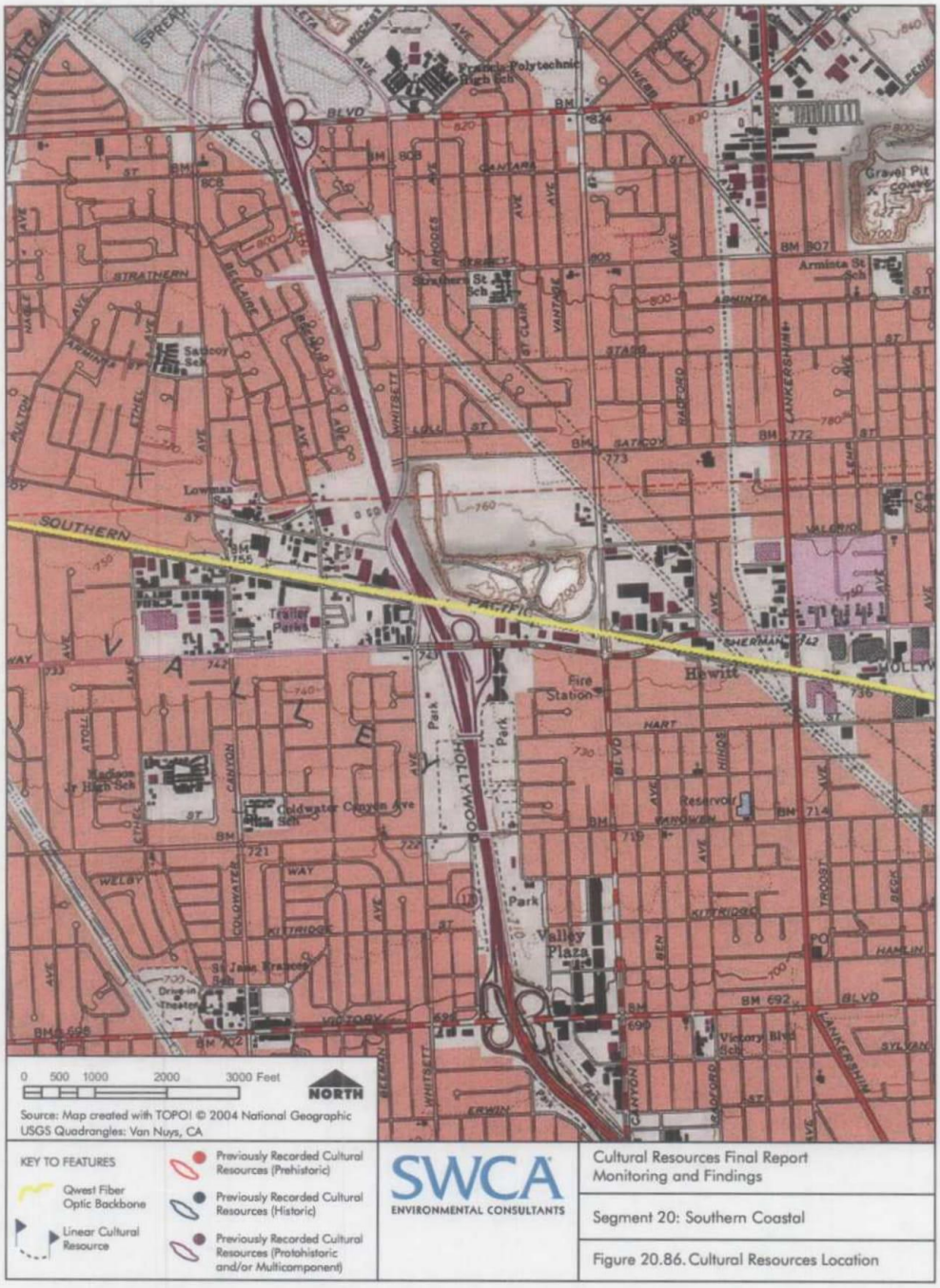
VN 2504
LA 8255
OR 3373



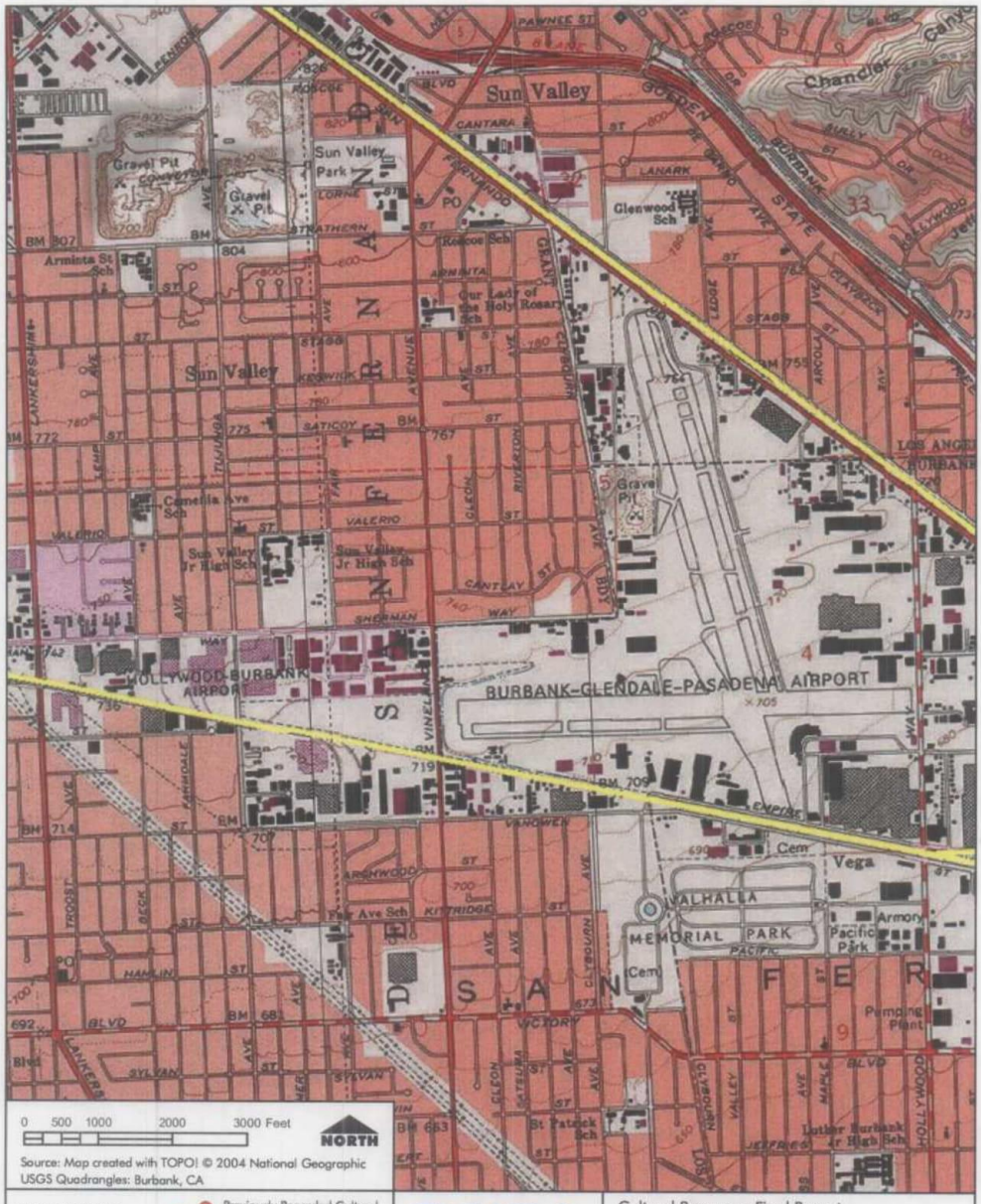
VN 2504
LA 8255
OR 3373



VN 2504
LA 8255
OR 3373



VN 2504
LA 8255
OR 3373



VN 2504
LA 8255
OR 3373

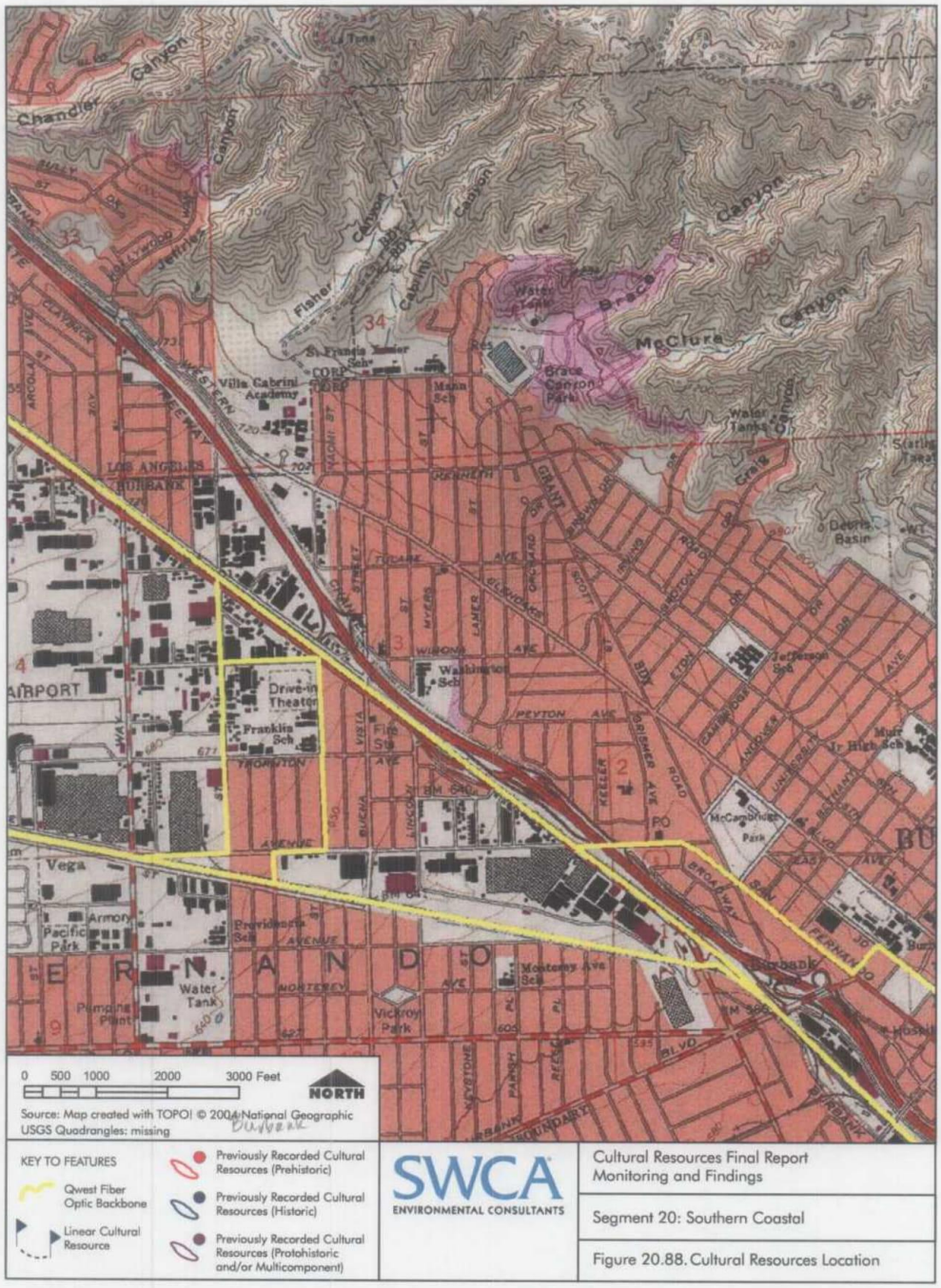


Table 22-8. Segment 20 Condition of Relocated Archaeological Sites
*Resource Name or # (Assigned by recorder) CA-SBA-60 Quad: Goleta *Recorded by: Paul Shen-Brown *Date Recorded 12-29-00 ☐ Continuation ☒ Update The site has been destroyed by a golf course. Area of the site bordered by railroad is bermed, so the fiber-optic line could not impact the site.
*Resource Name or # (Assigned by recorder) CA-VEN-240 Quad: Pitas Point *Recorded by: Paul Shen-Brown *Date Recorded 9-19-00 ☐ Continuation ☒ Update The site is disturbed by the railroad, a pipeline, Highway 101, and roads. The fiber-optic line runs through the berm of the railroad, which contains previously displaced cultural materials. Areas of site on private land may contain intact deposits. Given the condition of the southern end of the site, the fiber-optic line could not impact previously undisturbed deposits.

22.4.2 Monitoring

22.4.2.1 Methods

In accordance with Protocol 5, a Mitigation and Monitoring Plan (MMP) was prepared in April 2000. The MMP noted that in this project corridor, Qwest would be performing maintenance on an existing line only. No new trenching was foreseen at this location. The proposed maintenance activity consisted of the re-excavation of pre-existing assist holes to perform maintenance or upgrades on the fiber-optic line. These excavations might take place at four points per linear mile. The MMP concluded that it was possible that some previously undisturbed soil might be disturbed during re-excavation.

Within a 1/4-mile of the proposed project corridor, 632 archaeological resources have been previously recorded. Of these resources, 48 are within San Luis Obispo County, 517 are within Santa Barbara County, and 67 are within Ventura County. Of these resources, 72 sites contain Native American burials and an additional 37 have a moderate to high probability of containing burials. In Ventura County, within the project corridor, two sites are known to contain burials and three sites have the potential to contain burials. The presence of human remains along this Southern Coastal segment was thus considered likely. Although much of the area has been surveyed, it is also possible that previously unknown cultural resources might be discovered during maintenance activities.

In view of the above information, the MMP made the following recommendations for monitoring within this study area:

- An archaeological monitor would be present when any maintenance is performed along this project corridor.
- A Native American observer would be present when any maintenance is performed along this project corridor.

The MMP for the Santa Barbara County portion of this Southern Coastal segment made one additional recommendation for monitoring within that county:

- Areas adjacent to known sites will be clearly marked as environmentally sensitive. These areas will be avoided if possible. If construction activity in these areas is unavoidable, the project Cultural Resource Specialist will determine whether monitoring constitutes sufficient mitigation or whether site testing is necessary.

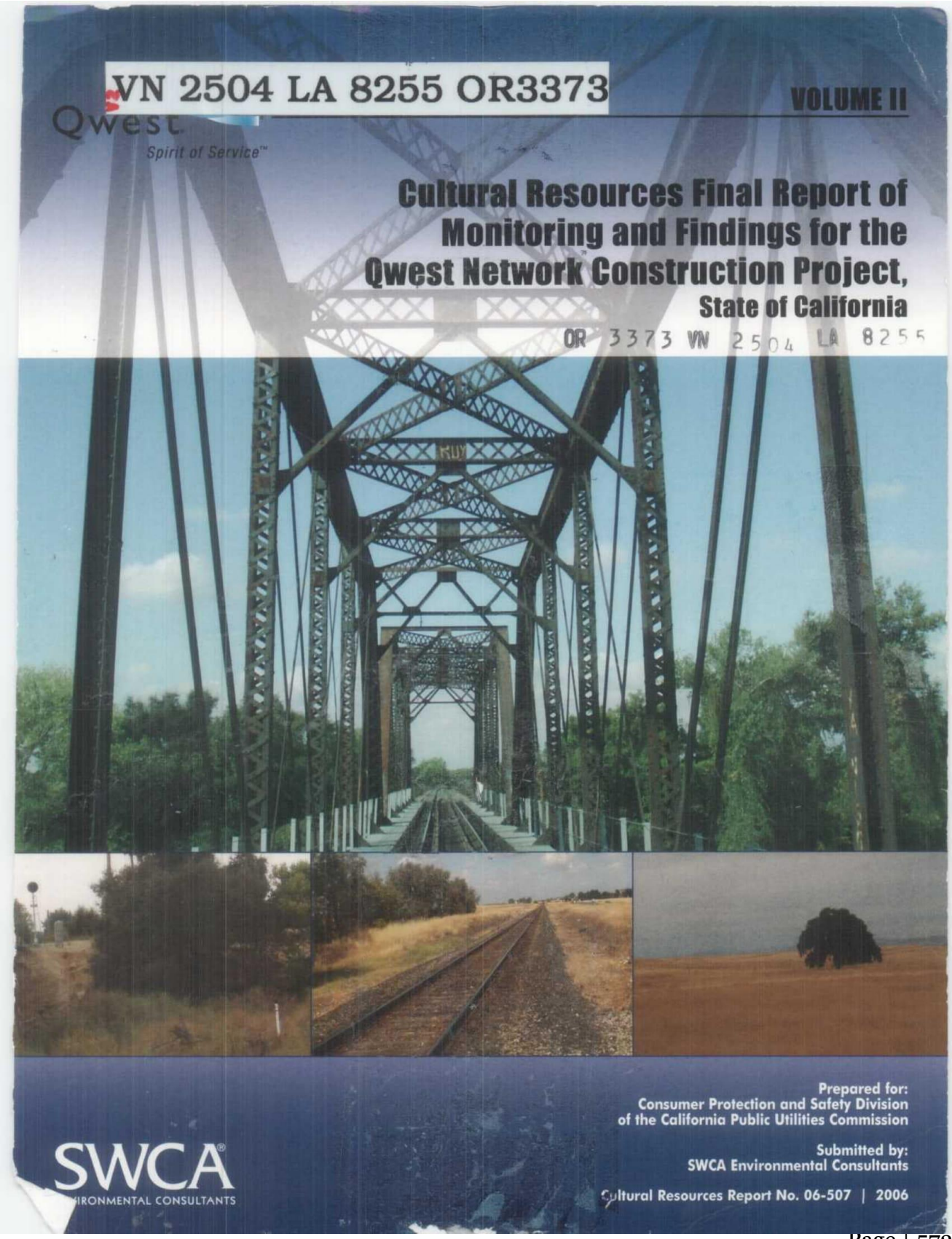
22.4.2.2 Findings

An archaeological monitor was present for all maintenance activities performed by Qwest, including excavation of new assist holes, reopening of handholes/manholes, and fiber pulling, splicing, or replacement for the Southern Coastal segment. On 157 separate occasions cultural monitoring occurred between April 4, 2000 and June 20, 2001.

As a result of monitoring, archaeological monitors noted the cultural items listed in Table 22-9. All were located at or below the current surface in a previously disturbed context, which occurred prior to Qwest backbone activities. Since the items listed in the table were not in primary context, with unknown provenience and compromised integrity, they were not formally recorded and are provided here only for information regarding the monitoring program.

An example of the daily monitoring log for the Southern Coastal segment is included as part of this chapter (Exhibit 22-1 and Exhibit 22-2).

During the monitoring program for Segment 20, only one site (CA-SBA-1990) was found to have been encountered by Qwest during maintenance activity. This prehistoric site is recorded on the USGS 7.5-Minute Gaviota Quadrangle. On January 9, 2001, the archaeological monitor immediately halted the backhoe, examined the spoils, and assessed the impact to the site. Impacts to the resource were determined to be non-substantial. The disturbances initiated by Qwest were located in the southern portion of the site within an area that had already suffered substantial disruption from prior railroad and highway construction. Common knapping debris, consisting of three pieces of debitage, was encountered during Qwest maintenance activities in the site area. No diagnostic materials were observed, and all artifacts were reburied. The daily monitoring log documenting this event is included as part of this chapter as Exhibit 22-3 through Exhibit 22-5.


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VOLUME II
Qwest
Spirit of Service™
Cultural Resources Final Report of Monitoring and Findings for the Qwest Network Construction Project, State of California
OR 3373 VN 2504 LA 8255
Prepared for:
Consumer Protection and Safety Division
of the California Public Utilities Commission
Submitted by:
SWCA Environmental Consultants
SWCA
ENVIRONMENTAL CONSULTANTS
Cultural Resources Report No. 06-507 | 2006

VN 2504
LA 8255
OR 3373

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February 6, 2007

South Central Coastal Information Center
University of California, Fullerton
Department of Anthropology
800 North State College Boulevard
Post Office Box 6846
Fullerton, CA 92834-6846

Re: Final Report of Monitoring and Findings for the Qwest Network Construction Project

Enclosed are the specific chapters listed in Table 1 from our final report on the project referenced above. The project covers the cultural resources investigation for the maintenance (replacement and repair) of fiber optic cable within the Qwest network backbone throughout the state of California. The backbone includes approximately 1,431 linear miles of existing belowground fiber optic cable, extending from the Oregon to the Arizona border, and runs along major railroad and highway corridors. For purposes of the investigation, the California network backbone was divided into 36 segments, each covered by a separate chapter. Each of those chapters was designed as stand-alone reports and includes background information, methods, and findings of the cultural resources program for the segment. In total, the report covers the period from January 2000 to May 2004, encompasses 36 of California's 58 counties, and is being filed with nine of the CHRIS information centers.

Table 1. Chapters Provided to South Central Coastal Information Center

Chapter No.	Chapter Title	Segment No.	California Counties
1	Introduction		
2	Statewide Natural and Cultural Setting		
22	Southern Coastal Segment	20	Los Angeles, San Luis Obispo, Santa Barbara, and Ventura
27	Lebec – San Fernando Segment	25	Kern and Los Angeles
28	Firestone Park – Long Beach Segment	26	Los Angeles
29	Los Angeles – Anaheim Segment	27	Los Angeles and Orange
30	Slauson Ring Segment	28	Los Angeles
31	Burbank – Los Angeles Segment	29	Los Angeles
32	Anaheim – San Clemente Segment	30	Orange
39	Summary and Recommendations		
40	Acronyms		
41	References Cited		

Page 1 of 2

SWCA
ENVIRONMENTAL CONSULTANTS

To consolidate the information provided by the various CHRIS searches and provide an easily accessible record of the data, each of 2,790 previously recorded cultural resources was plotted on USGS 7.5-Minute quadrangles. The series of maps for this extensive linear project are provided as figures at the end of each segment chapter, and identify each known resource as one of four types: linear, prehistoric, historic, or protohistoric and/or multi-component. Note that the maps are keyed to the segment number, rather than the chapter number.

Survey crews relocated a total of 79 previously recorded archaeological sites along segments 20, 25, and 29 (see Table 1) within the project area-of-potential effect (APE; a swath of land straddling the fiber optic line and extending 15 meters to either side). A table within the survey findings section for Chapters 22, 27, and 31 summarizes the condition of each relocated site. None of the relocated resources was impacted by Qwest.

No previously unknown cultural resource sites, artifacts, or objects were identified during the pedestrian survey along the entire Qwest California network backbone, or monitoring of maintenance activities within 13 of the 36 segments, including segments 20 and 27. Monitoring did not occur on the remaining 23 segments, including segments 25–26 and 28–30 because no maintenance activities were scheduled along those rights-of-way (ROWs).

Enclosed is a form letter, acknowledging receipt of the enclosed final report. Please date, sign, and return in the enclosed stamped, self-addressed envelope.

Thank you for returning the enclosure. Please let me know if you have any questions or concerns regarding the enclosed documents.

Sincerely,

Nancy E. Sikes, Ph.D., RPA
Principal Investigator – Cultural Resources
nsikes@swca.com

Enclosure: Acknowledgment form and stamped, self-addressed envelope

VN 2504
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27. LEBEC TO SAN FERNANDO SEGMENT

Qwest Communications International Inc. (Qwest) retained SWCA Environmental Consultants (SWCA) to complete the Cultural Resources Final Report of Monitoring and Findings for the Qwest Network Construction Project. The report covers the cultural resources investigation for the maintenance (replacement and repair) of fiber-optic cable within the Qwest network "backbone" throughout the state of California. The existing California backbone includes approximately 1,431 linear miles of fiber-optic network. The investigation included surveys, focused visits to previously recorded archaeological sites, and monitoring of routine maintenance of existing lines along the network backbone.

The California Public Utilities Commission (CPUC) is the designated Lead Agency for this project under the California Environmental Quality Act (CEQA). The Qwest project is subject to specific Cultural Resources Protocols, numbered 1 through 11, prepared to ensure Qwest's compliance under CPUC regulatory authority. The CPUC and the Native American Heritage Commission (NAHC) approved the Qwest Fiber Optic Project Cultural Resources Protocols in February 2000. Qwest is proud of its record of responsible environmental and cultural resources stewardship and was an enthusiastic participant in the development of the Cultural Resources Protocols for this statewide project. In addition, to the greatest extent possible, Qwest followed the preferred approach: namely, to avoid ground disturbance activities within Environmentally Sensitive Areas (ESAs) and cultural resources during all maintenance activities.

The Protocols set forth a program for the identification and protection of known cultural resources within project rights-of-way (ROWs) and for the identification, assessment, and treatment of cultural resources that might be encountered during project activities. Protocols 1 through 6 generally were applied during project planning; Protocols 7 through 11 were applied immediately prior to, during, or at the conclusion of the routine maintenance program. The document containing the Protocols is provided as Appendix A.

In compliance with the General Conditions section of the Cultural Resources Protocols, qualified lead archaeological monitors and a staff of archaeological monitors monitored for cultural resources for this project. The monitors, as well as Native American observers, worked under the supervision of a qualified Cultural Resource Specialist (CRS). The CRS also determined when a Native American observer was deemed appropriate, depending on the sensitivity of the project segment. In addition, all Qwest personnel received training in field identification of potential cultural resources, laws regarding the protection of cultural resources, and what actions to take immediately in the event of the unanticipated discovery of cultural resources or human remains.

For purposes of the investigation, the California network backbone was divided into 36 segments. This document reports on the background information, methods, and findings of the cultural resources program for the Lebec to San Fernando segment (Segment #25 out of 36) of the California Qwest network backbone, as shown on the segment location map (Figure 25) . Cultural resources include archaeological and historical objects, sites, and districts; historic buildings and structures; cultural landscapes; and sites and resources of concern to local Native American and other ethnic groups. Cultural resources may be found on the ground surface or buried beneath the surface.

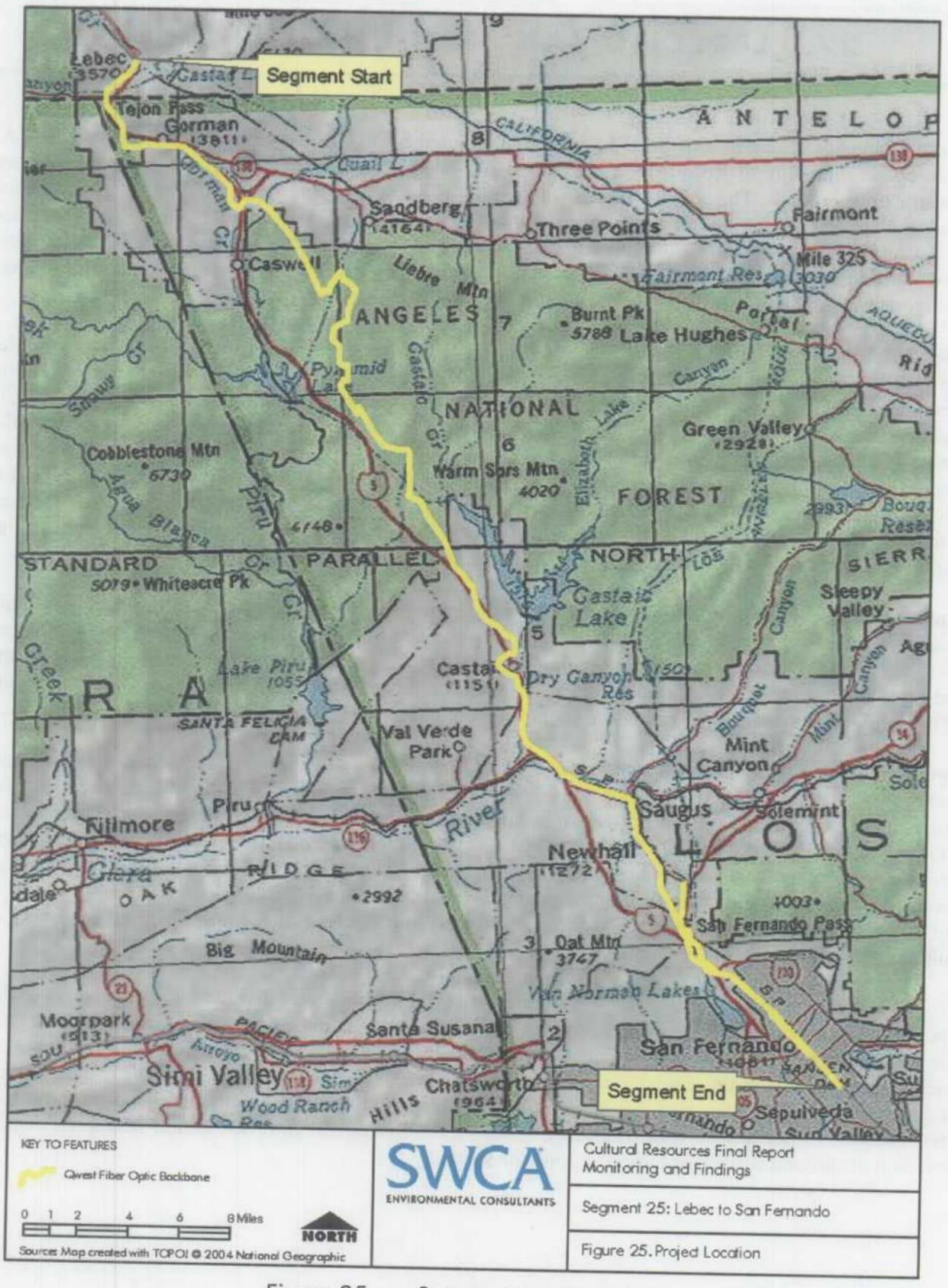


Figure 25. Segment Location Map

The Cultural Resources Final Report of Monitoring and Findings for the Qwest Network Construction Project, of which this document is a part, satisfies the requirements of Protocol 11: Final Report of Monitoring and Findings. The format of the Final Report and this chapter of that report follow *Archaeological Resource Management Reports (ARMR): Recommended Contents and Format* (Office of Historic Preservation 1990).

27.1 SEGMENT DESCRIPTION

The Lebec to San Fernando segment is along the Old Ridge Route, Highway 5, Lebec Road, and the Southern Pacific Railroad ROW through or near the cities of Lebec, Newhall, Castaic, San Fernando, and Burbank in Kern and Los Angeles Counties, California. The segment starts at Lebec and ends in Burbank. The network backbone in this area consists of a buried fiber-optic cable conduit, which can be accessed at four points per mile for maintenance and upgrading. Construction activity consists of the re-excavation of pre-existing handholes and assist holes to perform maintenance or upgrades on the fiber-optic line.

To access existing handholes, which are concrete or fiberglass vaults set below grade, the 18-inch cover of previously deposited soil immediately over the handhole cover is removed with a small mechanical excavator such as a backhoe or by hand. Assist hole openings are excavated to the depth of the conduit, up to 4 feet, and may range from 5 to 10 feet long and 2 feet wide. Then a backhoe-mounted puller adjacent to the alignment is used to assist the progress of the new fiber through the conduit. After the pulling operation is complete, the conduit is resealed and the assist hole backfilled with the excavation spoils. Soil disturbance for assist holes consists primarily of re-excavation of previously deposited trench spoils. Some possible intrusion into adjacent trench sidewalls also may occur.

The Lebec to San Fernando segment is along the specified roadways and railroad ROW on the U.S. Geological Survey (USGS) 7.5-Minute Quadrangles listed in Table 27-1.

Table 27-1. Segment 25 USGS 7.5-Minute Quadrangles

Black Mountain	Newhall	Warm Spring Mountain
Lebec	Oat Mountain	Whitaker Peak
Liebre Mountain	San Fernando	

27.2 SETTING

27.2.1 Natural

The Lebec to San Fernando segment crosses the San Emigdio Mountains through the Angeles National Forest into the San Fernando Valley, from Kern County into Los Angeles County. It is located in the Transverse Range geomorphic province (Chapter 2, Figure 2-2). Several drainages and lakes occur in the vicinity of the segment, including Pyramid Lake and Castaic Lake. Elevations along the segment range between approximately 320–1,090 meters (1,060–3,570 feet) above msl.

The climate near the segment is characterized by warm, dry summers and mild, wet winters. The segment falls within a climate region with very little precipitation. At higher elevations, the climate is cooler with

increased precipitation. Current winter temperatures have highs around 20 degrees Celsius (68 degrees Fahrenheit), and current summer temperatures have highs around 32 degrees Celsius (90 degrees Fahrenheit). When California initially was occupied, the climate was moister and cooler than today's Mediterranean climate (Major 1988).

Current uses along the segment include developed areas, a national forest, and open water. Historically, the vicinity of the segment was characterized by vegetation communities that included riparian scrub/forest along drainages, grasslands at lower elevations, and scrubland, chaparral, and woodlands in the foothills (Chapter 2, Figure 2-1). With this mosaic of ecological communities, the area would have provided a productive environment for its prehistoric occupants, one suited to a hunting–gathering economy with a variety of water birds, small and large mammals, fish, reptiles, amphibians, and edible plant species. Following are descriptions of vegetation communities within the area of the segment and the natural resources within each community that likely would have been harvested by the area's prehistoric occupants.

27.2.1.1 Vegetation Communities

The following descriptions of vegetation communities are based upon data presented by Holland (1986), Holland and Keil (1995), and Sawyer and Keeler-Wolf (1995).

Open Water

Pyramid and Castaic Lakes were previously free-flowing rivers before they were dammed and incorporated into the California State Water Project. The rivers provided a reliable source of water, as well as an abundance of fish, wildlife, and plant species. Riparian habitat along the open water provided necessary resources for populations during prehistory.

Riparian Scrub/Forest

Riparian scrub is a mid-successional stage community that typically matures into riparian forest; species composition between these habitat types, therefore, is very similar. Riparian forest can revert to riparian scrub through disturbances or frequent flooding events (Faber and Keller 1985). This community exists along streams and around seeps and springs and likely was located along local streams during the area's prehistory. Many plants within this community (Table 27-2), as well as animals (Table 27-3) attracted to the water and vegetation, provided abundant subsistence resources for prehistoric and historic peoples.

Valley and Foothill Grassland

The grassland community throughout California has been converted primarily into agricultural and urban uses. Historically, the community contained a variety of resources useful to Native Americans. Seeds of many annual grasses would have been the primary resource of interest to prehistoric peoples, but blossoms, greens, and bulbs were also available, primarily during the spring. Valley and foothill grasslands occur in a variety of forms ranging from scattered perennial bunch grasses (typically *Nassella pulchra* or *N. lepida*) to stands dominated by native perennial grasses in an assemblage of geophytes (plants with underground bulbs or corms) and herbaceous annual species. Valley and foothill grasslands also support an abundance of native geophytes, herbaceous plants, and sub-shrubs (Table 27-2). Wildlife species typical of grasslands are detailed in Table 27-3. Grassland vegetation may occur in other vegetation communities, particularly open canopies within chaparral or foothill woodlands.

Scrubland

Scrublands occur along slopes and intermixed with the woodland community. This community is dominated by evergreen shrubs with a well-developed herbaceous understory. Typical species within the community include California sagebrush (*Artemisia californica*), purple sage (*Salvia leucophylla*), bladderpod (*Isomeris arborea*), Mormon-tea (*Ephedra* spp.), and coffeeberry. Characteristic plant and animal species of scrublands are detailed in Table 27-2 and Table 27-3, respectively.

Chaparral

Chaparral community occurs in the foothills near the segment. The chaparral community contains a mix of shrubs, such as manzanita (*Arctostaphylus* spp.), chamise (*Adenostoma fasciculatum*), buck brush (*Ceanothus cuneatus*), mountain lilacs (*Ceanothus* spp.), and coffeeberry (*Rhamnus* spp.). Understory vegetation is sparse and limited to shade-tolerant herbs and ferns. Numerous shrub species occur in chaparral habitat, providing an abundance of seeds, berries, bulbs, shoots, and roots (Table 27-2). A diversity of animal species occurs within the chaparral community (Table 27-3).

Woodlands

Woodlands are common in the foothills of nearby mountains and contain many resources that prehistoric inhabitants likely used. Several types of woodlands are known within the vicinity of the segment, including pinyon-juniper woodlands, foothill woodlands, and oak woodlands. Pinyon-juniper woodlands are common in the desert mountains of California. Dominant plants include pinyon pine (*Pinus monophylla*), juniper (*Juniperus* spp.), and desert scrub oak (*Quercus john-tuckeri*). Understory vegetation typically consists of shrubs, such as mahogany (*Cercocarpus* spp.), Mormon-tea, manzanitas, and mountain lilacs. Foothill woodlands consist of a variety of tree species, such as foothill pine (*Pinus sabiniana*) and various oaks (*Quercus* spp.), with a ground cover of valley grassland species and woodland herbs. The oak woodlands contain several different oak trees, including valley oak (*Quercus lobata*), interior live oak (*Q. wislizenii*), and black oak (*Q. kelloggii*). Characteristic plant and animal species of woodland vegetation communities are detailed in Table 27-2 and Table 27-3, respectively.

Table 27-2. Segment 25 Plant Resources

Species	Scientific Name
Riparian Scrub/Forest Community	
Overstory Species	
Maples	*Acer* spp.
Alders	*Alnus* spp.
Fremont cottonwood	*Populus fremontii*
Mid-story Species	
Dogwoods	*Cornus* spp.
Arroyo willow	*Salix lasiolepis*
Willows	*Salix* spp.
Elderberries	*Sambucus* spp.

Table 27-2. Segment 25 Plant Resources

Species	Scientific Name
Understory Species	
Mugwort	*Artemisia douglasiana*
Monkeyflowers	*Mimulus* spp.
California rose	*Rosa californica*
Blackberries	*Rubus* spp.
Snowberries	*Symphoricarpos* spp.
Valley and Foothill Grassland Community	
Grasses	
Junegrass	*Koeleria macrantha*
Melic grasses	*Melica* spp.
Muhlies	*Muhlenbergia* spp.
Small-flowered needlegrass	*Nassella lepida*
Purple needlegrass	*Nassella pulchra*
Fescues	*Vulpia* spp.
Geophytes	
Onions	*Allium* spp.
Brodiaeas	*Brodiaea* spp.
Blue dicks	*Dichelostemma capitatum*
Blue-eyed grass	*Sisyrinchium bellum*
Herbaceous Plants	
Yellow fiddleneck	*Amsinckia menziesii*
Red maids	*Calandrinia ciliata*
Pussy paws	*Calyptridium* spp.
Suncups	*Camissonia* spp.
Owl's-clovers	*Castilleja* spp.
Blue-eyed Marys	*Collinsia* spp.
Cryptanthas	*Cryptantha* spp.
Delphiniums	*Delphinium* spp.
California poppy	*Eschscholzia californica*
Gilias	*Gilia* spp.
Everlastings	*Gnaphalium* spp.
Tarweeds	*Hemizonia* spp.
White tidy-tips	*Layia glandulosa*
Linanthus	*Linanthus* spp.
Lomatiums	*Lomatium* spp.
Lotus	*Lotus* spp.
Lupines	*Lupinus* spp.

Table 27-2. Segment 25 Plant Resources	
Species	Scientific Name
Microseris	*Microseris* spp.
Phacelias	*Phacelia* spp.
Popcorn flowers	*Plagiobothrys* spp.
California threadstem	*Pterostegia drymarioides*
Sanicles	*Sanicula* spp.
Checker mallow	*Sidalcea malvaeflora*
Clovers	*Trifolium* spp.
Sub-shrubs	
Milk vetches	*Astragalus* spp.
Buckwheats	*Eriogonum* spp.
Scrubland Community	
Shrubs and Herbaceous Plants	
California sage	*Artemisa californica*
Sage	*Artemisia* spp.
Big sagebrush	*Artemisia tridentata*
Saltbushes	*Atriplex* spp.
Desert mahogany	*Cercocarpus ledifolius*
Yellow rabbitbrush	*Chrysothamnus viscidiflorus*
Encelia	*Encelia* spp.
Mormon-tea	*Ephedra* spp.
Rubber rabbitbrush	*Ericameria nauseosa*
Yerba santa	*Eriodictyon* spp.
Buckwheat	*Eriogonum* spp.
Bladderpod	*Isomeris arborea*
Lupine	*Lupinus* spp.
Bracken fern	*Pteridium aquilinum*
Bitterbrush	*Purshia tridentata*
Coffeeberry	*Rhamnus* spp.
Purple sage	*Salvia leucophylla*
Black sage	*Salvia mellifera*
Spineless horsebrush	*Tetradymia canescens*
Grasses	
Ricegrass	*Achnatherum hymenoides*
Squirreltail	*Elymus elymoides*
Wild ryes	*Elymus* spp.
Bluegrasses	*Poa* spp.

Table 27-2. Segment 25 Plant Resources

Species	Scientific Name
Chaparral Community	
Shrubs	
Chamise	*Adenostoma fasciculatum*
Manzanitas	*Arctostaphylos* spp.
Hoary-leaved ceanothus	*Ceanothus crassifolius*
Buck brush	*Ceanothus cuneatus*
Mountain lilacs	*Ceanothus* spp.
Fremont silk-tassel	*Garrya fremontii*
Coffeeberry, redberry	*Rhamnus* spp.
Gooseberries, currants	*Ribes* spp.
Vines	
Dodders	*Cuscuta* spp.
Bedstraws	*Galium* spp.
Chaparral-peas	*Lathyrus* spp.
Woodland Community	
Overstory	
Juniper	*Juniperus* spp.
Jeffrey pine	*Pinus jeffreyi*
Pinyon pine	*Pinus monophylla*
Foothill pine	*Pinus sabiniana*
Canyon live oak	*Quercus chrysolepis*
Desert scrub oak	*Quercus john-tuckeri*
Black oak	*Quercus kelloggii*
Valley oak	*Quercus lobata*
Interior live oak	*Quercus wislizenii*
Mid-story	
Manzanitas	*Arctostaphylos* spp.
Buckbrush	*Ceanothus cuneatus*
Mountain lilacs	*Ceanothus* spp.
Mountain mahogany	*Cercocarpus* spp.
Mormon-tea	*Ephedra* spp.
Currants	*Ribes* spp.
California blackberry	*Rubus ursinus*
Snowberries	*Symphoricarpos* spp.
Understory Species	
Yellow fiddleneck	*Amsinckia menziesii*
Indian lettuce	*Claytonia perfoliata*

Table 27-2. Segment 25 Plant Resources	
Species	Scientific Name
Poppies	*Eschscholzia* spp.
Annual goldfields	*Lasthenia* spp.
Lupines	*Lupinus* spp.
Purple needlegrass	*Nassella pulchra*
Bracken fern	*Pteridium aquilinum*
Clovers	*Trifolium* spp.

27.2.1.2 Typical Animal Resources

Wildlife species common to the vegetation communities in the vicinity of the Lebec to San Fernando segment are detailed in Table 27-3.

Table 27-3. Segment 25 Common Animal Resources		
Species	Scientific Name	Communities
Amphibians		
Western toad	*Bufo boreas*	Riparian scrub/forest, Foothill woodland, Marshland
Reptiles		
California kingsnake	*Lampropeltis getula californiae*	Grasslands, Riparian scrub/forest, Scrublands, Chaparral, Foothill woodlands, Coniferous forests
Pacific gopher snake	*Pituophis catenifer catenifer*	Grasslands, Riparian scrub/forest, Scrublands, Chaparral
Western rattlesnake	*Crotalus viridis*	Scrublands, Grasslands, Foothill woodlands
Western fence lizard	*Sceloporus occidentalis*	Scrublands, Chaparral, Foothill woodlands, Coniferous forests
Western banded gecko	*Coleonyx variegatus*	Desert scrublands and foothills
Pacific pond turtle	*Emys marmorata*	Marshlands
Upland Birds		
Mountain quail	*Oreortyx pictus*	Scrublands, Chaparral, Foothill woodlands, Coniferous forests
California quail	*Callipepla californica*	Grasslands, Scrublands, Chaparral, Foothill woodlands

Table 27-3. Segment 25 Common Animal Resources

Species	Scientific Name	Communities
Hawks	*Buteo spp.*	Grasslands, Chaparral, Foothill woodlands
Band tailed pigeon	*Patagioenas fasciata*	Coniferous forest
Western scrub jay	*Aphelocoma californica*	Chaparral, Foothill woodlands
Mockingbird	*Mimus polyglottos*	Scrublands, Chaparral, Foothill woodlands
Western meadowlark	*Sturnella neglecta*	Grasslands
Mammals		
Desert cottontail	*Sylvilagus audubonii*	Grasslands, Scrublands, Chaparral, Foothill woodlands, Coniferous forests
Brush rabbits	*Sylvilagus bachmani*	Scrublands, Chaparral
Black-tailed jackrabbit	*Lepus californicus*	Grasslands, Scrublands
California ground squirrel	*Spermophilus beecheyi*	Grasslands
Western gray squirrel	*Sciurus griseus*	Riparian forest/scrub, Foothill woodlands, Coniferous forests
Pocket gopher	*Thomomys bottae*	Grasslands, Chaparral
Dusky-footed woodrat	*Neotoma fuscipes*	Scrublands, Chaparral, Foothill woodlands
California vole	*Microtus californicus*	Grasslands, Chaparral, Riparian scrub/forest, Foothill woodlands, Coniferous forests
Porcupine	*Erethizon dorsatum*	Chaparral, Riparian scrub/forest, Foothill woodlands, Coniferous forests
Coyote	*Canis latrans*	Grasslands, Scrublands, Chaparral, Riparian scrub/forest, Foothill woodlands, Coniferous forests
Gray fox	*Urocyon cinereoargenteus*	Grasslands, Scrublands, Chaparral, Riparian scrub/forest, Foothill woodlands, Coniferous forests
Raccoon	*Procyon lotor*	Grasslands, Chaparral, Riparian scrub/forest, Foothill woodlands, Coniferous forests
Long-tailed weasel	*Mustela frenata*	Grasslands, Chaparral, Riparian scrub/forest, Foothill woodlands, Coniferous forests
Badger	*Taxidea taxus*	Grasslands, Open woodlands
Striped skunk	*Mephitis mephitis*	Grasslands, Chaparral, Riparian scrub/forest, Foothill woodlands, Coniferous forests

Table 27-3. Segment 25 Common Animal Resources		
Species	Scientific Name	Communities
Mountain lion	*Felis concolor*	Grasslands, Scrublands, Chaparral, Riparian scrub/forest, Foothill woodlands, Coniferous forests
Bobcat	*Lynx rufus*	Grasslands, Scrublands, Chaparral, Riparian scrub/forest, Foothill woodlands, Coniferous forests
Mule deer	*Odocoileus hemionus*	Chaparral, Riparian scrub/forest, Foothill woodlands, Coniferous forests

27.2.2 Cultural

27.2.2.1 Prehistoric Overview

California prehistory is divided into three broad temporal periods that reflect similar cultural characteristics throughout the state: Paleoindian Period (ca. 9000–6000 B.C.), Archaic Period (6000 B.C. – A.D. 500), and Emergent Period (A.D. 500 – Historic Contact) (Fredrickson 1973, 1974, 1994a) (Chapter 2, Figure 2-5). The Archaic is further divided into Lower (6000–3000 B.C.), Middle (3000–1000 B.C.), and Upper (1000 B.C. – A.D. 500) Periods, generally governed by climatic and environmental variables, such as the drying of pluvial lakes at the transition from the Paleoindian to the Lower Archaic.

The Lebec to San Fernando segment lies in what generally is described as the Santa Barbara subregion of the Southern Coast Archaeological Region, which is one of eight arbitrary organizational divisions of the state (Moratto 1984:Fig. 1) (Chapter 2, Figure 2-3). This subregion extends southward along the coast from Morro Bay to Santa Monica Bay, and includes southern San Luis Obispo County, all of Santa Barbara and Ventura Counties, northern Los Angeles County (excluding Antelope Valley in the northwest corner), and a small slice of southwest Kern County.

In southern California, researchers attempting to define local or subregional traditions have created numerous cultural chronologies using various nomenclatures (Moratto 1984). Nonetheless, these chronologies are more notable for their similarities than their differences and a concordance of the best-known chronologies for the region is presented in Chapter 2, Figure 2-5. Building on early studies and focusing on data synthesis, Wallace (1955, 1978) developed a prehistoric chronology for the southern California coastal region that is widely used today. Four stages are presented in Wallace's prehistoric sequence: Horizon I, Early Man; Horizon II, Milling Stone; Horizon III, Intermediate; and Horizon IV, Late Prehistoric. As noted by Moratto (1984:159), Wallace's (1955) synthesis lacked chronological precision due to the lack of absolute dates at the time of its creation, but remains generally valid today.

In addition to Wallace's classic summary, two other regional syntheses, developed by Warren (1968) and King (1981, 1990), will be referred to in the following discussion. These two increasingly specific syntheses are supported by a larger archaeological database for southern California, which includes the advent and increased use of radiocarbon dating after the 1950s.

Using the concepts of cultural ecology and cultural tradition, Warren (1968) proposed a series of six prehistoric traditions. Three of these traditions, the San Dieguito Tradition, Encinitas Tradition, and Campbell Tradition, correlated with Wallace's Horizons I, II, and, III. The Chumash Tradition, Takic Tradition (formerly "Shoshonean"), and Yuman Tradition are represented within Wallace's Horizon IV. As noted further, these ecologically based traditions are applicable to specific regions within southern California.

King (1981, 1990) later modified Wallace's (1955, 1978) sequence into three major periods of Chumash region prehistory: Early, Middle, and Late, each of which contains phases or subphases. King's synthesis is based on stylistic changes in artifacts, particularly shell beads and ornaments, from Santa Barbara Channel burial assemblages, and he interprets the continuity in development of artifacts as an indication that Chumash culture developed locally over the last 7500 years. This chronological sequence is thus particularly relevant to archaeologists working in the Chumash sphere in the central California coast, centered on the greater Santa Barbara region.

Horizon I - Early Man/San Dieguito (ca. 10,000 – 6,000 B.C.)

When Wallace developed the Horizon I (Early Man) in the 1950s, there was little evidence of human presence on the southern California coast prior to 6000 B.C. Archaeological work in the intervening years has identified numerous sites older than this date including coastal and Channel Islands sites (e.g., Erlandson 1991; Johnson et al. 2002; Moratto 1984). In addition, radiocarbon dates recently obtained by SWCA from a deeply buried archaeological site in southern Orange County, 5.5 km (3.4 miles) from the coast indicate an occupation as early as 9000 B.C. (SWCA unpublished).

Recent data from Horizon I sites indicate that the economy was a diverse mixture of hunting and gathering, with a major emphasis on aquatic resources in many coastal areas (e.g., Jones et al. 2002) and on Pleistocene lake shores in eastern San Diego County (see Moratto 1984:90-92). Although few Clovis-like or Folsom-like fluted points have been found in southern California (e.g., Erlandson et al. 1987), it is generally considered that the emphasis on hunting may have been greater during Horizon I than in later periods. Common elements in many San Dieguito Tradition sites, for example, include leaf-shaped bifacial projectile points and knives, stemmed or shouldered projectile points, scrapers, engraving tools, and crescents (Warren 1967:177). Subsistence patterns shifted around 6000 B.C. coincident with the gradual desiccation associated with the onset of the Altithermal, a warm and dry period that lasted for about 3000 years. After 6000 B.C., a greater emphasis was placed on plant foods and small animals.

Horizon II – Milling Stone Period/Encinitas Tradition (6000–3000 B.C.)

The Milling Stone Horizon of Wallace (1955, 1978) and Encinitas Tradition of Warren (1968) (6000-3000 B.C.) are characterized by an ecological adaptation to collecting, and by the dominance of the principal ground stone implements generally associated with the horizontal motion of grinding small seeds; namely, milling stones (metates, slabs) and handstones (manos, mullers), which are typically shaped. Milling stones occur in large numbers for the first time, and are even more numerous near the end of this period. As testified by their toolkits and shell middens in coastal sites, people during this period practiced a mixed food procurement strategy. Subsistence patterns varied somewhat as groups became better adapted to their regional or local environments.

Wallace (1955, 1978) and Warren (1968) relied on several key coastal sites to characterize the Milling Stone Horizon and Encinitas Tradition, respectively. These include the Oak Grove Complex in the Santa Barbara region, Little Sycamore in southwestern Ventura County, Topanga Canyon in the Santa Monica Mountains, and at La Jolla in San Diego County. The Encinitas Tradition was proposed to extend

southward into San Diego County where it apparently continued alongside the following Campbell Tradition, which occurred primarily in the Santa Barbara-Ventura County region beginning around 3000 B.C.

During the Milling Stone Horizon and Encinitas Tradition, stone chopping, scraping, and cutting tools are abundant, and generally made from locally available raw material. Projectile points, rather large and generally leaf-shaped, and bone tools, including awls, are generally rare. The large points are associated with the spear, and probably with an atlatl. Items made from shell, including beads, pendants, and abalone dishes, are generally rare. Evidence of weaving or basketry is present at a few sites. Cogged stones and discoidals are often purposefully buried, and are found mainly in sites along the coastal drainages from southern Ventura County southward, with a few specimens inland at Cajon Pass, and heavily in Orange County (Moratto 1984:149). Kowta (1969) attributes the presence of numerous scraper-planes in Milling Stone sites to the preparation of agave or yucca for food or fiber. The mortar and pestle, associated with the vertical motion of pounding foods, such as acorns, were introduced during the Milling Stone Horizon, but are not common.

In the Santa Barbara region, Milling Stone sites occur on elevated landforms inland from the modern coast, with substantial midden deposits in many of the larger sites. A recent review (Glassow et al. 1988:68) concluded that the recorded sites in the Santa Barbara Channel area represent residential base camps, although smaller sites may yet be discovered.

Characteristic mortuary practices during the Milling Stone Horizon or Encinitas Tradition include extended and loosely flexed burials, some with red ochre and few grave goods, such as shell beads and milling stones, interred beneath cobble or milling stone cairns. "Killed" milling stones, exhibiting holes, may occur in the cairns. Reburials are common in the Los Angeles County area, with flexed burials oriented to the north common southward in Orange and San Diego Counties.

King's Early Period (5500–1350 B.C.)

The Early Period (5500-1350 B.C.) of the central coast (King 1981, 1990) roughly corresponds to the Milling Stone Horizon and Encinitas Tradition, although the Early Period lasts longer. The Early Period is divided into three phases. The earlier Ex Phase is characterized by large flake and core tools, manos and metates, but has few bone or shell tools or beads. Mortar and pestles, probably used to process acorns from the plentiful oak trees in the Santa Monica Mountains region, were not widely used until the beginning of Phase Ey. Also during the later phases of King's Early Period, evidence of trade becomes pronounced. Artifact assemblages include steatite from the Channel Islands and obsidian from distant inland areas. Coastal peoples fished with bone hooks and hunted land and sea mammals. There is also evidence for population growth on the mainland coast and the Channel Islands, along with an increase in non-utilitarian objects of art, ritual, and decoration.

Horizon III – Intermediate/Campbell (3000 B.C. – A.D. 500)

Following the Millingstone, Wallace's Intermediate Horizon and Warren's Campbell Tradition in Santa Barbara, Ventura, and parts of Los Angles Counties, date from approximately 3000 B.C.-A.D. 500 and are characterized by a shift toward a hunting and maritime subsistence strategy, along with a wider use of plant foods. The Campbell Tradition (Warren 1968) incorporates David B. Rogers' (1929) Hunting Culture and related expressions along the Santa Barbara coast. In the San Diego region, the Encinitas Tradition (Warren 1968) and the La Jolla Culture (Moriarty 1966; M. Rogers 1939, 1945) persist with little change during this time.

During the Intermediate Horizon and Campbell Tradition, there is a pronounced trend toward greater adaptation to regional or local resources. For example, the remains of fish, land mammals, and sea mammals are increasingly abundant and diverse in sites along the California coast in the referenced region. Related chipped stone tools suitable for hunting are more abundant and diversified, and shell fishhooks become part of the toolkit during this period. Larger knives, a variety of flake scrapers, and drill-like implements are common during this period. Projectile points include large side-notched, stemmed, and lanceolate or leaf-shaped forms. Bone tools, including awls, are more numerous than in the preceding period, and the use of asphaltum adhesive is now common.

Mortars and pestles become more common during this period, gradually replacing manos and metates as milling stone implements. In addition, hopper mortars and stone bowls, including steatite vessels, appear to enter the toolkit at this time. This shift appears to be a correlate of a diversification in subsistence resources. Many archaeologists believe this change in milling stones signals a shift away from the processing and consuming of hard seed resources to the increasing importance of the acorn (e.g., Glassow et al. 1988; True 1993). It has been argued that mortars and pestles may have been used initially to process roots (e.g., tubers, bulbs, and corms associated with marshland plants), with acorn processing beginning at a later point in prehistory (Glassow 1997:86) and continuing to European contact.

Characteristic mortuary practices during the Intermediate Horizon and Campbell Tradition include fully flexed burials, placed face down or face up, and oriented toward the north or west (Warren 1968:2-3). Red ochre is common, and abalone shell dishes infrequent. Interments sometimes occurred beneath cairns or broken artifacts. Shell, bone and stone ornaments, including charmstones, are more common than in the preceding Encinitas Tradition. Some later sites include *Olivella* shell and steatite beads, mortars with flat bases and flaring sides, and a few small points.

King's Middle Period (1350 B.C.–A.D.1200)

King's (1981, 1990) central coast Middle Period lasted from approximately 1350 B.C.- A.D.1200, and is divided into five phases. This time period overlaps Wallace's (1955, 1978) Intermediate and Late Prehistoric Horizons, as well as Warren's (1968) Campbell, Encinitas, and Chumash Traditions. The Middle Period is characterized by an increase in the numbers and types of shell beads and personal ornaments. Diagnostic artifacts include stone effigies, charmstones, stone pipes, and new bead types. Stylistic changes include a shift from rectangular to circular *Haliotis* sp. and *Olivella* sp. beads. Complex maritime technology also proliferated. Notable introductions included the circular shell fishhooks at the start of the period and the later development of the wooden plank canoe (Arnold 1995; Kennett 1998:357; King 1990:87-88; Rick et al. 2002). The introduction of shell fishhooks and plank canoes, their subsequent modifications, and the increased use of other capture devices such as nets appear to have led to a substantial focus on fishing in most coastal areas. A seasonal round settlement pattern was still followed, but large, permanently occupied settlements, particularly in coastal areas, appear to have been the norm by the end of the period (Kennett 1998). The atlatl and dart were replaced by the bow and arrow about A.D. 500, during the later phases of this period.

Horizon IV - Late Prehistoric (ca. A.D. 500–Historic Contact)

In the Late Prehistoric Horizon (Wallace 1955, 1978), which lasted from the end of the Intermediate (~A.D. 500) until European contact, there was an increase in the use of plant food resources in addition to an increase in land and sea mammal hunting. There was a concomitant increase in the diversity and complexity of material culture during the Late Prehistoric, demonstrated by more classes of artifacts. The recovery of a greater number of small, finely chipped projectile points, usually stemless with convex or concave bases, suggests an increased utilization of the bow and arrow rather than the atlatl and dart for

hunting. Other items include steatite containers, circular shell fishhooks, perforated stones, arrow straighteners, and a variety of bone tools and personal ornaments. There is also an increased use of asphalt adhesive.

During the Late Prehistoric, sites contain beautiful and complex objects of utility, art, and decoration. Ornaments include drilled whole *Chione* and drilled abalone. Steatite effigies become more common, with *Pecten* shell rattles common in middens. Mortuary customs are elaborate, include cremation and interment, with abundant grave goods. Pottery and smoking pipes occur in some locations during this period. Most of the rock art found today in the Chumash sphere along (and inland of) the central coast is thought to date to this period.

In Warren's (1968) cultural ecological scheme, the period between A.D. 500 and European contact is divided into three regional patterns. The Chumash Tradition is present mainly in the region of Santa Barbara and Ventura Counties; the Takic or Numic Tradition in the Los Angeles and Orange Counties region; and the Yuman Tradition in the San Diego region.

The seemingly abrupt changes in material culture, burial practices, and subsistence focus at the beginning of the Late Prehistoric period are considered the result of a migration to the coast of peoples from inland desert regions to the east. In addition to the small triangular and triangular side-notched points similar to those found in the desert regions in the Great Basin and Lower Colorado River, Colorado River pottery and the introduction of cremation in the archaeological record are diagnostic of the *Yuman Tradition* in the San Diego region. This combination certainly suggests a strong influence from the Colorado Desert region. In Los Angeles and Orange Counties, similar changes (introduction of cremation, pottery, and small triangular arrow points) are considered the result of a Takic migration to the coast from inland desert regions. This Takic or Numic Tradition was formerly referred to as the "Shoshonean wedge" or "Shoshonean intrusion" (Warren 1968). This terminology, used originally to describe a Uto-Aztecan language group, is generally no longer employed in order to avoid confusion with ethnohistoric and modern Shoshonean groups who spoke Numic languages (Heizer 1978:5; Shipley 1978:88, 90). Modern Gabrielino/Tongva, Juaneño, and Luiseño in this region are considered the descendants of the prehistoric Uto-Aztecan, Takic-speaking populations that settled along the California coast during this period, or perhaps somewhat earlier.

After A.D. 500, a wealth of ornaments, ceremonial, and artistic items characterize the Chumash Tradition (Warren 1968) along the central coast and offshore islands. According to Warren, it seems likely that this culture developed from that present in that area during the Intermediate, and indeed from the Campbell Tradition. Ground stone items include bowls, mortars and pestles, balls, grooved stones, doughnut stones, stone beads, pendants, pipes, tubes, and mammal effigies. Projectile points, both large and small, were typically non-stemmed leaf-shaped, with convex or concave bases. Chipped stone implements also included drills and scrapers. Utilitarian objects were made from bone, including awls, fishhooks, whistles, and tubes, and from shell, including fishhooks and abalone shell dishes. Shell beads and ornaments were abundant, and bowls, pestles, pipes, and stone tubes were inlaid with shell beads and engraved. Bowls, pipes, and ornaments were commonly manufactured from steatite.

Characteristic mortuary practices during the Chumash Tradition include burial in crowded cemeteries. Burials are normally flexed, placed face down, and oriented toward the north or west (Warren 1968:5). The interments are typically marked by vertical pieces of whalebone, and have abundant grave goods, such as ornaments, effigies, and utensils.

King's Late Period (ca. A.D. 1200– Historic Contact)

Chumash society underwent widespread economic, social, and political change during a Middle-to-Late Period transition around A.D.1200 (e.g., Arnold 1992, 1993, 2001). Fishing increased in importance (Colten 1995), while competition over scarce resources lead to increased levels of disease and warfare (Lambert and Walker 1991). The so-called Chumash money bead, the *Olivella* sp. callus cup, was introduced and trade between inland and coastal areas intensified. This increased importance of trade may have helped buffer local shortfalls of wild food resources. Island Chumash, for example, traded such items as beads, shell, and steatite in exchange for acorns, pine nuts, and obsidian from coastal groups, who in turn traded with groups further inland. Status differentiation is clearly apparent in the archaeological record during the Middle to Late transition, suggesting that these changes allowed for the construction and maintenance of the permanent elite that characterized the sociopolitical structure of Chumash society during the ethnohistoric era.

King (1981, 1990) divides the Late Period into three phases, which dated after A.D. 1200 and lasted until the Mission era. During this period, the full development of Chumash culture, one of the most economically and socially complex hunting and gathering groups in North America, occurred (Arnold 1987). Class differentiation, inherited chieftainship, and religious beliefs developed along with a dramatic increase in population. Objects of art and decoration are even more abundant during this period, with most of the rock art viewed today in Chumash territory probably dating to this period. Shell beads continue to be a primary medium of exchange, and are common in high status burials. Fishing continued to increase in importance during the Late Period and along with sea mammals, waterfowl, and shellfish supported villages of nearly 1,000 individuals clustered along the coast. Permanent inland settlements were supported by various natural resources, including deer and elk, smaller game animals, and plants. These inland villages were economically allied with the larger coastal villages. Characteristic mortuary practices in cemeteries are described above for the Chumash Tradition. In addition, high status graves were opulently decorated and marked by tall, inscribed poles.

27.2.2.2 Ethnographic Overview

The Lebec to San Fernando segment runs southward through Tejón Pass past the Santa Clara River to the San Fernando Valley. Three Native American groups occupied the segment route during the ethnohistoric period (Kroeber 1925; Bean and Smith 1978; Grant 1978b; King and Blackburn 1978). From north to south, the three groups include: Chumash at the very northern end of the segment; Tataviam between Tejón Pass and Newhall, comprising the majority of the segment; and Gabrielino (Tongva) within the San Fernando Valley in the southern portion of the segment.

Chumash

The very northern end of the Lebec to San Fernando segment, just south of Grapevine Peak between Lebec and Tejón Pass, is within Chumash tribal territory. The term "Chumash" is derived from a Native American word, initially applied to the people living on Santa Cruz Island (King 1994a:6). Chumash now refers to the entire linguistic and ethnic group of societies that occupied the coast between San Luis Obispo and northwestern Los Angeles County, including the Santa Barbara Channel Islands, and inland to the western edge of the San Joaquin Valley. Neighboring groups included the Salinan to the north, the Southern Valley Yokuts and Tataviam to the east, and the Gabrielino (Tongva) to the south.

The Chumash spoke six closely related Chumashan languages, which have been divided into two broad groups—Northern Chumash (consisting only of Obispeño) and Southern Chumash (Purisimeño, Ineseño, Barbareño, Ventureño, and Island Chumash) (Mithun 2001:389). While Island Chumash was the most

divergent of the five southern languages, Ventureño may have had the most internal variation with at least six distinct dialects (Mugu, Malibu, Shisholop, Matilija, Castac, and Emigdiano). The Chumashan language currently is considered an isolate stock with a long history in the Santa Barbara region, and not part of the Hokan linguistic family (Mithun 2001:304).

At the time of Spanish contact in 1542 and again in 1769, the early accounts describe settlement along the Santa Barbara Channel coast as heavily populated. Estimates of total Chumash population for the initial contact period vary from 8,000–10,000 (Kroeber 1925:551) to 18,000–22,000 (Cook and Heizer 1965:21). For the Ventureño group, village estimates vary from 23 (Kroeber 1925:Plate 48) to 41 (King 2000:Map 1), with King estimating the village population in 1770 from 2,500–4,200. Diarists on the 1769 Portolá expedition described the village of *Shisholop* at the mouth of Santa Clara River near today's City of Ventura as a large and nicely laid out "rancheria" with 30 large houses, 15 canoes, and at least 900 people (Brown 2001:389, 397). Some coastal Barbareño Chumash villages near Goleta and Dos Pueblo were even larger, with over 1,000 inhabitants and 120 houses (Grant 1978a:510). Inland, the Spanish noted the villages were smaller, with from 100–500 occupants.

The Lebec to San Fernando segment passes through the ethnohistoric lands of the Emigdiano Chumash social group. They maintained *Kastiq* village on the shore of Castac Lake, at the head of Grapevine Canyon (Grant 1978b:533).

Near the coast in the large, permanent Chumash villages, hemispherical dwellings covered by grass or tule mats were arranged in close groups. These were described as "spacious and fairly comfortable" by the Spanish, with light coming in through the top hole where smoke also could exit. In rainy weather, these holes were covered with animal skins. Houses were usually very large (15 meters in diameter) and "able to lodge 60 persons and more without hindrance" (Brown 2001:391). Inland, around Santa Clara, houses in smaller villages "resembled the rectangular, mat-covered houses of the adjacent Takic speakers but they had many artifacts of types the Spanish later described from the coast" (Grant 1978a:518). The houses "were sometimes partitioned into rooms by hanging mats," and in some areas people used wooden sleeping platforms raised off the ground covered with mats (McCall and Perry 1986:25). The chief's house was often the largest because of his larger household and hospitality duties. The villages also contained storehouses, one or more subterranean sweat lodges, and a semi-circular dance ground and associated sacred ceremonial enclosure, with a nearby game field surrounded by low walls (McCall and Perry 1986:18-19). Satellite gathering or processing areas included earth ovens used to roast yucca and other foods, rock shelters, quarries, and bedrock mortars for processing acorns and similar plant resources (King 1994b:116).

Each Chumash village had a formal cemetery, generally separate from the village proper. Ethnographic records indicate that cemeteries were marked by tall painted poles and frequently had an entrance area where ceremonies were performed. Within the cemetery, stone, wood, or bone markers identified burial sites. Occasionally, individual burials were marked by painted boards; the markings indicated the occupation or clan of the deceased (Gamble et al. 2001:191). Prior to burial, a wake was held in a sacred enclosure. Individuals then were buried face down in a flexed position amidst personal objects, effigies, steatite pipes, bowls, ollas, beads, and other grave goods. Archaeological studies have identified separate sections for elite versus commoner families within the cemetery grounds (King 1969).

Chumash society was divided into three classes (McCall and Perry 1986:40). Upper class members held the important social and religious positions, including chief, canoe builders and owners, and members in the *'antap* society. The middle class contained about half the population, mainly hunters, gatherers, and general workers. Social outcasts and unproductive people populated the lower class. Unlike their southern neighbors, the Chumash did not have a lineage organization; most elite marriages were matrilocal.

Every village had a chief, or *wot*. The chief was usually male, but hereditary rights to this role were passed down matrilinealy (Johnson 1987). The *wot* had both political and religious ceremonial duties to perform; his assistant, the *paha*, helped officiate at rituals. Other officials known as *ksen* were "messengers who traveled from place to place, making announcements and gathering news for the *wot*" (McCall and Perry 1986:40). A large village usually had three to four chiefs, one of whom would be the head chief. This pattern was seen throughout Ventureño territory, as noted by the Portolá expedition for villages with populations of 100–500 people (Brown 2001:355, 389). Other portions of Chumash territory were organized into provinces, or groups of villages ruled by a single chief.

Chumash society also was organized into craft guilds. Different crafts were involved—canoe building, bead making, basketry making, woodworking, and weapon making were among them (Miller 1988:108). Being a guild member had strong economic advantages. Membership was primarily open to the upper class, and ranking members of the guilds were *'antap* society members. Specific crafts, such as money bead making, an exclusive Island Chumash product, held regional monopolies.

Chumash subsistence varied between coastal and inland resources, but like many indigenous Californian groups, the acorn was a dietary staple. Acorns were gathered in the autumn and stored in villages, where they were ground to a meal, leached, and then cooked daily. In addition to acorns—mainly from the coast live oak—other nuts, such as pine nuts and walnuts, were collected. Chumash diet also included cattail roots, fruits and pads from *Opuntia* cactus, and bulbs and tubers of plants such as amole (Miller 1988:89). Yucca stalks were harvested and roasted, and the buds and flowers also were gathered. Staples included small hard seeds of several annual and perennial plants such as grass, chia and other sages, and buckwheat. Seasonal resources included berries (blackberry, elderberry, grape, madrone, laurel, wild cherry), mushrooms, and cress.

Seeds were processed using various grinding implements (wooden and stone mortars, pestles, bedrock mortars, handstones). Tools used to gather plant foodstuffs consisted of several forms of gathering baskets, woven seed beaters, and sharpened digging sticks. A variety of basket styles were manufactured for the processing and serving of foods, for straining acorn meal, for leaching the meal, and for cooking acorn meal and other foods in water-tight baskets (Miller 1988:49). Other baskets were made for storing grains, acorns, meal, prepared foods, and other natural resources. Carved steatite bowls, ollas, and comals also were used for cooking, and meals were served on wooden plates and bowls.

On the coast, the wooden plank canoe (*tomol*) was employed in the pursuit of marine mammals and fish. The *tomol* not only facilitated marine resource procurement but also facilitated an active trade network maintained by frequent crossings between the mainland and the Channel Islands. Seals, sea lions, otters, porpoises, and whales were hunted with harpoons. Deep-sea fish such as bonito, sea bass, halibut, barracuda, yellowtail, and shark were caught with hooks and lines, harpoons, and deep or shoreline nets. Both women and men shared the task of gathering shellfish. Digging sticks were used to procure some species of clams and scallops from the beach sands. Flat bone or wood wedges were used to pry mussels and abalone from the near-shore rocks.

Local Chumash populations captured mule deer, antelope, cottontail, jackrabbit, mice, and wood rats; mountain and valley quail, dove, and resident and migratory waterfowl, among other birds; and various types of reptiles, amphibians, and insects. Predators included mountain lion, coyote, bobcat, and fox. Larger animals, such as mule deer, coyote, and fox, were hunted with the bow and arrow; smaller game were captured with traps and snares. Hunting parties comprised up to eight people (Brown 2001:375). Individuals used throwing sticks to kill rabbits and hares; communal hunting groups used large nets and clubs.

Trade was an integral component of Chumash subsistence, and trade relationships among inland, coastal, and island groups were well established. Island Chumash traded beads, shell, fish bones, otter and seal skins, steatite, chert bifaces, and baskets, among other goods. In return, they received acorns, pine nuts, chia sage, deer and rabbit skins, bows and arrows, serpentine bowls, and obsidian from coastal groups. In turn, coastal Chumash traded with inland Chumash who traded with the Yokuts, Tataviam, Kitanemuk, and Gabrielino (Miller 1988:112). The trade network increased the diversity of goods available throughout Chumash territory, encouraged craft specialization, and established the coastal villages as middlemen. The coastal villages had access to the abundant marine resources, built and kept the boats that moved trade goods across the channel, and also made a profit with each exchange.

The Chumash are well known for their material culture, which included highly decorated utilitarian tools and ceremonial items, as well as rock art (Grant 1978a:517, 1978b:532). Carved steatite items included bowls decorated with beads, medicine tubes, effigies, beads, pipes, and charmstones. Rock paintings occur at sheltered locations near the coast and inland to the farthest reaches of the Chumash sphere. In the interior region inhabited by the Cuyama Chumash who spoke the Ineseño dialect, archaeological and ethnographic evidence strongly suggest a Chumash affiliation with the Carrizo Plain rock art, where the rock paintings—mostly pictographs comprised of polychrome abstract designs and some petroglyphs—reach a high degree of development. Despite being recognized as the location of the most extensive rock art, the Carrizo Plain area is among the least studied of Chumash regions. The remote location of the majority of Chumash rock art suggests the paintings may represent shrines or sacred spots.

Chumash religion was well developed and integrated into everyday life. Rituals and ceremonies were observed throughout the year; the most important was performed at the Winter Solstice, when a large festival was held in honor of the Sun. Astronomers carefully marked the shortest day of the year to know when to begin the rites and dances and also used the observation to recalibrate their calendar. The *Hutush* autumn harvest festival, a time of thanksgiving, celebrated the Earth Goddess as provider of all foods (McCall and Perry 1986:43-44). There were also initiation ceremonies for the young men into the mysteries of the religion, others for the first naming of children, for curing, and so forth. The *'antap* society, restricted to the upper class, was also the federation of shamans who controlled ceremonial observances.

The earliest European visits to the Chumash region began with the Cabrillo, Viscaino, and other naval explorers to the southern California coast in the 1500s. The first land expedition through the study area occurred in A.D. 1769 when Gaspar de Portolá led an overland expedition from the newly established settlement at San Diego to San Francisco Bay. The first permanent non-indigenous settlement in the general area occurred with the founding of Mission San Luis Obispo in 1771, and soon numerous troop and supply trains passed through Chumash lands on the way from San Diego to more northerly missions and outposts. Within Chumash lands, additional Franciscan missions were founded at La Purísima, Santa Ynez, Santa Barbara, San Buenaventura, and San Fernando. When the pueblo of Los Angeles was established in 1781, the Ventureño Chumash were recruited as labor.

The effect of mission influence upon local native populations was devastating. The dissolution of their culture alienated them from their traditional subsistence patterns, social customs, and marriage networks. European diseases, against which they had no immunity, reached epidemic proportions, and Chumash populations were decimated (Johnson 1987). The increase in agriculture and the spread of grazing livestock into their collecting and hunting areas made maintaining traditional lifeways increasingly difficult. Although most Chumash eventually submitted to the Spanish and were incorporated into the mission system, some refused to give up their traditional existence and escaped into the interior regions of the state, as refugees living with other tribes.

With the secularization of mission lands after 1834, traditional Chumash lands were distributed among grants to private owners. Only in the area of Mission Santa Barbara and Mission San Fernando del Rey were several small ranchos granted to neophytes of these missions, providing a secure home and gardens for a few people. Most Chumash managed to maintain a presence in the area into the early twentieth century as cowboys, farm hands, and town laborers. The Catholic Church provided some land near Mission Santa Ynez for ex-neophytes. This land eventually was deeded to the U.S. government in 1901 as a 127-acre reservation. This is the sole Chumash reservation, with a recent enrollment of only 158 people (California Indian Assistance Program 2003:144). Since the 1970s, Chumash descendants living in the City of Santa Barbara and the rural areas of San Luis Obispo, Santa Barbara, and Ventura Counties have formed social and political organizations to aid in cultural revitalization, to protect sacred areas and archaeological sites, and to petition for federal recognition. Today, the Santa Ynez Band of Chumash Indians is the only federally recognized Chumash tribe.

Tataviam

The northern end of the Lebec to San Fernando segment starts in the area historically occupied by the Native American group known as the Tataviam (Kroeber 1925:613-614; King and Blackburn 1978). Their territory was located primarily in the upper drainage of the Santa Clara River between the San Fernando Valley to the south and the top of Pastoria Creek in the Tehachapi Mountains in the north. To the east, their lands extended to part of the southern fringe of Antelope Valley. The core Tataviam population centered on the south sides of the Liebre, Sawmill, and Sierra Pelona Mountains. Their neighbors were the Ventureño Chumash to the west, Emigdiano Chumash to the north, Kitanemuk to the northeast, Vanyume Serrano to the east, and Western Gabrielino/Tongva to the south in the San Fernando Valley (King and Blackburn 1978:535; Grant 1978a; Johnson and Earle 1990:193).

The Tataviam language is a part of the Takic branch of the Uto-Aztecan language family, also spoken by their neighbors, the Western Gabrielino/Tongva to the south and Kitanemuk to the west (Mithun 2001:540). This language family can be traced to the Great Basin area, which represents an origin different from their Chumash neighbors. According to Bright (1975), the Tataviam language may be "the remnant, influenced by Takic, of a language family otherwise unknown in southern California" or the language was probably Takic but not from the Serran or Cupan branches like Kitanemuk and Vanyume, respectively. The Tataviam language probably began to differentiate itself from the others around 1000 B.C. (King and Blackburn 1978:535).

Regrettably, little is known of the Tataviam. The name "Tataviam" itself is derived from the Kitanemuk's designation for this group (King and Blackburn 1978:535). Kroeber (1925:614) referred to them as the "Alliklik," named by the Ventureño Chumash to separate them from the Beñeme Serrano in the western Mojave Desert and Antelope Valley.

Tataviam social organization and political structure is not well understood, but there is no evidence that would substantially differentiate them from their neighbors, the Kitanemuk and Western Gabrielino/Tongva. Tataviam villages ranged from large centers of around 200 individuals to small settlements of 10 to 15 people (King and Blackburn 1978:536). Intermediate-sized villages were dispersed between the larger centers with smaller villages spaced around the larger villages. Tataviam villages in the segment area would have included three along Castaic Creek, *Tikkattsing*, *Pi'inh* and *Tsavayu('u)ng* (King and Blackburn 1978:535).

King and Blackburn (1978:534) estimate the total Tataviam population at the time of historic contact at no more than 1,000 people with the widest possible territorial extent given them. Mortuary practices

probably included cremation as well as a mourning ceremony practiced in late summer or early fall (King and Blackburn 1978:535).

Archaeological data, the primary source of information available, indicate broad similarities among the Tataviam, Chumash, and Gabrielino/Tongva (King and Blackburn 1978:536). Considering their environment and available data, it is probable that Tataviam relied more heavily on yucca as a staple than neighboring groups. Additional plant foods most likely included acorns, sage seeds, juniper seeds, and islay berries (*Prunus ilicifolia*). Animal resources included small mammals such as the rabbit and rodents, as well as deer and possibly antelope. Extensive trade networks developed between inland groups of the desert regions. They traded lithic material and large game animals with coastal groups for marine resources, shell, asphaltum, and steatite.

The first European visit to the general Tataviam area occurred in A.D. 1769 when Lt. Colonel Gaspar de Portolá led an overland expedition from the newly established settlement at San Diego in an attempt to find Monterey Bay. They traversed the San Fernando Valley in August 1769, passing to the north of where Mission San Fernando would be founded 28 years later. From there, they entered Tataviam territory in the Newhall–Saugus area through the Freemont Pass (Smith and Teggert 1909, in McIntyre 1980). The general vicinity was probably crossed again during the second Portolá Expedition in 1770, and by the Friar Francisco Garces expedition in 1776 (Beck and Haase 1974:15). The Mission of San Fernando was founded in 1798 on the southern fringe of Tataviam lands, and by 1820 most of the population had been baptized at the mission. During this time, Tataviam often intermarried with surrounding Native American groups, most notably the Kitanemuk, and often attended and participated in Chumash ceremonies.

Following the Spanish Period, interest in the Santa Clara Valley grew as fur trappers in the early 1800s, the discovery of gold in Placerita Canyon in 1842, and provisioning of miners heading for the gold strikes in the 1850s, led to Euro-American settlement, ranching, and agriculture within the valley. Beef, grain, and other foodstuffs in demand by the miners resulted in an economic windfall for the ranches in the valley. As a consequence, the ranchers expanded their range into Tataviam hunting grounds and harvesting fields.

Tataviam families and communities intermarried with and were absorbed into other Native American settlements in southern California during the late nineteenth century (Johnson and Earle 1990:209). Several Tataviam descendant families lasted into the twentieth century, but by 1916, there were no longer any Tataviam speakers (King and Blackburn 1978:536). Recently, several families of Tataviam descendents have formed a combined Tataviam/Gabrielino tribal organization (Fernandeño/Tataviam Band of Mission Indians) that has a combined heritage originating from families of both tribes that resided at the Tejón rancheria in the late nineteenth century. The major goals of this group are to seek federal recognition of their tribe and to monitor and preserve known ancestral sites in Antelope Valley.

Gabrielino/Tongva

The Lebec to San Fernando segment ends in the San Fernando Valley. The Western Tongva (Gabrielino) social group historically occupied this valley (Bean and Smith 1978). Tongva villages recorded along the segment include *Momonga* and *Hukxa'oynga* (Chatsworth) (McCawley 1996:39-40).

The name "Gabrielino" denotes those people who were administered by the Spanish from Mission San Gabriel, which included people from the Gabrielino proper, as well as other social groups (Bean and Smith 1978; Kroeber 1925). Therefore, in the post-contact period, the name does not necessarily identify a specific ethnic or tribal group. The names Native Americans in southern California used to identify

themselves have, for the most part, been lost. Many contemporary Gabrielino identify themselves as descendents of the indigenous people living across the plains of the Los Angeles Basin and use the native term *Tongva* (King 1994a:12).

Tongva lands encompassed the greater Los Angeles Basin, including the inland valleys of San Fernando, San Gabriel, and Pomona, the Pacific Ocean coastal region from Topanga Canyon in the north to Newport Bay in the south, and three Channel Islands, San Clemente, San Nicolas, and Santa Catalina (Bean and Smith 1978:538; Kroeber 1925:636; McCawley 1996). Inland, their territory was bounded on the north by the Chumash at Topanga Creek, and on the south by the Juaneño at Aliso Creek. To the east past the San Gabriel Mountains were the Vanyume Serrano, the mountain Serrano, and the Cahuilla. The southern boundary of Gabrielino territory at Aliso Creek was based on anthropological fieldwork conducted by Kroeber in 1907 (Kroeber 1925), and the Juaneño currently dispute this defined northern boundary of their lands with the Gabrielino.

The Gabrielino language, as well as that of the Juaneño and Luiseño to the south, was derived from the Takic family, part of the Uto-Aztecan linguistic stock, which can be traced to the Great Basin area (Mithun 2001:539). This language group represents an origin quite different from that of the Chumash to the north and the Ipai and Tipai further south. The language of the Ipai and Tipai is derived from the Hokan stock of the Yuman language family originating in the American Southwest. The Chumash language is unlike both the Hokan and Uto-Aztecan stocks and may represent a separate lineage (Mithun 2001:390). Linguistic analysis suggests that Takic-speaking immigrants from the Great Basin area began moving into southern California around 500 B.C. (Kroeber 1925:579). This migration may have displaced both Chumashan and Yuman speaking peoples, but the timing and extent of the migrations and their impact on indigenous peoples is not well understood.

The Gabrielino language consisted of two main dialects, Eastern and Western; the Western included much of the coast and the Channel Island population (King 2004). Lands of the Western group encompassed much of the western Los Angeles Basin and San Fernando Valley, northward along the coast to the Palos Verdes Peninsula (McCawley 1996:47). Their neighbors to the north were the Tataviam in the interior and the Chumash along the coast; to the south along the coast were the Juaneño (now referred to as the Acjachemen). To the east were the Vanyume Serrano, the mountain Serrano, and the Cahuilla.

Early historical records concerning the Tongva are available through Spanish voyages of exploration in the sixteenth century, and accounts by Spanish missionaries and colonists in the middle eighteenth century. The Spanish military and mission records are considerable. Other reports by agents of the United States Office of Indian Affairs date from the 1850s. Ethnographers were late on the scene and collected little information after 1900, the exception being John Harrington in the 1910s. Published ethnographies include Kroeber (1925), Johnston (1962), Bean and Smith (1978), and McCawley (1996).

Kroeber (1925:621) considered the Tongva "…to have been the most advanced group south of Tehachapi, except perhaps the Chumash. They certainly were the wealthiest and most thoughtful of all the Shoshoneans of the State, and dominated these civilizationally wherever contacts occurred." Tongva society was organized along patrilineal non-localized clans, a characteristic Takic pattern. Clans consisted of several lineages, each with their own ceremonial leader. The leader of the primary lineage was the chief of the entire clan. One or two clans generally made up the population of a village. Even though the Tongva did not have a distinctly stratified society, there were two general classes of individuals: elites and commoners. The elites consisted of primary lineage members, other lineage leaders (who maintained a separate ceremonial language), the wealthy, and the elite families of the various villages who commonly married among themselves. The commoner class contained those from "fairly well-to-do and long-established lineages" (Bean and Smith 1978:543). A third, lower class might be recognized as consisting

of slaves taken in war and individuals, unrelated to the inhabitants, who drifted into the village. The chief, or *tómyaar*, always came from the primary lineage of the clan/village.

The Tongva established large, permanent villages in the fertile lowlands along rivers and streams, and in sheltered areas along the coast, stretching from the foothills of the San Gabriel Mountains to the Pacific Ocean. A total tribal population has been estimated of at least 5,000 (Bean and Smith 1978:540), but recent ethnohistoric work suggests a number approaching 10,000 seems more likely (O'Neil 2002). Several Tongva villages appear to have served as trade centers, due in large part to their centralized geographic position in relation to the Southern Channel Islands and to other tribes. These villages maintained particularly large populations and hosted annual trade fairs that would bring their population to 1,000 or more for the duration of the event. *Puvunga* in Long Beach and *Swuangna* at San Pedro are examples of Tongva village trade centers.

Houses constructed by the Tongva were large, circular, domed structures made of willow poles thatched with tule that could hold up to 50 people (Bean and Smith 1978). Other structures served as sweathouses, menstrual huts, ceremonial enclosures, and probably communal granaries. Cleared fields for races and games, such as lacrosse and pole throwing, were created adjacent to Tongva villages (McCawley 1996:27). Archaeological sites comprised of villages with various sized structures have been identified.

The fundamental economy of the Tongva was one of subsistence gathering and hunting. The surrounding environment was rich and varied, and the tribe exploited mountains, foothills, valleys, deserts, riparian, estuarine, and open and rocky coastal eco-niches. Like the majority of native Californians, acorns were the staple food (an established industry by the time of the early Intermediate Period). Acorns were supplemented by the roots, leaves, seeds, and fruits of a wide variety of flora (e.g., islay, *Opuntia*, yucca, sages, and agave). Fresh-water and salt-water fish, shellfish, birds, reptiles, and insects, as well as large and small mammals, were also consumed. The Tongva are among several southern California native groups who were noted for periodically setting fire to the grassy plains and brush-covered hillsides to promote the growth of harvestable grass seeds, discourage the growth of chaparral, and create pasture for deer and antelope.

A wide variety of tools and implements were employed by the Gabrielinos to gather and collect food resources. These included bows and arrows, traps, nets, blinds, throwing sticks and slings, spears, harpoons, and hooks. Many plant foods were collected with woven seed beaters, several forms of burden baskets, carrying nets, and sharpened digging sticks, sometimes with stone weights fitted onto them. Groups residing near the ocean used ocean-going plank canoes (known as a *ti'at*) and tule balsa canoes for fishing (McCawley 1996:7). The ocean-going canoes were capable of holding six to fourteen people and were also used for travel and trade between the mainland and the Channel Islands. The tule balsa canoes were used for near-shore fishing.

Foods were processed with a variety of tools, including portable and bedrock mortars, pestles, basket hopper mortars, manos and metates, hammerstones and anvils, woven strainers and winnowers, leaching baskets and bowls, woven parching trays, knives, bone saws, and wooden drying racks. Food was consumed from a number of woven and carved wood vessels. The ground meal and unprocessed hard seeds were stored in large finely woven baskets, and the unprocessed acorns were stored in large granaries woven of willow branches and raised off the ground on platforms. Santa Catalina Island steatite was used to make comals, ollas, and cooking vessels that would not crack like regular stone under repeated firings (Kroeber 1925:629).

As part of the extensive exchange network, large amounts of steatite quarried on Santa Catalina Island were traded with numerous other groups on the coast and inland. In addition to cooking vessels, steatite was used to make effigies, ornaments, and arrow straighteners. Tongva obtained obsidian, acorns, and

seeds, among other items, from inland Tataviam and Vanyume (Desert) Serrano in exchange for coastal resources, such as steatite, shell beads, and dried fish. The Tongva also traded with other coastal groups, exchanging large, baked clay pipes obtained from the Kumeyaay or Luiseño to the south and with the Chumash on their northern border.

At the time of Spanish contact, the basis of Tongva religious life was the Chinigchinich Cult, centered on the last of a series of heroic mythological figures. Chinigchinich gave instruction on laws and institutions, and he also taught the people how to dance, the primary religious act for this society. He later withdrew into heaven where he rewarded the faithful and punished those who disobeyed his laws (Kroeber 1925:637-638). The Chinigchinich religion seems to have been relatively new when the Spanish arrived; the religion was in the process of spreading south into the Southern Takic groups even as Christian missionization was taking place and may have been influenced by Christianity.

Deceased Tongva were either buried or cremated (Harrington 1942; McCawley 1996). McCawley (1996:157) states that "[i]nternment may have been the more standard practice on the Channel Islands and the mainland coast directly opposite, perhaps reflecting either the influence of Chumash mortuary practices or else a scarcity of fuel suitable for funeral pyres." During the Contact Period, cremation was the standard practice for the mainland Tongva. Cremation ashes have been found in archaeological contexts buried within stone bowls and in shell dishes (Ashby and Winterbourne 1966:27). Archaeological and ethnographic data describe a wide variety of grave offerings, including seeds, stone grinding tools, otter skins, baskets, wood tools, shell beads, bone and shell ornaments, and projectile points and knives. Offerings varied with the sex and status of the deceased. Graves were sometimes marked, and in the San Pedro area headstones or boards were etched with figures (Heizer 1968:fn. 66).

European contact with the Tongva occurred as early as 1542 with the Spanish expedition led by Juan Rodriguez Cabrillo, followed by Sebastián Vizcaíno in 1602, both of who visited Santa Catalina Island. Colonization of Tongva lands did not begin in earnest until after the inland expedition led by Gaspar de Portolá in 1769; by 1771, four missions had been constructed in the region, including Mission San Gabriel, located in Los Angeles County and founded in September 1771 (Engelhardt 1927a). The Franciscan missions, charged with converting the Native Americans to Christianity and with acculturating them to European society and economy, began relocating them to mission grounds.

Known as *reducción*, relocation and baptism initially involved the Eastern Gabrielino of the plains as far south as the Santa Ana River and west to the Los Angeles River. The missionaries later proselytized the Western Gabrielino living west of the Los Angeles River, on the southern Channel Islands, and the interior groups to the east and south. Between 1780 and 1794, the majority of people from the southeast region were baptized and removed to the mission (King 2004:Figs. 7 and 8). Mission San Fernando del Rey was founded in 1797, and its priests pushed into the lands of other tribes located to the north and west and also converted Tongva people along the Los Angeles River and its tributaries. While mission life did give indigenous Californians some skills needed to survive in a rapidly changing world, much traditional cultural knowledge was lost during this era, as populations were moved and decimated by introduced diseases for which the people had no immunity.

With the founding of the Pueblo of Los Angeles in December 1781, civilian settlers came into the region, soon followed by retiring military men and their families from the Spanish garrisons (Engelhardt 1927b:48-51). The soldiers were given vast tracts of land by Spanish authorities within traditional Tongva subsistence areas. The Native Americans (both neophytes from the disintegrating missions and *cimarrones*, or gentile Indians) were among those who worked on the large ranchos. After governmental control of California shifted to Mexico, the missions were formally secularized in 1834, and the extensive mission lands were divided into private land grants, claimed by the growing ranchero class. With the migration of farmers to southern California after the Mexican-American War of 1846, the local native

population, who continued to work as laborers, was soon a minority that was often lumped together with the Mexican-American community. Many allied themselves with remaining Native American communities in the Tehachapi and San Bernardino Mountains.

In the early twentieth century, Tongva who still lived in San Gabriel neighborhoods near the old mission joined the Mission Indian Federation and sought redress from the federal government over lost lands. A generation later, partly as an outgrowth of the civil rights movement, Tongva started to form political organizations of their own to affect handling of ancestral remains discovered at construction sites and to seek federal acknowledgement of their tribe. There are currently five such organizations with total membership approaching nearly a thousand people. They are still struggling to receive federal recognition.

27.2.2.3 Historic Overview

Post-contact history for the state of California generally is divided into three specific periods: the Spanish Period (1769–1822), the Mexican Period (1822–1848), and the American Period (1848–present). As discussed in more detail in Chapter 2 of this report, although there were brief visits by Spanish, Russian, and British explorers from 1529–1769, the beginning of Spanish settlement in California occurred in 1769 with a settlement at San Diego and the first (Mission San Diego de Alcala) of 21 missions established from 1769–1823. After the 1822 revolution by Mexico against the Spanish crown, the Mexican Period is marked by an extensive era of land grants, most of which were in the interior of the state, and by exploration by American fur trappers west of the Sierra Nevada Mountains.

With the signing of the Treaty of Guadalupe Hidalgo in 1848, ending the Mexican–American War, California became a territory of the United States. The discovery of gold in 1848 at Sutter's Mill near Sacramento and the resulting Gold Rush era influenced the history of the state and the nation. The rush of tens of thousands of people to the gold fields also had a devastating impact on the lives of indigenous Californians, with the introduction and concentration of diseases, the loss of land and territory (including traditional hunting and gathering locales), violence, malnutrition, and starvation. Thousands of settlers and immigrants continued to pour into the state, particularly after the completion of the transcontinental railroad in 1869.

With continued growth, California continues to be a national leader in agriculture and poultry production, ranching (cattle and sheep), aerospace and communications industries, as well as the film and entertainment business. The wealth of California's natural resources (e.g., lumber, petroleum deposits, minerals, fish) also continues to contribute to its growth and development.

Kern County

The history of Kern County begins during the Spanish Period. In 1772, Pedro Fages, acting governor of Alta California, became the first European to travel to the area. Beginning in today's Imperial Valley, Fages crossed Tejón Pass in the Tehachapi Mountains into Grapevine Canyon, and entered the San Joaquin Valley, all in pursuit of Spanish Army deserters (Hoover et al. 2002:126). Four years later, Francisco Garcés, a Franciscan friar, entered the area from the south. Garcés named a large river Río de San Felipe; now known as the Kern River.

During the Mexican Period, José Aguirre and Ignacio del Valle received a large land grant in 1843; Rancho Tejón with 97, 616 acres. In the 1950s, General Edward Beale established a fort and reservation on Tejón ranch lands to protect local Native Americans from depredations by settlers. This outpost served as a military post and stage stop; it later housed a group of camels that Beale brought to the U.S. to serve

in the Mojave Desert, known as the Camel Corps. Beale bought the Tejón ranch in 1865 and retired there. The Tejón Ranch Company has since acquired many ranchos in the area, amassing in excess of a quarter million acres of land (Hoover et al. 2002:127). The buildings of Fort Tejón have been restored; the site is now Fort Tejón State Historic Park on Interstate 5 in Grapevine Canyon.

John C. Fremont led an expedition into Kern County in 1845 and 1846. He brought an artist by the name of Edward Meyer Kern from Philadelphia to act as the topographer for the expedition. While crossing a river, Kern narrowly escaped drowning, and Fremont named the river after his colleague (Gudde 1998:192; Hoover et al. 2002:124).

The history of the county would not be complete without mention of gold and other sources of natural wealth. Gold was discovered on the upper Kern River in 1853, bringing miners and settlers to the area. Kern County was established in 1866 with portions of Los Angeles and Tulare counties being set aside to form the new county. It is California's third largest county, and the county seat was established at Havilah in 1866. Mr. Asbury Harpending, who made a fortune in gold mining along the Kern River, built a toll road from Bakersfield to Havilah. The county seat was moved from Havilah to Bakersfield in 1874 (Gudde 1998:161; Hoover et al. 2002:132). Today, Kern County is the state of California's top oil-producing county, and accounts for one-tenth of the national oil production total. Three of the largest domestic oil fields are located in Kern County. The county is also home to the world's largest open pit mine, a borax extraction site located in the town of Boron.

Agricultural production has also been and continues to be identified with Kern County. The county was the destination of many of the Dust Bowl refugees chronicled by John Steinbeck in his Pulitzer Prize-winning novel *Grapes of Wrath*. His account chronicles the people from Oklahoma and Arkansas who were displaced by the severe dust storms of the 1930s and migrated to California for employment. These people came to be known as Oakies and Arkies, the terms usually applied as a pejorative. Many of them settled in Kern County to work the agricultural fields in the southern Central Valley.

When Filipino farm laborers organized a grape strike in Delano in 1965, it was the beginning of the farm workers labor movement and a protracted struggle to address wage and working conditions of farm labor workers. The striking laborers formed a union, led by Cesar Chavez. Later, Chavez helped to form the United Farmworker's Union from two smaller organizations, and went on to coordinate a non-violent grape boycott put together by the farm laborers. The struggle caught the attention of national consumers, and in 1970, the grape boycott was successful in bringing improved conditions for California's farm workers by negotiating contracts with the state's grape growers. Chavez died in 1993, and was celebrated with a U.S. Postage stamp bearing his likeness, as well as being posthumously awarded the Presidential Medal of Freedom.

In contrast to its agricultural bounty, Edwards Air Force Base was established on the arid landscape of the Mojave Desert in eastern Kern County. The base is the site of numerous historical aeronautic milestones, including the first supersonic flight, and the first landing of the Space Shuttle. Less famous, the epicenter of the second largest earthquake to strike the state (after the San Francisco earthquake in 1906) is in Kern County near Bear Mountain. Hitting on July 21, 1952, the quake measured 7.3 on the Richter scale and was responsible for the deaths of eighteen people, and an estimated fifty million dollars worth of property damage.

Lebec

The unincorporated community of Lebec was named for Peter Lebeck, probably a member of a trapping party from the Hudson's Bay Company, who shot and wounded a grizzly bear near the site of Fort Tejón

in 1837. The bear subsequently killed the unfortunate Lebeck; he was buried beneath a large oak tree and commemorated with an inscription written on the tree trunk. The tree is now preserved in the Kern County Museum. The name has been variously spelled as Le Beck, Lebecque, and Lebec (Gudde 1998:207).

Lebec is located between Fort Tejón in Grapevine Canyon to the north and Tejón Pass to the south. In 1772, Pedro Fages led an expedition through the mountain pass at the south end of the San Joaquin Valley in search of Spanish Army deserters (Hoover et al. 2002:125). Fages named the pass "Buena Vista" or "good view." It later became known as Tejón Pass. The pass has been an important transportation corridor between the San Joaquin Valley and the greater Los Angeles metropolitan area, even prior to the advent of the automobile. Interstate 5, the major north-south inland highway through the state now traverses over the pass and through Grapevine Canyon.

Northern Los Angeles County

In August 1769, the Spanish overland expedition led by Gaspar de Portolá went as far north in Los Angeles County as the San Fernando Valley, before heading west into Ventura County. This marked the beginning of the valley's use by Spanish military supply trains servicing newly established missions, including Mission San Gabriel de Arcangel (1771), the first permanent European settlement in the area. Later, in 1772, Spanish Commander Pedro Fages found grapes in the mountains north of present day Gorman and named the area Cañada de Las Uvas, or Grapevine Canyon (Scott 2003). Spanish settlers including Francisco Reyes established ranchos in the San Fernando Valley by the 1790s. In 1797, the Mission San Fernando Rey was founded on land appropriated from Reyes (Englehardt 1927:5-10). Secularization of the missions during the Mexican Period (1822–1848) resulted in the vast Mission San Fernando land holdings being acquired by Andrés Pico (brother of Pío Pico) and Juan Manso in 1845 (Robinson 1961). Although Pico and Manso originally leased the former Mission San Fernando lands from the Mexican government, the pair eventually acquired title to the rancho and U.S. courts upheld their ownership after the Mexican-American War of 1846-1848. Andrés Pico bought out his partner but by 1869, the Pico family sold all but approximately 2,000 acres of the approximately 117,000-acre rancho to the San Fernando Farm Homestead Association (Robinson 1961:21). This sale began the transition from ranching to farming in the San Fernando Valley typical of changing land use in the early American Period.

The San Fernando Valley was not excluded from the real estate boom that swept throughout southern California in the 1880s (Dumke 1944:93-103). However, unlike nearby areas such as San Gabriel, where the formation of towns was key, the boom in the San Fernando Valley primarily involved the sale of farm properties. Los Angeles County north of the valley did not experience the same population boom at this time primarily because the land was not nearly as suitable for farming.

The Santa Clara Valley region experienced population growth in mid-1800s spurred primarily by two events: the 1842 discovery of gold in Placerita Canyon, the first documented discovery in California (Worden 1996); and the 1859 discovery of oil in Pico Canyon, which resulted in the 1879 construction of California's first oil pipeline (Franks and Lambert 1985). By 1876, the Southern Pacific Railroad went as far north as Saugus before turning west toward Ventura, providing transportation for the Santa Clara Valley's agricultural, ranching, and oil products. This transportation route directly led to the development of the town of Newhall.

The Lebec to San Fernando segment veers east off Interstate 5 to follow the old Ridge Route Road through the town of Sandberg. This road opened in 1915 and, despite being curvy and only 20 feet wide, quickly became the preferred alternative for motorists traveling between Los Angeles and the San Joaquin

Valley (Kehe 1998). This road cut the distance of the "Midway" route, which ran through the Mojave Desert and Tehachapi Mountains, by nearly 58 miles. The popularity of the Ridge Route led to the establishment of numerous small businesses and inns in such places as Lebec, Gorman, and Sandberg. A straighter, wider road known as the Alternative Ridge Route was opened in 1933 (Kehe 1998). This led to the closure of many businesses along the portion of the old Ridge Route now bypassed. In 1960, Interstate 5 was constructed adjacent to, and occasionally crossing, the Alternate Ridge Route. These transportation routes were key to the historic development of the mountainous portion of Los Angeles County north of the Santa Clara Valley. Today, the mountain communities include residents who commute to jobs in the Los Angeles and Bakersfield metropolitan areas as well as those who are locally employed.

City of San Fernando

The history of the City of San Fernando has been largely discussed above, in the history of North Los Angeles County. San Fernando was established in September 1874 as the first organized community within the San Fernando Valley with the town site, platted by Charles Maclay, adjacent to the former mission (Dumke 1944; City of San Fernando 2006). San Fernando was the official northern terminus for the Southern Pacific Railroad from Los Angeles until the southward-reaching branch from San Joaquin was completed in 1886 (Dumke 1944). The completion of the railroad resulted in a boom for the community augmented by Maclay's construction of a 2 million-gallon reservoir serving the area. The City of San Fernando was incorporated in 1911, one of five cities in the valley not incorporated into the City of Los Angeles after the 1915 completion of the Owens Valley–Los Angeles Aqueduct. The twentieth century witnessed continued growth for the community including periods of rapid population growth corresponding with the two World Wars. Today, despite the San Fernando Valley being subsumed by the sprawl of Los Angeles, reminders of the community's history remain evident, such as portions of the original Mission San Fernando.

City of Burbank

Don José María Verdugo was granted the 36,403-acre Rancho San Rafael by Spanish Governor Pedro Fages in 1784 (Cowan 1956). This rancho and the 4,600-acre Rancho La Providencia (granted to Commandante J. Castro, Luis Arenas, and Vincente de la Ossa during the Mexican Period) covered most of present-day Burbank (Burbank Unified School District 1967). In 1845, the Battle of Providencia, also called the "Second Battle of Cahuenga Pass," took place at Rancho La Providencia. The battle resulted in the unpopular Mexican Governor Manuel Micheltorena being replaced by Pio Pico, who was highly popular with Californios even into the American Period (Burbank Unified School District 1967).

The first Americans to own land in the future Burbank were David W. Alexander and Alexander Bell, who purchased the Rancho La Providencia from Vincente de la Ossa for $1,500 in 1851 (Burbank Unified School District 1967). In 1857, Jonathan R. Scott traded his land in the La Cañada area, formerly part of the Verdugo family rancho, for 4,603 acres of the western portion of Rancho San Rafael. Today, this area is the business district of Burbank.

In 1867, Dr. David Burbank purchased the Rancho La Providencia and Scott's portion of Rancho San Rafael and combined them into one ranch, receiving clear title in 1871. Burbank was a dentist in the pueblo of Los Angeles, but soon became an established and successful sheep farmer. He shrewdly sold a right-of-way to the Southern Pacific Railroad for one dollar in 1873, and the first train passed through his property in 1874 (Burbank Unified School District 1967). In 1886, Burbank sold his ranch to a group of investors (including himself) who formed the Providencia Land and Water Company (Dumke 1944; City of Burbank 2006). The town of Burbank was laid out in April 1887, and the Providencia Land and Water Company advertised its 17,000 acres of town and surrounding farmland on the Southern Pacific line

(Dumke 1944). Within one year, the town had a streetcar line, a sixty-room hotel, and over 250 residents (Dumke 1944). However, a depression struck the greater Los Angeles area in 1889, and land values tumbled. Burbank survived the following dry climatic period by farming and tapping natural underground water wells (Burbank Unified School District 1967).

The City of Burbank was incorporated in 1911, the same year the Pacific Electric Railroad was completed from Los Angeles to Burbank (Burbank Unified School District 1967). The city experienced a boom in the 1920s, with the addition of many new industries. Among these were the First National Studio (now Warner Brothers), which began the city's noted association with the motion picture industry, and Lockheed Aircraft Company, which after bankruptcy caused by the 1929 stock market crash, became the Lockheed Aircraft Corporation. The Burbank Airport began construction in 1929 and was touted as the "first $1 million airport in the U.S." (Burbank Unified School District 1967). From the 1920s through the 1950s, Burbank annexed 13 areas, increasing the incorporated area of the city to nearly 17 square miles (Burbank Unified School District 1967). World War II created growth for both the aerospace and the motion picture industries. In 1951, the National Broadcasting Company (NBC) opened its color television studios in Burbank (Burbank Unified School District 1967). Today, Burbank is well known as the location of many television and movie studios and for being a mixed-use community with a bustling commercial airport.

27.3 PREVIOUS RESEARCH

27.3.1 Literature Search

27.3.1.1 Methods

A cultural resources site and survey record search was conducted at the Southern San Joaquin Valley Information Center (SSJVIC) and the South Central Coastal Information Center (SCCIC) of the California Historical Resources Information System (CHRIS) on May 25, 2000. Because the cable conduit already has been installed and no new construction will take place, only archaeological sites and surveys were requested; built environment resources (i.e., historic structures) were not requested. Site and survey information were requested for the linear project corridor and a 1/2-mile radius. Because some survey reports were very large, only bibliographic information on them was obtained.

In addition to official maps and records, the SCCIC and SSJVIC consulted the following information sources as part of their record search:

- National Register of Historic Places – Listed Properties
- California Register of Historical Resources
- California Inventory of Historical Resources
- California State Historical Landmarks
- California Points of Historical Interest
- Directory of Properties in the Historical Resources Inventory (Office of Historic Preservation)
- Caltrans State and Local Bridge Surveys

27.3.1.2 Findings

The literature search indicated that the project area within Kern County has not been subject to intensive archaeological investigation, as only 5 percent of the area has been previously surveyed. In contrast, the intensity of survey coverage in Los Angeles County is approximately 90 percent.

A total of 77 cultural resources have been previously recorded within the 1/2-mile radius of the segment corridor, only three of which are within Kern County (Table 27-4). Two of the resources in Kern County are historic; the third contains both prehistoric and historic components. Of the 74 cultural resources within Los Angles County, 43 are prehistoric (35 sites and eight isolated finds) and 31 are historic. None of the sites in either county are known to contain Native American burials, although four middens or occupation sites within Los Angeles County have a moderate to high probability of containing burials.

The series of 1:24,000 maps at the end of this chapter (Figure 25.1 through Figure 25.24) show the previously recorded cultural resources along the segment, as provided by the CHRIS records search. As noted in the figure legend, the labeled resources are identified as one of four types: linear, prehistoric, historic, or protohistoric and/or multi-component.

Table 27-4. Segment 25 Corridor – Previously Recorded Cultural Resources

Site #	Site Type	Site Condition	USGS Quad	Recorded
P-15-007740	Historic plaque for Don Pedro Fages	N/A	Lebec	Arbuckle 1980
CA-KER-1616H, P-15-005458	Isolate Historic glass shards	Unknown	Frazier Mountain	Hudlow 1996
CA-KER-2848H, P-15-002848	Fort Tejón Historic Park- Prehistoric bedrock milling, stone quarry, lithic scatters, historic structures and deposits, cisterns	Disturbed – trenching, construction, development, agriculture	Frazier Mountain	Knight 1998
CA-LAN-34	Prehistoric site with piles of metates and milling stones	May have been destroyed by SCE substation	San Fernando	Walker 1951; Sutton 98
CA-LAN-407	Prehistoric cairn complex	Destroyed by apartment complex	San Fernando	King 1970; Sutton 1998
CA-LAN-408	Prehistoric campsite	Destroyed by development	San Fernando	King 1970; Sutton 1998
CA-LAN-409	Prehistoric site	Destroyed by development	San Fernando	King 1970; Sutton 1998
CA-LAN-410	Prehistoric site	Destroyed	San Fernando	King 1970
CA-LAN-411	Prehistoric site	Probably destroyed	San Fernando	King 1970
CA-LAN-412	Prehistoric site	Probably destroyed	San Fernando	King 1970
CA-LAN-644	Prehistoric site with manos, metates, lithics	Destroyed	San Fernando	Kelley, Gates, Bente, McIntyre 1974

Table 27-4. Segment 25 Corridor – Previously Recorded Cultural Resources

Site #	Site Type	Site Condition	USGS Quad	Recorded
CA-LAN-255	Prehistoric habitation site with midden, groundstone, lithics, shell, possible cemetary	Destroyed	San Fernando	Apostolides and Croasdale 1963; Beaton 1968
P-19-002681	Prehistoric site with metates, manos, lithics, and historic glass	Disturbed by development	San Fernando	Knight 1998
P-19-002766	Historic trash deposits and subsurface constructs	Destroyed	San Fernando	Greenwood and Associates 1999
CA-LAN-2003	Prehistoic site with manos, other groundstone and chipped stone artifacts	Surface has been graded and plowed; site was backhoe tested; "site integrity destroyed"		Bleitz 1991
CA-LAN-2097H	Historic oil well and bricks	Disturbed – bulldozed	San Fernando	McDowell and Cole 1992
CA-LAN-1124H	Historic foundations of Southern Pacific Railway	Disturbed	San Fernando	Howell 1982
CA-LAN-2105H	Historic Los Angeles Aqueduct	Good	San Fernando	Costello, Marvin, Tordoff 1992
CA-LAN-2145H	Buick/Santa Ana Oil Road	Currently used as access road, regularly graded.	San Fernando, Oat Mountain	McDowell 1993
CA-LAN-2146H	System of 35-foot single wooden utility poles	Extant, in use	San Fernando, Oat Mountain	R. Sheets 1993
CA-LAN-2147	Pacific Coast Oil Road	Extant, unknown	San Fernando, Oat Mountain	Sheets and Cole 1993
CA-LAN-2148	Old Oil Road, Cuesta Viejo Trail	Portions paved over or destroyed by utility, highway and aqueduct construction	San Fernando, Oat Mountain	Sheets and Cole 1993
CA-LAN-2149	High voltage transmission lines suspended from steel towers	Extant, unknown	San Fernando, Oat Mountain	Cole, McDowell, Shelton 1992
CA-LAN-2150H	Main Road to Elsmere Canyon and associated oil wells	Some wells abandoned and destroyed	San Fernando, Oat Mountain	Sheets and Cole 1993
P-19-002132H	Linear feature, not recorded	Unknown	San Fernando	n/a
P-19-1000340	Andesite Core	Isolate	Newhall	Unknown 1981

Table 27-4. Segment 25 Corridor – Previously Recorded Cultural Resources

Site #	Site Type	Site Condition	USGS Quad	Recorded
P-19-100032	Chalcedoney and Quartzite flakes	Isolate	Newhall	Unknown 1977
P-19-1000345	Mano	Isolate	Newhall	Unknown 1977
P-19-1000346	Metate	Isolate	Newhall	Unknown 1977
CA-LAN-823	Prehistoric Chumash village site with ollas and beads	Destroyed	Newhall	Rosen 1975; Sutton 1989
CA-LIF-28	Isolate Prehistoric projectile point	Collected	Newhall	Dillon 1993
CA-LAN-2369H	Prehistoric site with mano and FCR, historic porcelain sherds	Fair – affected by erosion and bioturbation	Oat Mountain	Stick 1995
CA-LAN-1938H	Historic oil well site with tanks	Disturbed – vandalism and fire	Oat Mountain	Sheets and Gothar 1990
CA-LAN-1939H	Historic oil and water well site	Disturbed – vandalism and fire	Oat Mountain	Sheets and Gothar 1990
CA-LAN-1940H	Historic oil tanks, foundations, metal pipes	Disturbed – vandalism and fire	Oat Mountain	Sheets and Gothar 1990
CA-LAN-1941H	Historic jack line cradle and tanks	Disturbed – vandalism and fire	Oat Mountain	Sheets and Gothar 1990
CA-LAN-1942H	Historic oil well site with tanks	Disturbed – vandalism and fire	Oat Mountain	Sheets and Gothar 1990
CA-LAN-1943H	Historic oil well site with tanks	Disturbed – vandalism and fire	Oat Mountain	Sheets and Gothar 1990
CA-LAN-2570H	Historic foundation and earth mound	Poor	Lebec	Hines 1978
CA-LAN-2571H	Historic trash deposits and depression in hillside	Poor	Lebec	Hines 1978
P-19-002574H	Historic dugout with subsurface root cellar and retaining wall, wood debris	Good	Lebec	Hines 1978
P-19-002572	Historic ranch with subsurface deposits, metate fragment	Poor	Lebec	Hunter 1978
P-19-002573	Unknown historic site	Unknown	Lebec	Unknown
CA-LAN-2116	Prehistoric roasting pit	Excavated	Lebec	Ferraro 1992
CA-LAN-903	Prehistoric lithic scatter	Disturbed by grazing and erosion	Lebec	Anderson 1978
CA-LAN-921	Prehistoric roasting pit with FCR	Disturbed by erosion	Lebec	Hines 1978

Table 27-4. Segment 25 Corridor – Previously Recorded Cultural Resources

Site #	Site Type	Site Condition	USGS Quad	Recorded
CA-LAN-926	Prehistoric lithic scatter	Disturbed by bulldozing	Lebec	Anderson 1978
CA-LAN-925	2 Prehistoric bedrock mortars	Good – cattle grazing	Lebec	Baldwin 1978
CA-LAN-927	Prehistoric Isolate metate fragment	Area disturbed by development	Frazier Mountain	Schuster 1978
CA-LAN-1536	Prehistoric site with midden, flakes, beads	Good – site is intact	Frazier Mountain	Wakefield and Brown 1988
P-19-120018	Historic cement foundations of a fire lookout station	Disturbed	Liebre Mountain	Reponer 1978
CA-LAN-2372	Prehistoric hearth and FCR	Disturbed by development	Liebre Mountain	Haslouer and Sheets 1994
CA-LAN-1834H	Historic trash scatter of glass, metal, and cans	Fair	Liebre Mountain	Wahoff and Davis 1990
CA-LAN-1835	Prehistoric site with 7 roasting pits	Fair	Liebre Mountain	Davis 1990
CA-LAN-1354	Prehistoric lithic scatter	Disturbed	Liebre Mountain	Reponent 1978; Everson 1989
CA-LAN-1305	Prehistoric earth oven complex	Disturbed by road	Liebre Mountain	McIntyre 1989
CA-LAN-1277	Historic refuse scatter, former structure	Disturbed - All above ground features destroyed	Liebre Mountain	Wessel 1985
CA-LAN-992H	Historic foundations and trash deposits	Disturbed by development	Liebre Mountain	Reponent 1978; Broeker and Ferraro 1992
CA-LAN-993H	Historic trash deposits	Disturbed by vandalism	Liebre Mountain	Reponent 1978
CA-LAN-2373	Prehistoric hearth and FCR	Distrubed by road development	Liebre Mountain	Haslouer and Sheets 1994
P-19-120017	Historic Forest Service Campground	Disturbed - erosion, and deposition of eroded material	Liebre Mountain	Reponent 1978
CA-LAN-2463H	Historic debris and former structure	Poor	Whitaker Peak	Milburn, Bracken, and Scott 1996
CA-LAN-990H	Historic Old Ridge Route roadway, remnants of structures, historic dump sites	Disturbed – all structures demolished	Whitaker Peak	Reponent 1978; Milburn and Scott 1993
CA-LAN-991H	Historic Inn and dump sites	Disturbed – vandalism and development	Whitaker Peak	Reponent 1978

Table 27-4. Segment 25 Corridor – Previously Recorded Cultural Resources

Site #	Site Type	Site Condition	USGS Quad	Recorded
CA-LAN-2375	Prehistoric site with hearth, FCR, and lithics	Disturbed by firebreak	Black Mountain	Milburn 1992; Haslouer and Sheets 1994
P-19-100084	Prehistoric isolate point	Collected	Black Mountain	Milburn 1992
P-19-100152	Prehistoric isolate flake	N/A	Black Mountain	Anderson 1996
P-19-002578	Prehistoric site with lithic scatter, groundstone, burnt bone	Good	Black Mountain	Anderson, Mullen, and Sawyer 1997
P-19-002579	Prehistoric site with roasting pit and lithics	Good, some disturbance by bulldozing	Black Mountain	Anderson 1997
P-19-002580	Prehistoric lithic scatter	Fair	Black Mountain	Anderson 1997
P-19-002581	Prehistoric hearth feature	Completely excavated/removed	Black Mountain	Anderson 1997
P-19-002582	Prehistoric roasting hearth feature	Disturbed by grading for pipeline	Black Mountain	Anderson 1997
P-19-002480	Prehistoric roasting hearth feature	Disturbed by grading for firebreak	Black Mountain	Anderson 1997
CA-LAN-2374	Prehistoric hearth feature, lithics, projectile point	Disturbed by firebreak, pipeline	Black Mountain	Anderson 1994
CA-LAN-2375	Prehistoric hearth feature, lithics	Disturbed by firebreak, pipeline	Black Mountain	Haslouer, Sheets 1994
CA-LAN-2058	Prehistoric site with midden, lithics, faunal bone, groundstone	Disturbed – powerline road runs through site	Black Mountain	Milburn, Kozach
CA-LAN-1141	Large Prehistoric Site: lithics, bifaces, groundstone, burnt bone	Excellent – bifaces collected	Black Mountain	McIntyre, Peterson, Miles, Wessman 1984

27.3.2 Native American Consultation

27.3.2.1 Methods

The Native American Heritage Commission (NAHC) was contacted on May 5, 2000, to request a Sacred Lands file search and a current Native American contact list. The Commission's response, dated May 17, 2000, provided the names and addresses of 17 local Native American groups and individuals. Letters subsequently were sent on May 19, 2000, to the listed groups and individuals to determine if they have knowledge of culturally sensitive locations within the project area. If there was no response to the letter, a

telephone call was made to each individual or representative on June 6, 2000. A table listing contact dates and responses is attached as Appendix B.

27.3.2.2 Findings

The reply from the NAHC states the search failed to indicate the presence of Native American cultural resources in the immediate project area. Two telephoned responses were received to the letters addressed to the contact list; no responses were received to the telephone calls. Ron Wermuthy for the Kem Valley Indian Community expressed no specific concerns. Charles Cook also expressed no specific concerns.

27.4 FIELDWORK

Fieldwork for the Lebec to San Fernando segment involved (1) pedestrian survey and limited visits to known sites and (2) monitoring of maintenance activities. No cultural resources were collected during the Qwest Network Construction Project.

The fieldwork was conducted under the supervision of a CRS, who supervised lead archaeological monitors and a staff of archaeological monitors. Archaeological monitors were responsible for being on site during all work in sensitive areas, conducting spot checks if the area was designated for intermittent monitoring, and completing Daily Monitoring Logs. The CRS or archaeological monitor was responsible for flagging or otherwise delineating ESAs, including a 15-foot buffer zone around cultural resources, within four days prior to maintenance activities. The archaeological monitor was also responsible for completing a Site Condition Record immediately after removal of such flagging or other protective markers.

27.4.1 Survey

A pedestrian survey was conducted to identify any historic/prehistoric sites or features that may have been encountered during the installation of the fiber optic lines. The entire segment was subjected to intensive pedestrian survey for cultural resources. The survey area consisted of a swath of land straddling the fiber optic line and extending 15 meters to either side. This area was considered the area of potential effect (APE) for Qwest backbone construction.

27.4.1.1 Methods

The survey crew consisted of 14 archaeologists, and survey parties of one or two individuals. The survey parties were deployed to conduct surveys along the alignment. For safety, two-member survey parties were implemented in remote and inhospitable areas. Table 27-5 provides a list of key site investigation staff, along with their professional credentials.

Qualified archaeologists walked a single pedestrian transect on either side of the fiber optic backbone alignment. Exposures of native soil were closely inspected for cultural material, as were animal burrows and other disturbances affording limited subsurface visibility. An attempt was made to locate known sites within the APE, based on the CHRIS records searches. Field crews then recorded the extent of impacts upon cultural resources resulting from Qwest backbone construction and construction-related activities. During all site inspections, data was routinely gathered to update site records, based on current site conditions. The condition of all previously recorded cultural resources that survey crews could locate within the APE was recorded on Site Condition Record forms.

In addition to reporting on the condition of previously recorded sites, survey crew members were instructed to record any cultural resources not previously recorded and any impacts the resource may have suffered as a result of the Qwest backbone construction. The minimally acceptable level of documentation needed for a resource's inclusion in the Office of Historic Preservation's (OHP's) filing system can be met with the preparation of a California Department of Parks and Recreation (DPR) 523 series Primary Record and a Location Map. While the minimum level of documentation is designed to provide an initial record of all types of cultural resources, survey crews were instructed to fully document any previously unrecorded resources. Full documentation (although different for various types of resources) generally includes the preparation of the Primary Record and Location Map, but also an Archaeological Site Record, Artifact Record, Photograph Record, as well as a Sketch Map.

Table 27-5. Key Site Investigation Staff

Key Staff	Highest Degree *	Years Experience
Cindy Arrington	M.S., RPA	10
Paul Shen-Brown	M.A., RPA	8
Lori Harrington	M.A., RPA	15
Mark Sullivan	M.A., RPA	26
George Zeimens	M.A., RPA	30
Bradbury Brown	B.A.	18
William Brown	B.A.	10
Todd Folmer	B.A.	11
Keith Hamm	B.A.	4
Susan Kintscher	B.A.	2
Harry Moyer	B.A.	5
Mark Lowe	B.A.	12
Joise Salas	B.A	3
Dean Tye	B.A.	5

* RPA = Member of the Register of Professional Archaeologists

27.4.1.2 Findings

The entire segment was surveyed by archaeologists George Zeimens, Paul Shen-Brown, and Mark Sullivan in the fall and winter of 2000. The pedestrian survey did not locate any previously unrecorded or newly identified cultural resource sites, artifacts, or objects

The survey crew relocated one previously recorded archaeological site (historic) within the APE. The crew completed Site Condition Record forms for each known resource that was relocated. Table 27-6 summarizes the condition of each of these resources, none of which were impacted by Qwest.

Table 27-6. Segment 25 Condition of Relocated Archaeological Sites

*Resource Name or # (Assigned by recorder) CA-LAN-1124H Quad: San Fernando
*Recorded by: Cindy Arrington *Date Recorded: 12-28-00 ☐ Continuation ☒ Update
This site has been completely obliterated by urbanization. It is therefore not possible that the Qwest line could impact the site.

27.4.2 Monitoring

27.4.2.1 Methods

In accordance with Protocol 5, a Mitigation and Monitoring Plan (MMP) was prepared in June 2000. The MMP noted that in this project corridor, Qwest would be performing maintenance on an existing line only. No new trenching was foreseen at this location. The proposed maintenance activity consisted of the re-excavation of pre-existing assist holes to perform maintenance or upgrades on the fiber-optic line. These excavations might take place at four points per linear mile. The MMP concluded that it was possible that some previously undisturbed soil might be disturbed during re-excavation.

Within a 1/2-mile of the proposed project corridor, 77 archaeological resources have been previously recorded. Of these resources, none are known to contain Native American burials, although four sites in Los Angeles County have a moderate to high probability of containing burials. Although the percentage of the route remaining unsurveyed outside of the railroad ROW and specified roadways is 95 percent within Kern County and only 10 percent within Los Angeles County, the presence of human remains along this segment was not considered likely. Since some previously undisturbed soil may be disturbed during re-excavation, it is possible that previously unknown cultural resources might be discovered in the course of maintenance activities, but this was considered unlikely.

In view of the above information, the MMP made the following recommendations for monitoring within this study area:

- An archaeological monitor would be present when any maintenance is performed along this project corridor.
- No Native American observer would be present when any maintenance is performed along this project corridor.

27.4.2.2 Findings

No maintenance was required for the Lebec to San Fernando segment during the monitoring period. Because no maintenance activities occurred, archaeological monitoring was not necessary.

27.5 DISCUSSION

Prior to the current investigation, 90 percent of the Lebec to San Fernando segment corridor had been investigated for cultural resources within Los Angeles County, but only 5 percent had been investigated within Kern County. Within a 1/2-mile radius, 77 cultural resources had been previously recorded, three of which are in Kern County. None of the known archaeological sites contained Native American burials, although four in Los Angeles County were considered to have a moderate to high probability of

containing burials. No cultural resources had been previously recorded within the project corridor, and no previously unknown cultural resources were identified during the fieldwork reported here along the railroad ROW. The presence of human remains was not considered likely along this segment, and no evidence of human remains was discovered during this project.

Under the oversight of a CRS, the specific Cultural Resources Protocols for this project were accomplished. Preparation of a MMP in compliance with Protocol 5 assured that known cultural resources would be avoided as feasible and impacts reduced by ensuring that any necessary archaeological mitigation was carried out prior to commencement of the maintenance activity. In compliance with Protocol 7, the literature search and subsequent fieldwork assured that identified cultural resources within the segment corridor were protected. Under Protocol 8, an archaeological monitor and Native American observer were present where appropriate. During the project, it was not necessary to implement Protocol 9, which describes the methods to be employed to address unanticipated discoveries and assure that cultural resources are protected by work stoppage and evaluation of the resource by the CRS or an archaeological monitor, since there were no unanticipated discoveries. Although it was not necessary to implement Protocol 10, that protocol describes the actions to be taken in the event of the discovery of human remains or suspected human remains.

27.6 RECOMMENDATIONS

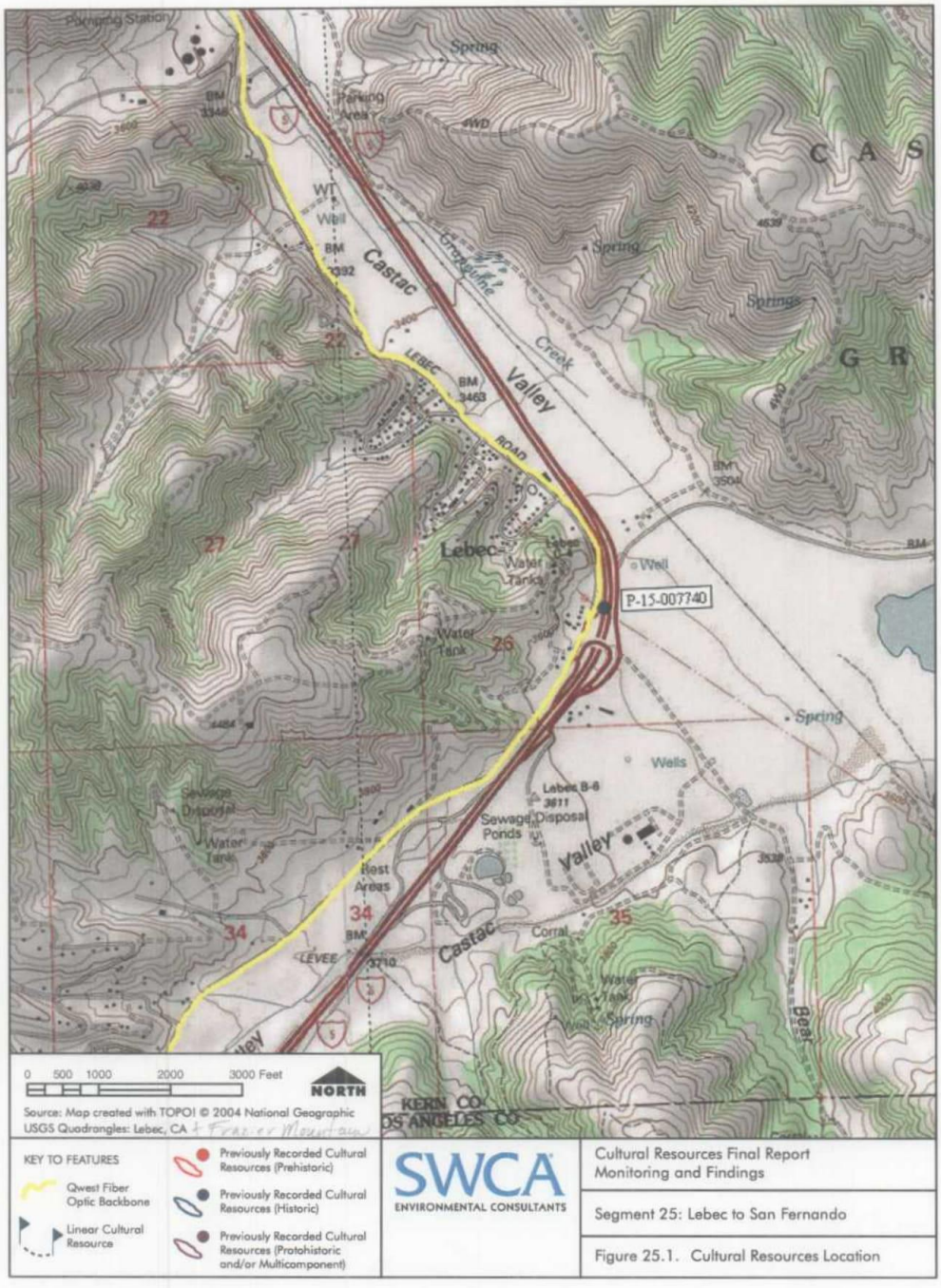
Given that the current field investigation was conducted along a railroad corridor, efforts to locate and relocate cultural resources within the scope of this project have been sufficient per current U.S. Secretary of the Interior's professional standards and guidelines.

There remains, however, the potential for the existence of buried archaeological materials within this heavily disturbed project area. Prehistoric materials might include flaked stone tools, toolmaking debris, stone milling tools, fire-affected rock, animal bone shaped for use as tools, baked clay items, pottery, marine shell, or soil darkened by cultural activities (midden). Historic materials might include building remains, metal, glass, or ceramic artifacts or debris.

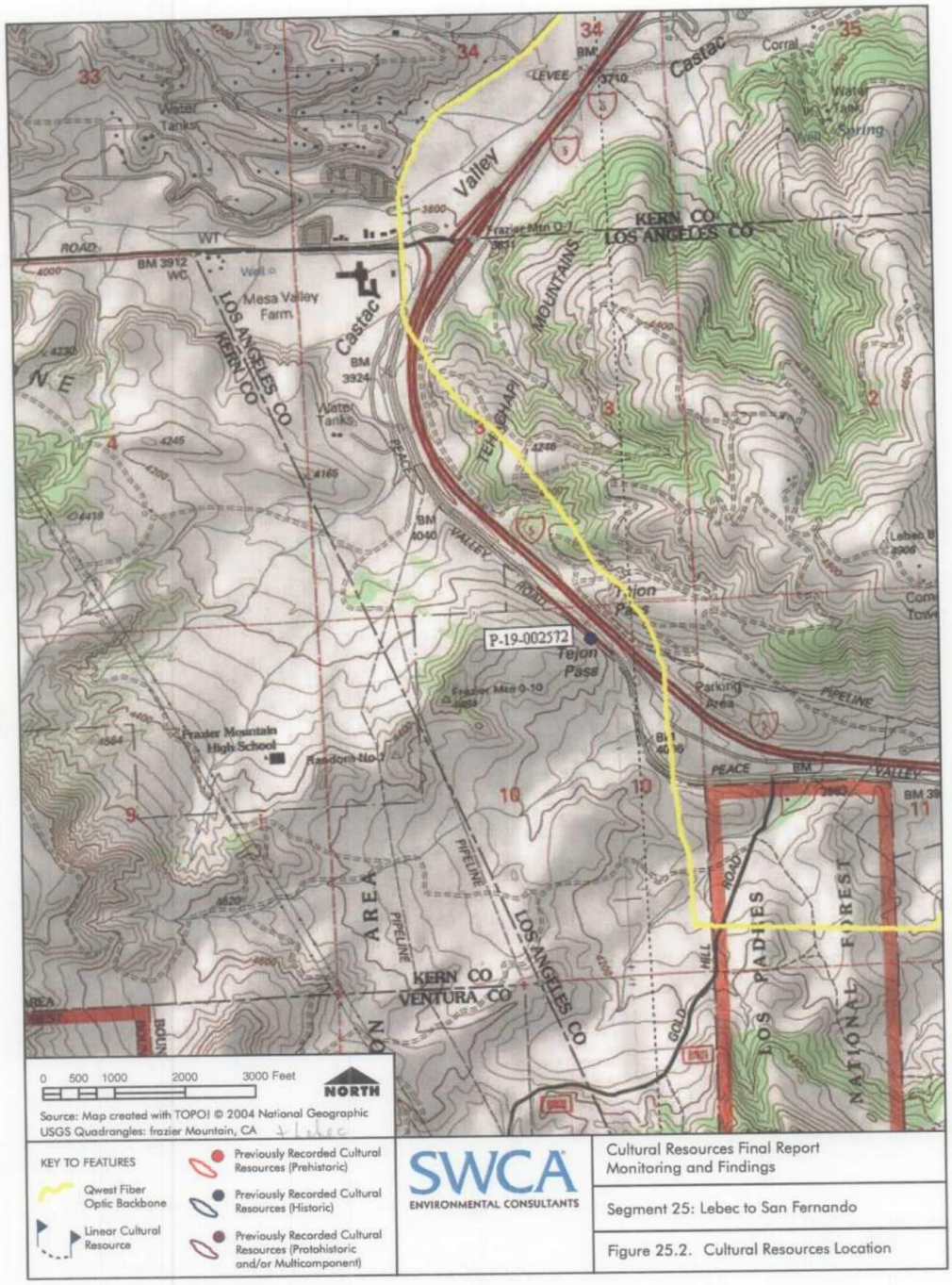
Should cultural resources be encountered by Qwest construction and/or management crews during future disturbance for maintenance of fiber-optic cable and related infrastructure, or should new construction occur within the state of California, work in the area must be halted and a qualified archaeologist should be notified immediately to evaluate the resource(s) encountered. Qwest would also adhere to the specific Cultural Resources Protocols, numbered 1 through 11, which were prepared to ensure Qwest's compliance under CPUC regulatory authority (see Appendix A).

- Protocol Number 1: Records Search and Data Adequacy Analysis
- Protocol Number 2: Native American Consultation
- Protocol Number 3: Archaeological Inventory and Site Recording
- Protocol Number 4: Site Boundary, Integrity or Significance Testing
- Protocol Number 5: Mitigation Monitoring Plan
- Protocol Number 6: Pre-Construction Data Recovery
- Protocol Number 7: Protection of Environmentally Sensitive Areas
- Protocol Number 8: Archaeological Monitoring and Native American Observation
- Protocol Number 9: Addressing Unanticipated Discoveries during Project Activity
- Protocol Number 10: Discovery of Human Bone
- Protocol Number 11: Final Report of Monitoring and Findings

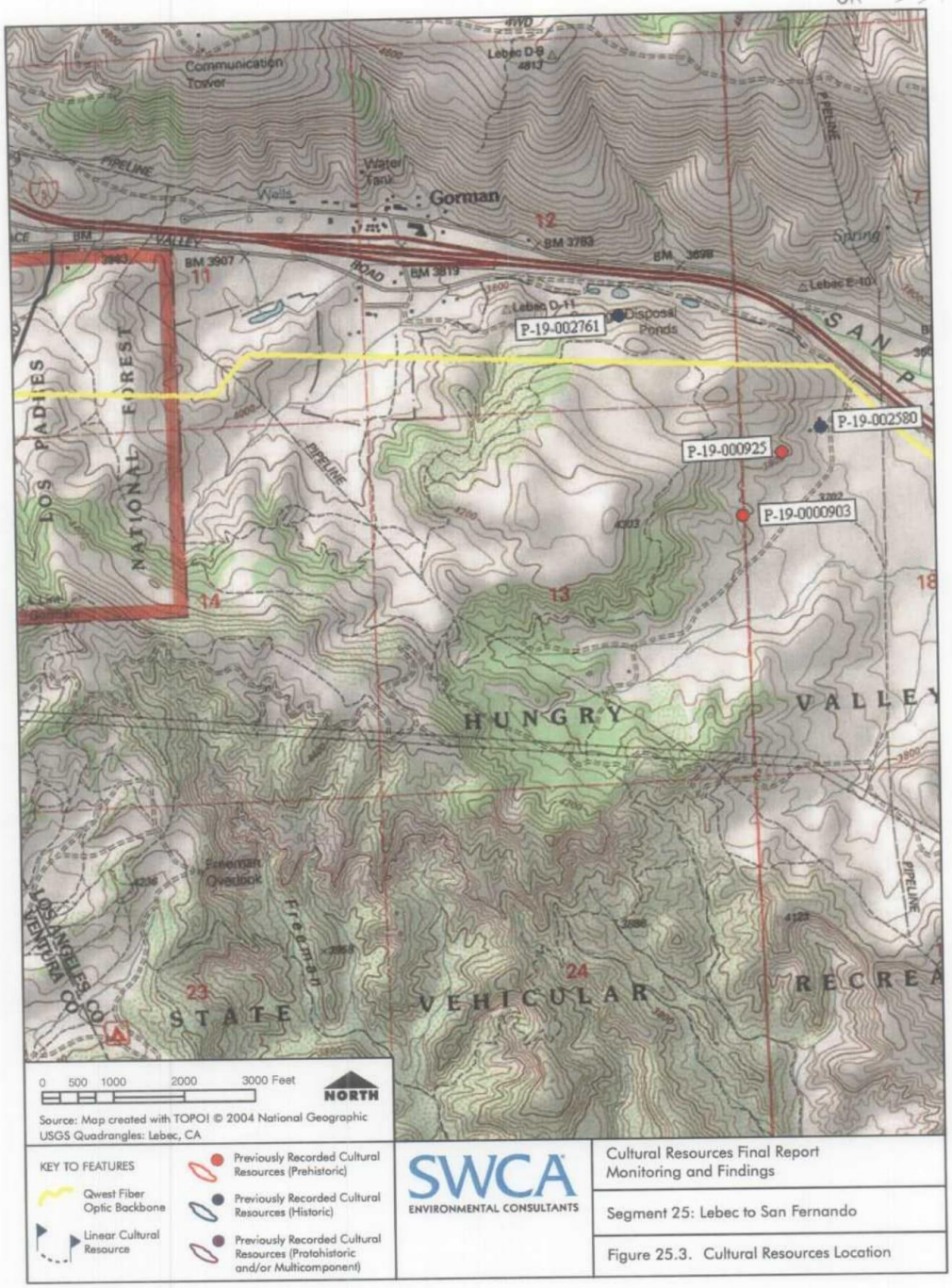
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OR 3373



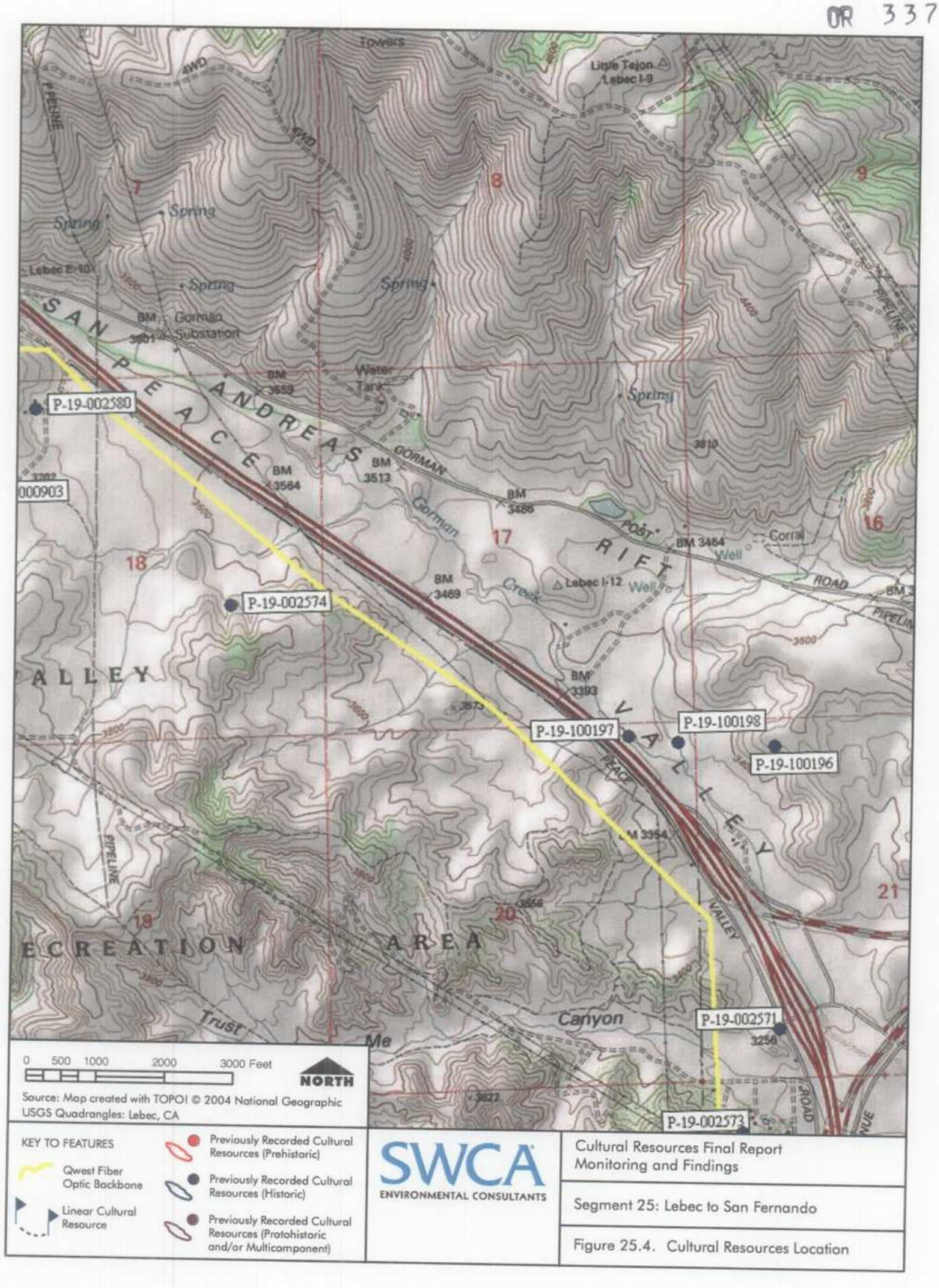
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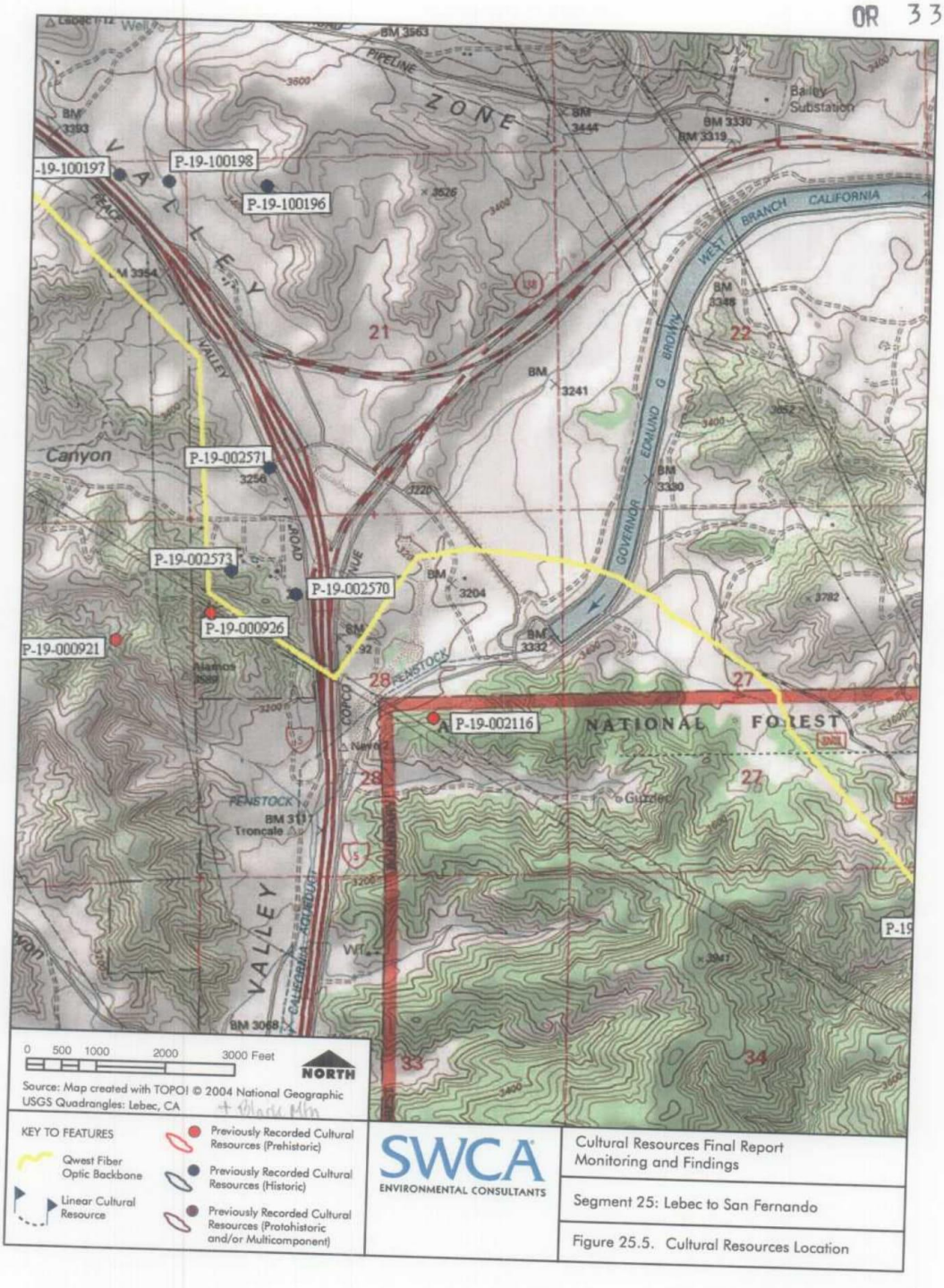
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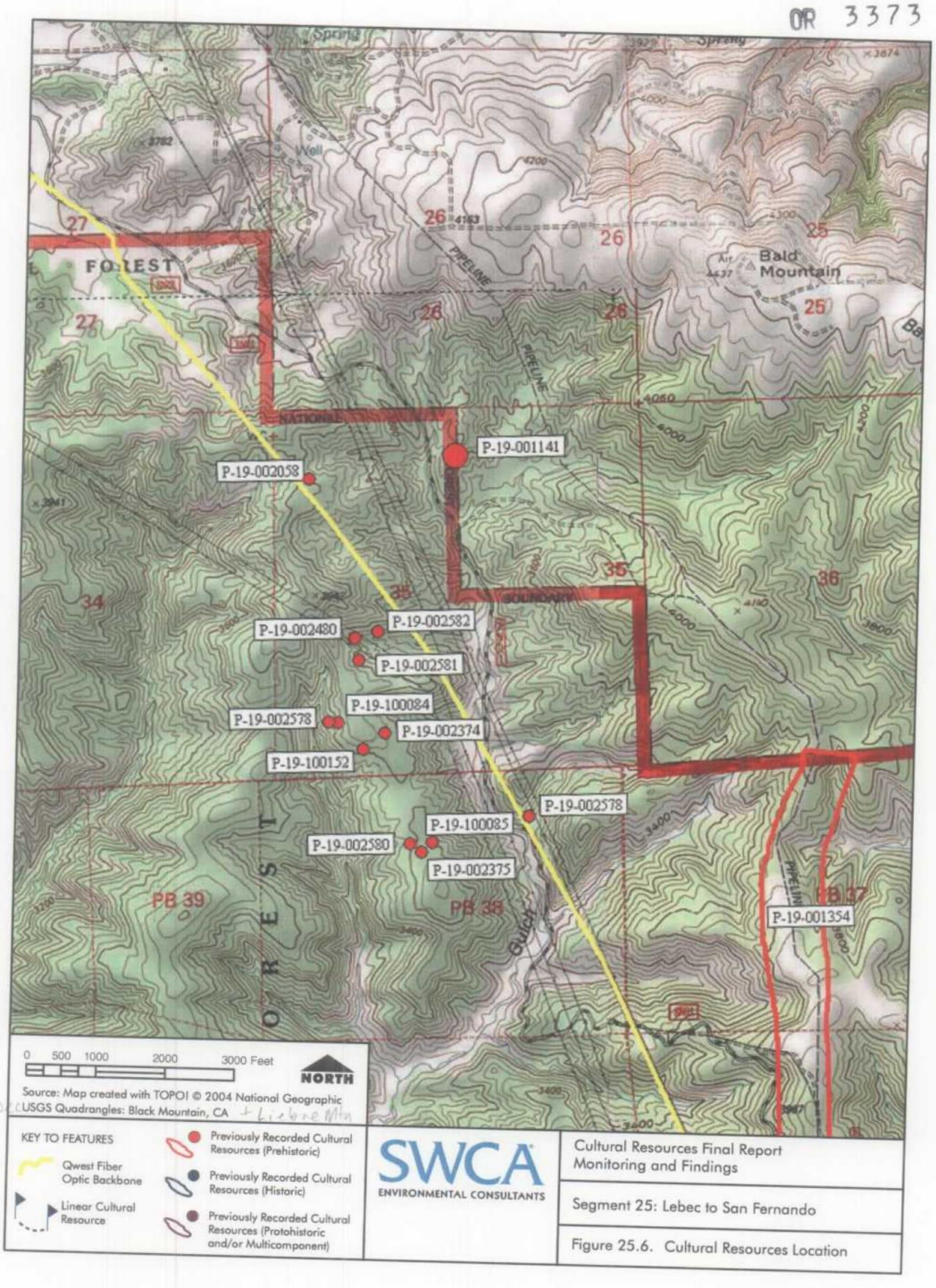
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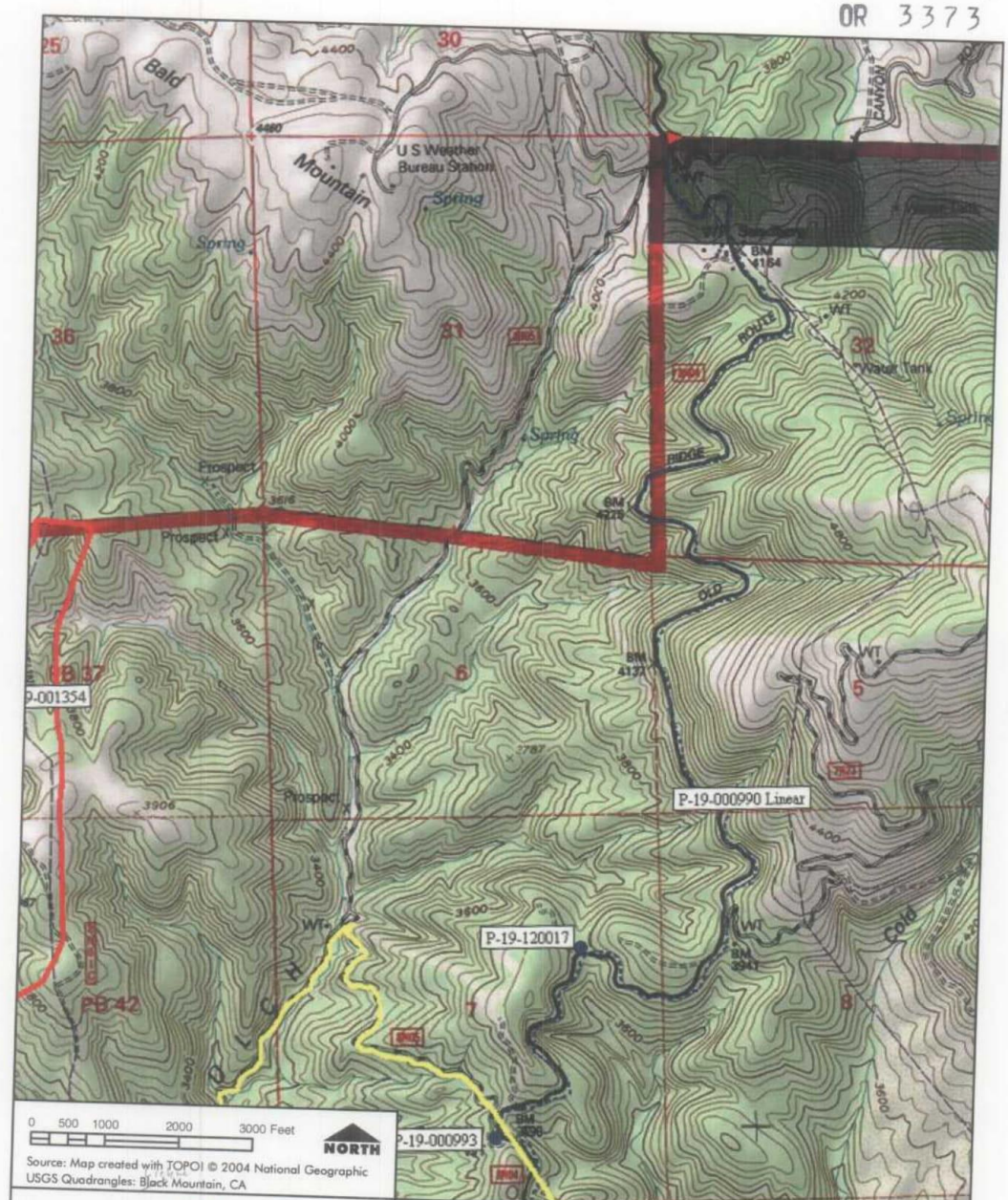
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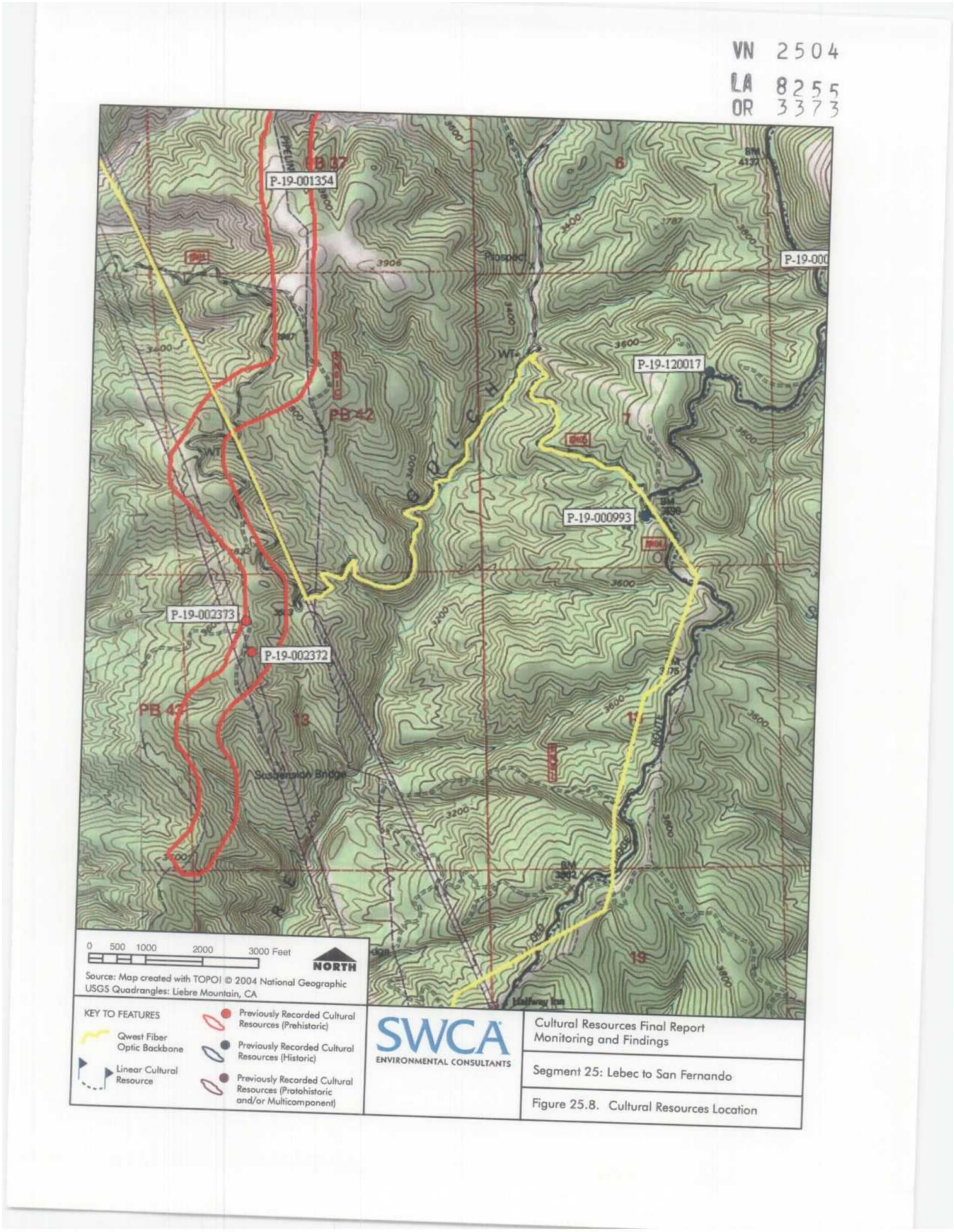


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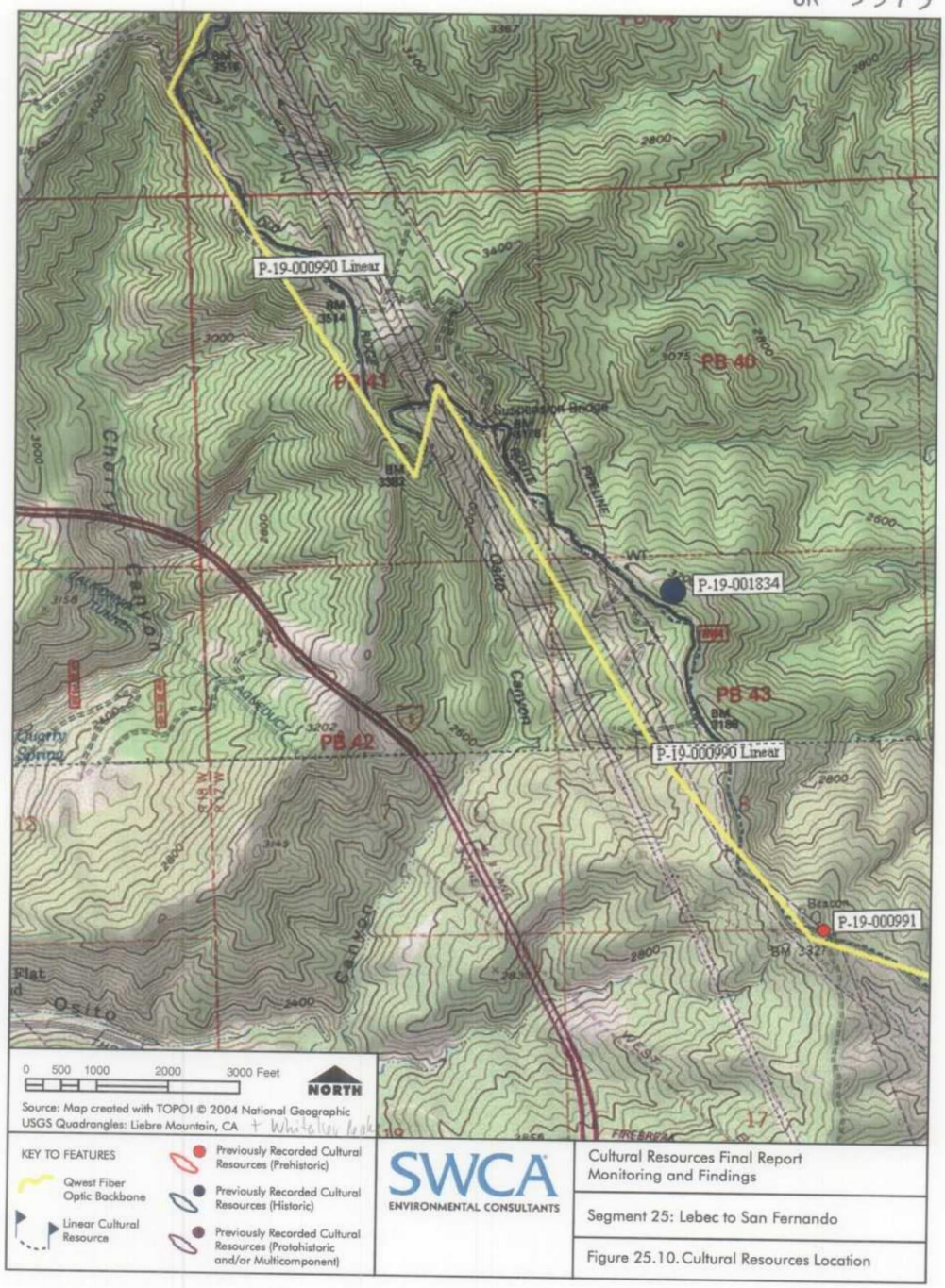
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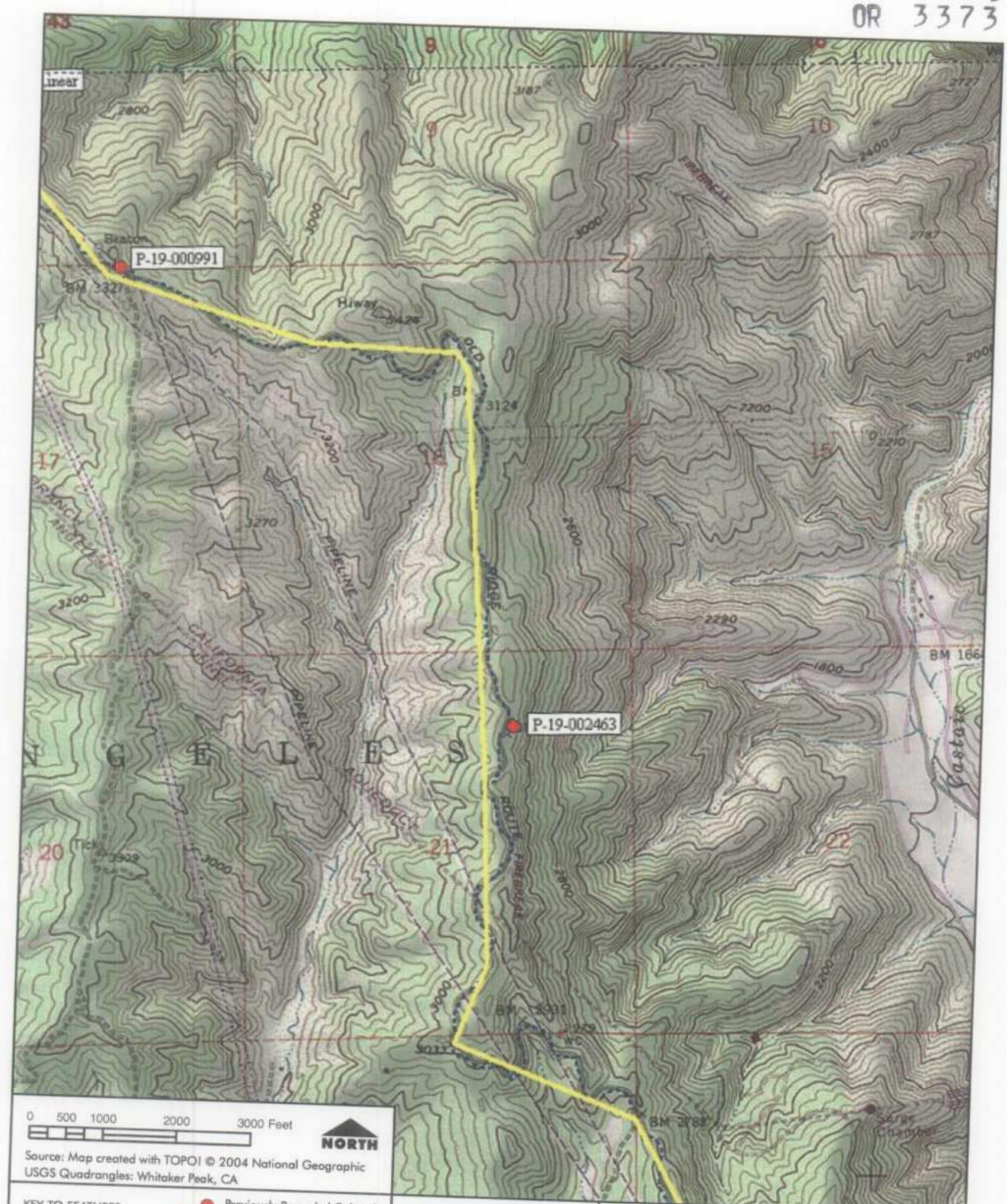

VN 2504
LA 8255
OR 3373
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P-19-120017
P-19-000993
P-19-002373
P-19-002372
PB 42
PB 37
Suspension Bridge
0 500 1000 2000 3000 Feet
NORTH
Source: Map created with TOPO! © 2004 National Geographic
USGS Quadrangles: Liebre Mountain, CA
KEY TO FEATURES
Qwest Fiber Optic Backbone
Linear Cultural Resource
Previously Recorded Cultural Resources (Prehistoric)
Previously Recorded Cultural Resources (Historic)
Previously Recorded Cultural Resources (Protohistoric and/or Multicomponent)
SWCA
ENVIRONMENTAL CONSULTANTS
Cultural Resources Final Report Monitoring and Findings
Segment 25: Lebec to San Fernando
Figure 25.8. Cultural Resources Location


VN 2504
LA 8255
OR 3373
P-19-001277
P-19-001305
P-19-120018
P-19-000992
P-19-001835
PB 37
PB 36
PB 42
PB 43
NATT
TROUGH
Posey
Canyon
PIPELINE
Suspension Bridge
Oil Well
0 500 1000 2000 3000 Feet
NORTH
Source: Map created with TOPO! © 2004 National Geographic
USGS Quadrangles: Liebre Mountain, CA
KEY TO FEATURES
Qwest Fiber Optic Backbone
Linear Cultural Resource
Previously Recorded Cultural Resources (Prehistoric)
Previously Recorded Cultural Resources (Historic)
Previously Recorded Cultural Resources (Protohistoric and/or Multicomponent)
SWCA
ENVIRONMENTAL CONSULTANTS
Cultural Resources Final Report Monitoring and Findings
Segment 25: Lebec to San Fernando
Figure 25.9. Cultural Resources Location

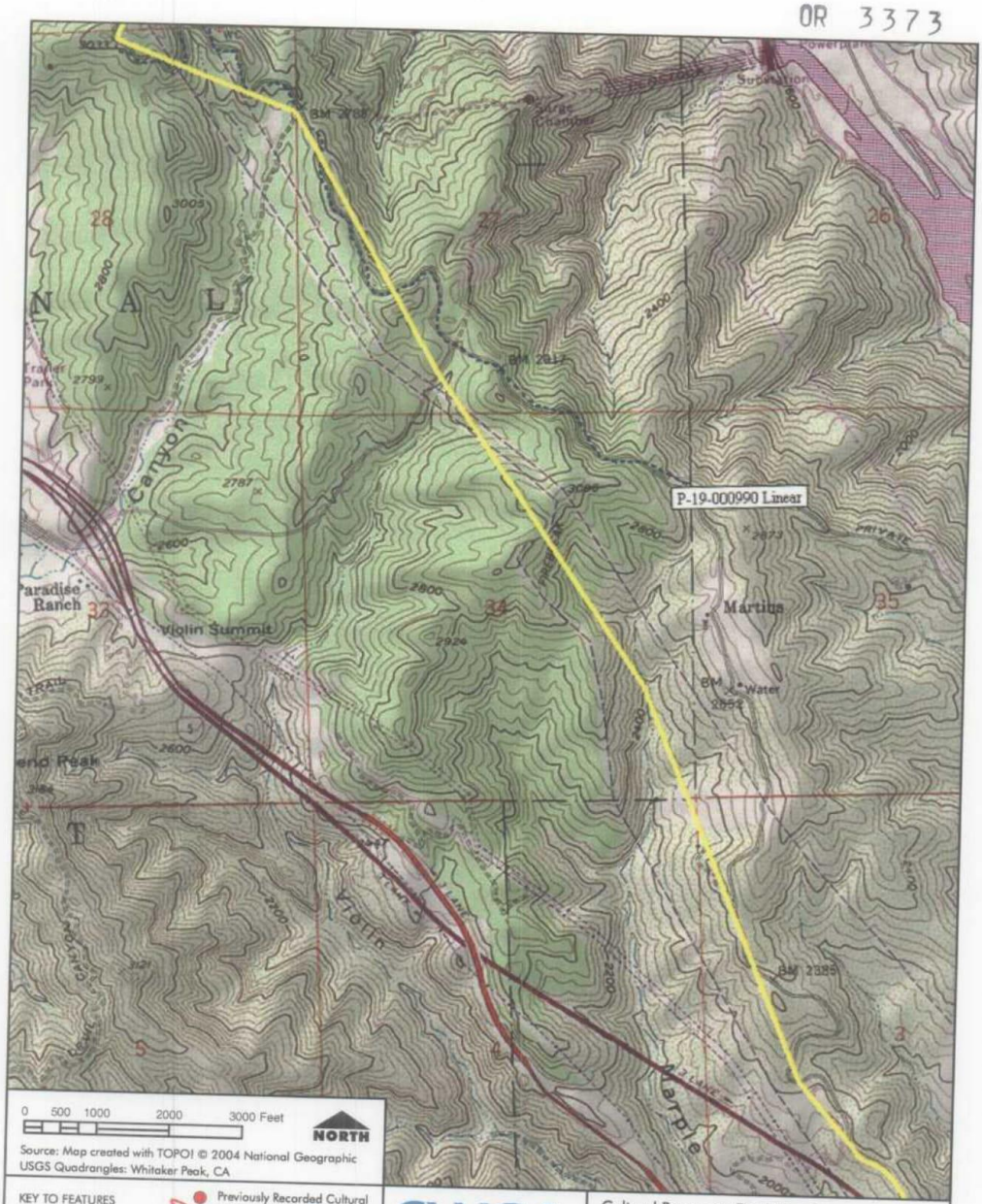
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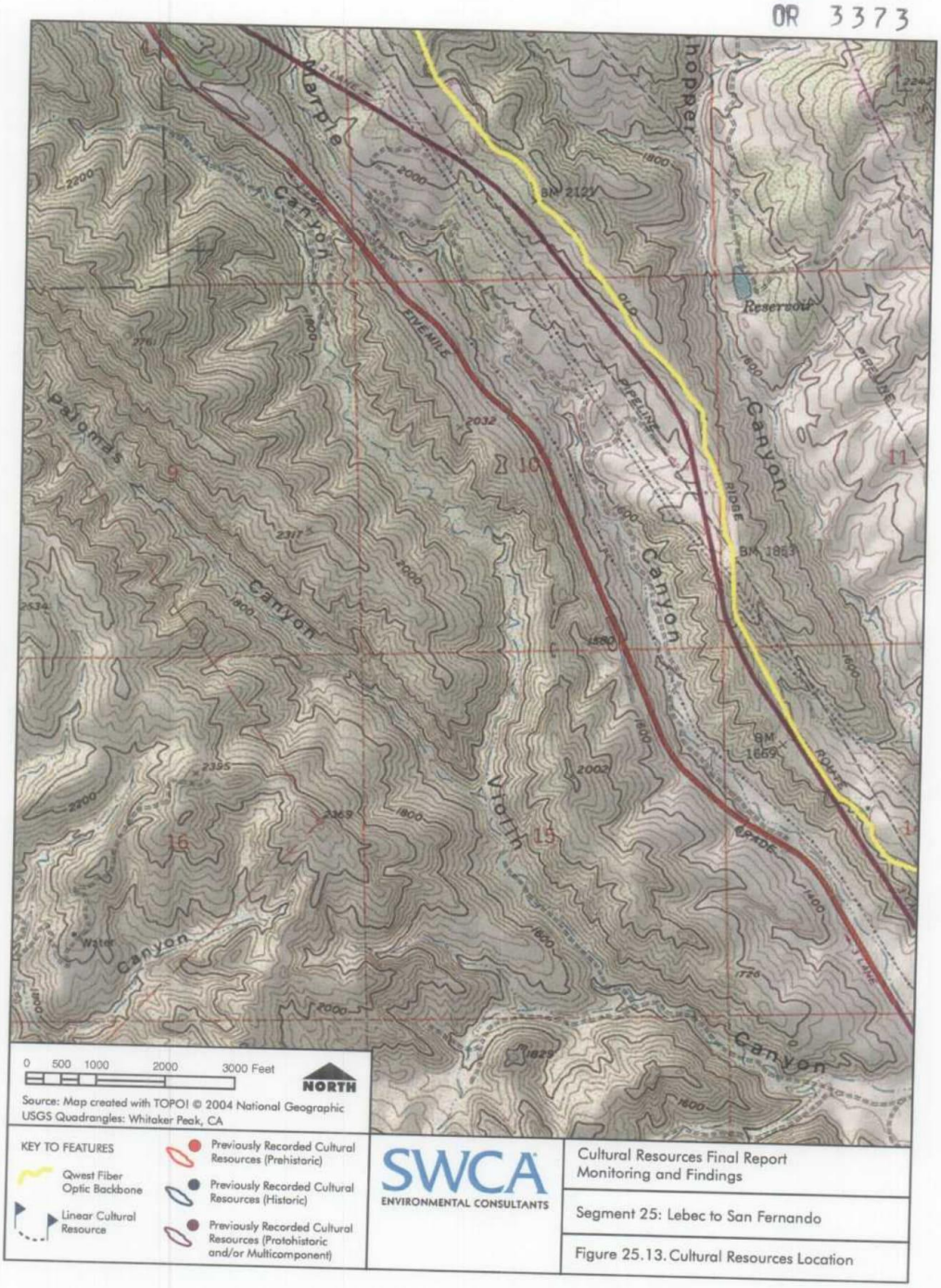
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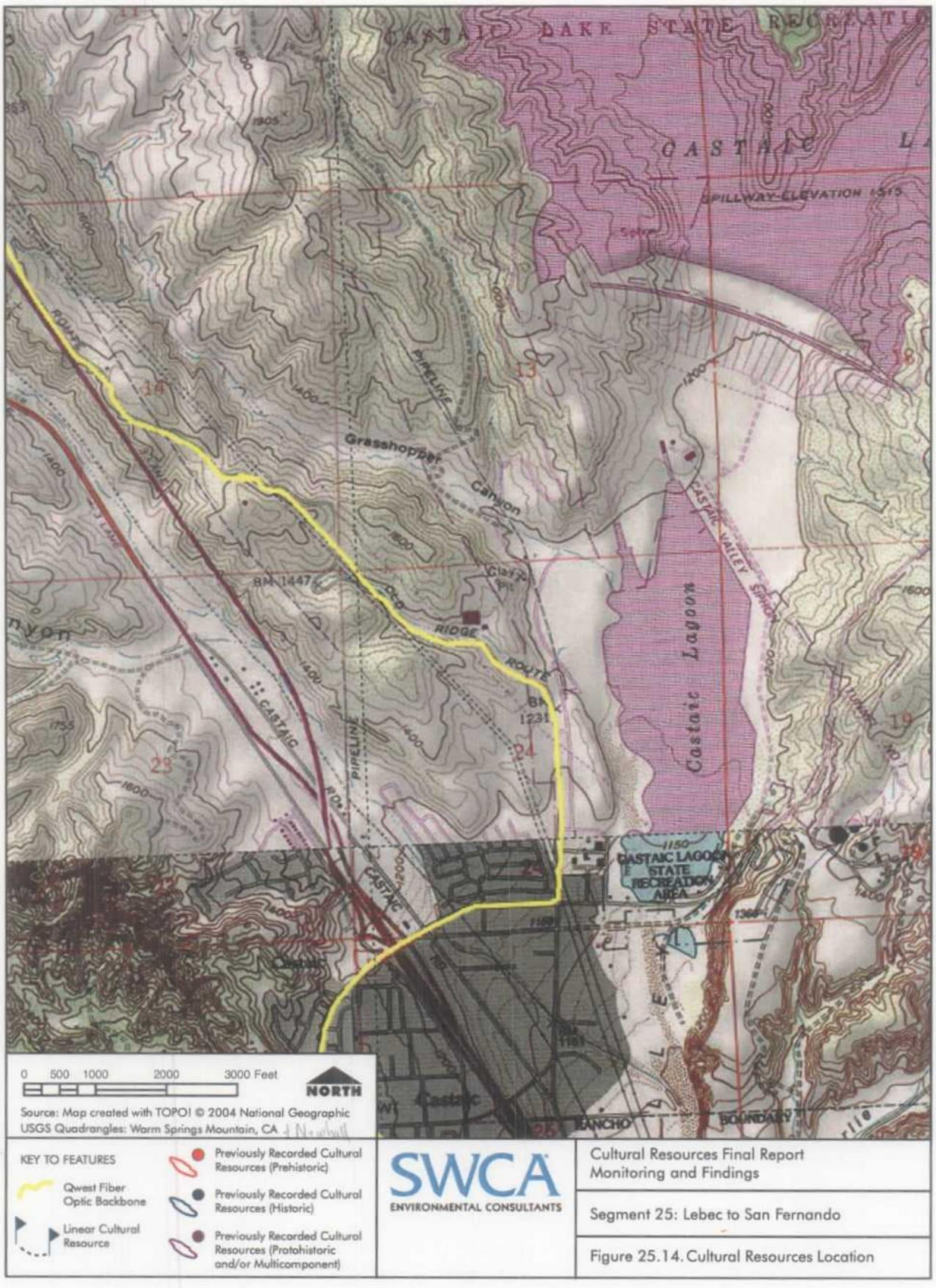
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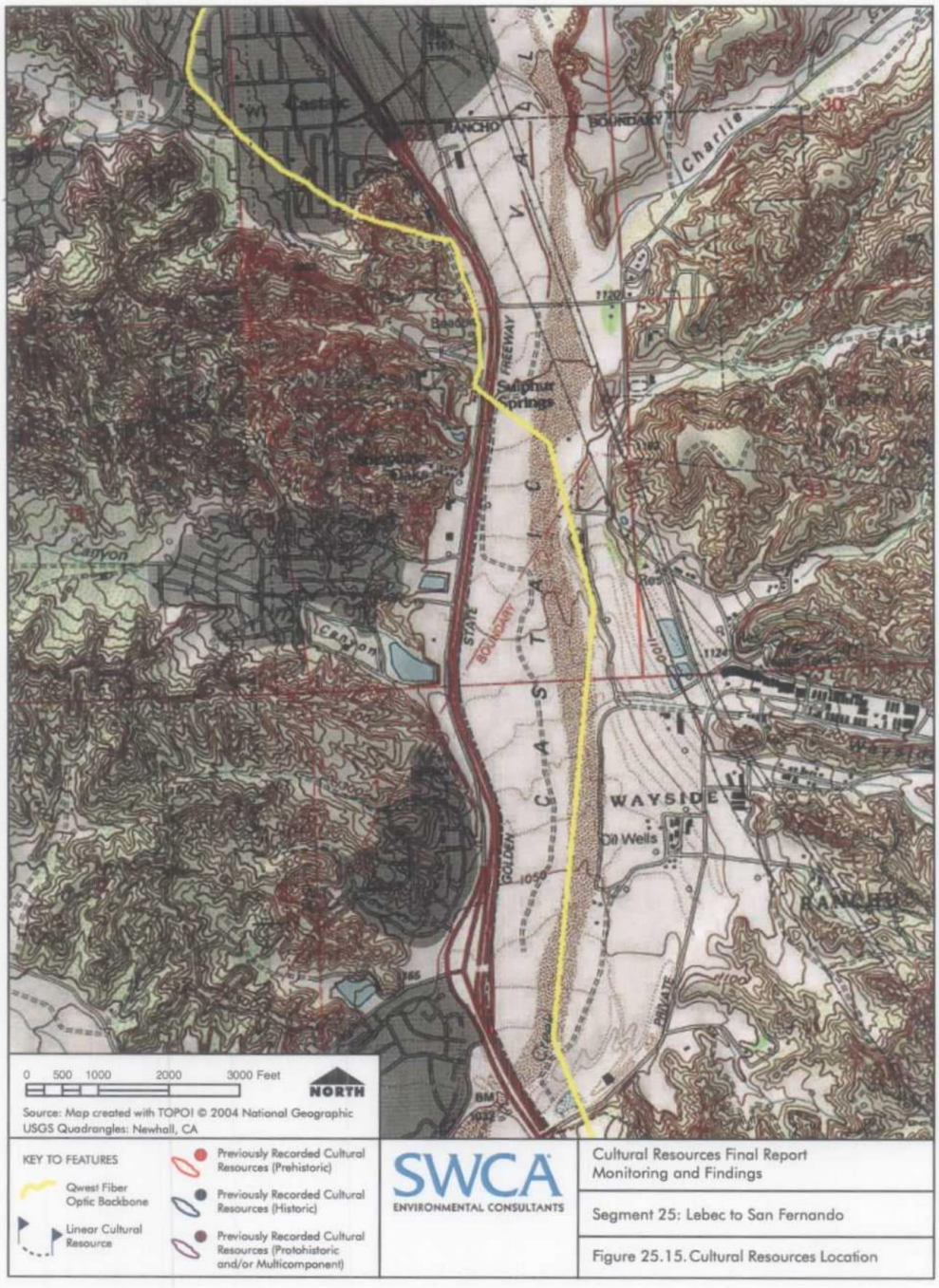
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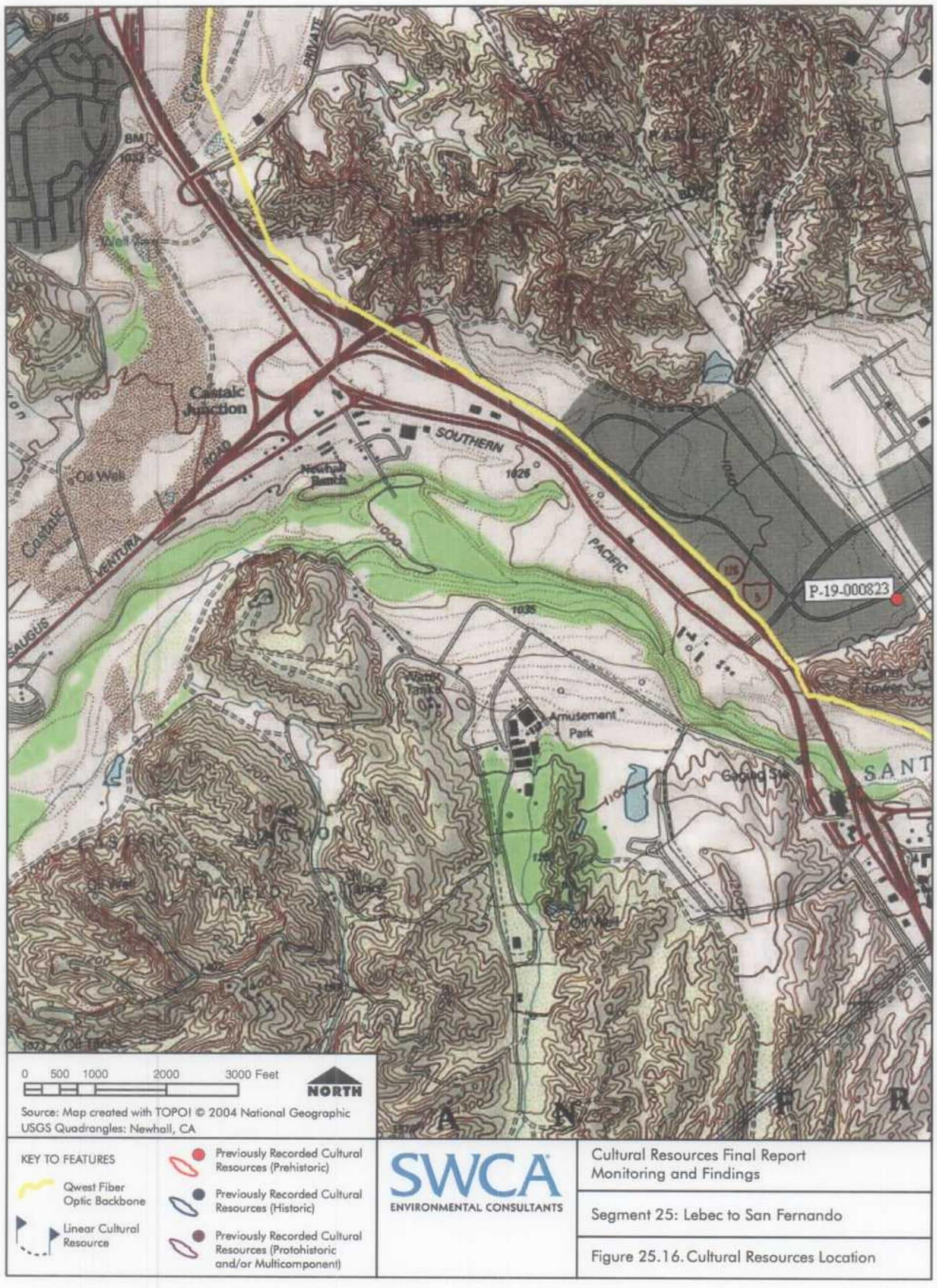
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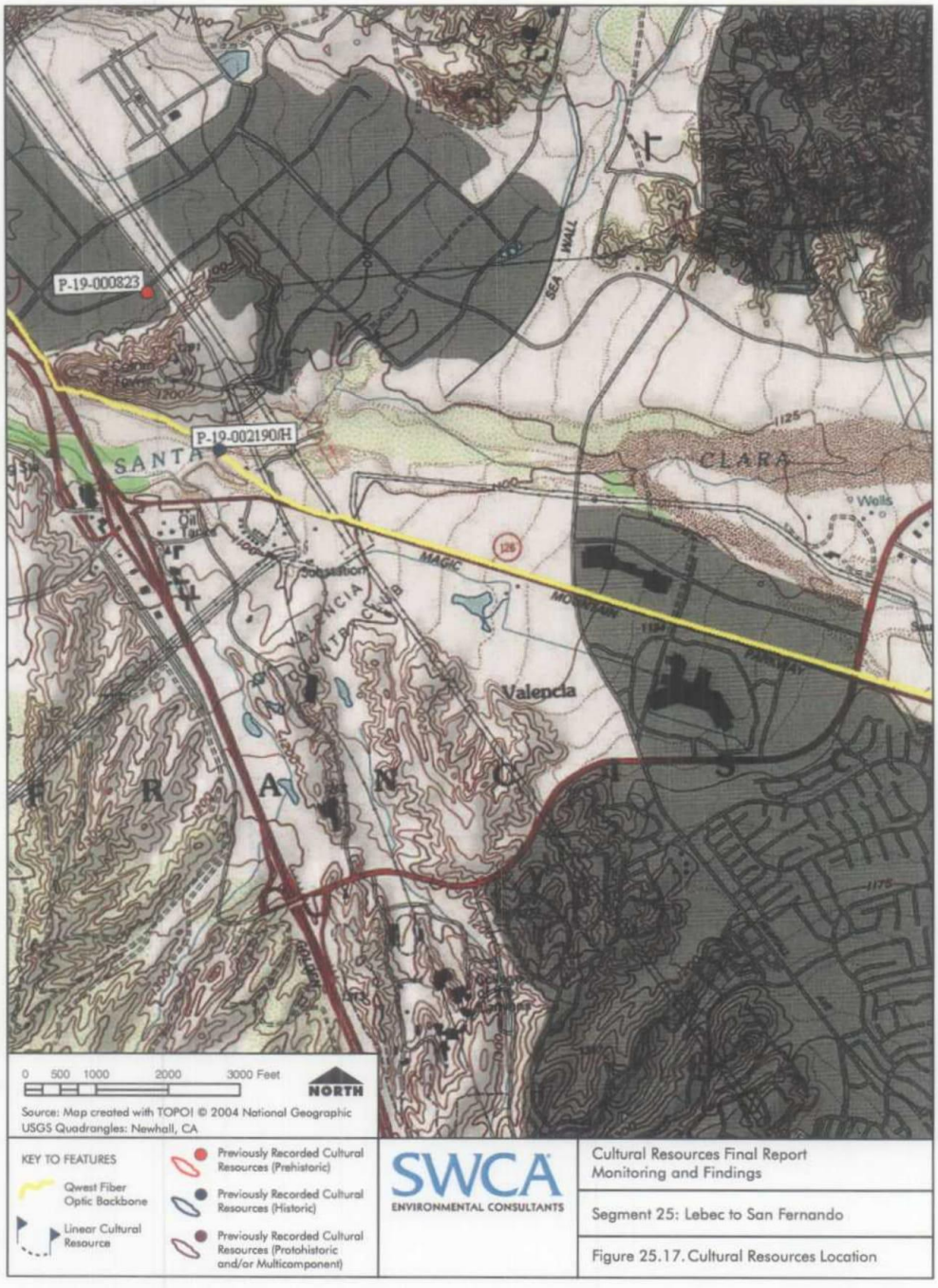
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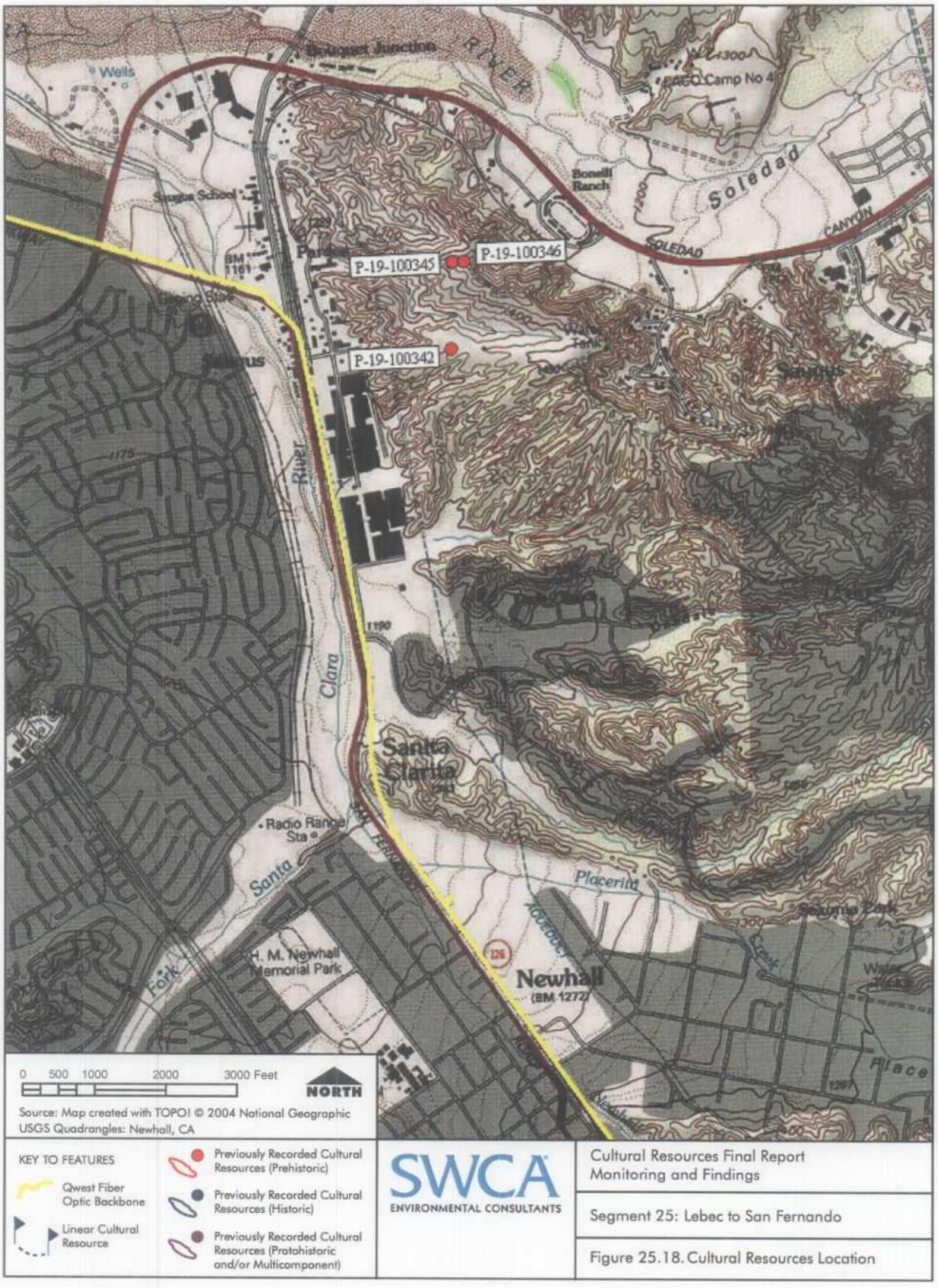
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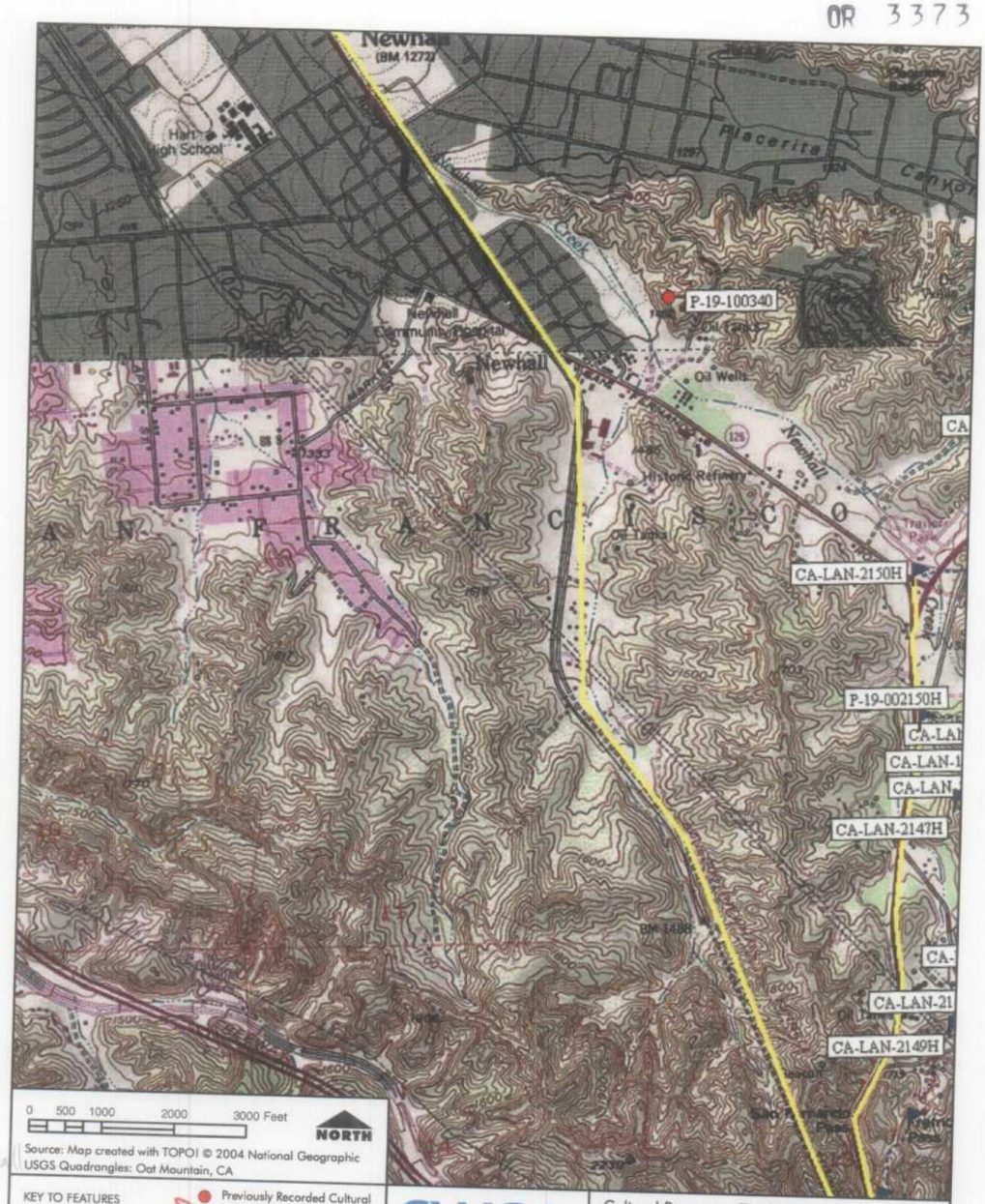
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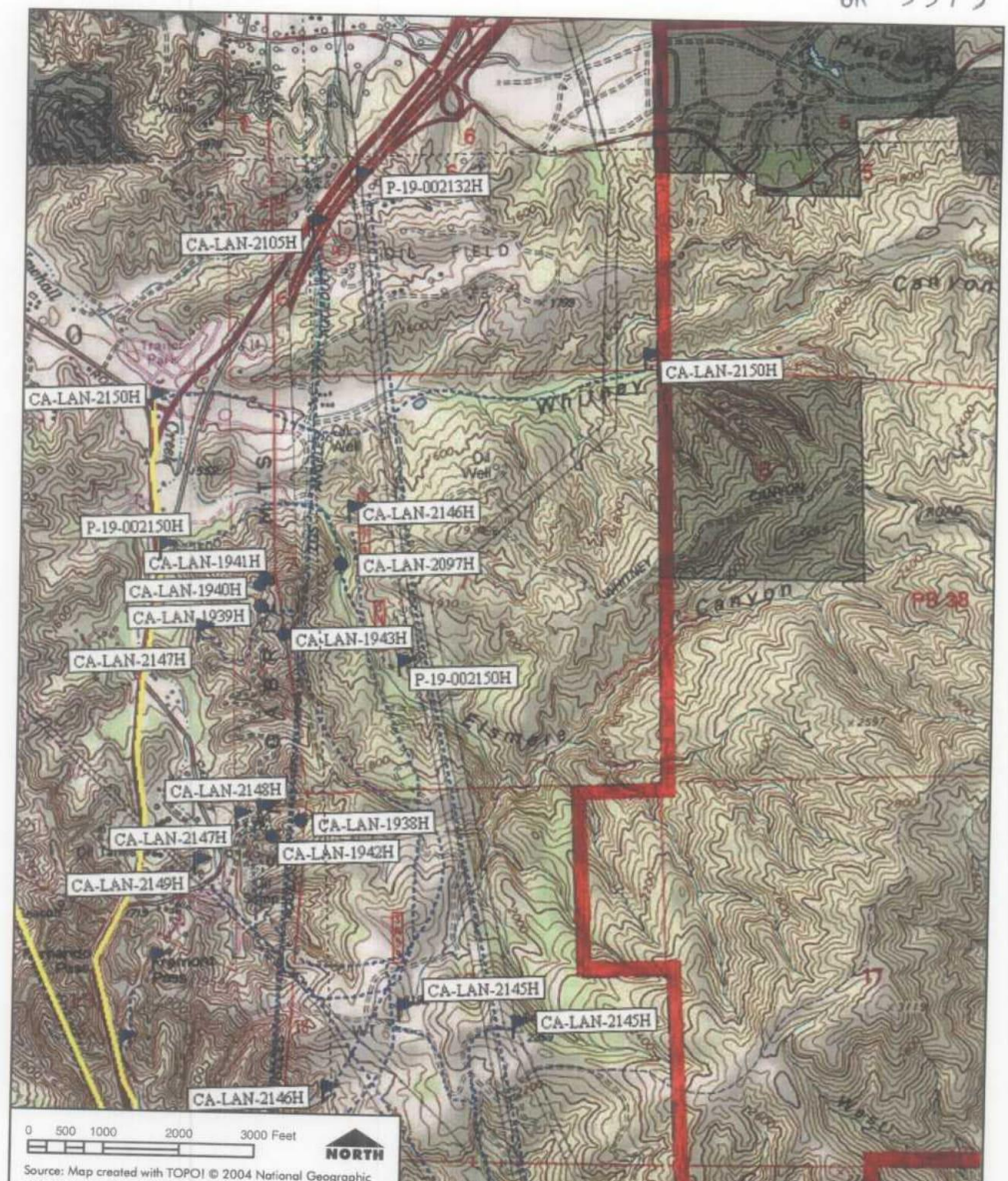
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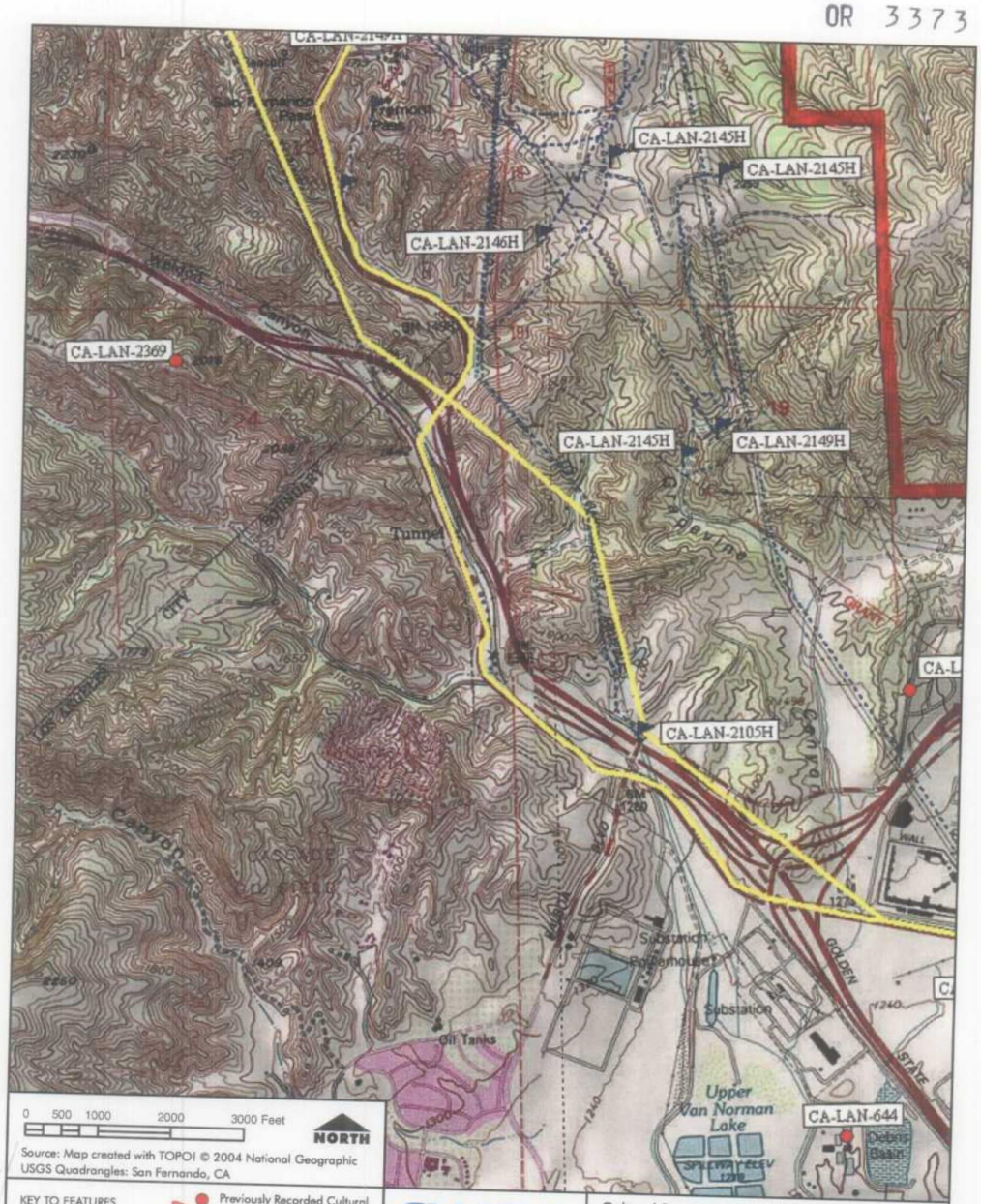
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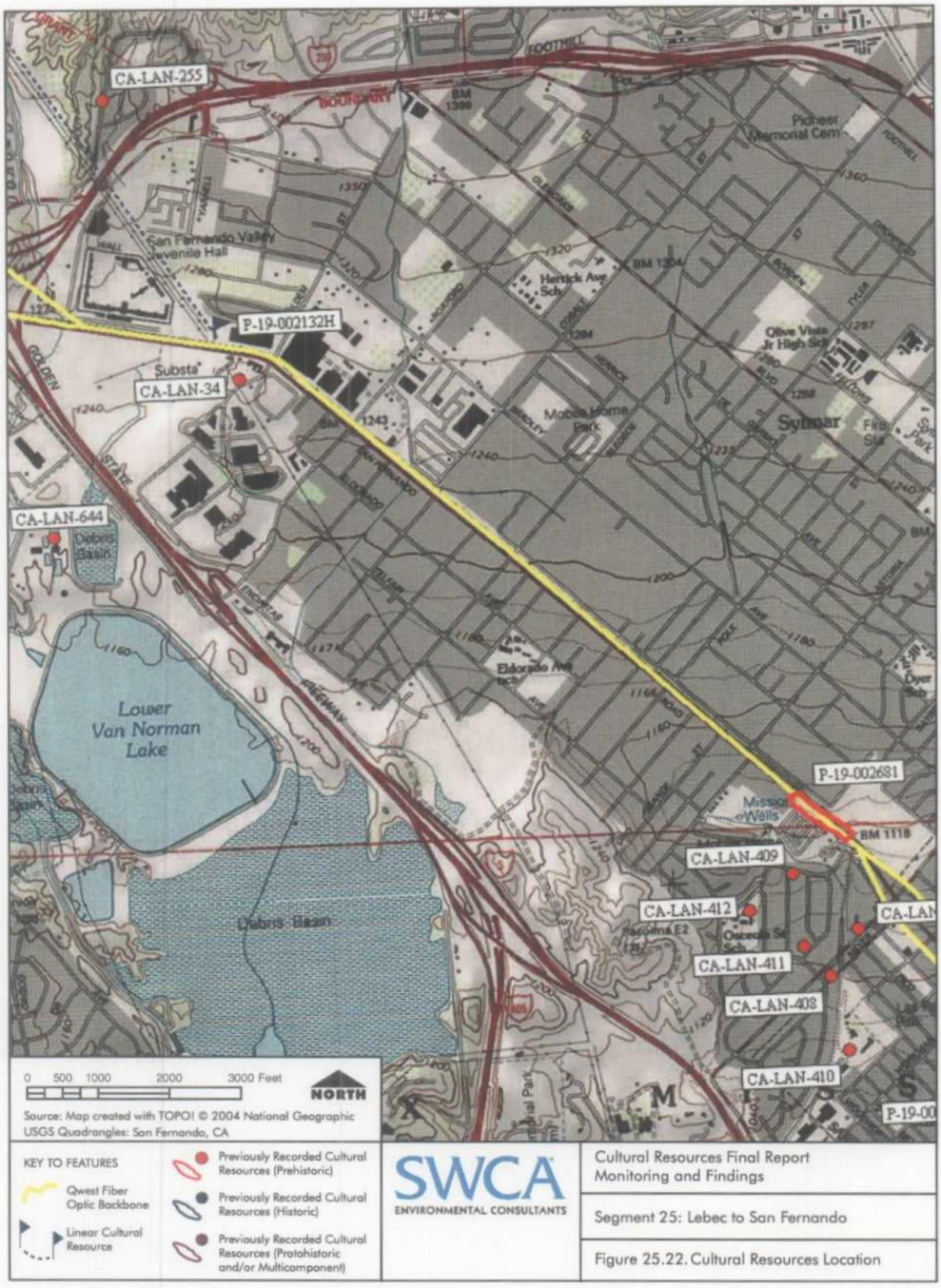
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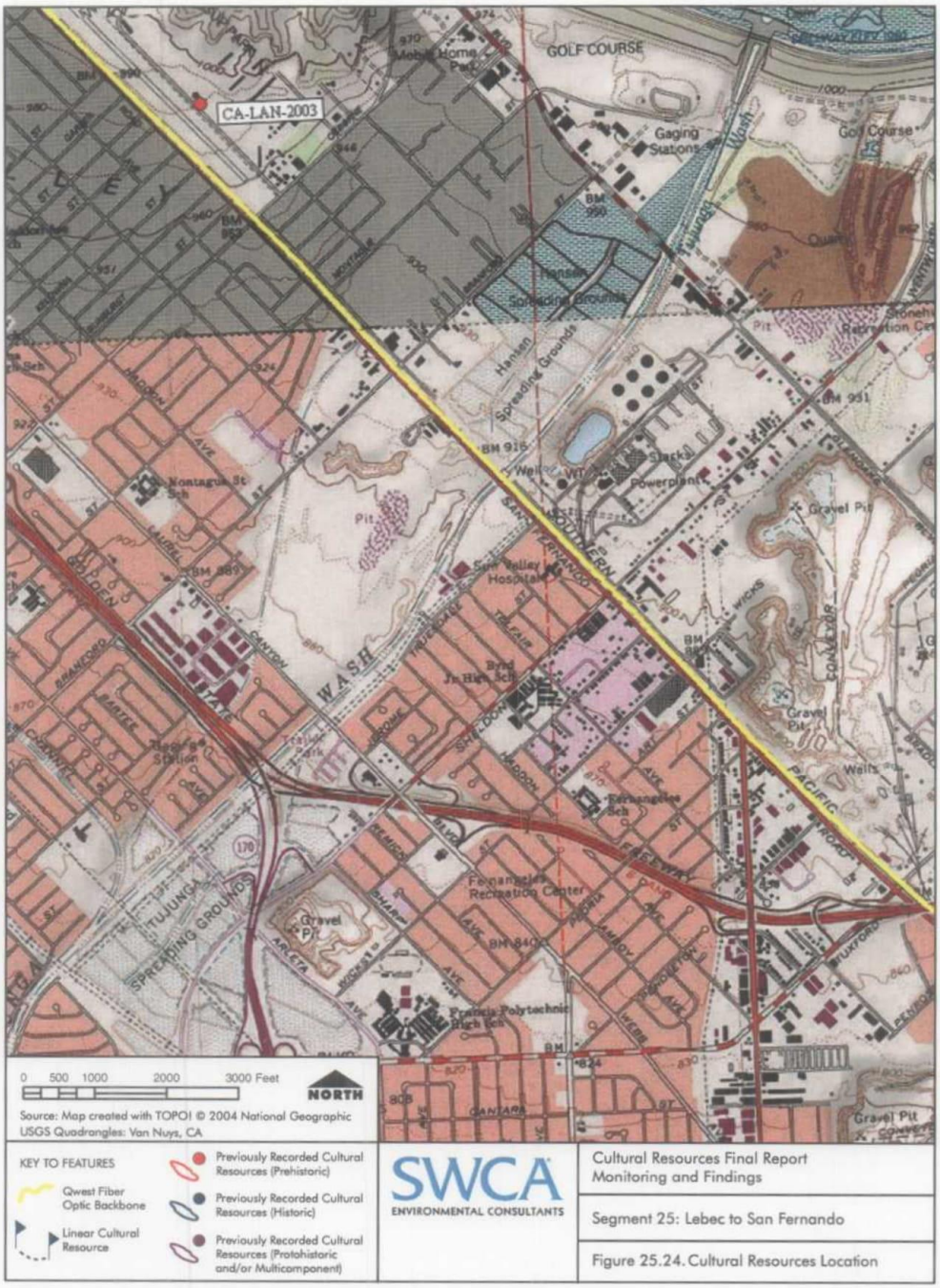
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28. FIRESTONE PARK TO LONG BEACH SEGMENT

Qwest Communications International Inc. (Qwest) retained SWCA Environmental Consultants (SWCA) to complete the Cultural Resources Final Report of Monitoring and Findings for the Qwest Network Construction Project. The report covers the cultural resources investigation for the maintenance (replacement and repair) of fiber-optic cable within the Qwest network "backbone" throughout the state of California. The existing California backbone includes approximately 1,431 linear miles of fiber-optic network. The investigation included surveys, focused visits to previously recorded archaeological sites, and monitoring of routine maintenance of existing lines along the network backbone.

The California Public Utilities Commission (CPUC) is the designated Lead Agency for this project under the California Environmental Quality Act (CEQA). The Qwest project is subject to specific Cultural Resources Protocols, numbered 1 through 11, prepared to ensure Qwest's compliance under CPUC regulatory authority. The CPUC and the Native American Heritage Commission (NAHC) approved the Qwest Fiber Optic Project Cultural Resources Protocols in February 2000. Qwest is proud of its record of responsible environmental and cultural resources stewardship and was an enthusiastic participant in the development of the Cultural Resources Protocols for this statewide project. In addition, to the greatest extent possible, Qwest followed the preferred approach: namely, to avoid ground disturbance activities within Environmentally Sensitive Areas (ESAs) and cultural resources during all maintenance activities.

The Protocols set forth a program for the identification and protection of known cultural resources within project rights-of-way (ROWs) and for the identification, assessment, and treatment of cultural resources that might be encountered during project activities. Protocols 1 through 6 generally were applied during project planning; Protocols 7 through 11 were applied immediately prior to, during, or at the conclusion of the routine maintenance program. The document containing the Protocols is provided as Appendix A.

In compliance with the General Conditions section of the Cultural Resources Protocols, qualified lead archaeological monitors and a staff of archaeological monitors monitored for cultural resources for this project. The monitors, as well as Native American observers, worked under the supervision of a qualified Cultural Resource Specialist (CRS). The CRS also determined when a Native American observer was deemed appropriate, depending on the sensitivity of the project segment. In addition, all Qwest personnel received training in field identification of potential cultural resources, laws regarding the protection of cultural resources, and what actions to take immediately in the event of the unanticipated discovery of cultural resources or human remains.

For purposes of the investigation, the California network backbone was divided into 36 segments. This document reports on the background information, methods, and findings of the cultural resources program for the Firestone Park to Long Beach segment (Segment #26 out of 36) of the California Qwest network backbone, as shown on the segment location map (Figure 26)[1]. Cultural resources include archaeological and historical objects, sites, and districts; historic buildings and structures; cultural landscapes; and sites and resources of concern to local Native American and other ethnic groups. Cultural resources may be found on the ground surface or buried beneath the surface.

[1] NOTE: All figures in this chapter are labeled according to segment number, not chapter number.

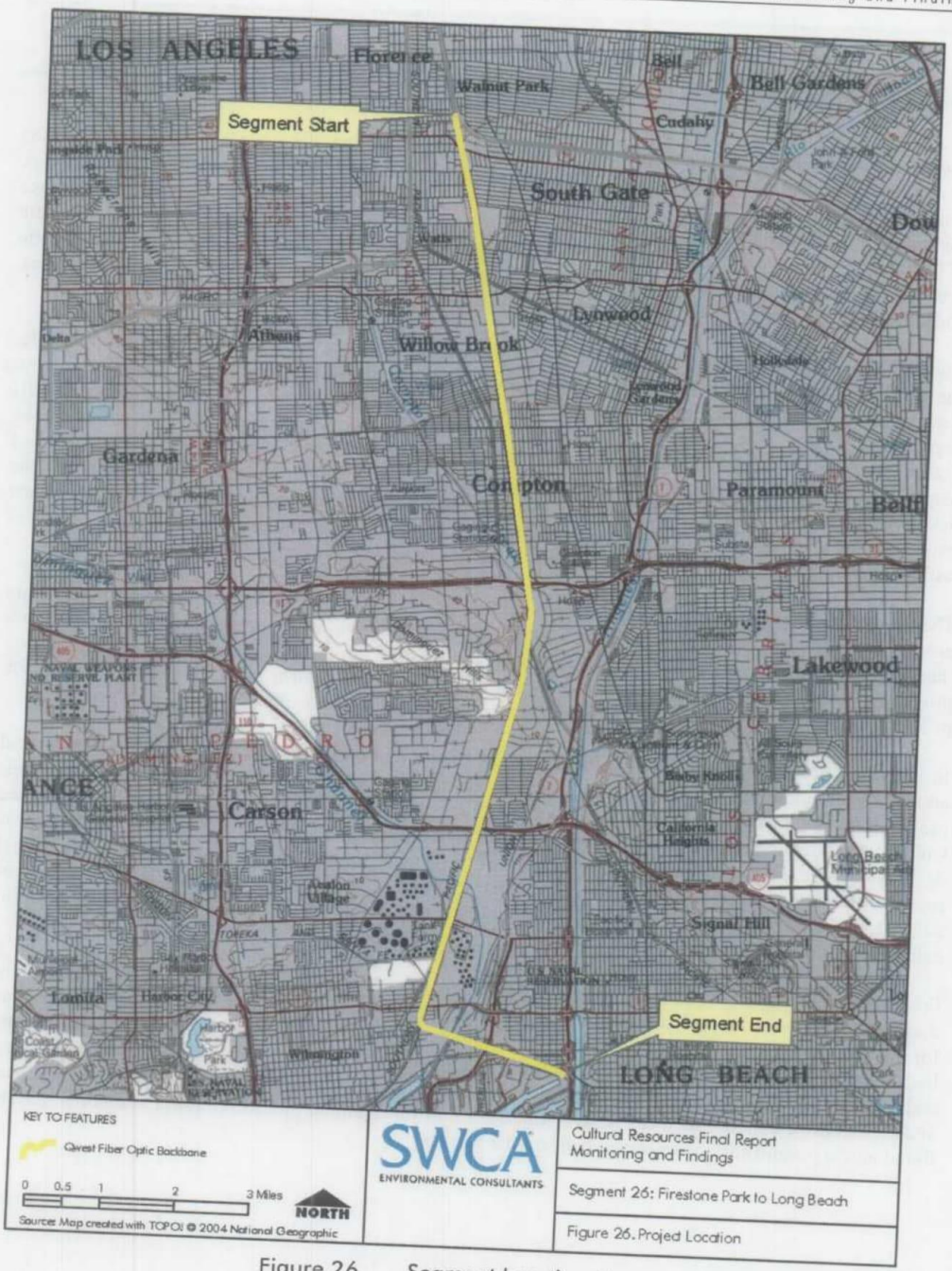


Figure 26. Segment Location Map

The Cultural Resources Final Report of Monitoring and Findings for the Qwest Network Construction Project, of which this document is a part, satisfies the requirements of Protocol 11: Final Report of Monitoring and Findings. The format of the Final Report and this chapter of that report follow *Archaeological Resource Management Reports (ARMR): Recommended Contents and Format* (Office of Historic Preservation 1990).

28.1 SEGMENT DESCRIPTION

The Firestone Park to Long Beach segment is along the Southern Pacific Railroad ROW within Los Angeles County, California. The network backbone in this area consists of a buried fiber-optic cable conduit, which can be accessed at four points per mile for maintenance and upgrading. Construction activity consists of the re-excavation of pre-existing handholes and assist holes to perform maintenance or upgrades on the fiber-optic line.

To access existing handholes, which are concrete or fiberglass vaults set below grade, the 18-inch cover of previously deposited soil immediately over the handhole cover is removed with a small mechanical excavator such as a backhoe or by hand. Assist hole openings are excavated to the depth of the conduit, up to 4 feet, and may range from 5 to 10 feet long and 2 feet wide. Then a backhoe-mounted puller adjacent to the alignment is used to assist the progress of the new fiber through the conduit. After the pulling operation is complete, the conduit is resealed and the assist hole backfilled with the excavation spoils. Soil disturbance for assist holes consists primarily of re-excavation of previously deposited trench spoils. Some possible intrusion into adjacent trench sidewalls also may occur.

The Firestone Park to Long Beach segment is along the ROW on the U.S. Geological Survey (USGS) 7.5-Minute Quadrangles listed in Table 28-1.

Table 28-1. Segment 26 USGS 7.5-Minute Quadrangles

Long Beach	Southgate

28.2 SETTING

28.2.1 Natural

The Firestone Park to Long Beach segment is within the urbanized area around the City of Los Angeles, in Los Angeles County. It is located in the Transverse Range geomorphic province (Chapter 2, Figure 2-2). The Los Angeles River runs north to south along the east side of the segment, and San Pedro Bay is just south of the end of the segment. Elevations along the segment range between approximately 9–100 meters (30–330 feet) above msl.

The climate near the segment is characterized by warm, dry summers and mild, moist winters. Because the area falls within a coastal region, winters are typically warmer, and summers tend to be milder. Current winter temperatures have highs around 20 degrees Celsius (68 degrees Fahrenheit), and current summer temperatures have highs around 29 degrees Celsius (85 degrees Fahrenheit). When California

initially was occupied, the climate was moister and cooler than today's Mediterranean climate (Major 1988).

Current uses along the segment include primarily development. Historically, the vicinity of the segment was characterized by vegetation communities that included brackish or salt marshlands in low-lying areas and along drainages, riparian scrub/forest along drainages, coastal grasslands in upland areas, and coastal scrub and chaparral in the foothills (Chapter 2, Figure 2-1). With this mosaic of ecological communities, the area would have provided a very productive environment for its prehistoric occupants, one well suited to a hunting–gathering economy with a variety of water birds, small and large mammals, fish, reptiles, amphibians, and edible plant species. Following are descriptions of vegetation communities within the area of the segment and the natural resources within each community that likely would have been harvested by the area's prehistoric occupants.

28.2.1.1 Vegetation Communities

The following descriptions of vegetation communities are based upon data presented by Holland (1986), Holland and Keil (1995), and Sawyer and Keeler-Wolf (1995).

Brackish or Salt Marshland

Brackish or salt marshlands were likely an important part of the prehistoric environment, particularly around low areas along major drainages and near the bays along the California coast. Brackish marshes contain species tolerant of high salinity, such as saltgrass (*Distichlis spicata*), pickleweeds (*Salicornia* spp.), sea-blite (*Suaeda* spp.), and saltbush (*Atriplex* spp.) (Table 28-2). Wildlife species typical of marshlands are detailed in Table 28-3.

Riparian Scrub/Forest

Riparian scrub is a mid-successional stage community that typically matures into riparian forest; species composition between these habitat types, therefore, is very similar. Riparian forest can revert to riparian scrub through disturbances or frequent flooding events (Faber and Keller 1985). This community exists along streams and around seeps and springs and likely was located along local streams during the area's prehistory. Many plants within this community (Table 28-2), as well as animals (Table 28-3) attracted to the water and vegetation, provided abundant subsistence resources for prehistoric and historic occupants.

Coastal Grassland

The grassland community throughout California has been converted primarily into agricultural and urban uses or has become dominated by non-native grasses, such as introduced bromes (*Bromus* spp.) and wild oats (*Avena* spp.). Historically, the community contained a variety of resources useful to Native Americans. Seeds of many annual grasses would have been the primary resource of interest to prehistoric occupants, but blossoms, greens, and bulbs were also available, primarily during the spring. Coastal grasslands occur in a variety of forms ranging from scattered perennial bunch grasses (typically *Nassella pulchra* or *N. lepida*) to stands dominated by native perennial grasses in an assemblage of geophytes (plants with underground bulbs or corms) and herbaceous annual species (Table 28-2). Wildlife species typical of grasslands are detailed in Table 28-3.

Coastal Scrub

Coastal scrub is characterized by a diversity of low, aromatic, drought-resistant deciduous shrubs and sub-shrub species. Seeds are the primary resource within the coastal sage scrub community, but edible stems, stalks, shoots, greens, roots, bulbs, and some berries also can be found. Resources of the coastal sage scrub community are primarily available in the spring. Coastal sage scrub often is distributed patchily throughout its range (O'Leary et al. 1992). Over a scale of several miles, it can be found in diverse habitat mosaics with other plant communities, particularly grassland and chaparral and oak/riparian woodland in more mesic areas. Coastal sage scrub may convert to chaparral or grassland, depending on slope, aspect, climate, fire history, and other physical factors and biological phenomena. Conversely, chaparral or grassland areas may convert to coastal sage scrub (Axelrod 1978; White 1995; O'Leary 1995; Allen et al. 1999). Characteristic plant and animal species that occur in coastal sage scrub habitat are included in Table 28-2 and Table 28-3, respectively.

Chaparral

Chaparral community occurs in the foothills near the segment. The chaparral community contains a mix of shrubs, such as manzanita (*Arctostaphylus* spp.), chamise (*Adenostoma fasciculatum*), mountain lilacs (*Ceanothus* spp.), and coffeeberry (*Rhamnus* spp.). Understory vegetation is sparse and limited to shade-tolerant herbs and ferns. Numerous shrub species occur in chaparral habitat, providing an abundance of seeds, berries, bulbs, shoots, and roots (Table 28-2). A diversity of animal species occurs within the chaparral community (Table 28-3).

Table 28-2. Segment 26 Plant Resources

Species	Scientific Name
Brackish or Salt Marshland Community	
Saltbush	*Atriplex* spp.
Saltgrass	*Distichlis spicata*
Pickleweed	*Salicornia* spp.
Bulrushes	*Scirpus* spp.
Sea-blite	*Suaeda* spp.
Riparian Scrub/Forest Community	
Overstory Species	
Maples	*Acer* spp.
Alders	*Alnus* spp.
Fremont cottonwood	*Populus fremontii*
Mid-story Species	
Dogwoods	*Cornus* spp.
Arroyo willow	*Salix lasiolepis*
Willows	*Salix* spp.
Elderberries	*Sambucus* spp.

Table 28-2. Segment 26 Plant Resources	
Species	Scientific Name
Understory Species	
Mugwort	*Artemisia douglasiana*
Monkeyflowers	*Mimulus* spp.
California rose	*Rosa californica*
Blackberries	*Rubus* spp.
Snowberries	*Symphoricarpos* spp.
Coastal Grassland Community	
Grasses	
Junegrass	*Koeleria macrantha*
Melic grasses	*Melica* spp.
Muhlies	*Muhlenbergia* spp.
Small-flowered needlegrass	*Nassella lepida*
Purple needlegrass	*Nassella pulchra*
Fescues	*Vulpia* spp.
Geophytes	
Onions	*Allium* spp.
Brodiaeas	*Brodiaea* spp.
Blue dicks	*Dichelostemma capitatum*
Blue-eyed grass	*Sisyrinchium bellum*
Herbaceous Plants	
Yellow fiddleneck	*Amsinckia menziesii*
Red maids	*Calandrinia ciliata*
Pussy paws	*Calyptridium* spp.
Suncups	*Camissonia* spp.
Owl's-clovers	*Castilleja* spp.
Blue-eyed Marys	*Collinsia* spp.
Cryptanthas	*Cryptantha* spp.
Delphiniums	*Delphinium* spp.
California poppy	*Eschscholzia californica*
Gilias	*Gilia* spp.
Everlastings	*Gnaphalium* spp.
Tarweeds	*Hemizonia* spp.
Linanthus	*Linanthus* spp.
Lomatiums	*Lomatium* spp.
Lotus	*Lotus* spp.
Lupines	*Lupinus* spp.
Microseris	*Microseris* spp.

Table 28-2. Segment 26 Plant Resources

Species	Scientific Name
Phacelias	*Phacelia* spp.
Popcorn flowers	*Plagiobothrys* spp.
California threadstem	*Pterostegia drymarioides*
Sanicles	*Sanicula* spp.
Checker mallow	*Sidalcea malvaeflora*
Clovers	*Trifolium* spp.
Sub-shrubs	
Milk vetches	*Astragalus* spp.
Buckwheats	*Eriogonum* spp.
Coastal Scrub Community	
California sage	*Artemisa californica*
Encelia	*Encelia* spp.
Buckwheat	*Eriogonum* spp.
Yerba santa	*Eriodictyon* spp.
Lupine	*Lupinus* spp.
Bracken fern	*Pteridium aquilinum*
Coffeeberry	*Rhamnus* spp.
Blackberry	*Rubus ursinus*
Purple sage	*Salvia leucophylla*
Black sage	*Salvia mellifera*
Figwort	*Scrophularia californica*
Chaparral Community	
Shrubs	
Chamise	*Adenostoma fasciculatum*
Manzanitas	*Arctostaphylos* spp.
Hoary-leaved ceanothus	*Ceanothus crassifolius*
Buck brush	*Ceanothus cuneatus*
Mountain lilacs	*Ceanothus* spp.
Mountain mahogany	*Cercocarpus betuloides*
Coffeeberry, redberry	*Rhamnus* spp.
Gooseberries, currants	*Ribes* spp.
Vines	
Dodders	*Cuscuta* spp.
Bedstraws	*Galium* spp.
Chaparral-peas	*Lathyrus* spp.

28.2.1.2 Typical Animal Resources

Wildlife species common to the vegetation communities in the vicinity of the Firestone Park to Long Beach segment are detailed in Table 28-3.

Table 28-3. Segment 26 Common Animal Resources

Species	Scientific Name	Communities
Amphibians		
Western toad	*Bufo boreas*	Riparian scrub/forest, Foothill woodland, Marshland
Reptiles		
Western fence lizard	*Sceloporus occidentalis*	Scrublands, Chaparral, Foothill woodlands, Coniferous forests
Pacific pond turtle	*Emys marmorata*	Marshlands
Upland Birds		
California quail	*Callipepla californica*	Grasslands, Scrublands, Chaparral, Foothill woodlands
Hawks	*Buteo* spp.	Grasslands, Chaparral, Foothill woodlands
Band tailed pigeon	*Patagioenas fasciata*	Coniferous forest
Western scrub jay	*Aphelocoma californica*	Chaparral, Foothill woodlands
Mockingbird	*Mimus polyglottos*	Scrublands, Chaparral, Foothill woodlands
Western meadowlark	*Sturnella neglecta*	Grasslands
Riparian and Marshland Birds		
Geese	*Branta* spp.	Marshlands
Ducks	*Anas, Aythya,* and *Bucephala* spp.	Marshlands
Ruddy duck	*Oxyura jamaicensis*	Marshlands
American bittern	*Botaurus lentiginosus*	Marshlands
Herons	*Ardea, Butorides, Nycticorax,* and *Nyctanassa* spp.	Marshlands
Egrets	*Egretta* spp.	Marshlands
Mammals		
Desert cottontail	*Sylvilagus audubonii*	Grasslands, Scrublands, Chaparral, Foothill woodlands, Coniferous forests
Brush rabbits	*Sylvilagus bachmani*	Scrublands, Chaparral
Black-tailed jackrabbit	*Lepus californicus*	Grasslands, Scrublands
California ground squirrel	*Spermophilus beecheyi*	Grasslands
Pocket gopher	*Thomomys bottae*	Grasslands, Chaparral

Table 28-3. Segment 26 Common Animal Resources

Species	Scientific Name	Communities
Dusky-footed woodrat	*Neotoma fuscipes*	Scrublands, Chaparral, Foothill woodlands
California vole	*Microtus californicus*	Grasslands, Chaparral, Riparian scrub/forest, Foothill woodlands, Coniferous forests
Coyote	*Canis latrans*	Grasslands, Scrublands, Chaparral, Riparian scrub/forest, Foothill woodlands, Coniferous forests
Gray fox	*Urocyon cinereoargenteus*	Grasslands, Scrublands, Chaparral, Riparian scrub/forest, Foothill woodlands, Coniferous forests
Raccoon	*Procyon lotor*	Grasslands, Chaparral, Riparian scrub/forest, Foothill woodlands, Coniferous forests
Long-tailed weasel	*Mustela frenata*	Grasslands, Chaparral, Riparian scrub/forest, Foothill woodlands, Coniferous forests
Badger	*Taxidea taxus*	Grasslands, Open woodlands
Striped skunk	*Mephitis mephitis*	Grasslands, Chaparral, Riparian scrub/forest, Foothill woodlands, Coniferous forests
Bobcat	*Lynx rufus*	Grasslands, Scrublands, Chaparral, Riparian scrub/forest, Foothill woodlands, Coniferous forests

28.2.2 Cultural

28.2.2.1 Prehistoric Overview

California prehistory is divided into three broad temporal periods that reflect similar cultural characteristics throughout the state: Paleoindian Period (ca. 9000–6000 B.C.), Archaic Period (6000 B.C. – A.D. 500), and Emergent Period (A.D. 500 – Historic Contact) (Fredrickson 1973, 1974, 1994a) (Chapter 2, Figure 2-5). The Archaic is further divided into Lower (6000–3000 B.C.), Middle (3000–1000 B.C.), and Upper (1000 B.C. – A.D. 500) Periods, generally governed by climatic and environmental variables, such as the drying of pluvial lakes at the transition from the Paleoindian to the Lower Archaic.

The Firestone Park to Long Beach segment lies in what generally is described as the San Diego subregion of the Southern Coast Archaeological Region, which is one of eight arbitrary organizational divisions of the state (Moratto 1984:Fig. 1) (Chapter 2, Figure 2-3). This subregion extends southward along the coast from Santa Monica Bay to the border with Mexico, and includes southern Los Angeles County, all of

Orange County, the southwest corner of San Bernardino County, and western Riverside and San Diego Counties.

In southern California, researchers attempting to define local or subregional traditions have created numerous cultural chronologies using various nomenclatures (Moratto 1984). Nonetheless, these chronologies are more notable for their similarities than their differences and a concordance of the best-known chronologies for the region is presented in Chapter 2, Figure 2-5. Building on early studies and focusing on data synthesis, Wallace (1955, 1978) developed a prehistoric chronology for the southern California coastal region that is widely used today. Four stages are presented in Wallace's prehistoric sequence: Horizon I, Early Man; Horizon II, Milling Stone; Horizon III, Intermediate; and Horizon IV, Late Prehistoric. As noted by Moratto (1984:159), Wallace's (1955) synthesis lacked chronological precision due to the lack of absolute dates at the time of its creation, but remains generally valid today.

In addition to Wallace's classic summary, a regional synthesis developed by Warren (1968) will be referred to in the following discussion. This synthesis is supported by a larger archaeological database for southern California, which includes the advent and increased use of radiocarbon dating after the 1950s.

Using the concepts of cultural ecology and cultural tradition, Warren (1968) proposed a series of six prehistoric traditions. Three of these traditions, the San Dieguito Tradition, Encinitas Tradition, and Campbell Tradition, correlated with Wallace's Horizons I, II, and, III. The Chumash Tradition, Takic Tradition (formerly "Shoshonean"), and Yuman Tradition are represented within Wallace's Horizon IV. As noted further, these ecologically based traditions are applicable to specific regions within southern California.

Horizon I - Early Man (ca. 10,000 – 6,000 B.C.)

When Wallace developed the Horizon I (Early Man) in the 1950s, there was little evidence of human presence on the southern California coast prior to 6000 B.C. Archaeological work in the intervening years has identified numerous sites older than this date including coastal and Channel Islands sites (e.g., Erlandson 1991; Johnson et al. 2002; Moratto 1984). In addition, radiocarbon dates recently obtained by SWCA from a deeply buried archaeological site in southern Orange County, 5.5 km (3.4 miles) from the coast indicate an occupation as early as 9000 B.C. (SWCA unpublished).

Recent data from Horizon I sites indicate that the economy was a diverse mixture of hunting and gathering, with a major emphasis on aquatic resources in many coastal areas (e.g., Jones et al. 2002) and on Pleistocene lake shores in eastern San Diego County (see Moratto 1984:90-92). Although few Clovis-like or Folsom-like fluted points have been found in southern California (e.g., Erlandson et al. 1987), it is generally considered that the emphasis on hunting may have been greater during Horizon I than in later periods. Common elements in many San Dieguito Tradition sites, for example, include leaf-shaped bifacial projectile points and knives, stemmed or shouldered projectile points, scrapers, engraving tools, and crescents (Warren 1967:177). Subsistence patterns shifted around 6000 B.C. coincident with the gradual desiccation associated with the onset of the Altithermal, a warm and dry period that lasted for about 3000 years. After 6000 B.C., a greater emphasis was placed on plant foods and small animals.

Horizon II - Milling Stone(6000–3000 B.C.)

The Milling StoneHorizon of Wallace (1955, 1978) and Encinitas Tradition of Warren (1968) (6000-3000 B.C.) are characterized by an ecological adaptation to collecting, and by the dominance of the principal ground stone implements generally associated with the horizontal motion of grinding small seeds; namely, milling stones (metates, slabs) and handstones (manos, mullers), which are typically shaped.

Milling stones occur in large numbers for the first time, and are even more numerous near the end of this period. As testified by their toolkits and shell middens in coastal sites, people during this period practiced a mixed food procurement strategy. Subsistence patterns varied somewhat as groups became better adapted to their regional or local environments.

Wallace (1955, 1978) and Warren (1968) relied on several key coastal sites to characterize the Milling StoneHorizon and Encinitas Tradition, respectively. These include the Oak Grove Complex in the Santa Barbara region, Little Sycamore in southwestern Ventura County, Topanga Canyon in the Santa Monica Mountains, and at La Jolla in San Diego County. The Encinitas Tradition was proposed to extend southward into San Diego County where it apparently continued alongside the following Campbell Tradition, which occurred primarily in the Santa Barbara-Ventura County region beginning around 3000 B.C.

During the Milling StoneHorizon and Encinitas Tradition, stone chopping, scraping, and cutting tools are abundant, and generally made from locally available raw material. Projectile points, rather large and generally leaf-shaped, and bone tools, including awls, are generally rare. The large points are associated with the spear, and probably with an atlatl. Items made from shell, including beads, pendants, and abalone dishes, are generally rare. Evidence of weaving or basketry is present at a few sites. Cogged stones and discoidals are often purposefully buried, and are found mainly in sites along the coastal drainages from southern Ventura County southward, with a few specimens inland at Cajon Pass, and heavily in Orange County (Moratto 1984:149). Kowta (1969) attributes the presence of numerous scraper-planes in Milling Stonesites to the preparation of agave or yucca for food or fiber. The mortar and pestle, associated with the vertical motion of pounding foods, such as acorns, were introduced during the Milling StoneHorizon, but are not common.

Characteristic mortuary practices during the Milling StoneHorizon or Encinitas Tradition include extended and loosely flexed burials, some with red ochre and few grave goods, such as shell beads and milling stones, interred beneath cobble or milling stone cairns. "Killed" milling stones, exhibiting holes, may occur in the cairns. Reburials are common in the Los Angeles County area, with flexed burials oriented to the north common southward in Orange and San Diego Counties.

Horizon III - Intermediate (3000 B.C. – A.D. 500)

Following the Millingstone, Wallace's Intermediate Horizon and Warren's Campbell Tradition in Santa Barbara, Ventura, and parts of Los Angles Counties, date from approximately 3000 B.C.-A.D. 500 and are characterized by a shift toward a hunting and maritime subsistence strategy, along with a wider use of plant foods. The Campbell Tradition (Warren 1968) incorporates David B. Rogers' (1929) Hunting Culture and related expressions along the Santa Barbara coast. In the San Diego region, the Encinitas Tradition (Warren 1968) and the La Jolla Culture (Moriarty 1966; M. Rogers 1939, 1945) persist with little change during this time.

During the Intermediate Horizon and Campbell Tradition, there is a pronounced trend toward greater adaptation to regional or local resources. For example, the remains of fish, land mammals, and sea mammals are increasingly abundant and diverse in sites along the California coast in the referenced region. Related chipped stone tools suitable for hunting are more abundant and diversified, and shell fishhooks become part of the toolkit during this period. Larger knives, a variety of flake scrapers, and drill-like implements are common during this period. Projectile points include large side-notched, stemmed, and lanceolate or leaf-shaped forms. Bone tools, including awls, are more numerous than in the preceding period, and the use of asphaltum adhesive is now common.

Mortars and pestles become more common during this period, gradually replacing manos and metates as milling stone implements. In addition, hopper mortars and stone bowls, including steatite vessels, appear to enter the toolkit at this time. This shift appears to be a correlate of a diversification in subsistence resources. Many archaeologists believe this change in milling stones signals a shift away from the processing and consuming of hard seed resources to the increasing importance of the acorn (e.g., Glassow et al. 1988; True 1993). It has been argued that mortars and pestles may have been used initially to process roots (e.g., tubers, bulbs, and corms associated with marshland plants), with acorn processing beginning at a later point in prehistory (Glassow 1997:86) and continuing to European contact.

Characteristic mortuary practices during the Intermediate Horizon and Campbell Tradition include fully flexed burials, placed face down or face up, and oriented toward the north or west (Warren 1968:2-3). Red ochre is common, and abalone shell dishes infrequent. Interments sometimes occurred beneath cairns or broken artifacts. Shell, bone and stone ornaments, including charmstones, are more common than in the preceding Encinitas Tradition. Some later sites include *Olivella* shell and steatite beads, mortars with flat bases and flaring sides, and a few small points.

Horizon IV - Late Prehistoric (A.D. 500–Historic Contact)

In the Late Prehistoric Horizon (Wallace 1955, 1978), which lasted from the end of the Intermediate (~A.D. 500) until European contact, there was an increase in the use of plant food resources in addition to an increase in land and sea mammal hunting. There was a concomitant increase in the diversity and complexity of material culture during the Late Prehistoric, demonstrated by more classes of artifacts. The recovery of a greater number of small, finely chipped projectile points, usually stemless with convex or concave bases, suggests an increased utilization of the bow and arrow rather than the atlatl and dart for hunting. Other items include steatite containers, circular shell fishhooks, perforated stones, arrow straighteners, and a variety of bone tools and personal ornaments. There is also an increased use of asphalt adhesive.

During the Late Prehistoric, sites contain beautiful and complex objects of utility, art, and decoration. Ornaments include drilled whole *Chione* and drilled abalone. Steatite effigies become more common, with *Pecten* shell rattles common in middens. Mortuary customs are elaborate, include cremation and interment, with abundant grave goods. Pottery and smoking pipes occur in some locations during this period.

In Warren's (1968) cultural ecological scheme, the period between A.D. 500 and European contact is divided into three regional patterns. The Chumash Tradition is present mainly in the region of Santa Barbara and Ventura Counties; the Takic or Numic Tradition in the Los Angeles and Orange Counties region; and the Yuman Tradition in the San Diego region.

The seemingly abrupt changes in material culture, burial practices, and subsistence focus at the beginning of the Late Prehistoric period are considered the result of a migration to the coast of peoples from inland desert regions to the east. In addition to the small triangular and triangular side-notched points similar to those found in the desert regions in the Great Basin and Lower Colorado River, Colorado River pottery and the introduction of cremation in the archaeological record are diagnostic of the Yuman Tradition in the San Diego region. This combination certainly suggests a strong influence from the Colorado Desert region.

In Los Angeles and Orange Counties, similar changes (introduction of cremation, pottery, and small triangular arrow points) are considered the result of a Takic migration to the coast from inland desert regions. This Takic or Numic Tradition was formerly referred to as the "Shoshonean wedge" or

"Shoshonean intrusion" (Warren 1968). This terminology, used originally to describe a Uto-Aztecan language group, is generally no longer employed in order to avoid confusion with ethnohistoric and modern Shoshonean groups who spoke Numic languages (Heizer 1978:5; Shipley 1978:88, 90). Modern Gabrielino/Tongva, Juaneño, and Luiseño in this region are considered the descendants of the prehistoric Uto-Aztecan, Takic-speaking populations that settled along the California coast during this period, or perhaps somewhat earlier.

28.2.2.2 Ethnographic Overview

The Firestone Peak to Long Beach segment is in an area historically occupied by the Gabrielino (Bean and Smith 1978; Kroeber 1925). The name "Gabrielino" denotes those people who were administered by the Spanish from Mission San Gabriel, which included people from the Gabrielino proper, as well as other social groups. Therefore, in the post-contact period, the name does not necessarily identify a specific ethnic or tribal group. The names Native Americans in southern California used to identify themselves have, for the most part, been lost. Many contemporary Gabrielino identify themselves as descendents of the indigenous people living across the plains of the Los Angeles Basin and use the native term *Tongva* (King 1994a:12).

Tongva lands encompassed the greater Los Angeles Basin, including the inland valleys of San Fernando, San Gabriel, and Pomona, the Pacific Ocean coastal region from Topanga Canyon in the north to Newport Bay in the south, and three Channel Islands, San Clemente, San Nicolas, and Santa Catalina (Bean and Smith 1978:538; Kroeber 1925:636; McCawley 1996). The Firestone Peak to Long Beach segment is generally situated along the path of the Los Angles River as it flows south out of the Santa Susanna and San Gabriel Mountains to Long Beach Bay where it empties into the Pacific Ocean. A number of small creeks drain the mountain watershed into this river as it passes through the Santa Clarita Valley, the San Fernando Valley, and finally through the Los Angeles Basin.

Inland, Tongva territory was bounded on the north by the Chumash at Topanga Creek, and on the south by the Juaneño at Aliso Creek. To the east past the San Gabriel Mountains were the Vanyume Serrano, the mountain Serrano, and the Cahuilla. The southern boundary of Gabrielino territory at Aliso Creek was based on anthropological fieldwork conducted by Kroeber in 1907 (Kroeber 1925), and the Juaneño currently dispute this defined northern boundary of their lands with the Gabrielino.

The Gabrielino language, as well as that of the Juaneño and Luiseño to the south, and the *Tataviam* (*Alliklik*) and Serrano to the east,was derived from the Takic family, part of the Uto-Aztecan linguistic stock, which can be traced to the Great Basin area (Mithun 2001:539, 543–544). This language group represents an origin quite different from that of the Chumash to the north and the Ipai and Tipai further south. The language of the Ipai and Tipai is derived from the Hokan stock of the Yuman language family originating in the American Southwest. The Chumash language is unlike both the Hokan and Uto-Aztecan stocks and may represent a separate lineage (Mithun 2001:390). Linguistic analysis suggests that Takic-speaking immigrants from the Great Basin area began moving into southern California around 500 B.C. (Kroeber 1925:579). This migration may have displaced both Chumashan and Yuman speaking peoples, but the timing and extent of the migrations and their impact on indigenous peoples is not well understood.

The Gabrielino language consisted of two main dialects, Eastern and Western; the Western included much of the coast and the Channel Island population (King 2004). Lands of the Western group encompassed much of the western Los Angeles Basin and San Fernando Valley, northward along the coast to the Palos Verdes Peninsula (McCawley 1996:47).

Early historical records concerning the Tongva are available through Spanish voyages of exploration in the sixteenth century, and accounts by Spanish missionaries and colonists in the middle eighteenth century. The Spanish military and mission records are considerable. Other reports by agents of the United States Office of Indian Affairs date from the 1850s. Ethnographers were late on the scene and collected little information after 1900, the exception being John Harrington in the 1910s. Published ethnographies include Kroeber (1925), Johnston (1962), Bean and Smith (1978), and McCawley (1996).

Kroeber (1925:621) considered the Tongva "…to have been the most advanced group south of Tehachapi, except perhaps the Chumash. They certainly were the wealthiest and most thoughtful of all the Shoshoneans of the State, and dominated these civilizationally wherever contacts occurred." Tongva society was organized along patrilineal non-localized clans, a characteristic Takic pattern. Clans consisted of several lineages, each with their own ceremonial leader. The leader of the primary lineage was the chief of the entire clan. One or two clans generally made up the population of a village. Even though the Tongva did not have a distinctly stratified society, there were two general classes of individuals: elites and commoners. The elites consisted of primary lineage members, other lineage leaders (who maintained a separate ceremonial language), the wealthy, and the elite families of the various villages who commonly married among themselves. The commoner class contained those from "fairly well-to-do and long-established lineages" (Bean and Smith 1978:543). A third, lower class might be recognized as consisting of slaves taken in war and individuals, unrelated to the inhabitants, who drifted into the village. The chief, or *tómyaar*, always came from the primary lineage of the clan/village.

The Tongva established large, permanent villages in the fertile lowlands along rivers and streams, and in sheltered areas along the coast, stretching from the foothills of the San Gabriel Mountains to the Pacific Ocean. A total tribal population has been estimated of at least 5,000 (Bean and Smith 1978:540), but recent ethnohistoric work suggests a number approaching 10,000 seems more likely (O'Neil 2002). Several Tongva villages appear to have served as trade centers, due in large part to their centralized geographic position in relation to the Southern Channel Islands and to other tribes. These villages maintained particularly large populations and hosted annual trade fairs that would bring their population to 1,000 or more for the duration of the event. *Puvunga* in Long Beach and *Swuangna* at San Pedro are examples of Tongva village trade centers.

Tongva villages along the northern portion of the Firestone Park to Long Beach segment, in the mountainous area and San Fernando Valley, included *Pasheekngа* (Mission San Fernando), *Tohuunga* ("old woman," Tujunga [identified with the archaeological site of CA-LAN-167 near the mouth of Little Tujunga Canyon]), Muuhomga ("owl"), *Pakooynga*, *Wiqanga* ("prickly pear cactus fruit," the Verdugo Hills), *Haahomnga* ("walking, they seated themselves," Glendale area) and *Kaweenga* ("the mountain" Cahuenga). In the Los Angeles Basin portion of the segment were the villages of *Maawnga* (Griffith Park), *Ochuunga*, *Yangna* ("poison oak") and *Geveronga* near downtown Los Angeles, *Tevaaxa'anga* in the north corner of Long Beach, *Ahwaanga*, and *Swaanga* at the segment's terminus at the mouth of the Los Angeles River, between the cities of San Pedro and Long Beach (McCawley 1996:36 and 56).

Houses constructed by the Tongva were large, circular, domed structures made of willow poles thatched with tule that could hold up to 50 people (Bean and Smith 1978). Other structures served as sweathouses, menstrual huts, ceremonial enclosures, and probably communal granaries. Cleared fields for races and games, such as lacrosse and pole throwing, were created adjacent to Tongva villages (McCawley 1996:27). Archaeological sites comprised of villages with various sized structures have been identified.

The fundamental economy of the Tongva was one of subsistence gathering and hunting. The surrounding environment was rich and varied, and the tribe exploited mountains, foothills, valleys, deserts, riparian, estuarine, and open and rocky coastal eco-niches. Like the majority of native Californians, acorns were the staple food (an established industry by the time of the early Intermediate Period). Acorns were

supplemented by the roots, leaves, seeds, and fruits of a wide variety of flora (e.g., islay, *Opuntia*, yucca, sages, and agave). Fresh-water and salt-water fish, shellfish, birds, reptiles, and insects, as well as large and small mammals, were also consumed. The Tongva are among several southern California native groups who were noted for periodically setting fire to the grassy plains and brush-covered hillsides to promote the growth of harvestable grass seeds, discourage the growth of chaparral, and create pasture for deer and antelope.

A wide variety of tools and implements were employed by the Gabrielinos to gather and collect food resources. These included bows and arrows, traps, nets, blinds, throwing sticks and slings, spears, harpoons, and hooks. Many plant foods were collected with woven seed beaters, several forms of burden baskets, carrying nets, and sharpened digging sticks, sometimes with stone weights fitted onto them. Groups residing near the ocean used ocean-going plank canoes (known as a *ti'at*) and tule balsa canoes for fishing (McCawley 1996:7). The ocean-going canoes were capable of holding six to fourteen people and were also used for travel and trade between the mainland and the Channel Islands. The tule balsa canoes were used for near-shore fishing.

Foods were processed with a variety of tools, including portable and bedrock mortars, pestles, basket hopper mortars, manos and metates, hammerstones and anvils, woven strainers and winnowers, leaching baskets and bowls, woven parching trays, knives, bone saws, and wooden drying racks. Food was consumed from a number of woven and carved wood vessels. The ground meal and unprocessed hard seeds were stored in large finely woven baskets, and the unprocessed acorns were stored in large granaries woven of willow branches and raised off the ground on platforms. Santa Catalina Island steatite was used to make comals, ollas, and cooking vessels that would not crack like regular stone under repeated firings (Kroeber 1925:629).

As part of the extensive exchange network, large amounts of steatite quarried on Santa Catalina Island were traded with numerous other groups on the coast and inland. In addition to cooking vessels, steatite was used to make effigies, ornaments, and arrow straighteners. Tongva obtained obsidian, acorns, and seeds, among other items, from inland Tataviam and Vanyume (Desert) Serrano in exchange for coastal resources, such as steatite, shell beads, and dried fish. The Tongva also traded with other coastal groups, exchanging large, baked clay pipes obtained from the Kumeyaay or Luiseño to the south and with the Chumash on their northern border.

At the time of Spanish contact, the basis of Tongva religious life was the Chinigchinich Cult, centered on the last of a series of heroic mythological figures. Chinigchinich gave instruction on laws and institutions, and he also taught the people how to dance, the primary religious act for this society. He later withdrew into heaven where he rewarded the faithful and punished those who disobeyed his laws (Kroeber 1925:637-638). The Chinigchinich religion seems to have been relatively new when the Spanish arrived; the religion was in the process of spreading south into the Southern Takic groups even as Christian missionization was taking place and may have been influenced by Christianity.

Deceased Tongva were either buried or cremated (Harrington 1942; McCawley 1996). McCawley (1996:157) states that "[i]nternment may have been the more standard practice on the Channel Islands and the mainland coast directly opposite, perhaps reflecting either the influence of Chumash mortuary practices or else a scarcity of fuel suitable for funeral pyres." During the Contact Period, cremation was the standard practice for the mainland Tongva. Cremation ashes have been found in archaeological contexts buried within stone bowls and in shell dishes (Ashby and Winterbourne 1966:27). Archaeological and ethnographic data describe a wide variety of grave offerings, including seeds, stone grinding tools, otter skins, baskets, wood tools, shell beads, bone and shell ornaments, and projectile points and knives. Offerings varied with the sex and status of the deceased. Graves were sometimes marked, and in the San Pedro area headstones or boards were etched with figures (Heizer 1968:fn. 66).

European contact with the Tongva occurred as early as 1542 with the Spanish expedition led by Juan Rodriguez Cabrillo, followed by Sebastián Vizcaíno in 1602, both of who visited Santa Catalina Island. Colonization of Tongva lands did not begin in earnest until after the inland expedition led by Gaspar de Portolá in 1769; by 1771, four missions had been constructed in the region, including Mission San Gabriel, located in Los Angeles County and founded in September 1771 (Engelhardt 1927a). The Franciscan missions, charged with converting the Native Americans to Christianity and with acculturating them to European society and economy, began relocating them to mission grounds.

Known as *reducción*, relocation and baptism initially involved the Eastern Gabrielino of the plains as far south as the Santa Ana River and west to the Los Angeles River. The missionaries later proselytized the Western Gabrielino living west of the Los Angeles River, on the southern Channel Islands, and the interior groups to the east and south. Between 1780 and 1794, the majority of people from the southeast region were baptized and removed to the mission (King 2004:Figs. 7 and 8). Mission San Fernando del Rey was founded in 1797, and its priests pushed into the lands of other tribes located to the north and west and also converted Tongva people along the Los Angeles River and its tributaries. While mission life did give indigenous Californians some skills needed to survive in a rapidly changing world, much traditional cultural knowledge was lost during this era, as populations were moved and decimated by introduced diseases for which the people had no immunity.

With the founding of the Pueblo of Los Angeles in December 1781, civilian settlers came into the region, soon followed by retiring military men and their families from the Spanish garrisons (Engelhardt 1927b:48-51). The soldiers were given vast tracts of land by Spanish authorities within traditional Tongva subsistence areas. The Native Americans (both neophytes from the disintegrating missions and *cimarrones*, or gentile Indians) were among those who worked on the large ranchos. After governmental control of California shifted to Mexico, the missions were formally secularized in 1834, and the extensive mission lands were divided into private land grants, claimed by the growing ranchero class. With the migration of farmers to southern California after the Mexican-American War of 1846, the local native population, who continued to work as laborers, was soon a minority that was often lumped together with the Mexican-American community. Many allied themselves with remaining Native American communities in the Tehachapi and San Bernardino Mountains.

In the early twentieth century, Tongva who still lived in San Gabriel neighborhoods near the old mission joined the Mission Indian Federation and sought redress from the federal government over lost lands. A generation later, partly as an outgrowth of the civil rights movement, Tongva started to form political organizations of their own to affect handling of ancestral remains discovered at construction sites and to seek federal acknowledgement of their tribe. There are currently five such organizations with total membership approaching nearly a thousand people. They are still struggling to receive federal recognition.

28.2.2.3 Historic Overview

Post-contact history for the state of California generally is divided into three specific periods: the Spanish Period (1769–1822), the Mexican Period (1822–1848), and the American Period (1848–present). As discussed in more detail in Chapter 2 of this report, although there were brief visits by Spanish, Russian, and British explorers from 1529–1769, the beginning of Spanish settlement in California occurred in 1769 with a settlement at San Diego and the first (Mission San Diego de Alcala) of 21 missions established from 1769–1823. After the 1822 revolution by Mexico against the Spanish crown, the Mexican Period is marked by an extensive era of land grants, most of which were in the interior of the state, and by exploration by American fur trappers west of the Sierra Nevada Mountains.

With the signing of the Treaty of Guadalupe Hidalgo in 1848, ending the Mexican–American War, California became a territory of the United States. The discovery of gold in 1848 at Sutter's Mill near Sacramento and the resulting Gold Rush era influenced the history of the state and the nation. The rush of tens of thousands of people to the gold fields also had a devastating impact on the lives of indigenous Californians, with the introduction and concentration of diseases, the loss of land and territory (including traditional hunting and gathering locales), violence, malnutrition, and starvation. Thousands of settlers and immigrants continued to pour into the state, particularly after the completion of the transcontinental railroad in 1869.

With continued growth, California continues to be a national leader in agriculture and poultry production, ranching (cattle and sheep), aerospace and communications industries, as well as the film and entertainment business. The wealth of California's natural resources (e.g., lumber, petroleum deposits, minerals, fish) also continues to contribute to its growth and development.

Los Angeles County

The first European account of the area to become Los Angeles County was by Portuguese navigator João Rodrigues Cabrilho (Juan Rodriguez Cabrillo in Spanish), who led a Spanish expedition along the California coast in 1542–1543 (Chartkoff and Chartkoff 1984:252-253). Cabrillo noted the numerous campfires of the Gabrielino and thus named the area the "Bay of Smokes." Spain's presence in the region was only intermittent for approximately 200 years. Then, because of the possibility of territorial encroachment by the British and Russians from the north, Spanish Governor of Baja California Gaspar de Portolá was instructed to lead a land–sea expedition to colonize Alta (upper) California in the 1760s (Chartkoff and Chartkoff 1984:254-257).

On September 8, 1771, Fathers Pedro Cambón and Angel Somera established the Mission San Gabriel de Arcángel near the present-day city of Montebello (Johnson et al. 1972). In 1775, the mission was moved to its current location in San Gabriel due to better agricultural lands. This mission marked the first sustained European occupation of the Los Angeles County area. Mission San Gabriel, despite a slow start partially due to misconduct by Spanish soldiers, eventually became so prosperous it was known as "The Queen of the Missions" (Johnson et al. 1972).

The pueblo that eventually became the City of Los Angeles was established in 1781. During this period, Spain also deeded ranchos to prominent citizens and soldiers (though very few in comparison to the Mexican Period). Rancho San Pedro, one such rancho, was deeded to soldier Juan Jose Dominguez in 1784 and comprised 75,000 acres encompassing the modern South Bay region from the Los Angeles River on the east to the Pacific Ocean on the west (Dominguez Rancho Adobe Museum 2006).

The area that became Los Angeles County saw an increase in European settlement during the Mexican Period largely due to the many land grants (ranchos) to Mexican citizens by various governors. However, the Mexican Period for Los Angeles ended in early January 1847. Mexican forces fought combined U.S. Army and Navy forces in the Battle of the San Gabriel River on January 8 and in the Battle of La Mesa on January 9 (Nevin 1978). On January 10, leaders of the pueblo of Los Angeles surrendered peacefully after Mexican General Jose Maria Flores withdrew his forces. Shortly thereafter, newly appointed Mexican Military Commander of California Andrés Pico surrendered all of Alta California to U.S. Army Lieutenant Colonel John C. Fremont in the Treaty of Cahuenga (Nevin 1978).

Settlement of the Los Angeles region continued in the early American Period. The county was established on February 18, 1850, one of 27 counties established in the months prior to California becoming a state. Many ranchos in the county were sold or otherwise acquired by Americans, and most were subdivided

into agricultural parcels or towns. Nonetheless, ranching retained its importance and, by the late 1860s, Los Angeles was one of the top dairy production centers in the country (Rolle 2003). By 1876, the county had a population of 30,000 (Dumke 1944:7).

In 1854, the U.S. Congress agreed to let San Pedro become an official port of entry. By the 1880s, the railroads had established networks throughout the county, resulting in fast and affordable shipment of goods, as well as a means to transport new residents to the booming region (Dumke 1944). New residents included many health-seekers drawn to the area by the fabled climate in the 1870s–1880s (Baur 1959).

Availability of fresh water has always been a concern for county residents. Many authors (e.g., Kahrl 1982; Mulholland 2000; Nadeau 1997; Reisner 1986) identified the control and management of water as the single most important factor in the development of southern California. As William Mulholland did for the City of Los Angeles in 1913, the Metropolitan Water District of southern California (MWD), formed in the 1920s, secured water rights for many areas including portions of Los Angeles County not incorporated within the City of Los Angeles (Metropolitan Water District of Southern California n.d.; Nadeau 1997). The formation of MWD began in 1924, when then Mayor of Pasadena Hiram W. Wadsworth initiated the formation of the Colorado River Aqueduct Association (Metropolitan Water District of Southern California n.d.). Wadsworth, as president of this group representing 13 cities, pushed for the construction of an aqueduct similar to the Los Angeles–Owens Valley Aqueduct that would provide water from the Colorado River to thirsty southern California. This resulted in the incorporation of MWD in 1928 and the construction of the aqueduct, an engineering marvel that finally began delivering Colorado River water to MWD's member cities in 1941 and ultimately facilitated the incredible population growth that occurred in the region (Metropolitan Water District of Southern California n.d.).

In the early to mid-1900s, population growth accelerated due to industry associated with both world wars, as well as emigration from the Midwest "dust bowl" states during the Great Depression. The county became one of the most densely occupied areas in the U.S. The county's mild climate and successful economy continued to draw new residents in the late 1900s, with much of the county transformed from ranches and farms into residential subdivisions surrounding commercial and industrial centers. Hollywood's development into the entertainment capital of the world, and southern California's booming aerospace industry, were key factors in the county's growth.

City of Los Angeles

Spanish Governor of California Felipe de Neve recognized the need to establish a pueblo north of the Mission San Gabriel to help supply Spain's military presidios in California as well as to help maintain Spain's control over the region (Ríos-Bustamante 1992). On 4 September 1781, 22 settlers from Mexico accompanied by the governor, soldiers, mission priests, and several Native Americans arrived at the site alongside the Los Angeles River that was officially declared *El Pueblo de la Reina de Los Angeles* or "The Town of the Queen of the Angels" (Ríos-Bustamante 1992).

Spanish Period residents of the Pueblo of Los Angeles, troubled by the inconsistent nature of the Los Angeles River including periods of drought and flooding, established a water management system named the *Zanja Madre* (Mother Ditch). This ditch system for the delivery of water was maintained and improved in both the Mexican and Early American Periods and remained in use until the early 1900s. The residents used this water for ranching and agriculture to feed themselves, as well as to help provision the presidios.

The Pueblo of Los Angeles grew in population during the Mexican Period (1822-1847) but retained the emphasis on ranching. Mexican governors granted numerous ranchos during this period, and the few

granted during the Spanish Period continued to operate or were broken up into smaller ranchos. On May 23, 1835, Los Angeles was officially declared a city by Mexican national decree (Bancroft 1885). During the Mexican Period, Anglo-Europeans such as Hugo Reid and Don Juan Forster were assimilated into Los Angeles's citizenry and culture (Dakin 1939).

On April 4, 1850, only two years after the Mexican American War and five months prior to California receiving statehood, the City of Los Angeles was formally incorporated. Los Angeles maintained its role as a regional business center in early American Period and the transition of many former rancho lands to agriculture, as well as the development of citriculture in the late 1800s, further strengthened this status (Caughey and Caughey 1977). These factors combined with the expansion of port facilities and railroads throughout the region contributed to the impact of the real estate boom of the 1880s on the City of Los Angeles (Caughey and Caughey 1977; Dumke 1944). The boom's fiscal impact can be observed through the City's tax assessments: In 1886, Los Angeles was assessed $18,000,000 and in 1889 the total was $46,000,000 (Dumke 1944). Despite the real estate boom largely occurring in surrounding areas, Los Angeles, as the commercial center, reaped substantial benefits from the explosive growth.

The City of Los Angeles recognized the need for water to sustain the growing population in the late 1800s and Irish immigrant William Mulholland personified the city's efforts for a stable water supply (Dumke 1944; Nadeau 1997). The city purchased large tracts of land in the Owens Valley and Mulholland planned and directed the construction of the 240-mile aqueduct that brought the valley's water to the city by 1913 (Nadeau 1997).

Los Angeles continued to grow in the twentieth century in part due to the discovery of oil in the area and its strategic location as a wartime port. The military presence led to the aviation and eventually aerospace industries having a large presence in the city and region. Mines Field, which would become Los Angeles International Airport, was established in 1928. The complexion of the multicultural city continued to change; however, the process was frequently painful for the new, and often unwelcome, ethnic groups (Garcia et al. 2004). Hollywood became the entertainment capital of the world through the presence of the film and television industries and continues to tenuously maintain that position. With nearly 4 million residents, Los Angeles is the second largest city in the U.S. (by population) and remains a city with worldwide influence while continuing to struggle with its population's growth and needs.

City of Compton

Rancho San Pedro was granted by Spain to retired soldier Juan José Dominguez in 1784 (Gillingham 1961). The rancho, which comprised more than 75,000 acres, was the first land grant issued by Spain to a private citizen in southern California (Gillingham 1961). Despite opposition by squatters who had made improvements to the rancho, Dominguez's heirs maintained title of the rancho through the Mexican Period. The U.S. Land Claims Commission upheld the family's ownership but, eventually, debt forced the sale of portions of the rancho. In 1866, Francis P.F. Temple and Fielding W. Gibson purchased 4,660 acres that became known as the Temple and Gibson Tract (Compton 2006). The area was subdivided and settlement began in 1867. Later that year, a wagon train led by Griffith Dickinson Compton and William Morton settled in the area. Though the town had been called Gibsonville, the named changed to Comptonville and then Compton, honoring the popular town founder and community activist (Compton 2006). The City of Compton was incorporated on May 11, 1888.

Compton proudly declares itself the "Hub City" due to its geographical location in the center of Los Angeles County, with which it shares much of its history (Compton 2006). The "Hub City" designation is also appropriate because five freeways bound the city: Interstates 105, 110, 405 and 710 and State Highway 91.

City of Long Beach

In 1784 Spanish soldier Manuel Perez Nieto received the third and largest Spanish land grant in California (Cenovich 1995). The grant initially comprised 300,000 acres, but in 1796 was reduced to 167,000 acres after a petition by Mission San Gabriel (Cenovich 1995). In 1834, 30 years after Manuel Nieto's death, his heirs divided the land into five ranchos, two of which, the 28,000-acre Los Alamitos and 27,000-acre Los Cerritos, included most of present-day Long Beach (Cenovich 1995; Long Beach Local 2006; Sanquist 1981).

Rancho Los Alamitos was sold in 1834 to Mexican Governor Jose Figuero. Eight years later it was sold to Abel Stearns and his wife Arcadia Bandini, who continued ranching the land. Michael Reese owned the rancho from 1866 until 1881, when John Bixby purchased it with help from I.W. Hellman and relative-owned J. Bixby & Co, which was a conglomerate of Jotham Bixby and Flint, Bixby, & Co. (Sanquist 1981). Rancho Los Cerritos remained in the Nieto family until its sale to John Temple in 1844 (Rancho Los Cerritos 2003). Temple sold Los Cerritos to Flint, Bixby, & Co. in 1866. The rancho was used for raising sheep until portions of it were subdivided beginning in 1880.

William Erwin Willmore took an option for 4,000 coastal acres of what was now called the Bixby Rancho (or Bixby Ranch) in 1880 (Dumke 1944). Despite a well-laid out town plan for an agricultural colony and extensive advertising, Willmore City, also called the American Colony, never took off and the project was abandoned in 1884. Willmore's misfortune was largely a matter of timing; the development strategy he employed was typical of the real estate boom that generally began in the area six years after his failed attempt (Dumke 1944). The Long Beach Land and Water Company renamed Willmore City "Long Beach" and capitalized on developing the town as a seaside resort by 1888, when the City of Long Beach was incorporated. In 1897, dissatisfaction of the citizenry led to the disincorporation of the city; however, they voted to reincorporate later that year (Long Beach Local 2006).

In 1901, Henry Huntington established the Pacific Electric Railway and in 1902 built a line connecting Los Angeles and Long Beach (University of Southern California 2005). These famous "red car" lines provided economical transportation and at its peak, the Pacific Electric had 900 cars on 1,150 miles of track connecting four counties. By 1959 the L.A. to Long Beach route was the last remaining line, and it ceased operating in 1961. The Pacific Electric was partially responsible for Long Beach being the fastest growing city in the U.S. during 1902–1910 (Long Beach Local 2006).

The port of Long Beach was established in 1911 and the Signal Hill, or Long Beach, Oil Field was discovered in 1921 (Franks and Lambert 1985). This led to an oil development boom in the Long Beach area, with the port offering convenient transportation of the oil; also resulting in residential boom. Oil continues to be pumped from this field today, although significantly less wells dot the landscape. In 1933, the Long Beach earthquake forced the reconstruction of most of downtown. The city rebounded from the quake, however. The development of a U.S. Navy base in 1941, the founding of California State University Long Beach in 1949, and various tourism-related developments and redevelopments have contributed to the vibrant and diverse economy and populace present today.

28.3 PREVIOUS RESEARCH

28.3.1 Literature Search

28.3.1.1 Methods

A cultural resources site and survey record search was conducted at the South Central Coastal Information Center (SCCIC) of the California Historical Resources Information System (CHRIS) on June 19, 2000. Because the cable conduit already has been installed and no new construction will take place, only archaeological sites and surveys were requested; built environment resources (i.e., historic structures) were not requested. Site and survey information were requested for the linear project corridor and a 1/4-mile radius. Because some survey reports were very large, only bibliographic information on them was obtained.

In addition to official maps and records, the SCCIC consulted the following information sources as part of their record search:

- National Register of Historic Places – Listed Properties
- California Register of Historical Resources
- California Inventory of Historical Resources
- California State Historical Landmarks
- California Points of Historical Interest
- Directory of Properties in the Historical Resources Inventory (Office of Historic Preservation)
- Caltrans State and Local Bridge Surveys

28.3.1.2 Findings

The literature search indicated that approximately 80 percent of the project area has been subject to intensive archaeological investigation. A total of seven cultural resources have been previously recorded within the 1/4-mile radius of the segment corridor (Table 28-4). Six of these resources are prehistoric, and one is historic. Of these archaeological resources, four are known to contain Native American burials, and two middens or occupation sites have a moderate to high probability of containing burials.

The series of 1:24,000 maps at the end of this chapter (Figure 26.1 through Figure 26.7) show the previously recorded cultural resources along the segment, as provided by the CHRIS records search. As noted in the figure legend, the labeled resources are identified as one of four types: linear, prehistoric, historic, or protohistoric and/or multi-component.

Table 28-4. Segment 26 Corridor – Previously Recorded Cultural Resources

Site #	Site Type	Site Condition	USGS Quad	Recorded
P-19-002796	Native American burial, midden deposit	Unknown	South Gate	Horne 2000

Table 28-4. Segment 26 Corridor – Previously Recorded Cultural Resources				
P-19-000385	Midden, faunal remains, FCR	Substantially destroyed	South Gate	King 1969
P-19-002792	Native American burial	Unknown	South Gate	Horne 2000
P-19-002757	Native American burial	Fair	South Gate	Williams 1999
P-19-002795	Historical – bovine skeletal remains, refuse burn pile, wooden conduit, wooden structural members	Poor	Long Beach	Livingstone 1999
CA-LAN-389	Seasonal Village / Camp site	Unknown	Long Beach	Chartkoff, Gutman 1969
P-19-002682	Protohistoric burial ground, midden soil	Poor	Long Beach	McDowell, Bonner 1998

28.3.2 Native American Consultation

28.3.2.1 Methods

The Native American Heritage Commission (NAHC) was contacted on May 5, 2000, to request a Sacred Lands file search and a current Native American contact list. The Commission's response, dated May 17, 2000, provided the names and addresses of 12 local Native American groups and individuals. Letters subsequently were sent on May 19, 2000, to the listed groups and individuals to determine if they have knowledge of culturally sensitive locations within the project area. If there was no response to the letter, a telephone call was made to each individual or representative on June 6, 2000. A table listing contact dates and responses is attached as Appendix B.

28.3.2.2 Findings

The reply from the NAHC states the search failed to indicate the presence of Native American cultural resources in the immediate project area. One telephoned response was received to the letters addressed to the contact list; no responses were received to the telephone calls. Sam Dunlap expressed no specific concerns and that Native American monitors were available, if needed.

28.4 FIELDWORK

Fieldwork for the Firestone Park to Long Beach segment involved (1) pedestrian survey and limited visits to known sites and (2) monitoring of maintenance activities. No cultural resources were collected during the Qwest Network Construction Project.

The fieldwork was conducted under the supervision of a CRS, who supervised lead archaeological monitors and a staff of archaeological monitors. Archaeological monitors were responsible for being on

site during all work in sensitive areas, conducting spot checks if the area was designated for intermittent monitoring, and completing Daily Monitoring Logs. The CRS or archaeological monitor was responsible for flagging or otherwise delineating ESAs, including a 15-foot buffer zone around cultural resources, within four days prior to maintenance activities. The archaeological monitor was also responsible for completing a Site Condition Record immediately after removal of such flagging or other protective markers.

28.4.1 Survey

A pedestrian survey was conducted to identify any historic/prehistoric sites or features that may have been encountered during the installation of the fiber optic lines. The entire segment was subjected to intensive pedestrian survey for cultural resources. The survey area consisted of a swath of land straddling the fiber optic line and extending 15 meters to either side. This area was considered the area of potential effect (APE) for Qwest backbone construction.

28.4.1.1 Methods

The survey crew consisted of 14 archaeologists, and survey parties of one or two individuals. The survey parties were deployed to conduct surveys along the alignment. For safety, two-member survey parties were implemented in remote and inhospitable areas. Table 28-5 provides a list of key site investigation staff, along with their professional credentials.

Qualified archaeologists walked a single pedestrian transect on either side of the fiber optic backbone alignment. Exposures of native soil were closely inspected for cultural material, as were animal burrows and other disturbances affording limited subsurface visibility. No attempt was made to locate known sites within the APE; the segment corridor lays in/under blast of the railroad.

In addition to reporting on the condition of previously recorded sites, survey crew members were instructed to record any cultural resources not previously recorded and any impacts the resource may have suffered as a result of the Qwest backbone construction. The minimally acceptable level of documentation needed for a resource's inclusion in the Office of Historic Preservation's (OHP's) filing system can be met with the preparation of a California Department of Parks and Recreation (DPR) 523 series Primary Record and a Location Map. While the minimum level of documentation is designed to provide an initial record of all types of cultural resources, survey crews were instructed to fully document any previously unrecorded resources. Full documentation (although different for various types of resources) generally includes the preparation of the Primary Record and Location Map, but also an Archaeological Site Record, Artifact Record, Photograph Record, as well as a Sketch Map.

Table 28-5. Key Site Investigation Staff

Key Staff	Highest Degree *	Years Experience
Cindy Arrington	M.S., RPA	10
Paul Shen-Brown	M.A., RPA	8
Lori Harrington	M.A., RPA	15
Mark Sullivan	M.A., RPA	26
George Zeimens	M.A., RPA	30

Table 28-5. Key Site Investigation Staff

Key Staff	Highest Degree *	Years Experience
Bradbury Brown	B.A.	18
William Brown	B.A.	10
Todd Folmer	B.A.	11
Keith Hamm	B.A.	4
Susan Kintscher	B.A.	2
Harry Moyer	B.A.	5
Mark Lowe	B.A.	12
Joise Salas	B.A	3
Dean Tye	B.A.	5

* RPA = Member of the Register of Professional Archaeologists

28.4.1.2 Findings

The entire segment was surveyed by archaeologists George Zeimens, Paul Shen-Brown, and Mark Sullivan in the fall and winter of 2000. The pedestrian survey did not locate any previously unrecorded or newly identified cultural resource sites, artifacts, or objects.

28.4.2 Monitoring

28.4.2.1 Methods

In accordance with Protocol 5, a Mitigation and Monitoring Plan (MMP) was prepared in June 2000. The MMP noted that in this project corridor, Qwest would be performing maintenance on an existing line only. No new trenching was foreseen at this location. The proposed maintenance activity consisted of the re-excavation of pre-existing assist holes to perform maintenance or upgrades on the fiber-optic line. These excavations might take place at four points per linear mile. The MMP concluded that it was possible that some previously undisturbed soil might be disturbed during re-excavation.

Within a 1/4-mile of the proposed project corridor, seven archaeological resources have been previously recorded. Of these resources, four contain Native American burials, and two have a moderate to high probability of containing burials. In addition, 20 percent of the route remains unsurveyed outside of the railroad ROW, and the presence of human remains along this segment was considered likely. It is thus possible that previously unknown cultural resources might be discovered during maintenance activities.

In view of the above information, the MMP made the following recommendations for monitoring within this study area:

- An archaeological monitor would be present when any maintenance is performed along this project corridor.
- No Native American observer would be present when any maintenance is performed along this project corridor.

28.4.2.2 Findings

No maintenance was required for the Firestone Park to Long Beach segment during the monitoring period. Because no maintenance activities occurred, archaeological monitoring was not necessary.

28.5 DISCUSSION

Prior to the current investigation, 80 percent of the Firestone Park to Long Beach segment corridor had been investigated for cultural resources, with seven cultural resources previously recorded within a 1/4-mile radius. In addition, four of the known archaeological sites contained Native American burials, and an additional two were considered to have a moderate to high probability of containing burials. No cultural resources had been previously recorded within the project corridor, and no previously unknown cultural resources were identified during the fieldwork reported here along the railroad ROW. Although the presence of human remains was considered likely along this segment, no evidence of human remains was discovered during this project.

Under the oversight of a CRS, the specific Cultural Resources Protocols for this project were accomplished. Preparation of a MMP in compliance with Protocol 5 assured that known cultural resources would be avoided as feasible and impacts reduced by ensuring that any necessary archaeological mitigation was carried out prior to commencement of the maintenance activity. In compliance with Protocol 7, the literature search and subsequent fieldwork assured that identified cultural resources within the segment corridor were protected. Under Protocol 8, an archaeological monitor and Native American observer were present where appropriate. During the project, it was not necessary to implement Protocol 9, which describes the methods to be employed to address unanticipated discoveries and assure that cultural resources are protected by work stoppage and evaluation of the resource by the CRS or an archaeological monitor, since there were no unanticipated discoveries. Although it was not necessary to implement Protocol 10, that protocol describes the actions to be taken in the event of the discovery of human remains or suspected human remains.

28.6 RECOMMENDATIONS

Given that the current field investigation was conducted along a railroad corridor, efforts to locate cultural resources within the scope of this project have been sufficient per current U.S. Secretary of the Interior's professional standards and guidelines.

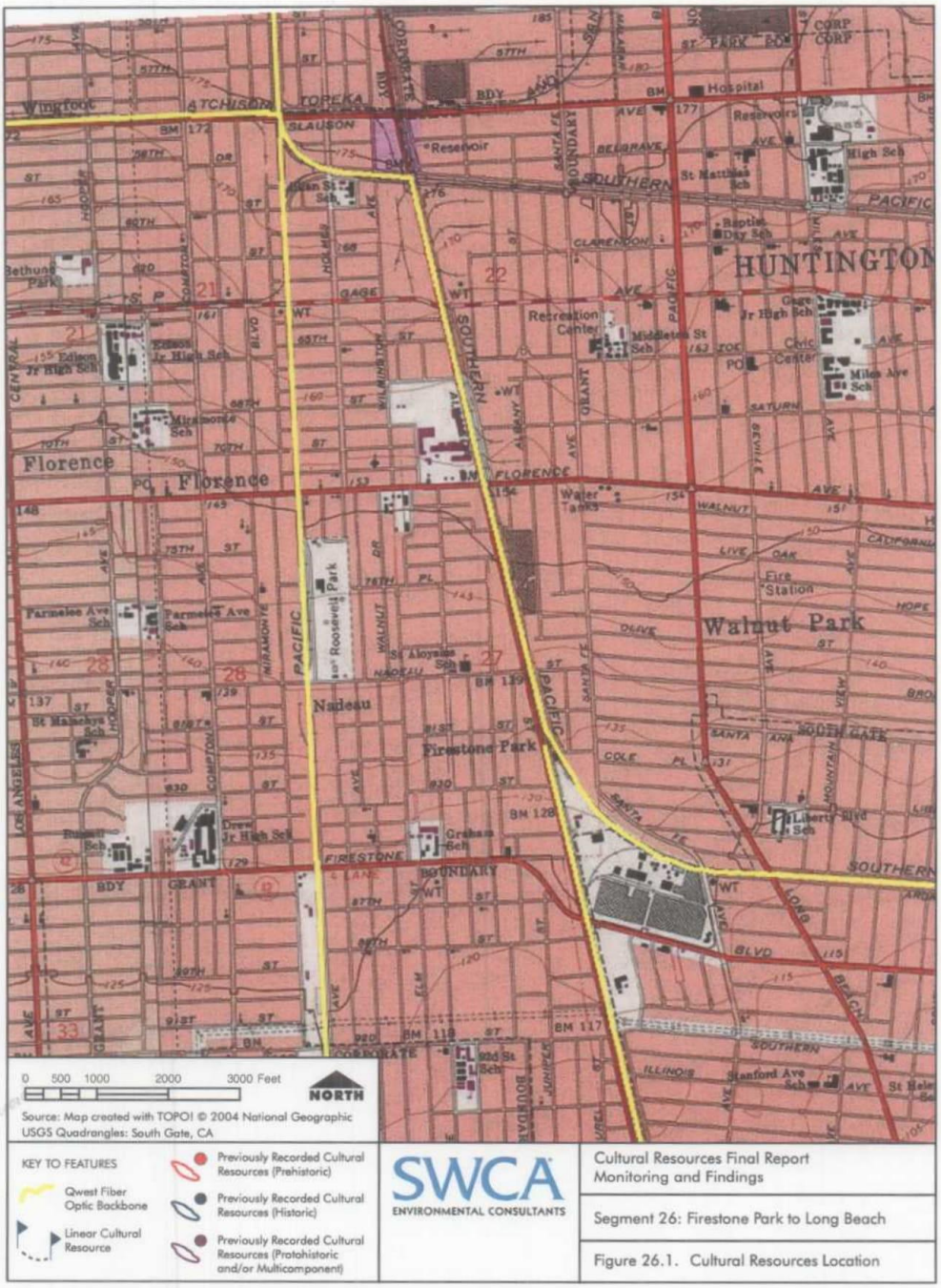
There remains, however, the potential for the existence of buried archaeological materials within this heavily disturbed project area. Prehistoric materials might include flaked stone tools, toolmaking debris, stone milling tools, fire-affected rock, animal bone shaped for use as tools, baked clay items, pottery, marine shell, or soil darkened by cultural activities (midden). Historic materials might include building remains, metal, glass, or ceramic artifacts or debris.

Should cultural resources be encountered by Qwest construction and/or management crews during future disturbance for maintenance of fiber-optic cable and related infrastructure, or should new construction occur within the state of California, work in the area must be halted and a qualified archaeologist should be notified immediately to evaluate the resource(s) encountered. Qwest would also adhere to the specific Cultural Resources Protocols, numbered 1 through 11, which were prepared to ensure Qwest's compliance under CPUC regulatory authority (see Appendix A).

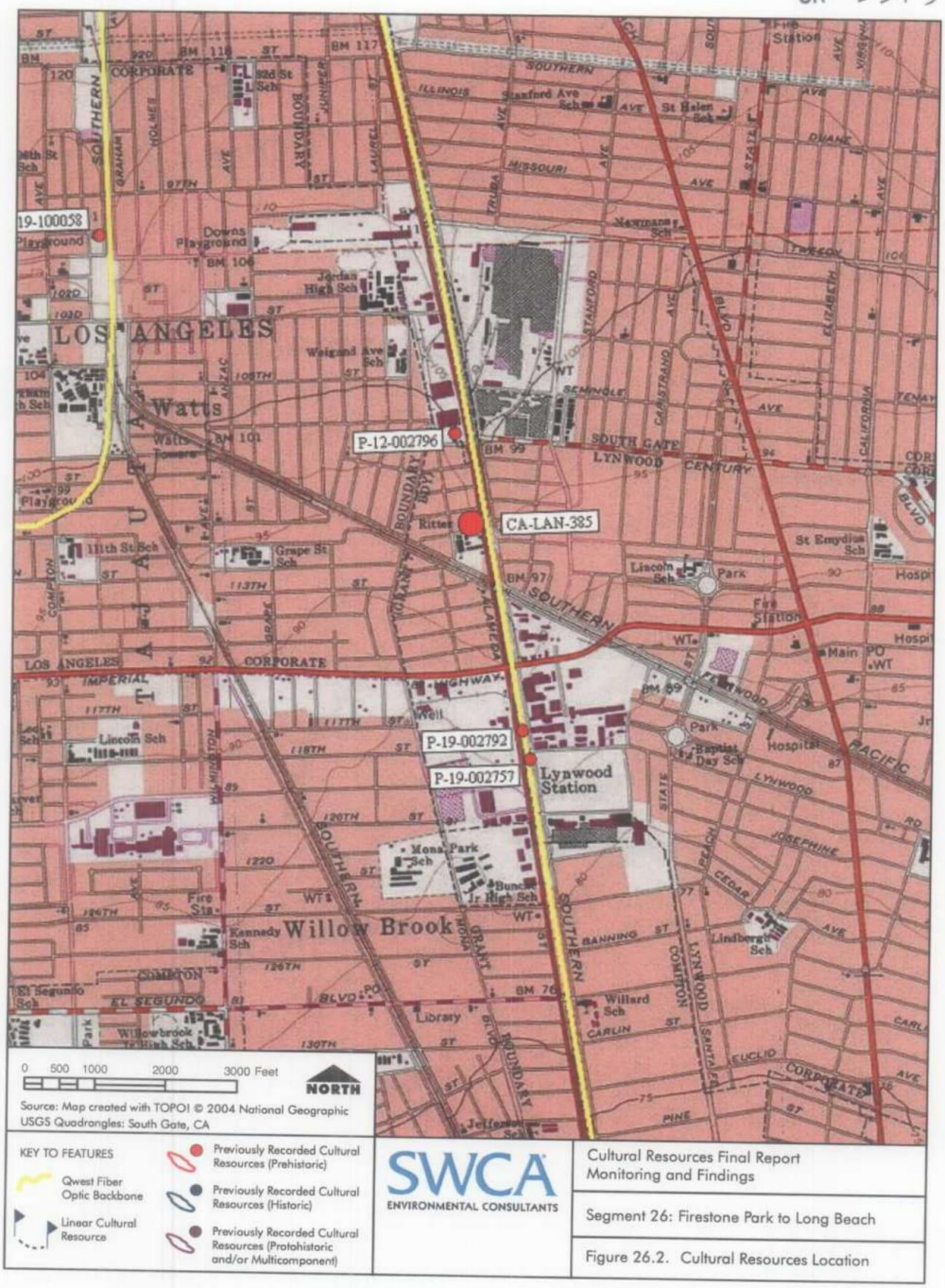
- Protocol Number 1: Records Search and Data Adequacy Analysis
- Protocol Number 2: Native American Consultation

- Protocol Number 3: Archaeological Inventory and Site Recording
- Protocol Number 4: Site Boundary, Integrity or Significance Testing
- Protocol Number 5: Mitigation Monitoring Plan
- Protocol Number 6: Pre-Construction Data Recovery
- Protocol Number 7: Protection of Environmentally Sensitive Areas
- Protocol Number 8: Archaeological Monitoring and Native American Observation
- Protocol Number 9: Addressing Unanticipated Discoveries during Project Activity
- Protocol Number 10: Discovery of Human Bone
- Protocol Number 11: Final Report of Monitoring and Findings

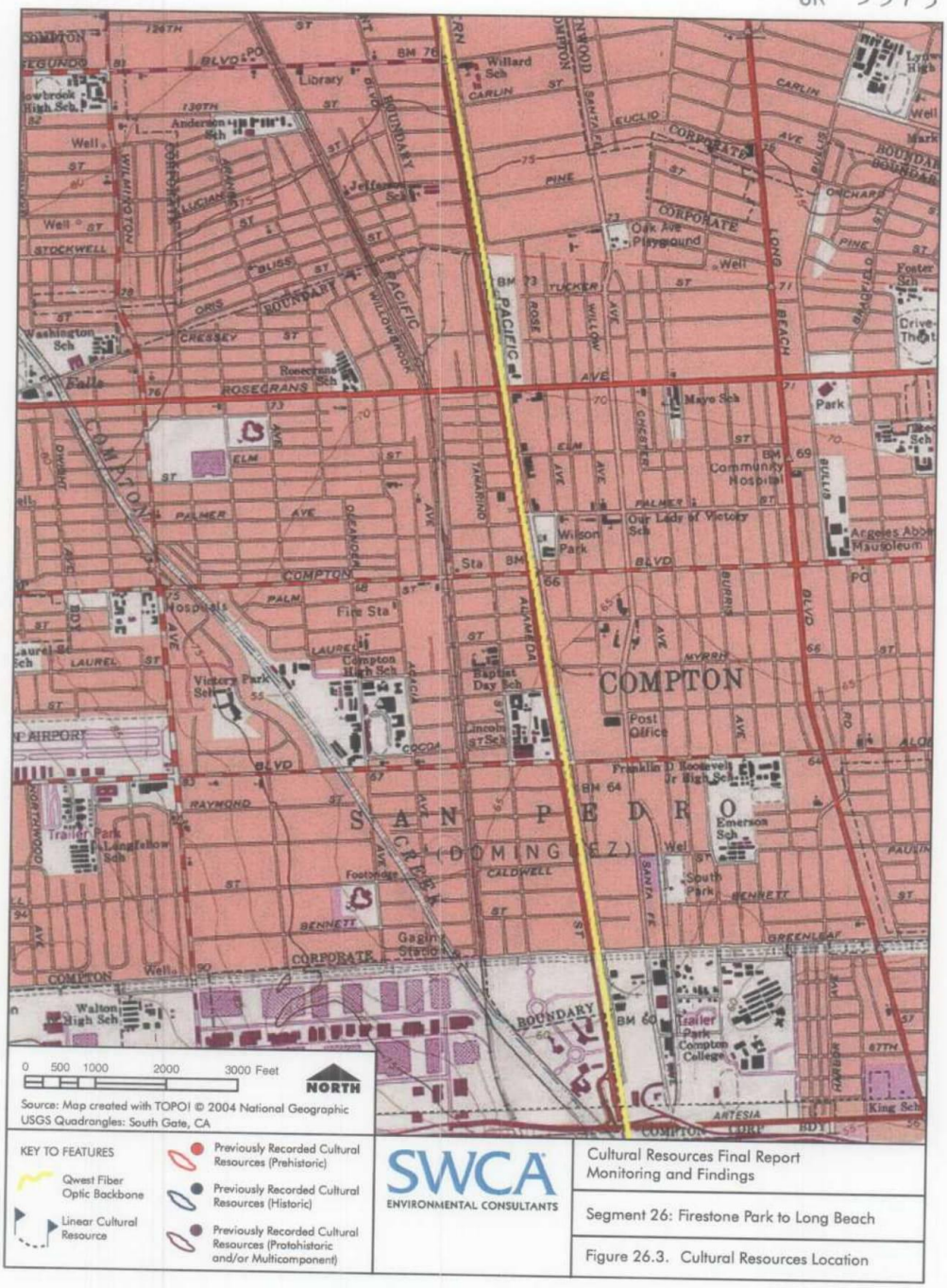
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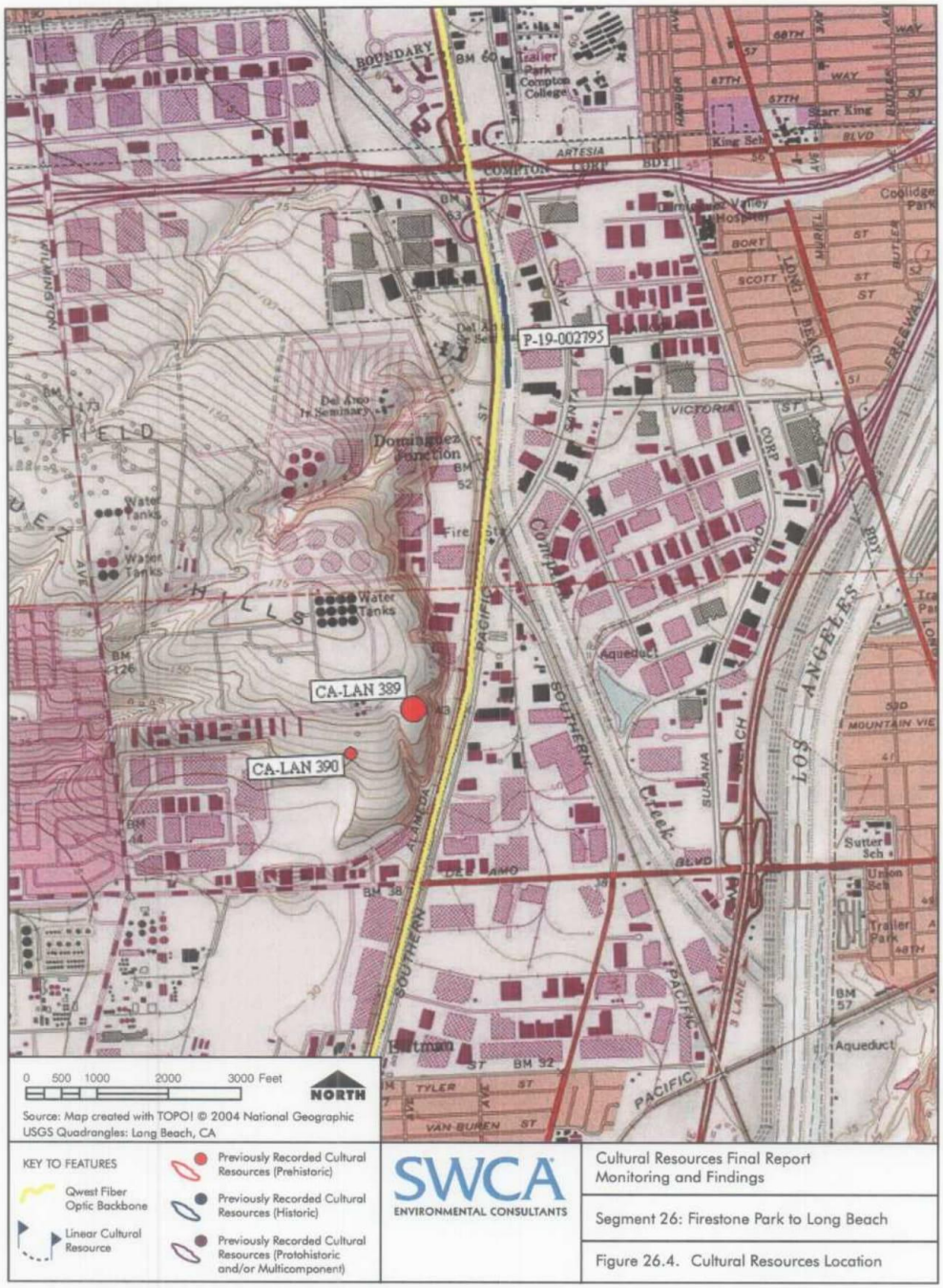
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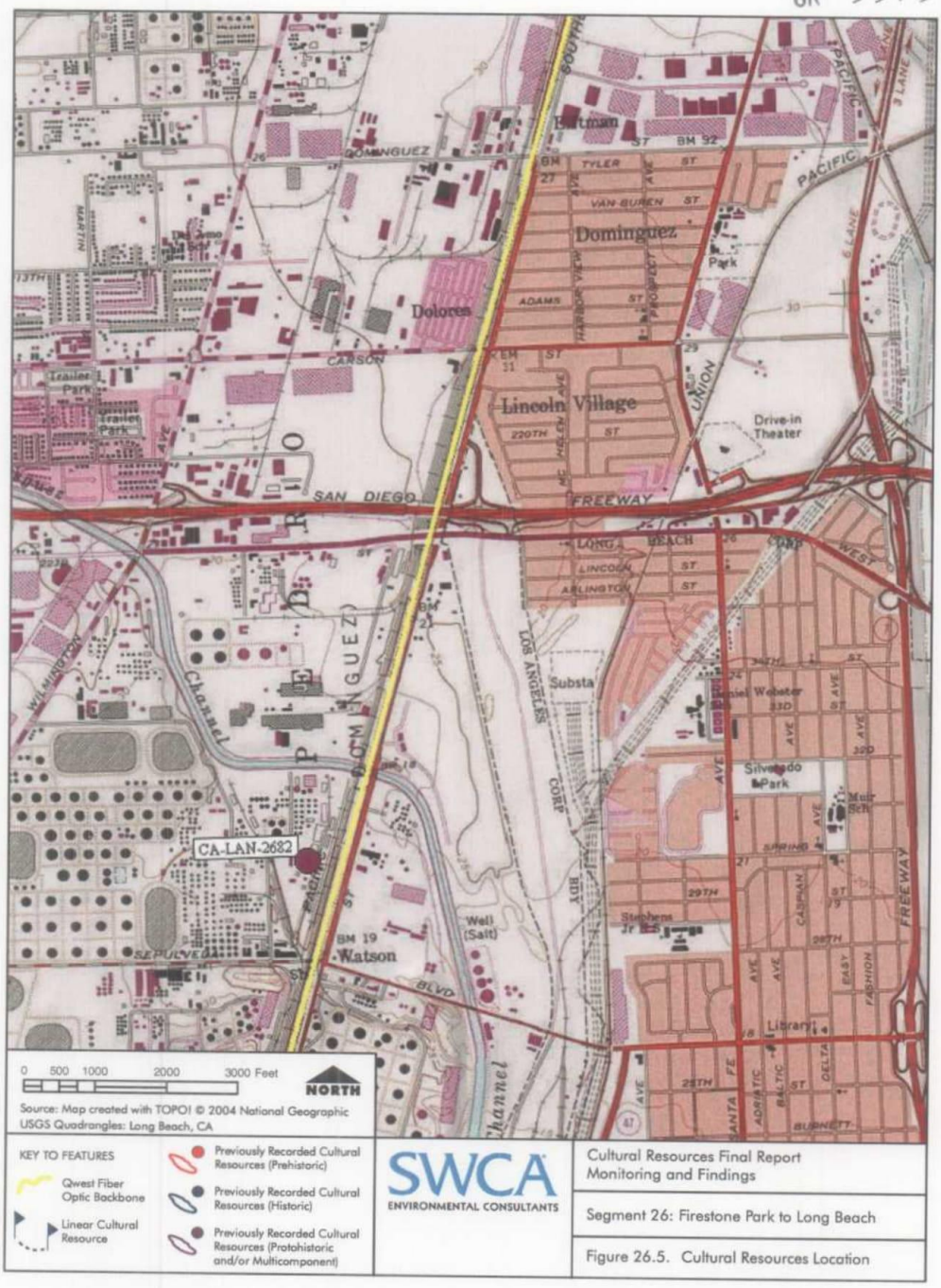
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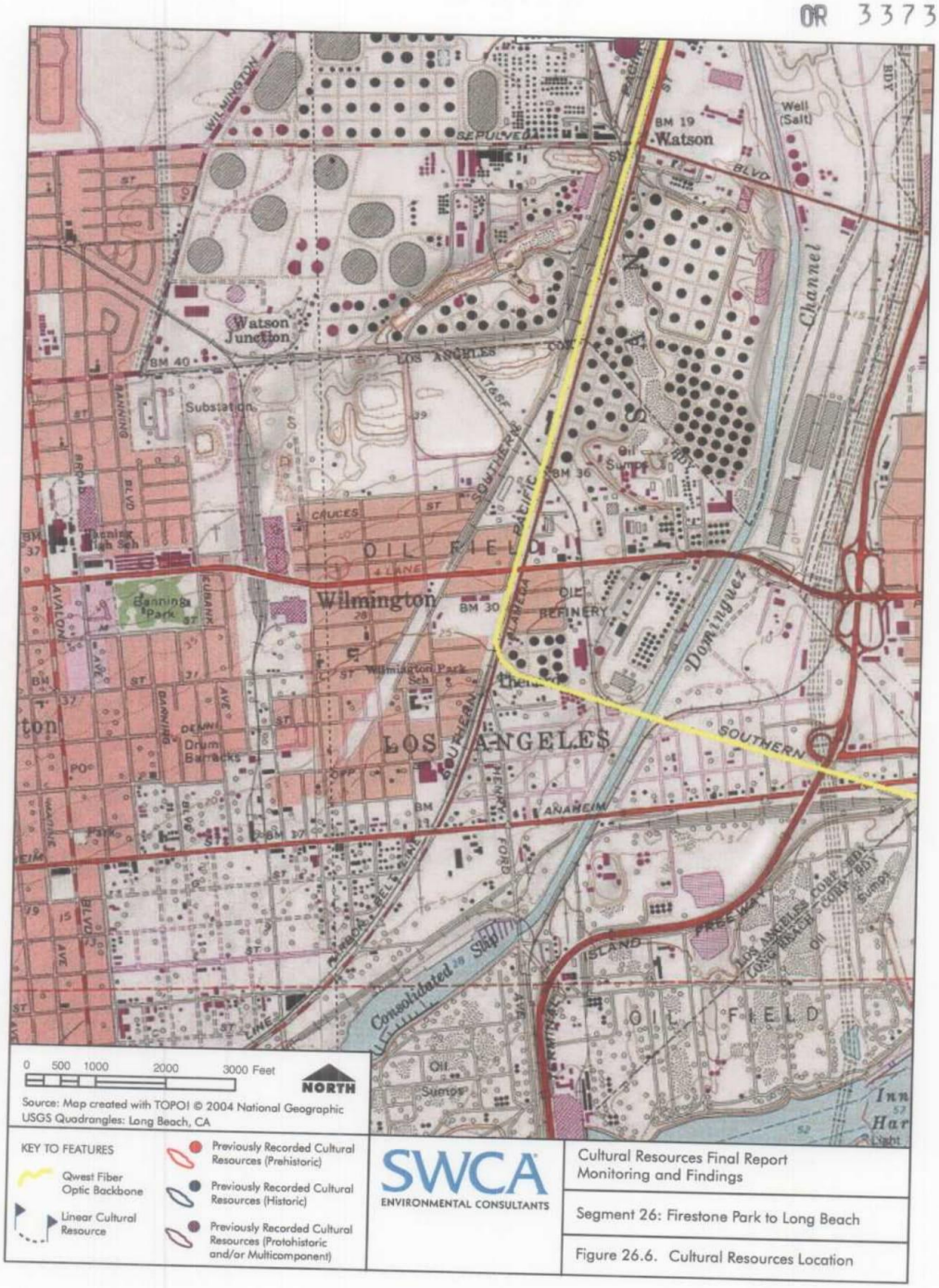
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29. LOS ANGELES TO ANAHEIM SEGMENT

Qwest Communications International Inc. (Qwest) retained SWCA Environmental Consultants (SWCA) to complete the Cultural Resources Final Report of Monitoring and Findings for the Qwest Network Construction Project. The report covers the cultural resources investigation for the maintenance (replacement and repair) of fiber-optic cable within the Qwest network "backbone" throughout the state of California. The existing California backbone includes approximately 1,431 linear miles of fiber-optic network. The investigation included surveys, focused visits to previously recorded archaeological sites, and monitoring of routine maintenance of existing lines along the network backbone.

The California Public Utilities Commission (CPUC) is the designated Lead Agency for this project under the California Environmental Quality Act (CEQA). The Qwest project is subject to specific Cultural Resources Protocols, numbered 1 through 11, prepared to ensure Qwest's compliance under CPUC regulatory authority. The CPUC and the Native American Heritage Commission (NAHC) approved the Qwest Fiber Optic Project Cultural Resources Protocols in February 2000. Qwest is proud of its record of responsible environmental and cultural resources stewardship and was an enthusiastic participant in the development of the Cultural Resources Protocols for this statewide project. In addition, to the greatest extent possible, Qwest followed the preferred approach: namely, to avoid ground disturbance activities within Environmentally Sensitive Areas (ESAs) and cultural resources during all maintenance activities.

The Protocols set forth a program for the identification and protection of known cultural resources within project rights-of-way (ROWs) and for the identification, assessment, and treatment of cultural resources that might be encountered during project activities. Protocols 1 through 6 generally were applied during project planning; Protocols 7 through 11 were applied immediately prior to, during, or at the conclusion of the routine maintenance program. The document containing the Protocols is provided as Appendix A.

In compliance with the General Conditions section of the Cultural Resources Protocols, qualified lead archaeological monitors and a staff of archaeological monitors monitored for cultural resources for this project. The monitors, as well as Native American observers, worked under the supervision of a qualified Cultural Resource Specialist (CRS). The CRS also determined when a Native American observer was deemed appropriate, depending on the sensitivity of the project segment. In addition, all Qwest personnel received training in field identification of potential cultural resources, laws regarding the protection of cultural resources, and what actions to take immediately in the event of the unanticipated discovery of cultural resources or human remains.

For purposes of the investigation, the California network backbone was divided into 36 segments. This document reports on the background information, methods, and findings of the cultural resources program for the Los Angeles to Anaheim segment (Segment #27 out of 36) of the California Qwest network backbone, as shown on the segment location map (Figure 27)[1]. Cultural resources include archaeological and historical objects, sites, and districts; historic buildings and structures; cultural landscapes; and sites and resources of concern to local Native American and other ethnic groups. Cultural resources may be found on the ground surface or buried beneath the surface.

[1] NOTE: All figures in this chapter are labeled according to segment number, not chapter number.



Figure 27. Segment Location Map

The Cultural Resources Final Report of Monitoring and Findings for the Qwest Network Construction Project, of which this document is a part, satisfies the requirements of Protocol 11: Final Report of Monitoring and Findings. The format of the Final Report and this chapter of that report follow *Archaeological Resource Management Reports (ARMR): Recommended Contents and Format* (Office of Historic Preservation 1990).

29.1 SEGMENT DESCRIPTION

The Los Angeles to Anaheim segment is along various main streets and side streets within the City of Los Angeles and along the Southern Pacific Railroad ROW, within Los Angeles and Orange Counties, California. The segment starts at Huntington Park in Los Angeles County and ends at Anaheim in Orange County. The network backbone in this area consists of a buried fiber-optic cable conduit, which can be accessed at four points per mile for maintenance and upgrading. Construction activity consists of the re-excavation of pre-existing handholes and assist holes to perform maintenance or upgrades on the fiber-optic line.

To access existing handholes, which are concrete or fiberglass vaults set below grade, the 18-inch cover of previously deposited soil immediately over the handhole cover is removed with a small mechanical excavator such as a backhoe or by hand. Assist hole openings are excavated to the depth of the conduit, up to 4 feet, and may range from 5 to 10 feet long and 2 feet wide. Then a backhoe-mounted puller adjacent to the alignment is used to assist the progress of the new fiber through the conduit. After the pulling operation is complete, the conduit is resealed and the assist hole backfilled with the excavation spoils. Soil disturbance for assist holes consists primarily of re-excavation of previously deposited trench spoils. Some possible intrusion into adjacent trench sidewalls also may occur.

The Los Angeles to Anaheim segment is along the specified roadways and railroad ROW on the U.S. Geological Survey (USGS) 7.5-Minute Quadrangles listed in Table 29-1.

Table 29-1. Segment 27 USGS 7.5-Minute Quadrangles

Anaheim	Los Angeles	Whittier
Los Alamitos	Southgate	

29.2 SETTING

29.2.1 Natural

The Los Angeles to Anaheim segment is situated within the urbanized area around the Cities of Los Angeles and Anaheim in Los Angeles and Orange counties. It begins in the Transverse Range geomorphic province and ends in the Peninsular Range province (Chapter 2, Figure 2-2). The segment crosses the Angeles and San Gabriel rivers. San Pedro Bay is located to the southwest. Elevations along the segment range between approximately 50–100 meters (160–330 feet) above msl.

The climate within the vicinity of the segment is characterized by warm, dry summers and mild, moist winters. Because the area falls within a coastal region, winters are typically warmer, but summers tend to

be milder. Winter temperatures have highs around 20 degrees Celsius (68 degrees Fahrenheit), and summer temperatures have highs around 29 degrees Celsius (85 degrees Fahrenheit). When California was initially occupied, the climate was moister and cooler than today's Mediterranean climate (Major 1988).

Current uses along the segment include primarily development. Historically, the vicinity of the segment was characterized by vegetation communities that included salt marshlands in low-lying areas and along drainages, riparian scrub/forest along drainages, grasslands in upland areas, and coastal scrubland and chaparral in the hills (Chapter 2, Figure 2-1). With this mosaic of ecological communities, the area would have provided a very productive environment for its prehistoric occupants, one well suited to a hunting–gathering economy with a variety of water birds, small and large mammals, fish, reptiles and amphibians, and edible plant species. Following are descriptions of vegetation communities within the area of the segment and the natural resources within each community that likely would have been harvested by the area's prehistoric occupants.

29.2.1.1 Vegetation Communities

The following descriptions of vegetation communities are based upon data presented by Holland (1986), Holland and Keil (1995), and Sawyer and Keeler-Wolf (1995).

Brackish Marshland

Brackish or salt marshlands were likely an important part of the prehistoric environment, particularly around low areas along major drainages and near the bays along the California coast. Brackish marshes contain species tolerant of high salinity, such as saltgrass (*Distichlis spicata*), pickleweeds (*Salicornia* spp.), sea-blite (*Suaeda* spp.), and saltbush (*Atriplex* spp.) (Table 29-2). Wildlife species typical of marshlands are detailed in Table 29-3.

Riparian Scrub/Forest

Riparian scrub is a mid-successional stage community that typically matures into riparian forest; species composition between these habitat types, therefore, is very similar. Riparian forest can revert to riparian scrub through disturbances or frequent flooding events (Faber and Keller 1985). This community exists along streams and around seeps and springs and was likely located along local streams in the area during its prehistory. Many plants within this community, as well as animals attracted to the water and vegetation, provided abundant subsistence resources for prehistoric and historic occupants (Table 29-2 and Table 29-3).

Coastal Grassland

The grassland community in much of California has been converted to agricultural and other uses or has become dominated by non-native grasses, such as introduced bromes (*Bromus* spp.) and wild oats (*Avena* spp.). Historically, the grassland community contained a variety of resources. Seeds of many annual grasses would have been the primary resource of interest to the prehistoric occupants, but blossoms, greens, and bulbs were also available, primarily during the spring. Coastal grasslands occur in a variety of forms ranging from scattered perennial bunch grasses (typically *Nassella pulchra* or *N. lepida*) to stands dominated by native perennial grasses in an assemblage of geophytes (plants with underground bulbs or corms) and herbaceous annual species (Table 29-2). Wildlife species typical of grasslands are detailed in Table 29-3.

Coastal Scrubland

Coastal scrub is characterized by a diversity of low, aromatic, drought deciduous shrubs and sub-shrub species. Seeds are the primary resource within coastal sage scrub community, but edible stems, stalks, shoots, greens, roots, bulbs, and some berries can also be found. The resources of coastal sage scrub community are primarily available in the spring. Coastal sage scrub often is patchily distributed throughout its range (O'Leary et al. 1992). Over a scale of several miles, it can be found in diverse habitat mosaics with other plant communities, particularly grassland and chaparral and oak/riparian woodland in more mesic areas. Coastal sage scrub may convert to chaparral or grassland, depending on slope, aspect, climate, fire history, and other physical factors and biological phenomena. Conversely, chaparral or grassland areas may convert to coastal sage scrub (Axelrod 1978; White 1995; O'Leary 1995; Allen et al. 1999). Characteristic species that occur in coastal sage scrub habitat are included in Table 29-2 and Table 29-3.

Chaparral

Chaparral community occurs in the foothills near the segment. The chaparral community contains a mix of shrubs, such as manzanita (*Arctostaphylus* spp.), chamise (*Adenostoma fasciculatum*), mountain lilacs (*Ceanothus* spp.), and coffeeberry (*Rhamnus* spp.). Understory vegetation is sparse and limited to shade tolerant herbs and ferns. Numerous shrub species occur in chaparral habitat, providing an abundance of seeds, berries, bulbs, shoots, and roots (Table 29-2). A diversity of animal species occurs within the chaparral community (Table 29-3).

Table 29-2. Segment 27 Plant Resources

Species	Scientific Name
Brackish Marshland Community	
Saltbush	*Atriplex* spp.
Saltgrass	*Distichlis spicata*
Pickleweed	*Salicornia* spp.
Bulrushes	*Scirpus* spp.
Sea-blite	*Suaeda* spp.
Riparian Scrub/Woodland Community	
Overstory Species	
Maples	*Acer* spp.
Alders	*Alnus* spp.
Fremont cottonwood	*Populus fremontii*
Mid-story Species	
Dogwoods	*Cornus* spp.
Arroyo willow	*Salix lasiolepis*
Willows	*Salix* spp.
Elderberries	*Sambucus* spp.

Table 29-2. Segment 27 Plant Resources	
Species	Scientific Name
Understory Species	
Mugwort	*Artemisia douglasiana*
Monkeyflowers	*Mimulus* spp.
California rose	*Rosa californica*
Blackberries	*Rubus* spp.
Snowberries	*Symphoricarpos* spp.
Coastal Grassland Community	
Grasses	
Junegrass	*Koeleria macrantha*
Melic grasses	*Melica* spp.
Muhlies	*Muhlenbergia* spp.
Small-flowered needlegrass	*Nassella lepida*
Purple needlegrass	*Nassella pulchra*
Fescues	*Vulpia* spp.
Geophytes	
Onions	*Allium* spp.
Brodiaeas	*Brodiaea* spp.
Blue dicks	*Dichelostemma capitatum*
Blue-eyed grass	*Sisyrinchium bellum*
Herbaceous Plants	
Yellow fiddleneck	*Amsinckia menziesii*
Red maids	*Calandrinia ciliata*
Pussy paws	*Calyptridium* spp.
Suncups	*Camissonia* spp.
Owl's-clovers	*Castilleja* spp.
Blue-eyed Marys	*Collinsia* spp.
Cryptanthas	*Cryptantha* spp.
Delphiniums	*Delphinium* spp.
California poppy	*Eschscholzia californica*
Gilias	*Gilia* spp.
Everlastings	*Gnaphalium* spp.
Tarweeds	*Hemizonia* spp.
Linanthus	*Linanthus* spp.
Lomatiums	*Lomatium* spp.
Lotus	*Lotus* spp.
Lupines	*Lupinus* spp.
Microseris	*Microseris* spp.

Table 29-2. Segment 27 Plant Resources	
Species	Scientific Name
Phacelias	*Phacelia* spp.
Popcorn flowers	*Plagiobothrys* spp.
California threadstem	*Pterostegia drymarioides*
Sanicles	*Sanicula* spp.
Checker mallow	*Sidalcea malvaeflora*
Clovers	*Trifolium* spp.
Sub-shrubs	
Milk vetches	*Astragalus* spp.
Buckwheats	*Eriogonum* spp.
Coastal Scrubland Community	
California sage	*Artemisa californica*
Encelia	*Encelia* spp.
Buckwheat	*Eriogonum* spp.
Yerba santa	*Eriodictyon* spp.
Lupine	*Lupinus* spp.
Bracken fern	*Pteridium aquilinum*
Coffeeberry	*Rhamnus* spp.
Blackberry	*Rubus ursinus*
Purple sage	*Salvia leucophylla*
Black sage	*Salvia mellifera*
Figwort	*Scrophularia californica*
Chaparral Community	
Shrubs	
Chamise	*Adenostoma fasciculatum*
Manzanitas	*Arctostaphylos* spp.
Hoary-leaved ceanothus	*Ceanothus crassifolius*
Buck brush	*Ceanothus cuneatus*
Bigpod ceanothus	*Ceanothus megacarpus*
Mountain lilacs	*Ceanothus* spp.
Western redbud	*Cercis occidentalis*
Mountain mahogany	*Cercocarpus betuloides*
Coffeeberry, redberry	*Rhamnus* spp.
Gooseberries, currants	*Ribes* spp.
Vines	
Dodders	*Cuscuta* spp.
Bedstraws	*Galium* spp.
Chaparral-peas	*Lathyrus* spp.

29.2.1.2 Typical Animal Resources

Wildlife species common to the vegetation communities in the vicinity of the Los Angeles to Anaheim segment are detailed in Table 29-3.

Table 29-3. Segment 27 Common Animal Resources

Species	Scientific Name	Communities
Amphibians		
Western toad	*Bufo boreas*	Riparian scrub/forest, Foothill woodland, Marshland
Reptiles		
Western fence lizard	*Sceloporus occidentalis*	Scrublands, Chaparral, Foothill woodlands, Coniferous forests
Pacific pond turtle	*Emys marmorata*	Marshlands
Upland Birds		
California quail	*Callipepla californica*	Grasslands, Scrublands, Chaparral, Foothill woodlands
Hawks	*Buteo* spp.	Grasslands, Chaparral, Foothill woodlands
Western scrub jay	*Aphelocoma californica*	Chaparral, Foothill woodlands
Mockingbird	*Mimus polyglottos*	Scrublands, Chaparral, Foothill woodlands
Western meadowlark	*Sturnella neglecta*	Grasslands
Riparian and Marshland Birds		
Geese	*Branta* spp.	Marshlands
Ducks	*Anas, Aythya,* and *Bucephala* spp.	Marshlands
Ruddy duck	*Oxyura jamaicensis*	Marshlands
American bittern	*Botaurus lentiginosus*	Marshlands
Herons	*Ardea, Butorides, Nycticorax,* and *Nyctanassa* spp.	Marshlands
Egrets	*Egretta* spp.	Marshlands
Mammals		
Desert cottontail	*Sylvilagus audubonii*	Grasslands, Scrublands, Chaparral, Foothill woodlands, Coniferous forests
Brush rabbits	*Sylvilagus bachmani*	Scrublands, Chaparral
Black-tailed jackrabbit	*Lepus californicus*	Grasslands, Scrublands
California ground squirrel	*Spermophilus beecheyi*	Grasslands

Table 29-3. Segment 27 Common Animal Resources

Species	Scientific Name	Communities
Pocket gopher	*Thomomys bottae*	Grasslands, Chaparral
Dusky-footed woodrat	*Neotoma fuscipes*	Scrublands, Chaparral, Foothill woodlands
California vole	*Microtus californicus*	Grasslands, Chaparral, Riparian scrub/forest, Foothill woodlands, Coniferous forests
Coyote	*Canis latrans*	Grasslands, Scrublands, Chaparral, Riparian scrub/forest, Foothill woodlands, Coniferous forests
Gray fox	*Urocyon cinereoargenteus*	Grasslands, Scrublands, Chaparral, Riparian scrub/forest, Foothill woodlands, Coniferous forests
Raccoon	*Procyon lotor*	Grasslands, Chaparral, Riparian scrub/forest, Foothill woodlands, Coniferous forests
Long-tailed weasel	*Mustela frenata*	Grasslands, Chaparral, Riparian scrub/forest, Foothill woodlands, Coniferous forests
Badger	*Taxidea taxus*	Grasslands, Open woodlands
Striped skunk	*Mephitis mephitis*	Grasslands, Chaparral, Riparian scrub/forest, Foothill woodlands, Coniferous forests
Bobcat	*Lynx rufus*	Grasslands, Scrublands, Chaparral, Riparian scrub/forest, Foothill woodlands, Coniferous forests

29.2.2 Cultural

29.2.2.1 Prehistoric Overview

California prehistory is divided into three broad temporal periods that reflect similar cultural characteristics throughout the state: Paleoindian Period (ca. 9000–6000 B.C.), Archaic Period (6000 B.C. – A.D. 500), and Emergent Period (A.D. 500 – Historic Contact) (Fredrickson 1973, 1974, 1994a) (Chapter 2, Figure 2-5). The Archaic is further divided into Lower (6000–3000 B.C.), Middle (3000–1000 B.C.), and Upper (1000 B.C. – A.D. 500) Periods, generally governed by climatic and environmental variables, such as the drying of pluvial lakes at the transition from the Paleoindian to the Lower Archaic.

The Los Angeles to Anaheim segment lies in what generally is described as the San Diego subregion of the Southern Coast Archaeological Region, which is one of eight arbitrary organizational divisions of the state (Moratto 1984:Fig. 1) (Chapter 2, Figure 2-3). This subregion extends southward along the coast from Santa Monica Bay to the border with Mexico, and includes southern Los Angeles County, all of

Orange County, the southwest corner of San Bernardino County, and western Riverside and San Diego Counties.

In southern California, researchers attempting to define local or subregional traditions have created numerous cultural chronologies using various nomenclatures (Moratto 1984). Nonetheless, these chronologies are more notable for their similarities than their differences and a concordance of the best-known chronologies for the region is presented in Chapter 2, Figure 2-5. Building on early studies and focusing on data synthesis, Wallace (1955, 1978) developed a prehistoric chronology for the southern California coastal region that is widely used today. Four stages are presented in Wallace's prehistoric sequence: Horizon I, Early Man; Horizon II, Milling Stone; Horizon III, Intermediate; and Horizon IV, Late Prehistoric. As noted by Moratto (1984:159), Wallace's (1955) synthesis lacked chronological precision due to the lack of absolute dates at the time of its creation, but remains generally valid today.

In addition to Wallace's classic summary, a regional synthesis developed by Warren (1968) will be referred to in the following discussion. This synthesis is supported by a larger archaeological database for southern California, which includes the advent and increased use of radiocarbon dating after the 1950s.

Using the concepts of cultural ecology and cultural tradition, Warren (1968) proposed a series of six prehistoric traditions. Three of these traditions, the San Dieguito Tradition, Encinitas Tradition, and Campbell Tradition, correlated with Wallace's Horizons I, II, and, III. The Chumash Tradition, Takic Tradition (formerly "Shoshonean"), and Yuman Tradition are represented within Wallace's Horizon IV. As noted further, these ecologically based traditions are applicable to specific regions within southern California.

Horizon I - Early Man (ca. 10,000 – 6,000 B.C.)

When Wallace developed the Horizon I (Early Man) in the 1950s, there was little evidence of human presence on the southern California coast prior to 6000 B.C. Archaeological work in the intervening years has identified numerous sites older than this date including coastal and Channel Islands sites (e.g., Erlandson 1991; Johnson et al. 2002; Moratto 1984). In addition, radiocarbon dates recently obtained by SWCA from a deeply buried archaeological site in southern Orange County, 5.5 km (3.4 miles) from the coast indicate an occupation as early as 9000 B.C. (SWCA unpublished).

Recent data from Horizon I sites indicate that the economy was a diverse mixture of hunting and gathering, with a major emphasis on aquatic resources in many coastal areas (e.g., Jones et al. 2002) and on Pleistocene lake shores in eastern San Diego County (see Moratto 1984:90-92). Although few Clovis-like or Folsom-like fluted points have been found in southern California (e.g., Erlandson et al. 1987), it is generally considered that the emphasis on hunting may have been greater during Horizon I than in later periods. Common elements in many San Dieguito Tradition sites, for example, include leaf-shaped bifacial projectile points and knives, stemmed or shouldered projectile points, scrapers, engraving tools, and crescents (Warren 1967:177). Subsistence patterns shifted around 6000 B.C. coincident with the gradual desiccation associated with the onset of the Altithermal, a warm and dry period that lasted for about 3000 years. After 6000 B.C., a greater emphasis was placed on plant foods and small animals.

Horizon II - Milling Stone(6000–3000 B.C.)

The Milling StoneHorizon of Wallace (1955, 1978) and Encinitas Tradition of Warren (1968) (6000-3000 B.C.) are characterized by an ecological adaptation to collecting, and by the dominance of the principal ground stone implements generally associated with the horizontal motion of grinding small seeds; namely, milling stones (metates, slabs) and handstones (manos, mullers), which are typically shaped.

Milling stones occur in large numbers for the first time, and are even more numerous near the end of this period. As testified by their toolkits and shell middens in coastal sites, people during this period practiced a mixed food procurement strategy. Subsistence patterns varied somewhat as groups became better adapted to their regional or local environments.

Wallace (1955, 1978) and Warren (1968) relied on several key coastal sites to characterize the Milling StoneHorizon and Encinitas Tradition, respectively. These include the Oak Grove Complex in the Santa Barbara region, Little Sycamore in southwestern Ventura County, Topanga Canyon in the Santa Monica Mountains, and at La Jolla in San Diego County. The Encinitas Tradition was proposed to extend southward into San Diego County where it apparently continued alongside the following Campbell Tradition, which occurred primarily in the Santa Barbara-Ventura County region beginning around 3000 B.C.

During the Milling StoneHorizon and Encinitas Tradition, stone chopping, scraping, and cutting tools are abundant, and generally made from locally available raw material. Projectile points, rather large and generally leaf-shaped, and bone tools, including awls, are generally rare. The large points are associated with the spear, and probably with an atlatl. Items made from shell, including beads, pendants, and abalone dishes, are generally rare. Evidence of weaving or basketry is present at a few sites. Cogged stones and discoidals are often purposefully buried, and are found mainly in sites along the coastal drainages from southern Ventura County southward, with a few specimens inland at Cajon Pass, and heavily in Orange County (Moratto 1984:149). Kowta (1969) attributes the presence of numerous scraper-planes in Milling Stonesites to the preparation of agave or yucca for food or fiber. The mortar and pestle, associated with the vertical motion of pounding foods, such as acorns, were introduced during the Milling StoneHorizon, but are not common.

Characteristic mortuary practices during the Milling StoneHorizon or Encinitas Tradition include extended and loosely flexed burials, some with red ochre and few grave goods, such as shell beads and milling stones, interred beneath cobble or milling stone cairns. "Killed" milling stones, exhibiting holes, may occur in the cairns. Reburials are common in the Los Angeles County area, with flexed burials oriented to the north common southward in Orange and San Diego Counties.

Horizon III - Intermediate (3000 B.C. – A.D. 500)

Following the Millingstone, Wallace's Intermediate Horizon and Warren's Campbell Tradition in Santa Barbara, Ventura, and parts of Los Angles Counties, date from approximately 3000 B.C.-A.D. 500 and are characterized by a shift toward a hunting and maritime subsistence strategy, along with a wider use of plant foods. The Campbell Tradition (Warren 1968) incorporates David B. Rogers' (1929) Hunting Culture and related expressions along the Santa Barbara coast. In the San Diego region, the Encinitas Tradition (Warren 1968) and the La Jolla Culture (Moriarty 1966; M. Rogers 1939, 1945) persist with little change during this time.

During the Intermediate Horizon and Campbell Tradition, there is a pronounced trend toward greater adaptation to regional or local resources. For example, the remains of fish, land mammals, and sea mammals are increasingly abundant and diverse in sites along the California coast in the referenced region. Related chipped stone tools suitable for hunting are more abundant and diversified, and shell fishhooks become part of the toolkit during this period. Larger knives, a variety of flake scrapers, and drill-like implements are common during this period. Projectile points include large side-notched, stemmed, and lanceolate or leaf-shaped forms. Bone tools, including awls, are more numerous than in the preceding period, and the use of asphaltum adhesive is now common.

Mortars and pestles become more common during this period, gradually replacing manos and metates as milling stone implements. In addition, hopper mortars and stone bowls, including steatite vessels, appear to enter the toolkit at this time. This shift appears to be a correlate of a diversification in subsistence resources. Many archaeologists believe this change in milling stones signals a shift away from the processing and consuming of hard seed resources to the increasing importance of the acorn (e.g., Glassow et al. 1988; True 1993). It has been argued that mortars and pestles may have been used initially to process roots (e.g., tubers, bulbs, and corms associated with marshland plants), with acorn processing beginning at a later point in prehistory (Glassow 1997:86) and continuing to European contact.

Characteristic mortuary practices during the Intermediate Horizon and Campbell Tradition include fully flexed burials, placed face down or face up, and oriented toward the north or west (Warren 1968:2-3). Red ochre is common, and abalone shell dishes infrequent. Interments sometimes occurred beneath cairns or broken artifacts. Shell, bone and stone ornaments, including charmstones, are more common than in the preceding Encinitas Tradition. Some later sites include *Olivella* shell and steatite beads, mortars with flat bases and flaring sides, and a few small points.

Horizon IV - Late Prehistoric (A.D. 500–Historic Contact)

In the Late Prehistoric Horizon (Wallace 1955, 1978), which lasted from the end of the Intermediate (~A.D. 500) until European contact, there was an increase in the use of plant food resources in addition to an increase in land and sea mammal hunting. There was a concomitant increase in the diversity and complexity of material culture during the Late Prehistoric, demonstrated by more classes of artifacts. The recovery of a greater number of small, finely chipped projectile points, usually stemless with convex or concave bases, suggests an increased utilization of the bow and arrow rather than the atlatl and dart for hunting. Other items include steatite containers, circular shell fishhooks, perforated stones, arrow straighteners, and a variety of bone tools and personal ornaments. There is also an increased use of asphalt adhesive.

During the Late Prehistoric, sites contain beautiful and complex objects of utility, art, and decoration. Ornaments include drilled whole *Chione* and drilled abalone. Steatite effigies become more common, with *Pecten* shell rattles common in middens. Mortuary customs are elaborate, include cremation and interment, with abundant grave goods. Pottery and smoking pipes occur in some locations during this period.

In Warren's (1968) cultural ecological scheme, the period between A.D. 500 and European contact is divided into three regional patterns. The Chumash Tradition is present mainly in the region of Santa Barbara and Ventura Counties; the Takic or Numic Tradition in the Los Angeles and Orange Counties region; and the Yuman Tradition in the San Diego region.

The seemingly abrupt changes in material culture, burial practices, and subsistence focus at the beginning of the Late Prehistoric period are considered the result of a migration to the coast of peoples from inland desert regions to the east. In addition to the small triangular and triangular side-notched points similar to those found in the desert regions in the Great Basin and Lower Colorado River, Colorado River pottery and the introduction of cremation in the archaeological record are diagnostic of the Yuman Tradition in the San Diego region. This combination certainly suggests a strong influence from the Colorado Desert region.

In Los Angeles and Orange Counties, similar changes (introduction of cremation, pottery, and small triangular arrow points) are considered the result of a Takic migration to the coast from inland desert regions. This Takic or Numic Tradition was formerly referred to as the "Shoshonean wedge" or

"Shoshonean intrusion" (Warren 1968). This terminology, used originally to describe a Uto-Aztecan language group, is generally no longer employed in order to avoid confusion with ethnohistoric and modern Shoshonean groups who spoke Numic languages (Heizer 1978:5; Shipley 1978:88, 90). Modern Gabrielino/Tongva, Juaneño, and Luiseño in this region are considered the descendants of the prehistoric Uto-Aztecan, Takic-speaking populations that settled along the California coast during this period, or perhaps somewhat earlier.

29.2.2.2 Ethnographic Overview

The Los Angeles to Anaheim segment is in an area historically occupied by the Gabrielino (Bean and Smith 1978; Kroeber 1925). The name "Gabrielino" denotes those people who were administered by the Spanish from Mission San Gabriel, which included people from the Gabrielino proper, as well as other social groups. Therefore, in the post-contact period, the name does not necessarily identify a specific ethnic or tribal group. The names Native Americans in southern California used to identify themselves have, for the most part, been lost. Many contemporary Gabrielino identify themselves as descendents of the indigenous people living across the plains of the Los Angeles Basin and use the native term *Tongva* (King 1994a:12).

Tongva lands encompassed the greater Los Angeles Basin, including the inland valleys of San Fernando, San Gabriel, and Pomona, the Pacific Ocean coastal region from Topanga Canyon in the north to Newport Bay in the south, and three Channel Islands, San Clemente, San Nicolas, and Santa Catalina (Bean and Smith 1978:538; Kroeber 1925:636; McCawley 1996). The Los Angeles to Anaheim segment runs through most of the flat Los Angeles Basin from the northwest to the southeast. The segment crosses the Los Angeles River which drains a portion of the San Gabriel Mountains; the San Gabriel River which drains the rest of the San Gabriel Mountains; and ends at the edge of the Santa Ana River, whose watershed is the western flanks of the San Bernardino and San Jacinto Mountains far the to the east and south. These three rivers created numerous fresh water marshes across the flat plain in the past; within the basin there are few rivers or creeks.

Inland, Tongva territory was bounded on the north by the Chumash at Topanga Creek, and on the south by the Juaneño at Aliso Creek. To the east past the San Gabriel Mountains were the Vanyume Serrano, the mountain Serrano, and the Cahuilla. The southern boundary of Gabrielino territory at Aliso Creek was based on anthropological fieldwork conducted by Kroeber in 1907 (Kroeber 1925), and the Juaneño currently dispute this defined northern boundary of their lands with the Gabrielino.

The Gabrielino language, as well as that of the Juaneño and Luiseño to the south, and the *Tataviam* (*Alliklik*) and Serrano to the east,was derived from the Takic family, part of the Uto-Aztecan linguistic stock, which can be traced to the Great Basin area (Mithun 2001:539, 543–544). This language group represents an origin quite different from that of the Chumash to the north and the Ipai and Tipai further south. The language of the Ipai and Tipai is derived from the Hokan stock of the Yuman language family originating in the American Southwest. The Chumash language is unlike both the Hokan and Uto-Aztecan stocks and may represent a separate lineage (Mithun 2001:390). Linguistic analysis suggests that Takic-speaking immigrants from the Great Basin area began moving into southern California around 500 B.C. (Kroeber 1925:579). This migration may have displaced both Chumashan and Yuman speaking peoples, but the timing and extent of the migrations and their impact on indigenous peoples is not well understood.

The Gabrielino language consisted of two main dialects, Eastern and Western; the Western included much of the coast and the Channel Island population (King 2004). Lands of the Western group

encompassed much of the western Los Angeles Basin and San Fernando Valley, northward along the coast to the Palos Verdes Peninsula (McCawley 1996:47).

Early historical records concerning the Tongva are available through Spanish voyages of exploration in the sixteenth century, and accounts by Spanish missionaries and colonists in the middle eighteenth century. The Spanish military and mission records are considerable. Other reports by agents of the United States Office of Indian Affairs date from the 1850s. Ethnographers were late on the scene and collected little information after 1900, the exception being John Harrington in the 1910s. Published ethnographies include Kroeber (1925), Johnston (1962), Bean and Smith (1978), and McCawley (1996).

Kroeber (1925:621) considered the Tongva "…to have been the most advanced group south of Tehachapi, except perhaps the Chumash. They certainly were the wealthiest and most thoughtful of all the Shoshoneans of the State, and dominated these civilizationally wherever contacts occurred." Tongva society was organized along patrilineal non-localized clans, a characteristic Takic pattern. Clans consisted of several lineages, each with their own ceremonial leader. The leader of the primary lineage was the chief of the entire clan. One or two clans generally made up the population of a village. Even though the Tongva did not have a distinctly stratified society, there were two general classes of individuals: elites and commoners. The elites consisted of primary lineage members, other lineage leaders (who maintained a separate ceremonial language), the wealthy, and the elite families of the various villages who commonly married among themselves. The commoner class contained those from "fairly well-to-do and long-established lineages" (Bean and Smith 1978:543). A third, lower class might be recognized as consisting of slaves taken in war and individuals, unrelated to the inhabitants, who drifted into the village. The chief, or *tómyaar*, always came from the primary lineage of the clan/village.

The Tongva established large, permanent villages in the fertile lowlands along rivers and streams, and in sheltered areas along the coast, stretching from the foothills of the San Gabriel Mountains to the Pacific Ocean. A total tribal population has been estimated of at least 5,000 (Bean and Smith 1978:540), but recent ethnohistoric work suggests a number approaching 10,000 seems more likely (O'Neil 2002). Several Tongva villages appear to have served as trade centers, due in large part to their centralized geographic position in relation to the Southern Channel Islands and to other tribes. These villages maintained particularly large populations and hosted annual trade fairs that would bring their population to 1,000 or more for the duration of the event. *Puvunga* in Long Beach and *Swuangna* at San Pedro are examples of Tongva village trade centers.

Tongva villages found along the Los Angeles to Anaheim segment included *Yangna* ("poison oak") and *Geveronga* near downtown Los Angeles, *Chokiishnga* and *Huutnga* (near the San Gabriel River), *Naxaawnga* (Santa Fe Springs), *Jujunga* (south of the Coyote Creek near Buena Park), and *Totpavit* along the banks of the Santa Ana River (McCawley 1996:56, O'Neil 2002, King 2004).

Houses constructed by the Tongva were large, circular, domed structures made of willow poles thatched with tule that could hold up to 50 people (Bean and Smith 1978). Other structures served as sweathouses, menstrual huts, ceremonial enclosures, and probably communal granaries. Cleared fields for races and games, such as lacrosse and pole throwing, were created adjacent to Tongva villages (McCawley 1996:27). Archaeological sites comprised of villages with various sized structures have been identified.

The fundamental economy of the Tongva was one of subsistence gathering and hunting. The surrounding environment was rich and varied, and the tribe exploited mountains, foothills, valleys, deserts, riparian, estuarine, and open and rocky coastal eco-niches. Like the majority of native Californians, acorns were the staple food (an established industry by the time of the early Intermediate Period). Acorns were supplemented by the roots, leaves, seeds, and fruits of a wide variety of flora (e.g., islay, *Opuntia*, yucca, sages, and agave). Fresh-water and salt-water fish, shellfish, birds, reptiles, and insects, as well as large

and small mammals, were also consumed. The Tongva are among several southern California native groups who were noted for periodically setting fire to the grassy plains and brush-covered hillsides to promote the growth of harvestable grass seeds, discourage the growth of chaparral, and create pasture for deer and antelope.

A wide variety of tools and implements were employed by the Gabrielinos to gather and collect food resources. These included bows and arrows, traps, nets, blinds, throwing sticks and slings, spears, harpoons, and hooks. Many plant foods were collected with woven seed beaters, several forms of burden baskets, carrying nets, and sharpened digging sticks, sometimes with stone weights fitted onto them. Groups residing near the ocean used ocean-going plank canoes (known as a *ti'at*) and tule balsa canoes for fishing (McCawley 1996:7). The ocean-going canoes were capable of holding six to fourteen people and were also used for travel and trade between the mainland and the Channel Islands. The tule balsa canoes were used for near-shore fishing.

Foods were processed with a variety of tools, including portable and bedrock mortars, pestles, basket hopper mortars, manos and metates, hammerstones and anvils, woven strainers and winnowers, leaching baskets and bowls, woven parching trays, knives, bone saws, and wooden drying racks. Food was consumed from a number of woven and carved wood vessels. The ground meal and unprocessed hard seeds were stored in large finely woven baskets, and the unprocessed acorns were stored in large granaries woven of willow branches and raised off the ground on platforms. Santa Catalina Island steatite was used to make comals, ollas, and cooking vessels that would not crack like regular stone under repeated firings (Kroeber 1925:629).

As part of the extensive exchange network, large amounts of steatite quarried on Santa Catalina Island were traded with numerous other groups on the coast and inland. In addition to cooking vessels, steatite was used to make effigies, ornaments, and arrow straighteners. Tongva obtained obsidian, acorns, and seeds, among other items, from inland Tataviam and Vanyume (Desert) Serrano in exchange for coastal resources, such as steatite, shell beads, and dried fish. The Tongva also traded with other coastal groups, exchanging large, baked clay pipes obtained from the Kumeyaay or Luiseño to the south and with the Chumash on their northern border.

At the time of Spanish contact, the basis of Tongva religious life was the Chinigchinich Cult, centered on the last of a series of heroic mythological figures. Chinigchinich gave instruction on laws and institutions, and he also taught the people how to dance, the primary religious act for this society. He later withdrew into heaven where he rewarded the faithful and punished those who disobeyed his laws (Kroeber 1925:637-638). The Chinigchinich religion seems to have been relatively new when the Spanish arrived; the religion was in the process of spreading south into the Southern Takic groups even as Christian missionization was taking place and may have been influenced by Christianity.

Deceased Tongva were either buried or cremated (Harrington 1942; McCawley 1996). McCawley (1996:157) states that "[i]nternment may have been the more standard practice on the Channel Islands and the mainland coast directly opposite, perhaps reflecting either the influence of Chumash mortuary practices or else a scarcity of fuel suitable for funeral pyres." During the Contact Period, cremation was the standard practice for the mainland Tongva. Cremation ashes have been found in archaeological contexts buried within stone bowls and in shell dishes (Ashby and Winterbourne 1966:27). Archaeological and ethnographic data describe a wide variety of grave offerings, including seeds, stone grinding tools, otter skins, baskets, wood tools, shell beads, bone and shell ornaments, and projectile points and knives. Offerings varied with the sex and status of the deceased. Graves were sometimes marked, and in the San Pedro area headstones or boards were etched with figures (Heizer 1968:fn. 66).

European contact with the Tongva occurred as early as 1542 with the Spanish expedition led by Juan Rodriguez Cabrillo, followed by Sebastián Vizcaíno in 1602, both of who visited Santa Catalina Island. Colonization of Tongva lands did not begin in earnest until after the inland expedition led by Gaspar de Portolá in 1769; by 1771, four missions had been constructed in the region, including Mission San Gabriel, located in Los Angeles County and founded in September 1771 (Engelhardt 1927a). The Franciscan missions, charged with converting the Native Americans to Christianity and with acculturating them to European society and economy, began relocating them to mission grounds.

Known as *reducción*, relocation and baptism initially involved the Eastern Gabrielino of the plains as far south as the Santa Ana River and west to the Los Angeles River. The missionaries later proselytized the Western Gabrielino living west of the Los Angeles River, on the southern Channel Islands, and the interior groups to the east and south. Between 1780 and 1794, the majority of people from the southeast region were baptized and removed to the mission (King 2004:Figs. 7 and 8). Mission San Fernando del Rey was founded in 1797, and its priests pushed into the lands of other tribes located to the north and west and also converted Tongva people along the Los Angeles River and its tributaries. While mission life did give indigenous Californians some skills needed to survive in a rapidly changing world, much traditional cultural knowledge was lost during this era, as populations were moved and decimated by introduced diseases for which the people had no immunity.

With the founding of the Pueblo of Los Angeles in December 1781, civilian settlers came into the region, soon followed by retiring military men and their families from the Spanish garrisons (Engelhardt 1927b:48-51). The soldiers were given vast tracts of land by Spanish authorities within traditional Tongva subsistence areas. The Native Americans (both neophytes from the disintegrating missions and *cimarrones*, or gentile Indians) were among those who worked on the large ranchos. After governmental control of California shifted to Mexico, the missions were formally secularized in 1834, and the extensive mission lands were divided into private land grants, claimed by the growing ranchero class. With the migration of farmers to southern California after the Mexican-American War of 1846, the local native population, who continued to work as laborers, was soon a minority that was often lumped together with the Mexican-American community. Many allied themselves with remaining Native American communities in the Tehachapi and San Bernardino Mountains.

In the early twentieth century, Tongva who still lived in San Gabriel neighborhoods near the old mission joined the Mission Indian Federation and sought redress from the federal government over lost lands. A generation later, partly as an outgrowth of the civil rights movement, Tongva started to form political organizations of their own to affect handling of ancestral remains discovered at construction sites and to seek federal acknowledgement of their tribe. There are currently five such organizations with total membership approaching nearly a thousand people. They are still struggling to receive federal recognition.

29.2.2.3 Historic Overview

Post-contact history for the state of California generally is divided into three specific periods: the Spanish Period (1769–1822), the Mexican Period (1822–1848), and the American Period (1848–present). As discussed in more detail in Chapter 2 of this report, although there were brief visits by Spanish, Russian, and British explorers from 1529–1769, the beginning of Spanish settlement in California occurred in 1769 with a settlement at San Diego and the first (Mission San Diego de Alcala) of 21 missions established from 1769–1823. After the 1822 revolution by Mexico against the Spanish crown, the Mexican Period is marked by an extensive era of land grants, most of which were in the interior of the state, and by exploration by American fur trappers west of the Sierra Nevada Mountains.

With the signing of the Treaty of Guadalupe Hidalgo in 1848, ending the Mexican–American War, California became a territory of the United States. The discovery of gold in 1848 at Sutter's Mill near Sacramento and the resulting Gold Rush era influenced the history of the state and the nation. The rush of tens of thousands of people to the gold fields also had a devastating impact on the lives of indigenous Californians, with the introduction and concentration of diseases, the loss of land and territory (including traditional hunting and gathering locales), violence, malnutrition, and starvation. Thousands of settlers and immigrants continued to pour into the state, particularly after the completion of the transcontinental railroad in 1869.

With continued growth, California continues to be a national leader in agriculture and poultry production, ranching (cattle and sheep), aerospace and communications industries, as well as the film and entertainment business. The wealth of California's natural resources (e.g., lumber, petroleum deposits, minerals, fish) also continues to contribute to its growth and development.

Los Angeles County

The first European account of the area to become Los Angeles County was by Portuguese navigator João Rodrigues Cabrilho (Juan Rodriguez Cabrillo in Spanish), who led a Spanish expedition along the California coast in 1542–1543 (Chartkoff and Chartkoff 1984:252-253). Cabrillo noted the numerous campfires of the Gabrielino and thus named the area the "Bay of Smokes." Spain's presence in the region was only intermittent for approximately 200 years. Then, because of the possibility of territorial encroachment by the British and Russians from the north, Spanish Governor of Baja California Gaspar de Portolá was instructed to lead a land–sea expedition to colonize Alta (upper) California in the 1760s (Chartkoff and Chartkoff 1984:254-257).

On September 8, 1771, Fathers Pedro Cambón and Angel Somera established the Mission San Gabriel de Arcángel near the present-day city of Montebello (Johnson et al. 1972). In 1775, the mission was moved to its current location in San Gabriel due to better agricultural lands. This mission marked the first sustained European occupation of the Los Angeles County area. Mission San Gabriel, despite a slow start partially due to misconduct by Spanish soldiers, eventually became so prosperous it was known as "The Queen of the Missions" (Johnson et al. 1972).

The pueblo that eventually became the City of Los Angeles was established in 1781. During this period, Spain also deeded ranchos to prominent citizens and soldiers (though very few in comparison to the Mexican Period). Rancho San Pedro, one such rancho, was deeded to soldier Juan Jose Dominguez in 1784 and comprised 75,000 acres encompassing the modern South Bay region from the Los Angeles River on the east to the Pacific Ocean on the west (Dominguez Rancho Adobe Museum 2006).

The area that became Los Angeles County saw an increase in European settlement during the Mexican Period largely due to the many land grants (ranchos) to Mexican citizens by various governors. However, the Mexican Period for Los Angeles ended in early January 1847. Mexican forces fought combined U.S. Army and Navy forces in the Battle of the San Gabriel River on January 8 and in the Battle of La Mesa on January 9 (Nevin 1978). On January 10, leaders of the pueblo of Los Angeles surrendered peacefully after Mexican General Jose Maria Flores withdrew his forces. Shortly thereafter, newly appointed Mexican Military Commander of California Andrés Pico surrendered all of Alta California to U.S. Army Lieutenant Colonel John C. Fremont in the Treaty of Cahuenga (Nevin 1978).

Settlement of the Los Angeles region continued in the early American Period. The county was established on February 18, 1850, one of 27 counties established in the months prior to California becoming a state. Many ranchos in the county were sold or otherwise acquired by Americans, and most were subdivided

into agricultural parcels or towns. Nonetheless, ranching retained its importance and, by the late 1860s, Los Angeles was one of the top dairy production centers in the country (Rolle 2003). By 1876, the county had a population of 30,000 (Dumke 1944:7).

In 1854, the U.S. Congress agreed to let San Pedro become an official port of entry. By the 1880s, the railroads had established networks throughout the county, resulting in fast and affordable shipment of goods, as well as a means to transport new residents to the booming region (Dumke 1944). New residents included many health-seekers drawn to the area by the fabled climate in the 1870s–1880s (Baur 1959).

Availability of fresh water has always been a concern for county residents. Many authors (e.g., Kahrl 1982; Mulholland 2000; Nadeau 1997; Reisner 1986) identified the control and management of water as the single most important factor in the development of southern California. As William Mulholland did for the City of Los Angeles in 1913, the Metropolitan Water District of Southern California (MWD), formed in the 1920s, secured water rights for many areas including portions of Los Angeles County not incorporated within the City of Los Angeles (Metropolitan Water District of Southern California n.d.; Nadeau 1997). The formation of MWD began in 1924, when then Mayor of Pasadena Hiram W. Wadsworth initiated the formation of the Colorado River Aqueduct Association (Metropolitan Water District of Southern California n.d.). Wadsworth, as president of this group representing 13 cities, pushed for the construction of an aqueduct similar to the Los Angeles–Owens Valley Aqueduct that would provide water from the Colorado River to thirsty southern California. This resulted in the incorporation of MWD in 1928 and the construction of the aqueduct, an engineering marvel that finally began delivering Colorado River water to MWD's member cities in 1941 and ultimately facilitated the incredible population growth that occurred in the region (Metropolitan Water District of Southern California n.d.).

In the early to mid-1900s, population growth accelerated due to industry associated with both world wars, as well as emigration from the Midwest "dust bowl" states during the Great Depression. The county became one of the most densely occupied areas in the U.S. The county's mild climate and successful economy continued to draw new residents in the late 1900s, with much of the county transformed from ranches and farms into residential subdivisions surrounding commercial and industrial centers. Hollywood's development into the entertainment capital of the world, and southern California's booming aerospace industry, were key factors in the county's growth.

City of Los Angeles

Spanish Governor of California Felipe de Neve recognized the need to establish a pueblo north of the Mission San Gabriel to help supply Spain's military presidios in California as well as to help maintain Spain's control over the region (Ríos-Bustamante 1992). On 4 September 1781, 22 settlers from Mexico accompanied by the governor, soldiers, mission priests, and several Native Americans arrived at the site alongside the Los Angeles River that was officially declared *El Pueblo de la Reina de Los Angeles* or "The Town of the Queen of the Angels" (Ríos-Bustamante 1992).

Spanish Period residents of the Pueblo of Los Angeles, troubled by the inconsistent nature of the Los Angeles River including periods of drought and flooding, established a water management system named the *Zanja Madre* (Mother Ditch). This ditch system for the delivery of water was maintained and improved in both the Mexican and Early American Periods and remained in use until the early 1900s. The residents used this water for ranching and agriculture to feed themselves, as well as to help provision the presidios.

The Pueblo of Los Angeles grew in population during the Mexican Period (1822-1847) but retained the emphasis on ranching. Mexican governors granted numerous ranchos during this period, and the few

granted during the Spanish Period continued to operate or were broken up into smaller ranchos. On May 23, 1835, Los Angeles was officially declared a city by Mexican national decree (Bancroft 1885). During the Mexican Period, Anglo-Europeans such as Hugo Reid and Don Juan Forster were assimilated into Los Angeles's citizenry and culture (Dakin 1939).

On April 4, 1850, only two years after the Mexican American War and five months prior to California receiving statehood, the City of Los Angeles was formally incorporated. Los Angeles maintained its role as a regional business center in early American Period and the transition of many former rancho lands to agriculture, as well as the development of citriculture in the late 1800s, further strengthened this status (Caughey and Caughey 1977). These factors combined with the expansion of port facilities and railroads throughout the region contributed to the impact of the real estate boom of the 1880s on the City of Los Angeles (Caughey and Caughey 1977; Dumke 1944). The boom's fiscal impact can be observed through the City's tax assessments: In 1886, Los Angeles was assessed $18,000,000 and in 1889 the total was $46,000,000 (Dumke 1944). Despite the real estate boom largely occurring in surrounding areas, Los Angeles, as the commercial center, reaped substantial benefits from the explosive growth.

The City of Los Angeles recognized the need for water to sustain the growing population in the late 1800s and Irish immigrant William Mulholland personified the city's efforts for a stable water supply (Dumke 1944; Nadeau 1997). The city purchased large tracts of land in the Owens Valley and Mulholland planned and directed the construction of the 240-mile aqueduct that brought the valley's water to the city by 1913 (Nadeau 1997).

Los Angeles continued to grow in the twentieth century in part due to the discovery of oil in the area and its strategic location as a wartime port. The military presence led to the aviation and eventually aerospace industries having a large presence in the city and region. Mines Field, which would become Los Angeles International Airport, was established in 1928. The complexion of the multicultural city continued to change; however, the process was frequently painful for the new, and often unwelcome, ethnic groups (Garcia et al. 2004). Hollywood became the entertainment capital of the world through the presence of the film and television industries and continues to tenuously maintain that position. With nearly 4 million residents, Los Angeles is the second largest city in the U.S. (by population) and remains a city with worldwide influence while continuing to struggle with its population's growth and needs.

Orange County

The Portolá expedition first reached the present-day boundaries of Orange County in July 1769, thereby becoming the first Europeans to visit the area (Smith 1965). They named the area *El Valle de Santa Ana* or "The Valley of Santa Ana." Six years later, Friar Junípero Serra returned to the valley to establish a Catholic mission, which was dedicated the following year. The Mission San Juan Capistrano became Orange County's first settlement.

Among the first ranchos deeded within the future Orange County were Manuel Nieto's Rancho Las Bolsas (partially in future Los Angeles County), granted by Spanish Governor Pedro Fages in 1784, and the Rancho Santiago de Santa Ana of José Antonio Yorba and Juan Pablo Peralta, granted by Governor José Joaquín Arrillaga in 1810 (Hallan-Gibson 1986). The secularization of the missions following Mexico's independence from Spain resulted in the subdivision of former mission lands and establishment of many additional ranchos.

Nine ranchos were granted between 1837 and 1846 in the future Orange County (Middlebrook 2005). Many of these ranchos remained intact after the U.S. took possession of California; however, a severe drought in the 1860s resulted in many of the ranchos being sold. Many of the lands in this area were

consolidated into extensive properties owned by Richard O'Neil, Sr., James Irvine, and others (Orange County 2006). Silver was discovered in the Santa Ana Mountains in 1887. This drew additional settlers to the region, which was already experiencing a real estate boom based on quality agricultural land (Dumke 1944). The first towns laid out in the Santa Ana Valley, Anaheim (1857), Santa Ana (1870), and Orange (1870), all experienced rapid growth during the boom years of the late 1880s. New towns were also the partial result of the anticipated presence of the Santa Fe Railroad and the construction of a branch of the Southern Pacific Railroad in 1887 (Dumke 1944). On March 11, 1889, the County of Orange was created, occupying 780 square miles of former Los Angeles County lands.

Orange County remained primarily agricultural through most of the twentieth century. Interstate 5 was completed in the 1950s and connected the communities of the county with Los Angeles and the rapidly growing aerospace industry. The county became increasingly residential and by the 1980s was developed with numerous master planned communities, such as Irvine, including most of south county. Today the county is identified with amusement parks, including Disneyland and Knott's Berry Farm, as well as its 40 miles of beaches. Despite weathering a bankruptcy in the 1990s, Orange County remains a desirable and expensive place to live with a mild Mediterranean climate. The county and its purported way of life have been documented cinematically in movies such as "Orange County" and "The Chase," and in the current television series "The OC."

City of Anaheim

The first Europeans to visit the Anaheim area were members of the Portolá expedition who camped along the bank of the Santa Ana River in July 1769. The camp was located on the east side of the river, across from a Native American village, where it emerges from Santa Ana Canyon (Smith 1965:8). Later during the Spanish Period, lands that included the Anaheim area were used by Mission San Gabriel for grazing.

The Mexican Period of California is largely associated with the land grants called *ranchos*. The Rancho San Juan Cajon de Santa Ana, consisting of 35,970 acres and including present-day Anaheim, was received by Juan Pacifico Ontiveros on May 13, 1837. In 1857, a group of German immigrants, from San Francisco, purchased 1,165 acres of the rancho for two dollars per acre (Carpenter 1988:155, Dumke 1944: 113). The community-owned land was divided into town lots and vineyards, where 400,000 grape vines and fruit trees were planted, thus establishing the first town in the Santa Ana Valley (Dumke 1944:112). The town was named Anaheim; "Ana" for the Santa Ana River and "heim," which is German for home. The City of Anaheim was incorporated in 1876 with a population of 881. With the arrival of the Santa Fe Railroad in 1887, the real estate boom already underway for a couple years was intensified, with many of the vineyards subdivided into lots. The vineyards were already in decline due to disease, which began destroying the vineyards in 1884 and resulted in crop experimentation. By 1890, Anaheim had become a center for growing Valencia oranges, the crop that replaced the vineyards that had not already been subdivided (Schultz 1988:70-72).

Southern California enjoyed a post-World War II boom and Anaheim was no exception. By 1950, 14,556 people were in living in Anaheim and the population was still growing. During this period, Walt Disney was looking for a location to build his version of a park and playground that he intended to call Mickey Mouse Park. Anaheim was chosen partly because it reminded Disney of his childhood hometown of Marceline, Missouri. Disney formed a partnership with the American Broadcasting Corporation (ABC) whereby ABC would invest in the park and Disney would produce a weekly television series called the Disneyland show. Disneyland opened on July 17, 1955, with 33,000 people attending. ABC presented a live broadcast of the opening to a television audience numbering in the millions (Anaheim 2006). Disneyland and the completion of Interstate 5 that connected Los Angeles and Anaheim encouraged

growth during the 1950s; between 1953 and 1955 the city quadrupled in size. Tourism and construction were the leading industries through the rest of the decade (Anaheim 2006).

In 1960, Gene Autry was awarded the franchise to the Los Angeles Angels baseball team. Because of difficulties that arose with the Angels sharing Dodger Stadium with the Dodgers team, Autry decided to move his team. Anaheim put together an offer and Walt Disney, who sat on the Angels Advisory Board, helped with negotiations. On August 31, 1964, the groundbreaking ceremony was held at the Anaheim Stadium that was constructed for the California Angeles (Anaheim 2006). The stadium continues to be used for professional and amateur sports events, concerts, and religious services.

To strengthen its tourism industry, and because Disneyland was primarily a summer and holiday destination, Anaheim built a convention center to attract year-round-tourists. The 400,000 square foot Anaheim Convention Center opened in July 1967 and that year hosted 45,000 delegates. Anaheim's transformation to a tourist destination has continued with the addition of the Arrowhead Pond (an indoor sports arena and home to the Mighty Ducks of Anaheim professional hockey franchise) in 1990 and the building of Disney's California Adventure Theme Park (Anaheim http://www.anaheim.net/ 2006). Today, the city is focused on redevelopment with many of the structures built during the boom of the 1950s being upgraded or replaced to accommodate its revitalization.

29.3 PREVIOUS RESEARCH

29.3.1 Literature Search

29.3.1.1 Methods

A cultural resources site and survey record search was conducted at the South Central California Information Center (SCCIC) of the California Historical Resources Information System (CHRIS) on June 23, 2000. Because the cable conduit already has been installed and no new construction will take place, only archaeological sites and surveys were requested; built environment resources (i.e., historic structures) were not requested. Site and survey information were requested for the linear project corridor and a 1/2-mile radius. Because some survey reports were very large, only bibliographic information on them was obtained.

In addition to official maps and records, the SCCIC consulted the following information sources as part of their record search:

- National Register of Historic Places – Listed Properties
- California Register of Historical Resources
- California Inventory of Historical Resources
- California State Historical Landmarks
- California Points of Historical Interest
- Directory of Properties in the Historical Resources Inventory (Office of Historic Preservation)
- Caltrans State and Local Bridge Surveys

29.3.1.2 Findings

The literature search indicated that the project area has not been subject to intensive archaeological investigation, as only 8 percent of the area has been previously surveyed. A total of 7 cultural resources have been previously recorded within the 1/2-mile radius of the segment corridor (Table 29-4). Of these resources, 4 are prehistoric, 1 is protohistoric (ethnohistoric), 1 is historic, and 1 is not assignable due to lack of information. Of these resources, 2 contain Native American burials, and none have a probability of containing burials; the records indicate each has been highly impacted or destroyed by construction development activities.

The series of 1:24,000 maps at the end of this chapter (Figure 27.1 through Figure 27.11) show the previously recorded cultural resources along the segment, as provided by the CHRIS records search. As noted in the figure legend, the labeled resources are identified as one of four types: linear, prehistoric, historic, or protohistoric and/or multi-component.

Table 29-4. Segment 27 Corridor – Previously Recorded Cultural Resources

Site #	Site Type	Site Condition	USGS Quad	Recorded
P-100058		Unknown	South Gate	
CA-LAN-385	Prehistoric midden on low rise	Record states "almost entirely built over"	South Gate	King 1969
P-19-002795	Linear deposit of historical bovine skeletal remains	At least 75% of remains removed during Alameda Corridor Project	Long Beach	Livingstone 1999
P-12-002796	Intact Native American burial	Disturbed by trenching activities of Alameda Corridor Project.	South Gate	McDougall and Horn 2000
CA-LAN-389	Prehistoric seasonal village or camp surface site	Effectively destroyed by ranching.	Long Beach	Gutman 1989
CA-LAN-390	Prehistoric site	Unknown	Long Beach	
CA-LAN-2682	Protohistoric burial ground with midden soil	Severely impacted by mechanical trenching	Long Beach	McDowell and Bonner 1998

29.3.2 Native American Consultation

29.3.2.1 Methods

The Native American Heritage Commission (NAHC) was contacted on May 1, 2000, to request a Sacred Lands file search and a current Native American contact list. The Commission's response, dated May 5, 2000, provided the names and addresses of 17 local Native American groups and individuals. Letters subsequently were sent on May 17, 2000, to the listed groups and individuals to determine if they have knowledge of culturally sensitive locations within the project area. If there was no response to the letter, a telephone call was made to each individual or representative on June 6, 2000. A table listing contact dates and responses is attached as Appendix B.

29.3.2.2 Findings

The reply from the NAHC states the search failed to indicate the presence of Native American cultural resources in the immediate project area. Two telephoned responses were received to the letters addressed to the contact list; no responses were received to the telephone calls. In the telephoned responses, Samuel Dunlap expressed no specific concerns and Robert Dorame stated he would send a letter if he had concerns. No letter was subsequently received from Mr. Dorame.

29.4 FIELDWORK

Fieldwork for the Los Angeles to Anaheim segment involved (1) pedestrian survey and limited visits to known sites and (2) monitoring of maintenance activities. No cultural resources were collected during the Qwest Network Construction Project.

The fieldwork was conducted under the supervision of a CRS, who supervised lead archaeological monitors and a staff of archaeological monitors. Archaeological monitors were responsible for being on site during all work in sensitive areas, conducting spot checks if the area was designated for intermittent monitoring, and completing Daily Monitoring Logs. The CRS or archaeological monitor was responsible for flagging or otherwise delineating ESAs, including a 15-foot buffer zone around cultural resources, within four days prior to maintenance activities. The archaeological monitor was also responsible for completing a Site Condition Record immediately after removal of such flagging or other protective markers.

29.4.1 Survey

A pedestrian survey was conducted to identify any historic/prehistoric sites or features that may have been encountered during the installation of the fiber optic lines. The entire segment was subjected to intensive pedestrian survey for cultural resources. The survey area consisted of a swath of land straddling the fiber optic line and extending 15 meters to either side. This area was considered the area of potential effect (APE) for Qwest backbone construction.

29.4.1.1 Methods

The survey crew consisted of 14 archaeologists, and survey parties of one or two individuals. The survey parties were deployed to conduct surveys along the alignment. For safety, two-member survey parties were implemented in remote and inhospitable areas. Table 29-5 provides a list of key site investigation staff, along with their professional credentials.

Qualified archaeologists walked a single pedestrian transect on either side of the fiber optic backbone alignment. Exposures of native soil were closely inspected for cultural material, as were animal burrows and other disturbances affording limited subsurface visibility. No previously recorded prehistoric or historic resources are known to be located within the project area or within 1/2 mile of the project area.

In addition to reporting on the condition of previously recorded sites, survey crew members were instructed to record any cultural resources not previously recorded and any impacts the resource may have suffered as a result of the Qwest backbone construction. The minimally acceptable level of documentation needed for a resource's inclusion in the Office of Historic Preservation's (OHP's) filing system can be met with the preparation of a California Department of Parks and Recreation (DPR) 523 series Primary Record and a Location Map. While the minimum level of documentation is designed to provide an initial

record of all types of cultural resources, survey crews were instructed to fully document any previously unrecorded resources. Full documentation (although different for various types of resources) generally includes the preparation of the Primary Record and Location Map, but also an Archaeological Site Record, Artifact Record, Photograph Record, as well as a Sketch Map.

Table 29-5. Key Site Investigation Staff

Key Staff	Highest Degree *	Years Experience
Cindy Arrington	M.S., RPA	10
Paul Shen-Brown	M.A., RPA	8
Lori Harrington	M.A., RPA	15
Mark Sullivan	M.A., RPA	26
George Zeimens	M.A., RPA	30
Bradbury Brown	B.A.	18
William Brown	B.A.	10
Todd Folmer	B.A.	11
Keith Hamm	B.A.	4
Susan Kintscher	B.A.	2
Harry Moyer	B.A.	5
Mark Lowe	B.A.	12
Joise Salas	B.A	3
Dean Tye	B.A.	5

* RPA = Member of the Register of Professional Archaeologists

29.4.1.2 Findings

The entire segment was surveyed by archaeologists Paul Shen-Brown and Mark Sullivan in the spring of 2001. The pedestrian survey did not locate any previously unrecorded or newly identified cultural resource sites, artifacts, or objects.

29.4.2 Monitoring

29.4.2.1 Methods

In accordance with Protocol 5, a Mitigation and Monitoring Plan (MMP) was prepared in July 2000. The MMP noted that in this project corridor, Qwest would be performing maintenance on an existing line only. No new trenching was foreseen at this location. The proposed maintenance activity consisted of the re-excavation of pre-existing assist holes to perform maintenance or upgrades on the fiber-optic line. These excavations might take place at four points per linear mile. The MMP concluded that it was possible that some previously undisturbed soil might be disturbed during re-excavation.

Within a 1/2-mile of the proposed project corridor, seven archaeological resources have been previously recorded. Of these resources, two contain Native American burials, but none have a current probability of containing additional burials. Each of these archaeological sites has been severely disturbed by

development activities, and do not warrant a Native American observer. Although 92 percent of the route remains unsurveyed outside of the railroad ROW and specified roadways, the presence of human remains along this segment was not considered likely. Since some previously undisturbed soil may be disturbed in the process of re-excavation, it is possible that previously unknown cultural resources might be discovered during maintenance activities.

In view of the above information, the MMP made the following recommendations for monitoring within this study area:

- An archaeological monitor would be present when any maintenance is performed along this project corridor.
- No Native American observer would be present when any maintenance is performed along this project corridor.

29.4.2.2 Findings

An archaeological monitor was present for all maintenance activities performed by Qwest, including excavation of new assist holes, reopening of handholes/manholes, and fiber pulling, splicing, or replacement for the Los Angeles to Anaheim segment. On 8 separate occasions, cultural monitoring occurred between February 28, 2001 and March 17, 2001. During these activities, archaeological monitors did not locate any previously unrecorded or newly identified cultural resource sites, artifacts, or objects.

An example of the daily monitoring log for the Los Angeles to Anaheim segment is included as part of this chapter (Exhibit 29-1).

QWEST FIBER OPTIC PROJECT

DAILY ARCHAEOLOGICAL MONITORING LOG

Date: 2/28/01 Monitor: Mark Sullivan Arr. on site: 8:30 AM Departed site: 1:15 PM

Hours billed (4 hr. minimum): 8 Construction foreman: Charlie

Account for any hours on site when work not in progress (e.g. construction delay): NA

Action monitored (e.g. Utility Trench 3A): Street trenching

Location (include start and stop if applicable): Sepulveda Blvd between El Segundo & Grand

Construction methods and equipment in use: backhoe, shovel

Soils and stratigraphy evident: **(describe in detail and illustrate typical profile on reverse**; note any inclusions of historic debris, evidence of fill, evidence of materials buried by sediment) attach additional pages as necessary:

All soil stratigraphy artificial, ie man-made. surface: 4" asphalt, then 6-8" of coarse gravel, finally coarse sand to depth

Cultural resource findings (Describe any historic or prehistoric materials observed, including isolated artifacts, buried faunal remains, historic trash, evidence of cultural deposits. Attach continuation sheets, drawings, photo records, etc., as needed):

None

Preliminary assessment of significance of find (if work continued, justify): NA

Action taken at discovery (Who was notified? Was work stopped, and for how long? If work continued, what precautions were taken to avoid further impacts? Any samples collected? List on cont. sheet. Disposition of samples? **Photos? [attach record]**)

NA

Additional comments, observations, recommendations: None

Photographs taken: yes (no)

Exhibit 29-1. Sample Segment 27 Daily Monitoring Log

29.5 DISCUSSION

Prior to the current investigation, only eight percent of the Los Angeles to Anaheim segment corridor had been investigated for cultural resources, with seven cultural resources previously recorded within a 1/2-mile radius. In addition, two of the known archaeological sites contained Native American burials, but none were considered to have any probability of containing additional burials. No cultural resources had been previously recorded within the project corridor, and no previously unknown cultural resources were identified during the fieldwork reported here along the railroad ROW and specified roadways. The presence of human remains was not considered likely along this segment, and no evidence of human remains was discovered during this project.

Under the oversight of a CRS, the specific Cultural Resources Protocols for this project were accomplished. Preparation of a MMP in compliance with Protocol 5 assured that known cultural resources would be avoided as feasible and impacts reduced by ensuring that any necessary archaeological mitigation was carried out prior to commencement of the maintenance activity. In compliance with Protocol 7, the literature search and subsequent fieldwork assured that identified cultural resources within the segment corridor were protected. Under Protocol 8, an archaeological monitor and Native American observer were present where appropriate. During the project, it was not necessary to implement Protocol 9, which describes the methods to be employed to address unanticipated discoveries and assure that cultural resources are protected by work stoppage and evaluation of the resource by the CRS or an archaeological monitor, since there were no unanticipated discoveries. Although it was not necessary to implement Protocol 10, that protocol describes the actions to be taken in the event of the discovery of human remains or suspected human remains.

29.6 RECOMMENDATIONS

Given that the current field investigation was conducted along a railroad corridor, efforts to locate cultural resources within the scope of this project have been sufficient per current U.S. Secretary of the Interior's professional standards and guidelines.

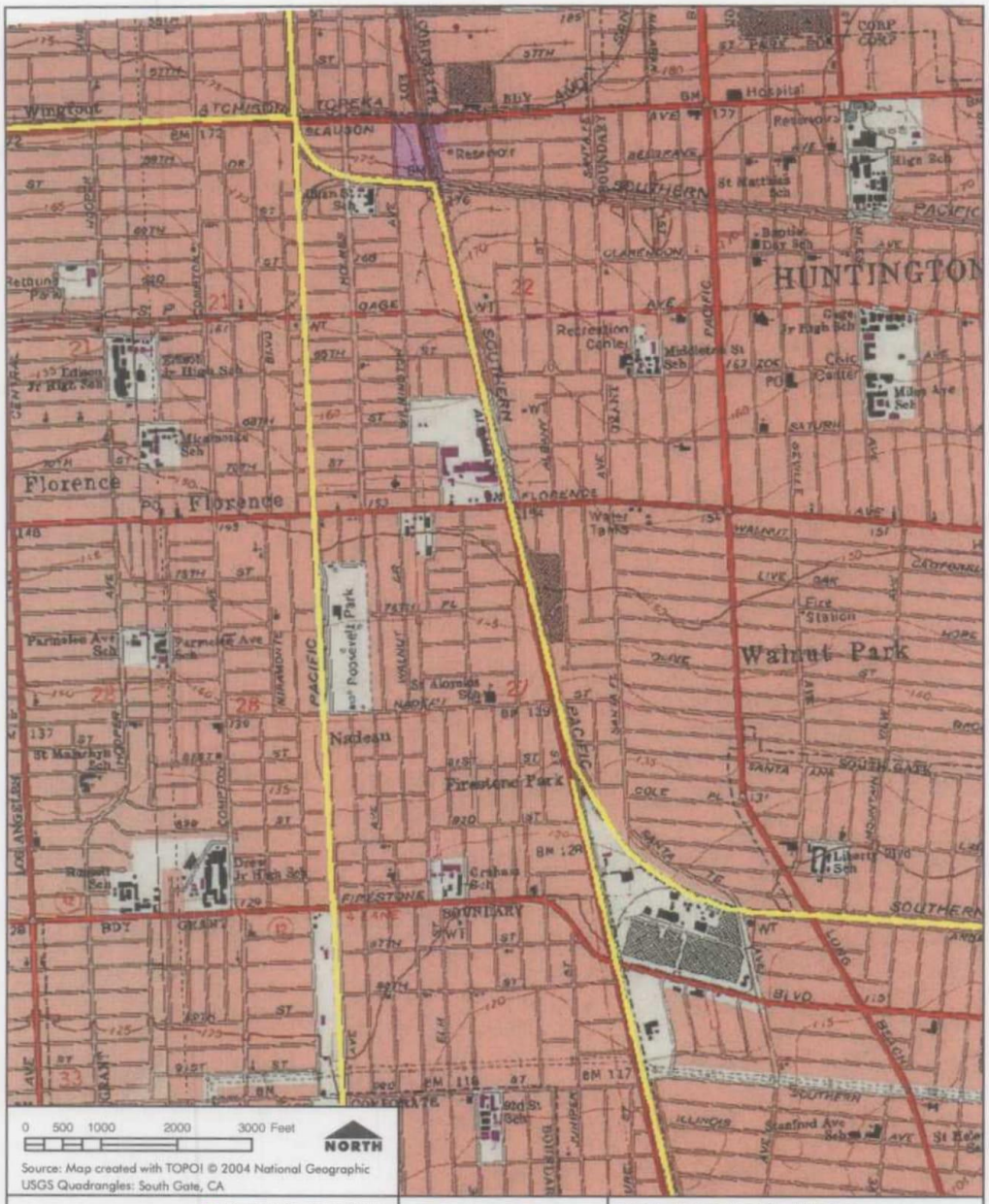
There remains, however, the potential for the existence of buried archaeological materials within this heavily disturbed project area. Prehistoric materials might include flaked stone tools, toolmaking debris, stone milling tools, fire-affected rock, animal bone shaped for use as tools, baked clay items, pottery, marine shell, or soil darkened by cultural activities (midden). Historic materials might include building remains, metal, glass, or ceramic artifacts or debris.

Should cultural resources be encountered by Qwest construction and/or management crews during future disturbance for maintenance of fiber-optic cable and related infrastructure, or should new construction occur within the state of California, work in the area must be halted and a qualified archaeologist should be notified immediately to evaluate the resource(s) encountered. Qwest would also adhere to the specific Cultural Resources Protocols, numbered 1 through 11, which were prepared to ensure Qwest's compliance under CPUC regulatory authority (see Appendix A).

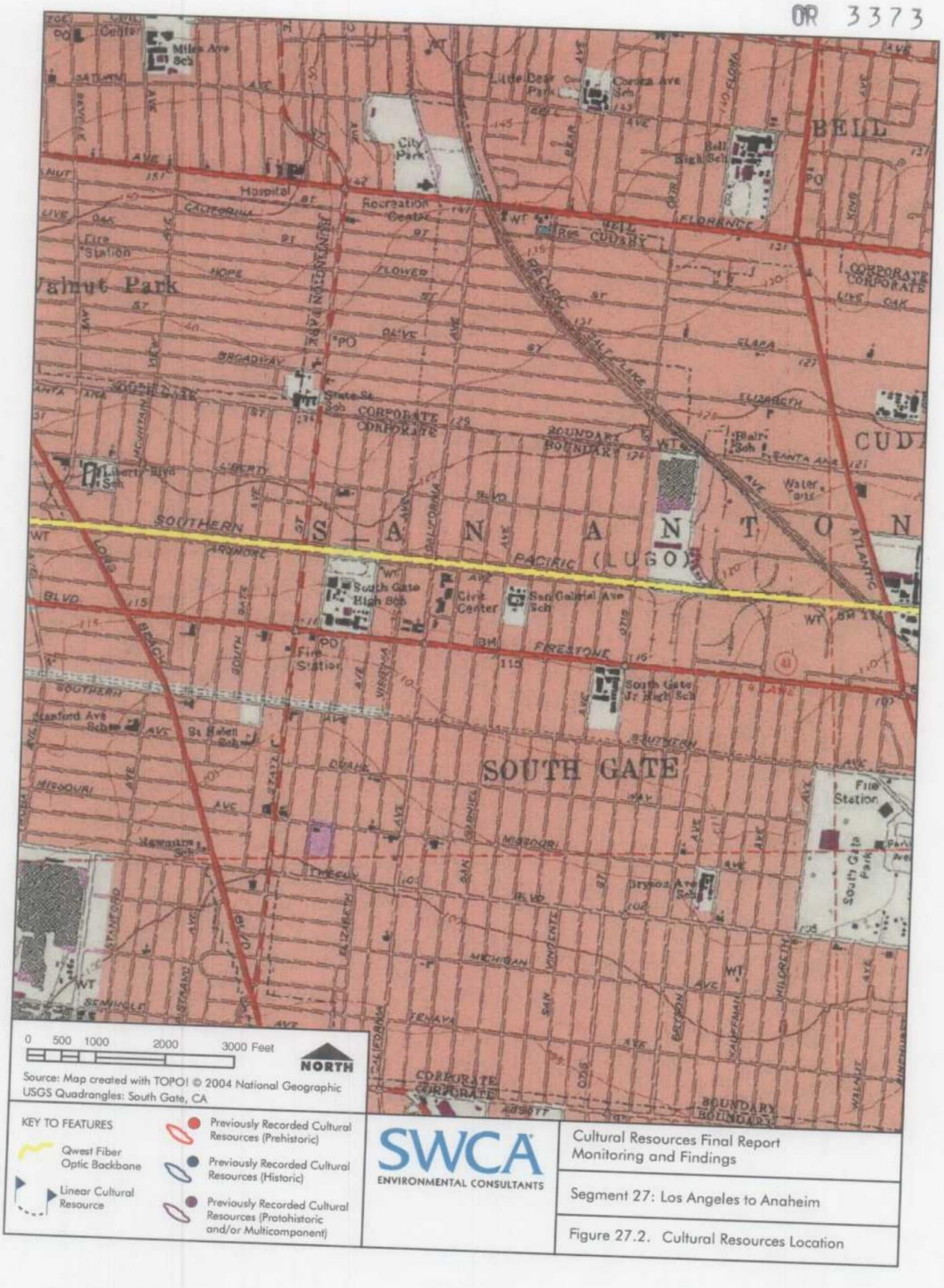
- Protocol Number 1: Records Search and Data Adequacy Analysis
- Protocol Number 2: Native American Consultation
- Protocol Number 3: Archaeological Inventory and Site Recording
- Protocol Number 4: Site Boundary, Integrity or Significance Testing
- Protocol Number 5: Mitigation Monitoring Plan
- Protocol Number 6: Pre-Construction Data Recovery

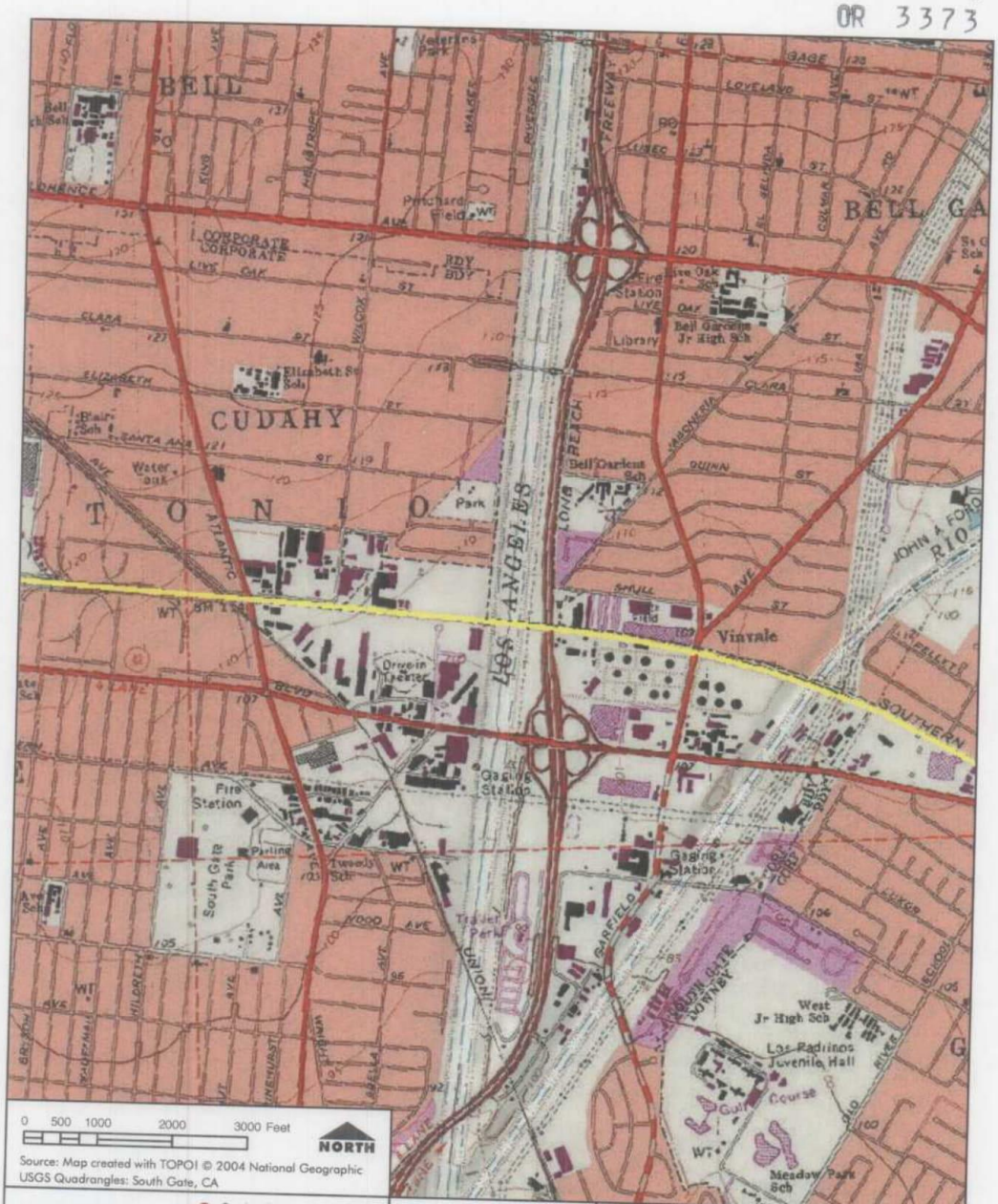
- Protocol Number 7: Protection of Environmentally Sensitive Areas
- Protocol Number 8: Archaeological Monitoring and Native American Observation
- Protocol Number 9: Addressing Unanticipated Discoveries during Project Activity
- Protocol Number 10: Discovery of Human Bone
- Protocol Number 11: Final Report of Monitoring and Findings

VN 2504
LA 8255
OR 3373

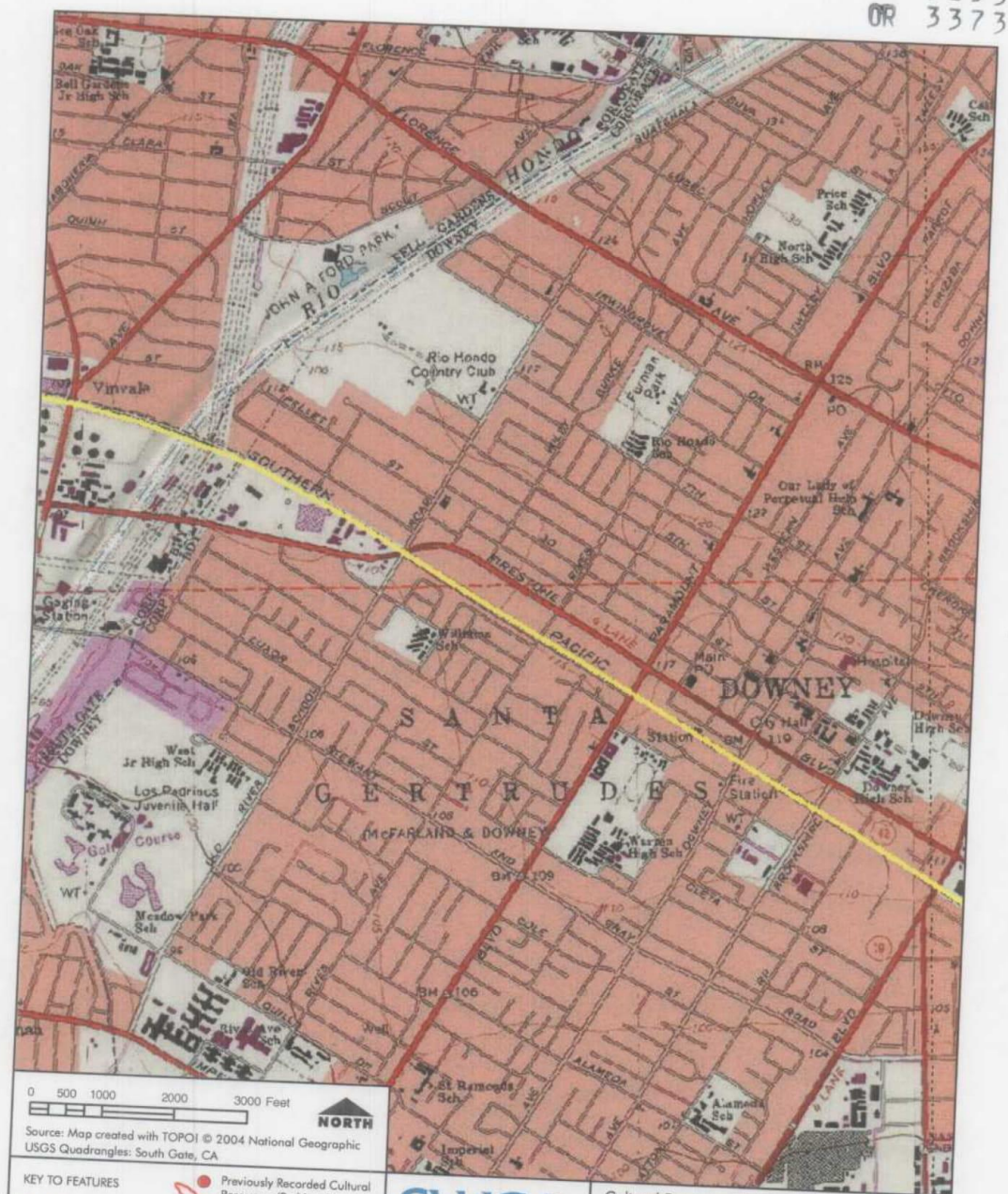


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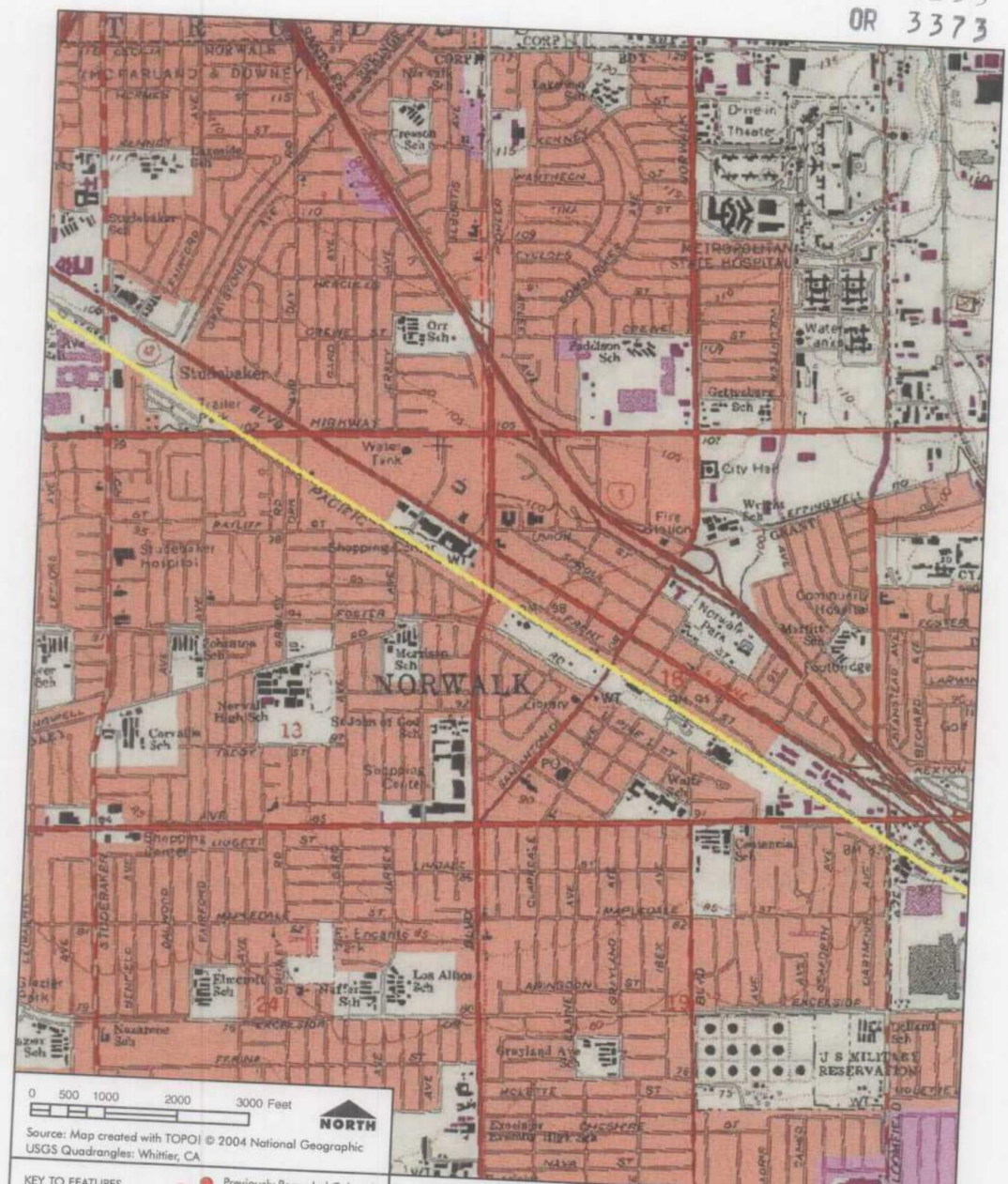

VN 2504
LA 8255
OR 3373
BELL
CUDAHY
T O N I O
LOS ANGELES
Vinvale
0 500 1000 2000 3000 Feet
NORTH
Source: Map created with TOPO! © 2004 National Geographic
USGS Quadrangles: South Gate, CA
KEY TO FEATURES
Qwest Fiber Optic Backbone
Linear Cultural Resource
Previously Recorded Cultural Resources (Prehistoric)
Previously Recorded Cultural Resources (Historic)
Previously Recorded Cultural Resources (Protohistoric and/or Multicomponent)
SWCA
ENVIRONMENTAL CONSULTANTS
Cultural Resources Final Report Monitoring and Findings
Segment 27: Los Angeles to Anaheim
Figure 27.3. Cultural Resources Location

VN 2504
LA 8255
OR 3373

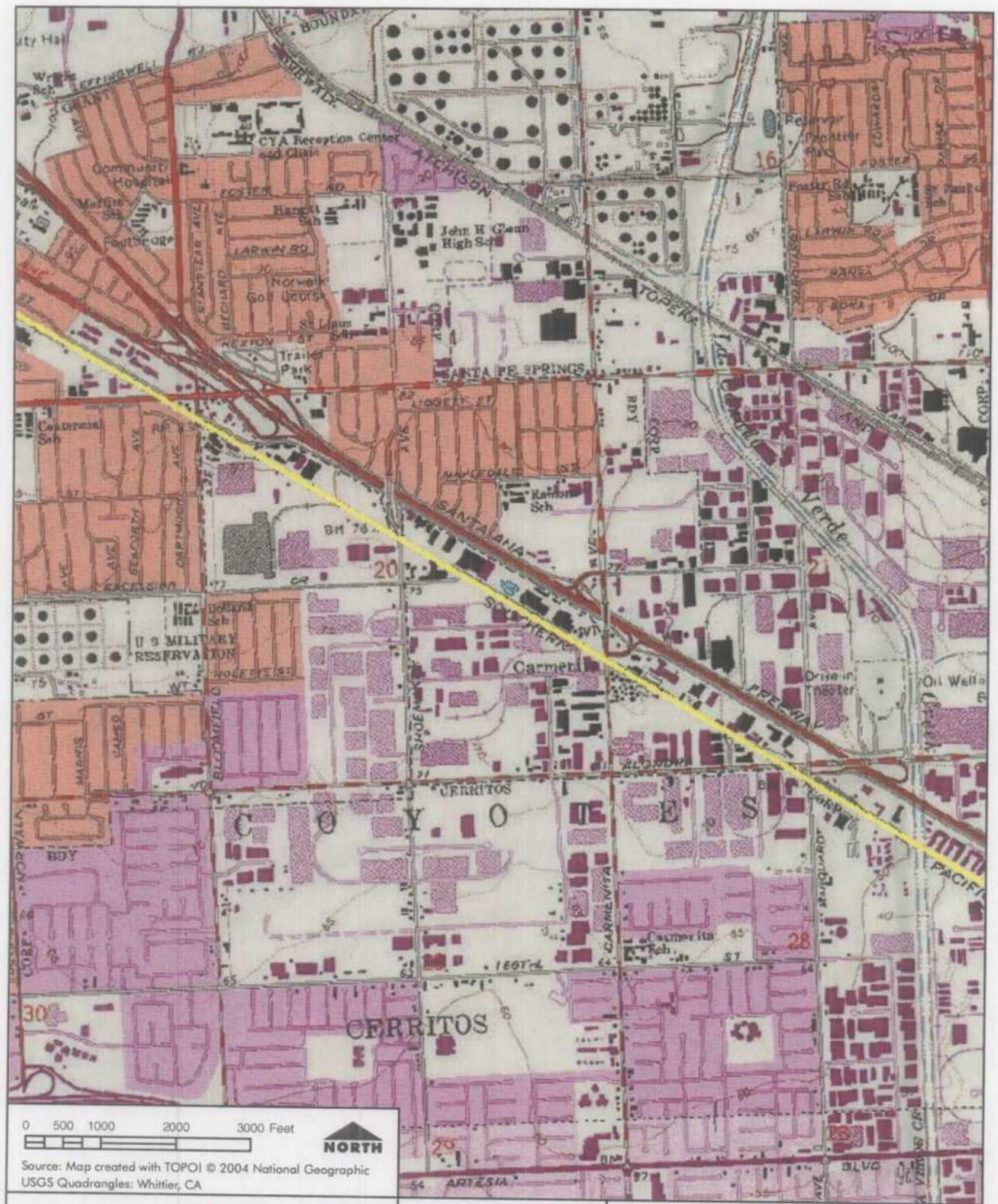



VN 2504
LA 8255
OR 3373
DOWNEY
DOWNEY
0 500 1000 2000 3000 Feet
NORTH
Source: Map created with TOPO! © 2004 National Geographic
USGS Quadrangles: Whittier, CA
KEY TO FEATURES
Qwest Fiber Optic Backbone
Linear Cultural Resource
Previously Recorded Cultural Resources (Prehistoric)
Previously Recorded Cultural Resources (Historic)
Previously Recorded Cultural Resources (Protohistoric and/or Multicomponent)
SWCA
ENVIRONMENTAL CONSULTANTS
Cultural Resources Final Report Monitoring and Findings
Segment 27: Los Angeles to Anaheim
Figure 27.5. Cultural Resources Location

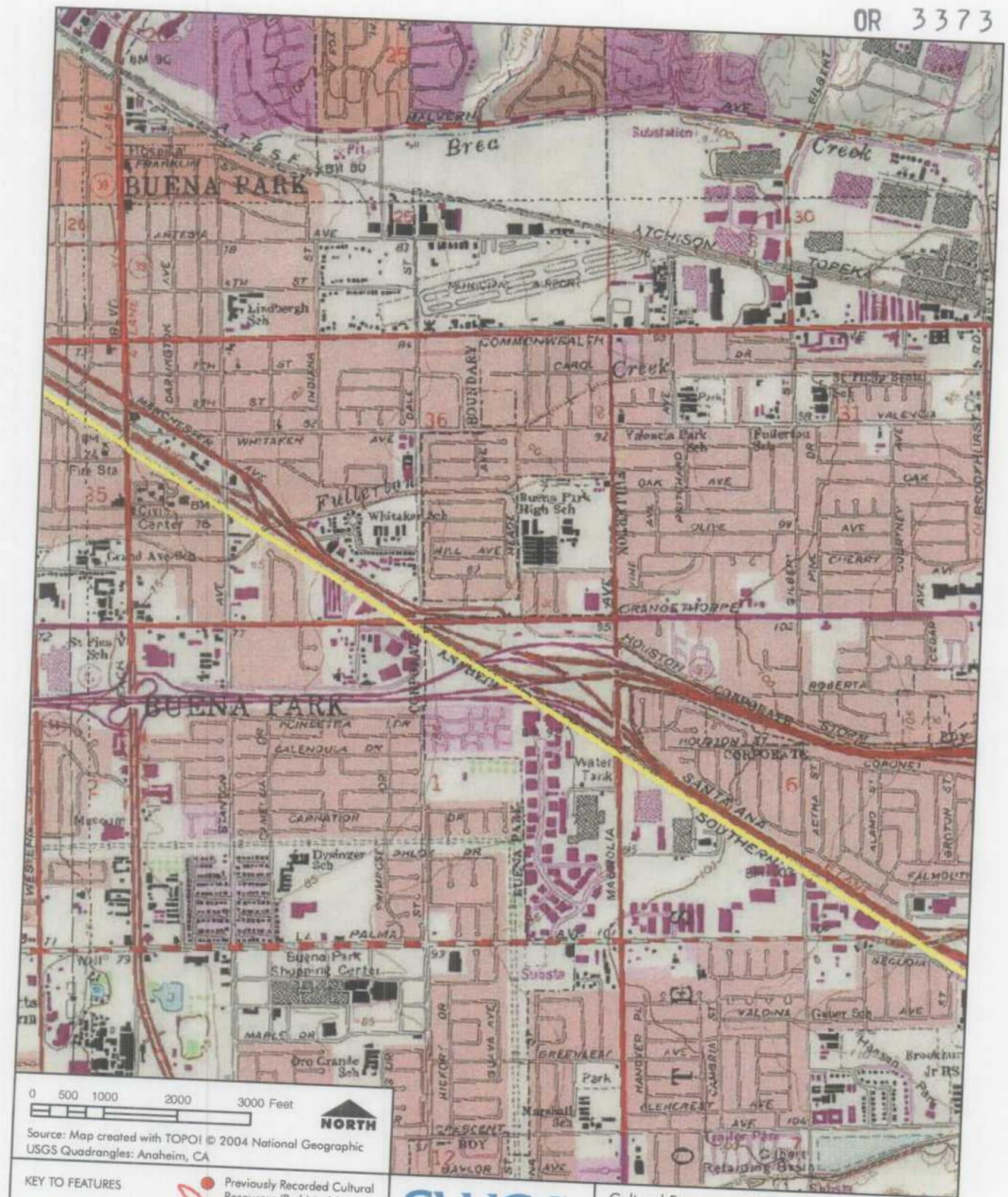
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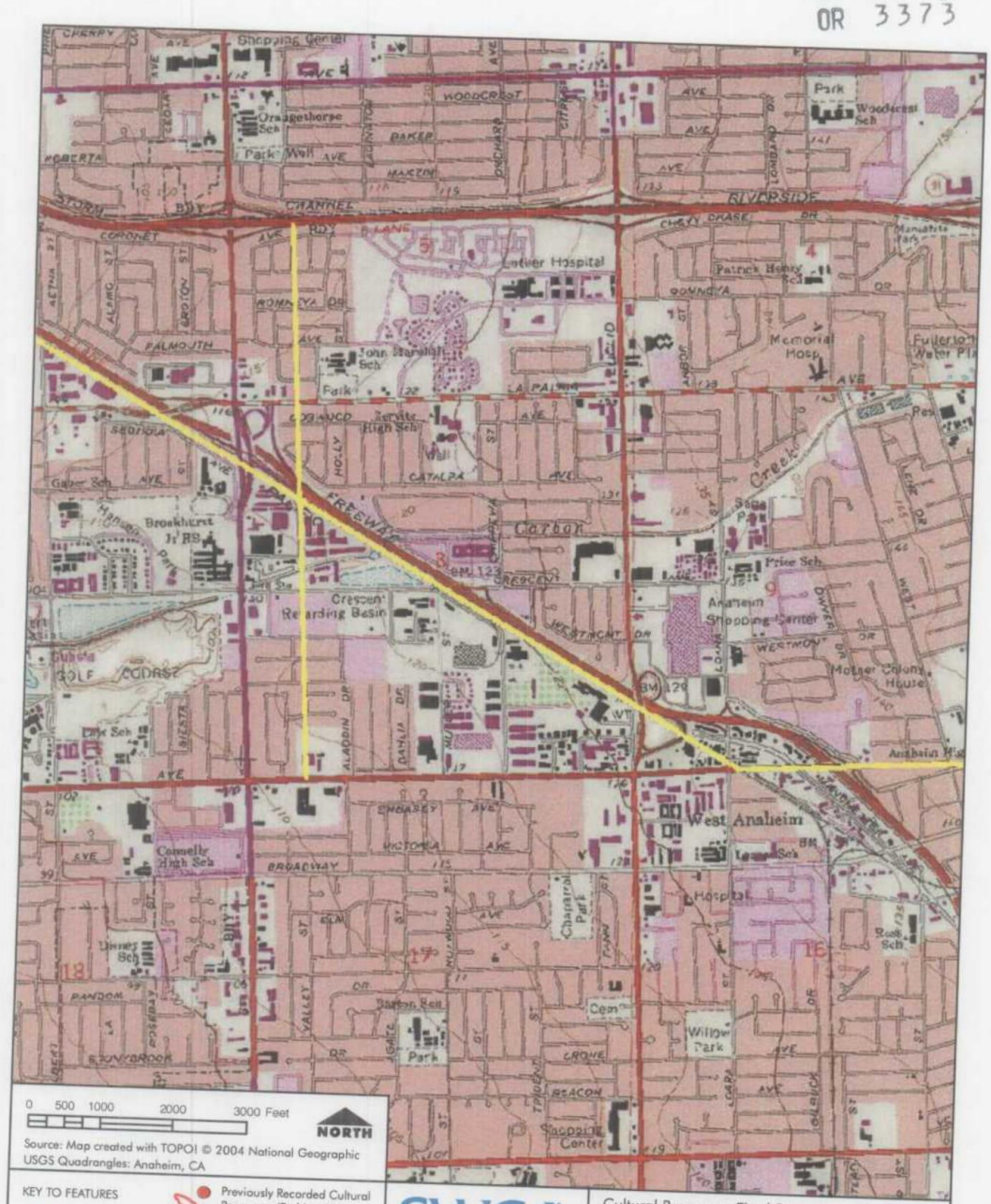
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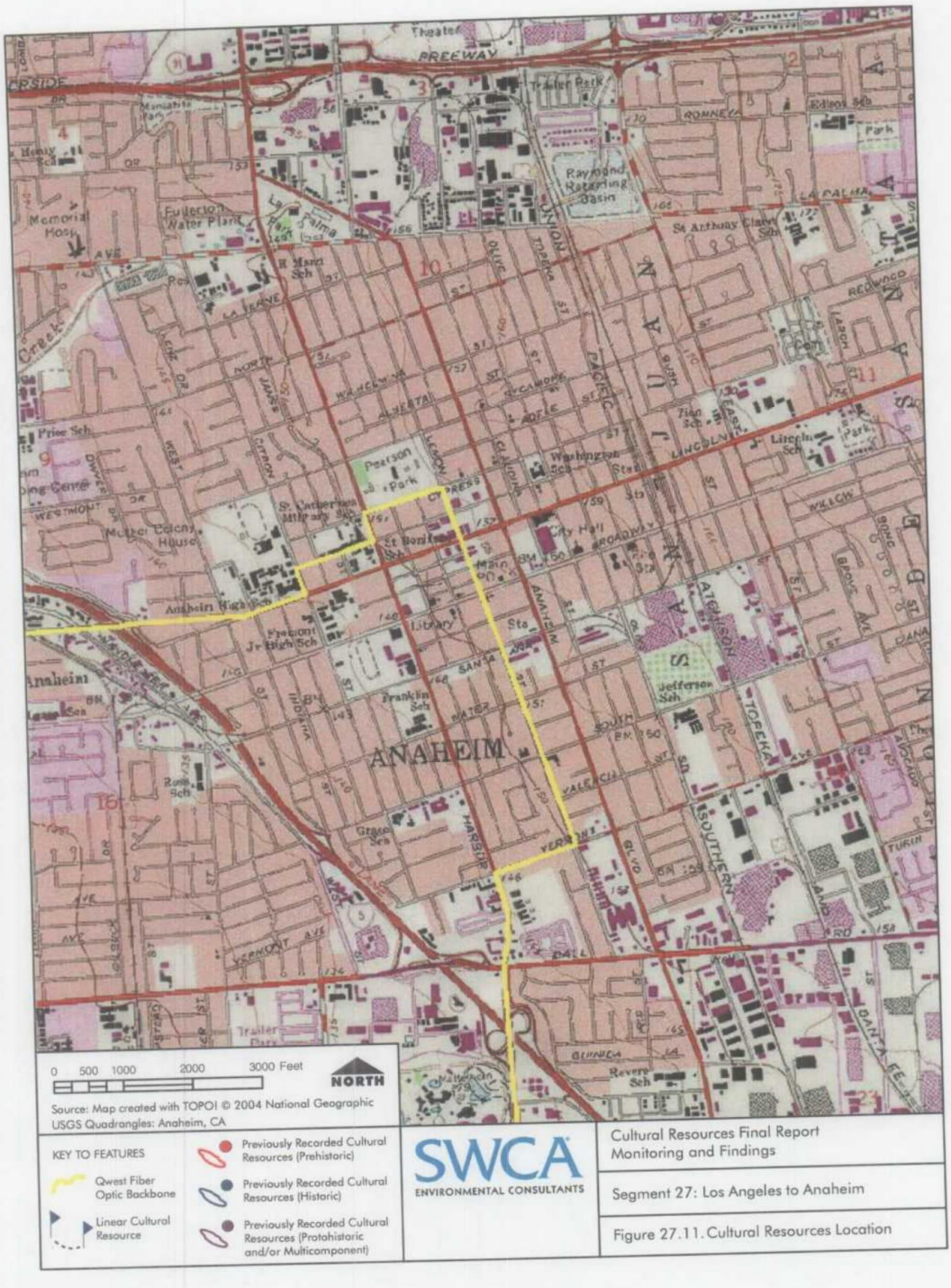
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30. SLAUSON RING SEGMENT

Qwest Communications International Inc. (Qwest) retained SWCA Environmental Consultants (SWCA) to complete the Cultural Resources Final Report of Monitoring and Findings for the Qwest Network Construction Project. The report covers the cultural resources investigation for the maintenance (replacement and repair) of fiber-optic cable within the Qwest network "backbone" throughout the state of California. The existing California backbone includes approximately 1,431 linear miles of fiber-optic network. The investigation included surveys, focused visits to previously recorded archaeological sites, and monitoring of routine maintenance of existing lines along the network backbone.

The California Public Utilities Commission (CPUC) is the designated Lead Agency for this project under the California Environmental Quality Act (CEQA). The Qwest project is subject to specific Cultural Resources Protocols, numbered 1 through 11, prepared to ensure Qwest's compliance under CPUC regulatory authority. The CPUC and the Native American Heritage Commission (NAHC) approved the Qwest Fiber Optic Project Cultural Resources Protocols in February 2000. Qwest is proud of its record of responsible environmental and cultural resources stewardship and was an enthusiastic participant in the development of the Cultural Resources Protocols for this statewide project. In addition, to the greatest extent possible, Qwest followed the preferred approach: namely, to avoid ground disturbance activities within Environmentally Sensitive Areas (ESAs) and cultural resources during all maintenance activities.

The Protocols set forth a program for the identification and protection of known cultural resources within project rights-of-way (ROWs) and for the identification, assessment, and treatment of cultural resources that might be encountered during project activities. Protocols 1 through 6 generally were applied during project planning; Protocols 7 through 11 were applied immediately prior to, during, or at the conclusion of the routine maintenance program. The document containing the Protocols is provided as Appendix A.

In compliance with the General Conditions section of the Cultural Resources Protocols, qualified lead archaeological monitors and a staff of archaeological monitors monitored for cultural resources for this project. The monitors, as well as Native American observers, worked under the supervision of a qualified Cultural Resource Specialist (CRS). The CRS also determined when a Native American observer was deemed appropriate, depending on the sensitivity of the project segment. In addition, all Qwest personnel received training in field identification of potential cultural resources, laws regarding the protection of cultural resources, and what actions to take immediately in the event of the unanticipated discovery of cultural resources or human remains.

For purposes of the investigation, the California network backbone was divided into 36 segments. This document reports on the background information, methods, and findings of the cultural resources program for the Slauson Ring segment (Segment #28 out of 36) of the California Qwest network backbone, as shown on the segment location map (Figure 28)[1]. Cultural resources include archaeological and historical objects, sites, and districts; historic buildings and structures; cultural landscapes; and sites and resources of concern to local Native American and other ethnic groups. Cultural resources may be found on the ground surface or buried beneath the surface.

[1] NOTE: All figures in this chapter are labeled according to segment number, not chapter number.

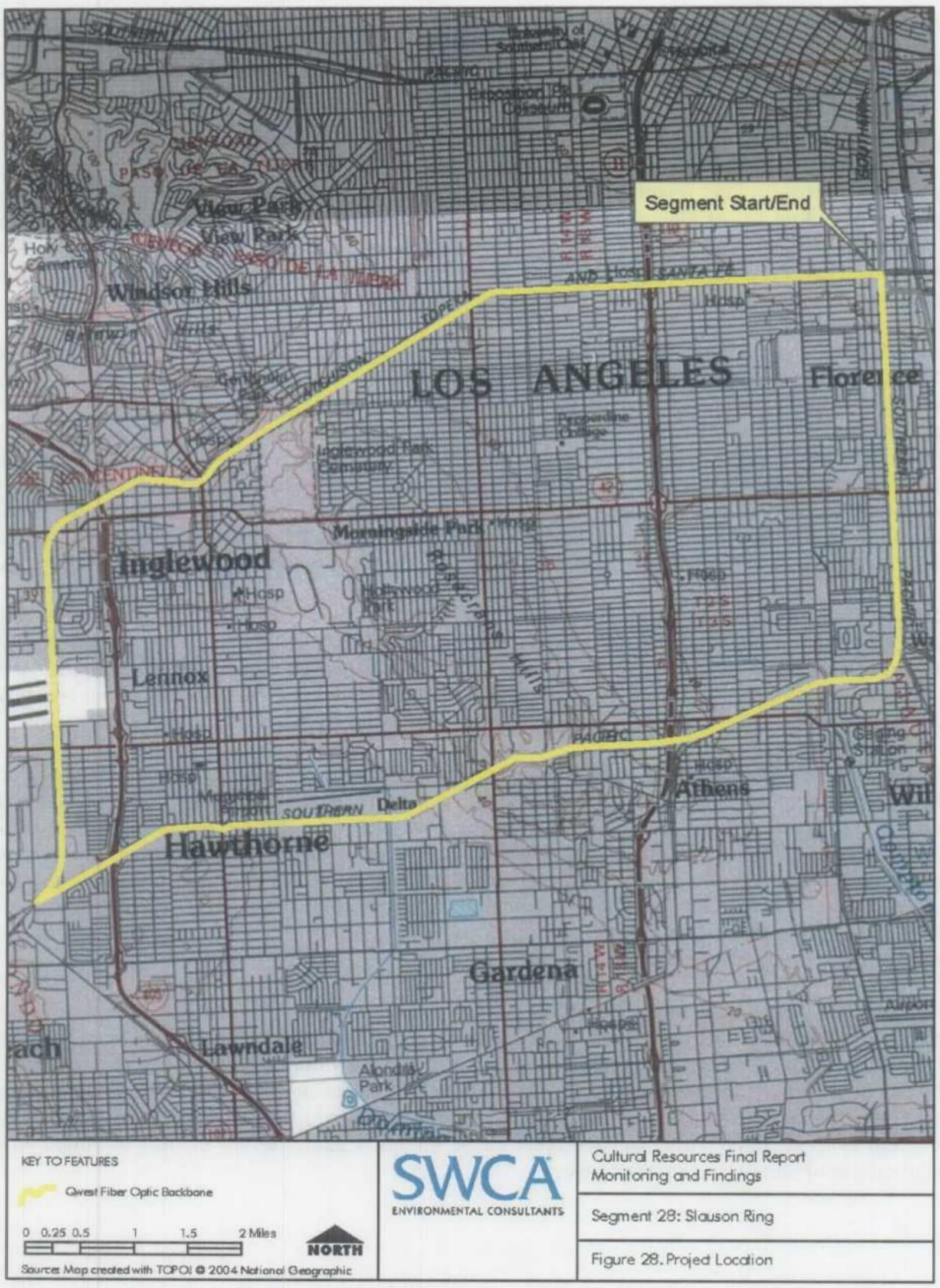


Figure 28. Segment Location Map

The Cultural Resources Final Report of Monitoring and Findings for the Qwest Network Construction Project, of which this document is a part, satisfies the requirements of Protocol 11: Final Report of Monitoring and Findings. The format of the Final Report and this chapter of that report follow *Archaeological Resource Management Reports (ARMR): Recommended Contents and Format* (Office of Historic Preservation 1990).

30.1 SEGMENT DESCRIPTION

The Slauson Ring segment is along the Southern Pacific Railroad ROW through or near the cities of Hawthorne, El Segundo, Inglewood, Lynwood, Compton, and Los Angeles, in Los Angeles County, California. The somewhat rectangular segment starts and ends at the same point near the town of Florence. The network backbone in this area consists of a buried fiber-optic cable conduit, which can be accessed at four points per mile for maintenance and upgrading. Construction activity consists of the re-excavation of pre-existing handholes and assist holes to perform maintenance or upgrades on the fiber-optic line.

To access existing handholes, which are concrete or fiberglass vaults set below grade, the 18-inch cover of previously deposited soil immediately over the handhole cover is removed with a small mechanical excavator such as a backhoe or by hand. Assist hole openings are excavated to the depth of the conduit, up to 4 feet, and may range from 5 to 10 feet long and 2 feet wide. Then a backhoe-mounted puller adjacent to the alignment is used to assist the progress of the new fiber through the conduit. After the pulling operation is complete, the conduit is resealed and the assist hole backfilled with the excavation spoils. Soil disturbance for assist holes consists primarily of re-excavation of previously deposited trench spoils. Some possible intrusion into adjacent trench sidewalls also may occur.

The Slauson Ring segment is along the railroad ROW on the U.S. Geological Survey (USGS) 7.5-Minute Quadrangles listed in Table 30-1.

Table 30-1. Segment 28 USGS 7.5-Minute Quadrangles

Inglewood	Los Angeles	Southgate

30.2 SETTING

30.2.1 Natural

The Slauson Ring segment is situated within the greater Los Angeles metropolitan area in Los Angeles County. Santa Monica Bay is located to the west, with San Pedro Bay to the south. The segment is located in the Transverse Range geomorphic province (Chapter 2, Figure 2-2). Elevation along the segment is approximately 100 meters (330 feet) above msl.

The climate within the vicinity of the segment is characterized by warm, dry summers and mild, moist winters. Because the area falls within a coastal region, winters are typically warmer, but summers tend to be milder. Winter temperatures have highs around 18 degrees Celsius (65 degrees Fahrenheit), and summer temperatures have highs around 27 degrees Celsius (81 degrees Fahrenheit). When California

was initially occupied, the climate was moister and cooler than today's Mediterranean climate (Major 1988).

Current uses along the segment are dedicated primarily to development. Historically, the vicinity of the segment was characterized by vegetation communities that included salt marshlands in low-lying areas and along drainages, riparian scrub/forest along drainages, grasslands in upland areas, and coastal scrubland and chaparral in the hills (Chapter 2, Figure 2-1). With this mosaic of ecological communities, the area would have provided a very productive environment for its prehistoric occupants, one well suited to a hunting–gathering economy with a variety of water birds, small and large mammals, fish, reptiles and amphibians, and edible plant species. Following are descriptions of vegetation communities within the area of the segment and the natural resources within each community that likely would have been harvested by the area's prehistoric occupants.

30.2.1.1 Vegetation Communities

The following descriptions of vegetation communities are based upon data presented by Holland (1986), Holland and Keil (1995), and Sawyer and Keeler-Wolf (1995).

Brackish Marshland

Brackish or salt marshlands were likely an important part of the prehistoric environment, particularly around low areas along major drainages and near the bays along the California coast. Brackish marshes contain species tolerant of high salinity, such as saltgrass (*Distichlis spicata*), pickleweeds (*Salicornia* spp.), sea-blite (*Suaeda* spp.), and saltbush (*Atriplex* spp.) (Table 30-2). Wildlife species typical of marshlands are detailed in Table 30-3.

Riparian Scrub/Forest

Riparian scrub is a mid-successional stage community that typically matures into riparian forest; species composition between these habitat types, therefore, is very similar. Riparian forest can revert to riparian scrub through disturbances or frequent flooding events (Faber and Keller 1985). This community exists along streams and around seeps and springs and was likely located along local streams in the area during its prehistory. Many plants within this community, as well as animals attracted to the water and vegetation, provided abundant subsistence resources for prehistoric and historic occupants (Table 30-2 and Table 30-3).

Coastal Grassland

The grassland community in much of California has been converted to agricultural and other uses or has become dominated by non-native grasses, such as introduced bromes (*Bromus* spp.) and wild oats (*Avena* spp.). Historically, the grassland community contained a variety of resources. Seeds of many annual grasses would have been the primary resource of interest to the prehistoric occupants, but blossoms, greens, and bulbs were also available, primarily during the spring. Coastal grasslands occur in a variety of forms ranging from scattered perennial bunch grasses (typically *Nassella pulchra* or *N. lepida*) to stands dominated by native perennial grasses in an assemblage of geophytes (plants with underground bulbs or corms) and herbaceous annual species (Table 30-2). Wildlife species typical of grasslands are detailed in Table 30-3.

Coastal Scrubland

Coastal scrub is characterized by a diversity of low, aromatic, drought deciduous shrubs and sub-shrub species. Seeds are the primary resource within coastal sage scrub community, but edible stems, stalks, shoots, greens, roots, bulbs, and some berries can also be found. The resources of coastal sage scrub community are primarily available in the spring. Coastal sage scrub often is patchily distributed throughout its range (O'Leary et al. 1992). Over a scale of several miles, it can be found in diverse habitat mosaics with other plant communities, particularly grassland and chaparral and oak/riparian woodland in more mesic areas. Coastal sage scrub may convert to chaparral or grassland, depending on slope, aspect, climate, fire history, and other physical factors and biological phenomena. Conversely, chaparral or grassland areas may convert to coastal sage scrub (Axelrod 1978; White 1995; O'Leary 1995; Allen et al. 1999). Characteristic species that occur in coastal sage scrub habitat are included in Table 30-2 and Table 30-3.

Chaparral

Chaparral community occurs in the foothills near the segment. The chaparral community contains a mix of shrubs, such as manzanita (*Arctostaphylus* spp.), chamise (*Adenostoma fasciculatum*), mountain lilacs (*Ceanothus* spp.), and coffeeberry (*Rhamnus* spp.). Understory vegetation is sparse and limited to shade tolerant herbs and ferns. Numerous shrub species occur in chaparral habitat, providing an abundance of seeds, berries, bulbs, shoots, and roots (Table 30-2). A diversity of animal species occurs within the chaparral community (Table 30-3).

Table 30-2. Segment 28 Plant Resources

Species	Scientific Name
Brackish Marshland Community	
Saltbush	*Atriplex* spp.
Saltgrass	*Distichlis spicata*
Pickleweed	*Salicornia* spp.
Bulrushes	*Scirpus* spp.
Sea-blite	*Suaeda* spp.
Riparian Scrub/Woodland Community	
Overstory Species	
Maples	*Acer* spp.
Alders	*Alnus* spp.
Fremont cottonwood	*Populus fremontii*
Mid-story Species	
Dogwoods	*Cornus* spp.
Arroyo willow	*Salix lasiolepis*
Willows	*Salix* spp.
Elderberries	*Sambucus* spp.

Table 30-2. Segment 28 Plant Resources

Species	Scientific Name
Understory Species	
Mugwort	*Artemisia douglasiana*
Monkeyflowers	*Mimulus* spp.
California rose	*Rosa californica*
Blackberries	*Rubus* spp.
Snowberries	*Symphoricarpos* spp.
Coastal Grassland Community	
Grasses	
Junegrass	*Koeleria macrantha*
Melic grasses	*Melica* spp.
Muhlies	*Muhlenbergia* spp.
Small-flowered needlegrass	*Nassella lepida*
Purple needlegrass	*Nassella pulchra*
Fescues	*Vulpia* spp.
Geophytes	
Onions	*Allium* spp.
Brodiaeas	*Brodiaea* spp.
Blue dicks	*Dichelostemma capitatum*
Blue-eyed grass	*Sisyrinchium bellum*
Herbaceous Plants	
Yellow fiddleneck	*Amsinckia menziesii*
Red maids	*Calandrinia ciliata*
Pussy paws	*Calyptridium* spp.
Suncups	*Camissonia* spp.
Owl's-clovers	*Castilleja* spp.
Blue-eyed Marys	*Collinsia* spp.
Cryptanthas	*Cryptantha* spp.
Delphiniums	*Delphinium* spp.
California poppy	*Eschscholzia californica*
Gilias	*Gilia* spp.
Everlastings	*Gnaphalium* spp.
Tarweeds	*Hemizonia* spp.
Linanthus	*Linanthus* spp.
Lomatiums	*Lomatium* spp.
Lotus	*Lotus* spp.
Lupines	*Lupinus* spp.
Microseris	*Microseris* spp.

Table 30-2. Segment 28 Plant Resources

Species	Scientific Name
Phacelias	*Phacelia* spp.
Popcorn flowers	*Plagiobothrys* spp.
California threadstem	*Pterostegia drymarioides*
Sanicles	*Sanicula* spp.
Checker mallow	*Sidalcea malvaeflora*
Clovers	*Trifolium* spp.
Sub-shrubs	
Milk vetches	*Astragalus* spp.
Buckwheats	*Eriogonum* spp.
Coastal Scrubland Community	
California sage	*Artemisa californica*
Encelia	*Encelia* spp.
Buckwheat	*Eriogonum* spp.
Yerba santa	*Eriodictyon* spp.
Lupine	*Lupinus* spp.
Bracken fern	*Pteridium aquilinum*
Coffeeberry	*Rhamnus* spp.
Blackberry	*Rubus ursinus*
Purple sage	*Salvia leucophylla*
Black sage	*Salvia mellifera*
Figwort	*Scrophularia californica*
Chaparral Community	
Shrubs	
Chamise	*Adenostoma fasciculatum*
Manzanitas	*Arctostaphylos* spp.
Hoary-leaved ceanothus	*Ceanothus crassifolius*
Buck brush	*Ceanothus cuneatus*
Bigpod ceanothus	*Ceanothus megacarpus*
Mountain lilacs	*Ceanothus* spp.
Western redbud	*Cercis occidentalis*
Mountain mahogany	*Cercocarpus betuloides*
Coffeeberry, redberry	*Rhamnus* spp.
Gooseberries, currants	*Ribes* spp.
Vines	
Dodders	*Cuscuta* spp.
Bedstraws	*Galium* spp.
Chaparral-peas	*Lathyrus* spp.

30.2.1.2 Typical Animal Resources

Wildlife species common to the vegetation communities in the vicinity of the Slauson Ring segment are detailed in Table 30-3.

Table 30-3. Segment 28 Common Animal Resources

Species	Scientific Name	Communities
Amphibians		
Western toad	*Bufo boreas*	Riparian scrub/forest, Foothill woodland, Marshland
Reptiles		
Western fence lizard	*Sceloporus occidentalis*	Scrublands, Chaparral, Foothill woodlands, Coniferous forests
Pacific pond turtle	*Emys marmorata*	Marshlands
Upland Birds		
California quail	*Callipepla californica*	Grasslands, Scrublands, Chaparral, Foothill woodlands
Hawks	*Buteo* spp.	Grasslands, Chaparral, Foothill woodlands
Western scrub jay	*Aphelocoma californica*	Chaparral, Foothill woodlands
Mockingbird	*Mimus polyglottos*	Scrublands, Chaparral, Foothill woodlands
Western meadowlark	*Sturnella neglecta*	Grasslands
Riparian and Marshland Birds		
Geese	*Branta* spp.	Marshlands
Ducks	*Anas, Aythya,* and *Bucephala* spp.	Marshlands
Ruddy duck	*Oxyura jamaicensis*	Marshlands
American bittern	*Botaurus lentiginosus*	Marshlands
Herons	*Ardea, Butorides, Nycticorax,* and *Nyctanassa* spp.	Marshlands
Egrets	*Egretta* spp.	Marshlands
Mammals		
Desert cottontail	*Sylvilagus audubonii*	Grasslands, Scrublands, Chaparral, Foothill woodlands, Coniferous forests
Brush rabbits	*Sylvilagus bachmani*	Scrublands, Chaparral
Black-tailed jackrabbit	*Lepus californicus*	Grasslands, Scrublands
California ground squirrel	*Spermophilus beecheyi*	Grasslands
Pocket gopher	*Thomomys bottae*	Grasslands, Chaparral

Table 30-3. Segment 28 Common Animal Resources

Species	Scientific Name	Communities
Dusky-footed woodrat	*Neotoma fuscipes*	Scrublands, Chaparral, Foothill woodlands
California vole	*Microtus californicus*	Grasslands, Chaparral, Riparian scrub/forest, Foothill woodlands, Coniferous forests
Coyote	*Canis latrans*	Grasslands, Scrublands, Chaparral, Riparian scrub/forest, Foothill woodlands, Coniferous forests
Gray fox	*Urocyon cinereoargenteus*	Grasslands, Scrublands, Chaparral, Riparian scrub/forest, Foothill woodlands, Coniferous forests
Raccoon	*Procyon lotor*	Grasslands, Chaparral, Riparian scrub/forest, Foothill woodlands, Coniferous forests
Long-tailed weasel	*Mustela frenata*	Grasslands, Chaparral, Riparian scrub/forest, Foothill woodlands, Coniferous forests
Badger	*Taxidea taxus*	Grasslands, Open woodlands
Striped skunk	*Mephitis mephitis*	Grasslands, Chaparral, Riparian scrub/forest, Foothill woodlands, Coniferous forests
Bobcat	*Lynx rufus*	Grasslands, Scrublands, Chaparral, Riparian scrub/forest, Foothill woodlands, Coniferous forests

30.2.2 Cultural

30.2.2.1 Prehistoric Overview

California prehistory is divided into three broad temporal periods that reflect similar cultural characteristics throughout the state: Paleoindian Period (ca. 9000–6000 B.C.), Archaic Period (6000 B.C. – A.D. 500), and Emergent Period (A.D. 500 – Historic Contact) (Fredrickson 1973, 1974, 1994a) (Chapter 2, Figure 2-5). The Archaic is further divided into Lower (6000–3000 B.C.), Middle (3000–1000 B.C.), and Upper (1000 B.C. – A.D. 500) Periods, generally governed by climatic and environmental variables, such as the drying of pluvial lakes at the transition from the Paleoindian to the Lower Archaic.

The Los Angeles to Anaheim segment lies in what generally is described as the San Diego subregion of the Southern Coast Archaeological Region, which is one of eight arbitrary organizational divisions of the state (Moratto 1984:Fig. 1) (Chapter 2, Figure 2-3). This subregion extends southward along the coast from Santa Monica Bay to the border with Mexico, and includes southern Los Angeles County, all of

Orange County, the southwest corner of San Bernardino County, and western Riverside and San Diego Counties.

In southern California, researchers attempting to define local or subregional traditions have created numerous cultural chronologies using various nomenclatures (Moratto 1984). Nonetheless, these chronologies are more notable for their similarities than their differences and a concordance of the best-known chronologies for the region is presented in Chapter 2, Figure 2-5. Building on early studies and focusing on data synthesis, Wallace (1955, 1978) developed a prehistoric chronology for the southern California coastal region that is widely used today. Four stages are presented in Wallace's prehistoric sequence: Horizon I, Early Man; Horizon II, Milling Stone; Horizon III, Intermediate; and Horizon IV, Late Prehistoric. As noted by Moratto (1984:159), Wallace's (1955) synthesis lacked chronological precision due to the lack of absolute dates at the time of its creation, but remains generally valid today.

In addition to Wallace's classic summary, a regional synthesis developed by Warren (1968) will be referred to in the following discussion. This synthesis is supported by a larger archaeological database for southern California, which includes the advent and increased use of radiocarbon dating after the 1950s.

Using the concepts of cultural ecology and cultural tradition, Warren (1968) proposed a series of six prehistoric traditions. Three of these traditions, the San Dieguito Tradition, Encinitas Tradition, and Campbell Tradition, correlated with Wallace's Horizons I, II, and, III. The Chumash Tradition, Takic Tradition (formerly "Shoshonean"), and Yuman Tradition are represented within Wallace's Horizon IV. As noted further, these ecologically based traditions are applicable to specific regions within southern California.

Horizon I - Early Man (ca. 10,000 – 6,000 B.C.)

When Wallace developed the Horizon I (Early Man) in the 1950s, there was little evidence of human presence on the southern California coast prior to 6000 B.C. Archaeological work in the intervening years has identified numerous sites older than this date including coastal and Channel Islands sites (e.g., Erlandson 1991; Johnson et al. 2002; Moratto 1984). In addition, radiocarbon dates recently obtained by SWCA from a deeply buried archaeological site in southern Orange County, 5.5 km (3.4 miles) from the coast indicate an occupation as early as 9000 B.C. (SWCA unpublished).

Recent data from Horizon I sites indicate that the economy was a diverse mixture of hunting and gathering, with a major emphasis on aquatic resources in many coastal areas (e.g., Jones et al. 2002) and on Pleistocene lake shores in eastern San Diego County (see Moratto 1984:90-92). Although few Clovis-like or Folsom-like fluted points have been found in southern California (e.g., Erlandson et al. 1987), it is generally considered that the emphasis on hunting may have been greater during Horizon I than in later periods. Common elements in many San Dieguito Tradition sites, for example, include leaf-shaped bifacial projectile points and knives, stemmed or shouldered projectile points, scrapers, engraving tools, and crescents (Warren 1967:177). Subsistence patterns shifted around 6000 B.C. coincident with the gradual desiccation associated with the onset of the Altithermal, a warm and dry period that lasted for about 3000 years. After 6000 B.C., a greater emphasis was placed on plant foods and small animals.

Horizon II - Milling Stone (6000–3000 B.C.)

The Milling Stone Horizon of Wallace (1955, 1978) and Encinitas Tradition of Warren (1968) (6000-3000 B.C.) are characterized by an ecological adaptation to collecting, and by the dominance of the principal ground stone implements generally associated with the horizontal motion of grinding small seeds; namely, milling stones (metates, slabs) and handstones (manos, mullers), which are typically

shaped. Milling stones occur in large numbers for the first time, and are even more numerous near the end of this period. As testified by their toolkits and shell middens in coastal sites, people during this period practiced a mixed food procurement strategy. Subsistence patterns varied somewhat as groups became better adapted to their regional or local environments.

Wallace (1955, 1978) and Warren (1968) relied on several key coastal sites to characterize the Milling Stone Horizon and Encinitas Tradition, respectively. These include the Oak Grove Complex in the Santa Barbara region, Little Sycamore in southwestern Ventura County, Topanga Canyon in the Santa Monica Mountains, and at La Jolla in San Diego County. The Encinitas Tradition was proposed to extend southward into San Diego County where it apparently continued alongside the following Campbell Tradition, which occurred primarily in the Santa Barbara-Ventura County region beginning around 3000 B.C.

During the Milling Stone Horizon and Encinitas Tradition, stone chopping, scraping, and cutting tools are abundant, and generally made from locally available raw material. Projectile points, rather large and generally leaf-shaped, and bone tools, including awls, are generally rare. The large points are associated with the spear, and probably with an atlatl. Items made from shell, including beads, pendants, and abalone dishes, are generally rare. Evidence of weaving or basketry is present at a few sites. Cogged stones and discoidals are often purposefully buried, and are found mainly in sites along the coastal drainages from southern Ventura County southward, with a few specimens inland at Cajon Pass, and heavily in Orange County (Moratto 1984:149). Kowta (1969) attributes the presence of numerous scraper-planes in Milling Stone sites to the preparation of agave or yucca for food or fiber. The mortar and pestle, associated with the vertical motion of pounding foods, such as acorns, were introduced during the Milling Stone Horizon, but are not common.

Characteristic mortuary practices during the Milling Stone Horizon or Encinitas Tradition include extended and loosely flexed burials, some with red ochre and few grave goods, such as shell beads and milling stones, interred beneath cobble or milling stone cairns. "Killed" milling stones, exhibiting holes, may occur in the cairns. Reburials are common in the Los Angeles County area, with flexed burials oriented to the north common southward in Orange and San Diego Counties.

Horizon III - Intermediate (3000 B.C. – A.D. 500)

Following the Millingstone, Wallace's Intermediate Horizon and Warren's Campbell Tradition in Santa Barbara, Ventura, and parts of Los Angles Counties, date from approximately 3000 B.C.-A.D. 500 and are characterized by a shift toward a hunting and maritime subsistence strategy, along with a wider use of plant foods. The Campbell Tradition (Warren 1968) incorporates David B. Rogers' (1929) Hunting Culture and related expressions along the Santa Barbara coast. In the San Diego region, the Encinitas Tradition (Warren 1968) and the La Jolla Culture (Moriarty 1966; M. Rogers 1939, 1945) persist with little change during this time.

During the Intermediate Horizon and Campbell Tradition, there is a pronounced trend toward greater adaptation to regional or local resources. For example, the remains of fish, land mammals, and sea mammals are increasingly abundant and diverse in sites along the California coast in the referenced region. Related chipped stone tools suitable for hunting are more abundant and diversified, and shell fishhooks become part of the toolkit during this period. Larger knives, a variety of flake scrapers, and drill-like implements are common during this period. Projectile points include large side-notched, stemmed, and lanceolate or leaf-shaped forms. Bone tools, including awls, are more numerous than in the preceding period, and the use of asphaltum adhesive is now common.

Mortars and pestles become more common during this period, gradually replacing manos and metates as milling stone implements. In addition, hopper mortars and stone bowls, including steatite vessels, appear to enter the toolkit at this time. This shift appears to be a correlate of a diversification in subsistence resources. Many archaeologists believe this change in milling stones signals a shift away from the processing and consuming of hard seed resources to the increasing importance of the acorn (e.g., Glassow et al. 1988; True 1993). It has been argued that mortars and pestles may have been used initially to process roots (e.g., tubers, bulbs, and corms associated with marshland plants), with acorn processing beginning at a later point in prehistory (Glassow 1997:86) and continuing to European contact.

Characteristic mortuary practices during the Intermediate Horizon and Campbell Tradition include fully flexed burials, placed face down or face up, and oriented toward the north or west (Warren 1968:2-3). Red ochre is common, and abalone shell dishes infrequent. Interments sometimes occurred beneath cairns or broken artifacts. Shell, bone and stone ornaments, including charmstones, are more common than in the preceding Encinitas Tradition. Some later sites include *Olivella* shell and steatite beads, mortars with flat bases and flaring sides, and a few small points.

Horizon IV - Late Prehistoric (A.D. 500–Historic Contact)

In the Late Prehistoric Horizon (Wallace 1955, 1978), which lasted from the end of the Intermediate (~A.D. 500) until European contact, there was an increase in the use of plant food resources in addition to an increase in land and sea mammal hunting. There was a concomitant increase in the diversity and complexity of material culture during the Late Prehistoric, demonstrated by more classes of artifacts. The recovery of a greater number of small, finely chipped projectile points, usually stemless with convex or concave bases, suggests an increased utilization of the bow and arrow rather than the atlatl and dart for hunting. Other items include steatite containers, circular shell fishhooks, perforated stones, arrow straighteners, and a variety of bone tools and personal ornaments. There is also an increased use of asphalt adhesive.

During the Late Prehistoric, sites contain beautiful and complex objects of utility, art, and decoration. Ornaments include drilled whole *Chione* and drilled abalone. Steatite effigies become more common, with *Pecten* shell rattles common in middens. Mortuary customs are elaborate, include cremation and interment, with abundant grave goods. Pottery and smoking pipes occur in some locations during this period.

In Warren's (1968) cultural ecological scheme, the period between A.D. 500 and European contact is divided into three regional patterns. The Chumash Tradition is present mainly in the region of Santa Barbara and Ventura Counties; the Takic or Numic Tradition in the Los Angeles and Orange Counties region; and the Yuman Tradition in the San Diego region.

The seemingly abrupt changes in material culture, burial practices, and subsistence focus at the beginning of the Late Prehistoric period are considered the result of a migration to the coast of peoples from inland desert regions to the east. In addition to the small triangular and triangular side-notched points similar to those found in the desert regions in the Great Basin and Lower Colorado River, Colorado River pottery and the introduction of cremation in the archaeological record are diagnostic of the Yuman Tradition in the San Diego region. This combination certainly suggests a strong influence from the Colorado Desert region.

In Los Angeles and Orange Counties, similar changes (introduction of cremation, pottery, and small triangular arrow points) are considered the result of a Takic migration to the coast from inland desert regions. This Takic or Numic Tradition was formerly referred to as the "Shoshonean wedge" or

"Shoshonean intrusion" (Warren 1968). This terminology, used originally to describe a Uto-Aztecan language group, is generally no longer employed in order to avoid confusion with ethnohistoric and modern Shoshonean groups who spoke Numic languages (Heizer 1978:5; Shipley 1978:88, 90). Modern Gabrielino/Tongva, Juaneño, and Luiseño in this region are considered the descendants of the prehistoric Uto-Aztecan, Takic-speaking populations that settled along the California coast during this period, or perhaps somewhat earlier.

30.2.2.2 Ethnographic Overview

The Slauson Ring segment is in an area historically occupied by the Gabrielino (Bean and Smith 1978; Kroeber 1925). The name "Gabrielino" denotes those people who were administered by the Spanish from Mission San Gabriel, which included people from the Gabrielino proper, as well as other social groups. Therefore, in the post-contact period, the name does not necessarily identify a specific ethnic or tribal group. The names Native Americans in southern California used to identify themselves have, for the most part, been lost. Many contemporary Gabrielino identify themselves as descendents of the indigenous people living across the plains of the Los Angeles Basin and use the native term *Tongva* (King 1994a:12).

Tongva lands encompassed the greater Los Angeles Basin, including the inland valleys of San Fernando, San Gabriel, and Pomona, the Pacific Ocean coastal region from Topanga Canyon in the north to Newport Bay in the south, and three Channel Islands, San Clemente, San Nicolas, and Santa Catalina (Bean and Smith 1978:538; Kroeber 1925:636; McCawley 1996). The Slauson Ring segment in the western Angeles Basin extends from the center of the basin west along a gentle slope almost to the Pacific Ocean coastline. The Palo Verde Peninsula rises to the south, and the Santa Monica Mountains to the north, creating an opening to the ocean for small drainages such as Ballona and Santa Monica Creeks. Flood control channels direct most of these waters today, but in the past they created numerous freshwater marshes across the flat plain.

Inland, Tongva territory was bounded on the north by the Chumash at Topanga Creek, and on the south by the Juaneño at Aliso Creek. To the east past the San Gabriel Mountains were the Vanyume Serrano, the mountain Serrano, and the Cahuilla. The southern boundary of Gabrielino territory at Aliso Creek was based on anthropological fieldwork conducted by Kroeber in 1907 (Kroeber 1925), and the Juaneño currently dispute this defined northern boundary of their lands with the Gabrielino.

The Gabrielino language, as well as that of the Juaneño and Luiseño to the south, and the Tataviam (Alliklik) and Serrano to the east, was derived from the Takic family, part of the Uto-Aztecan linguistic stock, which can be traced to the Great Basin area (Mithun 2001:539, 543–544). This language group represents an origin quite different from that of the Chumash to the north and the Ipai and Tipai further south. The language of the Ipai and Tipai is derived from the Hokan stock of the Yuman language family originating in the American Southwest. The Chumash language is unlike both the Hokan and Uto-Aztecan stocks and may represent a separate lineage (Mithun 2001:390). Linguistic analysis suggests that Takic-speaking immigrants from the Great Basin area began moving into southern California around 500 B.C. (Kroeber 1925:579). This migration may have displaced both Chumashan and Yuman speaking peoples, but the timing and extent of the migrations and their impact on indigenous peoples is not well understood.

The Gabrielino language consisted of two main dialects, Eastern and Western; the Western included much of the coast and the Channel Island population (King 2004). Lands of the Western group encompassed much of the western Los Angeles Basin and San Fernando Valley, northward along the coast to the Palos Verdes Peninsula (McCawley 1996:47).

Early historical records concerning the Tongva are available through Spanish voyages of exploration in the sixteenth century, and accounts by Spanish missionaries and colonists in the middle eighteenth century. The Spanish military and mission records are considerable. Other reports by agents of the United States Office of Indian Affairs date from the 1850s. Ethnographers were late on the scene and collected little information after 1900, the exception being John Harrington in the 1910s. Published ethnographies include Kroeber (1925), Johnston (1962), Bean and Smith (1978), and McCawley (1996).

Kroeber (1925:621) considered the Tongva "…to have been the most advanced group south of Tehachapi, except perhaps the Chumash. They certainly were the wealthiest and most thoughtful of all the Shoshoneans of the State, and dominated these civilizationally wherever contacts occurred." Tongva society was organized along patrilineal non-localized clans, a characteristic Takic pattern. Clans consisted of several lineages, each with their own ceremonial leader. The leader of the primary lineage was the chief of the entire clan. One or two clans generally made up the population of a village. Even though the Tongva did not have a distinctly stratified society, there were two general classes of individuals: elites and commoners. The elites consisted of primary lineage members, other lineage leaders (who maintained a separate ceremonial language), the wealthy, and the elite families of the various villages who commonly married among themselves. The commoner class contained those from "fairly well-to-do and long-established lineages" (Bean and Smith 1978:543). A third, lower class might be recognized as consisting of slaves taken in war and individuals, unrelated to the inhabitants, who drifted into the village. The chief, or *tómyaar*, always came from the primary lineage of the clan/village.

The Tongva established large, permanent villages in the fertile lowlands along rivers and streams, and in sheltered areas along the coast, stretching from the foothills of the San Gabriel Mountains to the Pacific Ocean. A total tribal population has been estimated of at least 5,000 (Bean and Smith 1978:540), but recent ethnohistoric work suggests a number approaching 10,000 seems more likely (O'Neil 2002). Several Tongva villages appear to have served as trade centers, due in large part to their centralized geographic position in relation to the Southern Channel Islands and to other tribes. These villages maintained particularly large populations and hosted annual trade fairs that would bring their population to 1,000 or more for the duration of the event. *Puvunga* in Long Beach and *Swuangna* at San Pedro are examples of Tongva village trade centers.

Tongva villages found along the Slauson Ring segment consist of *Saa'anga* ("tar, pitch") along Ballona Creek, and *'Ongoovanga* ("salt") at Redondo Beach (McCawley 1996:61-63). There is archaeological evidence for further Late Prehistoric villages in the area, but their place names are unknown.

Houses constructed by the Tongva were large, circular, domed structures made of willow poles thatched with tule that could hold up to 50 people (Bean and Smith 1978). Other structures served as sweathouses, menstrual huts, ceremonial enclosures, and probably communal granaries. Cleared fields for races and games, such as lacrosse and pole throwing, were created adjacent to Tongva villages (McCawley 1996:27). Archaeological sites comprised of villages with various sized structures have been identified.

The fundamental economy of the Tongva was one of subsistence gathering and hunting. The surrounding environment was rich and varied, and the tribe exploited mountains, foothills, valleys, deserts, riparian, estuarine, and open and rocky coastal eco-niches. Like the majority of native Californians, acorns were the staple food (an established industry by the time of the early Intermediate Period). Acorns were supplemented by the roots, leaves, seeds, and fruits of a wide variety of flora (e.g., islay, *Opuntia*, yucca, sages, and agave). Fresh-water and salt-water fish, shellfish, birds, reptiles, and insects, as well as large and small mammals, were also consumed. The Tongva are among several southern California native groups who were noted for periodically setting fire to the grassy plains and brush-covered hillsides to promote the growth of harvestable grass seeds, discourage the growth of chaparral, and create pasture for deer and antelope.

A wide variety of tools and implements were employed by the Gabrielinos to gather and collect food resources. These included bows and arrows, traps, nets, blinds, throwing sticks and slings, spears, harpoons, and hooks. Many plant foods were collected with woven seed beaters, several forms of burden baskets, carrying nets, and sharpened digging sticks, sometimes with stone weights fitted onto them. Groups residing near the ocean used ocean-going plank canoes (known as a *ti'at*) and tule balsa canoes for fishing (McCawley 1996:7). The ocean-going canoes were capable of holding six to fourteen people and were also used for travel and trade between the mainland and the Channel Islands. The tule balsa canoes were used for near-shore fishing.

Foods were processed with a variety of tools, including portable and bedrock mortars, pestles, basket hopper mortars, manos and metates, hammerstones and anvils, woven strainers and winnowers, leaching baskets and bowls, woven parching trays, knives, bone saws, and wooden drying racks. Food was consumed from a number of woven and carved wood vessels. The ground meal and unprocessed hard seeds were stored in large finely woven baskets, and the unprocessed acorns were stored in large granaries woven of willow branches and raised off the ground on platforms. Santa Catalina Island steatite was used to make comals, ollas, and cooking vessels that would not crack like regular stone under repeated firings (Kroeber 1925:629).

As part of the extensive exchange network, large amounts of steatite quarried on Santa Catalina Island were traded with numerous other groups on the coast and inland. In addition to cooking vessels, steatite was used to make effigies, ornaments, and arrow straighteners. Tongva obtained obsidian, acorns, and seeds, among other items, from inland Tataviam and Vanyume (Desert) Serrano in exchange for coastal resources, such as steatite, shell beads, and dried fish. The Tongva also traded with other coastal groups, exchanging large, baked clay pipes obtained from the Kumeyaay or Luiseño to the south and with the Chumash on their northern border.

At the time of Spanish contact, the basis of Tongva religious life was the Chinigchinich Cult, centered on the last of a series of heroic mythological figures. Chinigchinich gave instruction on laws and institutions, and he also taught the people how to dance, the primary religious act for this society. He later withdrew into heaven where he rewarded the faithful and punished those who disobeyed his laws (Kroeber 1925:637-638). The Chinigchinich religion seems to have been relatively new when the Spanish arrived; the religion was in the process of spreading south into the Southern Takic groups even as Christian missionization was taking place and may have been influenced by Christianity.

Deceased Tongva were either buried or cremated (Harrington 1942; McCawley 1996). McCawley (1996:157) states that "[i]nternment may have been the more standard practice on the Channel Islands and the mainland coast directly opposite, perhaps reflecting either the influence of Chumash mortuary practices or else a scarcity of fuel suitable for funeral pyres." During the Contact Period, cremation was the standard practice for the mainland Tongva. Cremation ashes have been found in archaeological contexts buried within stone bowls and in shell dishes (Ashby and Winterbourne 1966:27). Archaeological and ethnographic data describe a wide variety of grave offerings, including seeds, stone grinding tools, otter skins, baskets, wood tools, shell beads, bone and shell ornaments, and projectile points and knives. Offerings varied with the sex and status of the deceased. Graves were sometimes marked, and in the San Pedro area headstones or boards were etched with figures (Heizer 1968:fn. 66).

European contact with the Tongva occurred as early as 1542 with the Spanish expedition led by Juan Rodriguez Cabrillo, followed by Sebastián Vizcaíno in 1602, both of who visited Santa Catalina Island. Colonization of Tongva lands did not begin in earnest until after the inland expedition led by Gaspar de Portolá in 1769; by 1771, four missions had been constructed in the region, including Mission San Gabriel, located in Los Angeles County and founded in September 1771 (Engelhardt 1927a). The

Franciscan missions, charged with converting the Native Americans to Christianity and with acculturating them to European society and economy, began relocating them to mission grounds.

Known as *reducción*, relocation and baptism initially involved the Eastern Gabrielino of the plains as far south as the Santa Ana River and west to the Los Angeles River. The missionaries later proselytized the Western Gabrielino living west of the Los Angeles River, on the southern Channel Islands, and the interior groups to the east and south. Between 1780 and 1794, the majority of people from the southeast region were baptized and removed to the mission (King 2004:Figs. 7 and 8). Mission San Fernando del Rey was founded in 1797, and its priests pushed into the lands of other tribes located to the north and west and also converted Tongva people along the Los Angeles River and its tributaries. While mission life did give indigenous Californians some skills needed to survive in a rapidly changing world, much traditional cultural knowledge was lost during this era, as populations were moved and decimated by introduced diseases for which the people had no immunity.

With the founding of the Pueblo of Los Angeles in December 1781, civilian settlers came into the region, soon followed by retiring military men and their families from the Spanish garrisons (Engelhardt 1927b:48-51). The soldiers were given vast tracts of land by Spanish authorities within traditional Tongva subsistence areas. The Native Americans (both neophytes from the disintegrating missions and *cimarrones*, or gentile Indians) were among those who worked on the large ranchos. After governmental control of California shifted to Mexico, the missions were formally secularized in 1834, and the extensive mission lands were divided into private land grants, claimed by the growing ranchero class. With the migration of farmers to southern California after the Mexican-American War of 1846, the local native population, who continued to work as laborers, was soon a minority that was often lumped together with the Mexican-American community. Many allied themselves with remaining Native American communities in the Tehachapi and San Bernardino Mountains.

In the early twentieth century, Tongva who still lived in San Gabriel neighborhoods near the old mission joined the Mission Indian Federation and sought redress from the federal government over lost lands. A generation later, partly as an outgrowth of the civil rights movement, Tongva started to form political organizations of their own to affect handling of ancestral remains discovered at construction sites and to seek federal acknowledgement of their tribe. There are currently five such organizations with total membership approaching nearly a thousand people. They are still struggling to receive federal recognition.

30.2.2.3 Historic Overview

Post-contact history for the state of California generally is divided into three specific periods: the Spanish Period (1769–1822), the Mexican Period (1822–1848), and the American Period (1848–present). As discussed in more detail in Chapter 2 of this report, although there were brief visits by Spanish, Russian, and British explorers from 1529–1769, the beginning of Spanish settlement in California occurred in 1769 with a settlement at San Diego and the first (Mission San Diego de Alcala) of 21 missions established from 1769–1823. After the 1822 revolution by Mexico against the Spanish crown, the Mexican Period is marked by an extensive era of land grants, most of which were in the interior of the state, and by exploration by American fur trappers west of the Sierra Nevada Mountains.

With the signing of the Treaty of Guadalupe Hidalgo in 1848, ending the Mexican–American War, California became a territory of the United States. The discovery of gold in 1848 at Sutter's Mill near Sacramento and the resulting Gold Rush era influenced the history of the state and the nation. The rush of tens of thousands of people to the gold fields also had a devastating impact on the lives of indigenous Californians, with the introduction and concentration of diseases, the loss of land and territory (including

traditional hunting and gathering locales), violence, malnutrition, and starvation. Thousands of settlers and immigrants continued to pour into the state, particularly after the completion of the transcontinental railroad in 1869.

With continued growth, California continues to be a national leader in agriculture and poultry production, ranching (cattle and sheep), aerospace and communications industries, as well as the film and entertainment business. The wealth of California's natural resources (e.g., lumber, petroleum deposits, minerals, fish) also continues to contribute to its growth and development.

Los Angeles County

The first European account of the area to become Los Angeles County was by Portuguese navigator João Rodrigues Cabrilho (Juan Rodriguez Cabrillo in Spanish), who led a Spanish expedition along the California coast in 1542–1543 (Chartkoff and Chartkoff 1984:252-253). Cabrillo noted the numerous campfires of the Gabrielino and thus named the area the "Bay of Smokes." Spain's presence in the region was only intermittent for approximately 200 years. Then, because of the possibility of territorial encroachment by the British and Russians from the north, Spanish Governor of Baja California Gaspar de Portolá was instructed to lead a land–sea expedition to colonize Alta (upper) California in the 1760s (Chartkoff and Chartkoff 1984:254-257).

On September 8, 1771, Fathers Pedro Cambón and Angel Somera established the Mission San Gabriel de Arcángel near the present-day City of Montebello (Johnson et al. 1972). In 1775, the mission was moved to its current location in San Gabriel due to better agricultural lands. This mission marked the first sustained European occupation of the Los Angeles County area. Mission San Gabriel, despite a slow start partially due to misconduct by Spanish soldiers, eventually became so prosperous it was known as "The Queen of the Missions" (Johnson et al. 1972).

The pueblo that eventually became the City of Los Angeles was established in 1781. During this period, Spain also deeded ranchos to prominent citizens and soldiers (though very few in comparison to the Mexican Period). Rancho San Pedro, one such rancho, was deeded to soldier Juan Jose Dominguez in 1784 and comprised 75,000 acres encompassing the modern South Bay region from the Los Angeles River on the east to the Pacific Ocean on the west (Dominguez Rancho Adobe Museum 2006).

The area that became Los Angeles County saw an increase in European settlement during the Mexican Period largely due to the many land grants (ranchos) to Mexican citizens by various governors. However, the Mexican Period for Los Angeles ended in early January 1847. Mexican forces fought combined U.S. Army and Navy forces in the Battle of the San Gabriel River on January 8 and in the Battle of La Mesa on January 9 (Nevin 1978). On January 10, leaders of the pueblo of Los Angeles surrendered peacefully after Mexican General Jose Maria Flores withdrew his forces. Shortly thereafter, newly appointed Mexican Military Commander of California Andrés Pico surrendered all of Alta California to U.S. Army Lieutenant Colonel John C. Fremont in the Treaty of Cahuenga (Nevin 1978).

Settlement of the Los Angeles region continued in the early American Period. The county was established on February 18, 1850, one of 27 counties established in the months prior to California becoming a state. Many ranchos in the county were sold or otherwise acquired by Americans, and most were subdivided into agricultural parcels or towns. Nonetheless, ranching retained its importance and, by the late 1860s, Los Angeles was one of the top dairy production centers in the country (Rolle 2003). By 1876, the county had a population of 30,000 (Dumke 1944:7).

In 1854, the U.S. Congress agreed to let San Pedro become an official port of entry. By the 1880s, the railroads had established networks throughout the county, resulting in fast and affordable shipment of

goods, as well as a means to transport new residents to the booming region (Dumke 1944). New residents included many health-seekers drawn to the area by the fabled climate in the 1870s–1880s (Baur 1959).

Availability of fresh water has always been a concern for county residents. Many authors (e.g., Kahrl 1982; Mulholland 2000; Nadeau 1997; Reisner 1986) identified the control and management of water as the single most important factor in the development of southern California. As William Mulholland did for the City of Los Angeles in 1913, the Metropolitan Water District of Southern California (MWD), formed in the 1920s, secured water rights for many areas including portions of Los Angeles County not incorporated within the City of Los Angeles (Metropolitan Water District of Southern California n.d.; Nadeau 1997). The formation of MWD began in 1924, when then Mayor of Pasadena Hiram W. Wadsworth initiated the formation of the Colorado River Aqueduct Association (Metropolitan Water District of Southern California n.d.). Wadsworth, as president of this group representing 13 cities, pushed for the construction of an aqueduct similar to the Los Angeles–Owens Valley Aqueduct that would provide water from the Colorado River to thirsty southern California. This resulted in the incorporation of MWD in 1928 and the construction of the aqueduct, an engineering marvel that finally began delivering Colorado River water to MWD's member cities in 1941 and ultimately facilitated the incredible population growth that occurred in the region (Metropolitan Water District of Southern California n.d.).

In the early to mid-1900s, population growth accelerated due to industry associated with both world wars, as well as emigration from the Midwest "dust bowl" states during the Great Depression. The county became one of the most densely occupied areas in the U.S. The county's mild climate and successful economy continued to draw new residents in the late 1900s, with much of the county transformed from ranches and farms into residential subdivisions surrounding commercial and industrial centers. Hollywood's development into the entertainment capital of the world, and southern California's booming aerospace industry, were key factors in the county's growth.

City of Los Angeles

Spanish Governor of California Felipe de Neve recognized the need to establish a pueblo north of the Mission San Gabriel to help supply Spain's military presidios in California as well as to help maintain Spain's control over the region (Ríos-Bustamante 1992). On 4 September 1781, 22 settlers from Mexico accompanied by the governor, soldiers, mission priests, and several Native Americans arrived at the site alongside the Los Angeles River that was officially declared *El Pueblo de la Reina de Los Angeles* or "The Town of the Queen of the Angels" (Ríos-Bustamante 1992).

Spanish Period residents of the Pueblo of Los Angeles, troubled by the inconsistent nature of the Los Angeles River including periods of drought and flooding, established a water management system named the *Zanja Madre* (Mother Ditch). This ditch system for the delivery of water was maintained and improved in both the Mexican and Early American Periods and remained in use until the early 1900s. The residents used this water for ranching and agriculture to feed themselves, as well as to help provision the presidios.

The Pueblo of Los Angeles grew in population during the Mexican Period (1822-1847) but retained the emphasis on ranching. Mexican governors granted numerous ranchos during this period, and the few granted during the Spanish Period continued to operate or were broken up into smaller ranchos. On May 23, 1835, Los Angeles was officially declared a city by Mexican national decree (Bancroft 1885). During the Mexican Period, Anglo-Europeans such as Hugo Reid and Don Juan Forster were assimilated into Los Angeles's citizenry and culture (Dakin 1939).

30.3 PREVIOUS RESEARCH

30.3.1 Literature Search

30.3.1.1 Methods

A cultural resources site and survey record search was conducted at the South Central Coastal Information Center (SCCIC) of the California Historical Resources Information System (CHRIS) on May 25, 2000. Because the cable conduit already has been installed and no new construction will take place, only archaeological sites and surveys were requested; built environment resources (i.e., historic structures) were not requested. Site and survey information were requested for the linear project corridor and a 1/2-mile radius. Because some survey reports were very large, only bibliographic information on them was obtained.

In addition to official maps and records, the SCCIC consulted the following information sources as part of their record search:

- National Register of Historic Places – Listed Properties
- California Register of Historical Resources
- California Inventory of Historical Resources
- California State Historical Landmarks
- California Points of Historical Interest
- Directory of Properties in the Historical Resources Inventory (Office of Historic Preservation)
- Caltrans State and Local Bridge Surveys

30.3.1.2 Findings

The literature search indicated that the project area has not been subject to intensive archaeological investigation, as only 5 percent of the area has been previously surveyed. Two cultural resources have been previously recorded within the 1/2-mile radius of the segment corridor (Table 30-4). One of these resources is an isolated prehistoric find; the second is a historic archaeological site. Neither of these resources is known to contain Native American burials.

The series of 1:24,000 maps at the end of this chapter (Figure 28.1 through Figure 28.11) show the previously recorded cultural resources along the segment, as provided by the CHRIS records search. As noted in the figure legend, the labeled resources are identified as one of four types: linear, prehistoric, historic, or protohistoric and/or multi-component.

Table 30-4. Segment 28 Corridor – Previously Recorded Cultural Resources

Site #	Site Type	Site Condition	USGS Quad	Recorded
19-002748	Historic refuse deposit of glass, brick, concrete	Highly disturbed – mechanical excavation	Inglewood	Schmidt 1998
19-100058	Isolate Prehistoric metate	Unknown	South Gate	Soriano 1992

30.3.2 Native American Consultation

30.3.2.1 Methods

The Native American Heritage Commission (NAHC) was contacted on May 1, 2000, to request a Sacred Lands file search and a current Native American contact list. The Commission's response, dated May 5, 2000, provided the names and addresses of 13 local Native American groups and individuals. Letters subsequently were sent on May 17, 2000, to the listed groups and individuals to determine if they have knowledge of culturally sensitive locations within the project area. If there was no response to the letter, a telephone call was made to each individual or representative on June 6, 2000. A table listing contact dates and responses is attached as Appendix B.

30.3.2.2 Findings

The reply from the NAHC states the search failed to indicate the presence of Native American cultural resources in the immediate project area. One telephoned response was received to the letters addressed to the contact list; no responses were received to the telephone calls. Sam Dunlap expressed no specific concerns and that Native American monitors were available, if needed.

30.4 FIELDWORK

Fieldwork for the Slauson RIng segment involved (1) pedestrian survey and limited visits to known sites and (2) monitoring of maintenance activities. No cultural resources were collected during the Qwest Network Construction Project.

The fieldwork was conducted under the supervision of a CRS, who supervised lead archaeological monitors and a staff of archaeological monitors. Archaeological monitors were responsible for being on site during all work in sensitive areas, conducting spot checks if the area was designated for intermittent monitoring, and completing Daily Monitoring Logs. The CRS or archaeological monitor was responsible for flagging or otherwise delineating ESAs, including a 15-foot buffer zone around cultural resources, within four days prior to maintenance activities. The archaeological monitor was also responsible for completing a Site Condition Record immediately after removal of such flagging or other protective markers.

30.4.1 Survey

A pedestrian survey was conducted to identify any historic/prehistoric sites or features that may have been encountered during the installation of the fiber optic lines. The entire segment was subjected to intensive pedestrian survey for cultural resources. The survey area consisted of a swath of land straddling the fiber optic line and extending 15 meters to either side. This area was considered the area of potential effect (APE) for Qwest backbone construction.

30.4.1.1 Methods

The survey crew consisted of 14 archaeologists, and survey parties of one or two individuals. The survey parties were deployed to conduct surveys along the alignment. For safety, two-member survey parties were implemented in remote and inhospitable areas. Table 30-5 provides a list of key site investigation staff, along with their professional credentials.

Qualified archaeologists walked a single pedestrian transect on either side of the fiber optic backbone alignment. Exposures of native soil were closely inspected for cultural material, as were animal burrows and other disturbances affording limited subsurface visibility. No attempt was made to locate known sites within the APE. Only two know sites sit within the ½ mile radius. The historic site P-002748 is 676 meters from the segment corridor while, the prehistoric site, P-10058, is an isolate.

In addition to reporting on the condition of previously recorded sites, survey crew members were instructed to record any cultural resources not previously recorded and any impacts the resource may have suffered as a result of the Qwest backbone construction. The minimally acceptable level of documentation needed for a resource's inclusion in the Office of Historic Preservation's (OHP's) filing system can be met with the preparation of a California Department of Parks and Recreation (DPR) 523 series Primary Record and a Location Map. While the minimum level of documentation is designed to provide an initial record of all types of cultural resources, survey crews were instructed to fully document any previously unrecorded resources. Full documentation (although different for various types of resources) generally includes the preparation of the Primary Record and Location Map, but also an Archaeological Site Record, Artifact Record, Photograph Record, as well as a Sketch Map.

Table 30-5. Key Site Investigation Staff

Key Staff	Highest Degree *	Years Experience
Cindy Arrington	M.S., RPA	10
Paul Shen-Brown	M.A., RPA	8
Lori Harrington	M.A., RPA	15
Mark Sullivan	M.A., RPA	26
George Zeimens	M.A., RPA	30
Bradbury Brown	B.A.	18
William Brown	B.A.	10
Todd Folmer	B.A.	11
Keith Hamm	B.A.	4
Susan Kintscher	B.A.	2
Harry Moyer	B.A.	5
Mark Lowe	B.A.	12
Joise Salas	B.A	3
Dean Tye	B.A.	5

* RPA = Member of the Register of Professional Archaeologists

30.4.1.2 Findings

The entire segment was surveyed by archaeologists Paul Shen-Brown and Mark Sullivan in the spring of 2001. The pedestrian survey did not locate any previously unrecorded or newly identified cultural resource sites, artifacts, or objects.

30.4.2 Monitoring

30.4.2.1 Methods

In accordance with Protocol 5, a Mitigation and Monitoring Plan (MMP) was prepared in June 2000. The MMP noted that in this project corridor, Qwest would be performing maintenance on an existing line only. No new trenching was foreseen at this location. The proposed maintenance activity consisted of the re-excavation of pre-existing assist holes to perform maintenance or upgrades on the fiber-optic line. These excavations might take place at four points per linear mile. The MMP concluded that it was possible that some previously undisturbed soil might be disturbed during re-excavation.

Within a 1/2-mile of the proposed project corridor, two archaeological resources have been previously recorded. Neither of these resources is known to contain Native American burials. Although 95 percent of the route remains unsurveyed outside of the railroad ROW, the presence of human remains along this segment was not considered likely. Since some previously undisturbed soil may be disturbed during re-excavation, it is possible that previously unknown cultural resources might be discovered in the course of maintenance activities, but this was considered highly unlikely

In view of the above information, the MMP made the following recommendations for monitoring within this study area:

- No archaeological monitor would be present when any maintenance is performed along this project corridor.
- No Native American observer would be present when any maintenance is performed along this project corridor.

30.4.2.2 Findings

No maintenance was required for the Slauson Ring segment during the monitoring period. Because no maintenance activities occurred, archaeological monitoring was not necessary.

30.5 DISCUSSION

Prior to the current investigation, only 5 percent of the Slauson Ring segment corridor had been investigated for cultural resources, with two cultural resources previously recorded within a 1/2-mile radius. Neither of these known archaeological resources contained Native American burials. No cultural resources had been previously recorded within the project corridor, and no previously unknown cultural resources were identified during the fieldwork reported here along the railroad ROW. The presence of human remains was not considered likely along this segment, and no evidence of human remains was discovered during this project.

Under the oversight of a CRS, the specific Cultural Resources Protocols for this project were accomplished. Preparation of a MMP in compliance with Protocol 5 assured that known cultural resources would be avoided as feasible and impacts reduced by ensuring that any necessary archaeological mitigation was carried out prior to commencement of the maintenance activity. In compliance with Protocol 7, the literature search and subsequent fieldwork assured that identified cultural resources within the segment corridor were protected. Under Protocol 8, an archaeological monitor and Native American observer were present where appropriate. During the project, it was not necessary to implement Protocol 9, which describes the methods to be employed to address unanticipated discoveries

and assure that cultural resources are protected by work stoppage and evaluation of the resource by the CRS or an archaeological monitor, since there were no unanticipated discoveries. Although it was not necessary to implement Protocol 10, that protocol describes the actions to be taken in the event of the discovery of human remains or suspected human remains.

30.6 RECOMMENDATIONS

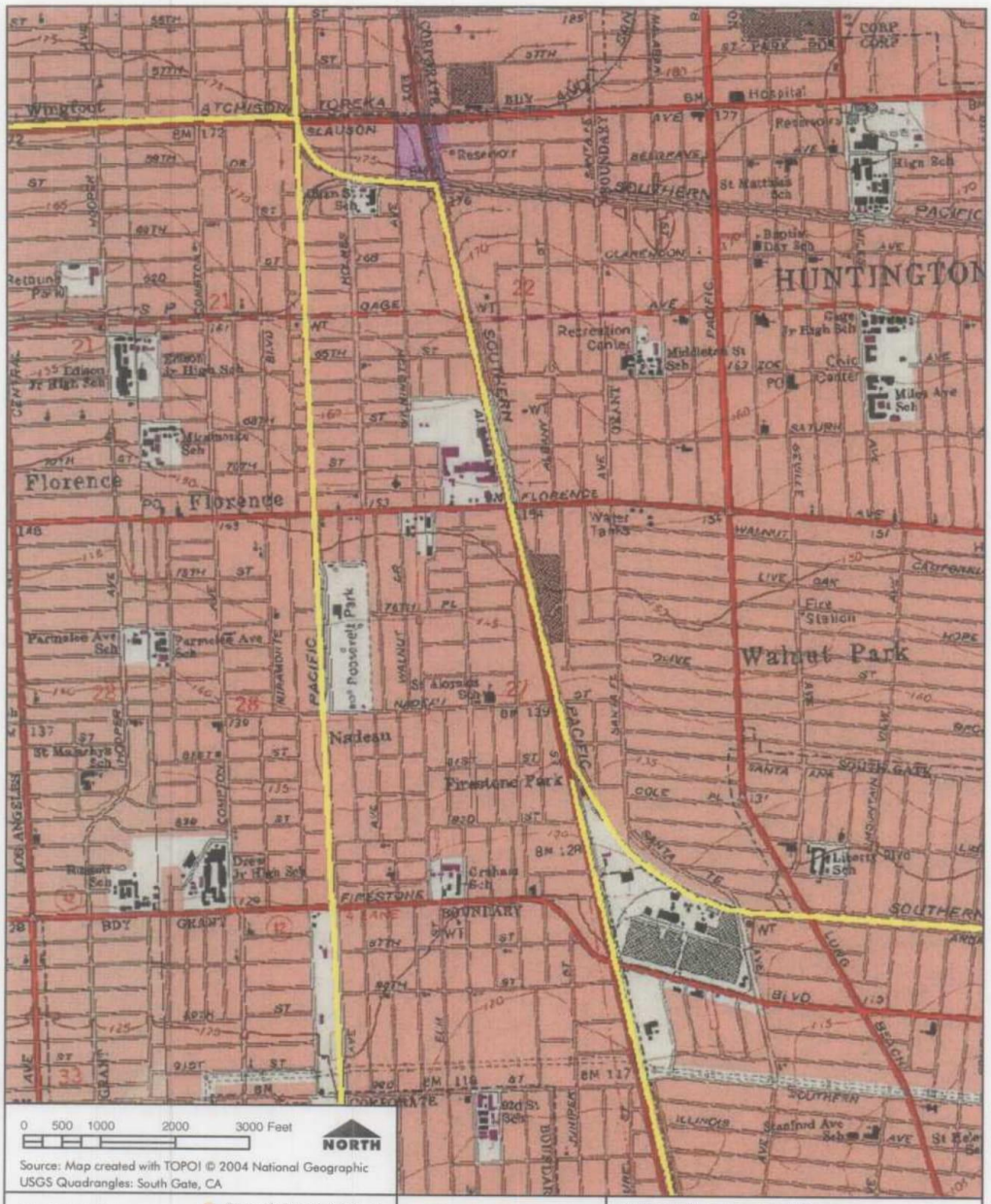
Given that the current field investigation was conducted along a railroad corridor, efforts to locate cultural resources within the scope of this project have been sufficient per current U.S. Secretary of the Interior's professional standards and guidelines.

There remains, however, the potential for the existence of buried archaeological materials within this heavily disturbed project area. Prehistoric materials might include flaked stone tools, toolmaking debris, stone milling tools, fire-affected rock, animal bone shaped for use as tools, baked clay items, pottery, marine shell, or soil darkened by cultural activities (midden). Historic materials might include building remains, metal, glass, or ceramic artifacts or debris.

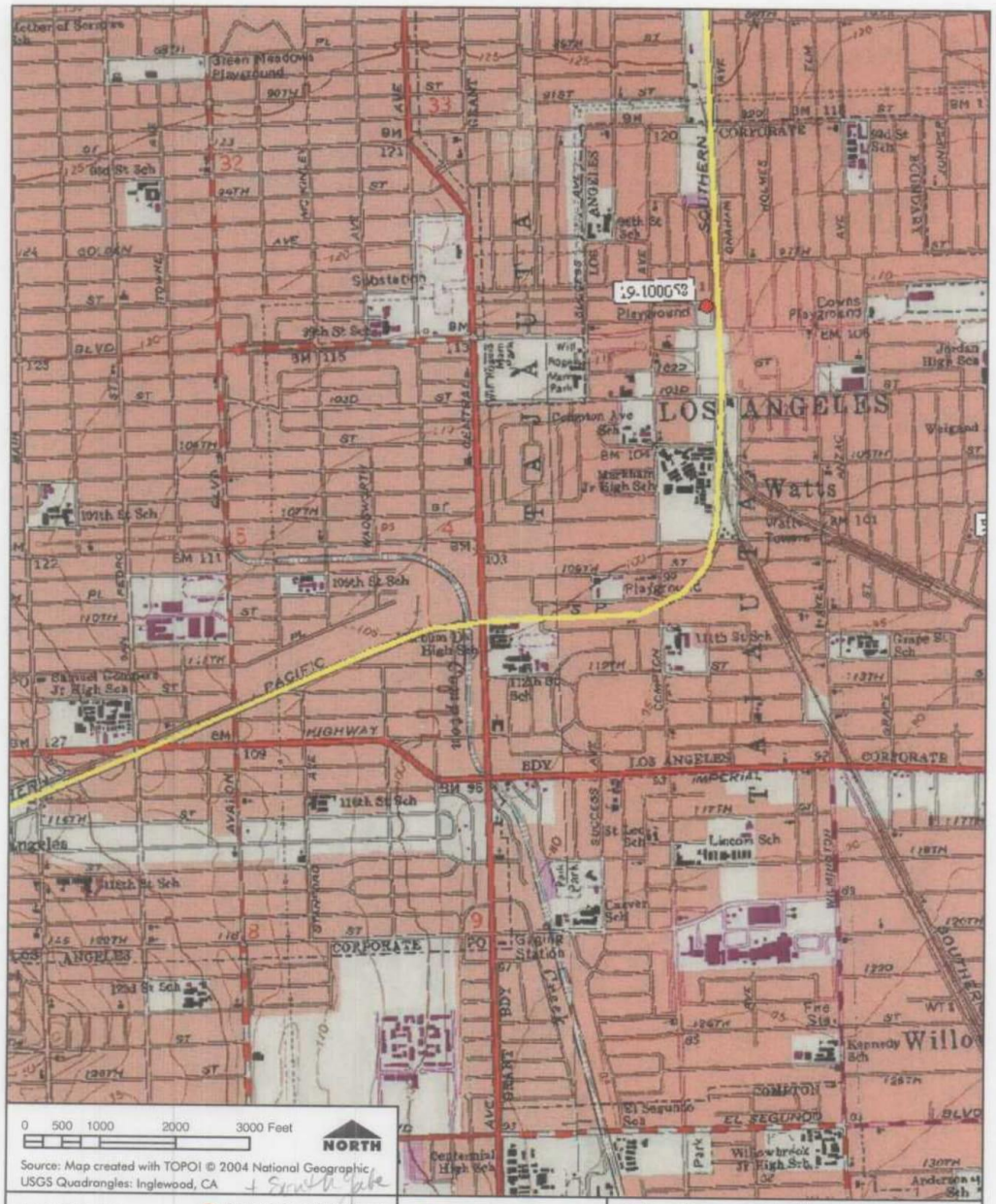
Should cultural resources be encountered by Qwest construction and/or management crews during future disturbance for maintenance of fiber-optic cable and related infrastructure, or should new construction occur within the state of California, work in the area must be halted and a qualified archaeologist should be notified immediately to evaluate the resource(s) encountered. Qwest would also adhere to the specific Cultural Resources Protocols, numbered 1 through 11, which were prepared to ensure Qwest's compliance under CPUC regulatory authority (see Appendix A).

- Protocol Number 1: Records Search and Data Adequacy Analysis
- Protocol Number 2: Native American Consultation
- Protocol Number 3: Archaeological Inventory and Site Recording
- Protocol Number 4: Site Boundary, Integrity or Significance Testing
- Protocol Number 5: Mitigation Monitoring Plan
- Protocol Number 6: Pre-Construction Data Recovery
- Protocol Number 7: Protection of Environmentally Sensitive Areas
- Protocol Number 8: Archaeological Monitoring and Native American Observation
- Protocol Number 9: Addressing Unanticipated Discoveries during Project Activity
- Protocol Number 10: Discovery of Human Bone
- Protocol Number 11: Final Report of Monitoring and Findings

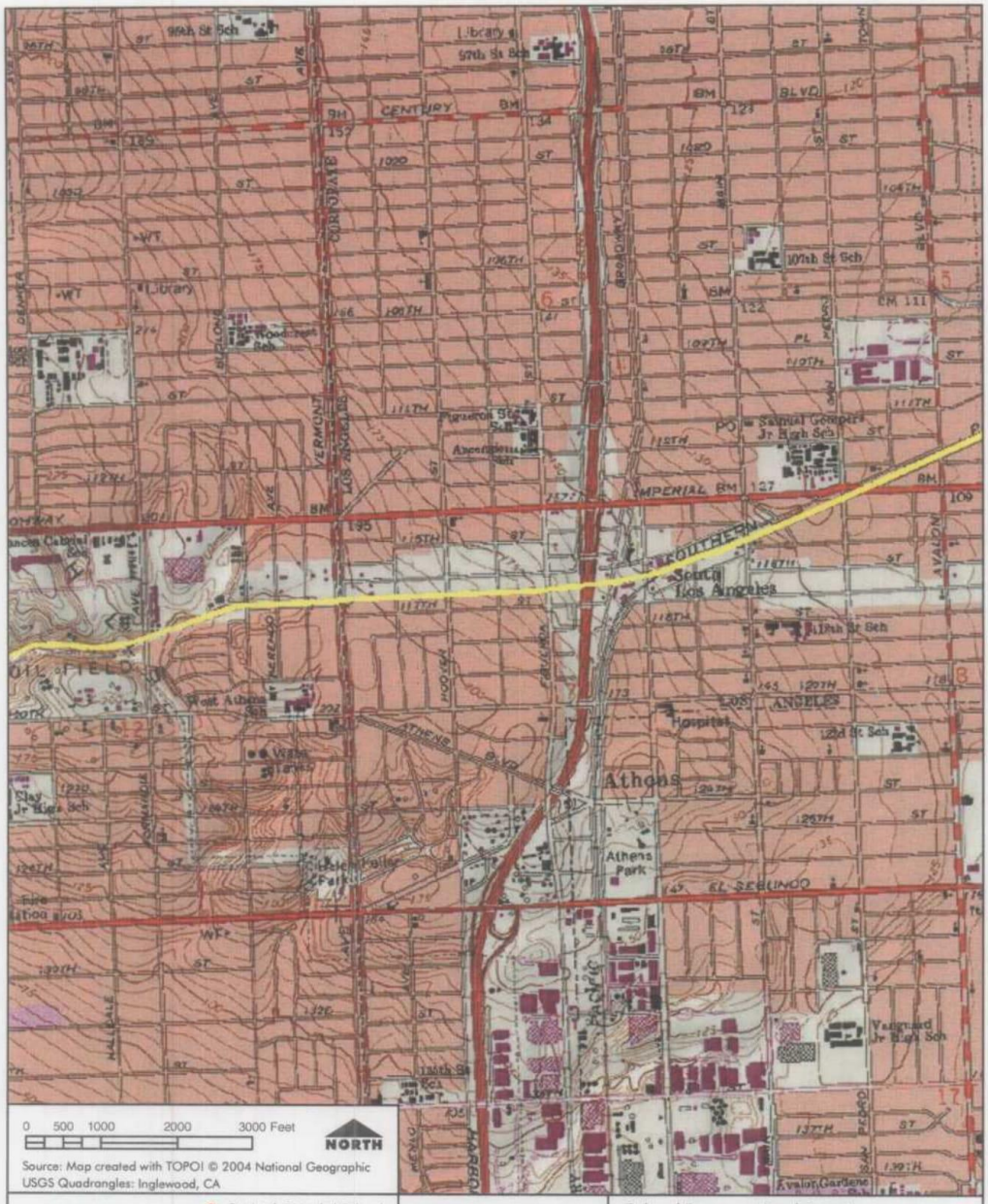
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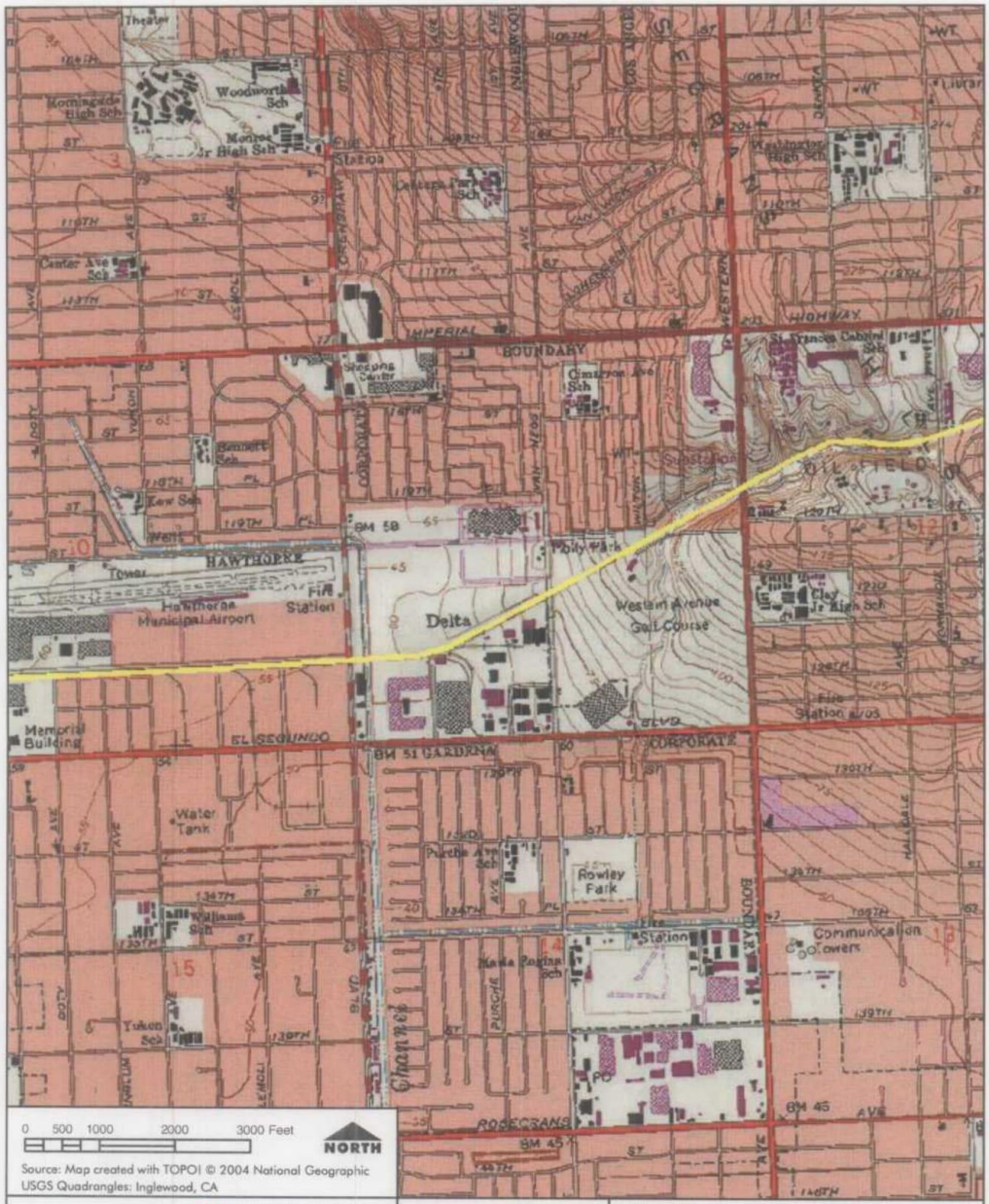
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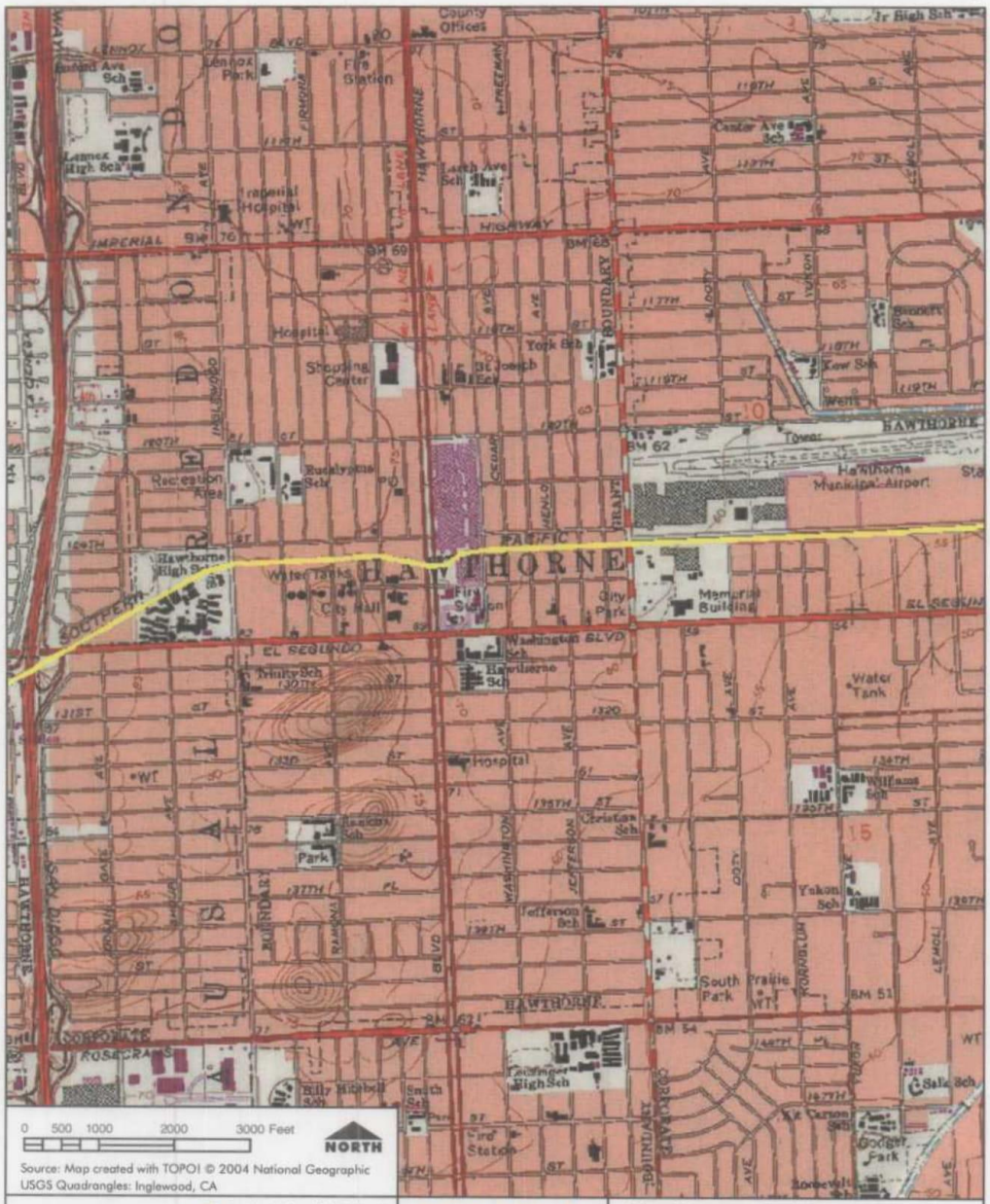
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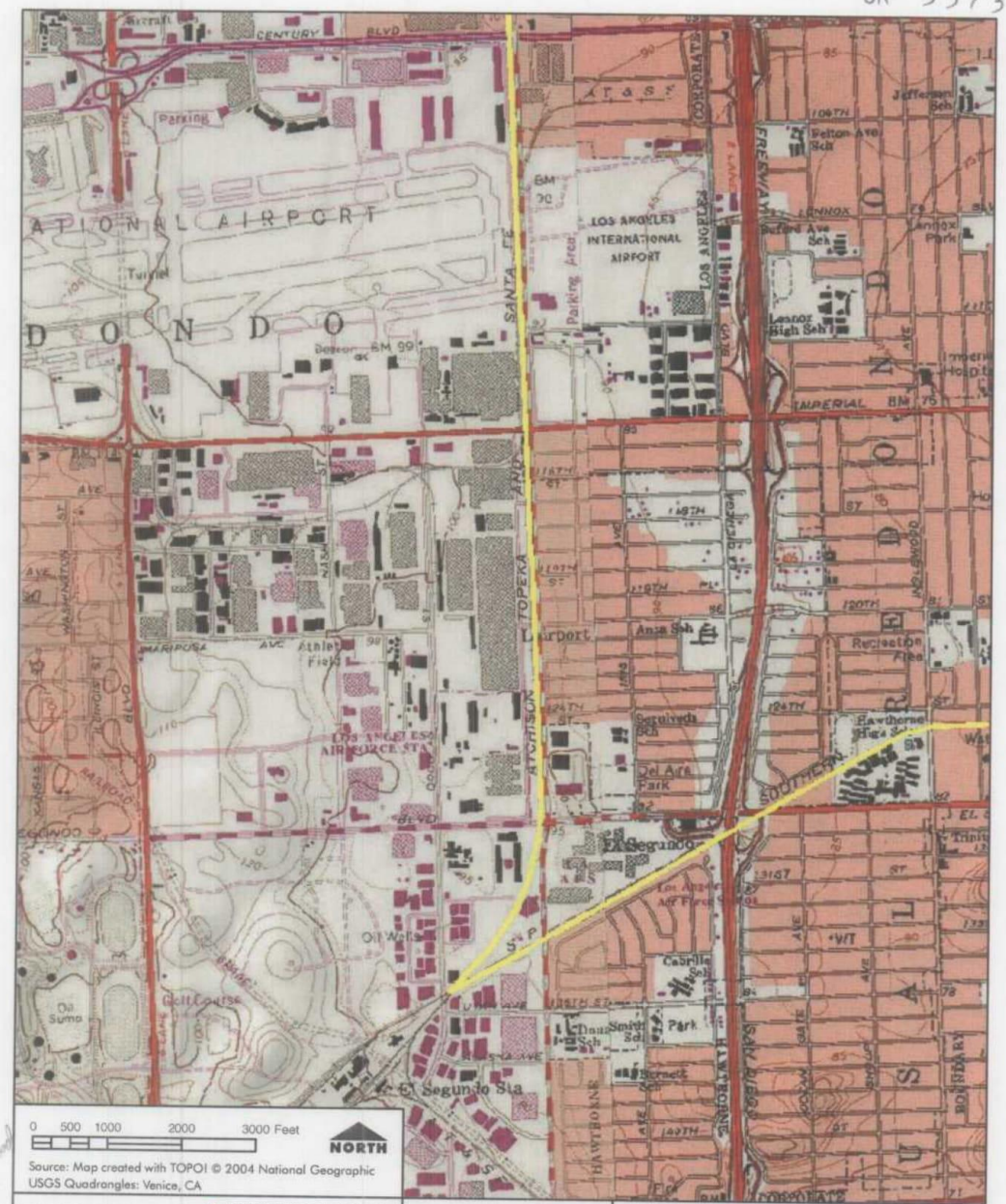
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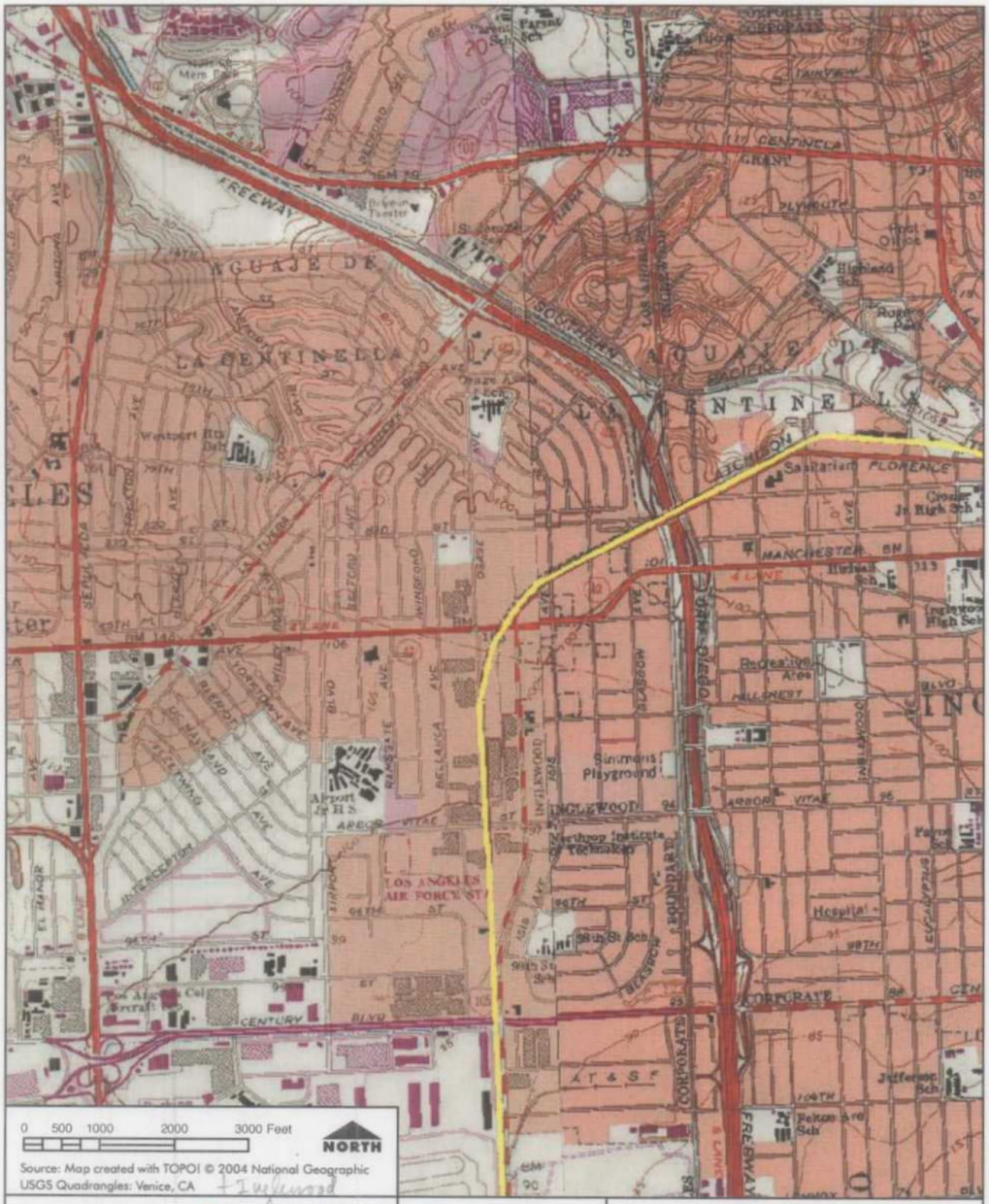
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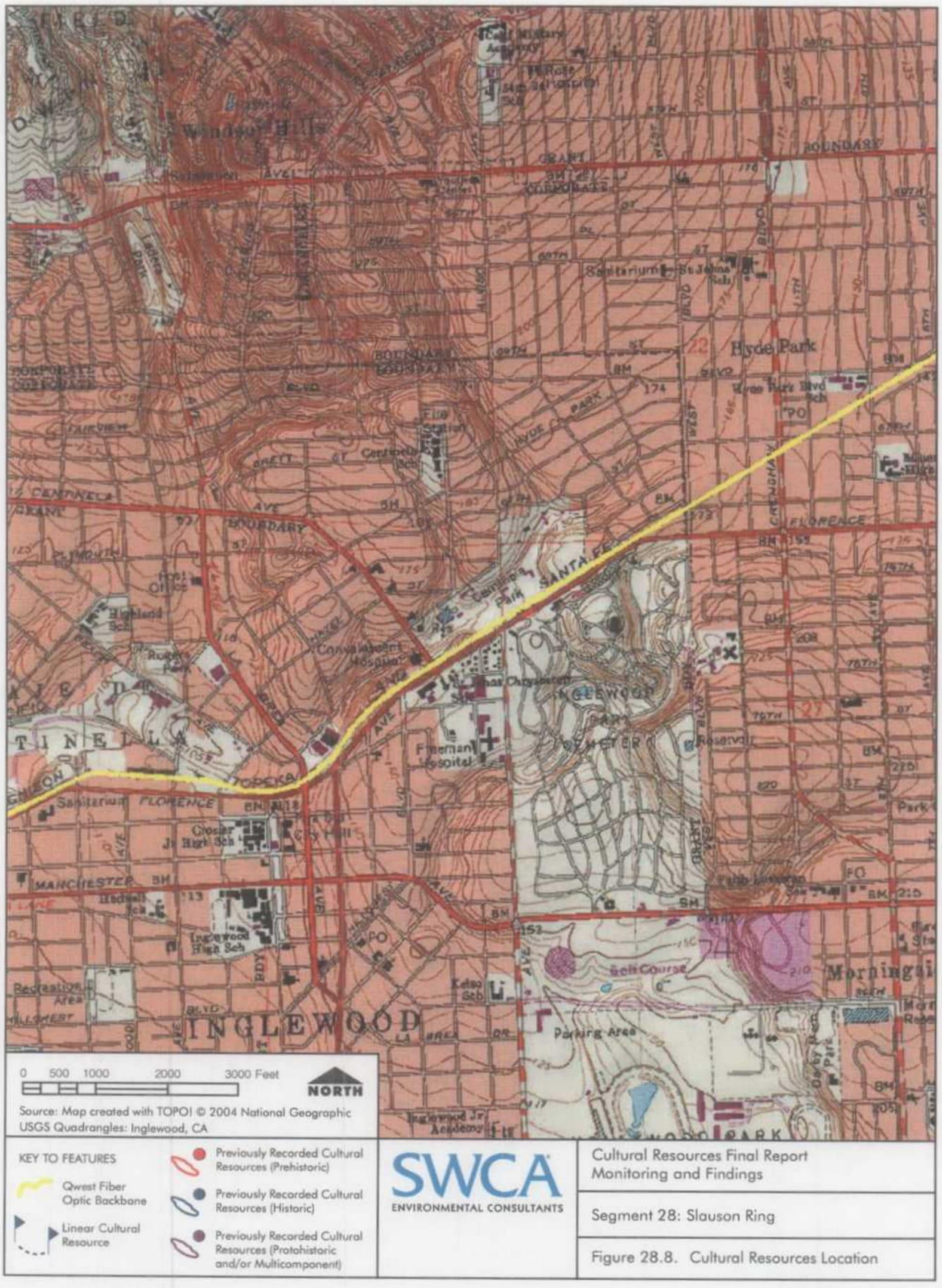
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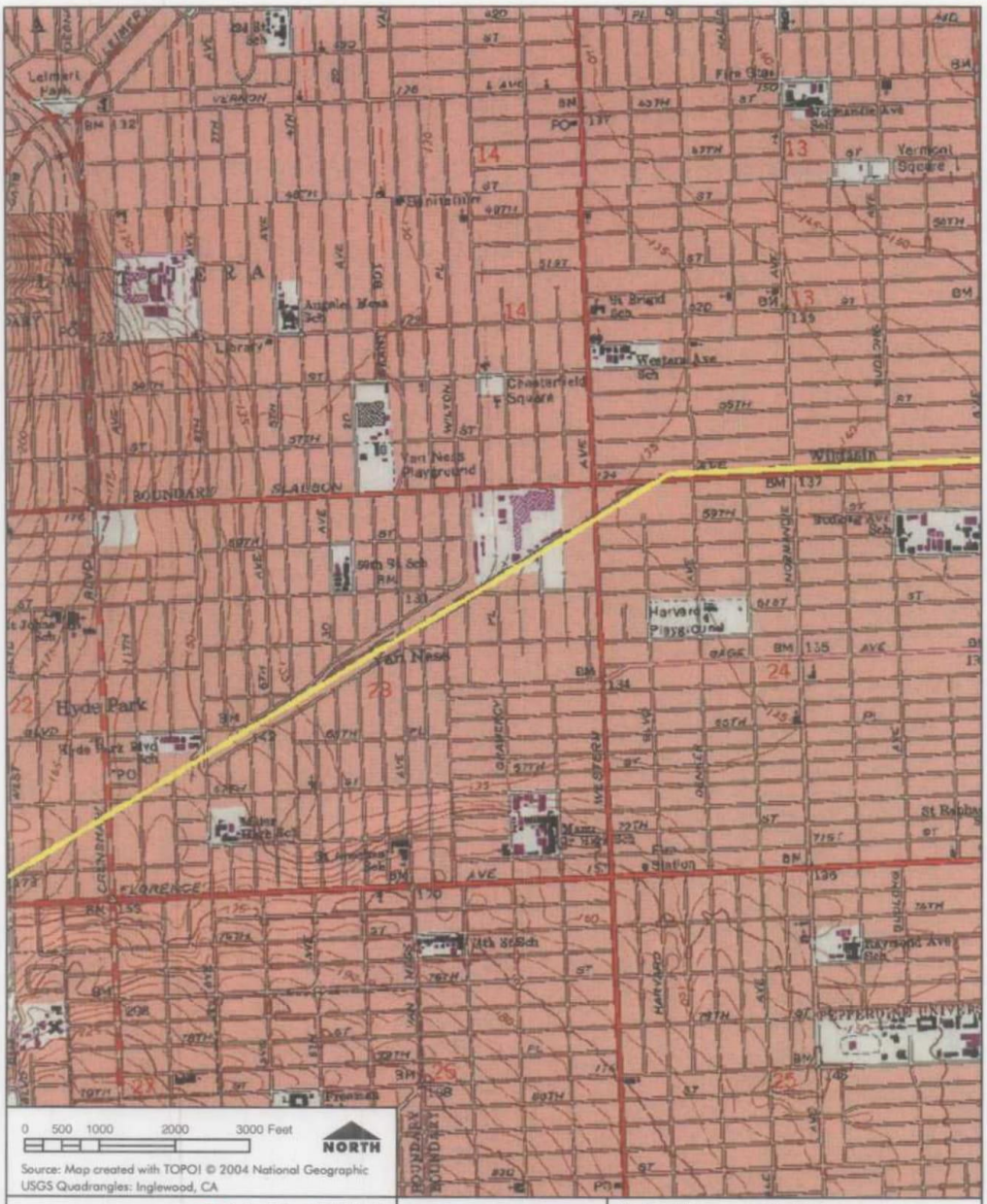
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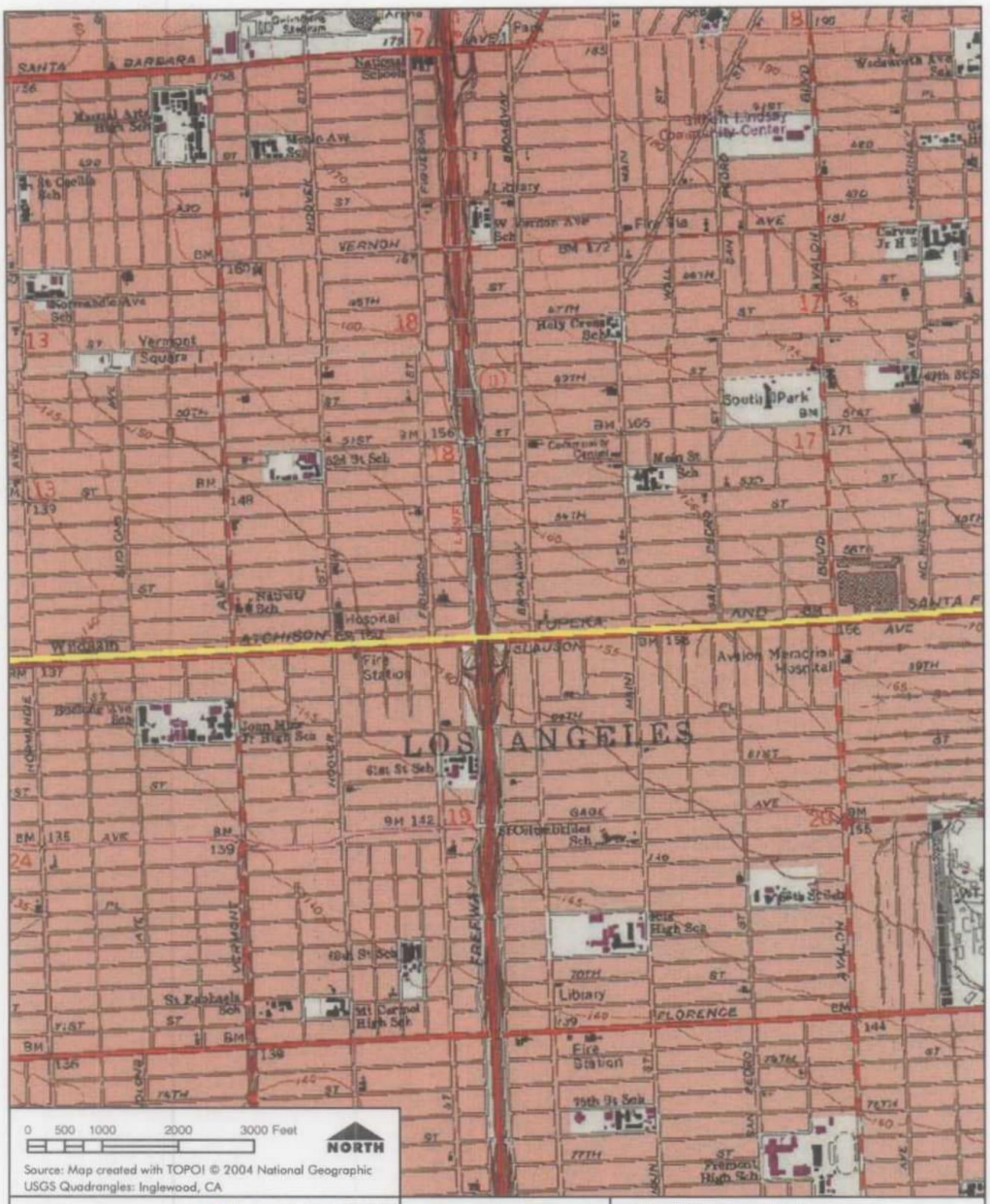
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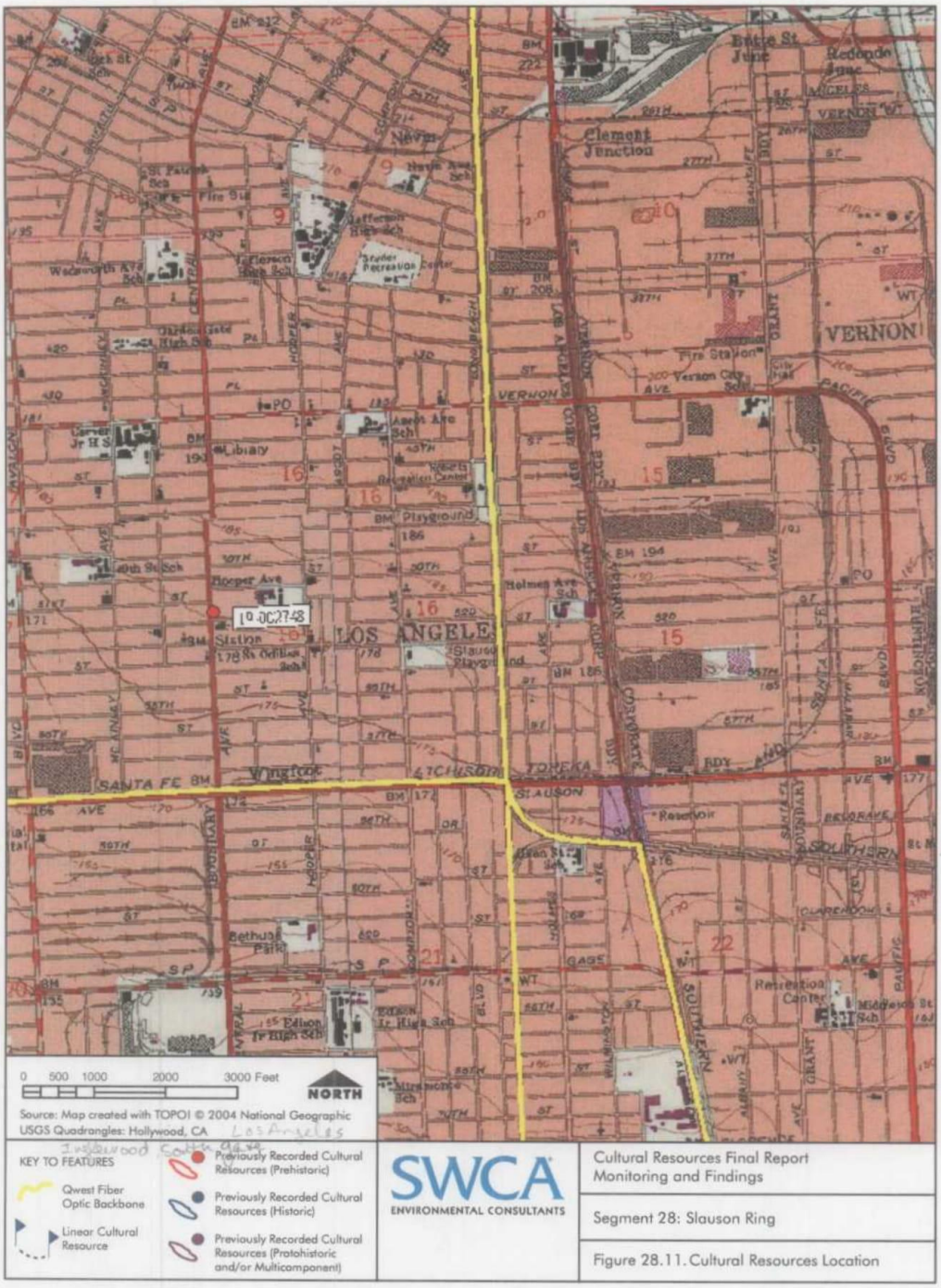
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31. BURBANK TO LOS ANGELES SEGMENT

Qwest Communications International Inc. (Qwest) retained SWCA Environmental Consultants (SWCA) to complete the Cultural Resources Final Report of Monitoring and Findings for the Qwest Network Construction Project. The report covers the cultural resources investigation for the maintenance (replacement and repair) of fiber-optic cable within the Qwest network "backbone" throughout the state of California. The existing California backbone includes approximately 1,431 linear miles of fiber-optic network. The investigation included surveys, focused visits to previously recorded archaeological sites, and monitoring of routine maintenance of existing lines along the network backbone.

The California Public Utilities Commission (CPUC) is the designated Lead Agency for this project under the California Environmental Quality Act (CEQA). The Qwest project is subject to specific Cultural Resources Protocols, numbered 1 through 11, prepared to ensure Qwest's compliance under CPUC regulatory authority. The CPUC and the Native American Heritage Commission (NAHC) approved the Qwest Fiber Optic Project Cultural Resources Protocols in February 2000. Qwest is proud of its record of responsible environmental and cultural resources stewardship and was an enthusiastic participant in the development of the Cultural Resources Protocols for this statewide project. In addition, to the greatest extent possible, Qwest followed the preferred approach: namely, to avoid ground disturbance activities within Environmentally Sensitive Areas (ESAs) and cultural resources during all maintenance activities.

The Protocols set forth a program for the identification and protection of known cultural resources within project rights-of-way (ROWs) and for the identification, assessment, and treatment of cultural resources that might be encountered during project activities. Protocols 1 through 6 generally were applied during project planning; Protocols 7 through 11 were applied immediately prior to, during, or at the conclusion of the routine maintenance program. The document containing the Protocols is provided as Appendix A.

In compliance with the General Conditions section of the Cultural Resources Protocols, qualified lead archaeological monitors and a staff of archaeological monitors monitored for cultural resources for this project. The monitors, as well as Native American observers, worked under the supervision of a qualified Cultural Resource Specialist (CRS). The CRS also determined when a Native American observer was deemed appropriate, depending on the sensitivity of the project segment. In addition, all Qwest personnel received training in field identification of potential cultural resources, laws regarding the protection of cultural resources, and what actions to take immediately in the event of the unanticipated discovery of cultural resources or human remains.

For purposes of the investigation, the California network backbone was divided into 36 segments. This document reports on the background information, methods, and findings of the cultural resources program for the Burbank to Los Angeles segment (Segment #29 out of 36) of the California Qwest network backbone, as shown on the segment location map (Figure 29)[1]. Cultural resources include archaeological and historical objects, sites, and districts; historic buildings and structures; cultural landscapes; and sites and resources of concern to local Native American and other ethnic groups. Cultural resources may be found on the ground surface or buried beneath the surface.

[1] NOTE: All figures in this chapter are labeled according to segment number, not chapter number.

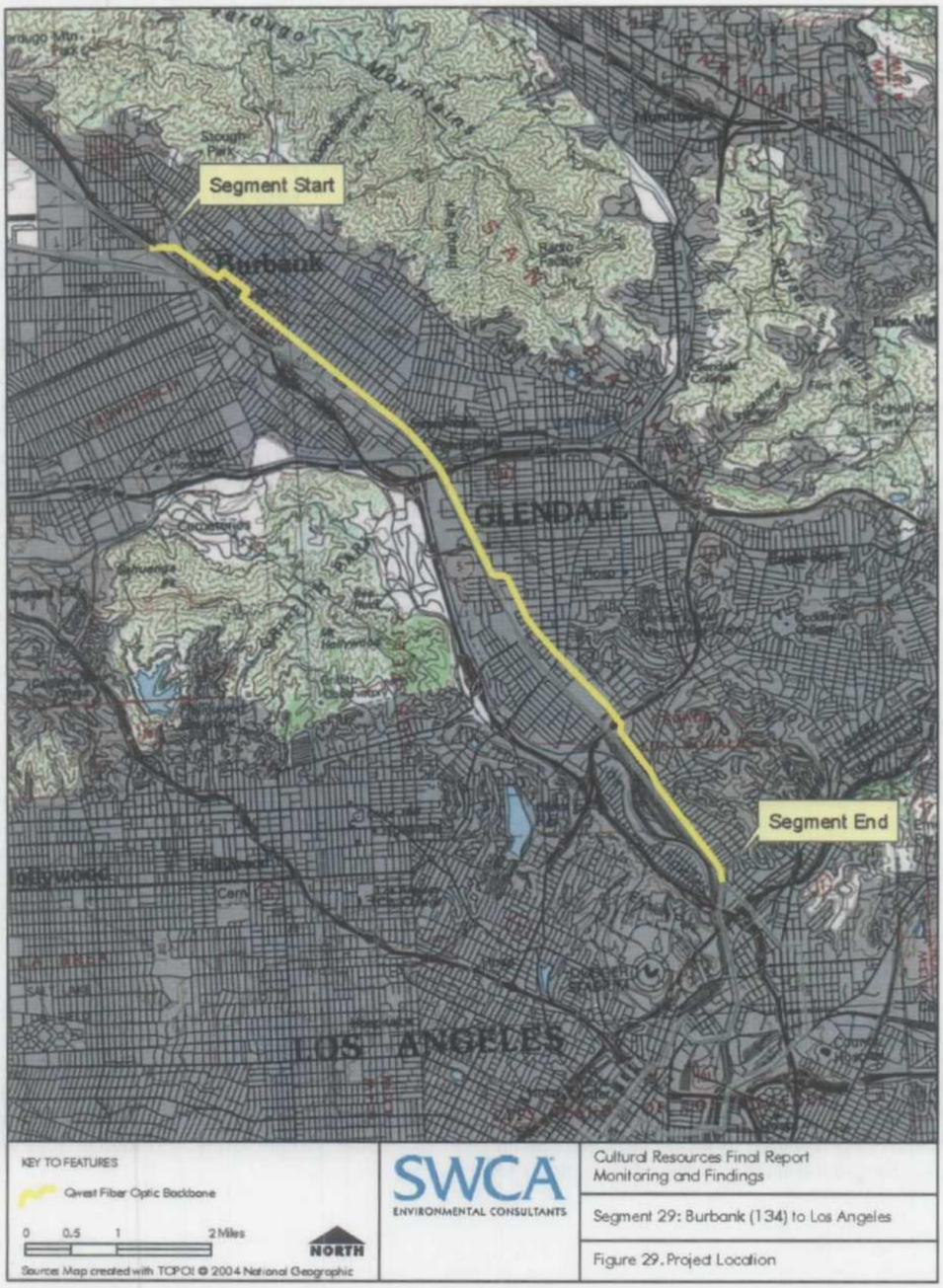


Figure 29. Segment Location Map

The Cultural Resources Final Report of Monitoring and Findings for the Qwest Network Construction Project, of which this document is a part, satisfies the requirements of Protocol 11: Final Report of Monitoring and Findings. The format of the Final Report and this chapter of that report follow *Archaeological Resource Management Reports (ARMR): Recommended Contents and Format* (Office of Historic Preservation 1990).

31.1 SEGMENT DESCRIPTION

The Burbank to Los Angeles segment is between the cities of Burbank and Los Angeles along San Fernando Road to Griffin Avenue to Mission Road to Los Angeles Avenue, in Los Angeles County, California. The network backbone in this area consists of a buried fiber-optic cable conduit, which can be accessed at four points per mile for maintenance and upgrading. Construction activity consists of the re-excavation of pre-existing handholes and assist holes to perform maintenance or upgrades on the fiber-optic line.

To access existing handholes, which are concrete or fiberglass vaults set below grade, the 18-inch cover of previously deposited soil immediately over the handhole cover is removed with a small mechanical excavator such as a backhoe or by hand. Assist hole openings are excavated to the depth of the conduit, up to 4 feet, and may range from 5 to 10 feet long and 2 feet wide. Then a backhoe-mounted puller adjacent to the alignment is used to assist the progress of the new fiber through the conduit. After the pulling operation is complete, the conduit is resealed and the assist hole backfilled with the excavation spoils. Soil disturbance for assist holes consists primarily of re-excavation of previously deposited trench spoils. Some possible intrusion into adjacent trench sidewalls also may occur.

The Burbank to Los Angeles segment is along the specified roadways on the U.S. Geological Survey (USGS) 7.5-Minute Quadrangles listed in Table 31-1.

Table 31-1. Segment 29 USGS 7.5-Minute Quadrangles

Burbank	Hollywood	Los Angeles

31.2 SETTING

31.2.1 Natural

The Burbank to Los Angeles segment is situated within the eastern portion of the San Fernando Valley in the urbanized area around the City of Los Angeles in Los Angeles County. The Verdugo Mountains are located just north of the segment. The segment is located in the Peninsular Range geomorphic province (Chapter 2, Figure 2-2). Elevations along the segment range between approximately 100–150 meters (330–500 feet) above msl.

The climate within the vicinity of the segment is characterized by warm, dry summers and mild, wet winters. Because the area falls within a coastal region, winters are typically warmer, but summers tend to be milder. Winter temperatures have highs around 20 degrees Celsius (68 degrees Fahrenheit), and summer temperatures have highs around 32 degrees Celsius (90 degrees Fahrenheit). When California

was initially occupied, the climate was moister and cooler than today's Mediterranean climate (Major 1988).

Current uses along the segment include primarily development. Historically, the vicinity of the segment was characterized by vegetation communities that included riparian scrub/forest along drainages, grasslands in upland areas, and coastal scrubland and chaparral in the hills (Chapter 2, Figure 2-1). With this mosaic of ecological communities, the area would have provided a productive environment for its prehistoric occupants, one suited to a hunting–gathering economy with a variety of small and large mammals, reptiles and amphibians, and edible plant species. Following are descriptions of vegetation communities within the area of the segment and the natural resources within each community that likely would have been harvested by the area's prehistoric occupants.

31.2.1.1 Vegetation Communities

The following descriptions of vegetation communities are based upon data presented by Holland (1986), Holland and Keil (1995), and Sawyer and Keeler-Wolf (1995).

Riparian Scrub/Forest

Riparian scrub is a mid-successional stage community that typically matures into riparian forest; species composition between these habitat types, therefore, is very similar. Riparian forest can revert to riparian scrub through disturbances or frequent flooding events (Faber and Keller 1985). This community exists along streams and around seeps and springs and was likely located along local streams in the area during its prehistory. Many plants within this community, as well as animals attracted to the water and vegetation, provided abundant subsistence resources for prehistoric and historic occupants (Table 31-2 and Table 31-3).

Coastal Grassland

The grassland community in much of California has been converted to agricultural and other uses or has become dominated by non-native grasses, such as introduced bromes (*Bromus* spp.) and wild oats (*Avena* spp.). Historically, the grassland community contained a variety of resources. Seeds of many annual grasses would have been the primary resource of interest to the prehistoric occupants, but blossoms, greens, and bulbs were also available, primarily during the spring. Coastal grasslands occur in a variety of forms ranging from scattered perennial bunch grasses (typically *Nassella pulchra* or *N. lepida*) to stands dominated by native perennial grasses in an assemblage of geophytes (plants with underground bulbs or corms) and herbaceous annual species (Table 31-2). Wildlife species typical of grasslands are detailed in Table 31-3.

Coastal Scrubland

Coastal scrub is characterized by a diversity of low, aromatic, drought deciduous shrubs and sub-shrub species. Seeds are the primary resource within coastal sage scrub community, but edible stems, stalks, shoots, greens, roots, bulbs, and some berries can also be found. The resources of coastal sage scrub community are primarily available in the spring. Coastal sage scrub often is patchily distributed throughout its range (O'Leary et al. 1992). Over a scale of several miles, it can be found in diverse habitat mosaics with other plant communities, particularly grassland and chaparral and oak/riparian woodland in more mesic areas. Coastal sage scrub may convert to chaparral or grassland, depending on slope, aspect, climate, fire history, and other physical factors and biological phenomena. Conversely, chaparral or

grassland areas may convert to coastal sage scrub (Axelrod 1978; White 1995; O'Leary 1995; Allen et al. 1999). Characteristic species that occur in coastal sage scrub habitat are included in Table 31-2 and Table 31-3.

Chaparral

Chaparral community occurs in the foothills near the segment. The chaparral community contains a mix of shrubs, such as manzanita (*Arctostaphylus* spp.), chamise (*Adenostoma fasciculatum*), mountain lilacs (*Ceanothus* spp.), and coffeeberry (*Rhamnus* spp.). Understory vegetation is sparse and limited to shade tolerant herbs and ferns. Numerous shrub species occur in chaparral habitat, providing an abundance of seeds, berries, bulbs, shoots, and roots (Table 31-2). A diversity of animal species occurs within the chaparral community (Table 31-3).

Table 31-2. Segment 29 Plant Resources

Species	Scientific Name
Riparian Scrub/Woodland Community	
Overstory Species	
Maples	*Acer* spp.
Alders	*Alnus* spp.
Fremont cottonwood	*Populus fremontii*
Mid-story Species	
Dogwoods	*Cornus* spp.
Arroyo willow	*Salix lasiolepis*
Willows	*Salix* spp.
Elderberries	*Sambucus* spp.
Understory Species	
Mugwort	*Artemisia douglasiana*
Monkeyflowers	*Mimulus* spp.
California rose	*Rosa californica*
Blackberries	*Rubus* spp.
Snowberries	*Symphoricarpos* spp.
Coastal Grassland Community	
Grasses	
Junegrass	*Koeleria macrantha*
Melic grasses	*Melica* spp.
Muhlies	*Muhlenbergia* spp.
Small-flowered needlegrass	*Nassella lepida*
Purple needlegrass	*Nassella pulchra*
Fescues	*Vulpia* spp.
Geophytes	
Onions	*Allium* spp.

Table 31-2. Segment 29 Plant Resources

Species	Scientific Name
Brodiaeas	*Brodiaea* spp.
Blue dicks	*Dichelostemma capitatum*
Blue-eyed grass	*Sisyrinchium bellum*
Herbaceous Plants	
Yellow fiddleneck	*Amsinckia menziesii*
Red maids	*Calandrinia ciliata*
Pussy paws	*Calyptridium* spp.
Suncups	*Camissonia* spp.
Owl's-clovers	*Castilleja* spp.
Blue-eyed Marys	*Collinsia* spp.
Cryptanthas	*Cryptantha* spp.
Delphiniums	*Delphinium* spp.
California poppy	*Eschscholzia californica*
Gilias	*Gilia* spp.
Everlastings	*Gnaphalium* spp.
Tarweeds	*Hemizonia* spp.
Linanthus	*Linanthus* spp.
Lomatiums	*Lomatium* spp.
Lotus	*Lotus* spp.
Lupines	*Lupinus* spp.
Microseris	*Microseris* spp.
Phacelias	*Phacelia* spp.
Popcorn flowers	*Plagiobothrys* spp.
California threadstem	*Pterostegia drymarioides*
Sanicles	*Sanicula* spp.
Checker mallow	*Sidalcea malvaeflora*
Clovers	*Trifolium* spp.
Sub-shrubs	
Milk vetches	*Astragalus* spp.
Buckwheats	*Eriogonum* spp.
Coastal Scrubland Community	
California sage	*Artemisa californica*
Encelia	*Encelia* spp.
Buckwheat	*Eriogonum* spp.
Yerba santa	*Eriodictyon* spp.
Lupine	*Lupinus* spp.
Bracken fern	*Pteridium aquilinum*
Coffeeberry	*Rhamnus* spp.

Table 31-2. Segment 29 Plant Resources	
Species	Scientific Name
Blackberry	*Rubus ursinus*
Purple sage	*Salvia leucophylla*
Black sage	*Salvia mellifera*
Figwort	*Scrophularia californica*
Chaparral Community	
Shrubs	
Chamise	*Adenostoma fasciculatum*
Manzanitas	*Arctostaphylos* spp.
Hoary-leaved ceanothus	*Ceanothus crassifolius*
Buck brush	*Ceanothus cuneatus*
Bigpod ceanothus	*Ceanothus megacarpus*
Mountain lilacs	*Ceanothus* spp.
Western redbud	*Cercis occidentalis*
Mountain mahogany	*Cercocarpus betuloides*
Coffeeberry, redberry	*Rhamnus* spp.
Gooseberries, currants	*Ribes* spp.
Vines	
Dodders	*Cuscuta* spp.
Bedstraws	*Galium* spp.
Chaparral-peas	*Lathyrus* spp.

31.2.1.2 Typical Animal Resources

Wildlife species common to the vegetation communities in the vicinity of the Burbank to Los Angeles segment are detailed in Table 31-3.

Table 31-3. Segment 29 Common Animal Resources		
Species	Scientific Name	Communities
Amphibians		
Western toad	*Bufo boreas*	Riparian scrub/forest, Foothill woodland, Marshland
Reptiles		
Western fence lizard	*Sceloporus occidentalis*	Scrublands, Chaparral, Foothill woodlands, Coniferous forests

Table 31-3. Segment 29 Common Animal Resources

Species	Scientific Name	Communities
Upland Birds		
California quail	*Callipepla californica*	Grasslands, Scrublands, Chaparral, Foothill woodlands
Hawks	*Buteo* spp.	Grasslands, Chaparral, Foothill woodlands
Western scrub jay	*Aphelocoma californica*	Chaparral, Foothill woodlands
Mockingbird	*Mimus polyglottos*	Scrublands, Chaparral, Foothill woodlands
Western meadowlark	*Sturnella neglecta*	Grasslands
Mammals		
Desert cottontail	*Sylvilagus audubonii*	Grasslands, Scrublands, Chaparral, Foothill woodlands, Coniferous forests
Brush rabbits	*Sylvilagus bachmani*	Scrublands, Chaparral
Black-tailed jackrabbit	*Lepus californicus*	Grasslands, Scrublands
California ground squirrel	*Spermophilus beecheyi*	Grasslands
Pocket gopher	*Thomomys bottae*	Grasslands, Chaparral
Dusky-footed woodrat	*Neotoma fuscipes*	Scrublands, Chaparral, Foothill woodlands
California vole	*Microtus californicus*	Grasslands, Chaparral, Riparian scrub/forest, Foothill woodlands, Coniferous forests
Coyote	*Canis latrans*	Grasslands, Scrublands, Chaparral, Riparian scrub/forest, Foothill woodlands, Coniferous forests
Gray fox	*Urocyon cinereoargenteus*	Grasslands, Scrublands, Chaparral, Riparian scrub/forest, Foothill woodlands, Coniferous forests
Raccoon	*Procyon lotor*	Grasslands, Chaparral, Riparian scrub/forest, Foothill woodlands, Coniferous forests
Long-tailed weasel	*Mustela frenata*	Grasslands, Chaparral, Riparian scrub/forest, Foothill woodlands, Coniferous forests
Badger	*Taxidea taxus*	Grasslands, Open woodlands
Striped skunk	*Mephitis mephitis*	Grasslands, Chaparral, Riparian scrub/forest, Foothill woodlands, Coniferous forests

Table 31-3. Segment 29 Common Animal Resources		
Species	Scientific Name	Communities
Bobcat	*Lynx rufus*	Grasslands, Scrublands, Chaparral, Riparian scrub/forest, Foothill woodlands, Coniferous forests

31.2.2 Cultural

31.2.2.1 Prehistoric Overview

California prehistory is divided into three broad temporal periods that reflect similar cultural characteristics throughout the state: Paleoindian Period (ca. 9000–6000 B.C.), Archaic Period (6000 B.C. – A.D. 500), and Emergent Period (A.D. 500 – Historic Contact) (Fredrickson 1973, 1974, 1994a) (Chapter 2, Figure 2-5). The Archaic is further divided into Lower (6000–3000 B.C.), Middle (3000–1000 B.C.), and Upper (1000 B.C. – A.D. 500) Periods, generally governed by climatic and environmental variables, such as the drying of pluvial lakes at the transition from the Paleoindian to the Lower Archaic.

The Burbank to Los Angeles segment lies in what generally is described as the San Diego subregion of the Southern Coast Archaeological Region, which is one of eight arbitrary organizational divisions of the state (Moratto 1984:Fig. 1) (Chapter 2, Figure 2-3). This subregion extends southward along the coast from Santa Monica Bay to the border with Mexico, and includes southern Los Angeles County, all of Orange County, the southwest corner of San Bernardino County, and western Riverside and San Diego Counties.

In southern California, researchers attempting to define local or subregional traditions have created numerous cultural chronologies using various nomenclatures (Moratto 1984). Nonetheless, these chronologies are more notable for their similarities than their differences and a concordance of the best-known chronologies for the region is presented in Chapter 2, Figure 2-5. Building on early studies and focusing on data synthesis, Wallace (1955, 1978) developed a prehistoric chronology for the southern California coastal region that is widely used today. Four stages are presented in Wallace's prehistoric sequence: Horizon I, Early Man; Horizon II, Milling Stone; Horizon III, Intermediate; and Horizon IV, Late Prehistoric. As noted by Moratto (1984:159), Wallace's (1955) synthesis lacked chronological precision due to the lack of absolute dates at the time of its creation, but remains generally valid today.

In addition to Wallace's classic summary, a regional synthesis developed by Warren (1968) will be referred to in the following discussion. This synthesis is supported by a larger archaeological database for southern California, which includes the advent and increased use of radiocarbon dating after the 1950s.

Using the concepts of cultural ecology and cultural tradition, Warren (1968) proposed a series of six prehistoric traditions. Three of these traditions, the San Dieguito Tradition, Encinitas Tradition, and Campbell Tradition, correlated with Wallace's Horizons I, II, and, III. The Chumash Tradition, Takic Tradition (formerly "Shoshonean"), and Yuman Tradition are represented within Wallace's Horizon IV. As noted further, these ecologically based traditions are applicable to specific regions within southern California.

Horizon I - Early Man (ca. 10,000 – 6,000 B.C.)

When Wallace developed the Horizon I (Early Man) in the 1950s, there was little evidence of human presence on the southern California coast prior to 6000 B.C. Archaeological work in the intervening years has identified numerous sites older than this date including coastal and Channel Islands sites (e.g., Erlandson 1991; Johnson et al. 2002; Moratto 1984). In addition, radiocarbon dates recently obtained by SWCA from a deeply buried archaeological site in southern Orange County, 5.5 km (3.4 miles) from the coast indicate an occupation as early as 9000 B.C. (SWCA unpublished).

Recent data from Horizon I sites indicate that the economy was a diverse mixture of hunting and gathering, with a major emphasis on aquatic resources in many coastal areas (e.g., Jones et al. 2002) and on Pleistocene lake shores in eastern San Diego County (see Moratto 1984:90-92). Although few Clovis-like or Folsom-like fluted points have been found in southern California (e.g., Erlandson et al. 1987), it is generally considered that the emphasis on hunting may have been greater during Horizon I than in later periods. Common elements in many San Dieguito Tradition sites, for example, include leaf-shaped bifacial projectile points and knives, stemmed or shouldered projectile points, scrapers, engraving tools, and crescents (Warren 1967:177). Subsistence patterns shifted around 6000 B.C. coincident with the gradual desiccation associated with the onset of the Altithermal, a warm and dry period that lasted for about 3000 years. After 6000 B.C., a greater emphasis was placed on plant foods and small animals.

Horizon II - Milling Stone(6000–3000 B.C.)

The Milling StoneHorizon of Wallace (1955, 1978) and Encinitas Tradition of Warren (1968) (6000-3000 B.C.) are characterized by an ecological adaptation to collecting, and by the dominance of the principal ground stone implements generally associated with the horizontal motion of grinding small seeds; namely, milling stones (metates, slabs) and handstones (manos, mullers), which are typically shaped. Milling stones occur in large numbers for the first time, and are even more numerous near the end of this period. As testified by their toolkits and shell middens in coastal sites, people during this period practiced a mixed food procurement strategy. Subsistence patterns varied somewhat as groups became better adapted to their regional or local environments.

Wallace (1955, 1978) and Warren (1968) relied on several key coastal sites to characterize the Milling StoneHorizon and Encinitas Tradition, respectively. These include the Oak Grove Complex in the Santa Barbara region, Little Sycamore in southwestern Ventura County, Topanga Canyon in the Santa Monica Mountains, and at La Jolla in San Diego County. The Encinitas Tradition was proposed to extend southward into San Diego County where it apparently continued alongside the following Campbell Tradition, which occurred primarily in the Santa Barbara-Ventura County region beginning around 3000 B.C.

During the Milling StoneHorizon and Encinitas Tradition, stone chopping, scraping, and cutting tools are abundant, and generally made from locally available raw material. Projectile points, rather large and generally leaf-shaped, and bone tools, including awls, are generally rare. The large points are associated with the spear, and probably with an atlatl. Items made from shell, including beads, pendants, and abalone dishes, are generally rare. Evidence of weaving or basketry is present at a few sites. Cogged stones and discoidals are often purposefully buried, and are found mainly in sites along the coastal drainages from southern Ventura County southward, with a few specimens inland at Cajon Pass, and heavily in Orange County (Moratto 1984:149). Kowta (1969) attributes the presence of numerous scraper-planes in Milling Stonesites to the preparation of agave or yucca for food or fiber. The mortar and pestle, associated with the vertical motion of pounding foods, such as acorns, were introduced during the Milling StoneHorizon, but are not common.

Characteristic mortuary practices during the Milling StoneHorizon or Encinitas Tradition include extended and loosely flexed burials, some with red ochre and few grave goods, such as shell beads and milling stones, interred beneath cobble or milling stone cairns. "Killed" milling stones, exhibiting holes, may occur in the cairns. Reburials are common in the Los Angeles County area, with flexed burials oriented to the north common southward in Orange and San Diego Counties.

Horizon III - Intermediate (3000 B.C. – A.D. 500)

Following the Millingstone, Wallace's Intermediate Horizon and Warren's Campbell Tradition in Santa Barbara, Ventura, and parts of Los Angles Counties, date from approximately 3000 B.C.-A.D. 500 and are characterized by a shift toward a hunting and maritime subsistence strategy, along with a wider use of plant foods. The Campbell Tradition (Warren 1968) incorporates David B. Rogers' (1929) Hunting Culture and related expressions along the Santa Barbara coast. In the San Diego region, the Encinitas Tradition (Warren 1968) and the La Jolla Culture (Moriarty 1966; M. Rogers 1939, 1945) persist with little change during this time.

During the Intermediate Horizon and Campbell Tradition, there is a pronounced trend toward greater adaptation to regional or local resources. For example, the remains of fish, land mammals, and sea mammals are increasingly abundant and diverse in sites along the California coast in the referenced region. Related chipped stone tools suitable for hunting are more abundant and diversified, and shell fishhooks become part of the toolkit during this period. Larger knives, a variety of flake scrapers, and drill-like implements are common during this period. Projectile points include large side-notched, stemmed, and lanceolate or leaf-shaped forms. Bone tools, including awls, are more numerous than in the preceding period, and the use of asphaltum adhesive is now common.

Mortars and pestles become more common during this period, gradually replacing manos and metates as milling stone implements. In addition, hopper mortars and stone bowls, including steatite vessels, appear to enter the toolkit at this time. This shift appears to be a correlate of a diversification in subsistence resources. Many archaeologists believe this change in milling stones signals a shift away from the processing and consuming of hard seed resources to the increasing importance of the acorn (e.g., Glassow et al. 1988; True 1993). It has been argued that mortars and pestles may have been used initially to process roots (e.g., tubers, bulbs, and corms associated with marshland plants), with acorn processing beginning at a later point in prehistory (Glassow 1997:86) and continuing to European contact.

Characteristic mortuary practices during the Intermediate Horizon and Campbell Tradition include fully flexed burials, placed face down or face up, and oriented toward the north or west (Warren 1968:2-3). Red ochre is common, and abalone shell dishes infrequent. Interments sometimes occurred beneath cairns or broken artifacts. Shell, bone and stone ornaments, including charmstones, are more common than in the preceding Encinitas Tradition. Some later sites include *Olivella* shell and steatite beads, mortars with flat bases and flaring sides, and a few small points.

Horizon IV - Late Prehistoric (A.D. 500–Historic Contact)

In the Late Prehistoric Horizon (Wallace 1955, 1978), which lasted from the end of the Intermediate (~A.D. 500) until European contact, there was an increase in the use of plant food resources in addition to an increase in land and sea mammal hunting. There was a concomitant increase in the diversity and complexity of material culture during the Late Prehistoric, demonstrated by more classes of artifacts. The recovery of a greater number of small, finely chipped projectile points, usually stemless with convex or concave bases, suggests an increased utilization of the bow and arrow rather than the atlatl and dart for hunting. Other items include steatite containers, circular shell fishhooks, perforated stones, arrow

straighteners, and a variety of bone tools and personal ornaments. There is also an increased use of asphalt adhesive.

During the Late Prehistoric, sites contain beautiful and complex objects of utility, art, and decoration. Ornaments include drilled whole *Chione* and drilled abalone. Steatite effigies become more common, with *Pecten* shell rattles common in middens. Mortuary customs are elaborate, include cremation and interment, with abundant grave goods. Pottery and smoking pipes occur in some locations during this period.

In Warren's (1968) cultural ecological scheme, the period between A.D. 500 and European contact is divided into three regional patterns. The Chumash Tradition is present mainly in the region of Santa Barbara and Ventura Counties; the Takic or Numic Tradition in the Los Angeles and Orange Counties region; and the Yuman Tradition in the San Diego region.

The seemingly abrupt changes in material culture, burial practices, and subsistence focus at the beginning of the Late Prehistoric period are considered the result of a migration to the coast of peoples from inland desert regions to the east. In addition to the small triangular and triangular side-notched points similar to those found in the desert regions in the Great Basin and Lower Colorado River, Colorado River pottery and the introduction of cremation in the archaeological record are diagnostic of the Yuman Tradition in the San Diego region. This combination certainly suggests a strong influence from the Colorado Desert region.

In Los Angeles and Orange Counties, similar changes (introduction of cremation, pottery, and small triangular arrow points) are considered the result of a Takic migration to the coast from inland desert regions. This Takic or Numic Tradition was formerly referred to as the "Shoshonean wedge" or "Shoshonean intrusion" (Warren 1968). This terminology, used originally to describe a Uto-Aztecan language group, is generally no longer employed in order to avoid confusion with ethnohistoric and modern Shoshonean groups who spoke Numic languages (Heizer 1978:5; Shipley 1978:88, 90). Modern Gabrielino/Tongva, Juaneño, and Luiseño in this region are considered the descendants of the prehistoric Uto-Aztecan, Takic-speaking populations that settled along the California coast during this period, or perhaps somewhat earlier.

31.2.2.2 Ethnographic Overview

The Slauson Ring segment is in an area historically occupied by the Gabrielino (Bean and Smith 1978; Kroeber 1925). The name "Gabrielino" denotes those people who were administered by the Spanish from Mission San Gabriel, which included people from the Gabrielino proper, as well as other social groups. Therefore, in the post-contact period, the name does not necessarily identify a specific ethnic or tribal group. The names Native Americans in southern California used to identify themselves have, for the most part, been lost. Many contemporary Gabrielino identify themselves as descendents of the indigenous people living across the plains of the Los Angeles Basin and use the native term *Tongva* (King 1994a:12).

Tongva lands encompassed the greater Los Angeles Basin, including the inland valleys of San Fernando, San Gabriel, and Pomona, the Pacific Ocean coastal region from Topanga Canyon in the north to Newport Bay in the south, and three Channel Islands, San Clemente, San Nicolas, and Santa Catalina (Bean and Smith 1978:538; Kroeber 1925:636; McCawley 1996). The Burbank (134) to Los Angeles segment is situated in the northwest portion of the Los Angeles Basin. It extends from the San Fernando Valley along the Los Angeles River between the Santa Monica Mountains to the west and the San Gabriel Mountains to the east. Through a gentle pass near the Verdugo Hills it enters onto the flat Downey Plain until reaching downtown Los Angeles.

Inland, Tongva territory was bounded on the north by the Chumash at Topanga Creek, and on the south by the Juaneño at Aliso Creek. To the east past the San Gabriel Mountains were the Vanyume Serrano, the mountain Serrano, and the Cahuilla. The southern boundary of Gabrielino territory at Aliso Creek was based on anthropological fieldwork conducted by Kroeber in 1907 (Kroeber 1925), and the Juaneño currently dispute this defined northern boundary of their lands with the Gabrielino.

The Gabrielino language, as well as that of the Juaneño and Luiseño to the south, and the *Tataviam* (*Alliklik*) and Serrano to the east, was derived from the Takic family, part of the Uto-Aztecan linguistic stock, which can be traced to the Great Basin area (Mithun 2001:539, 543–544). This language group represents an origin quite different from that of the Chumash to the north and the Ipai and Tipai further south. The language of the Ipai and Tipai is derived from the Hokan stock of the Yuman language family originating in the American Southwest. The Chumash language is unlike both the Hokan and Uto-Aztecan stocks and may represent a separate lineage (Mithun 2001:390). Linguistic analysis suggests that Takic-speaking immigrants from the Great Basin area began moving into southern California around 500 B.C. (Kroeber 1925:579). This migration may have displaced both Chumashan and Yuman speaking peoples, but the timing and extent of the migrations and their impact on indigenous peoples is not well understood.

The Gabrielino language consisted of two main dialects, Eastern and Western; the Western included much of the coast and the Channel Island population (King 2004). Lands of the Western group encompassed much of the western Los Angeles Basin and San Fernando Valley, northward along the coast to the Palos Verdes Peninsula (McCawley 1996:47).

Early historical records concerning the Tongva are available through Spanish voyages of exploration in the sixteenth century, and accounts by Spanish missionaries and colonists in the middle eighteenth century. The Spanish military and mission records are considerable. Other reports by agents of the United States Office of Indian Affairs date from the 1850s. Ethnographers were late on the scene and collected little information after 1900, the exception being John Harrington in the 1910s. Published ethnographies include Kroeber (1925), Johnston (1962), Bean and Smith (1978), and McCawley (1996).

Kroeber (1925:621) considered the Tongva "…to have been the most advanced group south of Tehachapi, except perhaps the Chumash. They certainly were the wealthiest and most thoughtful of all the Shoshoneans of the State, and dominated these civilizationally wherever contacts occurred." Tongva society was organized along patrilineal non-localized clans, a characteristic Takic pattern. Clans consisted of several lineages, each with their own ceremonial leader. The leader of the primary lineage was the chief of the entire clan. One or two clans generally made up the population of a village. Even though the Tongva did not have a distinctly stratified society, there were two general classes of individuals: elites and commoners. The elites consisted of primary lineage members, other lineage leaders (who maintained a separate ceremonial language), the wealthy, and the elite families of the various villages who commonly married among themselves. The commoner class contained those from "fairly well-to-do and long-established lineages" (Bean and Smith 1978:543). A third, lower class might be recognized as consisting of slaves taken in war and individuals, unrelated to the inhabitants, who drifted into the village. The chief, or *tómyaar*, always came from the primary lineage of the clan/village.

The Tongva established large, permanent villages in the fertile lowlands along rivers and streams, and in sheltered areas along the coast, stretching from the foothills of the San Gabriel Mountains to the Pacific Ocean. A total tribal population has been estimated of at least 5,000 (Bean and Smith 1978:540), but recent ethnohistoric work suggests a number approaching 10,000 seems more likely (O'Neil 2002). Several Tongva villages appear to have served as trade centers, due in large part to their centralized geographic position in relation to the Southern Channel Islands and to other tribes. These villages maintained particularly large populations and hosted annual trade fairs that would bring their population

to 1,000 or more for the duration of the event. *Puvunga* in Long Beach and *Swuangna* at San Pedro are examples of Tongva village trade centers.

Tongva villages along the Burbank (134) to Los Angeles segment included *Wiqanga* ("prickly pear cactus fruit," the Verdugo Hills), *Haahomnga* ("walking, they seated themselves," Glendale area) and *Kaweenga* ("the mountain." Cahuenga). The villages of *Maawnga* (Griffith Park), *Ochuunga*, *Yangna* ("poison oak") and *Geveronga* were near today's downtown Los Angeles (McCawley 1996:39-40).

Houses constructed by the Tongva were large, circular, domed structures made of willow poles thatched with tule that could hold up to 50 people (Bean and Smith 1978). Other structures served as sweathouses, menstrual huts, ceremonial enclosures, and probably communal granaries. Cleared fields for races and games, such as lacrosse and pole throwing, were created adjacent to Tongva villages (McCawley 1996:27). Archaeological sites comprised of villages with various sized structures have been identified.

The fundamental economy of the Tongva was one of subsistence gathering and hunting. The surrounding environment was rich and varied, and the tribe exploited mountains, foothills, valleys, deserts, riparian, estuarine, and open and rocky coastal eco-niches. Like the majority of native Californians, acorns were the staple food (an established industry by the time of the early Intermediate Period). Acorns were supplemented by the roots, leaves, seeds, and fruits of a wide variety of flora (e.g., islay, *Opuntia*, yucca, sages, and agave). Fresh-water and salt-water fish, shellfish, birds, reptiles, and insects, as well as large and small mammals, were also consumed. The Tongva are among several southern California native groups who were noted for periodically setting fire to the grassy plains and brush-covered hillsides to promote the growth of harvestable grass seeds, discourage the growth of chaparral, and create pasture for deer and antelope.

A wide variety of tools and implements were employed by the Gabrielinos to gather and collect food resources. These included bows and arrows, traps, nets, blinds, throwing sticks and slings, spears, harpoons, and hooks. Many plant foods were collected with woven seed beaters, several forms of burden baskets, carrying nets, and sharpened digging sticks, sometimes with stone weights fitted onto them. Groups residing near the ocean used ocean-going plank canoes (known as a *ti'at*) and tule balsa canoes for fishing (McCawley 1996:7). The ocean-going canoes were capable of holding six to fourteen people and were also used for travel and trade between the mainland and the Channel Islands. The tule balsa canoes were used for near-shore fishing.

Foods were processed with a variety of tools, including portable and bedrock mortars, pestles, basket hopper mortars, manos and metates, hammerstones and anvils, woven strainers and winnowers, leaching baskets and bowls, woven parching trays, knives, bone saws, and wooden drying racks. Food was consumed from a number of woven and carved wood vessels. The ground meal and unprocessed hard seeds were stored in large finely woven baskets, and the unprocessed acorns were stored in large granaries woven of willow branches and raised off the ground on platforms. Santa Catalina Island steatite was used to make comals, ollas, and cooking vessels that would not crack like regular stone under repeated firings (Kroeber 1925:629).

As part of the extensive exchange network, large amounts of steatite quarried on Santa Catalina Island were traded with numerous other groups on the coast and inland. In addition to cooking vessels, steatite was used to make effigies, ornaments, and arrow straighteners. Tongva obtained obsidian, acorns, and seeds, among other items, from inland Tataviam and Vanyume (Desert) Serrano in exchange for coastal resources, such as steatite, shell beads, and dried fish. The Tongva also traded with other coastal groups, exchanging large, baked clay pipes obtained from the Kumeyaay or Luiseño to the south and with the Chumash on their northern border.

At the time of Spanish contact, the basis of Tongva religious life was the Chinigchinich Cult, centered on the last of a series of heroic mythological figures. Chinigchinich gave instruction on laws and institutions, and he also taught the people how to dance, the primary religious act for this society. He later withdrew into heaven where he rewarded the faithful and punished those who disobeyed his laws (Kroeber 1925:637-638). The Chinigchinich religion seems to have been relatively new when the Spanish arrived; the religion was in the process of spreading south into the Southern Takic groups even as Christian missionization was taking place and may have been influenced by Christianity.

Deceased Tongva were either buried or cremated (Harrington 1942; McCawley 1996). McCawley (1996:157) states that "[i]nternment may have been the more standard practice on the Channel Islands and the mainland coast directly opposite, perhaps reflecting either the influence of Chumash mortuary practices or else a scarcity of fuel suitable for funeral pyres." During the Contact Period, cremation was the standard practice for the mainland Tongva. Cremation ashes have been found in archaeological contexts buried within stone bowls and in shell dishes (Ashby and Winterbourne 1966:27). Archaeological and ethnographic data describe a wide variety of grave offerings, including seeds, stone grinding tools, otter skins, baskets, wood tools, shell beads, bone and shell ornaments, and projectile points and knives. Offerings varied with the sex and status of the deceased. Graves were sometimes marked, and in the San Pedro area headstones or boards were etched with figures (Heizer 1968:fn. 66).

European contact with the Tongva occurred as early as 1542 with the Spanish expedition led by Juan Rodriguez Cabrillo, followed by Sebastián Vizcaíno in 1602, both of who visited Santa Catalina Island. Colonization of Tongva lands did not begin in earnest until after the inland expedition led by Gaspar de Portolá in 1769; by 1771, four missions had been constructed in the region, including Mission San Gabriel, located in Los Angeles County and founded in September 1771 (Engelhardt 1927a). The Franciscan missions, charged with converting the Native Americans to Christianity and with acculturating them to European society and economy, began relocating them to mission grounds.

Known as *reducción*, relocation and baptism initially involved the Eastern Gabrielino of the plains as far south as the Santa Ana River and west to the Los Angeles River. The missionaries later proselytized the Western Gabrielino living west of the Los Angeles River, on the southern Channel Islands, and the interior groups to the east and south. Between 1780 and 1794, the majority of people from the southeast region were baptized and removed to the mission (King 2004:Figs. 7 and 8). Mission San Fernando del Rey was founded in 1797, and its priests pushed into the lands of other tribes located to the north and west and also converted Tongva people along the Los Angeles River and its tributaries. While mission life did give indigenous Californians some skills needed to survive in a rapidly changing world, much traditional cultural knowledge was lost during this era, as populations were moved and decimated by introduced diseases for which the people had no immunity.

With the founding of the Pueblo of Los Angeles in December 1781, civilian settlers came into the region, soon followed by retiring military men and their families from the Spanish garrisons (Engelhardt 1927b:48-51). The soldiers were given vast tracts of land by Spanish authorities within traditional Tongva subsistence areas. The Native Americans (both neophytes from the disintegrating missions and *cimarrones*, or gentile Indians) were among those who worked on the large ranchos. After governmental control of California shifted to Mexico, the missions were formally secularized in 1834, and the extensive mission lands were divided into private land grants, claimed by the growing ranchero class. With the migration of farmers to southern California after the Mexican-American War of 1846, the local native population, who continued to work as laborers, was soon a minority that was often lumped together with the Mexican-American community. Many allied themselves with remaining Native American communities in the Tehachapi and San Bernardino Mountains.

In the early twentieth century, Tongva who still lived in San Gabriel neighborhoods near the old mission joined the Mission Indian Federation and sought redress from the federal government over lost lands. A generation later, partly as an outgrowth of the civil rights movement, Tongva started to form political organizations of their own to affect handling of ancestral remains discovered at construction sites and to seek federal acknowledgement of their tribe. There are currently five such organizations with total membership approaching nearly a thousand people. They are still struggling to receive federal recognition.

31.2.2.3 Historic Overview

Post-contact history for the state of California generally is divided into three specific periods: the Spanish Period (1769–1822), the Mexican Period (1822–1848), and the American Period (1848–present). As discussed in more detail in Chapter 2 of this report, although there were brief visits by Spanish, Russian, and British explorers from 1529–1769, the beginning of Spanish settlement in California occurred in 1769 with a settlement at San Diego and the first (Mission San Diego de Alcala) of 21 missions established from 1769–1823. After the 1822 revolution by Mexico against the Spanish crown, the Mexican Period is marked by an extensive era of land grants, most of which were in the interior of the state, and by exploration by American fur trappers west of the Sierra Nevada Mountains.

With the signing of the Treaty of Guadalupe Hidalgo in 1848, ending the Mexican–American War, California became a territory of the United States. The discovery of gold in 1848 at Sutter's Mill near Sacramento and the resulting Gold Rush era influenced the history of the state and the nation. The rush of tens of thousands of people to the gold fields also had a devastating impact on the lives of indigenous Californians, with the introduction and concentration of diseases, the loss of land and territory (including traditional hunting and gathering locales), violence, malnutrition, and starvation. Thousands of settlers and immigrants continued to pour into the state, particularly after the completion of the transcontinental railroad in 1869.

With continued growth, California continues to be a national leader in agriculture and poultry production, ranching (cattle and sheep), aerospace and communications industries, as well as the film and entertainment business. The wealth of California's natural resources (e.g., lumber, petroleum deposits, minerals, fish) also continues to contribute to its growth and development.

Los Angeles County

The first European account of the area to become Los Angeles County was by Portuguese navigator João Rodrigues Cabrilho (Juan Rodriguez Cabrillo in Spanish), who led a Spanish expedition along the California coast in 1542–1543 (Chartkoff and Chartkoff 1984:252-253). Cabrillo noted the numerous campfires of the Gabrielino and thus named the area the "Bay of Smokes." Spain's presence in the region was only intermittent for approximately 200 years. Then, because of the possibility of territorial encroachment by the British and Russians from the north, Spanish Governor of Baja California Gaspar de Portolá was instructed to lead a land–sea expedition to colonize Alta (upper) California in the 1760s (Chartkoff and Chartkoff 1984:254-257).

On September 8, 1771, Fathers Pedro Cambón and Angel Somera established the Mission San Gabriel de Arcángel near the present-day city of Montebello (Johnson et al. 1972). In 1775, the mission was moved to its current location in San Gabriel due to better agricultural lands. This mission marked the first sustained European occupation of the Los Angeles County area. Mission San Gabriel, despite a slow start partially due to misconduct by Spanish soldiers, eventually became so prosperous it was known as "The Queen of the Missions" (Johnson et al. 1972).

The pueblo that eventually became the City of Los Angeles was established in 1781. During this period, Spain also deeded ranchos to prominent citizens and soldiers (though very few in comparison to the Mexican Period). Rancho San Pedro, one such rancho, was deeded to soldier Juan Jose Dominguez in 1784 and comprised 75,000 acres encompassing the modern South Bay region from the Los Angeles River on the east to the Pacific Ocean on the west (Dominguez Rancho Adobe Museum 2006).

The area that became Los Angeles County saw an increase in European settlement during the Mexican Period largely due to the many land grants (ranchos) to Mexican citizens by various governors. However, the Mexican Period for Los Angeles ended in early January 1847. Mexican forces fought combined U.S. Army and Navy forces in the Battle of the San Gabriel River on January 8 and in the Battle of La Mesa on January 9 (Nevin 1978). On January 10, leaders of the pueblo of Los Angeles surrendered peacefully after Mexican General Jose Maria Flores withdrew his forces. Shortly thereafter, newly appointed Mexican Military Commander of California Andrés Pico surrendered all of Alta California to U.S. Army Lieutenant Colonel John C. Fremont in the Treaty of Cahuenga (Nevin 1978).

Settlement of the Los Angeles region continued in the early American Period. The county was established on February 18, 1850, one of 27 counties established in the months prior to California becoming a state. Many ranchos in the county were sold or otherwise acquired by Americans, and most were subdivided into agricultural parcels or towns. Nonetheless, ranching retained its importance and, by the late 1860s, Los Angeles was one of the top dairy production centers in the country (Rolle 2003). By 1876, the county had a population of 30,000 (Dumke 1944:7).

In 1854, the U.S. Congress agreed to let San Pedro become an official port of entry. By the 1880s, the railroads had established networks throughout the county, resulting in fast and affordable shipment of goods, as well as a means to transport new residents to the booming region (Dumke 1944). New residents included many health-seekers drawn to the area by the fabled climate in the 1870s–1880s (Baur 1959).

Availability of fresh water has always been a concern for county residents. Many authors (e.g., Kahrl 1982; Mulholland 2000; Nadeau 1997; Reisner 1986) identified the control and management of water as the single most important factor in the development of southern California. As William Mulholland did for the City of Los Angeles in 1913, the Metropolitan Water District of Southern California (MWD), formed in the 1920s, secured water rights for many areas including portions of Los Angeles County not incorporated within the City of Los Angeles (Metropolitan Water District of Southern California n.d.; Nadeau 1997). The formation of MWD began in 1924, when then Mayor of Pasadena Hiram W. Wadsworth initiated the formation of the Colorado River Aqueduct Association (Metropolitan Water District of Southern California n.d.). Wadsworth, as president of this group representing 13 cities, pushed for the construction of an aqueduct similar to the Los Angeles–Owens Valley Aqueduct that would provide water from the Colorado River to thirsty southern California. This resulted in the incorporation of MWD in 1928 and the construction of the aqueduct, an engineering marvel that finally began delivering Colorado River water to MWD's member cities in 1941 and ultimately facilitated the incredible population growth that occurred in the region (Metropolitan Water District of Southern California n.d.).

In the early to mid-1900s, population growth accelerated due to industry associated with both world wars, as well as emigration from the Midwest "dust bowl" states during the Great Depression. The county became one of the most densely occupied areas in the U.S. The county's mild climate and successful economy continued to draw new residents in the late 1900s, with much of the county transformed from ranches and farms into residential subdivisions surrounding commercial and industrial centers. Hollywood's development into the entertainment capital of the world, and southern California's booming aerospace industry, were key factors in the county's growth.

City of Burbank

Don José María Verdugo was granted the 36,403-acre Rancho San Rafael by Spanish Governor Pedro Fages in 1784 (Cowan 1956). This rancho and the 4,600-acre Rancho La Providencia (granted to Commandante J. Castro, Luis Arenas, and Vincente de la Ossa during the Mexican Period) covered most of present-day Burbank (Burbank Unified School District 1967). In 1845, the Battle of Providencia, also called the "Second Battle of Cahuenga Pass," took place at Rancho La Providencia. The battle resulted in the unpopular Mexican Governor Manuel Micheltorena being replaced by Pio Pico, who was highly popular with Californios even into the American Period (Burbank Unified School District 1967).

The first Americans to own land in the future Burbank were David W. Alexander and Alexander Bell, who purchased the Rancho La Providencia from Vincente de la Ossa for $1,500 in 1851 (Burbank Unified School District 1967). In 1857, Jonathan R. Scott traded his land in the La Cañada area, formerly part of the Verdugo family rancho, for 4,603 acres of the western portion of Rancho San Rafael. Today, this area is the business district of Burbank.

In 1867, Dr. David Burbank purchased the Rancho La Providencia and Scott's portion of Rancho San Rafael and combined them into one ranch, receiving clear title in 1871. Burbank was a dentist in the pueblo of Los Angeles, but soon became an established and successful sheep farmer. He shrewdly sold a right-of-way to the Southern Pacific Railroad for one dollar in 1873, and the first train passed through his property in 1874 (Burbank Unified School District 1967). In 1886, Burbank sold his ranch to a group of investors (including himself) who formed the Providencia Land and Water Company (Dumke 1944; Burbank 2006). The town of Burbank was laid out in April 1887, and the Providencia Land and Water Company advertised its 17,000 acres of town and surrounding farmland on the Southern Pacific line (Dumke 1944). Within one year, the town had a streetcar line, a sixty-room hotel, and over 250 residents (Dumke 1944). However, a depression struck the greater Los Angeles area in 1889, and land values tumbled. Burbank survived the following dry climatic period by farming and tapping natural underground water wells (Burbank Unified School District 1967).

The City of Burbank was incorporated in 1911, the same year the Pacific Electric Railroad was completed from Los Angeles to Burbank (Burbank Unified School District 1967). The city experienced a boom in the 1920s, with the addition of many new industries. Among these were the First National Studio (now Warner Brothers), which began the city's noted association with the motion picture industry, and Lockheed Aircraft Company, which after bankruptcy caused by the 1929 stock market crash, became the Lockheed Aircraft Corporation. The Burbank Airport began construction in 1929 and was touted as the "first $1 million airport in the U.S." (Burbank Unified School District 1967). From the 1920s through the 1950s, Burbank annexed 13 areas, increasing the incorporated area of the city to nearly 17 square miles (Burbank Unified School District 1967). World War II created growth for both the aerospace and the motion picture industries. In 1951, the National Broadcasting Company (NBC) opened its color television studios in Burbank (Burbank Unified School District 1967). Today, Burbank is well known as the location of many television and movie studios and for being a mixed-use community with a bustling commercial airport.

City of Los Angeles

Spanish Governor of California Felipe de Neve recognized the need to establish a pueblo north of the Mission San Gabriel to help supply Spain's military presidios in California as well as to help maintain Spain's control over the region (Ríos-Bustamante 1992). On 4 September 1781, 22 settlers from Mexico accompanied by the governor, soldiers, mission priests, and several Native Americans arrived at the site alongside the Los Angeles River that was officially declared *El Pueblo de la Reina de Los Angeles* or "The Town of the Queen of the Angels" (Ríos-Bustamante 1992).

Spanish Period residents of the Pueblo of Los Angeles, troubled by the inconsistent nature of the Los Angeles River including periods of drought and flooding, established a water management system named the *Zanja Madre* (Mother Ditch). This ditch system for the delivery of water was maintained and improved in both the Mexican and Early American Periods and remained in use until the early 1900s. The residents used this water for ranching and agriculture to feed themselves, as well as to help provision the presidios.

The Pueblo of Los Angeles grew in population during the Mexican Period (1822-1847) but retained the emphasis on ranching. Mexican governors granted numerous ranchos during this period, and the few granted during the Spanish Period continued to operate or were broken up into smaller ranchos. On May 23, 1835, Los Angeles was officially declared a city by Mexican national decree (Bancroft 1885). During the Mexican Period, Anglo-Europeans such as Hugo Reid and Don Juan Forster were assimilated into Los Angeles's citizenry and culture (Dakin 1939).

On April 4, 1850, only two years after the Mexican American War and five months prior to California receiving statehood, the City of Los Angeles was formally incorporated. Los Angeles maintained its role as a regional business center in early American Period and the transition of many former rancho lands to agriculture, as well as the development of citriculture in the late 1800s, further strengthened this status (Caughey and Caughey 1977). These factors combined with the expansion of port facilities and railroads throughout the region contributed to the impact of the real estate boom of the 1880s on the City of Los Angeles (Caughey and Caughey 1977; Dumke 1944). The boom's fiscal impact can be observed through the City's tax assessments: In 1886, Los Angeles was assessed $18,000,000 and in 1889 the total was $46,000,000 (Dumke 1944). Despite the real estate boom largely occurring in surrounding areas, Los Angeles, as the commercial center, reaped substantial benefits from the explosive growth.

The City of Los Angeles recognized the need for water to sustain the growing population in the late 1800s and Irish immigrant William Mulholland personified the city's efforts for a stable water supply (Dumke 1944; Nadeau 1997). The city purchased large tracts of land in the Owens Valley and Mulholland planned and directed the construction of the 240-mile aqueduct that brought the valley's water to the city by 1913 (Nadeau 1997).

Los Angeles continued to grow in the twentieth century in part due to the discovery of oil in the area and its strategic location as a wartime port. The military presence led to the aviation and eventually aerospace industries having a large presence in the city and region. Mines Field, which would become Los Angeles International Airport, was established in 1928. The complexion of the multicultural city continued to change; however, the process was frequently painful for the new, and often unwelcome, ethnic groups (Garcia et al. 2004). Hollywood became the entertainment capital of the world through the presence of the film and television industries and continues to tenuously maintain that position. With nearly 4 million residents, Los Angeles is the second largest city in the U.S. (by population) and remains a city with worldwide influence while continuing to struggle with its population's growth and needs.

31.3 PREVIOUS RESEARCH

31.3.1 Literature Search

31.3.1.1 Methods

A cultural resources site and survey record search was conducted at the South Central Coastal Information Center (SCCIC) of the California Historical Resources Information System (CHRIS) on June

22, 2000. Because the cable conduit already has been installed and no new construction will take place, only archaeological sites and surveys were requested; built environment resources (i.e., historic structures) were not requested. Site and survey information were requested for the linear project corridor and a 1/2-mile radius. Because some survey reports were very large, only bibliographic information on them was obtained.

In addition to official maps and records, the SCCIC consulted the following information sources as part of their record search:

- National Register of Historic Places – Listed Properties
- California Register of Historical Resources
- California Inventory of Historical Resources
- California State Historical Landmarks
- California Points of Historical Interest
- Directory of Properties in the Historical Resources Inventory (Office of Historic Preservation)
- Caltrans State and Local Bridge Surveys

31.3.1.2 Findings

The literature search indicated that approximately 50 percent of the project area has been subject to intensive archaeological investigation. A total of 17 cultural resources have been previously recorded within the 1/2-mile radius of the segment corridor (Table 31-4). Of these resources, 1 is prehistoric and 16 are historic (one isolated find and 15 sites). Of the 17 resources, one is known to contain Native American burials.

The series of 1:24,000 maps at the end of this chapter (Figure 29.1 through Figure 29.5) show the previously recorded cultural resources along the segment, as provided by the CHRIS records search. As noted in the figure legend, the labeled resources are identified as one of four types: linear, prehistoric, historic, or protohistoric and/or multi-component.

Table 31-4. Segment 29 Corridor – Previously Recorded Cultural Resources

Site #	Site Type	Site Condition	USGS Quad	Recorded
CA-LAN-7H	Probable dump area for Chinatown 1850-1870	Destroyed by freeway construction	Los Angeles	Meighan 1951
CA-LAN-887H	Spanish occupation site to 1950, artifacts and structural components	Intact, sealed under parking lot and city park	Los Angeles	Costello 1978; Padon 1999
CA-LAN-1112H	Foundations for 19th century padres house, cemetery, and garden area	Northern half of site destroyed in 1920s and other possible destruction by planned building of a new parish	Los Angeles	NARC 1981

Table 31-4. Segment 29 Corridor – Previously Recorded Cultural Resources

Site #	Site Type	Site Condition	USGS Quad	Recorded
CA-LAN-1575H	Chinatown ca. 1860-1930s	Chinatown is demolished, Union Station located on the substantial deposits	Los Angeles	Foster 1989
P-19-002530	Historic Burbank Depot ca. 1929	Structures intact	Burbank	Schmidt 1992
P-19-002563	Historic trash deposit, location of La Grande Railroad Station	Good	Los Angeles	Foster and Turner 1997
P-19-002610	Cut granite cobblestone street and remains of streetcar rail line	Good: utility pipelines in site area, some stones and rails have been removed	Los Angeles	Owen 1997
P-19-002741	Buried mortared red brick footing/wall	Fair: portion of wall above current pavement is gone, trenching activity	Los Angeles	Michalsky 1998
P-19-002791	South half of El Pueblo Historical Park containing historic buildings	Fair: site subject to construction, demolition, trenching, and excavation	Los Angeles	Foster 1999
P-19-100301	Isolate "black glass" bottle fragment	N/A	Los Angeles	Michalsky
P-19-120014	Pit feature containing bricks, stoneware bottles, barrel hoops, and boulders	Unknown	Los Angeles	Eisentraut 1996
P-19-120015	Isolated burial	Discovered during trenching, no artifacts were found with the burial	Los Angeles	SCC Information Center Staff 1996
P-19-186110	U.P. Standard gage railroad and associated features	Extant, tracks currently maintained, replaced and used.	Los Angeles	Ashkar 1999
P-19-186112	U.P. and S.P. Standard gage railroad and associated features	Extant, tracks currently maintained, replaced and used.	Los Angeles	Ashkar 1999

Table 31-4. Segment 29 Corridor – Previously Recorded Cultural Resources

Site #	Site Type	Site Condition	USGS Quad	Recorded
P-19-150330	St. Vibiana's Cathedral, 114 E 2nd St.	Dedicated 1876, renovations completed 1922, condition unknown	Los Angeles	n/a
P-19-150329	Fritz Estate, Two Queen Anne Cottages	Extant, cottages repositioned on lots, largely unaltered	Los Angeles	Slawson 1995
P-19-150324	Southern Pacific RR Depot	Good/registered	Hollywood	unknown

31.3.2 Native American Consultation

31.3.2.1 Methods

The Native American Heritage Commission (NAHC) was contacted on May 5, 2000, to request a Sacred Lands file search and a current Native American contact list. The Commission's response, dated May 17, 2000, provided the names and addresses of 12 local Native American groups and individuals. Letters subsequently were sent on May 19, 2000, to the listed groups and individuals to determine if they have knowledge of culturally sensitive locations within the project area. If there was no response to the letter, a telephone call was made to each individual or representative on June 6, 2000. A table listing contact dates and responses is attached as Appendix B.

31.3.2.2 Findings

The reply from the NAHC states the search failed to indicate the presence of Native American cultural resources in the immediate project area. One telephoned response was received to the letters addressed to the contact list; no responses were received to the telephone calls. Sam Dunlap expressed no specific concerns and that Native American monitors were available, if needed.

31.4 FIELDWORK

Fieldwork for the Burbank to Los Angeles segment involved (1) pedestrian survey and limited visits to known sites and (2) monitoring of maintenance activities. No cultural resources were collected during the Qwest Network Construction Project.

The fieldwork was conducted under the supervision of a CRS, who supervised lead archaeological monitors and a staff of archaeological monitors. Archaeological monitors were responsible for being on site during all work in sensitive areas, conducting spot checks if the area was designated for intermittent monitoring, and completing Daily Monitoring Logs. The CRS or archaeological monitor was responsible for flagging or otherwise delineating ESAs, including a 15-foot buffer zone around cultural resources, within four days prior to maintenance activities. The archaeological monitor was also responsible for completing a Site Condition Record immediately after removal of such flagging or other protective markers.

31.4.1 Survey

A pedestrian survey was conducted to identify any historic/prehistoric sites or features that may have been encountered during the installation of the fiber optic lines. The entire segment was subjected to intensive pedestrian survey for cultural resources. The survey area consisted of a swath of land straddling the fiber optic line and extending 15 meters to either side. This area was considered the area of potential effect (APE) for Qwest backbone construction.

31.4.1.1 Methods

The survey crew consisted of 14 archaeologists, and survey parties of one or two individuals. The survey parties were deployed to conduct surveys along the alignment. For safety, two-member survey parties were implemented in remote and inhospitable areas. Table 31-5 provides a list of key site investigation staff, along with their professional credentials.

Qualified archaeologists walked a single pedestrian transect on either side of the fiber optic backbone alignment. Exposures of native soil were closely inspected for cultural material, as were animal burrows and other disturbances affording limited subsurface visibility. An attempt was made to locate known sites within the APE, based on the CHRIS records searches. Field crews then recorded the extent of impacts upon cultural resources resulting from Qwest backbone construction and construction-related activities. During all site inspections, data was routinely gathered to update site records, based on current site conditions. The condition of all previously recorded cultural resources that survey crews could locate within the APE was recorded on Site Condition Record forms.

In addition to reporting on the condition of previously recorded sites, survey crew members were instructed to record any cultural resources not previously recorded and any impacts the resource may have suffered as a result of the Qwest backbone construction. The minimally acceptable level of documentation needed for a resource's inclusion in the Office of Historic Preservation's (OHP's) filing system can be met with the preparation of a California Department of Parks and Recreation (DPR) 523 series Primary Record and a Location Map. While the minimum level of documentation is designed to provide an initial record of all types of cultural resources, survey crews were instructed to fully document any previously unrecorded resources. Full documentation (although different for various types of resources) generally includes the preparation of the Primary Record and Location Map, but also an Archaeological Site Record, Artifact Record, Photograph Record, as well as a Sketch Map.

Table 31-5. Key Site Investigation Staff

Key Staff	Highest Degree *	Years Experience
Cindy Arrington	M.S., RPA	10
Paul Shen-Brown	M.A., RPA	8
Lori Harrington	M.A., RPA	15
Mark Sullivan	M.A., RPA	26
George Zeimens	M.A., RPA	30
Bradbury Brown	B.A.	18
William Brown	B.A.	10
Todd Folmer	B.A.	11

Table 31-5. Key Site Investigation Staff

Key Staff	Highest Degree *	Years Experience
Keith Hamm	B.A.	4
Susan Kintscher	B.A.	2
Harry Moyer	B.A.	5
Mark Lowe	B.A.	12
Joise Salas	B.A	3
Dean Tye	B.A.	5

* RPA = Member of the Register of Professional Archaeologists

31.4.1.2 Findings

The entire segment was surveyed by archaeologists Paul Shen-Brown and Mark Sullivan in the spring of 2001. The pedestrian survey did not locate any previously unrecorded or newly identified cultural resource sites, artifacts, or objects.

The survey crew relocated one previously recorded archaeological site (historic structure) within the APE. The crew completed Site Condition Record forms for each known resource that was relocated. Table 31-6 summarizes the condition of each of these resources, none of which were impacted by Qwest.

Table 31-6. Segment 29 Condition of Relocated Archaeological Sites

*Resource Name or # (Assigned by recorder) P-19-002530 Quad: Burbank
*Recorded by: Paul Shen-Brown *Date Recorded: 12-29-00 ☐ Continuation ☒ Update
This site has been completely obliterated by urbanization; it is not possible that the Qwest line could have impacted the site.

31.4.2 Monitoring

31.4.2.1 Methods

In accordance with Protocol 5, a Mitigation and Monitoring Plan (MMP) was prepared in June 2000. The MMP noted that in this project corridor, Qwest would be performing maintenance on an existing line only. No new trenching was foreseen at this location. The proposed maintenance activity consisted of the re-excavation of pre-existing assist holes to perform maintenance or upgrades on the fiber-optic line. These excavations might take place at four points per linear mile. The MMP concluded that it was possible that some previously undisturbed soil might be disturbed during re-excavation.

Within a 1/2-mile of the proposed project corridor, 17 archaeological resources have been previously recorded. Of these resources, one contains Native American burials. Although 50 percent of the route remains unsurveyed outside of the specified roadways, the presence of human remains along this segment was not considered likely. Since some previously undisturbed soil may be disturbed during re-excavation,

it is possible that previously unknown cultural resources might be discovered during maintenance activities.

In view of the above information, the MMP made the following recommendations for monitoring within this study area:

- An archaeological monitor would be present when any maintenance is performed along this project corridor.
- No Native American observer would be present when any maintenance is performed along this project corridor.

31.4.2.2 Findings

No maintenance was required for the Burbank (134) to Los Angeles segment during the monitoring period. Because no maintenance activities occurred, archaeological monitoring was not necessary.

31.5 DISCUSSION

Prior to the current investigation, 50 percent of the Burbank to Los Angeles segment corridor had been investigated for cultural resources, with 17 cultural resources previously recorded within a 1/2-mile radius. In addition, one of the known archaeological sites contained Native American burials. No cultural resources had been previously recorded within the project corridor, and no previously unknown cultural resources were identified during the fieldwork reported here along the specified roadways. The presence of human remains was not considered likely along this segment, and no evidence of human remains was discovered during this project.

Under the oversight of a CRS, the specific Cultural Resources Protocols for this project were accomplished. Preparation of a MMP in compliance with Protocol 5 assured that known cultural resources would be avoided as feasible and impacts reduced by ensuring that any necessary archaeological mitigation was carried out prior to commencement of the maintenance activity. In compliance with Protocol 7, the literature search and subsequent fieldwork assured that identified cultural resources within the segment corridor were protected. Under Protocol 8, an archaeological monitor and Native American observer were present where appropriate. During the project, it was not necessary to implement Protocol 9, which describes the methods to be employed to address unanticipated discoveries and assure that cultural resources are protected by work stoppage and evaluation of the resource by the CRS or an archaeological monitor, since there were no unanticipated discoveries. Although it was not necessary to implement Protocol 10, that protocol describes the actions to be taken in the event of the discovery of human remains or suspected human remains.

31.6 RECOMMENDATIONS

Given that the current field investigation was conducted along a railroad corridor and surface streets, efforts to locate and relocate cultural resources within the scope of this project have been sufficient per current U.S. Secretary of the Interior's professional standards and guidelines.

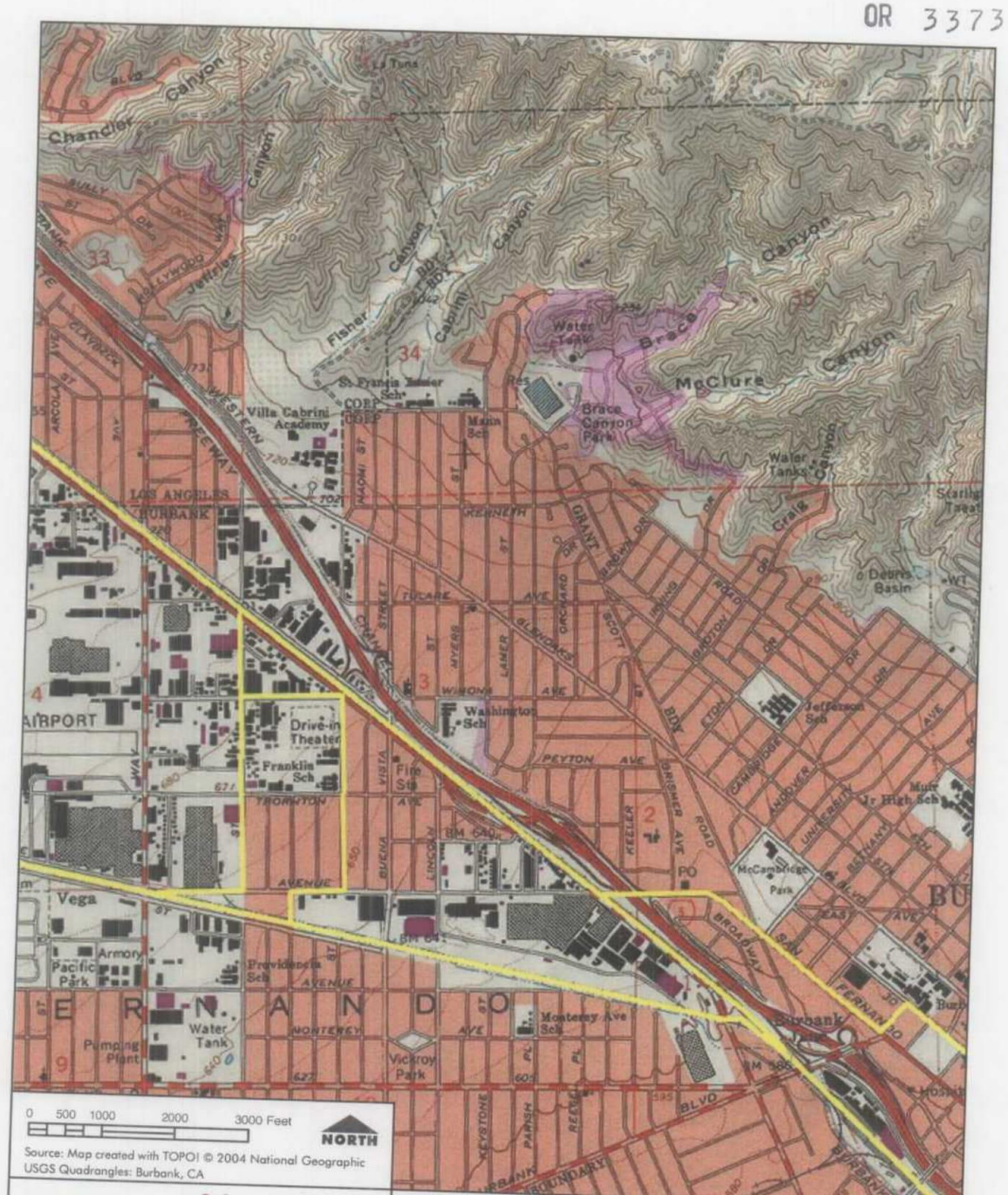
There remains, however, the potential for the existence of buried archaeological materials within this heavily disturbed project area. Prehistoric materials might include flaked stone tools, toolmaking debris, stone milling tools, fire-affected rock, animal bone shaped for use as tools, baked clay items, pottery,

marine shell, or soil darkened by cultural activities (midden). Historic materials might include building remains, metal, glass, or ceramic artifacts or debris.

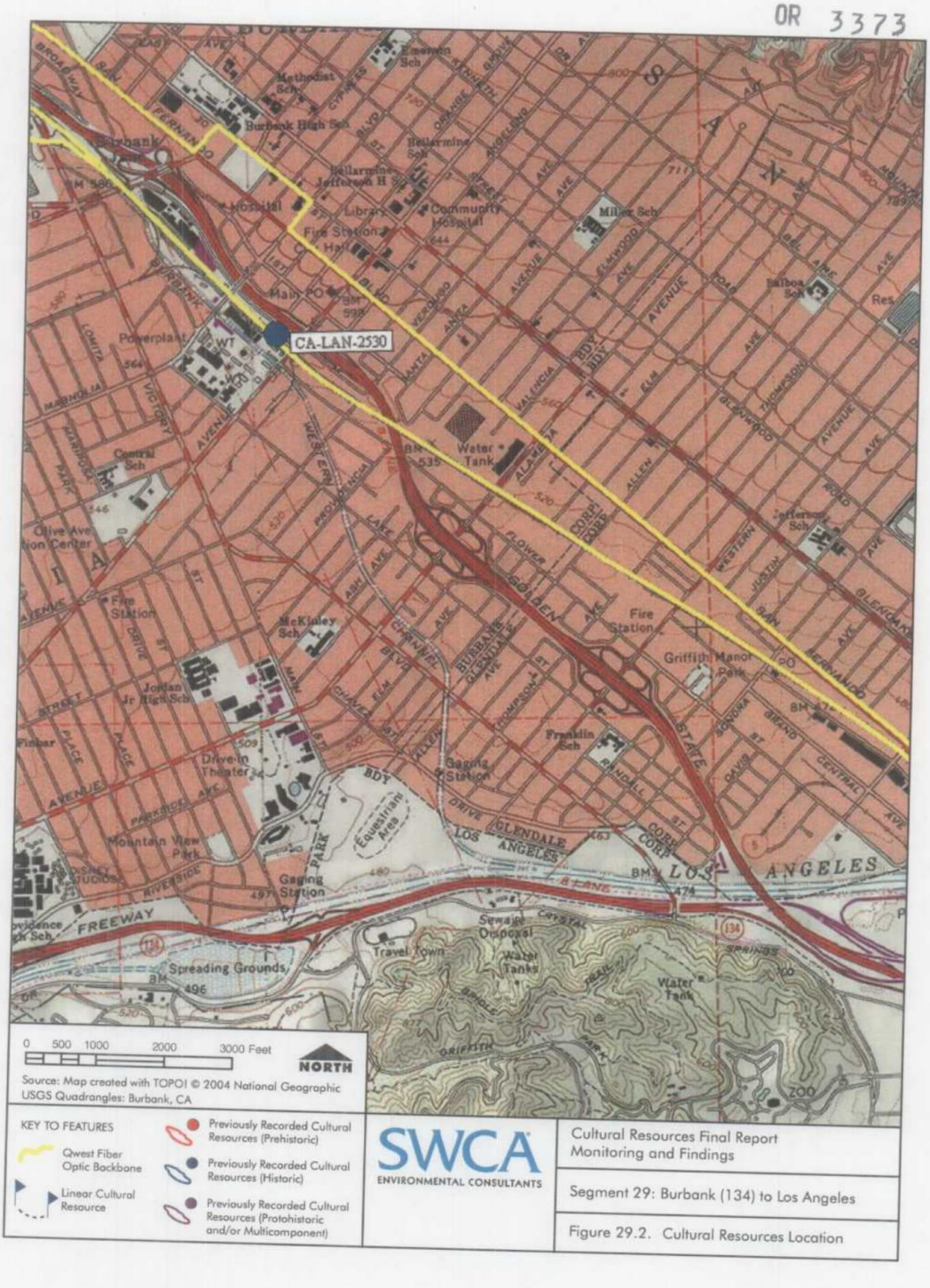
Should cultural resources be encountered by Qwest construction and/or management crews during future disturbance for maintenance of fiber-optic cable and related infrastructure, or should new construction occur within the state of California, work in the area must be halted and a qualified archaeologist should be notified immediately to evaluate the resource(s) encountered. Qwest would also adhere to the specific Cultural Resources Protocols, numbered 1 through 11, which were prepared to ensure Qwest's compliance under CPUC regulatory authority (see Appendix A).

- Protocol Number 1: Records Search and Data Adequacy Analysis
- Protocol Number 2: Native American Consultation
- Protocol Number 3: Archaeological Inventory and Site Recording
- Protocol Number 4: Site Boundary, Integrity or Significance Testing
- Protocol Number 5: Mitigation Monitoring Plan
- Protocol Number 6: Pre-Construction Data Recovery
- Protocol Number 7: Protection of Environmentally Sensitive Areas
- Protocol Number 8: Archaeological Monitoring and Native American Observation
- Protocol Number 9: Addressing Unanticipated Discoveries during Project Activity
- Protocol Number 10: Discovery of Human Bone
- Protocol Number 11: Final Report of Monitoring and Findings

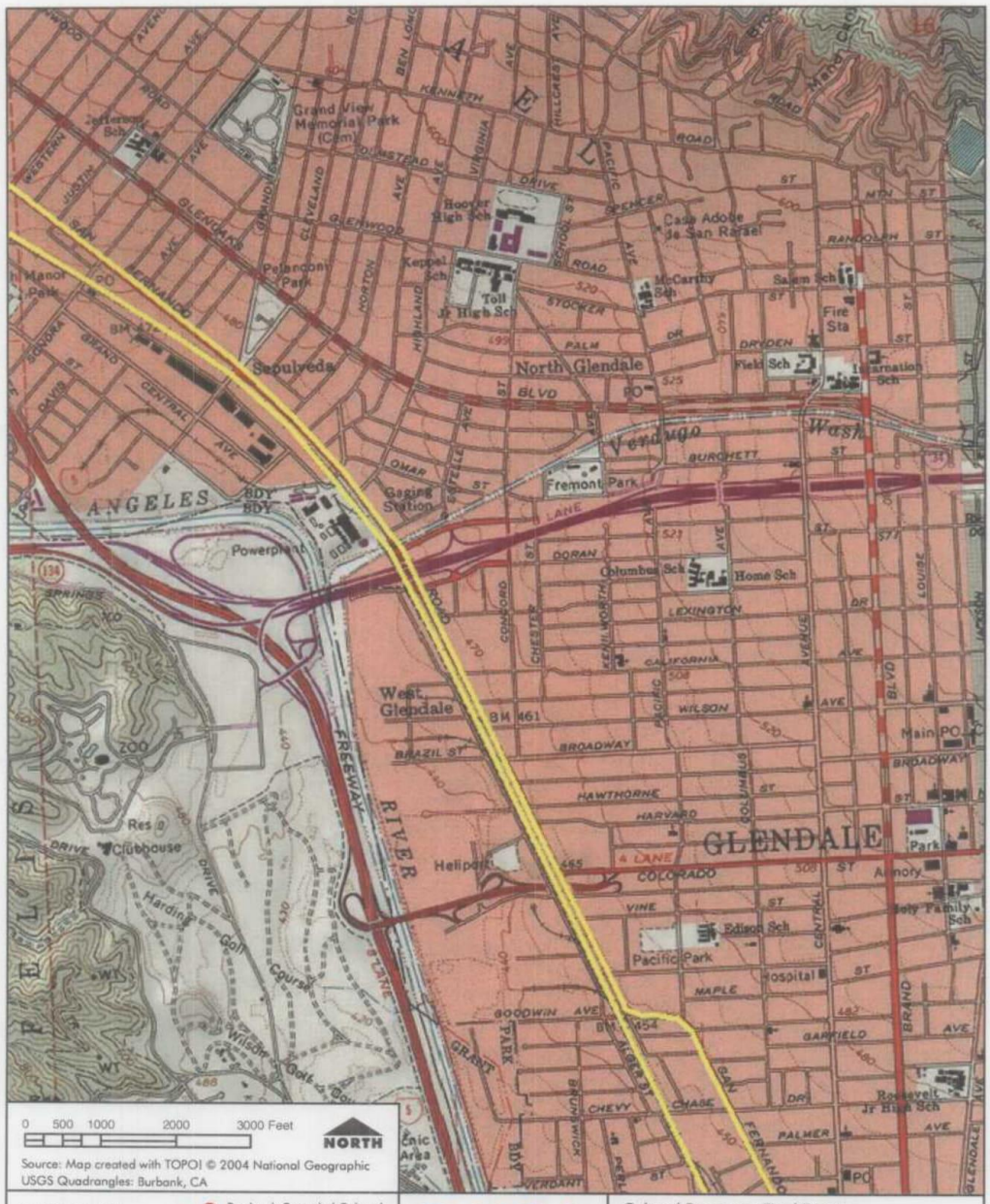
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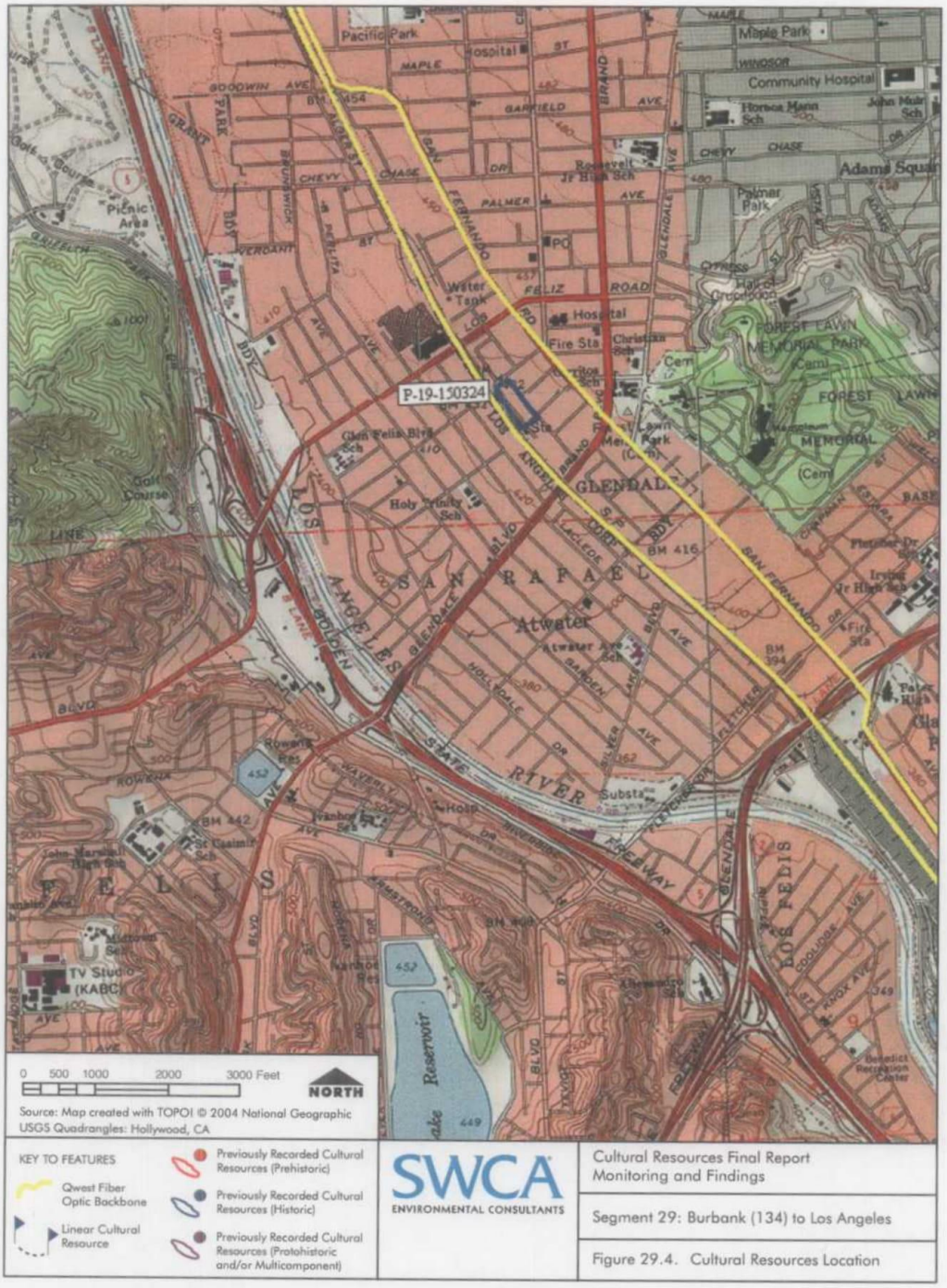
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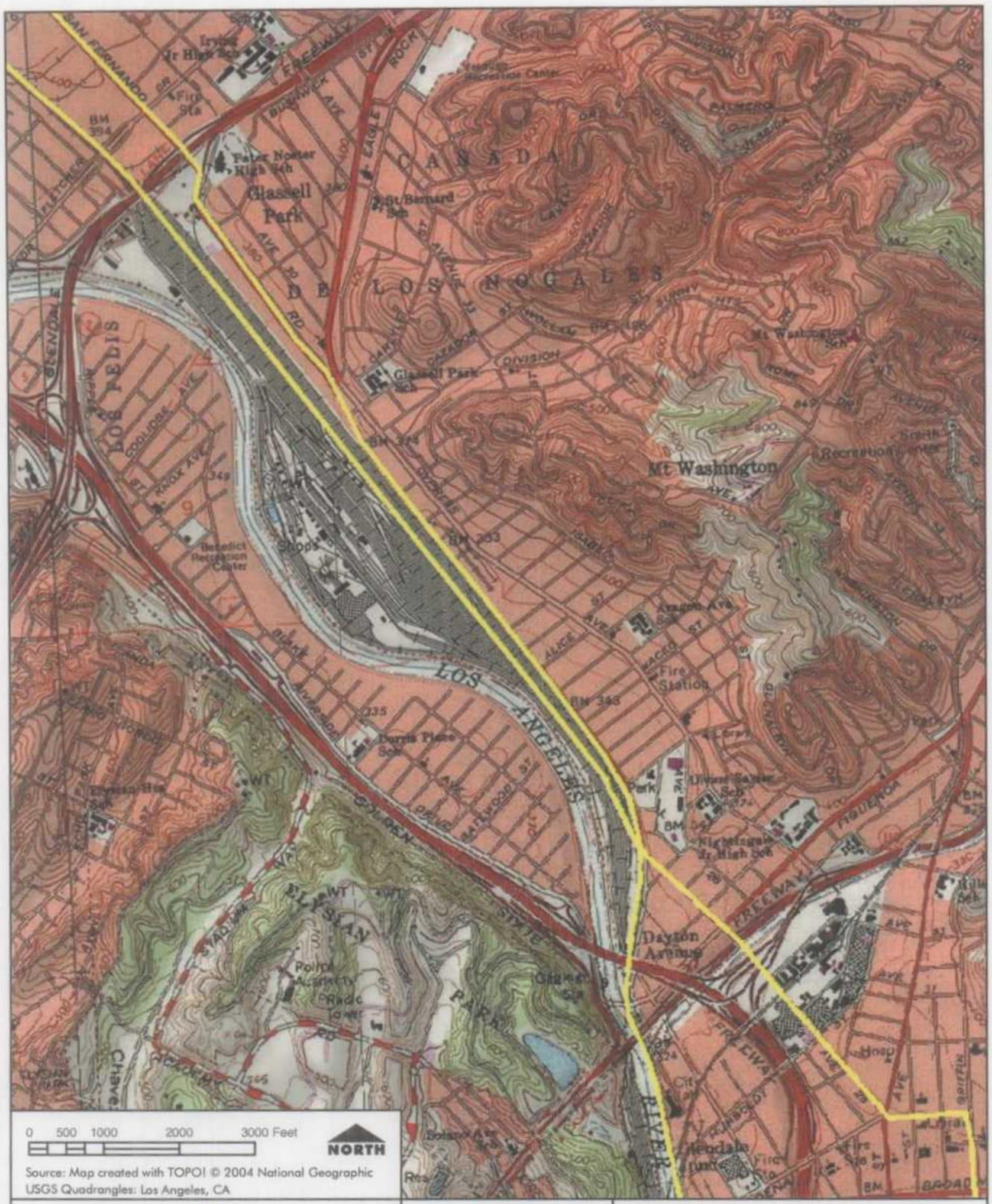
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32. ANAHEIM TO SAN CLEMENTE SEGMENT

Qwest Communications International Inc. (Qwest) retained SWCA Environmental Consultants (SWCA) to complete the Cultural Resources Final Report of Monitoring and Findings for the Qwest Network Construction Project. The report covers the cultural resources investigation for the maintenance (replacement and repair) of fiber-optic cable within the Qwest network "backbone" throughout the state of California. The existing California backbone includes approximately 1,431 linear miles of fiber-optic network. The investigation included surveys, focused visits to previously recorded archaeological sites, and monitoring of routine maintenance of existing lines along the network backbone.

The California Public Utilities Commission (CPUC) is the designated Lead Agency for this project under the California Environmental Quality Act (CEQA). The Qwest project is subject to specific Cultural Resources Protocols, numbered 1 through 11, prepared to ensure Qwest's compliance under CPUC regulatory authority. The CPUC and the Native American Heritage Commission (NAHC) approved the Qwest Fiber Optic Project Cultural Resources Protocols in February 2000. Qwest is proud of its record of responsible environmental and cultural resources stewardship and was an enthusiastic participant in the development of the Cultural Resources Protocols for this statewide project. In addition, to the greatest extent possible, Qwest followed the preferred approach: namely, to avoid ground disturbance activities within Environmentally Sensitive Areas (ESAs) and cultural resources during all maintenance activities.

The Protocols set forth a program for the identification and protection of known cultural resources within project rights-of-way (ROWs) and for the identification, assessment, and treatment of cultural resources that might be encountered during project activities. Protocols 1 through 6 generally were applied during project planning; Protocols 7 through 11 were applied immediately prior to, during, or at the conclusion of the routine maintenance program. The document containing the Protocols is provided as Appendix A.

In compliance with the General Conditions section of the Cultural Resources Protocols, qualified lead archaeological monitors and a staff of archaeological monitors monitored for cultural resources for this project. The monitors, as well as Native American observers, worked under the supervision of a qualified Cultural Resource Specialist (CRS). The CRS also determined when a Native American observer was deemed appropriate, depending on the sensitivity of the project segment. In addition, all Qwest personnel received training in field identification of potential cultural resources, laws regarding the protection of cultural resources, and what actions to take immediately in the event of the unanticipated discovery of cultural resources or human remains.

For purposes of the investigation, the California network backbone was divided into 36 segments. This document reports on the background information, methods, and findings of the cultural resources program for the Anaheim to San Clemente segment (Segment #30 out of 36) of the California Qwest network backbone, as shown on the segment location map (Figure 30)[1]. Cultural resources include archaeological and historical objects, sites, and districts; historic buildings and structures; cultural landscapes; and sites and resources of concern to local Native American and other ethnic groups. Cultural resources may be found on the ground surface or buried beneath the surface.

[1] NOTE: All figures in this chapter are labeled according to segment number, not chapter number.



Figure 30. Segment Location Map

The Cultural Resources Final Report of Monitoring and Findings for the Qwest Network Construction Project, of which this document is a part, satisfies the requirements of Protocol 11: Final Report of Monitoring and Findings. The format of the Final Report and this chapter of that report follow *Archaeological Resource Management Reports (ARMR): Recommended Contents and Format* (Office of Historic Preservation 1990).

32.1 SEGMENT DESCRIPTION

The Anaheim to San Clemente segment is along the Southern Pacific Railroad ROW and various inner city streets, through or near the cities of Anaheim, El Toro, Irvine, Mission Viejo, Orange, San Clemente, San Juan Capistrano, and Santa Ana, in Orange County, California. The network backbone in this area consists of a buried fiber-optic cable conduit, which can be accessed at four points per mile for maintenance and upgrading. Construction activity consists of the re-excavation of pre-existing handholes and assist holes to perform maintenance or upgrades on the fiber-optic line.

To access existing handholes, which are concrete or fiberglass vaults set below grade, the 18-inch cover of previously deposited soil immediately over the handhole cover is removed with a small mechanical excavator such as a backhoe or by hand. Assist hole openings are excavated to the depth of the conduit, up to 4 feet, and may range from 5 to 10 feet long and 2 feet wide. Then a backhoe-mounted puller adjacent to the alignment is used to assist the progress of the new fiber through the conduit. After the pulling operation is complete, the conduit is resealed and the assist hole backfilled with the excavation spoils. Soil disturbance for assist holes consists primarily of re-excavation of previously deposited trench spoils. Some possible intrusion into adjacent trench sidewalls also may occur.

The Anaheim to San Clemente segment is along the railroad ROW and city streets on the U.S. Geological Survey (USGS) 7.5-Minute Quadrangles listed in Table 32-1.

Table 32-1. Segment 30 USGS 7.5-Minute Quadrangles

Anaheim	El Toro	San Juan
Capistrano	Orange	Tustin
Dana Point	San Clemente	

32.2 SETTING

32.2.1 Natural

The Anaheim-San Clemente segment is situated just inland of the Gulf of Santa Catalina in Orange County. It is located in the Peninsular Range geomorphic province (Chapter 2, Figure 2-2). The segment crosses the San Diego Creek, and the San Joaquin Hills are located to the south. Elevation along the segment is approximately 50 meters (160 feet) above msl.

The climate within the vicinity of the segment is characterized by cool, dry summers and mild, moist winters. Because the area falls within a coastal region, winters are typically warmer, but summers tend to be milder. Winter temperatures have highs around 18 degrees Celsius (65 degrees Fahrenheit), and

summer temperatures have highs around 25 degrees Celsius (77 degrees Fahrenheit). When California was initially occupied, the climate was moister and cooler than today's Mediterranean climate (Major 1988).

Current uses along the segment include primarily development. Historically, the vicinity of the segment was characterized by vegetation communities that included salt marshlands in low-lying areas and along drainages, riparian scrub/forest along drainages, grasslands in upland areas, and coastal scrubland and chaparral in the hills (Chapter 2, Figure 2-1). With this mosaic of ecological communities, the area would have provided a very productive environment for its prehistoric occupants, one well suited to a hunting–gathering economy with a variety of water birds, small and large mammals, fish, reptiles and amphibians, and edible plant species. Following are descriptions of vegetation communities within the area of the segment and the natural resources within each community that likely would have been harvested by the area's prehistoric occupants.

32.2.1.1 Vegetation Communities

The following descriptions of vegetation communities are based upon data presented by Holland (1986), Holland and Keil (1995), and Sawyer and Keeler-Wolf (1995).

Brackish Marshland

Brackish or salt marshlands were likely an important part of the prehistoric environment, particularly around low areas along major drainages and near the bays along the California coast. Brackish marshes contain species tolerant of high salinity, such as saltgrass (*Distichlis spicata*), pickleweeds (*Salicornia* spp.), sea-blite (*Suaeda* spp.), and saltbush (*Atriplex* spp.) (Table 32-2). Wildlife species typical of marshlands are detailed in Table 32-3.

Riparian Scrub/Forest

Riparian scrub is a mid-successional stage community that typically matures into riparian forest; species composition between these habitat types, therefore, is very similar. Riparian forest can revert to riparian scrub through disturbances or frequent flooding events (Faber and Keller 1985). This community exists along streams and around seeps and springs and was likely located along local streams in the area during its prehistory. Many plants within this community, as well as animals attracted to the water and vegetation, provided abundant subsistence resources for prehistoric and historic occupants (Table 32-2 and Table 32-3).

Coastal Grassland

The grassland community in much of California has been converted to agricultural and other uses or has become dominated by non-native grasses, such as introduced bromes (*Bromus* spp.) and wild oats (*Avena* spp.). Historically, the grassland community contained a variety of resources. Seeds of many annual grasses would have been the primary resource of interest to the prehistoric occupants, but blossoms, greens, and bulbs were also available, primarily during the spring. Coastal grasslands occur in a variety of forms ranging from scattered perennial bunch grasses (typically *Nassella pulchra* or *N. lepida*) to stands dominated by native perennial grasses in an assemblage of geophytes (plants with underground bulbs or corms) and herbaceous annual species (Table 32-2). Wildlife species typical of grasslands are detailed in Table 32-3.

Coastal Scrubland

Coastal scrub is characterized by a diversity of low, aromatic, drought deciduous shrubs and sub-shrub species. Seeds are the primary resource within coastal sage scrub community, but edible stems, stalks, shoots, greens, roots, bulbs, and some berries can also be found. The resources of coastal sage scrub community are primarily available in the spring. Coastal sage scrub often is patchily distributed throughout its range (O'Leary et al. 1992). Over a scale of several miles, it can be found in diverse habitat mosaics with other plant communities, particularly grassland and chaparral and oak/riparian woodland in more mesic areas. Coastal sage scrub may convert to chaparral or grassland, depending on slope, aspect, climate, fire history, and other physical factors and biological phenomena. Conversely, chaparral or grassland areas may convert to coastal sage scrub (Axelrod 1978; White 1995; O'Leary 1995; Allen et al. 1999). Characteristic species that occur in coastal sage scrub habitat are included in Table 32-2 and Table 32-3.

Chaparral

Chaparral community occurs in the foothills near the segment. The chaparral community contains a mix of shrubs, such as manzanita (*Arctostaphylus* spp.), chamise (*Adenostoma fasciculatum*), mountain lilacs (*Ceanothus* spp.), and coffeeberry (*Rhamnus* spp.). Understory vegetation is sparse and limited to shade tolerant herbs and ferns. Numerous shrub species occur in chaparral habitat, providing an abundance of seeds, berries, bulbs, shoots, and roots (Table 32-2). A diversity of animal species occurs within the chaparral community (Table 32-3).

Table 32-2. Segment 30 Plant Resources

Species	Scientific Name
Brackish Marshland Community	
Saltbush	*Atriplex* spp.
Saltmarsh dodder	*Cuscuta salina*
Saltgrass	*Distichlis spicata*
Fleshy jaumea	*Jaumea carnosa*
Pickleweed	*Salicornia* spp.
Bulrushes	*Scirpus* spp.
Sea-blite	*Suaeda* spp.
Arrow-grass	*Triglochin* spp.
Riparian Scrub/Woodland Community	
Overstory Species	
Maples	*Acer* spp.
Alders	*Alnus* spp.
Fremont cottonwood	*Populus fremontii*
Mid-story Species	
Dogwoods	*Cornus* spp.
Mesquite	*Prosopis* spp.
Arroyo willow	*Salix lasiolepis*
Willows	*Salix* spp.

Table 32-2. Segment 30 Plant Resources

Species	Scientific Name
Elderberries	*Sambucus* spp.
Understory Species	
Mugwort	*Artemisia douglasiana*
Monkeyflowers	*Mimulus* spp.
California rose	*Rosa californica*
Blackberries	*Rubus* spp.
Snowberries	*Symphoricarpos* spp.
Coastal Grassland Community	
Grasses	
Junegrass	*Koeleria macrantha*
Melic grasses	*Melica* spp.
Muhlies	*Muhlenbergia* spp.
Small-flowered needlegrass	*Nassella lepida*
Purple needlegrass	*Nassella pulchra*
Fescues	*Vulpia* spp.
Geophytes	
Onions	*Allium* spp.
Brodiaeas	*Brodiaea* spp.
Blue dicks	*Dichelostemma capitatum*
Blue-eyed grass	*Sisyrinchium bellum*
Herbaceous Plants	
Yellow fiddleneck	*Amsinckia menziesii*
Red maids	*Calandrinia ciliata*
Pussy paws	*Calyptridium* spp.
Suncups	*Camissonia* spp.
Owl's-clovers	*Castilleja* spp.
Blue-eyed Marys	*Collinsia* spp.
Cryptanthas	*Cryptantha* spp.
Delphiniums	*Delphinium* spp.
California poppy	*Eschscholzia californica*
Gilias	*Gilia* spp.
Everlastings	*Gnaphalium* spp.
Tarweeds	*Hemizonia* spp.
Linanthus	*Linanthus* spp.
Lomatiums	*Lomatium* spp.
Lotus	*Lotus* spp.
Lupines	*Lupinus* spp.

Table 32-2. Segment 30 Plant Resources	
Species	Scientific Name
Microseris	*Microseris* spp.
Phacelias	*Phacelia* spp.
Popcorn flowers	*Plagiobothrys* spp.
California threadstem	*Pterostegia drymarioides*
Sanicles	*Sanicula* spp.
Checker mallow	*Sidalcea malvaeflora*
Clovers	*Trifolium* spp.
Sub-shrubs	
Milk vetches	*Astragalus* spp.
Buckwheats	*Eriogonum* spp.
Coastal Scrubland Community	
California sage	*Artemisa californica*
Coyote bush	*Baccharis pilularis*
Encelia	*Encelia* spp.
Buckwheat	*Eriogonum* spp.
Yerba santa	*Eriodictyon* spp.
Lupine	*Lupinus* spp.
Bracken fern	*Pteridium aquilinum*
Coffeeberry	*Rhamnus* spp.
Blackberry	*Rubus ursinus*
Black sage	*Salvia mellifera*
Figwort	*Scrophularia californica*
Chaparral Community	
Shrubs	
Chamise	*Adenostoma fasciculatum*
Manzanitas	*Arctostaphylos* spp.
Hoary-leaved ceanothus	*Ceanothus crassifolius*
Buck brush	*Ceanothus cuneatus*
Bigpod ceanothus	*Ceanothus megacarpus*
Mountain lilacs	*Ceanothus* spp.
Mountain mahogany	*Cercocarpus betuloides*
Fremont silk-tassel	*Garrya fremontii*
Coffeeberry, redberry	*Rhamnus* spp.
Gooseberries, currants	*Ribes* spp.
Scrub oak	*Quercus berberidifolia*
Vines	
Dodders	*Cuscuta* spp.

Table 32-2. Segment 30 Plant Resources	
Species	Scientific Name
Bedstraws	*Galium* spp.
Chaparral-peas	*Lathyrus* spp.

32.2.1.2 Typical Animal Resources

Wildlife species common to the vegetation communities in the vicinity of the Anaheim to San Clemente segment are detailed in Table 32-3.

Table 32-3. Segment 30 Common Animal Resources		
Species	Scientific Name	Communities
Amphibians		
Western toad	*Bufo boreas*	Riparian scrub/forest, Foothill woodland, Marshland
Reptiles		
California kingsnake	*Lampropeltis getula californiae*	Grasslands, Riparian scrub/forest, Scrublands, Chaparral, Foothill woodlands, Coniferous forests
Pacific gopher snake	*Pituophis catenifer catenifer*	Grasslands, Riparian scrub/forest, Scrublands, Chaparral
Western rattlesnake	*Crotalus viridis*	Scrublands, Grasslands, Foothill woodlands
Western fence lizard	*Sceloporus occidentalis*	Scrublands, Chaparral, Foothill woodlands, Coniferous forests
Pacific pond turtle	*Emys marmorata*	Marshlands
Upland Birds		
California quail	*Callipepla californica*	Grasslands, Scrublands, Chaparral, Foothill woodlands
Hawks	*Buteo* spp.	Grasslands, Chaparral, Foothill woodlands
Western scrub jay	*Aphelocoma californica*	Chaparral, Foothill woodlands
Mockingbird	*Mimus polyglottos*	Scrublands, Chaparral, Foothill woodlands
Western meadowlark	*Sturnella neglecta*	Grasslands
Riparian and Marshland Birds		
Geese	*Branta* spp.	Marshlands

Table 32-3. Segment 30 Common Animal Resources

Species	Scientific Name	Communities
Ducks	*Anas, Aythya,* and *Bucephala* spp.	Marshlands
Mergansers	*Mergus* and *Lophodytes* spp.	Marshlands
Ruddy duck	*Oxyura jamaicensis*	Marshlands
American bittern	*Botaurus lentiginosus*	Marshlands
Herons	*Ardea, Butorides, Nycticorax,* and *Nyctanassa* spp.	Marshlands
Egrets	*Egretta* spp.	Marshlands
Mammals		
Desert cottontail	*Sylvilagus audubonii*	Grasslands, Scrublands, Chaparral, Foothill woodlands, Coniferous forests
Brush rabbits	*Sylvilagus bachmani*	Scrublands, Chaparral
Black-tailed jackrabbit	*Lepus californicus*	Grasslands, Scrublands
California ground squirrel	*Spermophilus beecheyi*	Grasslands
Pocket gopher	*Thomomys bottae*	Grasslands, Chaparral
Dusky-footed woodrat	*Neotoma fuscipes*	Scrublands, Chaparral, Foothill woodlands
California vole	*Microtus californicus*	Grasslands, Chaparral, Riparian scrub/forest, Foothill woodlands, Coniferous forests
Coyote	*Canis latrans*	Grasslands, Scrublands, Chaparral, Riparian scrub/forest, Foothill woodlands, Coniferous forests
Gray fox	*Urocyon cinereoargenteus*	Grasslands, Scrublands, Chaparral, Riparian scrub/forest, Foothill woodlands, Coniferous forests
Raccoon	*Procyon lotor*	Grasslands, Chaparral, Riparian scrub/forest, Foothill woodlands, Coniferous forests
Long-tailed weasel	*Mustela frenata*	Grasslands, Chaparral, Riparian scrub/forest, Foothill woodlands, Coniferous forests
Badger	*Taxidea taxus*	Grasslands, Open woodlands
Striped skunk	*Mephitis mephitis*	Grasslands, Chaparral, Riparian scrub/forest, Foothill woodlands, Coniferous forests
Mountain lion	*Felis concolor*	Grasslands, Scrublands, Chaparral, Riparian scrub/forest, Foothill woodlands, Coniferous forests

Table 32-3. Segment 30 Common Animal Resources		
Species	Scientific Name	Communities
Bobcat	*Lynx rufus*	Grasslands, Scrublands, Chaparral, Riparian scrub/forest, Foothill woodlands, Coniferous forests
Mule deer	*Odocoileus hemionus*	Chaparral, Riparian scrub/forest, Foothill woodlands, Coniferous forests

32.2.2 Cultural

32.2.2.1 Prehistoric Overview

California prehistory is divided into three broad temporal periods that reflect similar cultural characteristics throughout the state: Paleoindian Period (ca. 10,000–6000 B.C.), Archaic Period (6000 B.C.–A.D. 500), and Emergent Period (A.D. 500–Historic Contact) (Fredrickson 1973, 1974, 1994) (Chapter 2, Figure 2-5). The Archaic is divided further into Lower (6000–3000 B.C.), Middle (3000–1000 B.C.), and Upper (1000 B.C.–A.D. 500) Periods, generally governed by climatic and environmental variables, such as the drying of pluvial lakes at the transition from the Paleoindian to the Lower Archaic.

The Anaheim to San Clemente segment lies in what generally is described as the San Diego subregion of the Southern Coast Archaeological Region, which is one of eight arbitrary organizational divisions of the state (Moratto 1984:Fig. 1) (Chapter 2, Figure 2-3). This subregion extends southward along the coast from Santa Monica Bay to the border with Mexico, and includes southern Los Angeles County, all of Orange County, the southwest corner of San Bernardino County, and western Riverside and San Diego Counties.

Numerous chronological sequences have been devised to understand cultural changes for various areas within southern California over the past century (Chapter 2, Figure 2-5). Building on early studies and focusing on data synthesis, Wallace (1955, 1978) developed a prehistoric chronology for the southern California coastal region, including Orange County, which is widely used today. Four periods are presented in Wallace's prehistoric sequence: Early Man, Milling Stone, Intermediate, and Late Prehistoric. As noted by Moratto (1984:159), Wallace's (1955) synthesis lacked chronological precision due to the lack of absolute dates at the time of its creation, but remains generally valid today.

In addition to Wallace's classic summary, a regional synthesis developed by Warren (1968) is referred to in the following discussion. This synthesis is supported by a larger archaeological database for southern California, which includes the advent and increased use of radiocarbon dating after the 1950s. Using the concepts of cultural ecology and cultural tradition, Warren (1968) proposed a series of six prehistoric traditions. Three of these traditions, the San Dieguito Tradition, Encinitas Tradition, and Campbell Tradition, correlate with Wallace's Early Man, Milling Stone, and Intermediate. The Chumash Tradition, Takic Tradition (formerly "Shoshonean"), and Yuman Tradition are represented within Wallace's Late Prehistoric Period. As noted further, these ecologically based traditions are applicable to specific regions within southern California.

Some revisions have been made to Wallace's 1955 synthesis using radiocarbon dates and projectile point assemblages (e.g., Koerper and Drover 1983; Mason and Peterson 1994; Koerper et al. 2002), although

his 50-year-old cultural scheme still dominates discussion of Orange County prehistory. The summary of prehistoric chronological sequences for southern California coastal and near-coastal areas presented below is a composite of information in Wallace (1955) and Warren (1968), as well as more recent studies, including Koerper and Drover (1983). The chronology formulated by Koerper and Drover (1983) is based on the results of their excavations at a multi-component village site (CA-ORA-119-A) near the University of California, Irvine in Orange County. Diagnostic artifacts, particularly projectile points, and other cultural material produced evidence at CA-ORA-119-A from the late Milling Stone, Intermediate, Late Prehistoric, and early Historic Periods.

Early Man Period /San Dieguito/Paleo-Coastal (ca. 10,000–6000 B.C.)

When Wallace defined the Early Man Period in the mid-1950s, there was little evidence of human presence on the southern California coast prior to 6000 B.C. Archaeological work in the intervening years identified numerous older sites dating prior to 10,000 years ago, including ones on the coast and Channel Islands (e.g., Erlandson 1991; Rick et al. 2001:609; Johnson et al. 2002; Moratto 1984). The earliest accepted dates for occupation are from two of the Northern Channel Islands, located off the coast from Santa Barbara. On San Miguel Island, Daisy Cave clearly establishes the presence of people in this area about 10,000 years ago (Erlandson 1991:105). On Santa Rosa Island, human remains have been dated from the Arlington Springs site to approximately 13,000 years ago (Johnson et al. 2002). In what is now Orange County, there are sites dating to 9,000–10,000 years ago (Mason and Peterson 1994:55-57; Macko 1998a:41).

In Orange County, evidence from the Newport Coast Archaeological Project (NCAP) and Muddy Canyon Archaeological District (MCAD) shows that activity at several archaeological sites dates to the middle early Holocene. Two NCAP sites have been dated to approximately 9,200–8,400 years ago (Mason and Peterson 1994:57). CA-ORA-246 produced two dates, one at 8416 ± 85 cal B.P. and an uncorrected date of 8550 ± 80 B.P. from a mixed deposit. Another NCAP site, CA-ORA-339, yielded uncalibrated radiocarbon dates of 8670 ± 110 and 9280 ± 90 B.P. Three sites within the MCAD produced dates ranging circa 8300–9900 before now (Sawyer 2006). Two dates from collapsed rockshelter site CA-ORA-1405-B range between 8544–9600 cal. B.P. One component at MCAD site CA-ORA-1403 yielded a date range of 8386–8709 cal B.P. Two loci at site CA-ORA-1406 showed activity between 8375–8590 cal B.P. (locus B) and 9536–9899 cal. B.P. (locus A). In addition, radiocarbon dates recently obtained by SWCA from a deeply buried archaeological site in southern Orange County, 5.5 km (3.4 miles) from the coast, indicate an occupation as early as 9000 B.C. (SWCA unpublished).

Recent data from sites during this period indicate that the economy was a diverse mixture of hunting and gathering, with a major emphasis on aquatic resources in many coastal areas (e.g., Jones et al. 2002) and on Pleistocene lakeshores in eastern San Diego County (see Moratto 1984:90-92). A Paleo-Coastal Tradition was proposed and recently referenced to highlight the distinctive marine and littoral focus identified within the southern California coastal archaeological record prior to the emergence of the Encinitis Tradition during the succeeding Milling Stone Period (Moratto 1984:104; Mason and Peterson 1994:57-58). At coastal sites, there is abundant evidence that marine resources such as fish, sea mammals, and shellfish were exploited during the Paleo-Coastal.

At near-coastal and inland sites, it is generally considered that an emphasis on hunting may have been greater during the Early Man Period than in later periods, although few Clovis-like or Folsom-like fluted points have been found in southern California (e.g., Erlandson et al. 1987). Common elements in many San Dieguito Tradition sites, for example, include leaf-shaped bifacial projectile points and knives, stemmed or shouldered projectile points (e.g., Silver Lake and Lake Mojave series), scrapers, engraving tools, and crescents (Warren 1967:174-177; Warren and True 1961:251-254). Use of the atlatl (spear-

throwing stick) during this period facilitated launching spears with greater power and distance. Subsistence patterns shifted around 6000 B.C. coincident with the gradual desiccation associated with the onset of the Altithermal, a warm and dry period that lasted for about 3,000 years. After 6000 B.C., a greater emphasis was placed on plant foods and small animals.

Milling Stone Period (ca. 6000–3000/1000 B.C.)

The Milling Stone Period of Wallace (1955, 1978) and the Encinitas Tradition of Warren (1968) are characterized by an ecological adaptation to collecting and by the dominance of the principal ground stone implements generally associated with the horizontal motion of grinding small seeds, namely, milling stones (metates, slabs) and handstones (manos, mullers), which are typically shaped. Milling stones occur in large numbers for the first time and are even more numerous near the end of this period. As testified by their toolkits and shell middens in coastal sites, people during this period practiced a mixed food procurement strategy. Subsistence patterns varied somewhat as groups became better adapted to their regional or local environments.

Milling Stone Period sites are common in the southern California coastal region between Santa Barbara and San Diego, and at many inland locations (e.g., True 1958; Herring 1968; Langenwalter and Brock 1985; Sutton 1993; Sawyer and Brock 1999). Wallace (1955, 1978) and Warren (1968) relied on several key coastal sites to characterize the Milling Stone Period and Encinitas Tradition, respectively. These include the Oak Grove Complex in the Santa Barbara region, Little Sycamore in southwestern Ventura County, Topanga Canyon in the Santa Monica Mountains, and at La Jolla in San Diego County. The Encinitas Tradition was proposed to extend southward into San Diego County where it apparently continued alongside the following Campbell Tradition, which occurred primarily in the Santa Barbara–Ventura County region beginning around 3000 B.C.

Of several Milling Stone Period sites identified in Orange County, the most well known is the Irvine site (CA-ORA-64), which has occupation levels dating between circa 6000–4000 B.C. (Drover et al. 1983; Macko 1998b). In Orange County, Koerper and Drover (1983:11) mark the transition at the end of the Milling Stone around 1000 B.C., while Wallace's mid-1950s scheme has the period ending at 3000 B.C. Based on radiocarbon dates from the NCAP project, Mason and Peterson (1994) propose a timeline for the Milling Stone similar to that advanced by Koerper and Drover.

During the Milling Stone Period and Encinitas Tradition, stone chopping, scraping, and cutting tools are abundant and generally made from locally available raw material. Projectile points, rather large and generally leaf-shaped, and bone tools, including awls, are generally rare. The large points are associated with the spear and probably with an atlatl. Items made from shell, including beads, pendants, and abalone dishes, are generally rare. Evidence of weaving or basketry is present at a few sites. Cogged stones and discoidals are often purposefully buried and are found mainly in sites along the coastal drainages from southern Ventura County southward, with a few specimens inland at Cajon Pass, and heavily in Orange County (Moratto 1984:149). Kowta (1969) attributes the presence of numerous scraper-planes in Milling Stone sites to the preparation of agave or yucca for food or fiber. The mortar and pestle, associated with the vertical motion of pounding foods, such as acorns, were introduced during the Milling Stone, but are not common.

Two types of artifacts that are considered diagnostic of the Milling Stone Period are the cogged stone and discoidal, most of which have been found within sites dating between 4000–1000 B.C. (Moratto 1984:149). The cogged stone is best described as a ground stone object that has variant forms of gear-like teeth on the perimeter, which is produced from a variety of materials. The function of cogged stones is unknown, but has been interpreted as ritualistic or ceremonial in nature (Eberhart 1961:367; Dixon

1968:64-65). Similar to cogged stones, discoidals are found in the archaeological record subsequent to the introduction of the cogged stone. Both discoidals and cogged stones have been found together at some Orange County sites, such as CA-ORA-83/86/144 (Van Bueren et al. 1989:772), CA-ORA-950 (Ron Bissell, personal communication 1999), and Los Cerritos Ranch (Dixon 1975 in Moratto 1984:150).

Koerper and Drover (1983) suggest that Milling Stone Period sites represent migratory settlement patterns of hunters and gatherers who used marine resources during the winter and inland resources the remainder of the year. More recent research indicates that residential bases or camps were moved to resources as part of a seasonal round (de Barros 1996; Mason et al. 1997; Koerper et al. 2002), or that some sites were occupied year-round with portions of the village population leaving at certain times of the year to exploit available resources (Cottrell and Del Chario 1981). Regardless of settlement system, it is clear that subsistence strategies during the Milling Stone Period included hunting of small and large terrestrial mammals, sea mammals, and birds; collecting of shellfish and other shore species; extensive using of seed and plant products; processing of yucca and agave; and nearshore fishing with barbs or gorges (Reinman 1964; Kowta 1969). As evidenced by the abundant milling equipment found at these sites throughout Orange County and the surrounding region, the processing of small seeds was an important component of their subsistence practices.

Characteristic mortuary practices during the Milling Stone Period or Encinitas Tradition include extended and loosely flexed burials, some with red ochre and few grave goods, such as shell beads and milling stones, interred beneath cobble or milling stone cairns. "Killed" milling stones, exhibiting holes, may occur in the cairns. Reburials are common in the Los Angeles County area, with flexed burials oriented to the north being common southward in Orange and San Diego Counties. Evidence of wattle-and-daub structures and walls have been identified at some sites in the San Joaquin Hills and Newport Coast area spanning all cultural periods (Mason et al. 1991, 1992, 1993; Koerper 1995; Strudwick 2004; Sawyer 2006).

Perhaps one unique trait of the Milling Stone Period, isolated to a small region of coastal Orange County, is the presence of a rudimentary ceramic industry involving the creation of fired clay effigies, figurines, and small, crude, thick-walled pottery vessels (Drover 1971, 1975; Drover et al. 1983; Macko 1998b; Sawyer and Koerper 2006). The figurines have been found at the Irvine site (CA-ORA-64) on Newport Bay and at a collapsed rockshelter site (CA-ORA-1405-B) within Muddy Canyon.

Intermediate Period (ca. 3000/1000 B.C.–A.D. 500/650)

Following the Milling Stone, Wallace's Intermediate Period and Warren's Campbell Tradition in Santa Barbara, Ventura, and parts of Los Angles Counties date from approximately 3000 B.C.–A.D. 500 and are characterized by a shift toward a hunting and maritime subsistence strategy, along with a wider use of plant foods. The Campbell Tradition (Warren 1968) incorporates David B. Rogers' (1929) Hunting Culture and related expressions along the Santa Barbara coast. In the San Diego region, the Encinitas Tradition (Warren 1968) and the La Jolla Culture (Moriarty 1966; Rogers 1939, 1945) persist with little change during this time.

Temporal placement of the Intermediate is generally recognized as ranging between 3000 B.C.–A.D. 500 (Wallace 1955; Warren 1968). In Orange County, researchers have estimated the Intermediate Period began around 1000 B.C. and lasted until circa A.D. 650 (3000–1300 B.P.) (Koerper and Drover 1983:11; Mason and Peterson 1994). A more recent evaluation, based on some 1300 calibrated radiocarbon dates, suggests a date of 1400 B.C. for the start of the Intermediate, marked by single-piece circular fishhooks and coinciding with the transition from the Middle to Late Holocene (Koerper et al. 2002:67–68). Another researcher sees the Intermediate not as a cultural period but as a transition between the Milling

Stone and the later Late Prehistoric Period, based on his investigations at sites in the Bonita Mesa area near upper Newport Bay (Peterson 2000). This idea may simply reflect sub-regional or area-specific trends at sites in and around Newport Bay rather than an accurate depiction of the cultural period dynamics in Orange County and the greater southern California region.

During the Intermediate Period, there is a pronounced trend toward greater adaptation to regional or local resources. For example, the remains of fish, land mammals, and sea mammals are increasingly abundant and diverse in sites along the southern California coast. Related chipped stone tools suitable for hunting are more abundant and diversified, and shell fishhooks become part of the toolkit during this period. Larger knives, a variety of flake scrapers, and drill-like implements are common during this period. Projectile points include large side-notched, stemmed, and lanceolate or leaf-shaped forms. Koerper and Drover (1983) consider Gypsum Cave and Elko series points, which have a wide distribution in the Great Basin and Mojave deserts between circa 2000 B.C.–A.D. 500), to be diagnostic of this period. Bone tools, including awls, are more numerous than in the preceding period, and the use of asphaltum adhesive is now common.

Mortars and pestles become more common during this period, gradually replacing manos and metates as milling stone implements. In addition, hopper mortars and stone bowls, including steatite vessels, appear to enter the toolkit at this time. This shift appears to be a correlate of a diversification in subsistence resources. Many archaeologists believe this change in milling stones signals a shift away from the processing and consuming of hard seed resources to the increasing importance of the acorn (e.g., Glassow et al. 1988; True 1993). It has been argued that mortars and pestles may have been used initially to process roots (e.g., tubers, bulbs, and corms associated with marshland plants), with acorn processing beginning at a later point in prehistory (Glassow 1997:86) and continuing to European contact.

Characteristic mortuary practices during the Intermediate Period include fully flexed burials, placed face down or face up and oriented toward the north or west (Warren 1968:2-3). Red ochre is common, and abalone shell dishes are infrequent. Interments sometimes occurred beneath cairns or broken artifacts. Shell, bone, and stone ornaments, including charmstones, are more common than in the preceding Encinitas Tradition. Some later sites include Olivella shell and steatite beads, mortars with flat bases and flaring sides, and a few small points. The broad distribution of steatite from the Channel Islands and obsidian from distant inland regions, among other items, attest to the growth of trade, particularly during the later part of this period.

Yet another synthesis of central-southern California prehistory was developed by Chester King (1981, 1990), who modified Wallace's (1955, 1978) sequence into three major periods of Chumash region prehistory: Early, Middle, and Late, each of which contains phases or subphases, beginning circa 5500 B.C. in the Milling Stone. King's synthesis is based on stylistic changes in artifacts, particularly shell beads and ornaments from Santa Barbara Channel burial assemblages, and he interprets the continuity in development of artifacts as an indication that Chumash culture developed locally over the last 7,500 years. This chronological sequence is thus particularly relevant to archaeologists working in the Chumash sphere in the central California coast, but it has also been shown that this sequence is applicable to Orange County prehistory, as recently summarized by Koerper et al. (2002:69). Study of the beads from the NCAP and CA-ORA-378, in particular, support this correlation (Gibson and King 1994; Gibson and Koerper 2000).

Late Prehistoric Period (ca. A.D. 500/650–Historic Contact)

Wallace (1955, 1978) places the beginning of the Late Prehistoric around A.D. 500. In Orange County, the start of this period is recognized at a slightly later date, circa A.D. 650 (Koerper and Drover 1983;

Mason and Peterson 1994). In all chronological schemes for southern California, the Late Prehistoric Period lasts until European contact occurred in A.D. 1769.

During the Late Prehistoric Period, there was an increase in the use of plant food resources in addition to an increase in land and sea mammal hunting. There was a concomitant increase in the diversity and complexity of material culture during this period, demonstrated by more classes of artifacts. The recovery of a greater number of small, finely chipped projectile points, usually stemless with convex or concave bases, suggests an increased utilization of the bow and arrow rather than the atlatl and dart for hunting. In Orange County, Cottonwood series triangular projectile points in particular are diagnostic of this period (Koerper and Drover 1983). Other items include steatite cooking vessels and containers, the increased presence of smaller bone and shell circular fishhooks, perforated stones, arrow shaft straighteners made of steatite, a variety of bone tools, and personal ornaments made from shell, bone, and stone. There is also an increased use of asphalt for waterproofing and as an adhesive.

During the Late Prehistoric, sites contain beautiful and complex objects of utility, art, and decoration. Ornaments include drilled whole Chione (venus clam) and drilled abalone. Steatite effigies become more common, with Pecten shell rattles common in middens. In Orange County, for example, pecten shell rattles are concentrated in the Late Prehistoric midden at CA-ORA-119A, and other time-sensitive artifacts, including abalone ornaments and drilled Chione shells, are present (Koerper and Drover 1983:19-20). Most of the rock art found today in the Chumash sphere is thought to date to this period. Mortuary customs are elaborate and include cremation and interment, with abundant grave goods.

By A.D. 1000, fired clay smoking pipes and ceramic vessels begin to appear at some sites (Meighan 1954; Warren 1984). The scarcity of pottery in coastal and near-coastal sites implies ceramic technology was not well developed in that area, or that ceramics were obtained by trade with neighboring groups to the south and east. The lack of widespread pottery manufacture is usually attributed to the high quality of tightly woven and watertight basketry that functioned in the same capacity as ceramic vessels.

Another feature typical of Late Prehistoric Period occupation is an increase in the frequency of obsidian imported from the Obsidian Butte source in Imperial County, California. Obsidian Butte was exploited after circa A.D. 1000 after its exposure by the receding waters of Holocene Lake Cahuilla (Wilke 1978). In the earlier Milling Stone and Intermediate Periods, most of the obsidian found at sites within Orange County came from northern sources, mostly the Coso volcanic field. The presence of Grimes Canyon (Ventura County) fused shale at southern California archaeological sites is also thought to be typical of the Late Prehistoric Period (Demcak 1981; Hall 1988).

During this period, there is an increase in population accompanied by the advent of larger, more permanent villages (Wallace 1955:223). Large populations and, in places, high population densities are characteristic, with some coastal and near-coastal settlements containing as many as 1,500 people. Many larger settlements were permanent villages, where people resided year-round. The populations of these villages may have also increased seasonally.

In Warren's (1968) cultural ecological scheme, the period between A.D. 500 and European contact is divided into three regional patterns. The Chumash Tradition is present mainly in the region of Santa Barbara and Ventura Counties; the Takic or Numic Tradition in the Los Angeles and Orange Counties region; and the Yuman Tradition in the San Diego region. The seemingly abrupt changes in material culture, burial practices, and subsistence focus at the beginning of the Late Prehistoric Period are considered the result of a migration to the coast of peoples from inland desert regions to the east. In addition to the small triangular and triangular side-notched points similar to those found in the desert regions in the Great Basin and Lower Colorado River, Colorado River pottery and the introduction of

cremation in the archaeological record are diagnostic of the Yuman Tradition in the San Diego region. This combination suggests a strong influence from the Colorado Desert region.

In Los Angeles and Orange Counties, similar changes (introduction of cremation, pottery, and small triangular arrow points) are considered the result of a Takic migration to the coast from inland desert regions. This Takic or Numic Tradition was formerly referred to as the "Shoshonean wedge" or "Shoshonean intrusion" (Warren 1968). This terminology, used originally to describe a Uto-Aztecan language group, is generally no longer employed in order to avoid confusion with ethnohistoric and modern Shoshonean groups who spoke Numic languages (Heizer 1978:5; Shipley 1978:88, 90). Modern Gabrielino/Tongva, Juaneño, and Luiseño in this region are considered the descendants of the prehistoric Uto-Aztecan, Takic-speaking populations that settled along the California coast during this period or perhaps somewhat earlier.

32.2.2.2 Ethnographic Overview

The Anaheim to San Clemente segment runs inland through the south end of the Los Angeles Basin and the Santa Ana Valley before emerging from the hills at the mouth of San Juan Creek at the Pacific Ocean and continuing down to the coastline to San Clemente. Two Native American groups occupied the segment route during the historic period (Kroeber 1925; Bean and Shipek 1978; Bean and Smith 1978). The northern part of the segment is within a portion of Gabrielino (now known as the Tongva) lands; the southern part of the segment is within Juaneño (now known as the Acjachemen) territory. Early ethnographers defined Aliso Creek as the northern boundary of the Juaneño/Acjachemen and the southern boundary of neighboring Gabrielino/Tongva. As noted below, the Juaneño currently dispute the defined northern boundary of their lands with the Gabrielino at Aliso Creek.

Gabrielino/Tongva

The northern part of the Anaheim to San Clemente segment is within a portion of the lands historically occupied by the Gabrielino/Tongva. The name "Gabrielino" denotes those people who were administered by the Spanish from Mission San Gabriel, which included people from the Gabrielino proper, as well as other social groups (Bean and Smith 1978; Kroeber 1925). Therefore, in the post-contact period, the name does not necessarily identify a specific ethnic or tribal group. The names Native Americans in southern California used to identify themselves have, for the most part, been lost. Many contemporary Gabrielino identify themselves as descendents of the indigenous people living across the plains of the Los Angeles Basin and use the native term *Tongva* (1994a:12).

Tongva lands encompassed the greater Los Angeles Basin, including the inland valleys of San Fernando, San Gabriel, and Pomona, the Pacific Ocean coastal region from Topanga Canyon in the north to Newport Bay in the south, and three Channel Islands, San Clemente, San Nicolas, and Santa Catalina (Bean and Smith 1978:538; Kroeber 1925:636; McCawley 1996). Inland, their territory was bounded on the north by the Chumash at Topanga Creek, and on the south by the Juaneño at Aliso Creek. To the east past the San Gabriel Mountains were the Vanyume Serrano, the mountain Serrano, and the Cahuilla. The southern boundary of Gabrielino territory at Aliso Creek was based on anthropological fieldwork conducted by Kroeber in 1907 (Kroeber 1925), and the Juaneño currently dispute this defined northern boundary of their lands with the Gabrielino.

The Gabrielino language, as well as that of the Juaneño and Luiseño to the south, was derived from the Takic family, part of the Uto-Aztecan linguistic stock, which can be traced to the Great Basin area (Mithun 2001:539). This language group represents an origin quite different from that of the Chumash to the north and the Ipai and Tipai further south. The language of the Ipai and Tipai is derived from the

Hokan stock of the Yuman language family originating in the American Southwest. The Chumash language is unlike both the Hokan and Uto-Aztecan stocks and may represent a separate lineage (Mithun 2001:390). Linguistic analysis suggests that Takic-speaking immigrants from the Great Basin area began moving into southern California around 500 B.C. (Kroeber 1925:579). This migration may have displaced both Chumashan and Yuman speaking peoples, but the timing and extent of the migrations and their impact on indigenous peoples is not well understood.

The Gabrielino language consisted of two main dialects, Eastern and Western; the Western included much of the coast and the Channel Island population (King 2004). Lands of the Western group encompassed much of the western Los Angeles Basin and San Fernando Valley, northward along the coast to the Palos Verdes Peninsula (McCawley 1996:47).

Kroeber (1925:621) considered the Tongva "…to have been the most advanced group south of Tehachapi, except perhaps the Chumash. They certainly were the wealthiest and most thoughtful of all the Shoshoneans of the State, and dominated these civilizationally wherever contacts occurred." Tongva society was organized along patrilineal non-localized clans, a characteristic Takic pattern. Clans consisted of several lineages, each with their own ceremonial leader. The leader of the primary lineage was the chief of the entire clan. One or two clans generally made up the population of a village. Even though the Tongva did not have a distinctly stratified society, there were two general classes of individuals: elites and commoners. The elites consisted of primary lineage members, other lineage leaders (who maintained a separate ceremonial language), the wealthy, and the elite families of the various villages who commonly married among themselves. The commoner class contained those from "fairly well-to-do and long-established lineages" (Bean and Smith 1978:543). A third, lower class might be recognized as consisting of slaves taken in war and individuals, unrelated to the inhabitants, who drifted into the village. The chief, or *tómyaar*, always came from the primary lineage of the clan/village.

The Tongva established large, permanent villages in the fertile lowlands along rivers and streams, and in sheltered areas along the coast, stretching from the foothills of the San Gabriel Mountains to the Pacific Ocean. A total tribal population has been estimated of at least 5,000 (Bean and Smith 1978:540), but recent ethnohistoric work suggests a number approaching 10,000 seems more likely (O'Neil 2002). Several Tongva villages appear to have served as trade centers, due in large part to their centralized geographic position in relation to the Southern Channel Islands and to other tribes. These villages maintained particularly large populations and hosted annual trade fairs that would bring their population to 1,000 or more for the duration of the event. *Puvunga* in Long Beach and *Swuangna* at San Pedro are examples of Tongva village trade centers.

Houses constructed by the Tongva were large, circular, domed structures made of willow poles thatched with tule that could hold up to 50 people (Bean and Smith 1978). Other structures served as sweathouses, menstrual huts, ceremonial enclosures, and probably communal granaries. Cleared fields for races and games, such as lacrosse and pole throwing, were created adjacent to Tongva villages (McCawley 1996:27). Archaeological sites comprised of villages with various sized structures have been identified.

The fundamental economy of the Tongva was one of subsistence gathering and hunting. The surrounding environment was rich and varied, and the tribe exploited mountains, foothills, valleys, deserts, riparian, estuarine, and open and rocky coastal eco-niches. Like the majority of native Californians, acorns were the staple food (an established industry by the time of the early Intermediate Period). Acorns were supplemented by the roots, leaves, seeds, and fruits of a wide variety of flora (e.g., islay, *Opuntia*, yucca, sages, and agave). Fresh-water and salt-water fish, shellfish, birds, reptiles, and insects, as well as large and small mammals, were also consumed. The Tongva are among several southern California native groups who were noted for periodically setting fire to the grassy plains and brush-covered hillsides to

promote the growth of harvestable grass seeds, discourage the growth of chaparral, and create pasture for deer and antelope.

A wide variety of tools and implements were employed by the Gabrielino to gather and collect food resources. These included bows and arrows, traps, nets, blinds, throwing sticks and slings, spears, harpoons, and hooks. Many plant foods were collected with woven seed beaters, several forms of burden baskets, carrying nets, and sharpened digging sticks, sometimes with stone weights fitted onto them. Groups residing near the ocean used ocean-going plank canoes (known as a *ti'at*) and tule balsa canoes for fishing (McCawley 1996:7). The ocean-going canoes were capable of holding six to fourteen people and were also used for travel and trade between the mainland and the Channel Islands. The tule balsa canoes were used for near-shore fishing.

Foods were processed with a variety of tools, including portable and bedrock mortars, pestles, basket hopper mortars, manos and metates, hammerstones and anvils, woven strainers and winnowers, leaching baskets and bowls, woven parching trays, knives, bone saws, and wooden drying racks. Food was consumed from a number of woven and carved wood vessels. The ground meal and unprocessed hard seeds were stored in large finely woven baskets, and the unprocessed acorns were stored in large granaries woven of willow branches and raised off the ground on platforms. Santa Catalina Island steatite was used to make comals, ollas, and cooking vessels that would not crack like regular stone under repeated firings (Kroeber 1925:629).

As part of the extensive exchange network, large amounts of steatite quarried on Santa Catalina Island were traded with numerous other groups on the coast and inland. In addition to cooking vessels, steatite was used to make effigies, ornaments, and arrow straighteners. Tongva obtained obsidian, acorns, and seeds, among other items, from inland Tataviam and Vanyume (Desert) Serrano in exchange for coastal resources, such as steatite, shell beads, and dried fish. The Tongva also traded with other coastal groups, exchanging large, baked clay pipes obtained from the Kumeyaay or Luiseño to the south and with the Chumash on their northern border.

At the time of Spanish contact, the basis of Tongva religious life was the Chinigchinich Cult, centered on the last of a series of heroic mythological figures. Chinigchinich gave instruction on laws and institutions, and he also taught the people how to dance, the primary religious act for this society. He later withdrew into heaven where he rewarded the faithful and punished those who disobeyed his laws (Kroeber 1925:637-638). The Chinigchinich religion seems to have been relatively new when the Spanish arrived; the religion was in the process of spreading south into the Southern Takic groups even as Christian missionization was taking place and may have been influenced by Christianity.

Deceased Tongva were either buried or cremated (Harrington 1942; McCawley 1996). McCawley (1996:157) states that "[i]nternment may have been the more standard practice on the Channel Islands and the mainland coast directly opposite, perhaps reflecting either the influence of Chumash mortuary practices or else a scarcity of fuel suitable for funeral pyres." During the Contact Period, cremation was the standard practice for the mainland Tongva. Cremation ashes have been found in archaeological contexts buried within stone bowls and in shell dishes (Ashby and Winterbourne 1966:27). Archaeological and ethnographic data describe a wide variety of grave offerings, including seeds, stone grinding tools, otter skins, baskets, wood tools, shell beads, bone and shell ornaments, and projectile points and knives. Offerings varied with the sex and status of the deceased. Graves were sometimes marked, and in the San Pedro area headstones or boards were etched with figures (Heizer 1968:fn. 66).

European contact with the Tongva occurred as early as 1542 with the Spanish expedition led by Juan Rodriguez Cabrillo, followed by Sebastián Vizcaíno in 1602, both of who visited Santa Catalina Island. Colonization of Tongva lands did not begin in earnest until after the inland expedition led by Gaspar de

Portolá in 1769; by 1771, four missions had been constructed in the region, including Mission San Gabriel, located in Los Angeles County and founded in September 1771 (Engelhardt 1927a). The Franciscan missions, charged with converting the Native Americans to Christianity and with acculturating them to European society and economy, began relocating them to mission grounds.

Known as *reducción*, relocation and baptism initially involved the Eastern Gabrielino of the plains as far south as the Santa Ana River and west to the Los Angeles River. The missionaries later proselytized the Western Gabrielino living west of the Los Angeles River, on the southern Channel Islands, and the interior groups to the east and south. Between 1780 and 1794, the majority of people from the southeast region were baptized and removed to the mission (King 2004:Figs. 7 and 8). Mission San Fernando del Rey was founded in 1797, and its priests pushed into the lands of other tribes located to the north and west and also converted Tongva people along the Los Angeles River and its tributaries. While mission life did give indigenous Californians some skills needed to survive in a rapidly changing world, much traditional cultural knowledge was lost during this era, as populations were moved and decimated by introduced diseases for which the people had no immunity.

With the founding of the Pueblo of Los Angeles in December 1781, civilian settlers came into the region, soon followed by retiring military men and their families from the Spanish garrisons (Engelhardt 1927b:48-51). The soldiers were given vast tracts of land by Spanish authorities within traditional Tongva subsistence areas. The Native Americans (both neophytes from the disintegrating missions and *cimarrones*, or gentile Indians) were among those who worked on the large ranchos. After governmental control of California shifted to Mexico, the missions were formally secularized in 1834, and the extensive mission lands were divided into private land grants, claimed by the growing ranchero class. With the migration of farmers to southern California after the Mexican-American War of 1846, the local native population, who continued to work as laborers, was soon a minority that was often lumped together with the Mexican-American community. Many allied themselves with remaining Native American communities in the Tehachapi and San Bernardino Mountains.

In the early twentieth century, Tongva who still lived in San Gabriel neighborhoods near the old mission joined the Mission Indian Federation and sought redress from the federal government over lost lands. A generation later, partly as an outgrowth of the civil rights movement, Tongva started to form political organizations of their own to affect handling of ancestral remains discovered at construction sites and to seek federal acknowledgement of their tribe. There are currently five such organizations with total membership approaching nearly a thousand people. They are still struggling to receive federal recognition.

Juaneño/Acjachemen

The southern part of the Anaheim to San Clemente segment is within a portion of the lands historically occupied by the Juaneño. The name "Juaneño" denotes people who were administered during Spanish Colonial times by Mission San Juan Capistrano; Mission San Luis Rey administered the Luiseño to the south (Bean and Shipek 1978; Kroeber 1925). Many contemporary Juaneño and coastal Luiseño identify themselves as descendents of the indigenous people living in the local area, termed the Acjachemen Nation. *Acjachemen* was the name of a central village. The Acjachemen language is the northernmost dialect of Luiseño, derived from the Cupan segment of the Takic language branch, a part of the Uto-Aztecan linguistic family (Mithun 2001:539-540).

Acjachemen territory was situated in southern Orange County and northern San Diego County. Their lands encompassed the San Joaquin Hills west to the Pacific Ocean, east into the Santa Ana Mountains and possibly farther into Temescal Valley, and south along the coast to the Santa Margarita mountain

range. Their neighbors to the north were the Gabrielino (now known as the Tongva), who spoke a related northern Takic language, and by the closely related Luiseño to the east and south. The northern boundary of Acjachemen territory at Aliso Creek was based on anthropological fieldwork conducted by Kroeber in 1907 (Kroeber 1925); they currently dispute this boundary of their lands with the Gabrielino/Tongva.

Acjachemen resided in permanent, well-defined villages and associated seasonal camps. Each village contained 35 to 300 persons, who for the most part belonged to a single lineage in the smaller villages, and a dominant clan joined with other families of multiple lineage background in the larger towns. As Boscana, one of the Franciscan missionaries, said of the Acjachemen, "all the rancherias were composed of a single relationship" (Harrington 1934:32). Each clan/village had its own resource territory and was politically independent, yet maintained ties to others through economic, religious, and social networks in the immediate region.

The southern portion of the Anaheim to San Clemente segment passes by a large number of ethnohistoric Acjachemen towns. These include *Lukup* ("bent") at El Toro, as well as *Putuidem* (named after the cheiftainess who founded the village) and *Acjachema* ("wild pea") in San Juan Capistrano. Villages in San Clemente included *Eñe* ("salt") and *Pange* ("ice plant"); at the mouth of San Juan Creek were *Julve* and *Tobane* (an edible estuary plant).

There were three hierarchical social classes: an elite class consisting of chiefly families, lineage heads, and other ceremonial specialists; a "middle class" of established and successful families; and, finally, people of disconnected or wandering families and war captives (Bean 1976:109–111). Native leadership focused in the *Nota*, or clan chief, who conducted community rites and regulated ceremonial life in conjunction with a council of elders (*puplem*) composed of lineage heads and ceremonial specialists. The council discussed and decided matters of community import; the Nota and his staff then implemented those decisions.

The hereditary village chief held an administrative position that combined and controlled religious, economic, and warfare powers. While the placement of residential huts in a village was not regulated, a contemporary census study would likely have shown family groupings. The ceremonial enclosure (*wankech*) and the chief's home could generally be found in the center of the village. As Fr. Boscana states:

> The temples … were invariably erected in the center of their towns, and contiguous to the dwelling-place of the captain, or chief; … they managed to have the location of his house as near the middle as possible [Boscana 1933:37].

The village chief had a formal assistant, who acted as messenger and had important religious duties. Ritual specialists and shamans, each with his own special area of knowledge about the environment or ritual magic, had hereditary membership on the council and the responsibility for training some successor from his own lineage or family who showed the proper innate abilities. Hence, intra- and inter-lineage affairs dominated the political landscape, both within and between villages.

Plant foods were by far the largest part of the traditional Acjachemen diet. The following description is from the summary by Bean and Shipek (1978:552). Similar to most other indigenous Californian groups, acorns were a staple, two species of which were used locally. As a dietary staple, acorn mush (*weewish*) was prepared in various ways and served as gruel, cakes, or fried; it might be sweetened with honey or berries; and it was also made into a stew with added greens and meat. Grass seeds were another staple; other plant foods included manzanita, sunflower, sage, chia, lemonade berry, wild rose, holly-leaf cherry, prickly pear, lamb's-quarter, and pine nuts. Seeds were parched, ground, and cooked as mush in various

combinations (according to taste and availability) much like *weewish*. Greens, such as thistle, lamb's-quarters, miner's lettuce, white sage, and clover, were eaten raw or cooked, and were sometimes dried for storage. Other edible vegetal parts included cactus pods and fruits; berries (thimbleberries, elderberries, wild grapes); yucca buds, blossoms, and pods; underground bulbs, roots, and tubers; and mushrooms and tree fungus. Various teas, used for medicinal cures and beverages, were made from flowers, fruits, stems, and roots.

Principal game animals included deer, rabbit, jackrabbit, wood rat, mice, ground squirrel, antelope, quail, dove, duck, and other birds. The diet also included fish, such as trout and salmon. Most predators, as well as tree squirrels and most reptiles, were avoided as food. Being predominantly a coastal people, the Acjachemen diet included numerous marine resources, including sea mammals, fish, and crustaceans, obtained on the shore or open sea. Shellfish were the most heavily used resource and included abalone, turban, mussel, and other species from the rocky shores; clams, scallops, and univalves from the sandy beaches; and *Chione* and bubble shells from the estuaries. Reed and dugout canoes were used for sea travel.

Raymond White (1962) proposed that for the coastal Luiseño (which includes the Acjachemen), fish and marine animals accounted for variably 50–60 percent of the diet, and terrestrial game another 5–10 percent. Plant foods accounted for the remaining 30–60 percent, broken down by acorns 10–25 percent; seeds 5–10 percent; greens 5–10 percent; and bulbs, roots, and fruits 10–15 percent. These percentages would have varied as a reflection of village placement and size, the characteristics of its near surroundings, and annual variations in weather, sea temperature, and oceanic currents.

Like the neighboring groups, a wide variety of tools and implements were employed by the Acjachemen to gather and collect food resources. These included the bow and arrow, traps, blinds, spears, throwing sticks and slings, as well as seines, nets, harpoons, and hooks for fishing. Many plant foods were collected with several forms of burden baskets, woven seed beaters, carrying nets, and sharpened digging sticks. Light balsa or dugout canoes were used for near-shore fishing (Bean and Shipek 1978:552).

Foods were processed with a variety of tools, including basin metates and handstones (manos), portable and bedrock mortars, pestles, basket hopper mortars, hammerstones and anvils, woven strainers and winnowers, leaching baskets and bowls, woven parching trays, knives, bone saws, and wooden drying racks. Food was cooked in clay jars and earth ovens, and consumed from woven or soapstone vessels. The pottery was fired in shallow open pits after manufacture usingn the paddle and anvil technique (Bean and Shipek 1978:553). Unprocessed hard seeds and ground meal were stored in large finely woven baskets; unprocessed acorns were stored in large granaries woven of willow branches. Steatite was obtained from the Santa Catalina Island Tongva, and obsidian from distant sources to the north and east.

The observations of native lifeways recorded by Father Boscana, a priest at Mission San Juan Capistrano, are invaluable (Boscana 1933; Harrington 1934). Kroeber (1925) describes Boscana's "*Chinigchinich*" as "the most intensive and best written account of the customs and religion of any group of California Indians in the mission days." Drawing on Boscana and other sources, Kroeber describes the Juaneño as having well-developed religious, ritualistic, and social customs.

The center of the Acjachemen religion was *Chinigchinich*, the last of a series of heroic mythological figures. The heroes were originally from the stars and the sagas told of them formed the Juaneño religious beliefs. The most obvious expression of the religion at the time of arrival of the Spanish was the wankech, a brush-enclosed area where religious observances were performed. The wankech apparently contained an inner enclosure housing a representation of Chinigchinich, a coyote skin stuffed with feathers, horns, claws, beaks, and arrows.

Both young men and women went through initiation rites around the age of puberty. The rites for males included use of *Datura wrightii* extract, a hallucinogen, in the search for a spirit helper. Trials of endurance may also have been part of the ritual. Females were placed in a branch-lined pit containing heated stones, and the one being initiated fasted in the pit for several days. Females were also tattooed after running a race at the end of the initiation period.

The Acjachemen practiced cremation and burial of the dead. Specific individuals who received compensation for their services managed the cremation. The death of at least those of higher rank was commemorated on the first anniversary. The Juaneño possessed a very accurate calendar. Complete knowledge of its exact working has been lost, but we do know that it combined both lunar and solar elements in a fashion similar to certain Southwestern practices.

The first direct European contact with the Acjachemen was the July 1769 Spanish expedition led by Lt. Colonel Gaspar de Portolá. Six years later, eight missions and forts had been founded to the north and south, and Mission San Juan Capistrano founded in 1776. Within 20 years, over fifty percent of the Acjachemen had been brought into the new religious, social and economic system, with an even larger percentage of their hunting grounds and plant harvesting areas turned into croplands and cattle pasture. By 1806, all remaining Acjachemen had been baptized or fled the region.

The Acjachemen population during the precontact period is thought to been greater than 3,500 (O'Neil 2002). It is known that 1,138 local Native Americans, consisting primarily of Acjachemen but including Tongva, coastal and interior Luiseno, Serrano, and Cahuilla, resided at Mission San Juan Capistrano in the year 1810 (Engelhardt 1922:175). The Mission's death register lists 1,665 native burials in its cemetery by this time, a number in addition to those who were dying at the villages from natural causes and introduced infectious diseases.

Many neophytes left the mission grounds in 1825 when they were freed by the Mexican government. When the missions were fully secularized in 1834–1836, even more left for work on the large cattle ranchos being carved out of the mission lands. In 1841 there was an effort to create a pueblo libre of ex-neophytes around San Juan Capistrano mission, but Euro-American settlers shortly acquired most of the land from the remaining Acjachemen. Economic conditions compelled them to continue to leave the area or become laborers. Records from this era show only 100 or so Acjachemen remaining in town, with unknown numbers scattered around southern California.

Several families with connections to both San Juan Capistrano mission and San Luis Rey mission to the south lived at Los Flores north of the Santa Margarita River. Their leader signed a statewide treaty in 1852, which was never ratified by the U.S. Congress. No treaty was ever signed with the Acjachemen people, and without any formal recognition as a tribe from the federal government they never received a reservation or other lands. In 1862 there was a devastating small pox plague in the region, and it is believed half the San Juan Capistrano population died within two months. After the Treaty of Guadalupe Hidalgo in 1848, when California became a territory of the United States, many of the ranchos became small farms and towns. Several of the remaining Acjachemen families moved to towns in north Orange County looking for work; others remained associated with the cattle and sheep ranches.

During the 1920s, many Native Americans residing in San Juan Capistrano became members of the Mission Indian Federation, organized to fight for self-rule on southern California reservations. Acjachemen were aware of their linguistic and cultural connections to other tribal people, and there were strong marriage ties from San Juan throughout the rest of the region. In 1975 Acjachemen created the Capistrano Indian Council, which served as a cultural center and an advisory council to the school district. The Juaneno Band of Mission Indians was formed in 1979; its main goal is federal recognition. At

present, the community has a combined membership of approximately 1,400. In late 2005, the Bureau of Indian Affairs accepted their recognition petition for review.

32.2.2.3 Historic Overview

Post-contact history for the state of California generally is divided into three specific periods: the Spanish Period (1769–1822), the Mexican Period (1822–1848), and the American Period (1848–present). As discussed in more detail in Chapter 2 of this report, although there were brief visits by Spanish, Russian, and British explorers from 1529–1769, the beginning of Spanish settlement in California occurred in 1769 with a settlement at San Diego and the first (Mission San Diego de Alcala) of 21 missions established from 1769–1823. After the 1822 revolution by Mexico against the Spanish crown, the Mexican Period is marked by an extensive era of land grants, most of which were in the interior of the state, and by exploration by American fur trappers west of the Sierra Nevada Mountains.

With the signing of the Treaty of Guadalupe Hidalgo in 1848, ending the Mexican–American War, California became a territory of the United States. The discovery of gold in 1848 at Sutter's Mill near Sacramento and the resulting Gold Rush era influenced the history of the state and the nation. The rush of tens of thousands of people to the gold fields also had a devastating impact on the lives of indigenous Californians, with the introduction and concentration of diseases, the loss of land and territory (including traditional hunting and gathering locales), violence, malnutrition, and starvation. Thousands of settlers and immigrants continued to pour into the state, particularly after the completion of the transcontinental railroad in 1869.

With continued growth, California continues to be a national leader in agriculture and poultry production, ranching (cattle and sheep), aerospace and communications industries, as well as the film and entertainment business. The wealth of California's natural resources (e.g., lumber, petroleum deposits, minerals, fish) also continues to contribute to its growth and development.

Orange County

The Portolá expedition first reached the present-day boundaries of Orange County in July 1769, thereby becoming the first Europeans to visit the area (Smith 1965). They named the area *El Valle de Santa Ana* or "The Valley of Santa Ana." Six years later, Friar Junípero Serra returned to the valley to establish a Catholic mission, which was dedicated the following year. The Mission San Juan Capistrano became Orange County's first settlement.

Among the first ranchos deeded within the future Orange County were Manuel Nieto's Rancho Las Bolsas (partially in future Los Angeles County), granted by Spanish Governor Pedro Fages in 1784, and the Rancho Santiago de Santa Ana of José Antonio Yorba and Juan Pablo Peralta, granted by Governor José Joaquín Arrillaga in 1810 (Hallan-Gibson 1986). The secularization of the missions following Mexico's independence from Spain resulted in the subdivision of former mission lands and establishment of many additional ranchos.

Nine ranchos were granted between 1837 and 1846 in the future Orange County (Middlebrook 2005). Many of these ranchos remained intact after the U.S. took possession of California; however, a severe drought in the 1860s resulted in many of the ranchos being sold. Many of the lands in this area were consolidated into extensive properties owned by Richard O'Neil, Sr., James Irvine, and others (Orange County 2006). Silver was discovered in the Santa Ana Mountains in 1887. This drew additional settlers to the region, which was already experiencing a real estate boom based on quality agricultural land (Dumke 1944). The first towns laid out in the Santa Ana Valley, Anaheim (1857), Santa Ana (1870), and Orange

(1870), all experienced rapid growth during the boom years of the late 1880s. New towns were also the partial result of the anticipated presence of the Santa Fe Railroad and the construction of a branch of the Southern Pacific Railroad in 1887 (Dumke 1944). On March 11, 1889, the County of Orange was created, occupying 780 square miles of former Los Angeles County lands.

Orange County remained primarily agricultural through most of the twentieth century. Interstate 5 was completed in the 1950s and connected the communities of the county with Los Angeles and the rapidly growing aerospace industry. The county became increasingly residential and by the 1980s was developed with numerous master planned communities, such as Irvine, including most of south county. Today the county is identified with amusement parks, including Disneyland and Knott's Berry Farm, as well as its 40 miles of beaches. Despite weathering a bankruptcy in the 1990s, Orange County remains a desirable and expensive place to live with a mild Mediterranean climate. The county and its purported way of life have been documented cinematically in movies such as "Orange County" and "The Chase," and in the current television series "The OC."

City of Anaheim

The first Europeans to visit the Anaheim area were members of the Portolá expedition who camped along the bank of the Santa Ana River in July 1769. The camp was located on the east side of the river, across from a Native American village, where it emerges from Santa Ana Canyon (Smith 1965:8). Later during the Spanish Period, lands that included the Anaheim area were used by Mission San Gabriel for grazing.

The Mexican Period of California is largely associated with the land grants called *ranchos*. The Rancho San Juan Cajon de Santa Ana, consisting of 35,970 acres and including present-day Anaheim, was received by Juan Pacifico Ontiveros on May 13, 1837. In 1857, a group of German immigrants, from San Francisco, purchased 1,165 acres of the rancho for two dollars per acre (Carpenter 1988:155, Dumke 1944: 113). The community-owned land was divided into town lots and vineyards, where 400,000 grape vines and fruit trees were planted, thus establishing the first town in the Santa Ana Valley (Dumke 1944:112). The town was named Anaheim; "Ana" for the Santa Ana River and "heim," which is German for home. The City of Anaheim was incorporated in 1876 with a population of 881. With the arrival of the Santa Fe Railroad in 1887, the real estate boom already underway for a couple years was intensified, with many of the vineyards subdivided into lots. The vineyards were already in decline due to disease, which began destroying the vineyards in 1884 and resulted in crop experimentation. By 1890, Anaheim had become a center for growing Valencia oranges, the crop that replaced the vineyards that had not already been subdivided (Schultz 1988:70-72).

Southern California enjoyed a post-World War II boom and Anaheim was no exception. By 1950, 14,556 people were in living in Anaheim and the population was still growing. During this period, Walt Disney was looking for a location to build his version of a park and playground that he intended to call Mickey Mouse Park. Anaheim was chosen partly because it reminded Disney of his childhood hometown of Marceline, Missouri. Disney formed a partnership with the American Broadcasting Corporation (ABC) whereby ABC would invest in the park and Disney would produce a weekly television series called the Disneyland show. Disneyland opened on July 17, 1955, with 33,000 people attending. ABC presented a live broadcast of the opening to a television audience numbering in the millions (Anaheim 2006). Disneyland and the completion of Interstate 5 that connected Los Angeles and Anaheim encouraged growth during the 1950s; between 1953 and 1955 the city quadrupled in size. Tourism and construction were the leading industries through the rest of the decade (Anaheim 2006).

In 1960, Gene Autry was awarded the franchise to the Los Angeles Angels baseball team. Because of difficulties that arose with the Angels sharing Dodger Stadium with the Dodgers team, Autry decided to

move his team. Anaheim put together an offer and Walt Disney, who sat on the Angels Advisory Board, helped with negotiations. On August 31, 1964, the groundbreaking ceremony was held at the Anaheim Stadium that was constructed for the California Angeles (Anaheim 2006). The stadium continues to be used for professional and amateur sports events, concerts, and religious services.

To strengthen its tourism industry, and because Disneyland was primarily a summer and holiday destination, Anaheim built a convention center to attract year-round-tourists. The 400,000 square foot Anaheim Convention Center opened in July 1967 and that year hosted 45,000 delegates. Anaheim's transformation to a tourist destination has continued with the addition of the Arrowhead Pond (an indoor sports arena and home to the Mighty Ducks of Anaheim professional hockey franchise) in 1990 and the building of Disney's California Adventure Theme Park (Anaheim http://www.anaheim.net/ 2006). Today, the city is focused on redevelopment with many of the structures built during the boom of the 1950s being upgraded or replaced to accommodate its revitalization.

City of Garden Grove

The community was first settled in the late 1860s, and was given the name Garden Grove by Alonzo G. Cook in 1874 (Friis 1965:73; Doig 1962:32; Witcher 1988:112). Cook has also been credited with organizing the group of scattered farms and ranches into a town and establishing the first Garden Grove school district in 1874. Within a few years there was a school, a general merchandise store, a post office, and a Methodist church (Friis 1965:73). Population growth was slow during the remainder of the nineteenth century until the arrival of the Pacific Electric Railway in 1905 (Witcher 1988:113). The railroad provided essential transportation not only for commuters, but to carry produce and import building materials (MacArthur 1963a:225). Like other Orange County communities, the chief source of income during the early years was agriculture. Egg and poultry production in Garden Grove ranked first in southern California during the early 1910s. Growth was slow during much of the first half of the twentieth century. Between 1950 and 1956, the population of Garden Grove increased over tenfold and the city was officially incorporated on June 18, 1956 (MacArthur 1963a:222; Witcher 1988:114).

City of Orange

Attorneys Andrew Glassell and Alfred B. Chapman founded the City of Orange in 1871. They acquired the property from the Yorba family in payment for attorney fees (Meadows 1963c:295). The subdivision was originally named Richland, but was changed to Orange when it was discovered that Sacramento County already had a town by that name (Friis 1965:63). In 1880, the town had some 164,000 grape vines, the fruit mainly dried into raisins, with some being used to make wine (Brigandi 1988:152). The City of Orange was incorporated April 6, 1888, a year after the arrival of the Santa Fe Railroad. Despite the economic boom of the 1880s the city went into a decline following the destruction of the local vineyards by a grape plant disease. Orange lost nearly 23 percent of its population during this period. By 1900, the population had rebounded, and the agricultural industry was back on track (Meadows 1963c:302). Soon the city had utilities and the Pacific Electric Railroad refurbished the old car line that connected with Santa Ana and points beyond. Like other Orange County cities, Orange grew slowly until the post World War II population explosion and real estate boom. The population grew from around 10,000 in 1950 to over 27,000 in 1960, and was well over 100,000 in 1985 (Meadows 1963c:302; Brigandi 1988:154).

City of Santa Ana

The original town site of Santa Ana was located on a 74.27 acre tract allotted to Zenobia Yorba de Rowland in the partition of the Rancho Santiago de Santa Ana in 1868. The town of Santa Ana first appeared as a subdivision offered by its founder and father, William Spurgeon in 1869. The city expanded with a number of additional subdivisions during the 1870s and 1880s. The Southern Pacific Railroad arrived in Santa Ana in 1877 and started a minor boom with several new buildings in the downtown area. The railroad improved Santa Ana's ability to compete economically with the neighboring communities of Anaheim and Tustin (Friis 1965:61).

The real estate boom of the 1880s was responsible for rapid growth in Santa Ana, spurred in part by the arrival of the railroad and further stimulated by the availability of fairly inexpensive property and farm land (Dumke 1944:115-116; Friis 1965:868). Santa Ana experienced rapid civic growth with a number of new buildings, three hotels, a schoolhouse, three churches, a library, two public halls, one society hall, and a bank on the southeast corner of Fourth and Main Streets (Swanner 1953:23). The city was incorporated in 1886 with William Spurgeon appointed as the first mayor.

The real estate boom caused a rate war among competing railroad companies. The Atchson, Topeka, and Santa Fe Railroad completed its line through the Santa Ana Canyon to the City of Santa Ana in 1887 (Anonymous 1887:20; Meadows 1963a:260). With drastically reduced fares, the railroads shuttled thousands of people into the area each week, particularly from the Midwest (Dumke 1944:264). Access to two railroads was beneficial to local farmers and businessmen in Santa Ana, particularly when they competed to provide minimal costs for shipping freight.

In 1889, the City of Santa Ana became the seat of the newly formed County of Orange. During the 1890s, Santa Ana reverted to slow growth and economic development with few major developments or civic expansion noticeable (Shaw 1911:37). The last two decades of the nineteenth century saw certain improvements to the city that included installation of utilities such as gas, electricity, telephone service, and water. A sewer system would not be built until the early 1900s. The Pacific Electric Railroad arrived in Santa Ana in 1906 and operated to 1931, when it was replaced by a bus line (Shaw 1911:38; Pleasants 1931:302). With the marked growth of the automobile industry during the first two decades of the new century, nearly all of the streets in Santa Ana were paved (Anonymous 1969:58-59). The population of the city increased from 16,000 to 30,000 individuals between 1920 and 1929 (Garstang 1969:62). During the 1930s, feeling the effects of the Great Depression, Santa Ana's population increased by less than 700 people (Goddard 1969a:73). After World War II, Santa Ana, and many other Orange County cities, experienced a boom period marked by rapid population growth and expansion. Santa Ana's population grew from 45,533 in 1950 to 156,601 by 1970 (Goddard 1969c:103). Currently, the population is over 300,000, placing Santa Ana as the most populous city in Orange County.

Downtown Santa Ana also contains two large districts listed on the National Register of Historic Places (NRHP). The Downtown Santa Ana Historic District (listed in 1984) contains 66 buildings on 245 acres and is bounded by First Street, Ross Street, Civic Center Drive, and Spurgeon Street. The French Park District (listed in 1999) contains 131 buildings on 450 acres and is bounded by Garfield Street, Santa Ana Boulevard, Civic Center Drive East, Bush Street, and East Washington Street. These districts encompass some of the earliest city subdivisions and much of the core of the original Santa Ana town site as laid out by William Spurgeon in 1870.

City of Irvine

Irvine, the largest master planned community on the North American continent had its beginnings as part of the Irvine Ranch, which itself was part of the sprawling Rancho San Joaquin and Rancho Lomas de

Santiago (Liebeck 1988:119). In 1876, James Irvine, Sr. became owner of the Irvine Ranch. By the 1880s, sheep and cattle ranching gave way to farming on the Irvine Ranch. James Irvine, Jr. came into possession of the Irvine Ranch in 1893; he incorporated his holdings as The Irvine Company in 1894 (Cleland 1978:101). By the 1890s, the Irvine Ranch was the largest producer of lima beans in the world. Agriculture dominated activity on the ranch until the farmlands were eventually consumed by expanding urban growth from the 1970s to the present day. The City of Irvine officially incorporated on December 28, 1971 (Liebeck 1990:92).

City of Lake Forest (El Toro)

El Toro had its beginnings during the real estate boom of the 1880s, originally being named Aliso City. Dwight Whiting acquired much of the Rancho Cañada de los Alisos and is considered responsible for El Toro's early development (Friis 1965:88). In the early 1900s, Dwight Whiting planted 400 eucalyptus trees in the area of present day Lake Forest as an answer to the California lumber shortages. Whiting also managed to get the San Bernardino and San Diego Railroad (a branch of the Santa Fe Railroad) to the community in the 1880s. The little community remained fairly unchanged until the arrival of Metropolitan Water in the 1960s, which caused a boom that continues to this day (Osterman 1992:101). During the 1960s, planner Occidental Petroleum designed a community in the midst of man-made lakes and abundant trees, calling it Lake Forest. The City of Lake Forest was incorporated in 1991, and absorbed the historic community of El Toro in the process (Osterman 1992:41).

City of Mission Viejo

The present City of Mission Viejo was developed atop land that was part of the former Rancho Mission Viejo. John Forster acquired the rancho along with El Trabuco and Los Potreros Ranchos in 1821 (Sleeper 1988:160). Forster's main source of capital was cattle ranching, but a series of droughts decimated his cattle herds and by the 1880s the cost of fencing the 205,000-acre ranch overtaxed his resources. After death, Forster's heirs sold the Rancho Mission Viejo to Richard O'Neill, a cattleman. O'Neill acquired both Rancho El Trabuco and Rancho Mission Viejo in 1907. Little or no development occurred on the expansive ranch until the 1960s when 10,000 acres were sold to the newly formed Mission Viejo Company. By 1966, the first new homes were built in neighborhoods near La Paz Road and Chrisanta Drive. The City of Mission Viejo was incorporated in 1988.

City of San Juan Capistrano

In 1776, the Mission San Juan Capistrano, founded by Friar Junipero Serra, became the first permanent European settlement in what is now southern Orange County (Bancroft 1886:299). In 1794, 40 adobes were built to house married military personnel and mission neophytes. Some of these buildings still remain today as part of the oldest residential area in Orange County, the Los Rios Street Historic District (Hallan-Gibson 1988:173). By1800, the mission was home to priests, workers, soldiers, and about 100 Native Americans (Friis 1965:8). Sustaining considerable damage in the 1812 earthquake and falling into disrepair after secularization in 1821, the mission was abandoned. John Forster purchased the mission in 1845.

The town surrounding the mission continued to grow steadily over the years; farming was the primary pursuit after the demise of the cattle industry in the mid nineteenth century. By the twentieth century, the town expanded with some new construction and the restoration or removal of older buildings. By the 1920s, with all the modern amenities, the town embraced tourism as a potentially lucrative industry. The mission had been a tourist attraction since the late nineteenth century; tourists also came to witness the

annual return of the swallows (Hallan-Gibson 1988:174). The town was accessible by the Santa Fe Railroad since 1887, and by the 1920s and 1930s the automobile provided a convenient means by which to visit the area. With the extension of the Santa Ana–San Diego Freeway in the late 1950s, commuting improved.

The City of San Juan Capistrano had a population of 1,200 when it was incorporated on April 19, 1961, and reached 12,000 by the early 1970s (Hallan-Gibson 1988:175). Over the past several decades, the city has been actively involved in the preservation and restoration of the historic components of its community. The city's Redevelopment Agency refurbished the historic town center and restoration work continues today on the mission.

City of San Clemente

In 1906, Cornelio Echenique and the Goldschmidt brothers jointly owned 9,000 acres of land previously claimed by Felipe Carrillo in 1846 (Ashbaugh 1988:170). The land was split, with the Goldschmidt brothers taking the southern half. This parcel, the future site of the City of San Clemente, was then sold in 1923 to Hamilton H. Cotton and a group of investors. Two years later, the land was purchased by Ole Hanson.

Community developer and former mayor of Seattle, Ole Hanson, announced on November 8, 1925, that 2,000 acres of land on the coast would be the site for a new town – to be called San Clemente, "the Spanish Village" (Meadows 1963b:321; Friis 1965:133). The streets had already been graded, the lots were laid out, and soon work would begin on community buildings (Meadows 1963b:321). Hanson sold a number of lots with an architectural requirement for all Spanish-style buildings, complete with a red tile roof (Friis 1965:133).

The development was a successful enterprise and the City of San Clemente was incorporated in 1928. San Clemente was essentially a resort town with long stretches of beachfront and summer homes for the wealthy. In 1931, the 113-acre San Clemente Beach State Park was established (Meadows 1963c:322). The city was also a roadside stop on the long drive between Los Angeles and San Diego. After the establishment of the U.S. Marine Corps reservation at Camp Pendleton in the early 1940s, San Clemente grew to service the Marines and their families, also providing some housing. The completion of the Santa Ana–San Diego Freeway in 1958 facilitated access to the south Orange County area, which increased tourism at San Clemente.

San Clemente gained national and international attention as the location of the "Western White House" during Richard M. Nixon's tenure as President of the United States from 1969–1974 (Ashbaugh 1988:171). Friends of the President purchased the Cotton Estate with its Spanish Colonial Style architecture and presented it for use by Mr. Nixon and his family. After World War II, there was a boom in housing development and civic expansion in northern Orange County cities. However, this level of growth and expansion did not occur in the San Clemente area until quite recently, with large-scale developments east of the Santa Ana–San Diego Freeway.

32.3 PREVIOUS RESEARCH

32.3.1 Literature Search

32.3.1.1 Methods

A cultural resources site and survey record search was conducted at the South Central Coastal Information Center (SCCIC) of the California Historical Resources Information System (CHRIS) on July 26, 2000. Because the cable conduit already has been installed and no new construction will take place, only archaeological sites and surveys were requested; built environment resources (i.e., historic structures) were not requested. Site and survey information were requested for the linear project corridor and a 1/2-mile radius. Because some survey reports were very large, only bibliographic information on them was obtained.

In addition to official maps and records, the SCCIC consulted the following information sources as part of their record search:

- National Register of Historic Places – Listed Properties
- California Register of Historical Resources
- California Inventory of Historical Resources
- California State Historical Landmarks
- California Points of Historical Interest
- Directory of Properties in the Historical Resources Inventory (Office of Historic Preservation)
- Caltrans State and Local Bridge Surveys

32.3.1.2 Findings

The literature search indicated that the project area has not been subject to intensive archaeological investigation, as only 35 percent of the area has been previously surveyed. A total of 75 cultural resources have been previously recorded within the 1/2-mile radius of the segment corridor (Table 32-4). Of these resources, 55 are prehistoric (42 sites and 13 isolated finds), 19 are historic, and one contains both prehistoric and historic components. Although not indicated at the end of the trinomial by the usual symbol ("/H"), the site descriptions note that an additional seven have prehistoric and historic components. Of these resources, three are known to contain Native American burials, and 10 middens or occupation sites have a moderate probability of containing burials.

The literature search also revealed that the records for 4 sequential sites (P-30-100151, P-30-100152, P-30-100153, and P-30-100154) within the search radius are missing. There is thus no information for these 4 resources.

The series of 1:24,000 maps at the end of this chapter (Figure 30.1 through Figure 30.19) show the previously recorded cultural resources along the segment, as provided by the CHRIS records search. As noted in the figure legend, the labeled resources are identified as one of four types: linear, prehistoric, historic, or protohistoric and/or multi-component.

Table 32-4. Segment 30 Corridor – Previously Recorded Cultural Resources

Site #	Site Type	Site Condition	USGS Quad	Recorded
P-30-001514	Prehistoric shell scatter	Disturbed by development	Newport Beach	Duke and Lopez 1999
CA-ORA-508	Prehistoric milling site with groundstone, lithics, and shell	Disturbed by agriculture	Tustin	Cottrell 1975
CA-ORA-373	Prehistoric site with groundstone and lithics	Disturbed by agriculture	Tustin	Houser 1972
CA-ORA-196/H	Prehistoric habitation site with groundstone, lithics, shell, burials, and a historic component with ceramics & glass	Fair – some areas of site highly disturbed, other areas intact	Tustin	Strudwick 1996; Bakker, McKinney, and Hafner 1967
CA-ORA-195	Prehistoric site with groundstone, lithics, and shell	Disturbed by agriculture	Tustin	Bakker, McKinney, and Hafner 1967
CA-ORA-602	Prehistoric lithic scatter with groundstone	Destroyed by construction and agriculture	El Toro	Cottrell and Miller 1976
CA-ORA-566	Prehistoric lithic scatter with groundstone	Disturbed by development	El Toro	Leonard 1973
CA-ORA-544	Prehistoric lithic scatter with groundstone	Disturbed by agriculture	El Toro	Cottrell 1976
CA-ORA-514	Prehistoric lithic scatter with groundstone	Disturbed by agriculture and development	El Toro	Wright 1976
CA-ORA-38	Pre/Protohistoric "camp"	Unknown	El Toro	Unknown, 1949
P-30-100158	Prehistoric isolate metate and hammerstone	Unknown	Dana Point	Unknown
P-30-100157	Prehistoric isolate cores	Unknown	Dana Point	Unknown
P-30-100074	Prehistoric isolate tool	Disturbed by grading	Dana Point	Maxon 1996
P-30-100155	Prehistoric isolate flakes	Unknown	Dana Point	Unknown
P-30-100156	Prehistoric isolate mano fragment and flake	Unknown	Dana Point	Unknown
P-30-100157	2 Possible core fragments	Human-induced disturbances	Dana Point	Unknown
P-30-100158	Isolated granitic milling slab and hammering tool	Unknown	Dana Point	Unknown
P-30-100159	Single felsite flake	Isolate	Dana Point	Becker 1989
P-30-100160	Unifacial mano	Isolate	Dana Point	Becker 1989

Table 32-4. Segment 30 Corridor – Previously Recorded Cultural Resources

Site #	Site Type	Site Condition	USGS Quad	Recorded
CA-ORA-1363H	Historic foundation, ceramics, metal, glassware	Disturbed by bulldozing	Dana Point	Brock 1994
CA-ORA-1337H	Historic concrete slab foundations	Highly disturbed by development	Dana Point	Maxon 1998; Shinn 1993; VanWormer 1985
CA-ORA-1325H	Historic adobe house and restaurant with subsurface features, historic debris	Disturbed by development	Dana Point	Brock and Sawyer 1992
CA-ORA-1258	Prehistoric lithic scatter with metate fragment	Destroyed	Dana Point	Maxon 1996; Brown 1990
CA-ORA-1215H	Historic wall foundation of San Juan Mission and historic debris	Highly disturbed by grading and construction	Dana Point	Winter, Mason, and McLean 1988
CA-ORA-1107	Prehistoric site with lithics, groundstone, shell, and historic debris	Disturbed by agriculture	Dana Point	Dibble 1986
CA-ORA-1108	Prehistoric lithic scatter, FCR, and groundstone	Destroyed by grading	Dana Point	Bissell 1986
CA-ORA-1173H	Historic house with subsurface deposits, historic debris, and Prehistoric lithics and shell	Slightly disturbed by trenching	Dana Point	Brock 1988
CA-ORA-923	Single felsite flake	Disturbed by roads and dumping	Dana Point	Van Horn and Murray 1980
CA-ORA-924	Prehistoric isolate flakes and tool	Disturbed by roads and dumping	Dana Point	Van Horn and Murray 1980
CA-ORA-1342H	Farmhouse and associated buildings	Currently in use, buildings in various stages of neglect	Dana Point	Becker 1992
CA-ORA-835	Prehistoric milling site with lithics	Destroyed by construction	Dana Point	Mitchell 1979
CA-ORA-836	Prehistoric lithic scatter	Unknown	Dana Point	Mitchell 1979
CA-ORA-642	Prehistoric lithic site with groundstone	Disturbed by grading and surface collection	Dana Point	Tadlock and Tadlock 1977
CA-ORA-627H	Historic adobe structure with subsurface features, historic debris	Disturbed by development	Dana Point	Helvey 1987; Greenwood and Bente 1977
CA-ORA-549	Prehistoric lithic scatter with groundstone	Destroyed by development	Dana Point	Jacobs and Rice 1977
CA-ORA-484	Prehistoric shell midden with lithics, groundstone, and hearths	Destroyed by development	Dana Point	Cooley and Cottrell 1975

Table 32-4. Segment 30 Corridor – Previously Recorded Cultural Resources

Site #	Site Type	Site Condition	USGS Quad	Recorded
CA-ORA-434	Prehistoric stone feature for a puberty rite ritual of the Capistrano Indians, lithic scatter	Site destroyed by development, Stone feature moved to a new location	Dana Point	Van Horn 1981; Ellis Hardesty, and Crabtree 1973
CA-ORA-188	Prehistoric shell midden with lithics and groundstone	Two-thirds of the site has been destroyed	Dana Point	Bakker, Hafner, and McKinney 1966
CA-ORA-23, P-30-100023	Pre/Protohistoric camp	Unknown	Dana Point and San Juan Capistrano	Unknown 1949
P-30-120018	Prehistoric quarry site	Unknown	Dana Point and San Juan Capistrano	Unknown
CA-ORA-21	Pre/Protohistoric camp site, burial grounds possible	Unknown	Dana Point	Romero 1949
P-30-100025	Hammerstone/ battered stone	Isolate	San Clemente	Hatheway & McKenna 1988
CA-ORA-903	Prehistoric site with lithics and groundstone	Highly disturbed by development and excavation	San Clemente	Malone 1979
CA-ORA-102 & CA-ORA-103	Prehistoric shell midden site	Destroyed by construction	San Clemente	Smith 1953; Waldeck 1948
CA-ORA-101	Prehistoric shell midden	Unknown, probably destroyed by development	San Clemente	Smethe 1954
CA-ORA-22	Prehistoric village site, shell midden, lithics, ground-stone, ceramics	Most of site destroyed or highly impacted by development	San Clemente	Strudwick 1994; Hines & Schwaderer 1989, Unknown 1949
CA-ORA-1278	Prehistoric shell midden site	Disturbed by trenching	San Juan Capistrano	Becker & Baker 1992; Sundberg 1991
CA-ORA-1279	Prehistoric lithic scatter	Disturbed by agriculture	San Juan Capistrano	Becker & Baker 1992; Sundberg 1991
CA-ORA-1302	Historic wall foundation	Good	San Juan Capistrano	Scmidt 1991
CA-ORA-1247H	Historic adobe foundations and subsurface deposits, historic debris, Prehistoric milling site with lithics	Large majority of the site has been destroyed	San Juan Capistrano	Philip de Brros 1990

Table 32-4. Segment 30 Corridor – Previously Recorded Cultural Resources

Site #	Site Type	Site Condition	USGS Quad	Recorded
CA-ORA-1190 (also subsumes site CA-ORA-600H)	Pre/protohistoric site with lithics, ceramics, groundstone, shell, hearths, historic stone wall	Disturbed by development	San Juan Capistrano	Mason 1988; Belardes & Magalousis 1982
CA-ORA-1191	Prehistoric site with lithics and faunal remains	Highly disturbed	San Juan Capistrano	Mason 1988
CA-ORA-599	Midden site	Highly disturbed	San Clemente	Jertberg 1976
CA-ORA-963	Prehistoric site with shell, lithics, and groundstone	Highly disturbed by agriculture	San Juan Capistrano	Brown and Evans 1991; Brock and Murray 1981
CA-ORA-1036 (subsumes sites 1035, 1036, 1037, 1038, & 1039)	Large Prehistoric habitation site with lithics, groundstone, shell, burial	Highly disturbed by agriculture & development	San Juan Capistrano	Landis 1994; Bissell et al. 1992; Scroth et al. 1983
CA-ORA-1040	Prehistoric habitation site with lithics, shell, and groundstone	Destruction probable	San Juan Capistrano	Schroth et al. 1983
CA-ORA-855	Large Prehistoric habitation site with lithics, groundstone, shell, burial	Highly disturbed by construction and extensive excavation	San Juan Capistrano	Landis 1994; Dover 1980
CA-ORA-856H	Historic Spanish kiln	Good	San Juan Capistrano	Drover 1980
CA-ORA-841H	Historic adobe and brick debris, mano fragments	Destruction by development probable	San Juan Capistrano	Solheaid 1989; Magalousis 1979
CA-ORA-834H	Historic trash deposit with Prehistoric components	Disturbed by construction and agriculture	San Juan Capistrano	Helvey 1987; Scroth 1979
CA-ORA-497	Prehistoric lithic and groundstone scatter	Disturbed by grading	San Juan Capistrano	Carter et al. 1974
CA-ORA-375	Prehistoric site with groundstone and lithics	Disturbed by agriculture and roadways	San Juan Capistrano	Unknown 1972
CA-ORA-426	Prehistoric milling site	Destroyed by development	San Juan Capistrano	Cooley et al. date unknown
CA-ORA-354	Prehistoric site with groundstone and lithics	Destroyed by development	San Juan Capistrano	Ahlering and Garland 1972
CA-ORA-248	Pre/Protohistoric site with bedrock milling features, fireplace foundation & roasting oven	Destroyed by development	San Juan Capistrano	Robinson 1968

Table 32-4. Segment 30 Corridor – Previously Recorded Cultural Resources

Site #	Site Type	Site Condition	USGS Quad	Recorded
CA-ORA-16	Pre/Protohistoric camp site	Unknown	San Juan Capistrano	Unknown 1949
CA-ORA-1271H	Historic mansion with subsurface cesspool and brick cistern, Prehistoric lithic and shell scatter	Subsurface house features destroyed, Prehistoric site disturbed by disking	San Juan Capistrano	Brock 1991; Sundberg 1991; Van Wormer 1985
P-30-100328	Prehistoric isolate mano	Unknown	San Juan Capistrano	Bissell 1999
P-30-001536	Prehistoric site with lithics, shell, FCR, and faunal	Disturbed by construction and grading	San Juan Capistrano	Shepard 1999
P-30-001507	Historic brick wall and foundations	Unknown	San Juan Capistrano	Bissell 1999
CA-ORA-1343H	Historic storage tank and foundation	Good – disturbed by erosion	San Juan Capistrano	Becker and Evans 1992
CA-ORA-1327H	Historic house with subsurface foundations, Prehistoric olla and cogstones	Good	San Juan Capistrano	Becker and McKennan 1992
CA-ORA-1329H	Historic house with subsurface privies and wells	Good	San Juan Capistrano	Becker and McKennan 1992
CA-ORA-1330H	Historic house with subsurface privies and dumps	Good	San Juan Capistrano	Becker and McKennan 1992
CA-ORA-1328H	Historic house with subsurface privies and dumps	Good	San Juan Capistrano	Becker and McKennan 1992

32.3.2 Native American Consultation

32.3.2.1 Methods

The Native American Heritage Commission (NAHC) was contacted on May 5, 2000, to request a Sacred Lands file search and a current Native American contact list. The Commission's response, dated May 10, 2000, provided the names and addresses of 11 local Native American groups and individuals. Letters subsequently were sent on May 19, 2000, to the listed groups and individuals to determine if they have knowledge of culturally sensitive locations within the project area. If there was no response to the letter, a telephone call was made to each individual or representative on June 6, 2000. A table listing contact dates and responses is attached as Appendix B.

32.3.2.2 Findings

The reply from the NAHC states the search failed to indicate the presence of Native American cultural resources in the immediate project area. One telephoned response was received to the letters addressed to the contact list; no responses were received to the telephone calls. In his telephoned response, Sam Dunlap expressed no specific concerns.

32.4 FIELDWORK

Fieldwork for the Anaheim to San Clemente segment involved (1) pedestrian survey and limited visits to known sites and (2) monitoring of maintenance activities. No cultural resources were collected during the Qwest Network Construction Project.

The fieldwork was conducted under the supervision of a CRS, who supervised lead archaeological monitors and a staff of archaeological monitors. Archaeological monitors were responsible for being on site during all work in sensitive areas, conducting spot checks if the area was designated for intermittent monitoring, and completing Daily Monitoring Logs. The CRS or archaeological monitor was responsible for flagging or otherwise delineating ESAs, including a 15-foot buffer zone around cultural resources, within four days prior to maintenance activities. The archaeological monitor was also responsible for completing a Site Condition Record immediately after removal of such flagging or other protective markers.

32.4.1 Survey

A pedestrian survey was conducted to identify any historic/prehistoric sites or features that may have been encountered during the installation of the fiber optic lines. The entire segment was subjected to intensive pedestrian survey for cultural resources. The survey area consisted of a swath of land straddling the fiber optic line and extending 15 meters to either side. This area was considered the area of potential effect (APE) for Qwest backbone construction.

32.4.1.1 Methods

The survey crew consisted of 14 archaeologists, and survey parties of 1 or 2 individuals. The survey parties were deployed to conduct surveys along the alignment. For safety, two member survey parties were implemented in remote and inhospitable areas. Table 32-5provides a list of key site investigation staff, along with their professional credentials.

Qualified archaeologists walked a single pedestrian transect on either side of the fiber optic backbone alignment. Exposures of native soil were closely inspected for cultural material, as were animal burrows and other disturbances affording limited subsurface visibility. No attempt was made to locate known sites within the APE; the northern section of the segment corridor lays solely in/under blast of the railroad. While the southern half of the segment corridor lies in utility corridors under paved streets.

In addition to reporting on the condition of previously recorded sites, survey crew members were instructed to record any cultural resources not previously recorded and any impacts the resource may have suffered as a result of the Qwest backbone construction. The minimally acceptable level of documentation needed for a resource's inclusion in the Office of Historic Preservation's (OHP's) filing system can be met with the preparation of a California Department of Parks and Recreation (DPR) 523 series Primary Record and a Location Map. While the minimum level of documentation is designed to provide an initial record of all types of cultural resources, survey crews were instructed to fully document any previously unrecorded resources. Full documentation (although different for various types of resources) generally includes the preparation of the Primary Record and Location Map, but also an Archaeological Site Record, Artifact Record, Photograph Record, as well as a Sketch Map.

Table 32-5. Key Site Investigation Staff

Key Staff	Highest Degree *	Years Experience
Cindy Arrington	M.S., RPA	10
Paul Shen-Brown	M.A., RPA	8
Lori Harrington	M.A., RPA	15
Mark Sullivan	M.A., RPA	26
George Zeimens	M.A., RPA	30
Bradbury Brown	B.A.	18
William Brown	B.A.	10
Todd Folmer	B.A.	11
Keith Hamm	B.A.	4
Susan Kintscher	B.A.	2
Harry Moyer	B.A.	5
Mark Lowe	B.A.	12
Joise Salas	B.A	3
Dean Tye	B.A.	5

* RPA = Member of the Register of Professional Archaeologists

32.4.1.2 Findings

The entire segment was surveyed by archaeologists Paul Shen-Brown and Mark Sullivan in the spring of 2001. The pedestrian survey did not locate any previously unrecorded or newly identified cultural resource sites, artifacts, or objects.

32.4.2 Monitoring

32.4.2.1 Methods

In accordance with Protocol 5, a Mitigation and Monitoring Plan (MMP) was prepared in June 2000. The MMP noted that in this project corridor, Qwest would be performing maintenance on an existing line only. No new trenching was foreseen at this location. The proposed maintenance activity consisted of the re-excavation of pre-existing assist holes to perform maintenance or upgrades on the fiber-optic line. These excavations might take place at four points per linear mile. The MMP concluded that it was possible that some previously undisturbed soil might be disturbed during re-excavation.

Within a 1/2-mile of the proposed project corridor, 75 archaeological resources have been previously recorded. Of these resources, three contain Native American burials, and ten have a moderate probability of containing burials. In addition, 65 percent of the route remains unsurveyed outside of the railroad ROW and existing city streets, and the presence of human remains along this segment was considered likely. It is thus possible that previously unknown cultural resources might be discovered during maintenance activities.

In view of the above information, the MMP made the following recommendations for monitoring within this study area:

- An archaeological monitor would be present when any maintenance is performed along this project corridor.
- A Native American observer would be present when any maintenance is performed along this project corridor.

32.4.2.2 Findings

No maintenance was required for the Anaheim to San Clemente segment during the monitoring period. Because no maintenance activities occurred, archaeological monitoring was not necessary.

32.5 DISCUSSION

Prior to the current investigation, only 35 percent of the Anaheim to San Clemente segment corridor had been investigated for cultural resources, with 75 cultural resources previously recorded within a 1/2-mile radius. In addition, three of the known archaeological sites contained Native American burials, and an additional ten were considered to have a moderate probability of containing burials. No cultural resources had been previously recorded within the project corridor, and no previously unknown cultural resources were identified during the fieldwork reported here along the railroad ROW and city streets. Although the presence of human remains was considered likely along this segment, no evidence of human remains was discovered during this project.

Under the oversight of a CRS, the specific Cultural Resources Protocols for this project were accomplished. Preparation of a MMP in compliance with Protocol 5 assured that known cultural resources would be avoided as feasible and impacts reduced by ensuring that any necessary archaeological mitigation was carried out prior to commencement of the maintenance activity. In compliance with Protocol 7, the literature search and subsequent fieldwork assured that identified cultural resources within the segment corridor were protected. Under Protocol 8, an archaeological monitor and Native American observer were present where appropriate. During the project, it was not necessary to implement Protocol 9, which describes the methods to be employed to address unanticipated discoveries and assure that cultural resources are protected by work stoppage and evaluation of the resource by the CRS or an archaeological monitor, since there were no unanticipated discoveries. Although it was not necessary to implement Protocol 10, that protocol describes the actions to be taken in the event of the discovery of human remains or suspected human remains.

32.6 RECOMMENDATIONS

Given that the current field investigation was conducted along a railroad corridor and surface streets, efforts to locate cultural resources within the scope of this project have been sufficient per current U.S. Secretary of the Interior's professional standards and guidelines.

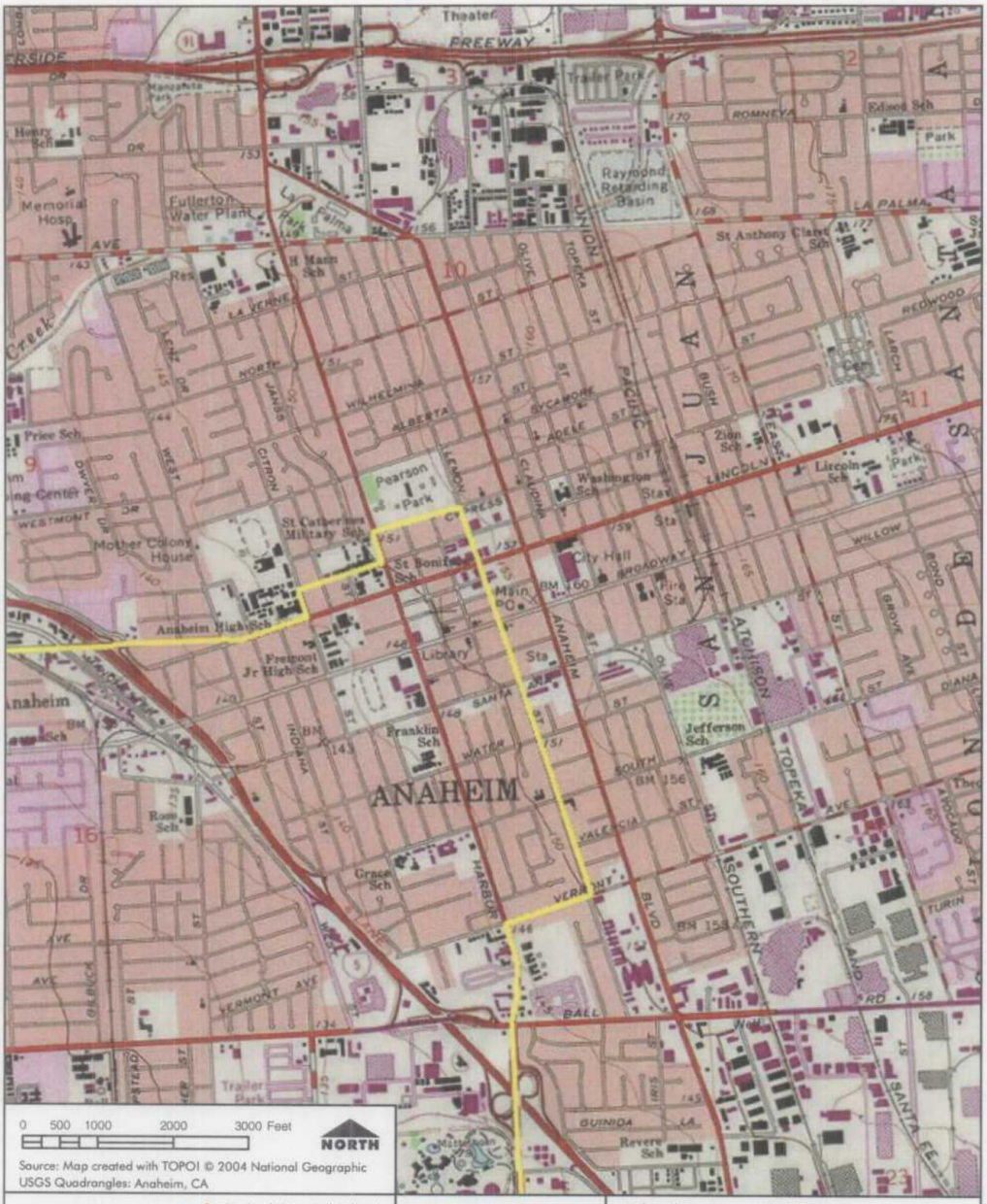
There remains, however, the potential for the existence of buried archaeological materials within this heavily disturbed project area. Prehistoric materials might include flaked stone tools, toolmaking debris, stone milling tools, fire-affected rock, animal bone shaped for use as tools, baked clay items, pottery, marine shell, or soil darkened by cultural activities (midden). Historic materials might include building remains, metal, glass, or ceramic artifacts or debris.

Should cultural resources be encountered by Qwest construction and/or management crews during future disturbance for maintenance of fiber-optic cable and related infrastructure, or should new construction occur within the state of California, work in the area must be halted and a qualified archaeologist should

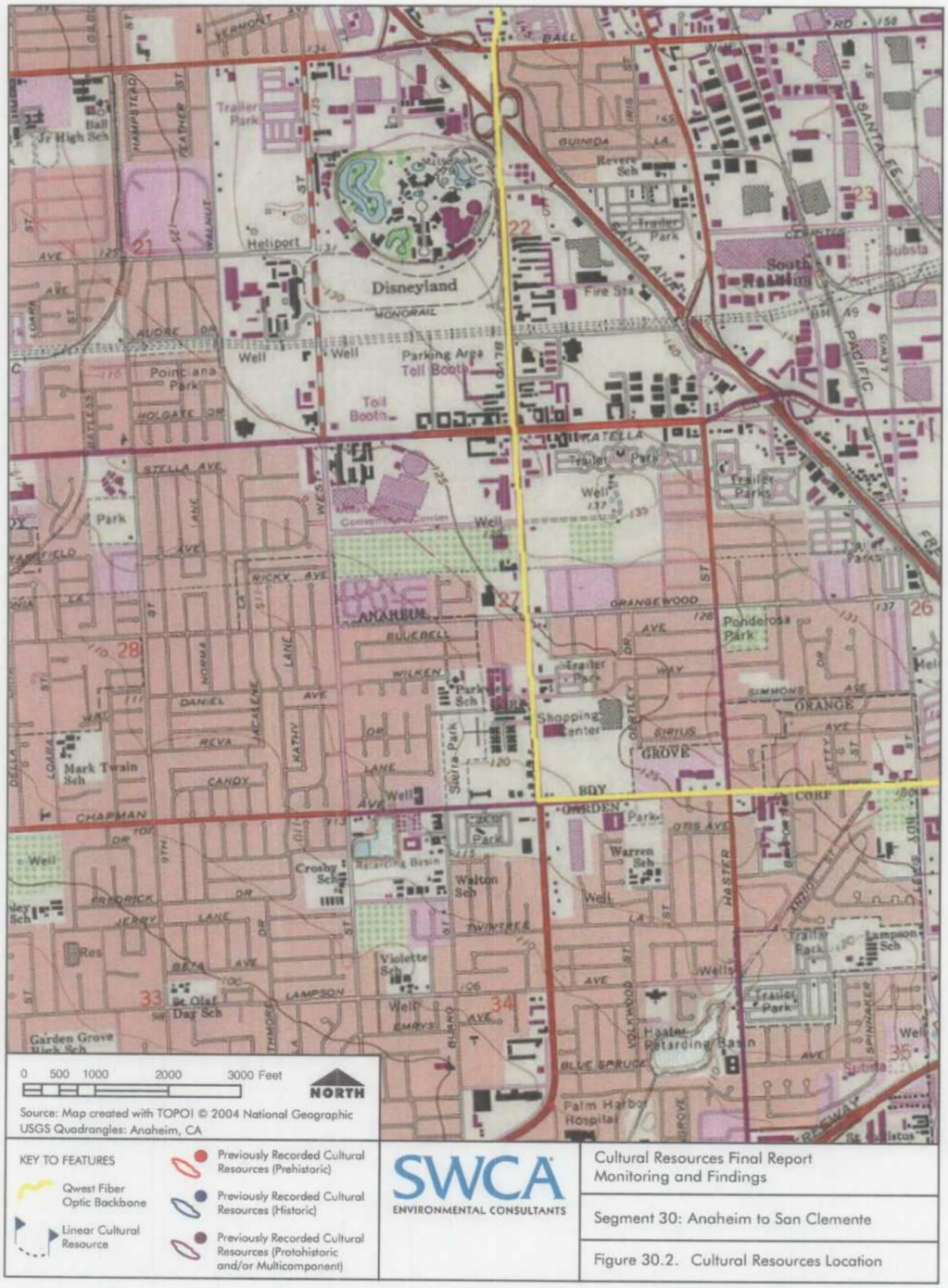
be notified immediately to evaluate the resource(s) encountered. Qwest would also adhere to the specific Cultural Resources Protocols, numbered 1 through 11, which were prepared to ensure Qwest's compliance under CPUC regulatory authority (see Appendix A).

- Protocol Number 1: Records Search and Data Adequacy Analysis
- Protocol Number 2: Native American Consultation
- Protocol Number 3: Archaeological Inventory and Site Recording
- Protocol Number 4: Site Boundary, Integrity or Significance Testing
- Protocol Number 5: Mitigation Monitoring Plan
- Protocol Number 6: Pre-Construction Data Recovery
- Protocol Number 7: Protection of Environmentally Sensitive Areas
- Protocol Number 8: Archaeological Monitoring and Native American Observation
- Protocol Number 9: Addressing Unanticipated Discoveries during Project Activity
- Protocol Number 10: Discovery of Human Bone
- Protocol Number 11: Final Report of Monitoring and Findings

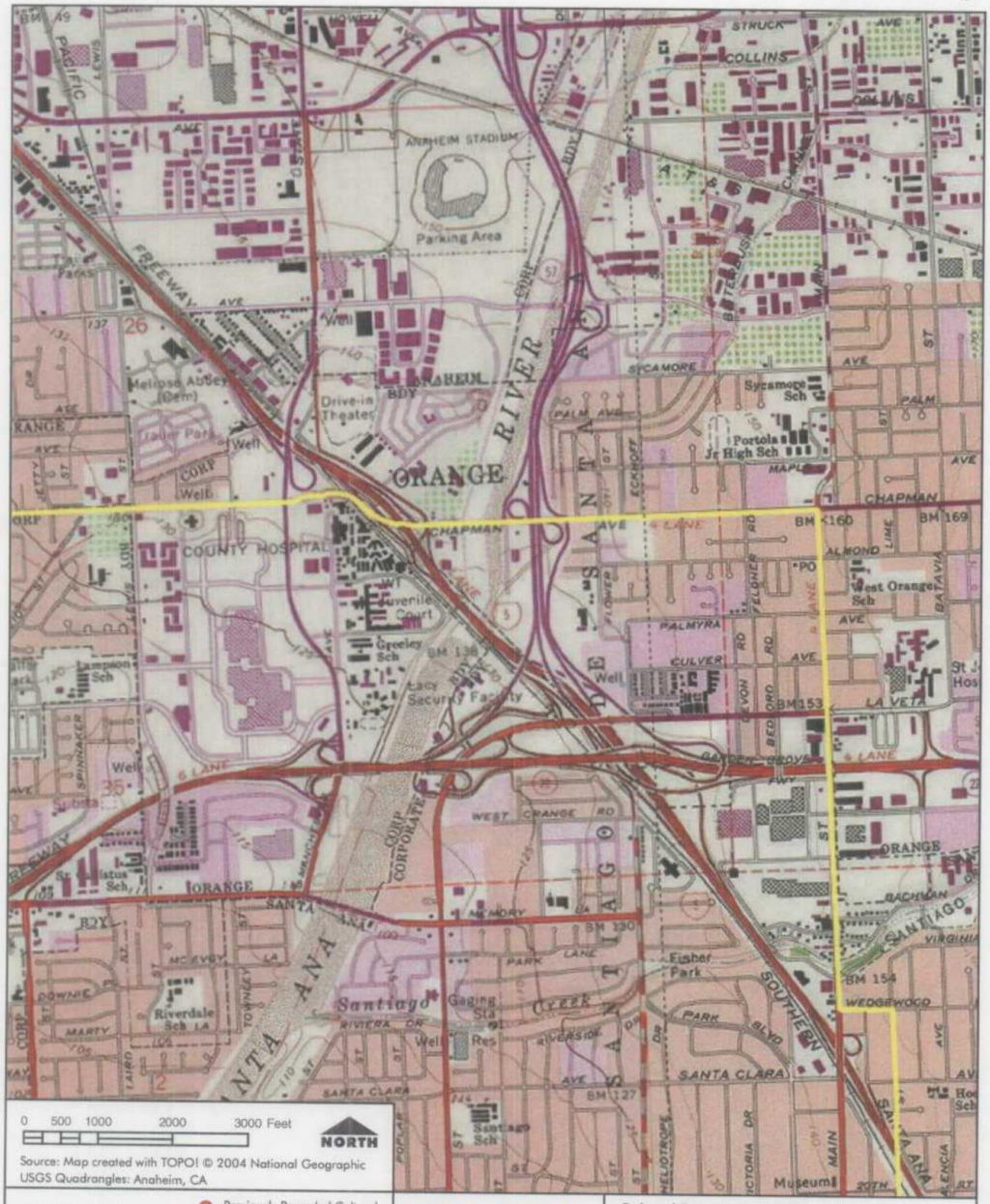
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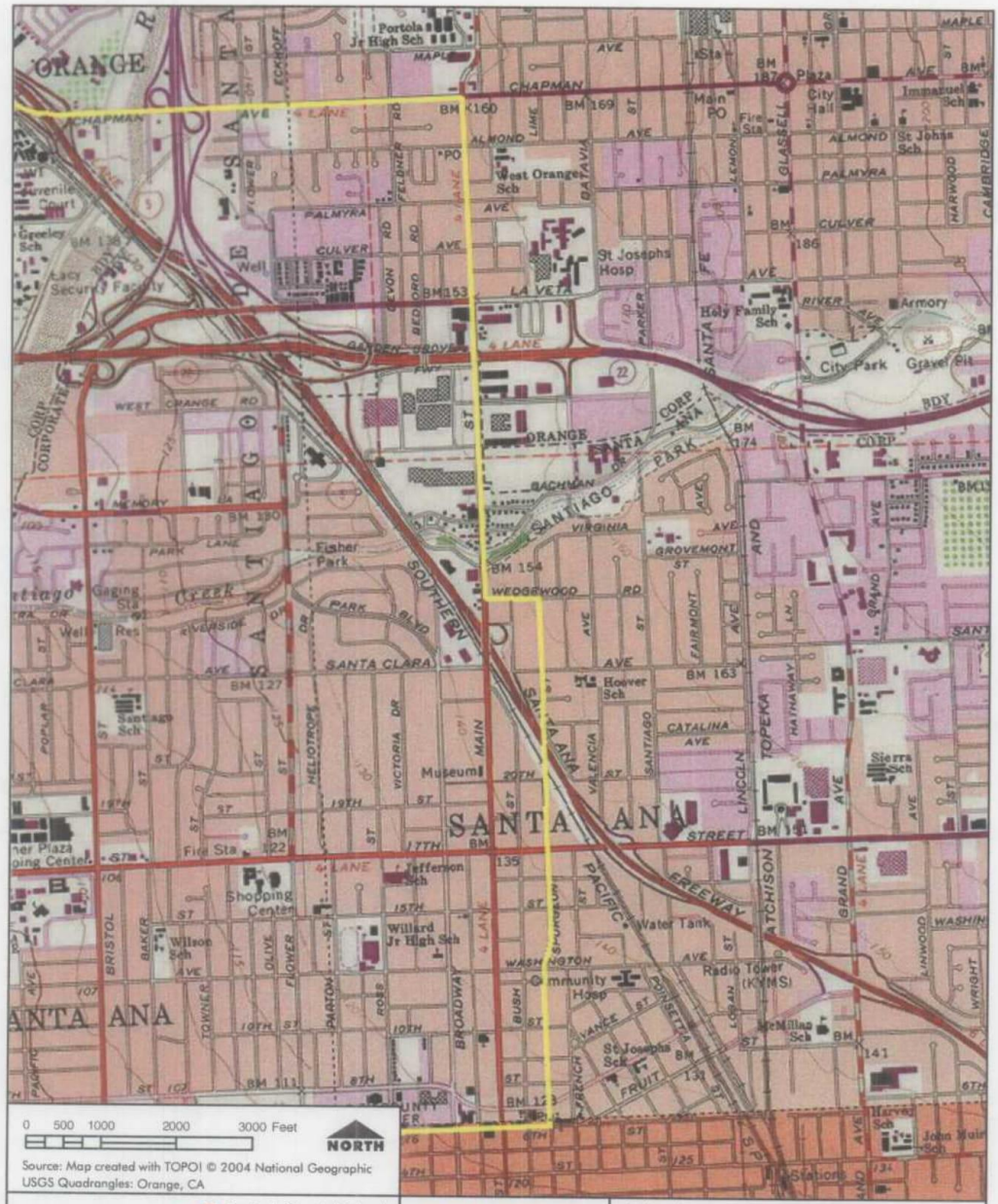
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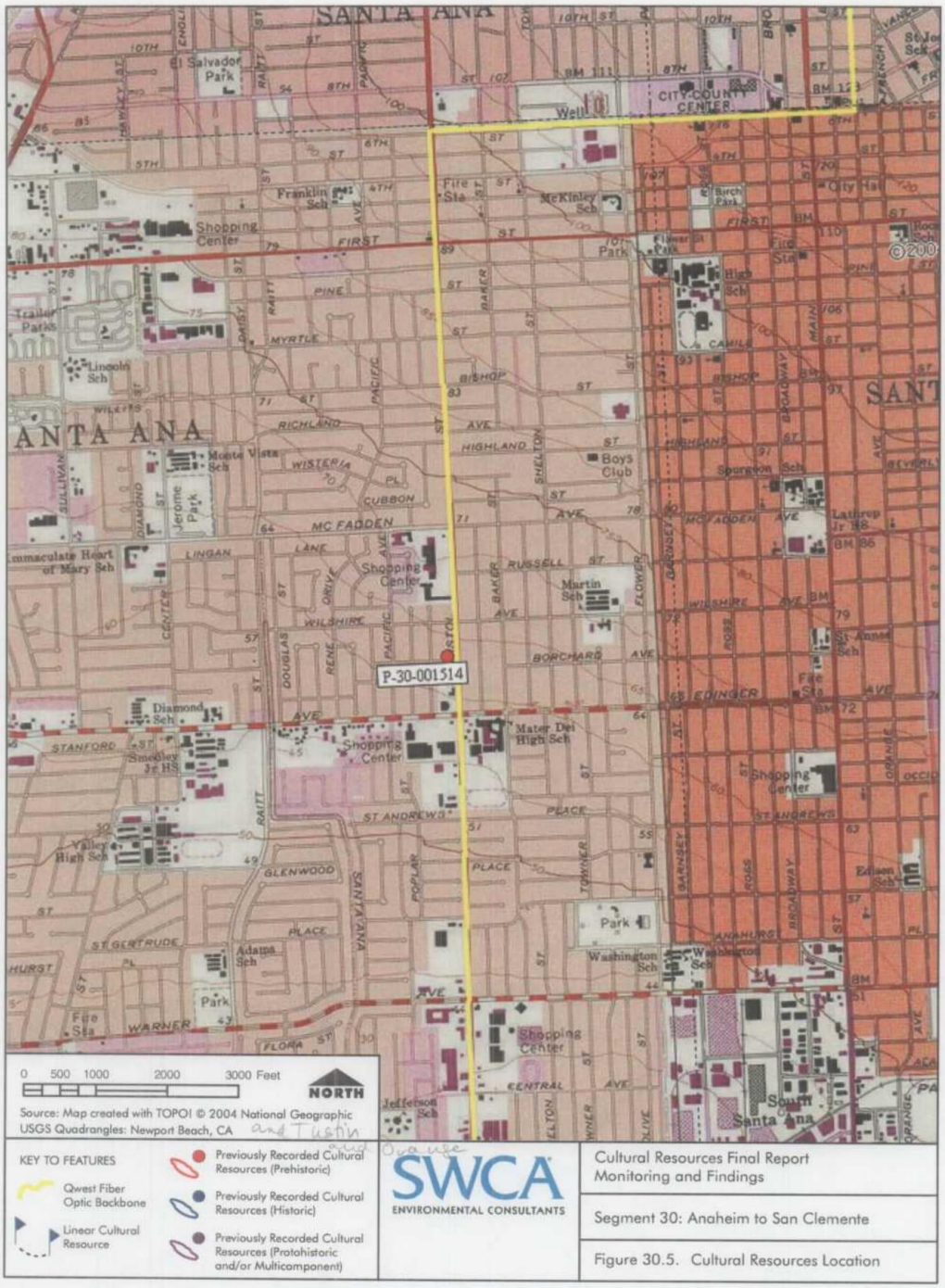
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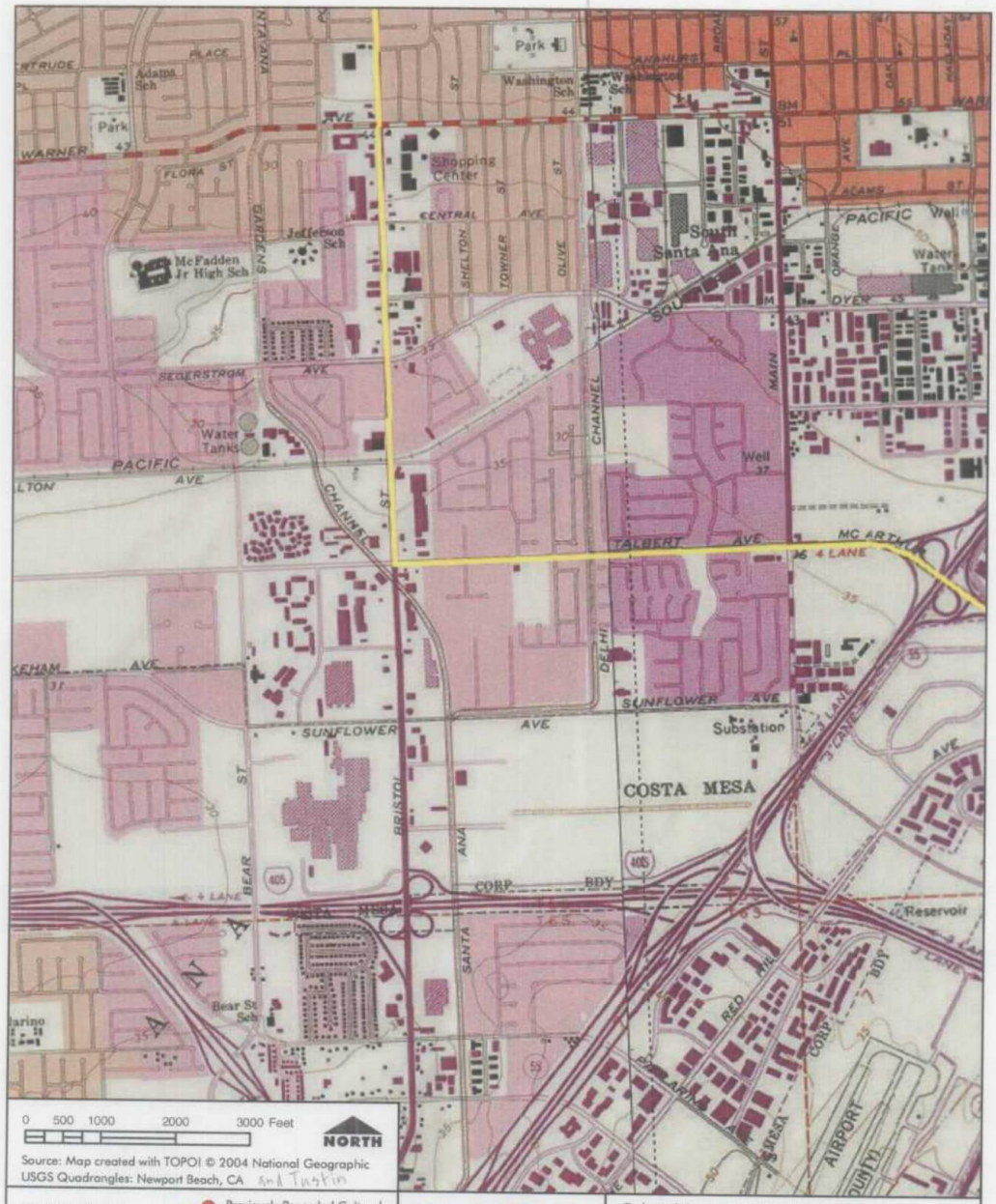
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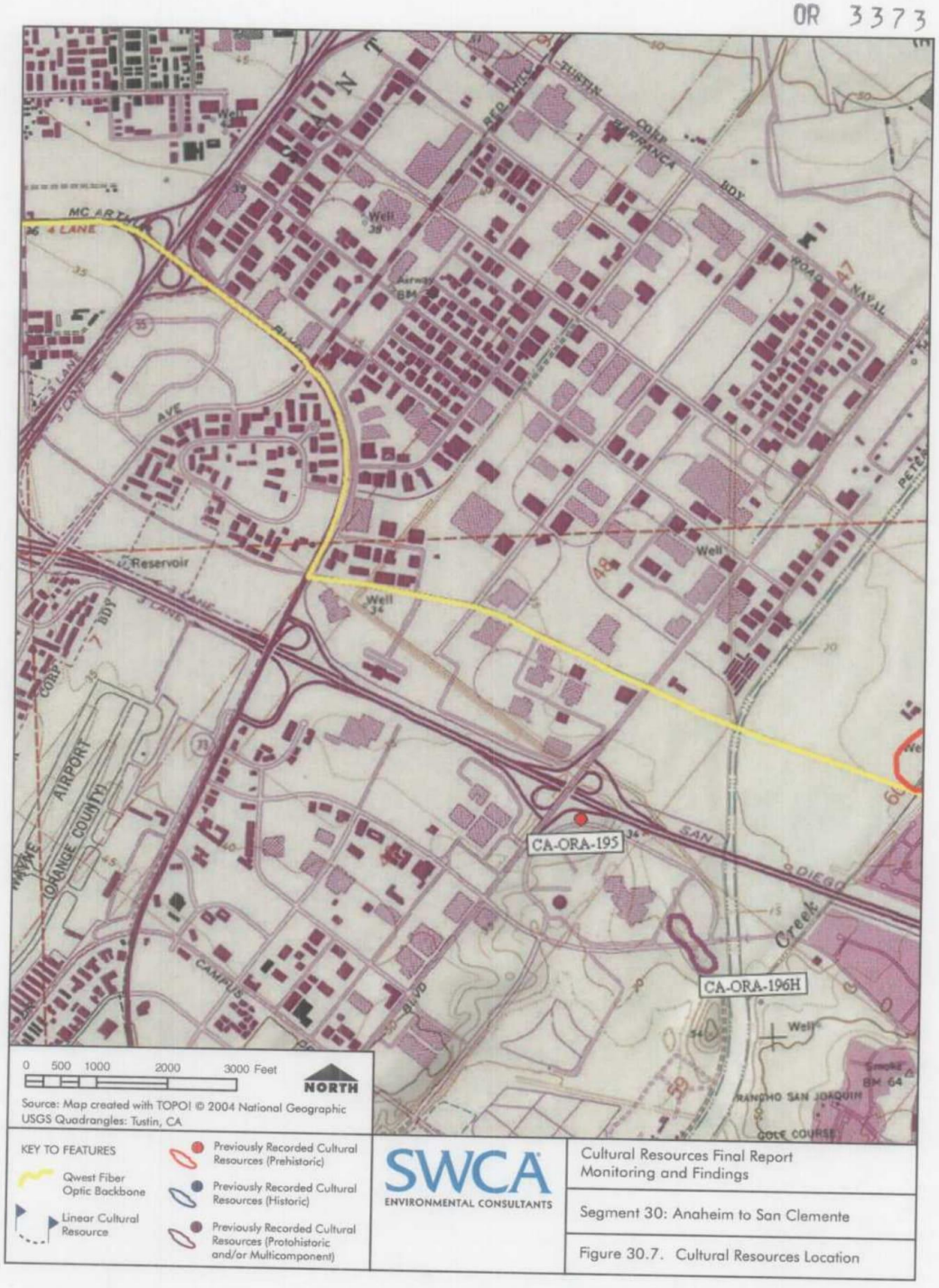
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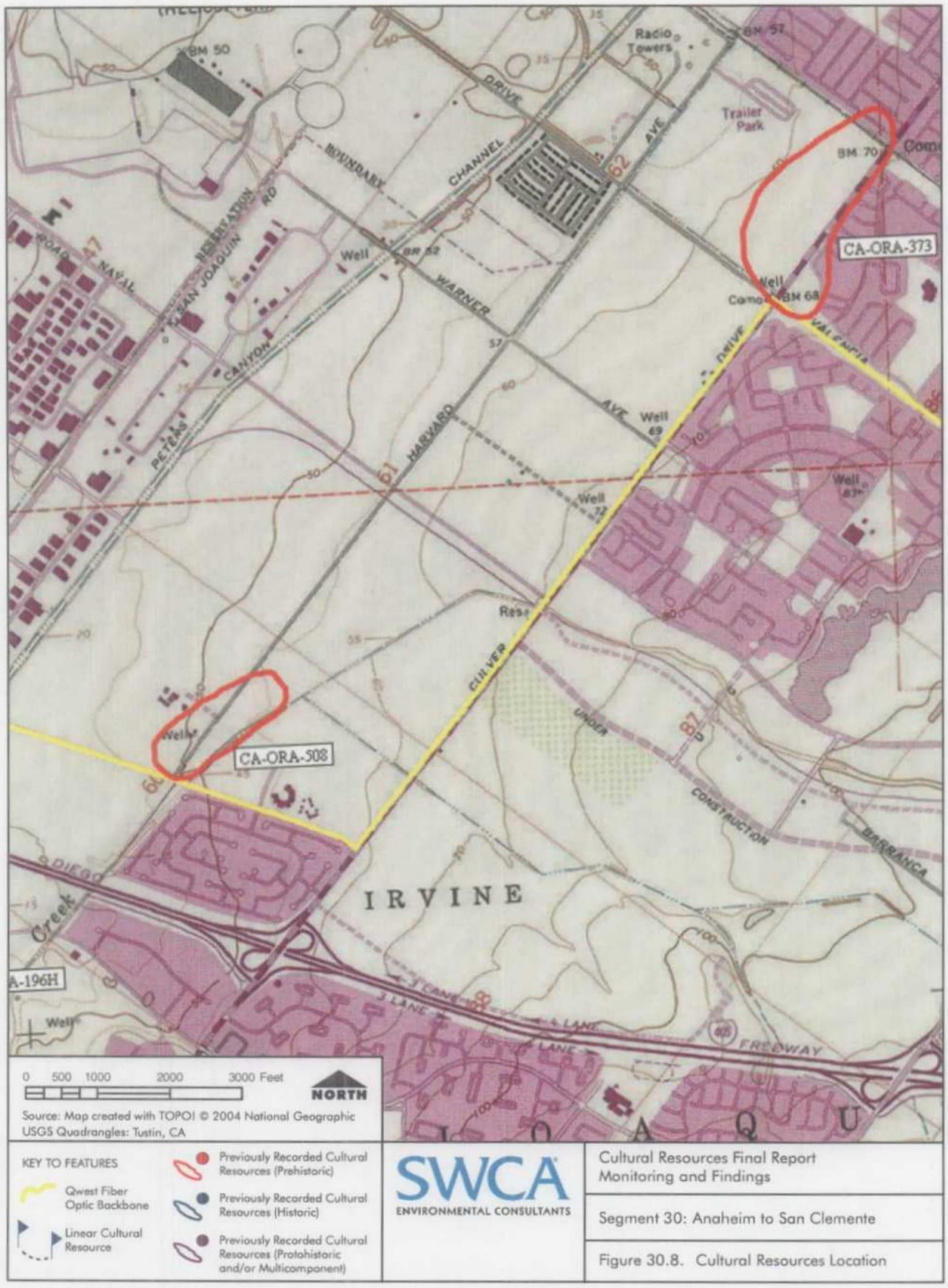
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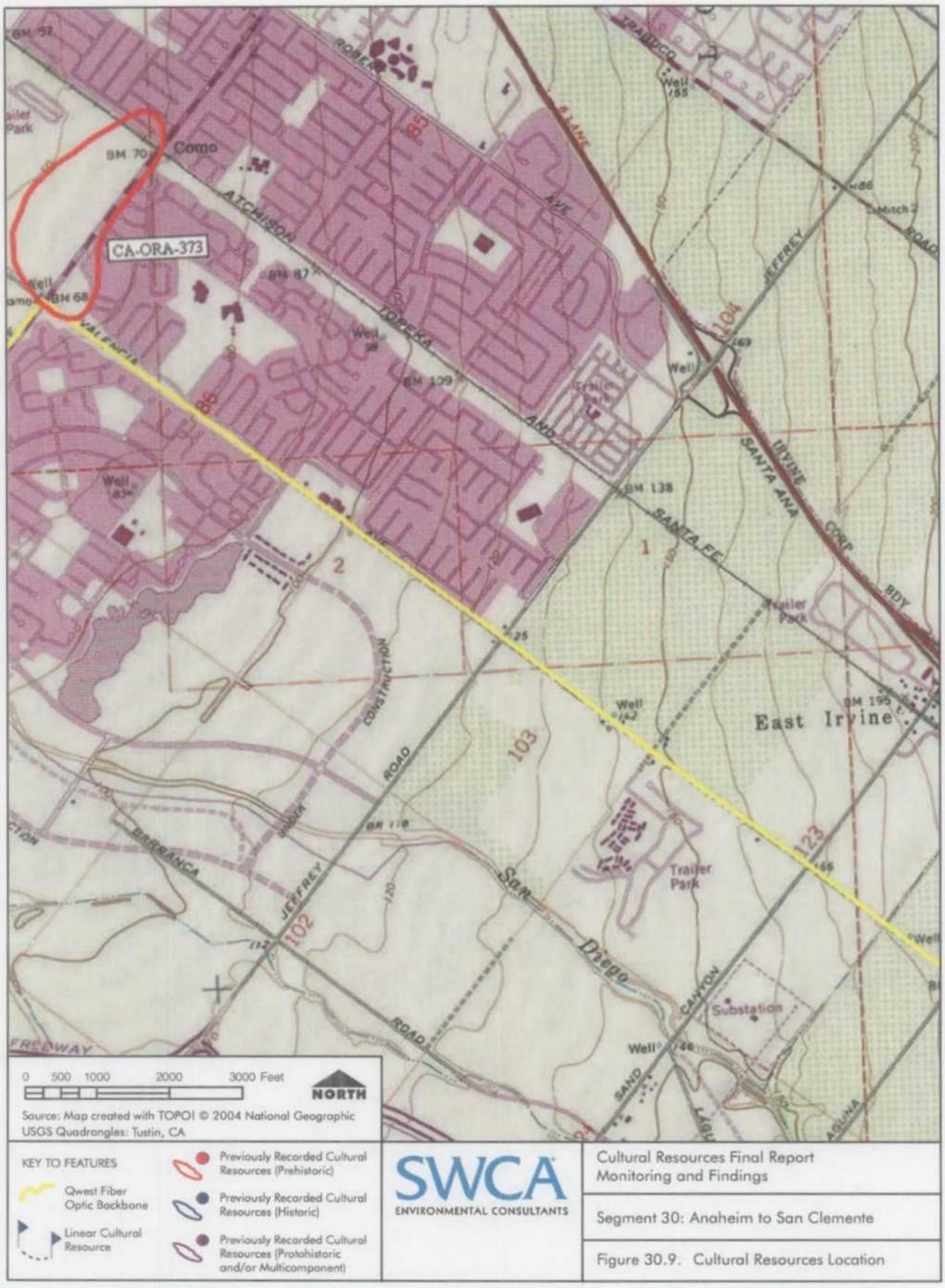
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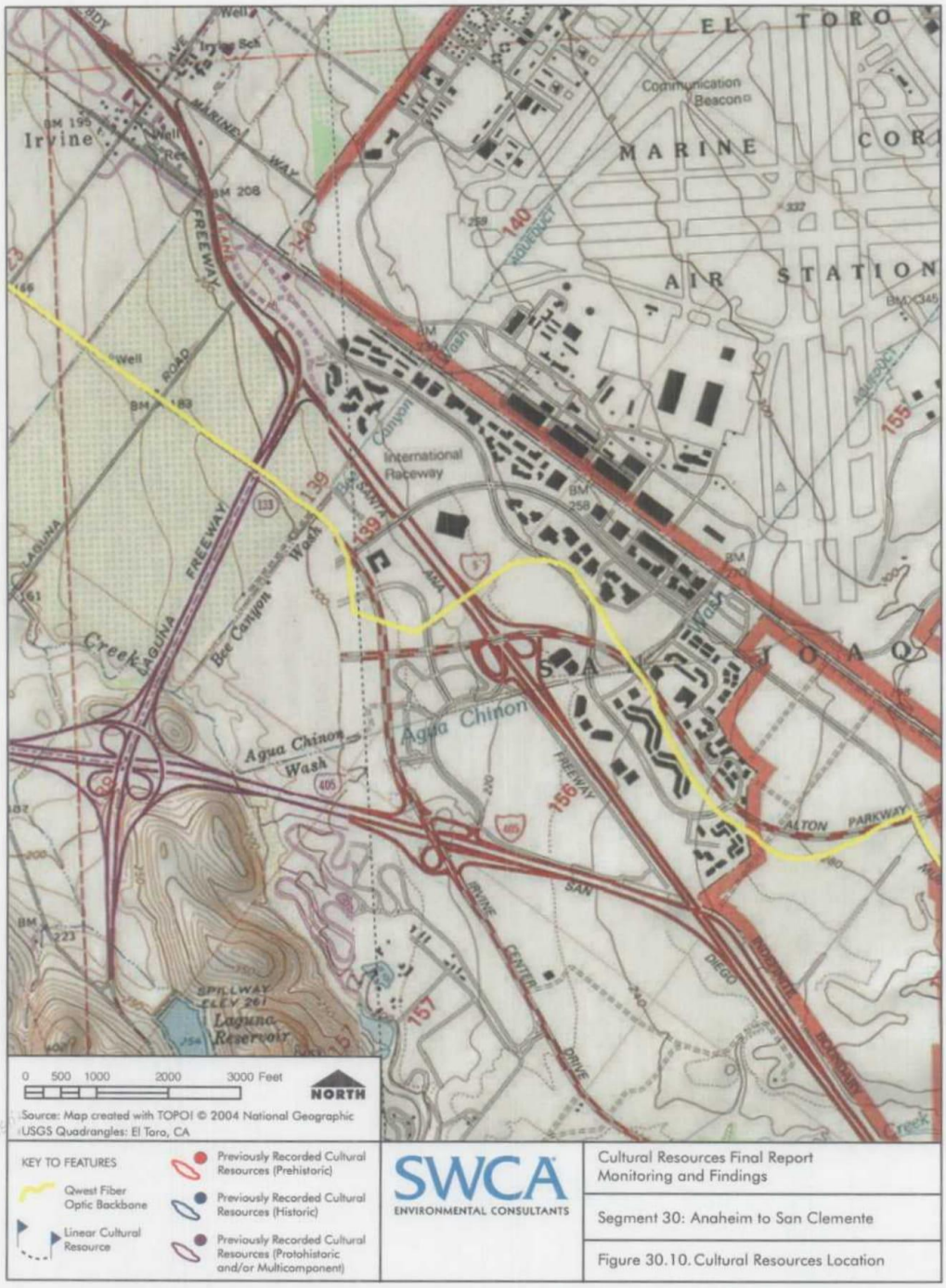
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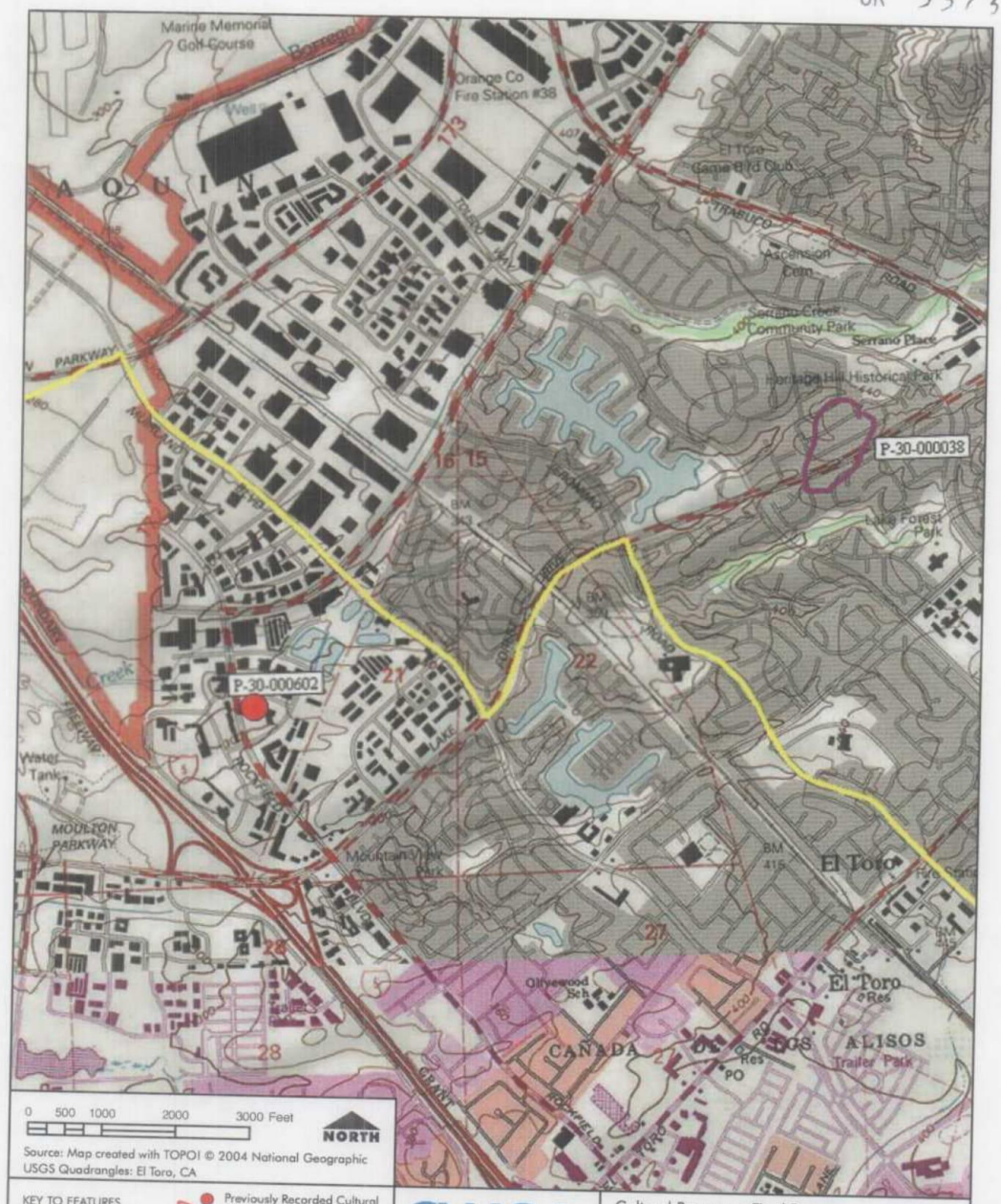
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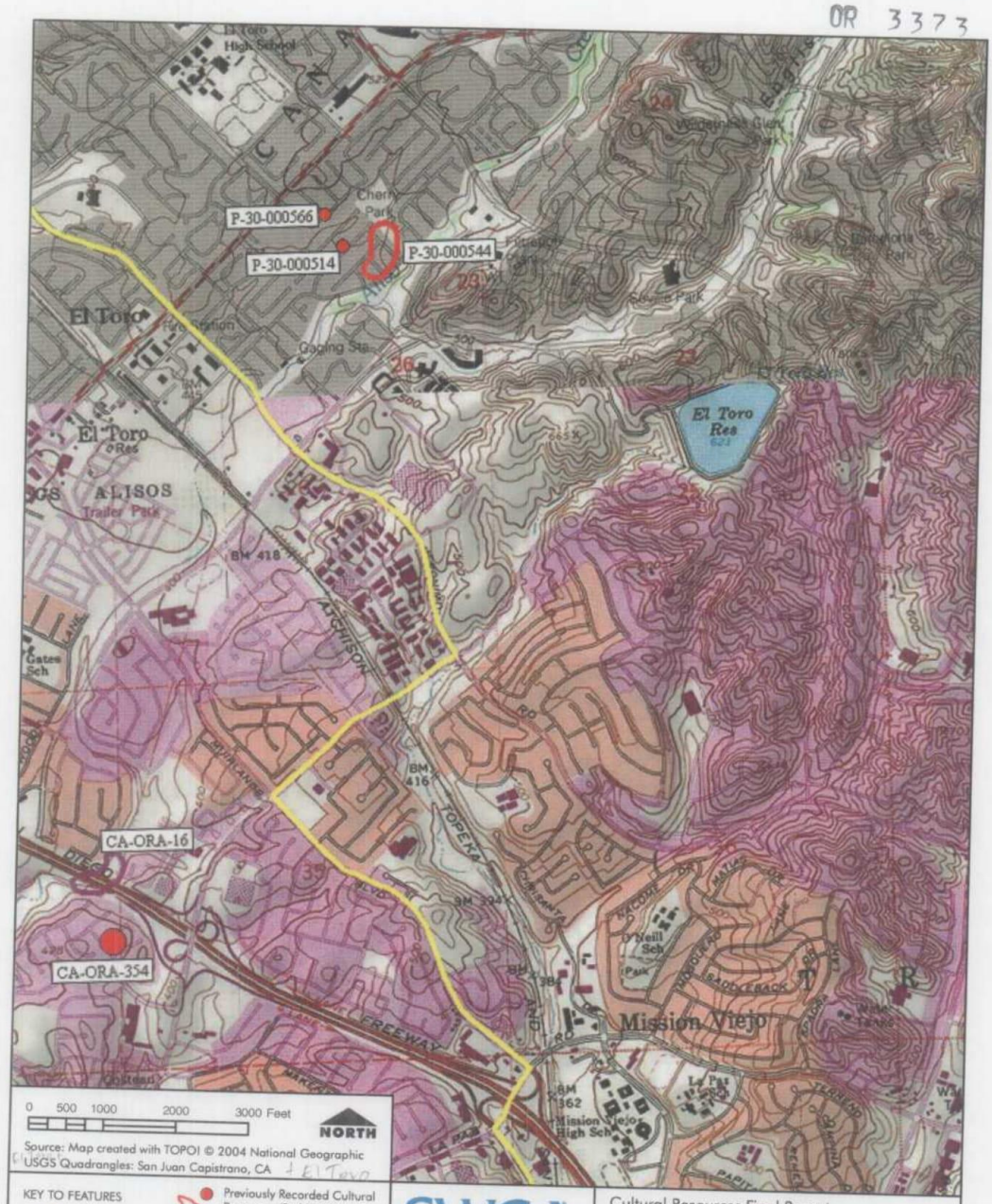
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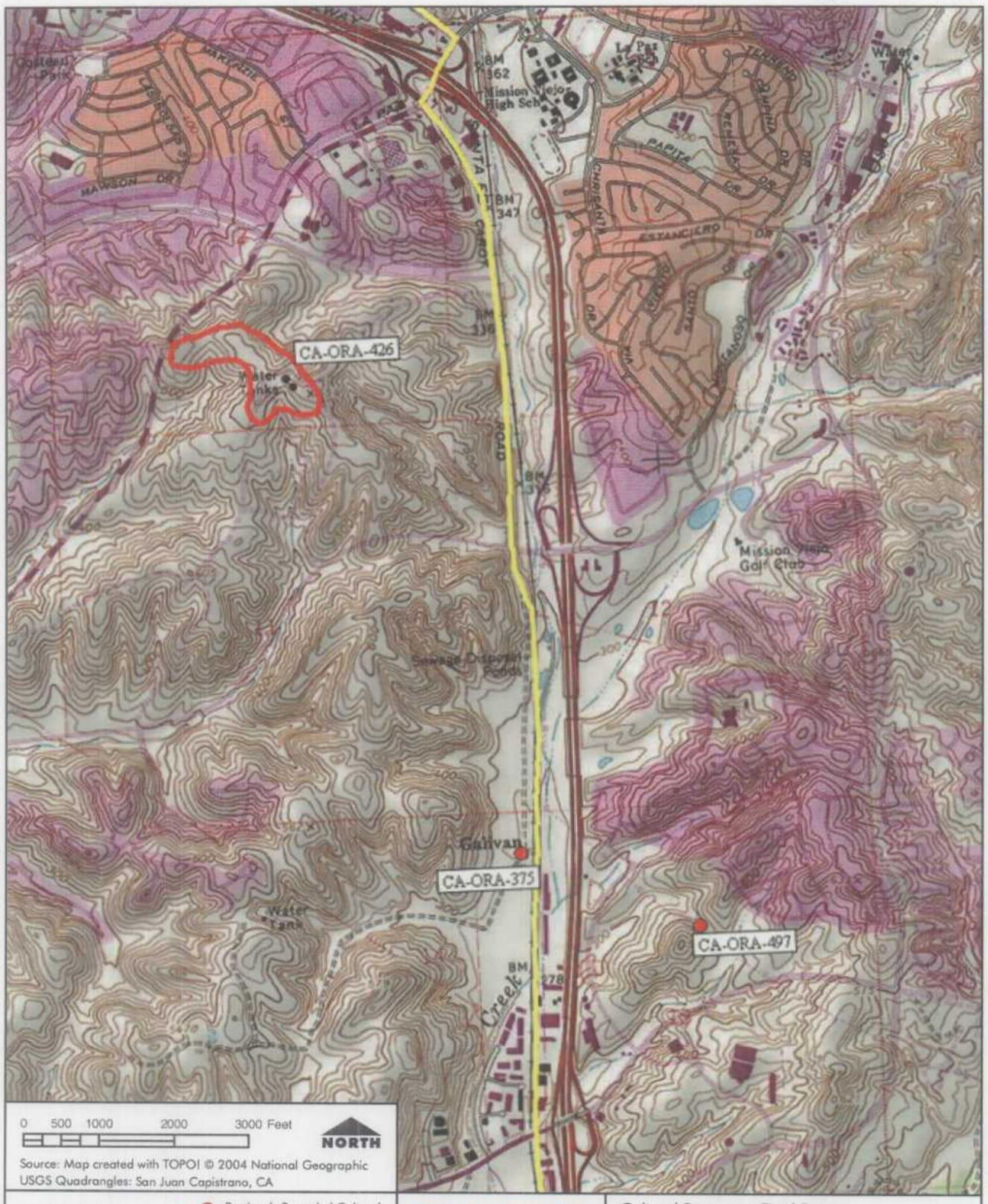
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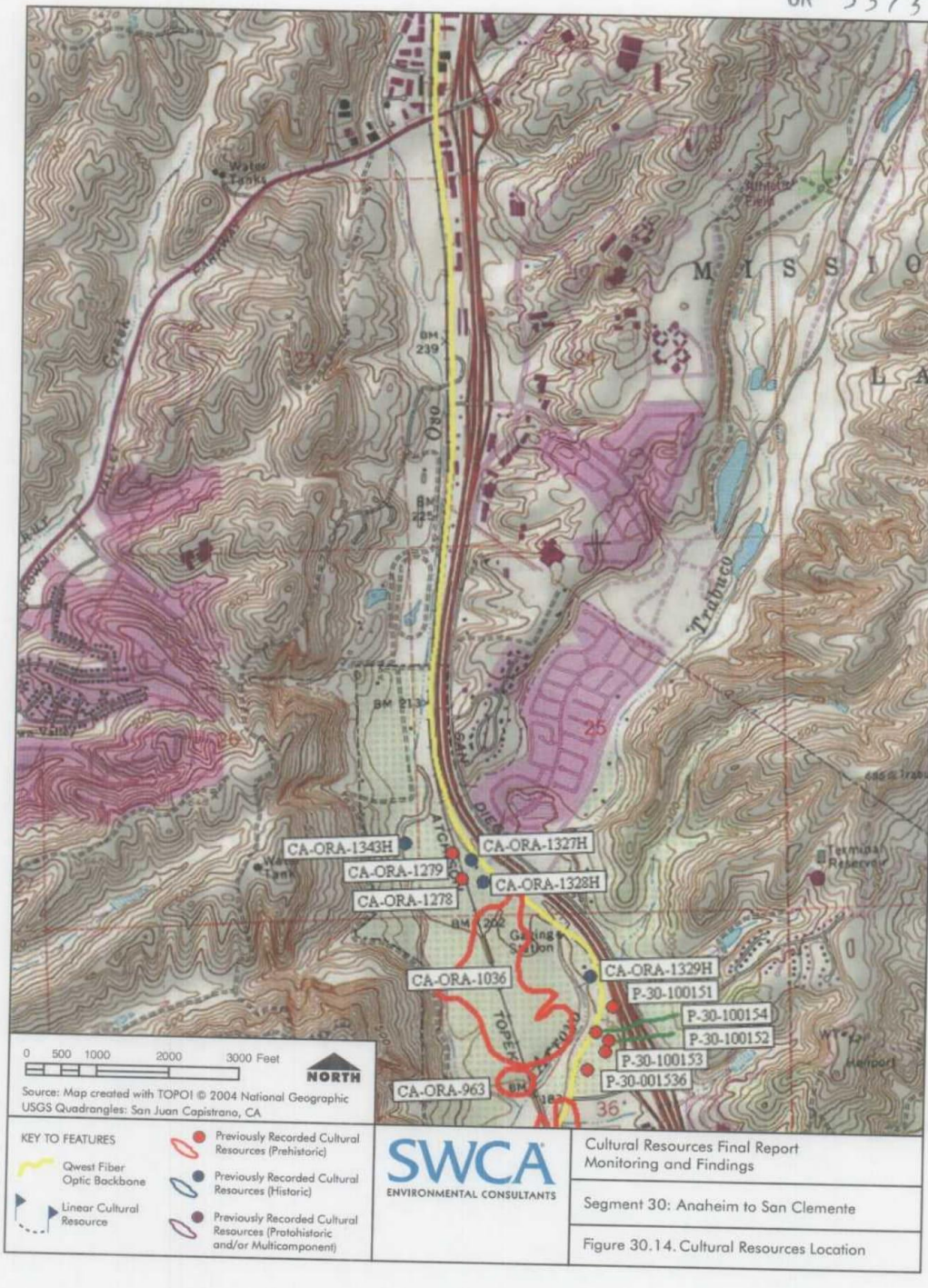


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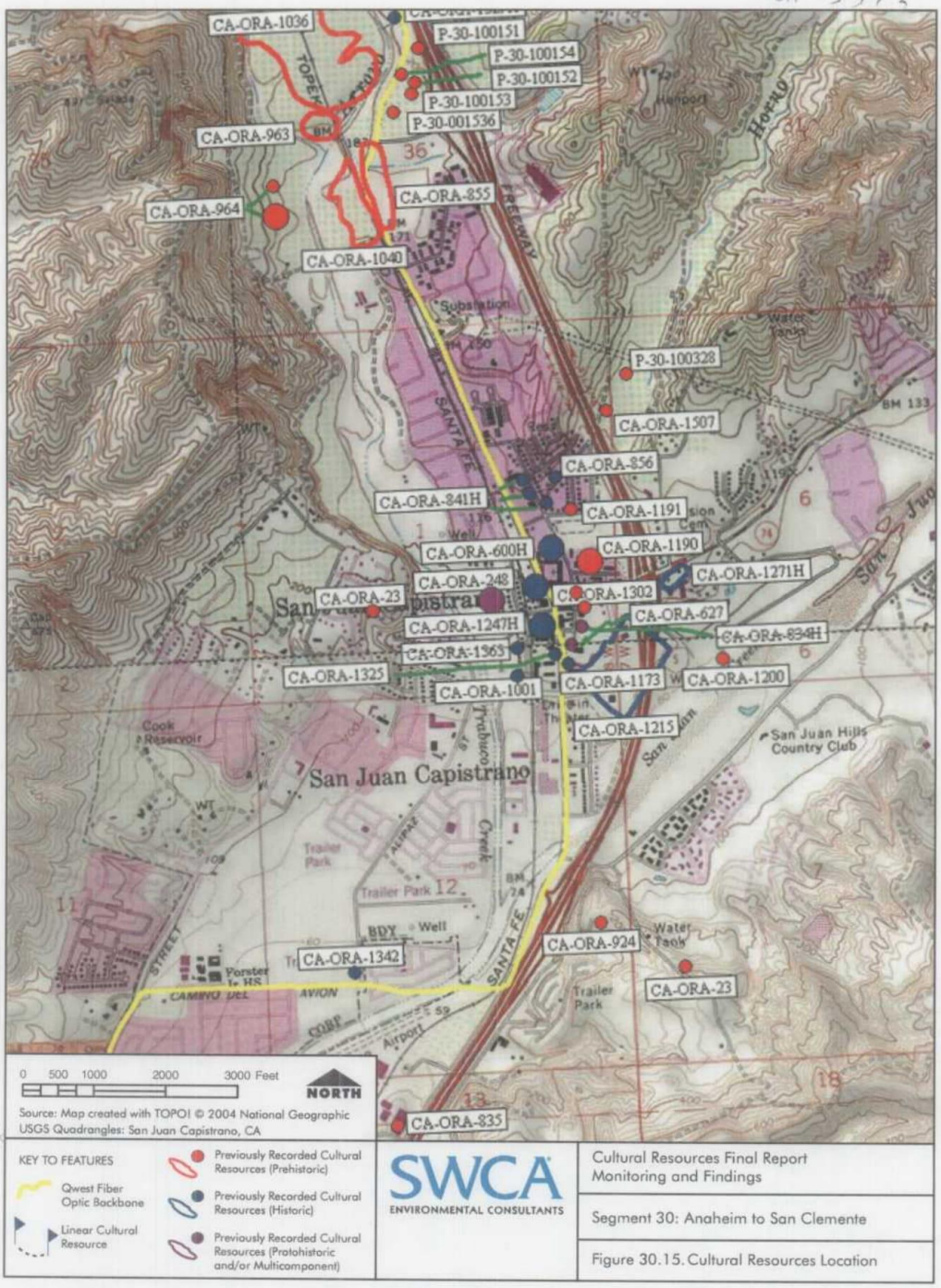


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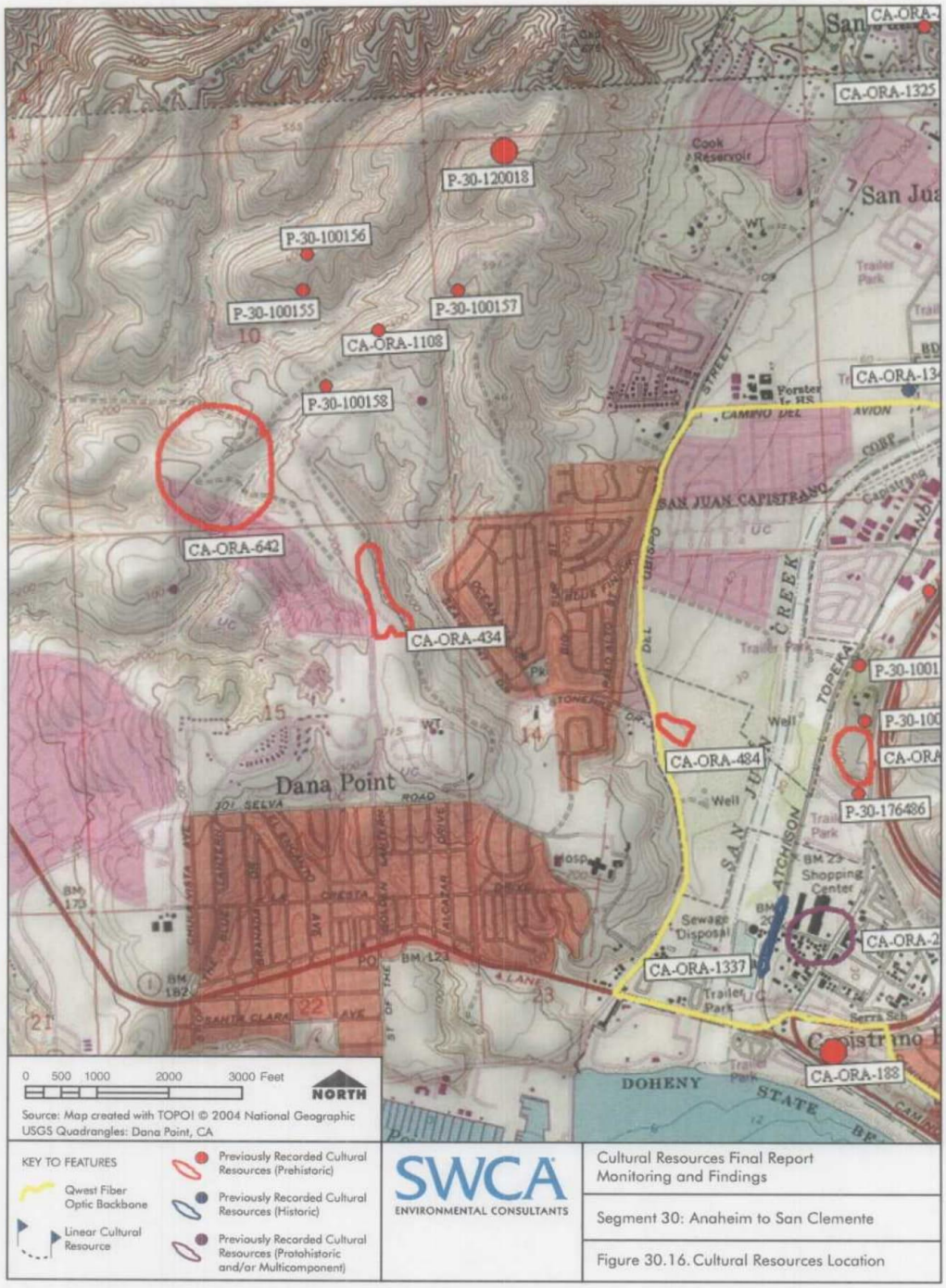


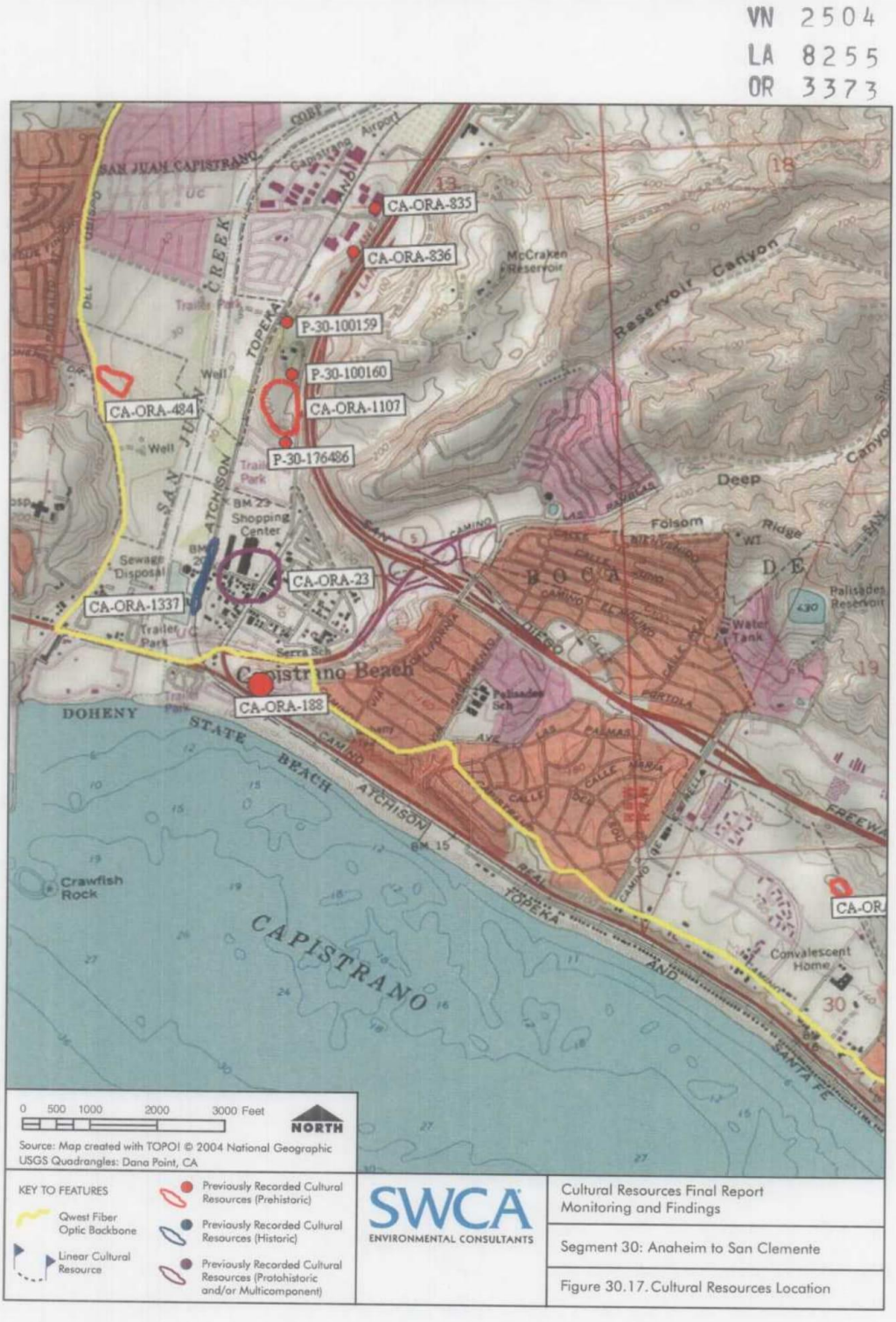

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P-30-100151
P-30-100154
P-30-100152
P-30-100153
P-30-001536
0 500 1000 2000 3000 Feet
NORTH
Source: Map created with TOPO! © 2004 National Geographic
USGS Quadrangles: San Juan Capistrano, CA
KEY TO FEATURES
Qwest Fiber Optic Backbone
Linear Cultural Resource
Previously Recorded Cultural Resources (Prehistoric)
Previously Recorded Cultural Resources (Historic)
Previously Recorded Cultural Resources (Protohistoric and/or Multicomponent)
SWCA
ENVIRONMENTAL CONSULTANTS
Cultural Resources Final Report Monitoring and Findings
Segment 30: Anaheim to San Clemente
Figure 30.14. Cultural Resources Location

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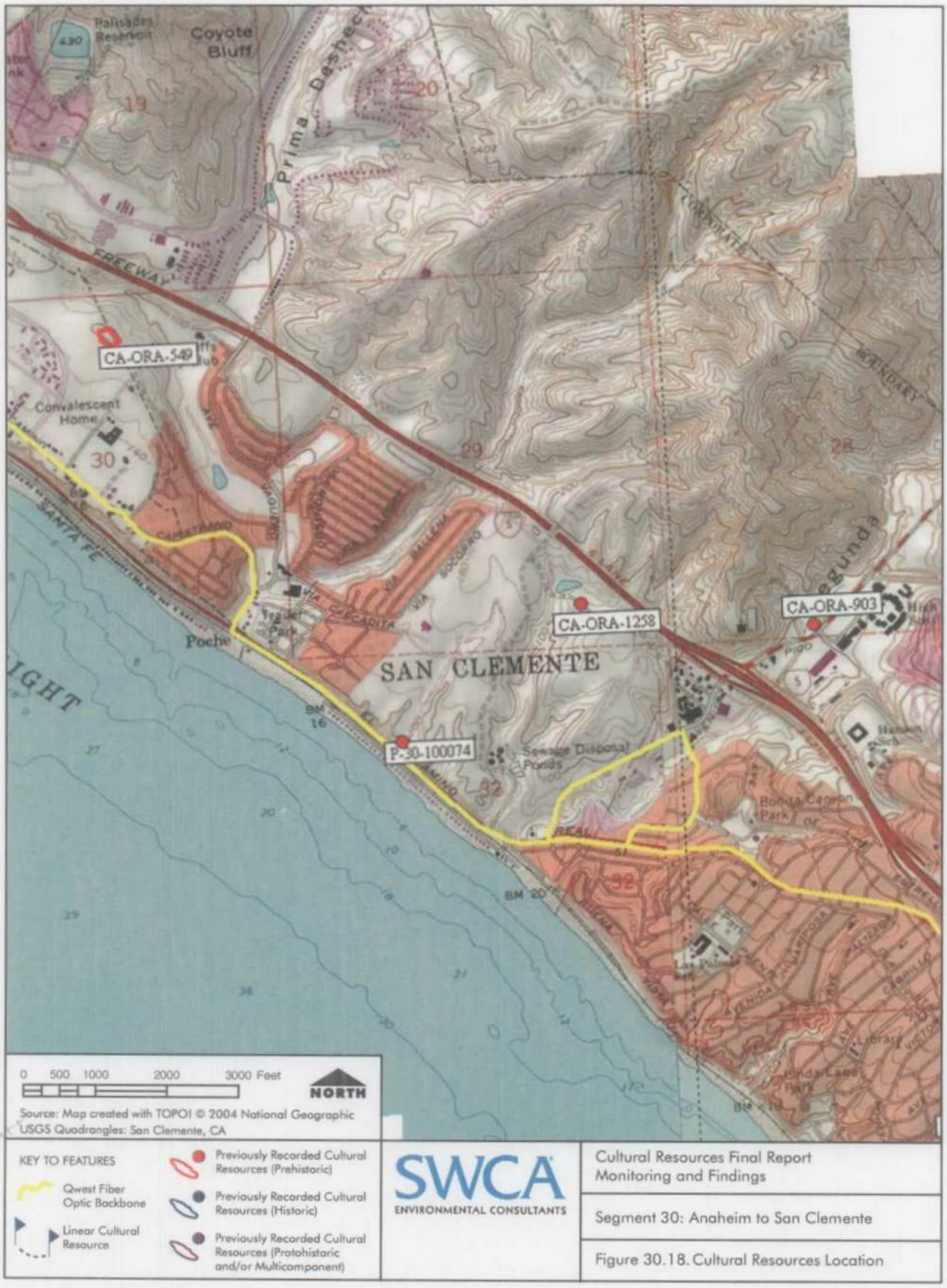


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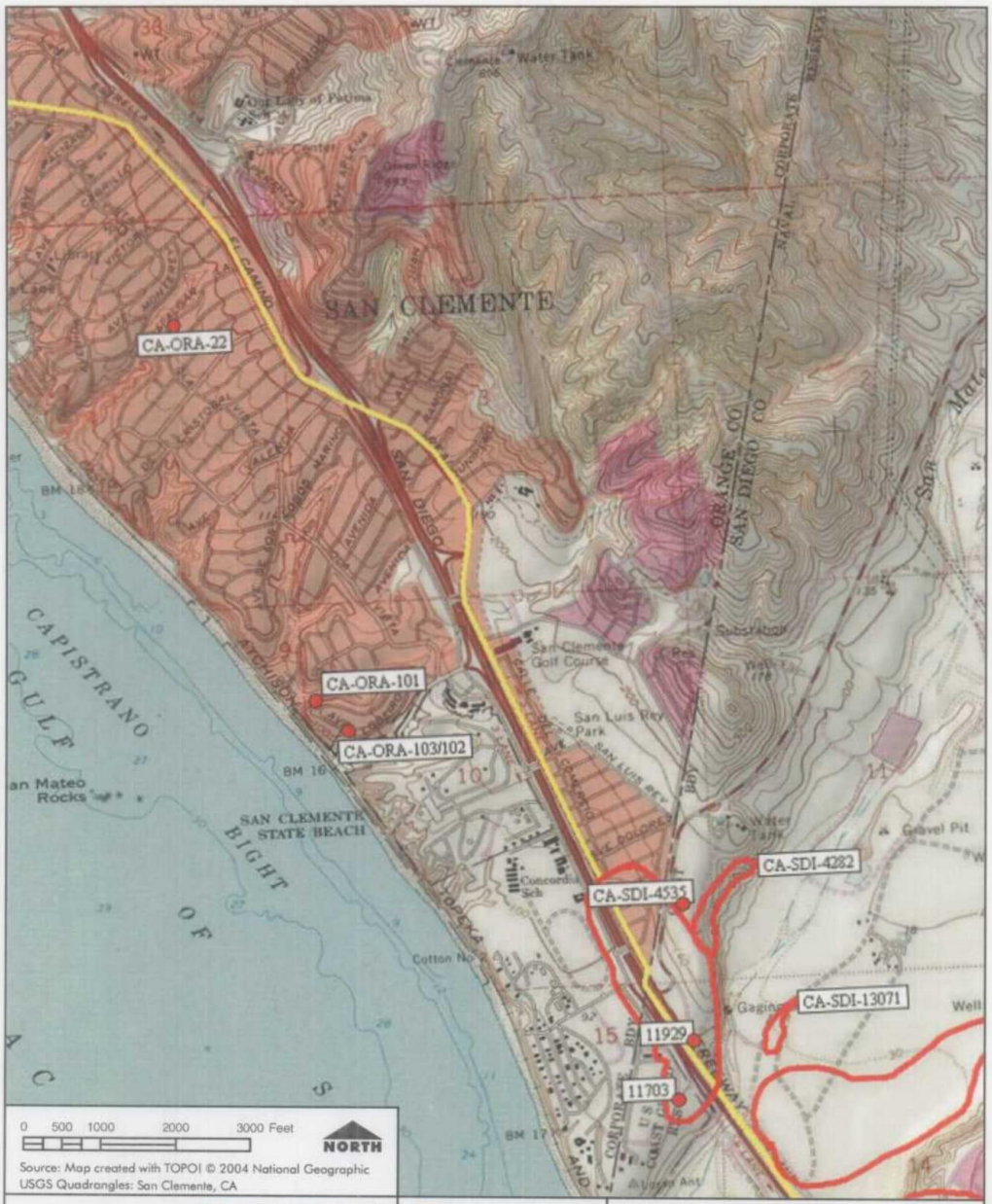



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CA-ORA-23
CA-ORA-1337
CA-ORA-188
SAN JUAN CAPISTRANO
McCracken Reservoir
Reservoir Canyon
Deep Canyon
Folsom Ridge
Shopping Center
Sewage Disposal
Trailer Park
Water Tank
Palisades Reservoir
Capistrano Beach
DOHENY STATE BEACH
Crawfish Rock
CAPISTRANO
Convalescent Home
0 500 1000 2000 3000 Feet
NORTH
Source: Map created with TOPO! © 2004 National Geographic
USGS Quadrangles: Dana Point, CA
KEY TO FEATURES
Qwest Fiber Optic Backbone
Linear Cultural Resource
Previously Recorded Cultural Resources (Prehistoric)
Previously Recorded Cultural Resources (Historic)
Previously Recorded Cultural Resources (Protohistoric and/or Multicomponent)
SWCA
ENVIRONMENTAL CONSULTANTS
Cultural Resources Final Report
Monitoring and Findings
Segment 30: Anaheim to San Clemente
Figure 30.17. Cultural Resources Location

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39. SUMMARY AND RECOMMENDATIONS

39.1 SUMMARY

39.1.1 Extent of the Investigation

This Final Report of Monitoring and Findings for the Qwest Network Construction Project covers the cultural resources investigation for the maintenance (replacement and repair) of fiber optic cable within the Qwest network backbone throughout the state of California. The backbone includes approximately 1,431 linear miles of existing belowground fiber optic cable, extending from the Oregon to the Arizona border, and runs along major railroad and highway corridors.

The Qwest Network Construction Project was completed under the provisions of CEQA, with the CPUC as the designated Lead Agency for the project. The project is also subject to specific Cultural Resources Protocols, numbered 1 through 11 (Table 1-1; Appendix A), prepared to ensure Qwest's compliance under CPUC regulatory authority, and approved by the CPUC and NAHC in February 2000. Protocols 1 through 6 were generally applied during project planning; Protocols 7 through 11 were applied immediately prior to, during, or at the conclusion of the routine maintenance program. This document satisfies the requirements of Protocol 11: Final Report of Monitoring and Findings.

In compliance with the General Conditions section of the Cultural Resources Protocols, qualified lead archaeological monitors and a staff of archaeological monitors monitored for cultural resources for this project. The monitors, as well as Native American observers, worked under the supervision of a qualified CRS. The CRS also determined when a Native American observer was deemed appropriate, depending on the sensitivity of the project segment. In addition, all Qwest personnel received comprehensive cultural resources sensitivity training.

For purposes of the investigation, the extensive California network backbone was divided into 36 segments (Table 1-2). Chapters 3–38 of this document each cover one of the 36 linear segments. Each of those chapters was designed as stand-alone reports and includes background information, methods, and findings of the cultural resources program for the segment.

The investigation was accomplished beginning with cultural resources record searches and Sacred Lands searches for each of the 36 segments, intended to compile information on documented cultural resources and known or potential Sacred Lands. Native American consultation on each segment included requesting information from the NAHC, notification and solicitation of comments from the contact lists provided by the NAHC, and further consultation as requested. The identification of known cultural resources was followed by intensive pedestrian survey of the entire backbone, intended to identify previously unknown archaeological sites or features and to relocate and summarize the condition of known archaeological sites within the project APE. Last, in accordance with a MMP prepared for each segment, routine maintenance of existing lines along the network backbone was subject to a cultural resources monitoring program.

39.1.2 CHRIS Literature Searches

A cultural resources site and survey record search was conducted for each of the 36 segments of the Qwest Network Construction Project. The record searches were requested and performed by 11 of the

Information Centers maintained by the CHRIS between January 3 and August 8, 2000. Because the cable conduit had already been installed and no new construction was to take place, only archaeological sites and surveys were requested; built environment resources (i.e., historic structures) were not requested. Site and survey information were requested for a quarter or half-mile radius from the city streets and railroad ROWs.

The record searches revealed that 2,790 cultural resources have been previously recorded within a quarter and/or half-mile radius of the linear project corridor. The number of known cultural resources within a segment varies from two each for Segments 2 and 28 to 632 reported by the CHRIS for Segment 20. Of the 2,790 previously recorded resources, 1,814 are prehistoric, 861 are historic, and 81 have prehistoric and historic components. Of the 1,814 prehistoric resources, 82 are isolated finds, 246 contain Native American burials, and 310 middens or occupation sites have a moderate to high probability of containing burials. Of the 861 historic resources, 189 are built resources and 11 contain historic burials.

Little to no documentation was available for 34 of the resources, so they could not be categorized as prehistoric, historic, or multi-component sites. An additional 13 resources received from the CHRIS centers are historic listings that do not have official designations.

To consolidate the information provided by the CHRIS searches and provide an easily accessible record of the data, each of these resources was plotted on USGS 7.5-Minute quadrangles. This series of maps are provided as figures at the end of each of Chapters 3–38, and identify each known resource as one of four types: linear, prehistoric, historic, or protohistoric and/or multi-component.

The records searches indicate that 20 cultural resources are listed on the NRHP. These include: Segment 14 – Menlo Park Railroad Station (CA-SMA-169H); Segments 14 and 17 – St. James Square Historic District (CA-SCL-466H); Segment 19 – CA-SLO-834; Segment 20 – Hammond Meadows Site (CA-SBA-1213); and Segment 32 with 16 listed properties. The Hammond Meadows Site is also listed on the NAHC Sacred Lands Inventory. One built resource (P-37-017018) listed in the search results for Segment 32 is listed on the CRHR.

Five sites are listed as California Historical Landmarks. These include: Segment 14 – No. 955 Menlo Park Railroad Station (CA-SMA-169H); Segment 15 – No. 46 Vallejo Flour Mill (CA-ALA-548-H); Segment 23 – No. 916 Forestiere Underground Gardens; Segment 36 – No. 808 Fort Yuma (P-13-008037) and No. 350, the Mission of La Purísima Concepción (P-13-008038).

39.1.3 Native American Consultation

The NAHC was contacted between January 13 and May 5, 2000 for information on potential Sacred Lands and for current Native American contact lists. A negative Sacred Land search was returned between February 1 and May 17, 2000, for all but one segment of the project. The Hammond Meadows Site (CA-SBA-1213) was recorded in 1972 as a prehistoric/protohistoric midden and village. Located in Santa Barbara County within a quarter-mile radius of the ROW on the Southern Coastal segment (#20), this site is also listed on the NRHP. Other than this federally listed site, no other Sacred Lands are presently known in the immediate project area.

The individuals and/or groups on the contact lists provided by the NAHC were given the opportunity to respond to letters and telephone calls informing them about the scope of the project. The letters were mailed between February 3 and May 19, 2000, and five written responses were received, all of which failed to identify Sacred Lands within the project area. The remainder of the contacts who did not send a written response were contacted via telephone. Follow-up telephone calls were made between February

20 and June 6, 2000. All contacts failed to indicate the presence of Sacred Lands within the linear project area.

Three consultations were held with Native American groups at the request of respondents within the contact lists for Segments 18, 19, and 20. The first was on February 21, 2000, with ten individuals representing the Ohlone and Costanoan. The second was on February 29, 2000, with over twenty members of the Salinan Nation. The third consultation was held on April 4, 2000, with seventeen individuals representing the Fernandino, Gabrieleno/Tongva, Santa Ynez Band of Chumash Indians, and Tataviam tribes.

39.1.4 Pedestrian Surveys

Intensive pedestrian surveys by qualified archaeologists of the entire 1,431 miles of Qwest fiber optic backbone within California were conducted for Segments 1–36 between the spring of 2000 and the summer of 2004. The intent of the survey was to identify any historic/prehistoric sites or features that may have been encountered during the installation of the fiber optic lines. The entire California backbone APE was surveyed during this period. Based on the CHRIS records searches, limited visits to known sites within the APE (a swath of land straddling the fiber optic line and extending 15 meters to either side) were accomplished during the pedestrian survey period. In addition to reporting on the condition of previously recorded sites, survey crew members were instructed to record any cultural resources not previously recorded and any impacts the resource may have suffered as a result of the Qwest backbone construction.

The fieldwork was conducted under the supervision of a CRS, who supervised lead archaeological monitors and a staff of archaeological monitors. The survey crew consisted of 14 archaeologists, and survey parties of one or two individuals. For safety, two-member survey parties were implemented in remote and inhospitable areas. Archaeological monitors were responsible for being on site during all work in sensitive areas, conducting spot checks if the area was designated for intermittent monitoring, and completing Daily Monitoring Logs. The CRS or archaeological monitor was responsible for flagging or otherwise delineating ESAs, including a 15-foot buffer zone around cultural resources, within four days prior to maintenance activities. The archaeological monitor was also responsible for completing a Site Condition Record immediately after removal of such flagging or other protective markers. No cultural resources were collected during the Qwest Network Construction Project.

During the pedestrian survey period, no attempt was made to relocate previously recorded archaeological resources in 16 of the 36 segments because the corridor is confined solely to the railroad berm and existing utility corridors. In some cases, no work along the segment was scheduled for several years out. Therefore, the survey alone served as detection of archaeological sites that may have been encountered during the installation of the backbone.

Within 20 of the 36 segments along the Qwest California backbone for which attempts were made to relocate (Table 39-1). As summarized in the relevant chapters, survey crews completed Site Condition Record forms for each known resource that was relocated. Tables within the survey findings section for each of the 20 segments in which resources were relocated summarize the condition of each relocated archaeological site. None of the relocated resources was impacted by Qwest.

Table 39-1. Segments with Relocated Sites		
Segment No.	Segment Name	Number of sites relocated
1	Oregon – Montague	4
3	Weed – Redding	5
4	Redding – Red Bluff	1
5	Red Bluff – Chico	5
7	Wheatland – Roseville	2
11	Sacramento – Suisun City – Napa	7
12	Napa Junction – Petaluma	1
13	Suisun City – Oakland	5
14	San Francisco – San Jose	2
15	Oakland – San Jose	3
17	Aromas – San Jose	6
18	King City – Watsonville	2
19	Coastal	13
20	Southern Coastal	77
21	Stockton	4
22	Turlock – Fresno	13
23	Fresno – Bakersfield	43
25	Lebec – San Fernando	1
29	Burbank – Los Angeles	1
35	Alpine	26
		Total Relocated 221

Of the five resources that were not relocated by the survey crews, two are archaeological sites and three are isolated finds. One of the two archaeological sites was initially recorded as a portion of a historic blacktop road (P-54-002170) and located on the USGS 7.5-Minute Traver Quadrangle along Segment 23. The second site was recorded as a remnant of a historic structure (CA-SBA-2442H) located on the USGS 7.5-Minute Dos Pueblos Canyon Quadrangle along Segment 20. Likely, the historic structure remnant simply deteriorated since its initial recordation. The three isolated finds that were not relocated include one flake (P-15-009059), two flakes (P-15-009060), and one flake (P-15-009061), all located on the USGS 7.5-Minute Famoso Quadrangle along Segment 23.

No previously unknown cultural resource sites, artifacts, or objects were identified during the pedestrian survey along the entire Qwest California network backbone.

Two historic archaeological sites were destroyed while the field crew reevaluating the sites was present. In one instance, archaeologist Paul Shen-Brown happened upon a pair of looters vigorously digging up the site to collect lithic artifacts. Local law enforcement was called and the men were caught several miles from the site with lithic artifacts in their possession. It is noted on the January 15, 2001, reevaluation form for Segment 20 that site CA-SBA-2587H, recorded on the USGS 7.5-Minute Dos Pueblos Canyon Quadrangle, was on the opposite side of the rail line from Qwest's backbone. The second instance occurred with a historic barn (P-24-00597), located on the USGS 7.5-Minute Merced Quadrangle along

Segment 22. Archaeologist George Zeimens noted that the backbone ran parallel to the property line, with the barn sitting close to the edge of that line, but not impacted by Qwest. On January 9, 2001, while the archaeologist was documenting his evaluation, a DC9 bulldozer, retained by the property owner, razed the building to ground level. The site reevaluation notes that, although the site was intact upon arrival, it soon was listed as destroyed.

Of particular concern was the sacred Hammond Meadows Site (CA-SBA-1213), which posed the highest potential for containing human remains. Upon inspection, however, the field team determined that the site would not be impacted by any soil moving activities associated with the Qwest Network Construction Project due to the considerable distance between the site location and the backbone line. The site is not located within the APE, but is within the half-mile CHRIS search radius.

As stated in the Site Condition Record forms and the chapter summary tables, within the 20 segments with relocated sites that exhibit damage since their last recordation, field observations indicate that impacts resulted from land development, urban growth, road construction, installation of utilities, railroad construction, and rodent activities (bioturbation) – all of which occurred prior to the Qwest backbone project. Hence, these impacts were not associated with the construction or maintenance of the Qwest California network backbone.

39.1.5 Monitoring

In accordance with Cultural Resources Protocol 5, a MMP was prepared for each of the 36 segments between April and August 2000. The MMP noted that Qwest would be performing maintenance on an existing line only; no new trenching was foreseen. The proposed maintenance activity consisted of the re-excavation of pre-existing assist holes to perform maintenance or upgrades on the fiber-optic line. These excavations might take place at four points per linear mile. The MMPs concluded that it was possible that some previously undisturbed soil might be disturbed during re-excavation. The MMPs also considered whether there could be potentially adverse impacts to any sites located adjacent to, or possibly overlapping, the project corridor, or if previously undisturbed soils might be displaced at re-excavation points.

Maintenance activities associated directly with the backbone line, involving excavation, included reopening handholes/manholes and the excavation of new assist holes. Monitoring these activities was the primary focus for this phase of the cultural resources investigation. It is important to note that the only discussed maintenance activity that potentially involved intrusion into undisturbed soils was the excavation of new assist holes to assist in the installation or removal of fiber cable from the conduit. This is because re-excavation of deposited trench spoils to gain access to conduit can cause soil disturbance in an assist hole. Additionally, upon the completion of a pulling operation, the conduit is resealed and the assist hole is backfilled with the excavation spoils. Furthermore, depending upon conditions encountered, it was impossible to predetermine where a new assist hole would need to be located.

During the monitoring program, recommendations made by the MMPs prepared for Segments 1–36 were followed, such as the presence or absence of an archaeological monitor or a Native American observer when any maintenance was performed along the project corridor. As recommended, where known sites had been mapped within or relatively close to the ROW, that area was avoided as much as possible.

Cultural monitoring of maintenance activities along the Qwest California network backbone, including excavation of new assist holes, reopening of handholes/manholes, and fiber pulling, splicing, or replacement, occurred only on the 13 segments listed in Table 39-2. Monitoring by qualified archaeologists and/or Native American observers occurred between January 17, 2000 and November 8,

2001. Monitoring did not occur on 23 of the 36 segments because no maintenance activities were scheduled along those ROWs (Table 39-2).

Table 39-2. Segment Monitoring Record

Monitored Maintenance Activity		No Maintenance Activity	
Segment #	Segment	Segment No.	Segment
2	Weed – Montague	1	Oregon – Montague
3	Weed – Redding	4	Redding – Red Bluff
5	Red Bluff – Chico	6	Chico – Wheatland
11	Sacramento – Suisun City – Napa	7	Wheatland – Roseville
13	Suisun City – Oakland	8	Roseville – North Sacramento
14	San Francisco – San Jose	9	Roseville – Sacramento
15	Oakland – San Jose	10	Roseville – Nevada Line
18	King City – Watsonville	12	Napa Junction – Petaluma
19	Coastal	16	Oakland – Dassell Road
20	Southern Coastal	17	Aromas – San Jose
27	Los Angeles – Anaheim	21	Stockton
35	Alpine	22	Turlock – Fresno
36	Yuma	23	Fresno – Bakersfield
		24	Bakersfield – Lebec
		25	Lebec – San Fernando
		26	Firestone Park – Long Beach
		28	Slauson Ring
		29	Burbank – Los Angeles
		30	Anaheim – San Clemente
		31	San Clemente – Oceanside
		32	Oceanside – Escondido
		33	Escondido – San Diego
		34	San Diego – Alpine

Because the vast majority of soil moving activities associated with maintenance occurred in soil that had been previously disturbed (moving fill dirt from the initial laying of conduit), there was no real threat of impact on any potential cultural resources. However, monitoring of these activities was performed to ensure that there were indeed no cultural resources that could be impacted. Thus, it was not surprising that monitoring of maintenance activities associated with the backbone fiber cable revealed that primary context cultural resources were not threatened by backbone maintenance activities.

As a result of monitoring, archaeological monitors did note a series of cultural items located at or below the current surface in previously disturbed contexts, which occurred prior to Qwest backbone activities. Since the items were not in primary context, with unknown provenience and compromised integrity, they were not formally recorded. For information regarding the monitoring program, a list of these miscellaneous, random items, and the depth at which they were found, is provided in the chapters for the 13 segments listed in Table 39-2.

During the monitoring program, only one site (CA-SBA-1990) was found to have been encountered by Qwest during maintenance activity. This prehistoric site is recorded on the USGS 7.5-Minute Gaviota Quadrangle along Segment 20. On January 9, 2001, the archaeological monitor immediately halted the backhoe, examined the spoils, and assessed the impact to the site. Impacts to the resource were determined to be non-substantial. The disturbances initiated by Qwest were located in the southern portion of the site within an area that had already suffered substantial disruption from prior railroad and highway construction. Common knapping debris, consisting of three pieces of debitage, was encountered during Qwest maintenance activities in the site area. No diagnostic materials were observed, and all artifacts were reburied. The daily monitoring log documenting this event is included as an exhibit within Chapter 22.

Included as exhibits within a number of the segment chapters are examples of daily monitoring logs. These logs demonstrate the attention to detail maintained throughout this project by the CRSs, lead archaeological monitors, and archaeological monitors.

No previously unknown cultural resources were identified during monitoring of maintenance activities performed along the ROW within the specified 23 segments of the Qwest Network Construction Project. Although the presence of human remains was considered likely along many of the segments that were monitored, no evidence of human remains was discovered during the project.

39.2 DISCUSSION

This investigation has found that no adverse impacts to cultural resources resulted from installation of the fiber optic lines or maintenance activities on the 1,431 linear miles of existing belowground fiber optic cable comprising the Qwest California network backbone. Most of the fiber optic line was placed in areas that had already experienced significant ground disturbances associated with prior construction of railroads, highways, and other development. Pedestrian survey investigations revealed no previously unknown cultural resources within the APE. The majority of the relocated sites were reported to be situated a safe distance from the path of the backbone APE, and were thus safe from the potential of any impact that could have been posed by installation or maintenance activities. Monitoring efforts associated with the maintenance and repair of the backbone network indicated cultural resources have not been threatened by backbone installation, maintenance, and repair activities, which occurred along major railroad and highway corridors. In summary, installation and maintenance of the Qwest California network backbone line had no significant adverse effect on cultural heritage resources in or surrounding backbone project lands.

In addition, with the adoption and implementation of the Qwest Fiber Optic Project Cultural Resources Protocols, which were subject to the scrutiny and approval of the CPUC and the NAHC, Qwest has demonstrated its dedication to the environment and an ability to protect cultural heritage resources through the adoption and utilization of standardized cultural resources management protocols.

Under the oversight of a CRS, the specific Cultural Resources Protocols for this project were accomplished. Preparation of a MMP in compliance with Protocol 5 assured that known cultural

resources would be avoided as feasible and impacts reduced by ensuring that any necessary archaeological mitigation was carried out prior to commencement of the maintenance activity. In compliance with Protocol 7, the literature search and subsequent fieldwork assured that identified cultural resources within the 36 segment corridors were protected. Under Protocol 8, an archaeological monitor and Native American observer were present where appropriate. During the project, it was not necessary to implement Protocol 9, which describes the methods to be employed to address unanticipated discoveries and assure that cultural resources are protected by work stoppage and evaluation of the resource by the CRS or an archaeological monitor, since there were no unanticipated discoveries. Although it was not necessary to implement Protocol 10, that protocol describes the actions to be taken in the event of the discovery of human remains or suspected human remains.

No previously unknown cultural resources were identified during the fieldwork reported in Chapters 3–38, covering Segments 1–36 along the Qwest California network backbone ROW. Although the presence of human remains was considered likely along many of the segments, no evidence of human remains was discovered during the project.

39.3 RECOMMENDATIONS

Given that the current field investigation within the Qwest network backbone was conducted along railroad corridors and city streets, efforts to locate and relocate cultural resources within the scope of this project have been sufficient per current U.S. Secretary of the Interior professional standards and guidelines.

There remains, however, the potential for the existence of buried archaeological materials within this heavily disturbed project area. Prehistoric materials might include flaked stone tools, toolmaking debris, stone milling tools, fire-affected rock, animal bone shaped for use as tools, baked clay items, pottery, marine shell, or soil darkened by cultural activities (midden). Historic materials might include building remains, metal, glass, or ceramic artifacts or debris.

Should cultural resources be encountered by Qwest construction and/or management crews during future disturbance for maintenance of fiber-optic cable and related infrastructure, or should new construction occur within the state of California, work in the area must be halted and a qualified archaeologist should be notified immediately to evaluate the resource(s) encountered. Qwest would also adhere to the specific Cultural Resources Protocols, numbered 1 through 11, which were prepared to ensure Qwest's compliance under CPUC regulatory authority (see Appendix A).

- Protocol Number 1: Records Search and Data Adequacy Analysis
- Protocol Number 2: Native American Consultation
- Protocol Number 3: Archaeological Inventory and Site Recording
- Protocol Number 4: Site Boundary, Integrity or Significance Testing
- Protocol Number 5: Mitigation Monitoring Plan
- Protocol Number 6: Pre-Construction Data Recovery
- Protocol Number 7: Protection of Environmentally Sensitive Areas
- Protocol Number 8: Archaeological Monitoring and Native American Observation
- Protocol Number 9: Addressing Unanticipated Discoveries during Project Activity
- Protocol Number 10: Discovery of Human Bone
- Protocol Number 11: Final Report of Monitoring and Findings

40. ACRONYMS

APE	Area of Potential Effect
ARMR	Archaeological Resource Management Reports
BART	Bay Area Rapid Transit
Cal Poly	California Polytechnic State University
CCIC	Central California Information Center
CCIC	Central Coastal Information Center
CCTS	Central California Taxonomic System
CEQA	California Environmental Quality Act
CHRIS	California Historical Resources Information System
CPUC	California Public Utilities Commission
CRHR	California Register of Historic Resources
CRS	Cultural Resources Specialist
EIC	Eastern Information Center
ESA	Environmentally Sensitive Area
FCR	Fire-cracked rock
HDPE	High-density polyethylene
IWW	International Workers of the World
I-5	Interstate 5
MCA	Medieval Climatic Anomaly
MCB	Marine Corps Base
MLD	Most Likely Descendent
MMP	Mitigation and Monitoring Plan
MND	Mitigated Negative Declaration
msl	mean sea level
NAHC	Native American Heritage Commission
NCIC	North Central Information Center
NEIC	Northeast Information Center
NPS	National Park Service
NRHP	National Register of Historic Places
NWIC	Northwest Information Center
OHP	Office of Historic Preservation
PRC	Public Resources Code
PVC	Polyvinyl chloride
Qwest	Qwest Communications International Inc.

ROW	Right-of-way
SB	Senate Bill
SBAIC	San Bernardino Archaeological Information Center
SCIC	South Coastal Information Center
SCCIC	South Central Coastal Information Center
SEIC	Southeast Information Center
SSJVIC	Southern San Joaquin Valley Information Center
TCP	Traditional Cultural Property
UOP	University of the Pacific
USGS	U.S. Geological Survey
WPLT	Western Pluvial Lakes Tradition

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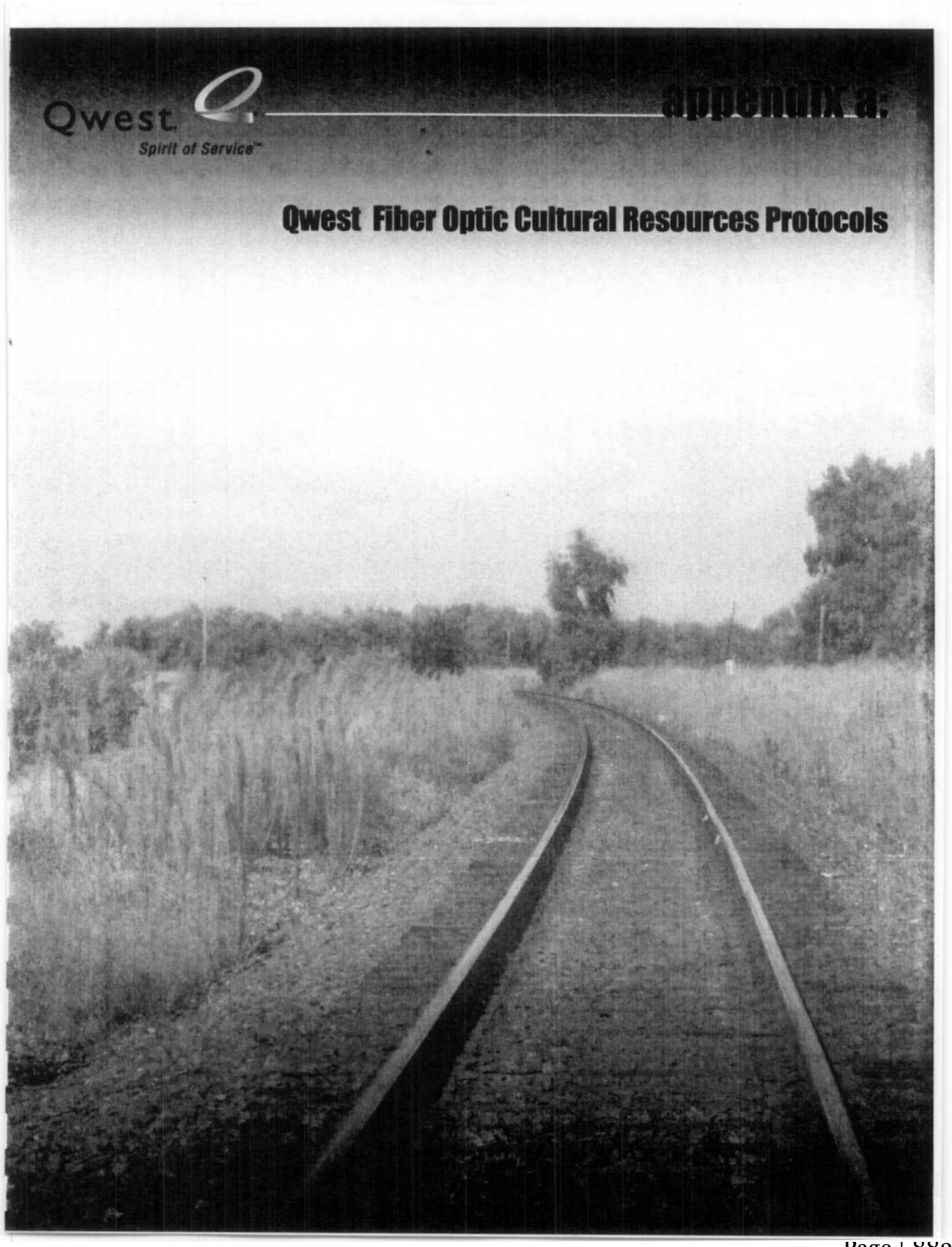
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Qwest
Spirit of Service™
appendix a:
Qwest Fiber Optic Cultural Resources Protocols

QWEST FIBER OPTIC PROJECT CULTURAL RESOURCES PROTOCOLS

Prepared for
QWEST COMMUNICATIONS INTERNATIONAL INC.

February 16, 2000



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1.0 INTRODUCTION

1.1 Purpose

This document defines procedures that will be followed during project planning, construction and maintenance activities to ensure the protection of significant cultural resources. To the greatest extent possible, Qwest will avoid disturbances to all such resources. This document sets forth the protocols that will facilitate avoidance of significant cultural resources, that is, historic resources and unique archaeological resources, as defined by the criteria of eligibility for the California Register of Historic Resources. Separate protocols are defined for new construction and for maintenance, and for specified activities within each category, since the potential effects of each differ significantly in magnitude and scope. It is expressly noted that the projects to which these protocols apply are not federal undertakings, but are governed by the provisions of the California Environmental Quality Act (CEQA). CEQA stipulates that "a project with an effect that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment"; however, under CEQA the proposed mitigation measures are to be roughly proportional with the anticipated potential for project effects. Qwest's project consists of the routine maintenance of existing lines and the construction within existing streets of new ring lines. These protocols set forth resource identification, assessment and mitigation measures designed to reflect the potential for impacts carried by these activities. These protocols apply to Qwest's maintenance and customer hookup activities throughout California.

1.2 About the Qwest System

Qwest Communications International Inc. (Qwest), is a leader in reliable, scalable and secure broadband Internet-based data, voice, and image communications for businesses and consumers. Qwest has built the first international, fiber optic network optimized for Internet technology. The existing Qwest network in California includes approximately 1431 linear miles of fiber optic plant. Qwest's total national system includes 18,500 linear miles of plant, which does not include the recent acquisition of fiber linking Seattle to Minneapolis via Canada. Qwest's North American system spans more than 24,500 linear miles. In addition, Qwest has partnered with KPN, the Dutch telecommunications company, to create KPNQwest, a joint venture that is constructing a high-capacity European fiber-optic network that will span 9,150 linear miles when it is completed in 2001.

The "backbone" of Qwest's system is substantially in place, and no major new construction of backbone systems is currently anticipated. Appendix F provides a map of Qwest's existing system. Approximately 80% of Qwest's system is within railroad rights of way, generally at the toe of the railroad berm and often entirely within 11 feet from center line of the rail. Proposed new construction consists almost exclusively of construction of fiber optic "rings" in paved streets and utility corridors within metropolitan areas, which will provide customers with connections to the existing backbone system.

Existing Qwest Systems will be tied in to city service by new construction of city "rings." These will consist of new lines to be installed in paved urban streets and light rail and other utility corridors.

These short new backbone segments and city rings are the elements of Qwest's service network that will be treated as new construction for purposes of this protocol.

Maintenance of existing lines consists primarily of replacement and repair of fiber optic cable without replacement of existing conduit. Cable is generally repaired and replaced by accessing the existing conduit through handholes or manholes built at the time of original construction. Old cable is pulled and new cable installed and spliced through the openings provided by these vaults. Maintenance may also require the excavation of new assist holes at unpredictable intervals along the conduit alignment (on average, about four per mile), which are used to free the cable when it becomes snagged during pulling or replacement. Assist holes may also be used for splicing or testing of cable. Should it become necessary to replace a substantial distance of existing conduit during maintenance, this activity would be treated as new construction.

The majority of Qwest's activity throughout the system will consist of installation of new customer hookups. Generally, these consist of installation of short runs of new fiber optic conduit between previously installed backbone or ring lines and the customer's facility. Virtually all such installations will be made in paved streets and other utility corridors, similar to the installation of water, electrical or sewer hookups by other utility operators. This construction will be addressed under maintenance protocols.

In Decision Number 98-03-066 issued March 26, 1998, the California Public Utilities Commission (CPUC) granted Qwest a Certificate of Public Convenience and Necessity (CPCN) to provide services to the public as a facilities based, competitive local exchange carrier.

The CPUC is the designated Lead Agency under CEQA. The CPUC prepared an Initial Study and Mitigated Negative Declaration ("MND"), dated September 4, 1997. This is attached to D.97-09-110, the CPUC decision granting LCI (a former owner of the company which became Qwest) authority to operate as a facilities-based local exchange carrier. This document provides cultural resources protocols that will ensure Qwest's compliance with the MND.

2.0 PROJECT COMPONENTS AND CONSTRUCTION METHODS

2.1 Fiber Optic Technology

Fiber optic technology provides high quality communications through fiber optic cables, which are low-maintenance and very reliable. Fiber optic cables are bundles of very fine strands of clear glass. Pulses of light transmitted along these strands provide telecommunications signals for a wide range of uses, including telephone conversations, images for video communications and television, and data communications. Because laser-generated light pulses can travel great distances without signal distortion, the quality of communications provided is much higher than with communications technologies used in the past. Further, fiber optics allow multiple signals to be fed into the fibers at the same time and remain discrete while traveling many miles, which facilitates a high volume of communications.

2.2 Construction and Maintenance Parameters

It is Qwest's intention to avoid impacts to cultural resources to the greatest extent possible during construction and maintenance. The protocols described here will be applied with the goal of identifying sensitive cultural resource locations prior to construction or prior to or during maintenance, and then avoiding impacts to cultural resources to the greatest extent possible.

With respect to maintenance of existing lines, it is Qwest's intent to avoid impacts to cultural resources to the greatest extent possible. However, it sometimes may be necessary to carry out maintenance activities within cultural resources locations, because maintenance activities and locales may not be discretionary. For example, the extent to which the locations of assist holes can be controlled is limited, since the specific location is governed by the location of placement problems as the cable is installed. Similarly, marker posts must be maintained in line of sight, so it might not be possible to span a very large site. However, it is anticipated that it will be possible to avoid most impacts to cultural resource locations during maintenance.

The following sections describe the maintenance and new construction activities which will be carried out by Qwest.

2.3 New Construction

Cultural Resources Protocols for new construction are described below.

2.3.1 Conduit and Cable Installation

Qwest's network of conduit in railroad rights of way was primarily placed utilizing a rail plow. A rail plow is a railroad track-mounted plow powered by locomotives, that lays the conduits in a 4" to 6" wide trench 10' to 12' off centerline of the track, at a depth of 48". The majority of Qwest's existing backbone lies along railroad rights of way. The existing fiber optic cables are approximately 0.875" in diameter. The cables are protected by conduit/innerduct made of PVC or other similar inert material, i.e., HDPE (high-density polyethylene), approximately 2" in diameter.

Qwest is preparing to install new conduit for ring installations in metropolitan areas. This will provide a service network connecting customers with the existing backbone system along the railroad rights of way. Most ring lines will be installed in city streets adjacent to other existing municipal utility corridors. In contrast with the 2" HDPE on the 1431 miles of existing line already in operation, the metropolitan service will be constructed utilizing primarily 4" PVC conduits. Potential service opportunities will determine the number of conduits to be installed, but two to four conduits would be the normal quantity installed.

2.3.1.1 Backhoe Trenching and Backfill. The most common installation method for Qwest's new fiber optic conduits will be backhoe trenching. This technique involves excavation of a trench 18" to 24" wide and 48" to 60" deep, placement of conduits and marker tape, and backfilling. Trenching will occur after all existing utilities and areas of environmental sensitivity have been identified and appropriately marked. Once the trench has been opened, the 4" PVC conduits will be installed within the trench and the trench will be backfilled. Warning tape will be installed 12" below grade

and above all direct-buried innerduct during the backfilling process. Either native soil or imported material, as required by applicable permits, will be used for backfill. Backfilling will be accomplished with a rubber-tired backhoe/loader, road graders, vibratory compactors and concrete trucks. Backfill material will be compacted to eliminate erosion and soil settlement in conformance with all applicable local, state and federal specifications. Soil compaction techniques will be modified as necessary to prevent damage to remains in any area where human remains have been discovered. Barricades and/or steel plate coverings, as appropriate, will be used if any trench must be left open overnight; however, due to safety requirements, trenches will be left open overnight only in extraordinary circumstances. Excess spoils will be exported off site to an appropriate dumpsite. If they are suspected to contain human remains, the CRS will consult with the MLD regarding appropriate processing and a plan for carrying out processing safely.

2.3.1.2 Directional Drilling and Bore Pits. Conduit installation in trenching will be supported by directional drilling as needed. Directional-bore construction methods will be used throughout the project where it is desirable or necessary to avoid trenching or when trenching is not possible. Directional drilling is used to place the conduit under features such as rail lines, some roadways, streams and wetland areas, and significant cultural resource locations to minimize potential environmental impacts. The directional bore process involves placement of lengths of stem pipe 8' to 10' long under structures such as asphalt roads, exit ramps, driveways, wetland areas, lawns or other areas where the finished grade can not be disturbed.

In this construction method, a backhoe is used to excavate a bore pit on the conduit alignment at a safe distance from the resource of concern. Guided or directional bore machines are then operated at ground level to bore under the resource and steer back up to the surface on the alignment beyond the resource boundaries. The bore pit generally measures 5' deep by 6' long by 3' wide, but some pits may be twice these length and width dimensions due to the particular requirements of the bore. A typical bore pit excavation displaces about 3.3 cubic yards of soil. A receiving pit is excavated at the far side of the bore and is usually two-thirds the size of the bore pit or smaller. A non-toxic mixture of bentonite clay and water is injected into the bore during the drilling process. The clay/water mixture helps lubricate the drill head and stabilize the bore until the casing is installed. The primary function of the bore pit is to recapture the water and bentonite slurry used to lubricate the passage of the drill through the earth. The water and bentonite return to the bore pit during drilling and back reaming. The slurry is retained in the bore pit until it can be removed from the site.

For cultural resources areas and wetlands, a buffer zone of 15 meters (50 feet) either side of the resource boundaries will be provided before placement of the bore pit. The alignment of the bore will be 36" deep at the base of the bore pit, and will achieve the depth necessary to pass under the base of a cultural resource deposit. The greater the depth desired for the drill, the further back from the obstruction it is necessary to move.

During drilling, a surface-operated drilling device is angled into the ground from the surface and directed to its destination using a radio-controlled tool that contains a cutter head. Personnel directing the tool on the ground control its depth and direction. A series of lengths of stem pipe are pushed into the tunnel created by the tool. Should the tool run into rock or other debris, it can be backed up and guided around the obstruction. During drilling, soil in the tunnel is compressed by the

drill and stem pipe, and does not come to the surface. Once the drilling operation is completed, the stem pipe is retracted and the cable or conduit is pulled into the tunnel.
Handholes will be used at either side of the bore to connect the conduit/innerduct from the adjacent construction technology to the bored pipe. Handholes are installed during new construction and used during maintenance as described below.

2.3.1.3 Surface restoration. Surface restoration is the final step in the construction process and involves appropriate grading of disturbed areas and re-establishing groundcover. Since most of Qwest's new construction will occur in metropolitan areas in paved streets, surface restoration will consist primarily of repairing pavements, reconstructing curbs and gutters and re-striping pavement (if necessary). In any unpaved areas, restoration will include appropriate grading to restore original or improved contours, installing and maintaining erosion control devices at locations susceptible to erosion, seeding and mulching. All cable installation debris, construction spoils, remaining installation materials and miscellaneous litter will be removed for proper off-site disposal.

2.3.2 Fiber Optic Cable Markers

Cable markers are installed at approximately 1000' intervals in rural areas to warn of the presence of buried fiber optic cable. In urban areas, markers are used only within railroad rights of way, where they are installed at 500' intervals. Markers are located parallel with the installed line at a distance of 30' to 50'. Markers consist of a 4" diameter metal pole covered with a white plastic sleeve that protrude 48" above ground. Markers are installed by hand-excavating a small hole 1' deep, if needed, then driving the post mechanically to a total depth of 48". Soil is displaced and replaced in the upper 1' of the hole.

2.3.3 Handholes, Manholes and Surge Arrestors

Qwest's new metropolitan construction will include the placement of manholes every 500' to 800'. A manhole consists of a 48" by 48" by 48" concrete or fiberglass vault set at grade and equipped with a steel lid mounted flush to the street. The manhole vault is installed in the conduit trench at the same time as the original conduit installation.

A handhole consists of a buried fiberglass composite vault 64" long by 34" wide by 30" deep, installed below grade in an excavation which does not exceed 7' in length by 5' in width and depth. The handhole is equipped with basal drain holes and set on 12" of crushed stone in the excavation on the conduit alignment, then covered with 18" of soil to ensure the security of the installation. Handholes are located approximately one per mile along the cable alignment on intracity and rural alignments. Handholes/manholes will support loadings associated with normal highway maintenance equipment.

After conduit is installed underground, the handhole/manhole is used to access the conduits in order to pull fiber optic cable through the conduits, to test cable, and to splice cable between reels. The handhole/manhole is maintained as a point for future access to fiber cable for future operations, maintenance, and necessary repairs with minimal environmental disturbance.

Surge arrestor handholes are also set about one per mile along the conduit. The prefabricated surge arrestor vault is a box about 12" by 12" by 18". Ground disturbance associated with this construction is minimal.

In metropolitan areas, paved areas, and street settings, manholes take the place of and function as assist holes (see below).

2.3.4 Assist Holes

In rural and intracity areas, assist holes may be used during construction to assist in the placement of the cable in the conduit. An assist hole is an excavation set atop the original conduit trench to access the conduit between handholes. An assist hole may be needed in cases where a cable "hangs up" in the conduit during placement, after the conduit trench has been backfilled. Assist holes occur at highly irregular intervals, since they are placed where they are needed to facilitate cable installation, but they average about four per mile. The assist hole consists of reexcavation of a 5' to 10' length of the original trench, 4' deep and 2' wide. The opening is used to access the cable at the "snagged" location and facilitate its progress through the conduit. When assist holes are excavated, the intent is to open only the previously excavated 2' wide trench. However, if the excavation is slightly offset from the original trench, or if the sidewalls of the trench slough off due to reexcavation, the width of the assist hole may exceed the width of the original trench, and may reach a width of 3'. This may result in disturbance of previously unexcavated soils adjacent to the original trench. Assist holes are not used in metropolitan areas and paved street installations; manholes serve the function of assist holes at these locations (see above). Assist holes are backfilled with original spoils after construction and no vaults or other access ports are maintained at assist hole locations.

2.4 Maintenance

Maintenance may require repair or replacement of existing cable or cable markers, and excavation of assist holes. Replacement of conduit or handholes will be treated as new construction.

2.4.1 Brushing/Clearing of Line

Brush may be hand-cleared from the immediate vicinity of handholes and assist holes. Ground disturbance is limited to a small area around the hole itself. The rights of way overall do not require clearing.

2.4.2 Replacement or Installation of Cable Markers

During maintenance, cable markers may be replaced or, if lacking, may be installed. As for new construction, markers are installed at approximately 1000' intervals, or in line of sight, in rural areas. In urban areas, cable markers are installed only where the line is within a railroad right of way, where the markers are installed at 500' intervals. See New Construction, above, for a description of the installation activity. Wherever possible, replacement markers are installed at the same location as the original markers, and no new soil disturbance is involved.

2.4.3 Fiber Pulling, Splicing or Replacement

When it is necessary to access existing cable for repair or replacement, existing conduit is accessed from an existing handhole or a new assist hole, depending on the location of the needed repair. Fiber is pulled from the existing conduit mechanically and mechanically replaced, using equipment mounted on a backhoe positioned adjacent to the hole. No ground disturbance is involved in the handling of the fiber for the pulling, splicing or replacement.

2.4.4 Reopening of Handholes/Manholes

Existing handholes are generally used when it is necessary to access the previously installed conduit for pulling, splicing, testing, or replacement of cable for repair or maintenance. To access an existing handhole, the 18" cover of previously deposited soil immediately over the handhole cover, which was used to bury the handhole at the time of construction, is removed with a small mechanical excavator such as a backhoe or by hand. The cover of the hole is then lifted to provide access to existing conduit. No new soil disturbance is involved. However, previously deposited spoils will be removed and, at the conclusion of the activity, replaced over the handhole. Manholes are maintained at grade in paved areas and access requires only removal of the steel cover.

2.4.5 Excavation of New Assist Holes

In the process of cable installation in or removal from conduit, the cable sometimes becomes snagged. As described under New Construction, above, assist holes are excavations on the alignment above the existing conduit, which are used to access the conduit where the cable is snagged, and assist in pulling the cable. An assist hole may also be excavated to splice or test cable. Assist holes are excavated along the line as needed to assist the progress of the cable during replacement. Because the assist holes are excavated only as needed, intervals vary, and the locations cannot be predicted or controlled, but on the average, about four holes per mile are needed. The assist hole is excavated to the depth of the conduit, usually 48". Soil disturbance for assist holes consists primarily of reexcavation of previously deposited trench spoils, but with some possible intrusion into adjacent trench sidewalls.

Once the assist hole is opened, the conduit is exposed and opened. A puller, mounted on a backhoe standing adjacent to the alignment, is used to assist the progress of the new fiber through the conduit. When the pulling operation is complete, the conduit is resealed and the assist hole is backfilled with the excavation spoils.

2.4.6 Customer Hookups

Customer hookups are short connections, typically in city streets or utility corridors, between previously installed backbone or ring line and the customer's facility. Customer hookups typically are accomplished by excavating in a short linear trench or directional drilling to install conduit between existing backbone or ring line conduit and the customer's facility.

2.4.7 Emergency Repairs

Emergency repairs consist of immediate repairs of cable or conduit that need to be made in order to restore service. Emergency repairs may be made in response to an accident or unforeseen disruption of service resulting from a flood, landslide, etc. A range of activities may be called upon, from testing, splicing or replacement of cable from handholes and assist holes, to replacement of conduit.

Because a delay in such a case may result in service disruptions that could be hazardous to public health and safety, ordinary construction or maintenance protocols will not apply during the emergency, but will be applied to the location as soon as possible after the emergency has been resolved

3.0 GENERAL CONDITIONS

3.1 Responsibilities of Project Personnel

The Qwest Project Manager will be responsible for prompt production of a complete and detailed project description, and timely initiation of cultural resources studies. He/she will work closely with the Cultural Resource Specialist (CRS-defined below) to develop plans to avoid and reduce cultural resources impacts, and will ensure that any necessary archaeological mitigation is carried out prior to commencement of the construction or maintenance activity. The Construction Project Manager will also ensure that qualified Archaeological Monitors and Native American Observers are present on site during the construction and maintenance activities as recommended, and that the line workers are aware of the monitoring requirements and of their responsibilities regarding cultural resources.

Qwest will hire or retain a qualified archaeologist(s), who will be the project's Cultural Resource Specialist (CRS). If necessary for project schedule and staffing, there may be more than one CRS for the project. Personnel qualifications are described in Section 3.2, below. Under the direction of the Qwest Project Manager, the CRS will be responsible to assess each proposed maintenance activity, determine the applicable protocols, and make staff assignments for prefield activities such as records searches, archaeological inventories, and preparation of monitoring plans. The CRS will have general oversight on all archaeological monitoring and on coordination of Native American observation activities. It will be the responsibility of the CRS to coordinate with the Qwest Project Manager on the scope and schedule for monitoring and to communicate scope and schedule to the Lead Archaeological Monitor. The CRS will be responsible for notifying the Qwest Project Manager of unanticipated discoveries and for assisting Archaeological Monitors as needed in assessing discoveries made during construction or maintenance. In the event that the Lead or Staff Archaeological Monitor makes an unanticipated archaeological discovery or discovery of human bone while the CRS is not present, the CRS will visit the site as needed to assist in making any necessary assessments, and to provide treatment recommendations as described in Section 4.9.7. The CRS will be responsible for preparing and carrying out treatment recommendations as needed.

A Lead Archaeological Monitor and a staff of Archaeological Monitors will be available to the project as needed. The Lead Archaeological Monitor may serve as an Archaeological Monitor as needed, but will have additional responsibilities for project communications, coordination and scheduling of monitoring and observing staff, and reporting to the CRS. He/she will regularly coordinate with the construction/maintenance foreman at each construction site regarding daily and long-term schedules, anticipated work activities, need for personnel, and findings. Qwest, in consultation with the CRS, will also be responsible for the selection of Native American Observers, as needed, from the pool of qualified individuals. He/she also will be responsible for the accuracy of all identification of human bone.

The Staff Archaeological Monitor typically will be the monitor on site. The Staff Archaeological Monitor will conduct on-the-ground reviews of sensitive locations with the maintenance crew as needed, and will be responsible for notification of the maintenance foreman of any work stoppage. The Staff Archaeological Monitor, under the supervision of the Lead Archaeological Monitor or CRS, will also be responsible for identification of human bone if it is discovered, and will complete daily monitoring logs. If the Staff Archaeological Monitor is unable to make positive human bone identification, any bone that may potentially be human bone will be referred to the Lead Archaeological Monitor for review and countersignature. The Staff Archaeological Monitor will also complete work stoppage logs and discovery notifications in the absence of the Lead Archaeological Monitor or CRS. In the event of an unanticipated discovery or discovery of human bone, the Staff Archaeological Monitor will stop work as appropriate and immediately inform the county coroner as required by California Health & Safety Code § 7050.5.

The Native American Observer will be hired on a subconsultant basis. He/she will accompany the Archaeological Monitor on site. His/her responsibilities will be to be present at the excavation site as described in the monitoring plan for each specific project, and where human remains are encountered, to ensure that they are respectfully treated in the absence of the Most Likely Descendant. The Native American Observer will provide input to the Archaeological Monitor regarding the significant of findings, and may make requests for work stoppage for inspections through the Archaeological Monitor.

3.2 Qualifications of Cultural Resources Specialist and Archaeological Staff

All archaeological work on the Qwest Fiber Optics Project will be done under the supervision of a project Cultural Resources Specialist (CRS). This individual at a minimum will meet the professional qualifications for archaeology described in the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation (48 Fed. Reg. 44716-44740). Qualifications of this individual will include at a minimum: a graduate degree in anthropology with specialization in archaeology; at least one-year of full-time professional experience or equivalent specialized training in archaeological research; administration or management, at least four months supervised field and analytic experience in general North American archaeology; and demonstrated ability to carry research to conclusion. If prehistoric resources are involved, the CRS will have at least one-year additional experience working with prehistoric California sites, as well as interacting with California Native American tribes and individuals. The CRS will also have available, or on staff, an historic archaeologist with a minimum of one-year experience on historic sites in the American West.

The Lead Archaeological Monitor will meet the Secretary of the Interior's minimum qualifications for a professional archaeologist. He/she will also have completed a minimum of one upper division or graduate level course in human osteology and have at a minimum four month's field or lab experience in four week blocks with the archaeological excavation and identification of human bone from either historic or prehistoric sites.

Staff Archaeological Monitors shall have: a B.A. degree in anthropology/archaeology or a closely related field with an emphasis in North American prehistoric or historic archaeology or human osteology; six months field experience in four week blocks on prehistoric and historic archaeological sites in California; and demonstrated field and laboratory experience in working with skeletal remains, including the ability to identify human bone under field conditions.

It should be noted that all individuals who will access the project site must complete the appropriate safety training(s) coordinated by Quest.

3.3 Qualifications of Native American Observer

All individuals serving as Native American Observers must have at least six months field experience in monitoring on prehistoric archaeological sites and working with archaeologists. The monitor in any given region must be culturally affiliated with the Native American cultural group who occupied that region ethnographically. During initial Native American consultation (as described in Protocol 2, below), Qwest will notify local Native American contacts of the proposed project. At this time, Qwest will also request resumes and a statement of interest in employment as Native American observers from those on the list. When the scope of any necessary Native American observation activities has been established, as described in the protocols, Qwest, in consultation with the CRS, will select a Native American observer or observers from among those qualified individuals who indicate to Qwest that they are interested in monitoring, and are available at the time of any given project.

It should be noted, again, that all individuals who will access the project site must complete the appropriate safety training(s), and must be equipped with all required safety gear.

3.4 Workforce Cultural Resources Training Program

Prior to construction or maintenance, all Qwest personnel directly involved with the completion of the activity will receive training in field identification of potential cultural resources. Personnel will also be cautioned on the legal and/or regulatory implications of knowingly destroying cultural resources or removing artifacts, human remains, bottles, and other cultural materials from the site of initial discovery. The training program, which will involve a one to two hour course of instruction, will also include instruction regarding the stipulations provided in the above protocols, with emphasis on actions to be taken in the event of the unanticipated discovery of a cultural resource or of human remains in the field during construction or maintenance. Workforce training materials have been prepared in written and electronic formats, and are available for CPUC review.

4.0 CULTURAL RESOURCES PROTOCOLS

This section describes in detail the cultural resources protocols that may be required during project planning, construction and maintenance to ensure that potential impacts of Qwest activities upon cultural resources are avoided, minimized or mitigated. Protocols 1 through 6 generally will be applied during the project planning stage, while protocols 7 through 11 will be applied immediately prior to, during, or at the conclusion of construction and maintenance. These protocols set forth a program for the identification and protection of known cultural resources within project rights of way, and for the identification, assessment and treatment of cultural resources that might be encountered in the course of project activities. Applicability of protocols is summarized in Table 1, below.

4.1 Protocol 1: Records Search and Data Adequacy Analysis

Record searches are carried out to identify previously recorded cultural resources or resources known to the Native American community which might be subject to impacts from the proposed project. A record search also identifies areas that previously have been subjected to archaeological inventory (also called archaeological survey). Generally, record searches are performed as early as possible in the project. The area searched will encompass all project facilities and a buffer of ¼-mile radius around proposed facilities. This buffer is searched to provide contextual data and to identify sites adjacent to the project, which may extend into the rights of way.

A record search will be initiated by the project Cultural Resources Specialist (CRS), either in person or by phone and mail. The search is carried out at the appropriate Information Center of the California Historical Resources Information System (CHRIS) as described below. Appendix B is a list of CHRIS Information Centers and the counties covered by each.

For maintenance of existing lines, a one-time record search will be conducted for each segment, which has not previously been assessed under new construction protocols. Native American consultation will be conducted as described for Customer Hookups, if not already fulfilled under new construction protocols. Subsequent maintenance of the same segment will not require repeated records searches or consultations.

Table 1: Reporting Requirements

Report Name	Necessary if/when:	Due Date:	Contents	Submit to:	Section	Protocol
Records Search Assessment Report	Project begins	ASAP after records search completion	Summary of records search and Native American Consultation	Qwest	4.1.3, 4.2	1
Archaeological Inventory Report	Records Search Assessment recommends survey	ASAP after completion of report above	Baseline information, impacts assessment, mitigation and monitoring plan	Qwest, Information Center	4.3.3	3
Supplemental Testing Report	Survey insufficient for monitoring recommendations	ASAP after completion of testing	Summary of site testing.	Qwest, Information Center, CPUC	4.4.3	4
Final Mitigation and Monitoring Plan	Testing revises monitoring recommendations	ASAP after completion of testing	Mitigation measures, including data recovery plan if necessary	Qwest, CPUC	4.5	5
Discovery Report	Discovery made	Qwest - Within 48 hours of discovery; CPUC - within 72 hours of discovery. Formal document to CPUC within 30 days	Description of discovery and context, map of discovery, site and feature maps, photographs, reason for evaluation	Qwest, CPUC, Information Center (if appropriate)	4.5.6.2	9
Letter Report of Investigations	Data recovery conducted	Qwest - Within 48 hours of fieldwork completion; CPUC - within 72 hours of fieldwork completion	Summarizes preliminary results of investigation, evaluation, and recommendations.	Qwest, CPUC	4.9.8	9
Data Recovery Report	Data recovery conducted	Within 9 months of fieldwork completion	Summary of all data recovery investigations	Qwest, CPUC, Information Center	4.9.9	9
Final Report of Monitoring and Findings	Construction on segment concluded	ASAP after construction closure	Summary of monitoring procedures, report of findings, assessments of discoveries, results of data recovery	Qwest, CPUC	4.11	11
Coroner Notification Form	Burial Discovered	ASAP after discovery	Describes find of human remains	Qwest, Coroner	4.10.5	
Daily Monitoring Log	Work day ends	Daily	Describes monitoring activity, area monitored, and any finds	Qwest, CPUC if requested	7.1.2.1	
Work Stoppage Log	Potential find is made and work stopped	With final monitoring report	Location, date, circumstances, length of work stoppage, description of putative find	Qwest, CPUC if requested	4.9.4, 7.1.2.3	9
Site Condition Report	Flagging ESAs and when removing flags	ASAP	Describes initial state of site, state after construction, and any impacts to site from construction	CRS, Qwest, CPUC if requested	4.7, 7.1.2.2	7

4.1.1 Project Maps

Qwest will provide the CRS with maps of the new construction route or proposed maintenance areas at a scale adequate to accurately and precisely locate all significant project elements. Locations of proposed bore pits, handholes and other specific proposed activity locations will be included on project maps. An overview map at 1:100,000 will be included if necessary for the search. The CRS will ensure that the proposed routes/facility locations and a ¼-mile buffer are accurately plotted on USGS 7.5' quads as the search area.

4.1.2 Search at the Information Center

The prepared maps will be taken or forwarded to the appropriate CHRIS Information Center(s), where the search will be performed. The scope of the search will be based on the potential for the proposed project to have impacts upon the resources for which the data are obtained. The following data will be gathered at the Information Center:

- Locations and site records of all previously recorded archaeological and historical sites
- Boundaries of and citations for all previous archaeological inventories which extended into the project rights of way.
- Status of all previously recorded archaeological resources with respect to eligibility to the National Register of Historic Places (NRHP) and the California Register of Historic Resources (CRHR).
- For any facility, which involves new construction outside existing roadways or railways, the record search will include an inspection of Government Land Office (GLO) plats and local heritage resources inventories as appropriate.
- For projects which will extend outside existing paved streets or railway rights of way, data on historic buildings and structures within the rights of way will be acquired from archaeological site maps and state and local inventories. These data on historic buildings and structures within the rights of way will not be acquired for proposed new projects or maintenance projects which include only paved streets and railroad rights of way, since these projects have no potential for impacts to standing structures.

4.1.3 Records Search Assessment Report

When the record search has been completed, the CRS will ensure that search results are analyzed so that the following can be assessed: the adequacy of existing cultural resources data; the need for additional archaeological inventory or other studies prior to construction; and whether and where known significant cultural resources are present in the project's effect area.

Based on the results of the above analyses, the CRS will provide Qwest with a preliminary report of findings, including recommendations regarding actions to be taken under cultural resources protocols. The CRS may recommend additional archaeological inventory, avoidance of specific locales (by drilling, rerouting, and/or identifying environmentally sensitive areas), additional archaeological testing or other research to assess the significance of resources which cannot be avoided, data recovery prior to impacts to significant archaeological sites, and monitoring during construction to ensure site avoidance or data recovery during construction.

The Records Search Assessment Report will include for following sections:

- Records search findings, including a table of number and types of sites, and extent of previous inventory
- Map of Environmentally Sensitive Areas (cultural resource locations and buffer zones)
- Summary of findings of Native American consultation conducted under Protocol 2 (any sites identified in Sacred Lands file, list of contacts, Native American Contact Records[see Protocol 2])
- Recommendations for any further pre-construction cultural resources work in accordance with protocols
- Recommendations for avoidance, redesign and other impact reduction or elimination measures
- Assessment of Archaeological Monitoring and Native American Observer needs, including locations and type of monitoring (e.g. intermittent, spot checks, full time)

This Records Search Assessment Report will be provided to Qwest. If the assessment is made that no additional work is needed prior to construction, results will be incorporated in the Mitigation Monitoring Plan (Protocol 5) for CPUC review. If further work, starting with archaeological inventory, is recommended, records search results and further recommendations will be conveyed in the Inventory Report (Protocol 3) and the Records Search Assessment Report will not be prepared.

4.2 Protocol 2: Native American Consultation

In order to secure information regarding potential Native American knowledge of and concerns regarding resources that could be affected by the project, the steps described in the following sections will be taken. Separate procedures are described for new construction versus maintenance and new customer hookups.

4.2.1 Local Native American Consultation for New Construction

4.2.1.1 Native American Heritage Commission Contact. Send a letter to the Native American Heritage Commission (NAHC) requesting that they check the "Sacred Lands Inventory" for burials, cemeteries, sacred sites, and traditional cultural properties along the route. Also request a list of interested Native American parties to inform them about the project and request information about any sites or locations of specific concern to them. This request will include the project name, purpose, and an appropriate scale map, and will describe the location of the project facilities by U.S.G.S. quad map, section, township and range. Ten (10) days must be allowed for a response. All individuals and/or groups recommended by the NAHC will be contacted.

4.2.1.2 Local Native American Contacts. Where the project route passes through burial grounds, cemeteries, sacred sites or other traditional cultural resources, Qwest shall send letters describing the project and soliciting concerns to the Native American parties on the list provided by the NAHC. Letters shall indicate that follow-up contact will be made by telephone. Letters shall also identify a contact person and suggest that a collect call can be made for additional information. Allow 10 days

for their response following direct contact. Combine responses from the NAHC and Native Americans with archaeological information as obtained above.

4.2.1.3 Consultation. If requested by interested Native Americans, Qwest will schedule a meeting with those Native Americans who have indicated to Qwest that they have concerns about the project. If, after that meeting, any Native Americans would like to view the project site in the area where it passes through the cultural resource of concern, Qwest will arrange for a site visit. Prior to access to railroad rights of way, all such individuals must complete the required safety training. In addition, other traditional or ethnic groups will be contacted in regard to areas or sites that have special significance for them, when such contact is determined appropriate as a result of CHRIS records.

4.2.2 Native American Contacts for Customer Hookups and Maintenance

The procedures set forth in Section 4.2.1.1, 4.2.1.2, and 4.2.1.3 shall be conducted on an area or segment basis for maintenance activities and customer hook-ups. For maintenance activities and customer hookups, a one time records search and consultation will be conducted for each area or segment that has not previously been assessed under new construction protocols. Maintenance activities or customer hookups within a segment that has been assessed and for which consultation opportunities have been provided will not require repeated record searches or consultation.

4.3 Protocol 3: Archaeological Inventory and Site Recording

4.3.1 Inventory Requirements

For new construction, archaeological inventory of the project rights of way or specific facility locations may be required for areas for which the Information Center indicates no previous inventory, or where the prior inventory may not have been conducted at current standards. The purpose of archaeological inventory is to identify archaeological sites in the rights of way which might be affected by activity associated with the project, to "ground-truth" the nature and extent of previously recorded sites which are in or may extend into the project rights of way, and to assess on the ground the relationship between project facilities and proposed facilities and the archaeological deposit. Paved or landscaped areas and railroad berms and ballast will not be subjected to archaeological inventory, since these areas afford little or no ground visibility. Where construction or maintenance are proposed for areas which have not previously been subjected to archaeological inventory, but where surface inspection would not be fruitful or would not be safe, an Archaeological Monitor will be present during construction or ground disturbing maintenance. New construction in areas where the ground surface is visible will be subject to archaeological inventory.

Since most all of the existing lines for which maintenance will be carried out lie within railroad berms or ballast, which afford little or no surface visibility, archaeological inventory will not be carried out prior to maintenance. For areas of this kind where maintenance is proposed, which have not been subjected to inventory at current standards, and where there are no data regarding the presence of archaeological sites, an Archaeological Monitor will be present during any ground disturbing activity which has the potential to disturb previously undisturbed soils. Maintenance in any areas of the alignment, which do afford ground visibility, will be subject to the same inventory requirements as for new construction.

4.3.2 Archaeological Inventory and Site Recording Procedures

For new construction and applicable maintenance as identified above, archaeological inventory (also called archaeological survey) will be conducted as follows:

4.3.2.1 Areas not Previously Subjected to Archaeological Inventory. Portions of the cable route in areas where the ground is visible will be examined in a single transect along and parallel with each side of the cable alignment but within the project rights of way. As discussed above, the inventory area will include those portions of the rights of way where the ground surface is visible and which have not been subjected to archaeological inventory at current standards. The inventory area generally will extend no more than 15 meters (50 feet) on each side from the track, road or facility centerline. This area can be inspected adequately in a single transect each side of centerline. Where the inventory area would include railroad alignments or paved streets, as is generally the case, a distance of 8 meters (25 feet) from the track centerline will be maintained due to safety requirements. The ground inspection of railway alignments and paved areas will thus be limited to railroad and street margins beyond the edge of ballast and paving.

4.3.2.2 Inspection and Re-recordation of Previously Recorded Sites. During inventory, previously recorded cultural resource site locations within or immediately adjacent to the project rights of way will be inspected by an archaeologist to document the precise physical relationship between the resource and the proposed facility and to ensure that existing site documentation is accurate with respect to site location and extent, and is up to current professional standards. An Archaeological Inventory Report will include notes on the field inspection, including information on whether the site extends into the project rights of way, and a copy of existing or revised documentation (see below).

4.3.2.3 Determination of Whether Site has Subsurface Deposits. During inventory documentation of a site, for sites within the construction rights of way in potential impact areas, sufficient shovel test probes or auger holes shall be excavated to determine if the site has subsurface deposits. All excavated material will be screened through 1/4" wire mesh. The object of this testing is to determine whether there are subsurface deposits associated with a site, to assist in making decisions about avoidance. If a site appears to be potentially significant and it cannot be avoided through drilling or rerouting, a formal testing program may be required (see below). If the site has been previously determined to lack subsurface materials, or if subsurface materials have been previously identified with site depth adequately determined, no probes will be excavated. For lithic scatter sites, the procedures in the "California Archaeological Resource Identification and Data Acquisition Program: Sparse Lithic Scatters" (CARIDAP 1988) will be followed if appropriate. If CARIDAP is carried out, the data potential of the site will be considered to have been captured and no further management of the site will be required.

4.3.2.4 Re-documentation. Within the project rights of way, each newly discovered cultural resource, and any site which was not recorded to current standards, will be documented to State standards on current Department of Parks and Recreation forms. GPS location data will be recorded for discovered and re-recorded sites, and any site for which this information has not been recorded. A photo will be taken of each site inspected.

4.3.3 Archaeological Inventory Report

For each proposed project, a single report of the results of the record search and of any inventory will be prepared. This report will comply with current Department of Parks and Recreation standards. The report will be divided into three principal sections; baseline information, assessment of impacts, and proposed mitigation and monitoring plan. If further fieldwork is needed for site significance, integrity, or boundary testing, recommendations and a plan for this work will be provided as an appendix to this report.

Subsequent to the inventory, a second phase of fieldwork may be required to further assess site boundaries, to assess and fine tune avoidance recommendations and drilling requirements, or to assess site significance or the significance of potential impacts to a site which cannot be avoided by rerouting or drilling. If work of this kind appears to be necessary, a testing program will be designed for Qwest's review and carried out upon Qwest approval as described in Section 4.4. Results of any such testing will be reported to Qwest and the CPUC in a Supplemental Testing Report, and will be incorporated in the Mitigation Monitoring Plan described below. The testing report and any resultant mitigation and monitoring recommendations will be submitted to the CPUC in the Mitigation Monitoring Plan for concurrence prior to initiation of construction in the vicinity of the site that required testing.

4.3.3.1 Baseline Information. The baseline section will include a project description, description of record search and inventory methodologies, an account of methods and results of Native American consultation, and detailed reporting of record search and inventory results. Results will be reported in map and table format, supplemented by text as needed. Inventory coverage and locations of all previously recorded and newly discovered sites will be depicted on USGS 7.5' base maps. Tables will list all sites on the records search maps shown to be in or directly adjacent to the cable route, and any new sites discovered during the inventories of previously unexamined areas, and will include inventory coverage by milepost (where available), including areas not examined and reason, and previous inventories, with author and year of each previous report and the Information Center file number of the report. On the site tables, information for each site will include site number, site type, potential for human remains, site eligibility status (i.e. significant, not significant, undetermined), site condition, project mile post (if available), USGS quad name, reference to any pertinent previous inventory, date recorded, and relationship of site to right-of-way. All recorded sites within or extending into the project rights of way will also be described in text.

4.3.3.2 Impact Assessment. A second section of the Archaeological Inventory Report will assess the potential cultural resources effects of each proposed facility on known sites by comparing proposed facility locations with locations of known sites. Subsections will describe each proposed facility, the identified significant or potentially significant resources that potentially will be affected by it, and the anticipated effects on each resource. For sites shown by field inventory and boundary testing to be outside the rights of way, no further assessment or management will be required. Isolate artifacts are assumed not eligible for the CRHR and will not be considered further in the impact assessment. Generally, for management purposes, potentially significant resources (that is, those for which significance has not been determined) will be assumed to be significant unless tested and determined not significant (not eligible to the California Register of Historic Resources). Where

significance is assumed, measures to avoid impacts will be incorporated in project design. Where such measures are not feasible, further site evaluation will be conducted, as described in Protocol 4.

4.3.3.3 Recommended Mitigation and Monitoring. The third section of the Archaeological Inventory Report will address the potential impacts of the project through a series of mitigation proposals, including an archaeological monitoring and Native American Observer plan. Subsections will describe mitigation measures proposed to address the impacts of each project component. Potential mitigation measures which could be included could range from site avoidance, to preconstruction data recovery (such as archaeological excavation in impact areas), to archaeological monitoring during construction. In most cases, the preferred mitigation is avoidance. In new construction projects, avoidance of site impacts may be achieved by emplacing the conduit by drilling or by minor rerouting of the line. When boring is carried out as an avoidance measure, it will be initiated at a minimum of fifty feet outside the identified boundary of the resource and will be continued to a minimum of fifty feet beyond the identified boundary. For sites which have been heavily disturbed in the past and which may not retain integrity, avoidance may not be recommended. In such a case, an Archaeological Monitor will be present during construction. If additional archaeological testing will be needed to assess the horizontal or vertical boundaries of a site, to assess site significance, or to evaluate site integrity within the impact areas, testing will be proposed in this section of the Archaeological Inventory Report. Testing would be carried out as described in Protocol 4.

This section of the report will include a table noting environmentally sensitive areas to be monitored by milepost, which will include of the locations of all known significance or potentially significant cultural resources within the rights of way. Even if sites can be avoided, a monitor may be recommended for construction in site areas (including trenching and bore pits, but not drilling); this will ensure that sites are not inadvertently affected by construction in the vicinity. In all cases, if a potential for human remains has been identified, avoidance is recommended. A Native American monitor shall be present for any ground-disturbing work in the vicinity of an archaeological site with a potential for human remains (see Protocol 8). A summary table of monitoring recommendations will include:

- the location, by milepost, where monitoring is to occur
- general notation on types of resources expected to occur at that location
- specific notation of whether human remains could be present
- Archaeological Monitor and Native American Observer scopes

This information also will be incorporated in the Mitigation Monitoring Plan to prepared under Protocol 5.

4.4 Protocol 4: Site Boundary, Integrity or Significance Testing

Inventory results alone may not be sufficient to assess the need for mitigation measures. In particular, if a site cannot be avoided, testing may be needed to determine site significance and integrity. Results of this testing may determine whether and to what extent mitigation is needed. Testing may also be needed to assist in determining appropriate limits for directional drilling as a site avoidance measure.

4.4.1 Site Boundary Testing

In order to achieve site avoidance, while also limiting the necessary drilling distance, Qwest may elect to have the project CRS carry out an archaeological boundary testing program. The object of testing is to more closely determine the subsurface boundaries and depth of deposit of a significant or potentially significant archaeological site. A test program minimally will consist of shovel test probes, auger holes, or controlled excavation units as needed at a maximum of 20 m intervals along the cable route within the rights of way and site boundaries. These will be excavated to 20 cm below sterile soil. If a site has the potential to contain human remains, a Native American Observer will be present. In some cases, the tested deposit may prove disturbed to its base, smaller or more shallow than previously anticipated, or so small or shallow that its data potential is captured during testing. In such cases, the results of the test program may reduce or eliminate the area that needs to be avoided by drilling.

4.4.2 Site Testing to Assess Integrity and Significance

Another purpose of testing is to evaluate the significance and integrity of sites that cannot be avoided. Under CEQA, archaeological site significance usually is measured by the potential for the site to yield information important to prehistory or history (CRHR eligibility Criterion 4). Site data potential is measured in accordance with a regional research design which posits questions which might be addressed through information from a site and stipulates the type of data which must be present in order for the site to address those questions. A sample research design, drawn from another recent construction protocol document (cf. Parsons Brinckerhoff Network Services, July 1999), is appended to these protocols.

For a site to be significant it must also possess integrity. Integrity is generally measured by the degree to which the site's cultural deposits are intact, both stratigraphically, and in terms of the range of materials present. A site that retains little integrity has substantially reduced information potential. Integrity of discrete portions of the site may also be significant as a measure of the significance of potential impacts to the site. If the project's impacts will occur in a portion of the site which has already lost its integrity as a result of prior activity on the site, those impacts may not be significant and may not require either avoidance or other mitigation measures, even if other portions of the site retain integrity and significance. For example, if the project would require trenching across a significant site, but the alignment of the proposed trench follows the alignment of previous construction of another utility line, then the proposed trench may not represent a significant impact to the site and may not require mitigation. In such a case, an Archaeological Monitor will make periodic inspections of the alignment during construction to verify that there is not potential for new impacts.

Activities carried out for site assessment may include augering, mechanical testing, or hand archaeological excavation of a small number of controlled excavation units, designed to determine the depth, distribution, stratigraphic integrity and content (features, materials and artifacts) present in the deposit.

4.4.3 Supplemental Testing Report

If significance or integrity testing of an archaeological site is carried out, results will be reported to Qwest and appropriate CHRIS Information Centers. If a site is assessed by the CRS as significant

(that is, to possess integrity and to have the potential to yield data important to prehistory or history), the results of testing will be used by the CRS to develop further mitigation recommendations. The testing report, which will include mitigation recommendations for significant sites, will also be submitted to the CPUC prior to initiation of construction in the site vicinity, for concurrence on site eligibility and appropriate mitigation measures.

4.5 Protocol 5: Mitigation Monitoring Plan

Assessments of monitoring and other mitigation requirements, derived from the records search, inventory and any supplemental testing reports will be incorporated in a Mitigation and Monitoring Plan which will direct the scope of cultural resources activities to be carried out for each project action. The Plan will specify timing, duration and extent of cultural resources work. Some measures may be carried out during project planning and prior to construction, others in conjunction with construction or maintenance, and others independently of construction or maintenance, as described in these protocols. A range of mitigation measures may be included in the Mitigation Monitoring Plan.

Because Qwest's work generally consists of a large number of relatively small scale on-going projects, the Mitigation Monitoring Plan will be an ongoing compendium of the reports prepared above. The above reports will be incorporated into the Mitigation Monitoring Plan as they are produced.

4.6 Protocol 6: Pre-Construction Data Recovery

For significant cultural resources that cannot be avoided during construction, mitigative data recovery may be necessary prior to construction. Data recovery may range from detailed inspection and recordation of the resource, to supplemental historic research, to controlled pre-excavation of construction impact zones. It is anticipated that archaeological data recovery would be the measure of last resort, to be undertaken only on significant resources where the resource cannot be avoided or impacts substantially decreased through other measures. A Data Recovery Plan, which includes a site-specific research design, will direct any archaeological data recovery that is proposed. Any such plan will be subject to review by CPUC and to Native American consultation should there be a potential to uncover human remains.

A report of data recovery investigations will be prepared and submitted within 9 months after the completion of fieldwork, or as negotiated in conjunction with more extensive data recovery investigations. A single report will be prepared covering all data recovery investigations. The final report will be consistent with **Archaeological Resources Management Reports (ARMR): Recommended Contents and Format**, published by the California Office of Historic Preservation.

4.7 Protocol 7: Protection of Environmentally Sensitive Areas

As discussed above, the preferred approach to cultural resources within the project rights of way is avoidance. Avoidance may be achieved by rerouting the alignment (for example by moving the alignment across the street or across the tracks), or by boring under the resource by using a directional drill. The delineation and monitoring of Environmentally Sensitive Areas (ESAs) will ensure that sites are avoided where possible. To the greatest extent possible, line markers and assist holes also will be placed outside ESAs. Avoidance measures are designed in the project planning stages, but may be adjusted during construction as archaeological monitoring reveals new information about the resource.

The CRS will use records search and subsequent field data as needed to identify all cultural resources along the rights of way. Cultural resource locations and a 15-meter (50-foot) buffer around each location will be included in the ESA. Locations identified as ESAs through the protocols described above will be mapped by the CRS and staff in the Records Search Assessment Report or the subsequent Archaeological Inventory Report (depending on whether the latter is required), and will be incorporated in the Mitigation Monitoring Plan. Specific archaeological site location data will not be provided in these documents, except as encapsulated in ESAs. Construction Managers will be informed that disclosure of cultural resource site locations to non-project personnel is prohibited. The Workforce Cultural Resources Training Program (see below) will include information about ESAs and an advisory that it is illegal to knowingly disturb, vandalize or loot a cultural resource site.

Prior to construction or maintenance in the vicinity of an environmentally sensitive area, the project CRS or Archaeological Monitor will flag or otherwise delineate the boundaries of the ESA (including a 15-meter [50-foot] buffer zone around the identified cultural resource). Site demarcation will be done, not more than four days prior to construction. Colors and types of flagging will be coordinated with construction personnel to ensure that the system is clearly understood. The Archaeological Monitor will remove the flags following the completion of construction. The Archaeological Monitor will also prepare a Site Condition Record at the time that the site is flagged and again when the flagging is removed. This will ensure assessment and reporting to the CPUC of whether any site impacts occur during the course of the project. These forms will be filed with the Final Report of Monitoring and Findings (see Protocol 11).

An Archaeological Monitor, and Native American Observer where appropriate (Protocol 8), will be present during all construction which crosses a designated ESA and will be responsible for ensuring that the boundaries of ESAs are accurately marked, maintained and respected during construction and maintenance. To the greatest extent possible, Qwest will avoid ground disturbance activities within the ESA.

Information and requirements regarding ESAs, and protocols for unanticipated discoveries and the discovery of human remains (Protocols 9 and 10), will be inserted in the General Conditions section of any excavation contract. In addition, all construction workers will be required to attend the Workforce Cultural Resources Training Program (described in Section 3.4, above) prior to or upon arrival at the job site.

4.8 Protocol 8: Archaeological Monitoring and Native American Observation

Qwest's qualified Archaeological Monitor will monitor project work involving new disturbance of soils in any previously determined archaeologically sensitive project areas, or where pre-construction data are insufficient to accurately assess the potential for cultural resources impacts. A Native American Observer will be involved in monitoring any area where human remains have been documented, or which in the professional assessment of the CRS has the potential for human remains, for both new construction and maintenance or customer hookups. The appropriate duration and intensity for the archaeological monitoring program for each project element will be specified in the Mitigation Monitoring Plan prepared by the CRS, and will range from full time monitoring to "as needed" inspections on either a regular or intermittent basis throughout all ground disturbing operations. Some local jurisdictions may require full time monitoring. Otherwise, it is anticipated that monitoring generally will be conducted on an "as needed" intermittent schedule. The CRS will work with the Qwest Project Manager to develop scope and schedule for monitoring. The CRS or Lead Archaeological Monitor will coordinate with construction foremen on specific projects to ensure that monitors are present as required, and will also coordinate Native American Observer scheduling as needed.

The Archaeological Monitor or the CRS will have the authority to temporarily halt construction operations within 30 meters (100 feet) of a find or resource exposure to determine if significant or potentially significant cultural resources are present and if they will be adversely affected by continuing construction operations. The Archaeological Monitor or CRS will give immediate notification of such assessments to the Qwest Project Manager. Work may be redirected to other locations outside of the find zone on the authority of the construction foreman or Qwest Project Manager.

If archaeological materials or suspected human remains are encountered in the absence of an Archaeological Monitor, procedures described in protocols 9 and 10, below, will be followed. Copies of this document will be available with each construction foreman. Each monitor and observer will be provided with copies of Protocols 9 and 10.

4.9 Protocol 9: Addressing Unanticipated Discoveries during Project Activity

This element consists of a plan for the identification, protection and treatment of cultural resources discovered by Archaeological Monitors or construction workforce during project activities either inside or outside designated ESAs. If assessment of the discovered resource by a qualified archaeologist reveals that the site cannot yield information important in prehistory or history, if there are no potential human remains at the site, and if the CPUC concurs in this decision, then no further management is required and work resumes. If the site has the potential to yield important information, it is eligible to the CRHR as a significant historic resource. Impacts to significant resources will be avoided or, if avoidance is not feasible, must be mitigated, usually through data recovery. Procedures to address the discovery of human remains during construction or maintenance are discussed in Protocol 10, below.

4.9.1 Definition of Unanticipated Discoveries

This protocol applies to unanticipated discoveries of cultural resource sites or features that have the potential to meet the criteria of eligibility to the California Register of Historic Resources, and are

therefore significant historic resources. Resources that neither meet any of these criteria nor qualify a Unique Archaeological Resource under CEQA are viewed as not significant, and project impacts to such resources are not addressed by these protocols. With this in mind, unanticipated discoveries are defined as:

- Previously unidentified prehistoric, protohistoric and historic archaeological sites and features, as defined by CEQA and professional guidelines and identified by qualified archaeologists;
- Artifacts or cultural materials within archaeological sites previously determined to be ineligible for further treatment which are qualitatively distinct from artifacts and cultural materials previously identified at the site and which indicate that the site has the potential to qualify as eligible for further treatment based on its potential to provide data; or
- Artifacts or cultural materials within archaeological sites previously determined to be eligible for further treatment which are qualitatively different from artifacts and cultural materials previously identified and/or investigated in the impacted portion of the site and which indicate that the impacted portion of the site has the potential to contribute to the eligibility of the site based on its potential to provide data relevant to the sorts of research issues defined in the project research design. All qualitative determinations will be made by the project CRS in consultation with Qwest and the CPUC as necessary, and be clearly stated; or
- Any evidence of human remains regardless of context of discovery. All discoveries of suspect bone are to be treated by construction personnel as potential human remains until a determination can be made by a coroner or, if acceptable to the coroner, a qualified Archaeological Monitor or CRS, as described in Protocol 10, below.

Finds that do not qualify for treatment under this unanticipated discovery protocol include:

- Prehistoric and historic era isolates, such as isolated artifacts, burned rock, or verified non-human bone outside the boundaries of previously defined archaeological sites.
- Artifacts or materials within archaeological sites previously evaluated as ineligible for either the California Register or, the National Register, which are qualitatively consistent with the materials previously identified at the site.

4.9.2 Steps to Protect Discovery

Flow Chart 1 (Appendix E) summarizes the procedures for potential unanticipated discoveries identified during construction when an Archaeological Monitor is on site and when an Archaeological Monitor is not on site. The following steps will be taken when an unanticipated discovery is encountered:

4.9.2.1 Work Stoppage. If an unanticipated discovery is encountered, construction activity will halt immediately at the discovery location, followed as soon as possible by the cessation of all other ground-disturbing activity within 30 meters (100 feet) of the discovery.

4.9.2.2 Immediate Protection. The CRS or construction foreman will ensure that an area at least 10 meters (30 feet) around the discovery is fenced with orange safety fencing or a similar material. These individuals will also be responsible to prevent traffic through the area of the resource disturbed by project activities, beyond that necessary to remove vehicles and equipment already within the area immediately surrounding the discovery. Persons involved in the discovery will immediately notify construction foreman who, in turn, will immediately notify the appropriate Qwest contact (see Appendix A), who will then contact the CRS to determine if the find is an unanticipated discovery.

4.9.3 Notification Regarding Unanticipated Discoveries

Individuals who will be notified in the event of unanticipated discoveries are listed below.

Qwest
Qwest Project Manager: Ron Matheson
Business hours: (916) 374-9516
After hours: (805) 701-4160

If Ron Matheson is not available, contact:
Qwest Project Manager: Jeff Bryan
Business hours: (562) 404-8865
After hours: (916) 765-1356

California Public Utilities Commission
California Public Utilities Commission Project Manager: John Boccio
Business hours: (415) 703-2641

In the event that a discovery involves potential human remains, notification must additionally include the Native American Heritage Commission and the appropriate county coroner (see Protocol 10, below and Appendix C)

4.9.4 Work Stoppage Log

A Work Stoppage Log will be completed whenever work is stopped for a putative find, and the find is evaluated as not significant (that is, does not qualify as an unanticipated discovery). This documentation will demonstrate that project procedures are in place and will also document any construction down time. The log will include:

- date, time and duration of the stoppage
- activity halted
- who requested the stoppage
- reason for the halt
- location (segment or milepost if available, GPS coordinates)
- notation as to whether the stoppage occurred within or near a previously recorded site or Environmentally Sensitive Area
- description of find and explanation as to why it does not qualify as an unanticipated discovery

Evidence in the form of Work Stoppage Logs of stoppage for multiple finds of the same type which are non-significant or that do not qualify as unanticipated discoveries may warrant an informal construction workforce training session to prevent future unnecessary work stoppage.

4.9.5 Verification of Potential Discovery by a Qualified Archaeologist

After halting construction and fencing the area of the unanticipated discovery as described above, Qwest will have the discovery verified by a qualified archaeologist, either the Archaeological Monitor or CRS. If the CRS or Archaeological Monitor determines that the discovery is non-cultural, Qwest will be notified and the halted construction activity can resume. If the CRS determines that the find is cultural but does not qualify as an unanticipated discovery, Qwest will be notified, a Work Stoppage Log will be completed, and the halted construction activity may resume.

If the Archaeological Monitor determines that the find does qualify as an unanticipated discovery, the archaeologist will notify Qwest, who will notify the CPUC contact, and the procedures outlined below for the treatment of unanticipated discoveries will be implemented. During verification and evaluation of the discovery, the archaeologist will have the authority to probe and shovel skim the potential unanticipated discovery to the extent necessary to determine whether it qualifies as an unanticipated discovery. If the unanticipated discovery is something other than human remains, the procedures below will be followed. If human remains are discovered, additional procedures outlined below (Protocol 10) will be followed.

4.9.6 Initial Documentation and Evaluation of Unanticipated Discoveries by a Qualified Archaeologist

Flowchart 1 (Appendix E) summarizes the procedures to follow when there is an unanticipated discovery. Discovery of potential human remains is addressed separately in Protocol 10, below, and summarized in Flowchart 2 (Appendix E). A qualified archaeologist, either the CRS or the Archaeological Monitor as appropriate, will verify all potential unanticipated discoveries. Upon verifying that the find meets the criteria of Unanticipated Discovery, the archaeologist will promptly:

1. Notify the Qwest contact to begin the official notification process (see below).

2. Complete a Discovery Record (see below).

3. Determine, in consultation with Qwest, whether or not the discovered resource can be avoided.

4. If impacts to the discovery cannot be avoided, evaluate the significance of the resource.

4.9.6.1 Notification of the CPUC and Landowner of Unanticipated Discovery. After the Archaeological Monitor or CRS notifies Qwest of a verified unanticipated discovery, Qwest will immediately contact CPUC by telephone, with written confirmation by fax or overnight mail. If Qwest learns of a potential discovery from construction personnel, when an Archaeological Monitor is not on location, Qwest will also notify the CRS. The notification will include a brief description of the discovery and its location. Qwest will also notify the landowner by letter.

The disposition/curation of any material collected and not destroyed by analysis will also be discussed and resolved with the landowner, if possible, at this time. Destructive analysis of human remains or associated grave goods will not be permitted unless written permission is granted by the Native American Most Likely Descendant.

4.9.6.2 Discovery Report. The investigating CRS will prepare a Discovery Record of the unanticipated discovery.

If the discovery is a **previously unidentified archaeological site**, the following steps will be taken:

1. The area around the discovery including the periphery of disturbance of the construction activity will be examined for any surface manifestation of the site. The appropriate records from the California Department of Parks and Recreation (DPR 523A-523L) will be completed. Recording will include GPS coordinates, plotting the location of the site on a US Geological Survey (USGS) 7.5' topographical map, producing a sketch map, and photographing the site. All activities will be confined to the right of way. If appropriate, CARIDAP procedures (e.g., for sparse lithic scatters) will be carried out see Section 4.3.3). Evaluation will be conducted in context of the project research design (appended to this document).

2. The CRS will advise Qwest as to whether additional testing will be needed to assess site significance.

3. Unless the project can avoid the site, further site evaluation (minimally, shovel testing) will be initiated to determine the significance of the site. If avoidance is possible, this will not be undertaken and further site evaluation will be unnecessary.

If the discovery consists of **qualitatively distinct materials within a previously recorded site** the following steps will be taken:

1. The CRS or Archaeological Monitor will make a detailed sketch map (DPR 523K) of the area containing the discovery. It will show the location and known extent of the discovery, areas that have been disturbed by construction, and micro-topographic features. Any features will be mapped in plan view and/or profile, as appropriate. Stratigraphic profiles will be made of a selected trench wall in which cultural materials are exposed.

2. The CRS or Archaeological Monitor will also prepare a summary description of the nature of the discovery and its environmental context and will describe of any features or artifacts. This record will also include photographs, with overviews showing the location of the discovery, the extent of disturbance resulting from construction in the surrounding area, and any feature or features. An update or supplement to any existing DPR 523 primary record or other record will be prepared if appropriate, and will be forwarded to the appropriate CHRIS office.

3. The CRS or Archaeological Monitor will collect any specimens and artifacts that in his/her judgement are in danger of being destroyed or illicitly removed from the work site. Any such

specimens will be documented, stored in a secure facility and transferred to the landowner or curated; consistent with the provisions described in Section 7.2, below.

If it is determined that the **find does not qualify as an unanticipated discovery**, it will be documented on a Work Stoppage Log.

4.9.5.3 Determination of whether Resource can be Avoided. The preferred approach to any discovered cultural resource is avoidance. Once the site has been documented and the boundaries delineated the CRS and Qwest will consult to determine whether impacts to the site can be avoided through such measures as rerouting or drilling. If the site cannot be avoided, as described below it either will be evaluated by the CRS, or will be assumed to be significant and will be treated as such.

4.9.5.4 Evaluation of Significance of Resources which cannot be Avoided. If the CRS and Qwest in consultation determine that there is no feasible way to avoid impacts to the resource, one of two evaluation options will be carried out:

1. **Assume that the site is significant and treat and mitigate as if it were significant.** This option will be used where time constraints do not permit the full evaluation of the site using standard archaeological evaluation methods, such as preconstruction excavation. Generally this option could be applied if the proposed mitigation consists primarily of recordation or monitoring measures which would not result in project delays. These measures would be reduced or eliminated, after proper notification, if subsequent work indicates that the site in fact is not significant.

2. **Evaluate the resource using standard archaeological evaluation methods.** The CRS will develop and carry out site evaluation, using archaeological testing as appropriate. In most cases, the site will be evaluated with respect to eligibility under CRHR Criterion 4, for its potential to answer questions important in prehistory or history, in accordance with regional research questions identified in a research design (appended to these Procedures). If the testing program determines that the site cannot yield information important in prehistory or history, if the site has no potential for human remains, and if the CPUC concurs with this decision, then no further management is required. If the resource is significant and impacts to the significant qualities of the site cannot be avoided recommendations will be made concerning the appropriate mitigation measures such as monitoring during construction, or archaeological data recovery.

4.9.6 Discovery Record Review Process

The investigating CRS, with input from the Archaeological Monitor, will submit a Discovery Record to Qwest within 48 hours of the initial examination of the discovery. For any site that cannot be avoided, Qwest will submit the Discovery Record to the CPUC within 72 hours of the initial examination of the discovery.

The CPUC will review the Discovery Record and determine whether the identification and evaluation measures are adequate, and will notify the Qwest contact regarding their determination by telephone followed by written confirmation. If a response is not received within ten calendar days, Qwest will consult with the CPUC to determine an appropriate course of action. Qwest will

maintain a written record of all CPUC decisions with regard to cultural resources encountered by the project.

If the CPUC determines that the site containing the discovery requires no further action, the CPUC will either prepare a written Notice to Proceed (NTP) or provide an authorized signature on the Discovery Record. The written NTP, or signed letter report, will be sent to Qwest. Qwest may resume construction immediately upon receipt of either the NTP or signed letter report.
If the CPUC concludes that the unanticipated discovery requires further testing or mitigation, the CPUC will immediately notify the Qwest contact by telephone or fax, and the CPUC will arrange a conference call or meeting with representatives of Qwest to:

1. Confirm the nature and scope of treatment to be completed prior to issuance of a written notice to proceed;
2. Determine a schedule for completion of the archaeological evaluation work;
3. Determine the nature and scope of any protective measures that will be required during construction;
4. Determine the nature and scope of any post-construction archaeological treatment that may be required.

With input from the Archaeological Monitor as needed, the CRS will prepare and Qwest will submit to the CPUC a more extensive Initial Discovery Report Addendum about the unanticipated discovery within 30 calendar days of the completion of the initial field documentation.

Formal documentation of the resource, including a brief narrative description of the discovery and its context; DPR 523 forms as appropriate; a drafted USGS 7.5' quadrangle map showing the location of the discovery; drafted site maps, feature plan maps, and profiles, as appropriate; photographs of the discovery; and a justification for the evaluation of the discovery, will be submitted to CPUC within 30 days as permanent documentation.

4.9.7 Treatment of Eligible Unanticipated Discoveries

Treatment of eligible (i.e. significant) cultural resources will be directed by the CRS, a qualified archaeologist. Flow Chart 1 (Appendix E) summarizes the procedures for the treatment of unanticipated historic or prehistoric discoveries which are evaluated as eligible for either the California Register or the National Register of Historic Places (i.e. as significant resources). Separate procedures, summarized on Flowchart 2, pertain to any discovery involving potential human remains. Treatment of eligible discoveries may be phased. The first phase includes the completion of fieldwork that must be undertaken before construction resumes in order to recover significant data and mitigate construction impacts. The second phase involves the protection of intact portions of the discovery from additional construction impacts. Such steps might include the use of barricade fencing, restricting the width of the construction ROW, construction monitoring, or similar actions. The third phase applies only to especially significant discoveries and may require additional data recovery field investigations after construction is completed.

Treatment of significant sites exposed during construction would involve data recovery investigations prior to the resumption of construction. Those investigations would focus on securing

adequate data to address important research questions while expediting the resumption of construction activities. This fieldwork is as a treatment mitigation to satisfy Criterion 4 of the California Register of Historical Resources and Criterion D of the National Register of Historic Places if applicable. Data recovery treatment would not stop construction except at the specific site or sites subject to treatment. Construction would continue outside of those areas.

The treatment plans are individually determined. Each discovery will be unique and each treatment plan will focus on each site's uniqueness. Data recovery will occur in accordance with the treatment plan approved by the CPUC. If, at any point during a treatment plan, human remains are discovered, the separate provisions for discovery of human remains will be invoked and instituted.

4.9.8 Letter Report of Treatment of Unanticipated Discovery

At the conclusion of the archaeological treatment data recovery, the CRS will prepare a letter report summarizing preliminary results of the investigation. This report will include a description of the nature and extent of the investigations, a brief summary of the results, an evaluation of the find, and any recommendations for additional treatment.

The CRS will submit the letter report to Qwest within 48 hours of the completion of the data recovery fieldwork. Qwest will submit a copy of the preliminary report to the CPUC within 72 hours of the completion of fieldwork. The CPUC has up to 10 calendar days from receipt of the preliminary data recovery report to determine whether additional investigations are justified.

If the CPUC concurs that no additional investigations are justified, the CPUC will either prepare a written NTP or provide an authorized signature on the data recovery report. The NTP or signed report will be submitted to Qwest by fax and mail.

Qwest may resume construction immediately upon receipt of either the NTP or signed report. Qwest will not resume construction at the location of the unanticipated discovery until it has received either the written NTP or signed report. Qwest will keep a record of all such decisions by the CPUC and will retain the related documentation (NTP or signed reports).

4.9.9 Additional Treatment

The CRS will undertake additional archaeological data recovery or other related investigations during or after construction or maintenance if the CPUC determines that this is necessary for adequate mitigation. The specific nature, scope, and timing of any such investigations will be negotiated by the CPUC and Qwest and specified in a written agreement signed by both parties. If necessary, this work will be completed prior to the resumption of construction, and then the CPUC will grant authorization for construction to resume at the location of the discovery.

Under certain circumstances, it may be necessary to conduct additional investigations in the adjoining area immediately outside the area of the construction activity. A data recovery plan that includes a research design will be produced and approved prior to any such investigations, and the CRS will receive formal authorization from the CPUC and Qwest prior to initiating those investigations.

Preliminary results of additional treatment will be reported in a letter report of investigations, as described in Section 4.9.8. The CRS will submit a Data Recovery Report within 9 months after the completion of fieldwork or as negotiated in conjunction with more extensive data recovery investigations. A single report will be prepared covering all data recovery investigations. The final report will be consistent with *Archaeological Resources Management Reports (ARMR): Recommended Contents and Format* published by the California Office of Historic Preservation.

4.9.10 Authority to Resume Work

Authority to resume work at the discovery location depends on the nature of the discovery. If the discovery is determined not to be significant, this protocol no longer applies, and work may resume on the authority of the CRS and the construction foreman. If the discovery is judged by the CRS and CPUC to be significant, work may not resume until the find has been documented and mitigated to the satisfaction of the CRS and the CPUC. In this case, permission to resume work must be received from the CPUC by the Qwest Project Manager, who will notify the CRS and the construction foreman. In the case of any discovery significant or not, the construction foreman must ensure that work does not proceed until safe to all personnel.

4.10 Protocol 10: Discovery of Human Bone

Flowchart 2 (Appendix E) details the actions to be taken in the event of the discovery of hum remains or suspected human remains. Human remains may include intact burials or isolated bon including teeth or fragmentary pieces of bone. Under law, the following procedures apply, whetl or not an Archaeological Monitor or Native American Observer is present. Notification a treatment procedures (if any) will conform with appropriate state and federal statutes, regulatio and guidance, including California Health and Safety Code (Chapter 1492, Section 7050.: California Public Resources Code sections 5097.94, 5097.98 and 5097.99, Native American Herita Commission (1994), and CEQA under PRC 5097.98. The Native American Graves Protection a Repatriation Act of 1990 (NAGPRA) (25 United States Code (USC) 3001-3013) applies only federal lands. It is important to note that, except on federal land, state law prevails in California regard to the treatment of human remains.

4.10.1 Work Stoppage

In the event of a discovery of suspected or possible human bone, work at that immediate locatio must halt until a determination has been made as to whether the bone is human. Except to ensur safety, the location of the find will not be backfilled. Further, if the bone is suspected to be human no spoils shall be moved until a determination of the source of the find has been made. If work i stopped for more than one hour, the CRS will complete a Work Stoppage Log. This log is describec in Section 7, below.

4.10.2 Determination of Whether Bone is Human

After work has stopped, the Lead Archaeological Monitor (if present at the discovery) will inspect the bone to determine whether or not it is human. If the bone is assessed as non- human, it is not considered to be an unanticipated discovery and work may proceed.

In the event of a discovery of bone while the Lead Archaeological Monitor is not on site, any maintenance personnel involved in such a discovery will immediately halt work at the discovery site, move off 30 meters (100 feet) and notify a supervisor (or designated substitute), who will immediately notify the Qwest Project Manager. The Project Manager will immediately notify the CRS who will direct the Lead Archaeological Monitor to inspect the find and determine whether or not it is human. If the find is not human, work may proceed. If the find is human, the protection and notification procedures described below must be followed immediately. If there is any doubt on the part of the Lead Archaeological Monitor about a find potentially representing human remains, work stoppage and protection procedures apply, the monitor will complete a Coroner Notification Form, and the County Coroner must be contacted immediately and the notification procedures must be followed.

4.10.3 Protection of the Find

Until the assessment of the find by the Lead Archaeological Monitor, CRS and/or coroner has been completed, work must remain stopped and no spoils will be removed from a 30 meter (100 foot) radius around the find. After the find has been determined to represent human remains, excavation work and vehicular traffic may not come within 30 meters (100 feet) of the discovery location. After

all such activity has been halted, appropriate steps will be taken to ensure that no further disturbance occurs to the discovery until the assessment and notification process has been carried out. At a minimum, the construction foreman will ensure that no ground-disturbing activity by Qwest or Qwest's agents resumes within 30 meters (100 feet) of the discovery in all directions, and will prevent the resumption of vehicular traffic within the buffer zone. Other steps to secure and protect the discovered remains will be taken, depending on the nature and particular circumstances of the discovery, potentially including measures such as the posting of a security person, placement of a security fence around the area of concern, or a combination of these measures. Measures taken to protect the remains and any associated artifacts will remain in effect until Qwest has received formal notice from the qualified archaeologist to proceed with the construction in the 30 meter (100 foot) buffer zone.

4.10.4 Photographs

No photos will be taken by Qwest or Qwest's agents of human bone or burials or associated grave goods found in a burial context without the express consent of the Most Likely Descendant.

4.10.5 Notification

The Lead Archaeological Monitor (if present at the find) will immediately notify the construction foreman and the CRS of the find and will also prepare and provide a Coroner Notification Form to the CRS. The notification form will include the time and location of discovery, a description of the find, and an assessment as to whether the remains are of Native American (archaeological) origin. If the Lead Archaeological Monitor is not present at the find, the CRS will inspect the find or will ensure that it is inspected promptly by the Lead Archaeological Monitor, and will be responsible to notify the Qwest Project Manager and to prepare the Coroner Notification Form for transmittal to the appropriate County Coroner (see Appendix C). If the CRS or Lead Archaeological Monitor cannot contact the Qwest Project Manager immediately, the CRS will be responsible to provide immediate notification by fax and phone to the coroner.

Upon being notified by the CRS of the presence of possible human remains, Qwest's Project Manager will contact the County Coroner's office immediately by phone and a fax transmittal of the Coroner Notification Form. The notification will include a brief description of the discovery and its location, a clear and explicit statement whether the discovery is situated on state or private land, and an opinion as to whether the find is archaeological.

The Coroner is allowed two working days to inspect the find and provide a determination as to whether the remains are archaeological or represent a crime scene. The Coroner may rely on the assessment of the project archaeologist if the find appears to be of Native American origin. If the remains are determined to be Native American, the coroner's office is responsible for contacting the Native American Heritage Commission (NAHC) within 24 hours. The NAHC then immediately designates and notifies a Most Likely Descendant (MLD). The MLD has 24 hours to inspect the find and provide recommendations for the treatment or disposition, with proper dignity, of the human remains and associated artifacts.

If the NAHC is unable to identify a MLD, the MLD fails to make a recommendation within 24 hours, or the landowner or his/her authorized representative rejects the recommendation of the MLD

and subsequent mediation (as per Section 5097.4 subdivision k) fails, the legal landowner, or Qwest acting on behalf of the landowner if so agreed by the landowner, will ensure that reinterment of the human remains and associated grave goods shall take place with appropriate dignity on the property in a location not subject to further subsurface disturbance. If disputes cannot be resolved, the remains will be reburied as close as possible to their discovery location, in a place secure from further disturbance, as described above. Reburial location will be subject to the agreement of the landowner.

4.10.6 Treatment and Reburial of Human remains

The MLD may provide recommendations to Qwest or the landowner for the recovery, treatment and disposition of the remains and associated grave goods. If possible within the requirements of the project, Qwest will comply with any such recommendations. With the permission of the landowner, Qwest will act on behalf of the landowner after notifying him of the find. If Qwest cannot comply with the MLD's recommendations due to project constraints and the remains cannot be left in place without further disturbance, Qwest will consult with the legal landowner to select an acceptable reinterment location, and the remains will be removed respectfully by the CRS or Archaeological Monitor and reburied on the property in an area where further disturbance can be avoided. The location will be mapped to ensure that it is protected in future.

Preservation in place of human remains and associated artifacts at the discovery location may be the MLD's preferred option. If the remains and grave goods will not be subject to further project disturbance, the remains and artifacts and their location will be accurately documented by the CRS or Archaeological Monitor on a Burial Record, and the discovery location carefully backfilled to avoid further disturbance. If it cannot be assured that there will be no further subsurface disturbance of the discovery location, human remains and associated cultural items discovered may be exhumed archaeologically, at the discretion of the MLD.

In compliance with CEQA, a qualified archaeologist, physical anthropologist or osteologist may conduct documentation and analysis of human remains and associated grave goods in a laboratory setting prior to reburial, providing that this is in accordance with the recommendations of the MLD. Analyses of human skeletal remains and any associated burial artifacts may include, but are restricted to, non-destructive metric and non-metric osteological investigation, determination of age and sex, and examination of pathological conditions. During analysis, if any, each burial and its associated funerary objects shall be stored as a unit in a secure facility, which shall be accessible to the MLD upon prior arrangement. The analysis of any human remains and grave goods and subsequent reburial shall be completed within a time period to be determined in consultation with the MLD. Any analyses and reports resulting from this examination shall be made available to the Native American community. The CRS or another qualified archaeologist will carry out archaeological documentation of the remains and associated materials.

The remains and associated funerary objects shall be reburied according to the provisions of California Public Resource Code 5097.98(a) and (b). The reburial shall be done in a manner that shall discourage or deter future disturbance. Persons designated by the MLD, with the assistance of Qwest, if requested, shall conduct reburial. The location shall be fully documented, filed with the

NAHC and the California Historical Resources Information System (CHRIS), and treated as confidential information.

For security reasons, no news releases, including but not limited to photographs, videotapes, written articles, or other such means that contain information about human remains or burial-related items of Native American origin shall be released by any party during the discovery, recovery and reburial unless approved by the MLD, Qwest, and the landowner.

4.11 Protocol 11: Final Report of Monitoring and Findings

For each segment of the project, a written monitoring closure report will be prepared at the conclusion of construction. The report will summarize monitoring procedures and will reference all reports of findings, assessments of discoveries, and results of data recovery and other mitigation elements. This report will be made available to the CPUC Lead Environmental Monitor and the CPUC Environmental Monitor assigned to the segment.

5.0 APPLICABLE PROTOCOLS DURING NEW CONSTRUCTION

This section specifies the protocols that apply to new construction activities. It must be noted that subsequent protocols often depend on the results of initial work: thus, if the entire project area has been inventoried with negative results, the need for any subsequent archaeological work will not be required. Conversely, if the work involved will affect numerous significant sites that cannot be avoided through redesign or drilling, a full blown cultural resources data recovery program could be required. This section provides information on initial work steps that will be needed for each construction activity. Note that Quest's new construction is limited almost exclusively to metropolitan rings to be installed in existing paved streets.

5.1 Conduit/Cable Installation

As discussed above, virtually all of the conduit installation to be conducted for this project will take place within metropolitan streets and utility corridors. The conduit installation will be implemented primarily through trenching, using a trencher or backhoe.

5.1.1 Trenching and Backfilling

At a minimum, a records search and Native American consultation as described in Protocols 1 and 2 will be conducted for proposed trenching areas. Where the trench will be confined to paved street settings or utility corridors, the record search need not include data on adjacent historic buildings. Because most conduit will be installed in paved city streets, inventory or site reexamination as described in Protocol 3 generally would not be fruitful and are not proposed. Protocol 4 testing of any known resources for extent or significance also generally would not be practical due to the constraints imposed by the limited ground visibility afforded by paved street setting and limitations on excavation associated with traffic. Archaeological sites identified in the record search or through native American consultation within 1/4 mile of the right of way will be plotted on project maps.

Where the line passes through known archaeological sites, the Mitigation Monitoring Plan required by Protocol 5 will recommend drilling under the site to avoid impacts. If drilling is used, the CRS or Archaeological Monitor will designate the site boundary and buffer and the excavation of the bore pits will be monitored, as described in Protocols 7 and 8. The Archaeological Monitor will be present during excavation of the trench in or near known sites, and a Native American Observer will be present during construction in the vicinity of sites that are known or suspected to contain human remains. The Archaeological Monitor also will be present during trenching in areas not previously subjected to archaeological inventory; however, neither an Archaeological Monitor nor a Native American Observer need be present during trench backfill. Any finds will be treated consistently with Protocols 9 and 10.

5.1.2 Bore Pits and Directional Drilling

Like trench alignment, bore pit locations and directional drill routes will be subject to records search and Native American consultation pursuant to Protocols 1 and 2. No bore pit will be excavated in such a way as to have the potential for impacts to historic structures, so historic structures need not be included in the records search for this project element. Any bore pit location which is not in a paved, landscaped or ballasted area will be subjected to archaeological inventory pursuant to Protocol 3, if it has not been inventoried in the past. The bore pit for the drill will be placed at least 15 meters (50 feet) from the margin of any identified resource which has been assessed as significant or potentially significant. If neither the records search nor subsequent inventory reveals cultural resources at the bore pit location, no monitor will be needed during construction. However, if the bore pit location had little or no surface visibility and could not effectively be inventoried, an Archaeological Monitor will be present during bore pit excavation pursuant to Protocol 8. Any finds will be treated consistently with Protocols 9 and 10, with respect to unanticipated discoveries and Native American human remains. A monitor is not necessary during directional drilling since no spoils are brought to the surface for examination.

5.1.3 Surface Restoration

Applicable protocols will have been applied during the trenching phase. No monitor is warranted during surface restoration. The potential for impacts to cultural resources is slight to none.

5.2 Cable Markers

Although the potential for impacts to resources from the placement of cable markers is slight, it is possible that archaeological deposits or human remains could be present in the upper one foot of soil which will be disturbed at the post location. Cable marker locations will be covered in the records searches required by Protocol 1 for construction of new line. Where marker post excavation will extend into surface soils rather than only into railroad ballast, an archaeological inventory will be performed prior to installation pursuant to Protocol 3 or an archaeological monitor will be present as described in Protocol 8 during the excavation of the upper 1' of the cable marker hole. If cultural materials are uncovered, Protocols 9 and 10 respecting unanticipated discoveries and human remains will be applied as appropriate. No archaeological inventory or archaeological monitoring is required for marker post excavation into railroad ballast or during driving of cable marker poles, since these activities will not bring soil to the surface for inspection.

5.3 Handholes/Manholes and Assist Holes

The Protocol 1 and 2 record search and Native American consultation also will apply to installation of handhole, manhole and assist hole locations along the line. Archaeological monitoring pursuant to Protocol 8 will be carried out as specified for the trenching, except that if there are no discoveries during trenching, subsequent excavation of hand holes and assist holes along the same line has very low likelihood of unanticipated discoveries and does not warrant monitoring. Excavation of handholes and assist holes within known significant archaeological sites will be avoided if at all possible. If excavation cannot be avoided (for instance, if an assist hole cannot be relocated) preconstruction data recovery of a sample of the material as described in Protocol 6 might be recommended in the Mitigation Monitoring Plan. However, if the location is in the street, it may not be possible to maintain an open hole for a sufficient period to carry out data recovery safely. If this is the case, an Archaeological Monitor will be present during construction and will thoroughly record findings and possibly screen a sample of the material excavated during construction. It is anticipated that most significant resource locations would be avoided by drilling, and thus would not be locations for handholes or assist holes.

6.0 APPLICABLE PROTOCOLS DURING MAINTENANCE AND CUSTOMER HOOKUPS

Although the potential for impacts to cultural resources from most maintenance activities is slight, a program of gradual acquisition of record search and inventory/monitoring data for line maintenance will be carried out. The majority of the lines at issue were placed within railroad rights of way. As discussed above, inventory of these rights of way is problematic and not very effective. Ground visibility in the actual rights of way is low due to the presence of railroad berm and ballast, often as deep as the projected impacts. Similarly, the potential for impacts generally is low in such areas, because project features may extend only slightly, if at all, into subgrade native soils. In these cases, archaeological inventory is unlikely to yield useful data.

Record searches as described in Protocol 1 will be carried out for the full linear extent of each proposed maintenance project. Native American consultation as described in Protocol 2 will be carried out concurrently with the record search. The intent of record searches is to acquire data on previous inventory and previously recorded sites adjacent to or under the railway. Archaeological inventory pursuant to Protocol 3 will be conducted only where known sites overlie the project, to delineate known sites and identify ESAs so that they can be avoided if possible. Archaeological inventory will not be conducted in areas where ground visibility is extremely limited. Instead, archaeological monitoring will be carried out during maintenance-related excavation in these areas. Excavation carried out during maintenance will provide subsurface samples for inspection by an Archaeological Monitor. If cultural materials are revealed, they will be addressed as unanticipated discoveries according to Protocol 9. However, because excavation in railroad rights of way can only be left open for a limited length of time due to Federal Railway Authority safety regulations, unanticipated discoveries within the railroad rights of way will be sampled, documented and assessed as they are uncovered.

If a significant resource is uncovered, data about its location and content will be used to refine a mitigation monitoring plan. This will provide a sample subsurface inventory, and will also provide stratigraphic cross-sections which will serve as a measure of the actual vertical extent of maintenance excavation relative to the depth of native soils. As data are acquired, they will form a basis for a more specific long-term maintenance protocol for each segment of the railroad. The CRS will assess data as they are acquired, for incorporation in a refined monitoring plan for these and future projects, and will provide CPUC with a refined monitoring plan for future maintenance within six months of approval of this interim plan.

A Native American Observer will be present where maintenance excavation is anticipated in the vicinity of any site anticipated to contain human remains. If human remains are encountered during maintenance, they will be addressed under Protocol 10.

6.1 Brushing/Clearing Rights of Way

Because the railroads maintain a clear right of way, little or no brushing or clearing is anticipated. No monitor is merited for this activity.

6.2 Cable Repair or Replacement

Cable repair or replacement during maintenance is accomplished by accessing existing conduit via existing handholes or manholes. Cable to be replaced is pulled from the conduit by a puller mounted on a backhoe that is parked adjacent to the line. New cable is inserted in the conduit in the same manner. Assist holes, at an average of four per mile, may be needed to assist the cable through the conduit. Potential cultural impacts at handholes and assist holes are discussed below.

6.3 Cable Marker Posts

Excavation for marker installation has little or no potential to extend below the level of ballast on the railroad rights of way. Although the marker posts may extend into native soils, their installation will not bring native soil to the surface for inspection. No monitor is warranted for this activity.

6.4 Uncovering and Reopening Handholes/Manholes

Handholes are uncovered in order to access the conduit and cable at the handhole vault for cable pulling, replacement, splicing or testing. As described above, handholes are buried under 18" (0.5 cubic yards) of previously excavated spoils at the time they are constructed. About two-thirds of a cubic yard of soil is displaced to access the handhole. The potential for these spoils to contain significant resources is very slight, but it is possible that some holes may have been excavated in archaeological sites containing human bone at the time the line was built. For this reason, in addition to the records search and Native American consultation described in Protocols 1 and 2, an Archaeological Monitor will be present during the first uncovering of each handhole, to inspect for human bone or unanticipated discoveries. Should human bone or other unanticipated discoveries be present, they will be treated as described in Protocols 9 and 10. For any handhole where no human

bone or other significant material is found to be present during monitoring, no further cultural resources studies will be required in the future, provided that the hole is reburied with the same soils or clean (imported) soils.

6.5 Excavating New Assist Holes

Assist holes are excavated to access the conduit when it is necessary to assist the cable's progress through it. This excavation carries some minimal potential to result in new impacts to cultural resources, since there may be some slight over-excavation of the previously excavated trench. As for the maintenance alignment in general, records searches pursuant to Protocol 1 will be carried out for the segment of the alignment that will be affected. Any maintenance areas which lie outside city streets or railroad rights of way will also be inspected through archaeological inventory as described in Protocol 3 to address the potential locations of any assist holes which might be required; however, maintenance alignments in railroad rights of way will not be subject to archaeological inventory, since ground visibility is expected to be minimal. An Archaeological Monitor as described in Protocol 8 will be present for excavation of assist holes in any stretches where there are previously recorded archaeological sites, or which have not previously been subjected to archaeological inventory. Any unanticipated discoveries and discoveries of human bone would be treated as described in Protocols 9 and 10.

6.6 Customer Hookups

Customer hookups typically are accomplished by excavating short linear trenches or directional drilling between existing backbone or ring line conduit and the customer's facility. For this activity, record searches and consultation will be conducted as described in Protocols 1 and 2. Monitoring will be conducted as described in Protocol 8, if judged to be warranted through the assessment made under the preceding protocols.

6.7 Emergency Repairs

Emergency repairs will be carried out immediately, as needed, irrespective of cultural resources conditions. However, any such repairs which require ground disturbances in areas which have not previously been subjected to archaeological inventory and/or records searches, and where cultural resources status is unknown, will be followed as soon as possible after the action by a records search, and on the ground archaeological inspection by a qualified archaeologist if the location is safe. Any evidence of impacts to a cultural resource as the result of emergency work will be reported to Qwest, the CPUC and the relevant Information Center. The resource information will be incorporated in refined maintenance protocols.

7.0 PROJECT ADMINISTRATION AND REPORTING

7.1 Scheduling and Communications

7.1.1 Schedule

Once monitoring requirements have been determined, the CRS, Qwest Project Manager and maintenance or construction foreman will meet to develop an estimated monitoring schedule and location map. These will: identify the locations where archaeological and Native American

Observers must be present during maintenance work; estimate the duration of each element of the maintenance activity (e.g. handhole uncovering-2 hours; fiber pulling-2 days); and specify when and where a monitor should be present for the activity. This will also be an opportunity to make sure that each party understands its responsibilities during the activity.

7.1.2 Meetings, Communications and Monitoring Log

Once a project is underway, the construction foreman and the Lead Archaeological Monitor will be responsible to coordinate on a weekly or daily basis (as needed) so that the monitor will be aware of work approaching sensitive areas. The Lead Archaeological Monitor will be responsible for coordinating with the Native American Observer regarding times and places to be present. The Archaeological Monitor will be on site during all work in sensitive areas, or will make regular spot checks if the area is designated for intermittent monitoring.

7.1.2.1 Daily Monitoring Log. Archaeological Monitors and Native American Observer will document each site visit or monitoring day on a monitoring log, which will describe the activity or facility monitored and will include a map or a milepost description of the monitored area. Information also to be recorded includes the amount of time spent at a site or with a crew, the crew being monitored, the construction supervisor, crew activities monitored, sites inspected, and a narrative report of the day's activities in which cultural resource problems and concerns are recorded. The log will also describe any finds or negative findings. If there are unanticipated discoveries, a site record or other documentation will be appended as appropriate. At the conclusion of the project, copies of all monitoring logs will be provided to the Project Manager with the final monitoring report. They also will be made available to review agencies if requested.

7.1.2.2 Site Condition Record. This report is to be completed by the Archaeological Monitor or CRS at the time an ESA is flagged and again when the flags are removed. The Site Condition record documents the site number, how the site was inspected, present site condition, and changes in site condition. This form may also be used to document damage to resources. In this case, information recorded will include how damage was discovered, the date and time of the damage, the party responsible for damage and his/her supervisor, and witnesses to the damage, if known, and a detailed description of damage. Also noted will be agency notifications and actions taken.

The Lead Archaeological Monitor and the CRS will maintain all forms, and will promptly submit these to the Qwest Project Manager. Copies will be made available to the CPUC Environmental Monitor on a weekly basis or as requested.

7.1.2.3 Work Stoppage Log. The Archaeological Monitor will be responsible for completing a work stoppage log each time work is stopped for more than a few minutes for inspection of excavations or for assessment of unanticipated discoveries. Copies of these reports will be included in the final monitoring report.

7.2 Collection, Curation and Technical Reporting

While all artifacts recovered from private property are the property of the landowner, it is Qwest's policy that to the extent permitted by the owner, all cultural materials recovered during monitoring or

data recovery will be subject to scientific analysis, professional museum curation, and reporting, in accordance with current professional standards. It is the policy of Qwest that artifact collection during inventory shall be restricted to those chronologically and typologically diagnostic artifacts which appear to be in imminent danger of destruction or are likely to be subject to illicit collection. To the extent feasible, artifact and features will be documented in the field and left in situ. Prior to any data recovery project, the CRS, acting for Qwest, will make good faith efforts to obtain permission from the property owner to curate any material collected and to obtain a curatorial agreement with a recognized curatorial institution in the region of California in which the site is located.

After analysis of materials and prior to transfer to a curation facility, the collections will be systematically organized and stored to facilitate research. These curation provisions do not apply to human remains, which must be treated in accordance with applicable California law, as described under Protocol 9, above.

Soil samples and similar specimens will not be curated, but rather disposed of at the completion of the project. A letter will be submitted to the CPUC documenting the final disposition of any collected cultural material. The disposal of such material or the transfer of collections will not occur until after the final report has been submitted, unless a private landowner demands possession sooner.

APPENDIX A. PROJECT CONTACTS

If an Archaeological Monitor is NOT present contact:

Gabe Schnelle, Qwest Construction Manager
(720) 205-4747

Cindy J. Arrington, Cultural Resource Specialist
(916) 765-9381

If Gabe Schnelle is not available contact:

Greg Kunz, Qwest Director of Construction
(720) 421-0784

APPENDIX B. CALIFORNIA HISTORICAL RESOURCE INFORMATION SYSTEM INFORMATION CENTERS

The following institutions are under agreement with the Office of Historic Preservation to:

1. Integrate newly discovered Resources and information on known Resources into the California Historical Resources File System;
2. Supply information on known resources and surveys to government, institutions, and individuals who have a justifiable need to know; and
3. Supply a list of consultants who are qualified to do archeological field work within their area.

Office of Historic Preservation
Department of Parks and Recreation
P.O. Box 942896
Sacramento, CA 94296-Ml
(916) 653-6624 Fax (916) 653-9824

Information Centers
Ms. Leigh Jordan, Coordinator
Northwest Information Center
Department of Anthropology
Sonoma State University
1801 East Cotati Avenue
Rohnert Park, CA 94928
(707) 664-2494 Fax (707) 664-3947, nwic.center@sonoma.edu

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Dr. Mark Kowta, Coordinator
Northeast Information Center
Department of Anthropology, Langdon 303
California State University, Chico
Chico, CA 95929-0400
Attn: Lisa Swillinger
(530) 898-6256 Fax (530) 898-4413, neinfocntr@campuspo.csuchico.edu

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Dr. Jerald J. Johnson, Coordinator
North Central Information Center
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California State University, Sacramento
6000 J Street
Sacramento, CA 95819-6106
Attn: Marianne Russo
(916) 278-6217 Fax (916) 278-5162, ncic@csus.edu

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Ms. Elizabeth Greathouse, Coordinator
Central California Information Center
Department of Anthropology
California State University, Stanislaus
801 W. Monte Vista Avenue
Turlock, CA 95382
Attn: Alice Lawrence
(209) 667-3307 Fax (209) 667-3324, egreatho@toto.csustan.edu

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Dr. Gerrit Fenenga, Coordinator
Southern San Joaquin Valley Information Center
California State University, Bakersfield
9001 Stockdale Highway
Bakersfield, CA 93311-1099
Attn: Adele Baldwin
(805) 664-2289 Fax (805) 664-2415, abaldwin@csubak.edu

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Dr. Michael A. Glassow, Coordinator
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Department of Anthropology
University of California, Santa Barbara
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6500jmjo@ucsbuxa.ucsb.edu

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Dr. Lynn Christenson, Coordinator
South Coastal Information Center
Social Sciences Research Laboratory
5500 Campanile Dr.
San Diego State University
San Diego, CA 92182-4537
Attn: Christina Mirsky
(619) 594-5682 Fax (619)594-1358, lchriste@mail.sdsu.edu

Serving San Diego County.

Robin Laska, Acting Coordinator
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Los Angeles, CA 90095-1510
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APPENDIX C. CALIFORNIA COUNTY CORONERS

Alameda County Coroner
Charles C. Plummer, Sheriff-Coroner
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Oakland CA 94612-4305
(510) 272-6886
(510) 268-7333 (fax)

Colusa County Coroner
Jeff Shadinger, Sheriff-Coroner
929 Bridge Street
Colusa, CA 95932-2899
(916) 458-0209
(916) 458-4697 (fax)

Contra Costa County Coroner
Warren Rupf, Sheriff-Coroner
P.O. Box 391
Martinez, CA 94553
(510) 335-1510
(510) 313-2886 (fax)

Fresno County Coroner
David M. Hadden, MD, Coroner
760 W. Nielsen Avenue
Fresno, CA 93706-1731
(209) 268-0109 X242
(209) 268-0211 (fax)

Glenn County Coroner
LK Donnalley, Sheriff-Coroner
543 West Oak
Willows, CA 95988
(530) 934-6431 (530) 934-6441
(530) 934-1199 (fax)

Kern County Coroner
Carl Sparks, Sheriff-Coroner
1350 Norris Road
Bakersfield, CA 93308
(805) 391-7771
(805) 881-3714 (fax)

Kings County Coroner
Ken Marvin, Sheriff-Coroner
Examiner
1444 W. Lacey Boulevard
P.O. Box 986
Visalia CA 93232-0986
(209) 582-3211 X2795
(209) 583-1553

Merced County Coroner
Tom Sawyer, Sheriff-Coroner
455 East 13th Street
Merced, CA 95340-6213
(209) 385-7369
(209) 725-3390 (fax)

Modoc County Coroner
Bruce Mix, Sheriff-Coroner
P.O. Drawer 480
Alturas, CA 96101-0460
(530) 233-4416
(530) 233-4971 (fax)

Monterey County Coroner
Norman G. Hicks, Sheriff-Coroner
1414 Natividad Road
Salinas, CA 93906
(408) 755-3702
(408) 755-3800 (fax)

Sacramento County Coroner
William F. Brown, Coroner
4800 Broadway
Sacramento, CA 95820-1350
(916) 874-9320
(916) 874-9257 (fax)

San Benito County Coroner
Harvey S. Nyland, Sheriff-Coroner
P.O. Box 700
Hollister,- CA 95024-0700
(408) 636-4080
(408) 636-1416

San Bernardino County Coroner
Brian McCormick, Coroner
175 South Lena Road
San Bernardino, CA 92415-0037
(909) 387-2543
(909) 387-2989 (fax)

San Joaquin County Coroner
Baxter Dunn, Sheriff-Coroner

7000 S. Michael Canlis Blvd.
French Camp, CA 95231
(209) 468-4310
(209) 468-4167 (fax)

Santa Clara County Coroner
Angelo K. Ozoa, MD
Examiner - Coroner
850 Thornton Way
San Jose, CA 95128-4702
(408) 299-5137
(408) 298-6129 (fax)

Shasta County Coroner
Jim Pope, Sheriff-Coroner
4555 Veterans Lane
Redding, CA 96001
(530) 225-5551
(530) 225-5572 (fax)

Solano County Coroner
James E. O'Brien, Coroner
311 Lane Street
Yreka, CA 96097-2942
(530) 842-8300
(530) 842-8356

Stanislaus County
Les Weidman, Sheriff-Coroner
939 Oakdale Road
Turlock, CA 95354-4150
(209) 525-7216
(209) 525-5145 (fax)

Tehama County
Don L Cole, Coroner
P.O. Box 1047
Red Bluff, CA 96080-1045
(530) 527-1130
(530) 529-7933 (tax)

Tulare County
Bill Wittman, Sheriff-Coroner
County Civic Center
Visalia, CA 93291
(209) 733-6241, (209) 733-6218
(209) 685-2607 (fax)

Ventura County
Ronald O'Halloran, MDMedical

3291 Loma Vista Road
Ventura, CA 93003
(805) 641-4406
(805) 641-4410

Los Angeles County Coroner
Anthony T. Hernandez, Director
1104 N. Mission Road
Los Angeles, CA 90033
(213) 343-0778
(213) 221-9768 (fax)

Madera County Coroner
Galenn Seymour, Sheriff-Coroner
216 West Sixth Street
Madera, CA 93637
(209) 675-7769
(209) 675-5413 (209) 674-4638 (fax)

San Luis Obispo County Coroner
Edward C. Williams, Sheriff-Coroner
P.O. Box 32
San Luis Obispo, CA 93406
(805) 781-4540
(805) 781-1003 (805) 781-1234 (fax)

Santa Barbara County Coroner
Jim Thomas, Sheriff-Coroner
4434 Calle Real
Santa Barbara, CA 93110
(805) 681-4100
(805) 681-4308 (fax)

Yolo County
Bart Simpson, Sheriff-Coroner
41793 Gibson Road
Woodland, CA 95776-9327
(916) 668-5280
(916) 668-5238 (fax)

APPENDIX D. PRELIMINARY RESEARCH DESIGNS

The following preliminary research designs are intended for use in assessment of the data potential of cultural resources discovered during archaeological inventory and unanticipated discoveries during construction. The potential to yield information important to history or prehistory is the criterion most often applied when assessing whether a site is eligible for listing on the California Register of Historic Resources. Resources that meet this criterion are considered to be significant. Impacts to such resources may be significant and should be mitigated. The questions discussed or listed here would direct an initial assessment of whether a resource has data potential. If data recovery were proposed for a resource, a resource and region-specific research design for that resource would be developed.

The prehistoric research design below is excerpted from Level 3, Long Haul Fiber Optics Project, Cultural Resources Procedures, prepared by Parsons Brinckerhoff Network Services, July 1999. This is an example of the type of research design which would be developed for the assessment of the significance of archaeological resources found in California, and which might be affected by a project similar to the one described in these pages. It presents issues and questions pertinent to California archaeological research, along with a discussion of the data classes that would be needed to address research into these questions.

Research Design [applicable to prehistoric resources]

Jim Railey
Howard Higgins, Ph.D.
TRC Mariah Associates, Inc.
Albuquerque, New Mexico

Project Background

The Long Haul Fiber Optics project is a major communications infrastructure development for North America, consisting of a fiber optic network optimized for internet technology. This project is not a federal undertaking, but rather falls under the mandate of the California Environmental Quality Act (CEQA). Ground-disturbing activities include primarily the excavation of narrow (approximately one-foot wide), but deep (4'), trenches, along with subterranean, directional boring. The project thus has the potential to impact significant archaeological and other cultural resources. As detailed in the CEQA Guidelines, Appendix G, activities that disrupt or adversely affect a prehistoric or historic archaeological site or property of historic or cultural significance to a community or ethnic or social group, or a paleontological site would be considered to have a significant environmental effect. To identify, assess, and avoid such potential impacts- to cultural resources within the fiber optics line right-of-way, an. action plan for archaeological investigations is being implemented, the specific procedures for which are described in the detail in the Long Haul Fiber Optics Project, Cultural Resources Procedures document (CRP).

Research Design

The purpose of this research design is to provide general guidance for archaeological investigations in the event that unanticipated discoveries are encountered in the course of the project

("unanticipated discoveries" are defined in the CRP). The action plan outlined in the CRP document calls for review of existing records and documents concerning cultural resources within, and in the immediate vicinity of, the project right-of-way. Previously uninvestigated portions of the right-of-way will be subjected to archaeological inventory, and both previously identified significant sites, and newly discovered sites, will be treated in a manner described in the CRP. These procedures are designed to avoid impacts to all cultural resources in the project right-of-way. However, it is possible that unanticipated discoveries might occur, and in such an event further archaeological investigations might be required. The central goal of such investigations would be to assess the potential significance of cultural resources with respect to the California Register of Historic Resources (CRHR) and (if applicable) the National Register of Historic Places (NRHP), and mitigate any effects to the resources. This research design has been prepared to provide a context and guidance for such further investigations.

The significance status of an archaeological site is usually assessed in terms of its potential to yield explicit information that allows archaeologists to address important questions concerning the prehistory or history of a particular area or region. Such potential often corresponds to the subsurface integrity of a site, i.e., the presence of subsurface deposits and/or undisturbed traces that can yield explicit data concerning cultural/chronological affiliation, past environmental conditions, subsistence patterns, type of settlement, range of activities carried out at a site, technological patterns, ceremonial activities, and other lines of information that allow archaeologists to infer past lifeways, and the ecological and social-evolutionary context of the observed archaeological remains.

The theoretical orientation adopted for this research design draws on ideas and models from the anthropological study of cultural ecology and sociopolitical evolution. One essential tenet of this approach is that humans adapt to specific environments, but that human culture has evolved to satisfy not only bare subsistence needs in particular environmental settings, but also to provide elaborate cognitive "maps" that allow human groups to carry on and reproduce their social structure and ideological systems. Importantly for archaeologists, the cognitive map of culture involves the use of material marker traits, which serve as visual cues that help people channel and evaluate experiences and information in terms of culturally embedded perceptions of their world.

The very broad adaptation limits imposed by most environments (especially mid-latitude temperate environments such as California's) allow for a tremendous range of potential variation in terms of cultural behaviors and their associated material markers.

Yet the nature of cultural learning is such that variation is often constrained by cultural conservatism (especially in more traditional societies), while 'at the same time, minor regional differences at one point in time may lead to radically different evolutionary outcomes, precisely because of these same cultural learning processes. The net result is the mosaic of cultural traditions, periods, and phases recognized by archaeologists. The interpretive challenge is to try and sort out the influence, on observed archaeological patterns, of ecological conditions, demographic patterns, environmental changes over time, and biologically-induced behavioral constraints within the human species, as well as the more stochastic pool of behavioral variation. Exploring the interaction of these various factors, conditions, and forces, and how these may collectively shape particular evolutionary-historical trajectories requires the identification of explicit research questions. Typically, such questions are

responsive both to baseline archaeological data recovery objectives as well as specific issues and data gaps in the archaeology of a particular region.

The archaeology of California covers a long-term, regionally distinctive evolutionary trajectory. It began with early, small-scale hunter-gatherers of the Paleo-Indian period (ca. 12,000-9000 BC, and witnessed the divergence of regional and local traditions of hunting-gathering societies in the Archaic period (ca . 9000-2000 BC, the localized emergence of complex hierarchical societies in the Pacific period (ca. 2000 BC-AD. 1769), the disruptions and decimation of native cultures following explorations and establishments of missions by the Spanish and their

Hispanic descendants (1769-1822), and the subsequent historical developments and changes of the Mexican (1822-1846) and American (1846-present) periods, that led to the remarkable cultural and ethnic mosaic that California is today (period definitions from Chartkoff and Chartkoff [1984]).

Research Questions

Because the present project may encounter archaeological remains from any or all of California's periods, and because of the substantial data gaps that exist in most areas traversed by the fiber optic line, the research questions posed here are necessarily broad. For prehistoric sites, these questions relate to general issues and information categories, including 1) chronology, 2) past environmental conditions, 3) subsistence practices and human ecology, 4) technological systems, 5) demography and settlement patterns, 6) regional exchange and interaction, and 7) patterns of social and political organization. An interest in change in these patterns and conditions over time is implicit. For historic sites, some of these same questions might apply (albeit in a different context), but more explicit issues can potentially be identified, given the particular historical circumstances of the region in question.

1) Chronology

Gaining precise chronological information on archaeological remains and deposits is a basic prerequisite for addressing many other research questions. Accordingly, the research design asks:

What are the chronological parameters of the various sites and components encountered?

This question prompts a need for gathering chronological information, in the form of both samples for chronometric dating, and comparative analysis of artifact stylistic attributes that are of chronological significance. Chronometric samples include radiocarbon, thermo-luminescence, oxidized carbon ratio (OCR), and obsidian hydration. These data will not only identify the chronological parameters of the recovered remains, but also contribute to the construction of a local chronological sequence.

2) Past Environments

Environmental conditions present both limits and. opportunities for human societies, and environmental changes can have a 'significant influence on evolutionary changes that can be observed in the archaeological record. Accordingly, this research design asks:

What is the nature of variation in past environments within the study areas, both across space and through time?

Such a question alerts us to the need to gather data that will allow inferences concerning past environmental data, including information from macrobotanical pollen, phytolith, and faunal remains, as -well as historical records concerning environmental conditions and variations in the local area and region. Such information can- lead to further, more explicit inquiries and understanding concerning past environmental conditions, as well as subsistence practices and human ecology, which constitute the second research question domain.

3) Subsistence Practices and Human Ecology

Subsistence patterns, and the ways in which human groups acquired or produced food are a central concern to archaeologists. Accordingly, the research design asks:

What is the nature of past subsistence practices within the project area and how did subsistence strategies vary over time?

This question identifies the need to collect subsistence-related data, derived from macrofloral, pollen, phytolith, and faunal remains, and to analyze such remains in a matter that will allow quantitative characterizations and comparisons. Functional and use-wear analysis of artifacts can also yield information on past subsistence patterns. Beyond questions concerning general subsistence patterns per se, such data derive added importance because they tie into other issues concerning technology, demographics, settlement patterns, and economic and sociopolitical organization.

4) Technological Patterns

Artifacts present in archaeological sites can provide direct evidence concerning past technologies. Two of the most visible classes of artifactual remains in California sites are chipped and ground stone, which were used to fabricate a variety of tools used for various functions and to process foodstuffs including seeds and acorns. Accordingly, the research design asks:

What were the patterns of chipped and ground stone tool production through time, and what are the implications of the observed changes (or continuity) for other research issues, including chronology, subsistence, settlement, and exchange?

Changes in patterns of chipped stone technology have been identified in the Southwest, i.e., a change from biface manufacture to a more expedient, core-flake technology, and morphological changes in ground stone implements are also evident through time. The analysis will be alert to the possibility of such temporal patterns in the recovered assemblages, and will characterize other technological aspects of the materials.

5) Demography and Settlement Patterns

Information on demography and settlement patterns is another central topic of archaeological research. Therefore, the research design asks:

What are the demographic and settlement patterns for the respective time periods within the study area(s)?

Although such patterns cannot be reconstructed from information recovered in the proposed investigations per se, the investigations will -contribute information that can be used to help reconstruct these patterns at the local and regional level. Information on site density, site size, density of artifact concentrations, 'and types of features encountered are just some of the lines of evidence that may be used to reconstruct demographic and settlement patterns.

6) Regional Exchange and Interaction
Reconstructing patterns of regional exchange, trade, and interaction is another important goal for archaeologists, and relates to other questions concerning subsistence, settlement patterns, and sociopolitical organization and change. Accordingly, the research design asks:

What patterns of exchange and interaction characterize the periods represented by respective site components?

Explicit information on the origins and distributions of raw materials used for stone tools will comprise the most direct line of evidence to address this question. Patterns of exchange and interaction are especially relevant to understanding patterns of social organization and change, which brings us to the final research question.

7) Sociopolitical Organization and Dynamics
In recent years, archaeologists have become increasingly interested in aspects of social and political organization, especially in light of the growing recognition that social structure in itself is an important evolutionary condition and force. Accordingly, the research design asks:

What are the social organizational features of the archaeological components encountered?

Addressing such a question relies on the creative use of ethnographic -analogy (both general and, in the case of California, local ethnohistorical information), general social-evolutionary theory, and a synthetic analysis of the archaeological record itself. Although there will be obvious limits as to the extent to which this research domain can be addressed in the present project, it is anticipated that recovered data will contribute to a corpus of information that can be used to address this question at local and regional levels.

8) Ethnographic Research
Ethnographic information can illuminate many of the research questions posed in this research design. Information derived from descendants of indigenous peoples can be incorporated into the archaeological analysis, bridging the past and present. Within Native American societies, cultural, ritual, and socio-political phenomena are inevitably connected to the landscape. Traditional knowledge of a given geographical area encompasses a wealth of information that can escape the most rigorous scientific investigation. In addition to the remnants of human activity in the past (archaeological resources), traditional landscapes abound with other cultural sites and features which may not show any trace of human activity. These places, referred to as "areas of cultural

significance" or "Traditional Cultural Properties (TCPs)," are as valuable as archaeological sites. Ethnographic research, when combined with archaeological investigation, can inform the archaeological research design and identify additional cultural sites in the project area.

Ethnographic research, in the form of interviews with tribal elders and other knowledgeable individuals, should ideally be conducted early in the research process. This way, the research questions included in this research design can be tailored to the particular area and group(s) of indigenous peoples that know it. While the details of indigenous traditions, passed down through oral tradition, cannot be superimposed upon the archaeological record, a better understanding of current and historic lifeways will undoubtedly contribute to an understanding of the past. Personal interviews, conducted "one-on-one" or in a group setting in a respectful manner, are the best way to obtain to ethnographic information.

Areas of cultural significance, or "Traditional Cultural Properties (TCPs)," are another important facet of ethnographic research. Elders and others who are legitimate descendants of indigenous populations and who know the landscape can provide a information regarding the cultural significance of specific landforms, routes, and areas. TCPs can be defined as any area or aspect of the natural landscape which has been (and may continue to be) of economic and/or religious significance to peoples today. They include Native American sacred areas where religious ceremonies are practiced or which are central to their origins or identity as a people. They also include areas where Native Americans gather plants or hunt animals for food, medicinal, or economic purposes. Traditional locations for events or rites with spiritual significance, such as dancegrounds, dream trails, places for gathering traditional medicinal items, or places for a Native American doctor or shaman to gather strength, are all Traditional Cultural Properties. These areas often show no trace of human activity, as they could be a prominent peak, a rock formation, a spring, a quiet glen, or a cave. Interviews with knowledgeable Native Americans in the area can be aided by the use of topographic maps, or by conducting the interview outside amidst the landscape in question.

Ethnographic research is an important component to any archaeological research design. Traditional knowledge of cultural patterns and their connection with the landscape provides a unique resource from which to improve our collective understanding of the past.

Reference Cited

Chartkoff, Joseph L. and Kerry Kona Chartkoff
1984 The Archaeology of California. Stanford University Press, Stanford, California.

Questions to Address Information Potential of Historic Period Sites

Many of the broad questions listed above are applicable to both historic and prehistoric period sites. When an historic resource is identified, assessment of data potential would focus on the classes of data available, the site's integrity, and the potential for the site to provide data that are not redundant

with other regional sites. Some questions that would assist in the assessment of an historic site's data potential include:

- Are there depositional features which may shed light on dietary practices, status relationships, and ethnicity, or does the find suggest only casual or informal disposal.
- Are the features or artifacts that are present typologically or chronologically diagnostic?
- Is there evidence of historic structures? Does the find suggest that a larger or more complex site may be present?
- Is there evidence of long term occupation?
- Is there evidence of special use? Are there features or artifacts that might provide information about the function of a site or feature?
- Does the assemblage include artifacts that appear to be exotic, or is it homogeneous?
- Are stratigraphic features present?

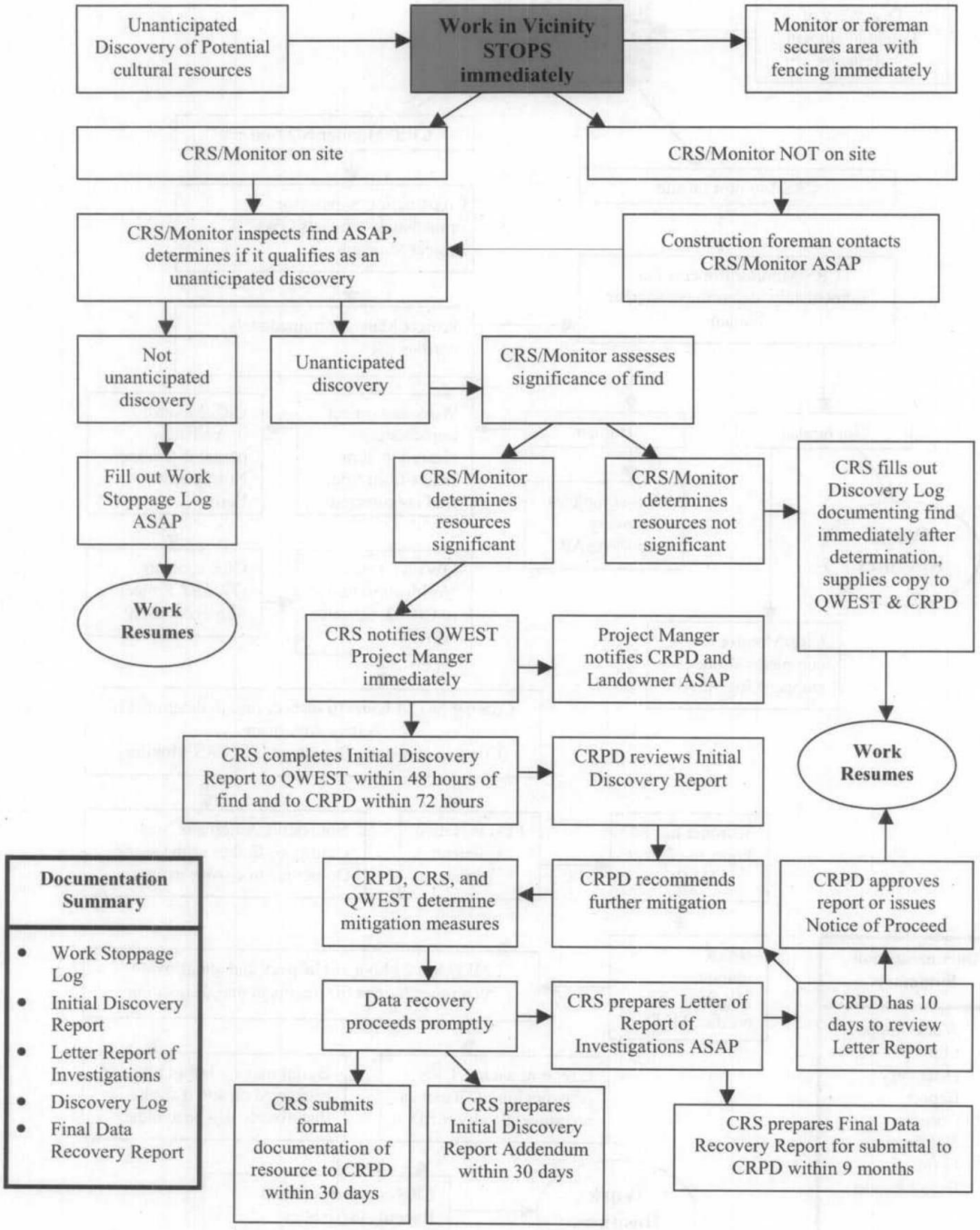
Evidence for site complexity, specialization, and the potential to provide typological or chronological data would all suggest that the site has the potential to yield important data.

Any data recovery at the site should be directed by a detailed research design, tailored to the data categories present in the site, and attuned to regional historic patterns. This research design should be developed prior to the beginning of data recovery.

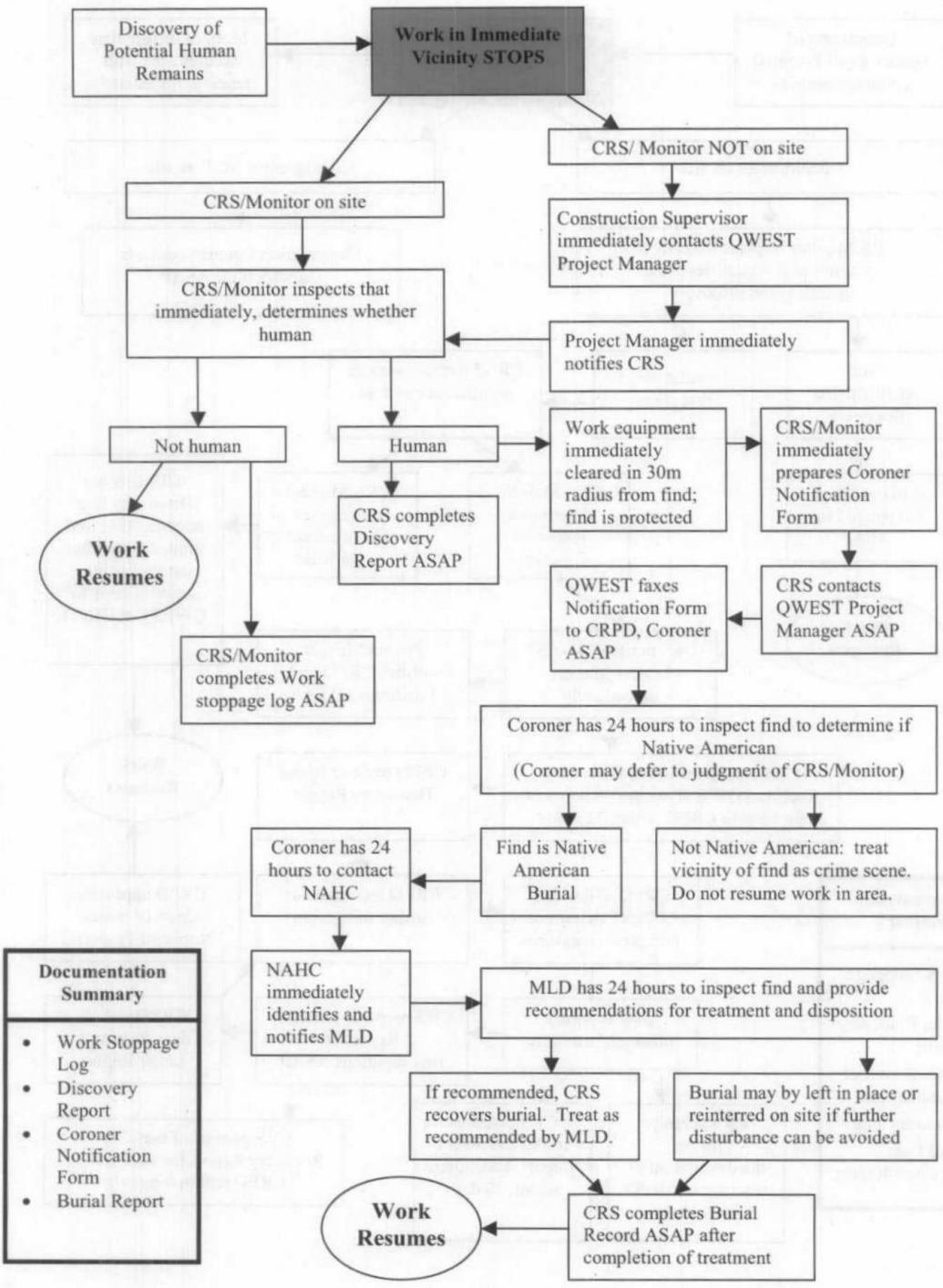
Appendix E. Flow Charts

Flowchart 1. Responses to Unanticipated Discoveries
Flowchart 2. Responses for Discovery of Potential Human Remains

Flow Chart 1
Protocol 1: Unanticipated Discoveries



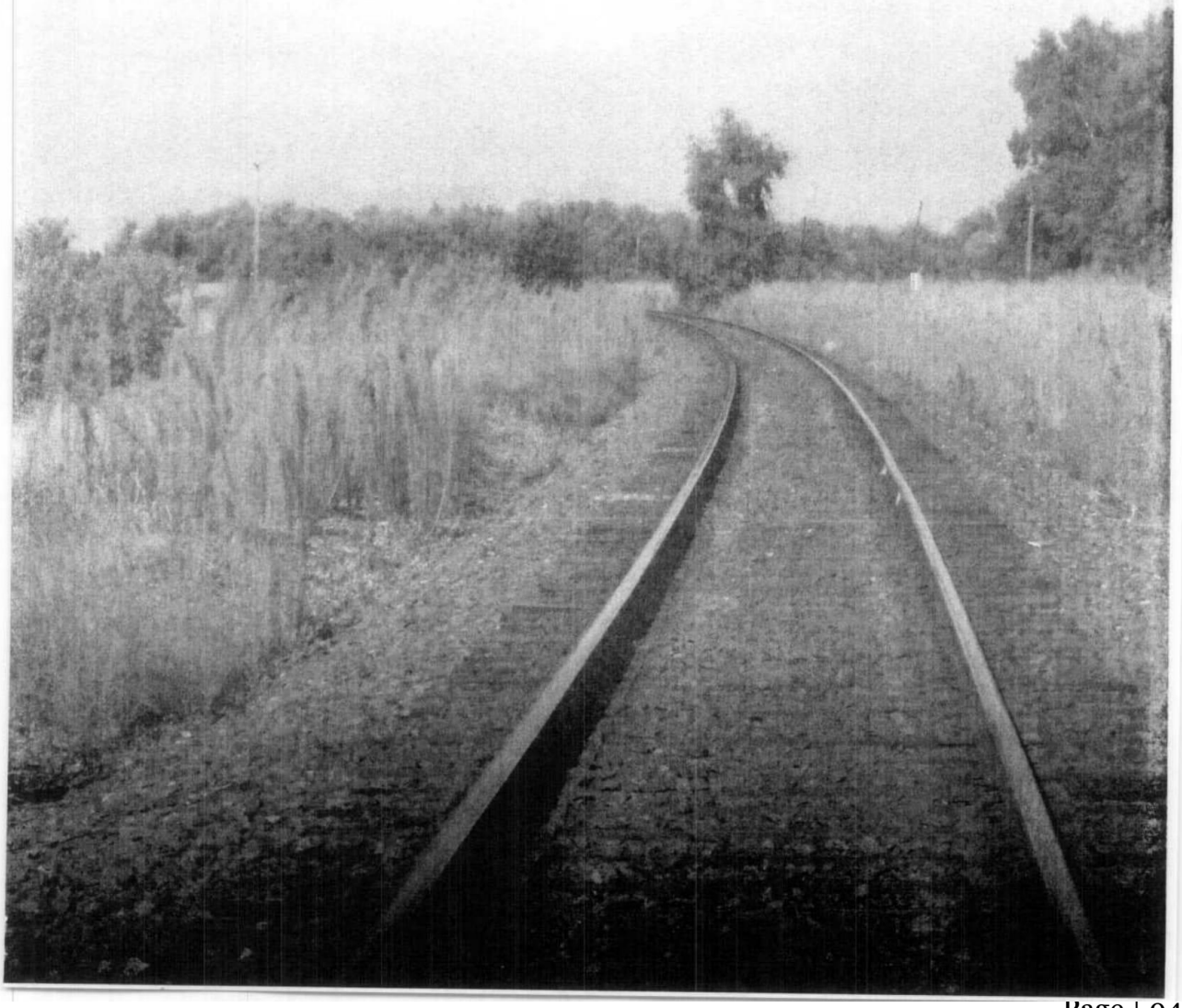
Flow Chart 2
Protocol 2: Discovery of Human Remains



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appendix b:

Native American Contact Table and Sample Consultation Letter



APPENDIX B

PRIVILEGED AND CONFIDENTIAL

Segment #	Segment Name	No. of Contacts	No. of Letters Sent	Date Letter Sent*	Closing Date*	Responses from Letter	Contacts by Phone No Response to Letter	Date of Phone Contact*	Consultation	Comments
1	Oregon/Montague	4	4	19-May	1-Jun	1	3	5-Jun	Not Requested	1 response by phone. Klamata Tribe - no concerns, contact if cultural resources are discovered.
2	Weed/Montague	4	4	19-May	1-Jun	1	3	5-Jun	Not Requested	This area was combined with Oregon to Montague.
3	Weed/Redding	11	11	16-May	31-May	4	7	5-Jun	Not Requested	Three responses by phone. Cecelia Silvis; Klamath Tribe, Morris Jimenez; Wintu Tribe - all stated no concerns. One response by letter Redding Rancheria, Barbara Murphy - request Native American monitors on site if prehistoric cultural materials are found.
4	Redding/Red Bluff	10	10	18-May	1-Jun	2	7	5-Jun	Not Requested	1 NWN (non working number), 2 responses by phone. 1). Redding Rancheria, Leon Benner - no concerns. 2). Wintu Tribe, Jill Ward - no concerns.
5	Red Bluff/Chico	13	13	18-May	1-Jun	0	12	5-Jun	Not Requested	1 non-working number
6	Chico /Wheatland	12	12	17-May	1-Jun	0	12	5-Jun	Not Requested	none
7	Wheatland/Roseville	18	18	16-May	31-May	1	17	5-Jun	Not Requested	1 response by phone. United Auburn Indian Community of the Auburn Rancheria, Jessica Tavares - no concerns
8	Roseville/N. Sac	9	9	17-May	1-Jun	0	9	6-Jun	Not Requested	none
9	Roseville/Sac	9	9	16-May	31-May	1	8	5-Jun	Not Requested	1 response by phone. United Auburn Indian Community of the Auburn Rancheria, Jessica Tavares - no concerns
10	Roseville/Nevada	9	9	16-May	31-May	1	8	5-Jun	Not Requested	1 response by phone. United Auburn Indian Community of the Auburn Rancheria, Jessica Tavares - no concerns
11	Sac./Napa	11	11	17-May	1-Jun	0	9	6-Jun	Not Requested	2 non-working numbers.
12	Napa Junction/Petaluma	22	22	18-May	1-Jun	0	20	6-Jun	Not Requested	2 non-working numbers.
13	Suisun City/Oakland	27	14	16-May	31-May	0	14	5-Jun	Not Requested	13 duplicated names
14	San Francisco/San Jose	15	15	18-May	1-Jun	1	14	6-Jun	Not Requested	One response by letter Marion Martinez - no concerns
15	Oakland to San Jose	15	15	18-May	1-Jun	0	15	6-Jun	Not Requested	None.
16	Oakland to Dassell Rd.	13	13	19-May	1-Jun	0	13	6-Jun	Not Requested	None.
17	Aromas-San Jose	25	13	10-Mar	24-Mar	3	10	24-Mar	Not Requested	12 names are duplicated. Three responses by phone. 1): Linda Yamarne - no concerns. 2). Ella Rodriques - no concerns has monitors available. #). The Ohlone Indian Tribe, Andrew Galvin - no concerns has monitors available.
18	King City-Watsonville	19	18	4-Feb	20-Feb	10	5	20-Feb	Held 21-Feb and 29-Feb	1 duplicate name; 3 disconnected phone numbers. Ten responses by phone. Ella Rodiques; Jokki Kehi; Linda Yamane; Thomas Soto; Amah Tribal Band, Irene Zwierlein; Indian Canyon Band of Castanoan, Ann Marie Soyer; The Ohlone Indian Tribe, Andrew Galvan; John Burch; Salinan Nation, Doug Alger; Penny Hurt; - all expressed concerns for cultural material and requested a consultation w/Qwest management. All also expressed desire to monitor. Doug Alger requested separate consultation to only include Salinan members.
19	Coastal Run	35	35	2-Feb	16-Feb	9	21	20-Feb	Held 21-Feb and 29-Feb	5 disconnected phone numbers. Eleven responses by phone. Ella Rodiques; Jokki Kehi; Thomas Soto; Amah Tribal Band, Irene Zwierlein; Indian Canyon Band of Castanoan, Ann Marie Soyer; The Ohlone Indian Tribe, Andrew Galvan; John Burch; Salinan Nation, Doug Alger; Mark Vigil; - all expressed concerns for cultural material and requested a consultation w/Qwest management. All also expressed desire to monitor. Doug Alger requested separate consultation to only include Salinan members.

*All dates in this appendix refer to the year 2000.

Native American Correspondence Tracking Table

1 of 2

APPENDIX B

PRIVILEGED AND CONFIDENTIAL

Segment #	Segment Name	No. of Contacts	No. of Letters Sent	Date Letter Sent*	Closing Date*	Responses from Letter	Contacts by Phone No Response to Letter	Date of Phone Contact*	Consultation	Comments
20	Southern Coastal	86	60	13-Mar	27-Mar	30	28	27-Mar	Held Apr. 4	2 disconnected #'s, 26 names duplicated. One written response from Susie Ruiz and Melissa Hernandez of the Ventureno Chumash.Ventureno Chumash of Oxnard/Ventura County, Susie Ruiz - has monitors as needed.
21	Stockton	2	2	28-Apr	12-May	1	1	5-May	Not Requested	One response by phone,Katherine Perez - has monitors if needed.
22	Turlock/Fresno	11	11	19-May	1-Jun	2	9	6-Jun	Not Requested	Two responses by phone. 1). Table Mountain Rancheria, Vernon Castro - no concerns. 2). Tuolumne Band of Me-Wuk, Reba Zuller - no concerns
23	Fresno to Bakersfield	15	15	19-May	1-Jun	2	12	6-Jun	Not Requested	1 non-working number. Two responses by phone. Ron Goode - no concern, can monitor if needed. Table Mt. Rancheria, Bob Powell - no concerns.
24	Bakersfield/Lebec	16	16	17-May	1-Jun	0	16	6-Jun	Not Requested	None.
25	Lebec/San Fernando	17	17	19-May	1-Jun	2	15	6-Jun	Not Requested	Two responses by phone. Charles Cook - no concerns. Kern Valley Indian Community, Ron Wermuthy - no concerns.
26	Firestone Pk/Long Beach	12	12	19-May	1-Jun	1	11	6-Jun	Not Requested	One response by phone. Sam Dunlap - no concerns, monitors available.
27	L.A./Anaheim	17	17	17-May	1-Jun	2	15	6-Jun	Not Requested	Two responses by phone Sam Dunlap - no concerns. Robert Dorame - will send letter if he has concerns. No letter received.
28	Slauson Ring	13	13	17-May	1-Jun	1	12	6-Jun	Not Requested	1 response by phone. Sam Dunlap -no concerns, has monitors if needed.
29	Burbank(134)/E.9th	12	12	19-May	1-Jun	1	11	6-Jun	Not Requested	One response by phone. Sam Dunlap - no concerns, monitors available
30	Anaheim/San Clemente	11	11	19-May	1-Jun	1	10	6-Jun	Not Requested	One response by phone. Sam Dunlap - no concerns
31	San Clemente/Oceanside	20	20	19-May	1-Jun	3	17	6-Jun	Not Requested	Three responses by phone: Campo Band of Mission Indians, La Posta of Mission Indians, and Kumeyaay Cultural Repatriation Committee. None expressed concerns but wished to be notified if cultural resources are discovered.
32	Oceanside/Escondido	20	20	19-May	1-Jun	1	18	6-Jun	Not Requested	1 non-working number. 1 response by letter Kumeyaay Cultural Repatriation Committee. Steve Banegas -no concerns wishes to be notified if cultural resources are discovered.
33	Escondido to San Diego	23	23	18-May	1-Jun	1	21	6-Jun	Not Requested	1 non-working number. One response by phone. La Posta of Mission Indians, Gwendolyn Parada - no concerns.
34	San Diego/Alpine	16	16	16-May	31-May	1	15	6-Jun	Not Requested	One response by phone. Kumeyaay Cultural Heritage, Frank Salagan - no concerns.
35	Alpine	17	17	5-Apr	19-Apr	3	13	18-Apr	Not Requested	1 name w/ no phone # given. Two responses by phone. Kumeyaay Cultural Historic Committee, Ron Christman - no concerns. La Posta of Mission Indians, Gwendolyn Parada - no concerns. One response by letter. Kumeyaay Cultural Repatriation Committee, Steve Banegas, wants to be notified if cultural material is located.
36	Yuma	1	1	5-Apr	18-Apr	0	1	18-Apr	Requested	Date pending legal easement

*All dates in this appendix refer to the year 2000.

Native American Correspondence Tracking Table

2 of 2

500 12th Street, Suite 200
Oakland, CA 94607-4014
PH: (510) 874-3204
FAX: (510) 874-3268

URS Greiner Woodward Clyde

FACSIMILE TRANSMITTAL

Transmitted By:

Name: Cindy J. Arrington Date: 5/8/2000
Number of Pages (including cover sheet): 2

Please Deliver To:

Name: Debbie Treadway
Company: California Native American Heritage Commission
Fax No.: (916) 657-5390 Office PH: (916) 653-4040
Subject: Data request for project in Alameda and Santa Clara Counties Project No.:

Remarks: "Oakland to San Jose BB"

Dear Ms. Treadway,

Qwest Communications Corporation proposes to perform maintenance of conduit for Fiber Optic Cable within Alameda and Santa Clara Counties, California. The project area occurs in a line that runs roughly Northwest to Southeast, alternately following the alignment of the Southern Pacific Railway Right-of-Way. The starting point is 19th Avenue in the City of Oakland, and the end point is the Bayshore Freeway (101) in the City of San Jose. Known as "Oakland to San Jose BB," this project falls within the following USGS 7.5 minute quadrangles:

* Oakland East
T 2 S, R 3 W, Unsectioned

* San Leandro
T 2 S, R 3 W, Unsectioned; T 2 S, R 2 W, Unsectioned; T 3 S, R 3 W, Unsectioned

* Hayward
T 3 S, R 2 W, Unsectioned

* Newark
T 3 S, R 2 W, Unsectioned; T 4 S, R 2 W, Unsectioned; T 4 S, R 1 W, Unsectioned

* Niles
T 4 S, R 1 W, Sections 21, 22, 27, 34, and 35; T 5 S, R 1 W, Sections 2, 3, 10, 11, 13, and 14

* Milpitas
T 5 S, R 1 W, Unsectioned; T 5 S, R 1 E, Unsectioned; T 6 S, R 1 W, Unsectioned; T 6 S, R 1 E, Unsectioned

We are transmitting from Fax. No. (510) 874-3268.
If you do not receive all pages or if the transmission is not legible,
please contact the sender at your earliest convenience.

* San Jose West
T 6 S, R 1 E, Unsectioned

I am requesting the following information:

- Groups or individuals the NAHC believes should be notified regarding this project.
- Identification by the NAHC of any sacred lands within the subject lands that are listed within the Sacred Lands File.
- If other fiber optic companies working on this same alignment have made any unanticipated discoveries, please forward any information, as we will need to incorporate this into our findings.

Thank you for your attention to this request.

Cindy J. Arrington
Archaeologist

March 30, 2000

Ms. Pauline Owl
Fort Yuma – Quechan Tribe
P. O. Box 282
Winterhaven, CA 92283

Subject: **Fiber Optic Cable Project in Imperial County, California**

Dear Ms. Owl:

As a member of the Native American community, we are sending this letter to inform you of a proposed Fiber Optic Cable project in Imperial County, known as the Yuma Run. Your name was provided to us by the Native American Heritage Commission as an appropriate contact for this area. The proposed project involves the maintenance of fiber-optic cable in existing railroad ballast along the railroad right of way. The project proponent is Qwest Communications Corporation. The locations for the maintenance have been subjected to an archaeological record search at the Southeast Information Center of the California Historical Resources Information System.

In addition, the California Native American Heritage Commission (NAHC) was contacted for a review of its Sacred Lands Files and to obtain a list of local Native Americans who may have specific knowledge of the area. The NAHC knows of no sacred lands in the area. If you have knowledge of such sites and wish to share that information with us, please call Cindy Arrington at (510) 874-3048.

We will be collecting information through April 19, 2000. If we receive no response from you by that date, we will initiate a follow-up contact with you by telephone. If you have any knowledge of cultural resources in the project area or know of other contacts that may have such specific knowledge, or if you have other concerns in the project area, please call Cindy Arrington, Archaeologist, at (510) 874-3048 or by facsimile at (510) 874-3268. In addition, if the need for a Native American monitor arises and you are interested in employment as a Native American monitor on this project, please send a resume and a statement of interest in employment to:

Cindy Arrington
URS Greiner Woodward Clyde
500 12th Street, Suite 200
Oakland, CA 94607-4104

Qwest will select a Native American observer or observers from those qualified individuals who are interested in monitoring and are available at the time the project takes place.

Thank you for your attention to this matter.

Sincerely,

URS GREINER WOODWARD CLYDE

Cindy J. Arrington
Archaeologist

Enclosure: Map

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65 pp.
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Los Angeles 1103
South Gate 892
Whittier 891
Los Alamitos 894
Anaheim 883
Long Beach 893
La Habra 882
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19-186111
30-176630

Title:

**Cultural Resources Inventory Report for
Williams Communications, Inc.
Proposed Fiber Optic Cable System Installation Project,
Los Angeles to Anaheim,
Los Angeles and Orange Counties, California.**

Prepared for:

Agency:

Williams Communications, Inc.
110 West 7th Street, Suite 500
Tulsa, OK 74119-1044
Contact: Jeff Schwartz
918/573-8992

Prepared by:

Author / Firm:

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Sacramento, CA 95818-1914
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916/737-3000

October 1999

This document should be cited as:

Jones & Stokes Associates, Inc. 1999. Cultural resources inventory report for Williams Communications, Inc. proposed fiber optic cable system installation project, Los Angeles to Anaheim, Los Angeles and Orange Counties, California. September. (JSA 98-379.) Sacramento, CA. Prepared for Williams Communications, Tulsa, OK.

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INTRODUCTION

Williams Communications, Inc. (Williams) is authorized by the Federal Communications Commission to provide interstate and international interexchange services and to construct transmission facilities. In conjunction with a nationwide expansion of its cable network, Williams proposes to install and operate a fiber optic cable system that would connect Los Angeles with Anaheim, California.

This fiber optic cable would serve as a portion of Williams' national fiber optic cable system. Because of the rapid growth and increasing use of the Internet and other voice and video media, existing fiber optic cable systems would not have the capacity to support future demands. The proposed facility would be constructed to expand Williams' fiber optic cable system and would allow Williams to provide voice, video, and data transmission services to new areas and maintain reliable services to existing and future clients.

Jones & Stokes Associates was retained by Williams to conduct a cultural resource inventory for the project and prepare a report detailing the methods and results of this inventory. Cultural resource specialists from Jones & Stokes Associates conferred with staff members from the California Public Utilities Commission (CPUC) to determine jurisdiction, formulate appropriate methods to avoid effects on significant cultural resources during project construction, and develop construction monitoring measures for known archaeological sites and for archaeological sites that may be discovered during construction.

This report documents the efforts undertaken by Jones & Stokes Associates to locate and avoid cultural resources on the portion of this project route from the City of Los Angeles to the City of Anaheim, California. This report contains descriptions of the archaeological and cultural settings of the study area, descriptions of the methods used for this inventory, detailed and summary descriptions of the cultural resources identified during the course of this investigation, and recommendations for methods of avoiding effects on any cultural resources in the study area. This report also contains a monitoring plan (Appendix A), records of contacts with Native Americans (Appendix B), archaeological site record forms (Appendix C), and maps indicating the project area and archaeological site locations (Appendix D).

REGULATORY FRAMEWORK

State Regulations

The proposed project is subject to the requirements of the California Environmental Quality Act (CEQA) both as an individual project and as part of a statewide fiber optic cable installation program. Williams has applied to the CPUC for a Certificate of Public Convenience and Necessity

authorizing Williams to install a fiber optic cable system in the state. The CPUC has therefore been identified as the state lead agency, with the principal responsibility for approving the project.

As the state lead agency, the CPUC must ensure that the project complies with CEQA requirements for the identification and treatment of historic properties and prehistoric cultural resources. This report complies with the requirements pertaining to cultural resources, as described in an expanded initial study/mitigated negative declaration being prepared by the CPUC for this and other projects proposed by Williams.

CEQA requires public or private projects financed or approved by public agencies to assess the effects of the project on cultural resources. Cultural resources are defined as buildings, sites, structures, or objects, each of which may have historical, architectural, archaeological, cultural, or scientific importance.

CEQA states that if a project results in significant effects on important cultural resources, then alternative plans or mitigation measures must be considered; however, only important cultural resources need to be addressed. Therefore, before mitigation measures can be developed, the importance of cultural resources must first be determined.

The State CEQA Guidelines define a significant historical resource as "a resources listed or eligible for listing on the California Register of Historical Resources (CRHR)" (Public Resources Code Section 5024.1). A historical resource may be eligible for inclusion in the CRHR if it:

- is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
- is associated with the lives of persons important in our past;
- embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
- has yielded, or may be likely to yield, information important in prehistory or history.

PROJECT DESCRIPTION

Williams proposes to install a fiber optic cable between Los Angeles and Anaheim. The project route travels along local road rights-of-way for 2.5 miles and along the Union Pacific Railroad (UPRR) right-of-way for approximately 21 miles.

Project Location

The project route would begin in Los Angeles and would end to the southeast in Anaheim. The location of this route is shown in Figure 1. The dotted lines in this figure indicate portions of the project route that were surveyed, but are no longer under consideration for construction.

The project route would begin within the urbanized Los Angeles metropolitan area at 624 South Grand Avenue and would continue, by way of an existing conduit or by means of trenching in or boring under 7th Street across the Los Angeles River, and enter the Metropolitan Transit Authority (MTA) rail right-of-way northwest of the Pomona and Santa Monica freeway interchange. Once in the MTA right-of-way, the project route would continue south to the intersection with Soto Street where it enters the Alameda Corridor Transportation Authority (ACTA) right-of-way and parallels Washington Boulevard. It then enters the Port of Los Angeles/Port of Long Beach (POLA/POLB) railroad right-of-way and turns south, running parallel to South Downey Road and through the communities of Vernon and Maywood. After crossing Gage Avenue, the project route parallels Salt Lake Avenue in the City of Huntington Park. Near the intersection of Salt Lake Avenue and Atlantic Avenue, the project route exits the POLA/POLB railroad right-of-way and enters the UPRR right-of-way. At that point, the project route would continue east, crossing over or under the Los Angeles River, Bell Gardens, and Downey, under the San Gabriel River and Interstate 605, and then travel southeast parallel to Firestone Boulevard through the cities of Norwalk, Cerritos, and Buena Park before entering Anaheim. In Anaheim, the project route would leave the UPRR right-of-way near Gilbert Street and end at 2461 West La Palma Avenue.

The study area consists of the railroad and street rights-of-way.

Project Components

The fiber optic cable system will consist of the following belowground and aboveground components. The belowground facilities are the fiber optic cable and conduit, utility access vaults, and manholes/handholes. The aboveground facilities are the cable marker posts.

- Williams plans to install three conduits along this proposed route. One conduit will accommodate the current proposed fiber optic cable and the remaining two conduits will be used for maintenance and future use by Williams or other carriers. Buried fiber optic cable consists of bundled glass optical fibers wrapped in thin plastic sheathing. Cable is inserted into a flexible, high-density polyethylene conduit. Each conduit has a typical outside diameter of 1.5 to 2 inches, can accommodate one fiber optic cable that is about 0.85 inch in diameter, and is composed of 96 to 288 hair-thin glass fibers.

- Utility access vaults and manholes/handholes are usually placed at intervals of approximately 3 to 5 miles to serve as splice points and to assist fiber optic cable installation and maintenance. The utility access vaults and handholes measure

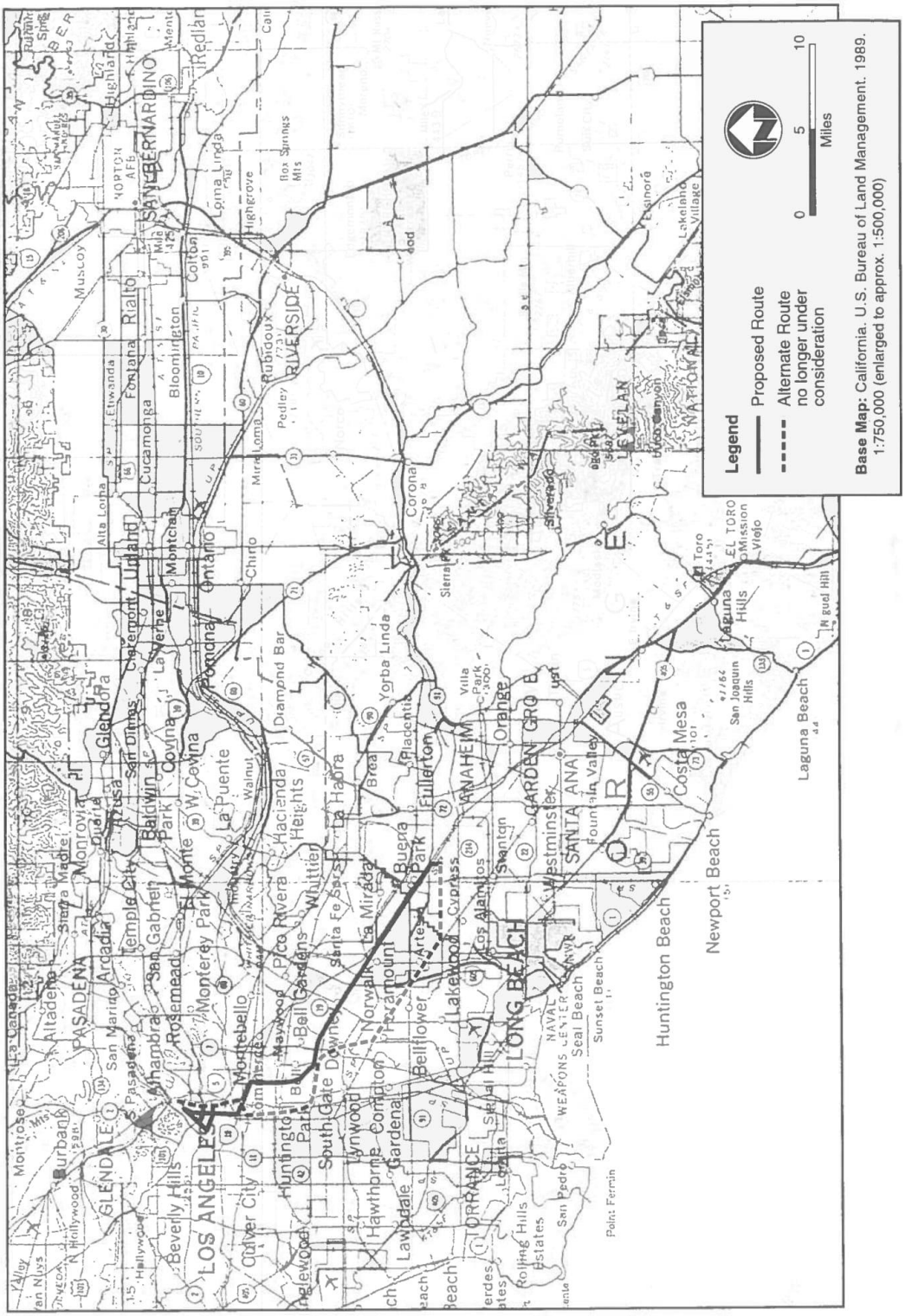


Figure 1
Los Angeles to Anaheim Project Route

approximately 30 by 48 by 24 inches and will typically be buried at a depth of 48 inches below the surface.

- In some areas, at streets or secured regenerator and OP-AMP station sites, manholes measuring 4 by 4 by 6 feet may be installed. Only the manhole lids will be visible at the surface.

- Aboveground cable marker posts will be located at approximately 700- to 1,000-foot intervals to alert people of the presence of the fiber optic cable. The posts are typically round PVC posts 3.5 inches in diameter with embossed lettering 4 feet aboveground.

Construction Methods

Construction methods employed on this project route would include plowing, trenching, directional boring, and bridge attachment.

Plowing or trenching would be used within existing streets and road and railroad rights-of-way. Plowed installation involves the use of a tracked vehicle with a cable reel on front and a plow blade on back. As the vehicle moves, it furrows the soil and installs the cable at the same time. In some instances the soil may be "prerippped" by a tractor in front of the plow. Ripping is a technique by which a slit is made in the surface of the soil to loosen it. The amount of surface disturbed by plowing is typically less than the amount disturbed by the trenching process.

Trenched installations typically involve the use of a rubber-tired backhoe or an excavator that digs a trench approximately 12 to 24 inches in width and 48 inches deep. However, permit requirements, sensitive environmental resources, locations of other utilities, and topographical and geological constraints can affect trench dimensions. Therefore, trenches may be as deep as 10 feet in some areas. Typically no more than 1,000 feet of trench would be exposed by a crew at any one time during construction, and trenches would be backfilled at the end of each day. Flowing drainages would not be directly trenched, but would be crossed using other methods (i.e., directional boring or bridge attachments). In some areas, culverted drainages would be crossed by installing the cable above or below the culvert or by trenching around the culvert.

Backfilling after installation of the cable through trenching and plowing methods will be accomplished with the use of rubber-tired backhoes and loaders, road graders, vibratory compactors, and concrete trucks. Backfill material or the furrow from plowing would be compacted to prevent erosion and soil settlement. Backfill material consists of native soil and may include an aggregate base or cement slurry. In most instances, the material excavated during cable installation would be replaced in the trench as backfill and compacted or would be disposed of at locations approved to receive clean fill material.

Directional boring would be used to avoid disturbance to sensitive streams and drainages, sensitive biological resources, and cultural resources that cannot be avoided by alternate placement of the cable. Directional boring involves the use of mechanical means to route subterranean sections of the cable without disturbing the surface layers. This method of installation requires only a "pot hole" at either end of a segment of line for the placement of boring machinery.

The final step in the cable installation process would be surface restoration. In unpaved areas, restoration would include restoring areas to original contours and, if necessary, implementing erosion control measures, including seeding and mulching. In urban areas where pavement is disturbed, restoration would include repairing the pavement, reconstructing curbs and gutters, and restriping the pavement, as necessary. Typical pavement repair would include laying new asphalt over the entire length of the trench after backfilling and compacting are completed.

During fiber optic cable installation activities, staging area for construction equipment, materials, fuels, lubricants, and solvents would be established to allow more efficient use and distribution of the materials and equipment. No grading to establish staging area would occur. Staging areas would be located in existing contractor yards; commercial areas for storing and maintaining equipment; previously cleared, graded, or paved areas; or level areas where grading and vegetation clearing are not required. No staging areas would be established in undisturbed areas.

Access to the project route will be by existing access roads to the utility, pipeline, road, or railroad rights-of-way. No new access roads will be created for cable routing; however, some of the existing roads in isolated areas may require minimal repairs to make them usable for construction. After completion of cable installation, access roads will be repaired, if necessary, to prevent future erosion.

SETTING

Prehistory

The proposed project route passes through Los Angeles and Orange Counties. The two regions share many common prehistoric contexts. However, subdividing the analysis is helpful in explaining the vast prehistory of the area. The following discussion is based primarily on a the summary presented by Moratto (1984) except where otherwise noted.

Los Angeles County

Much of the early prehistory of the Los Angeles area is apparent in one archaeological complex in Topanga Canyon, located approximately 6 kilometers from the Pacific Ocean. The Topanga Canyon sites were excavated by R.F. Heizer and E.M. Lemert in 1946. It is highly possible that occupation of Los Angeles County began around 10,000 years before present (B.P.), but

evidence is scarce. The earliest evidence of the occupation of the Topanga Canyon dates to 5,000 years B.P. and is referred to as the Topanga I Phase. This evidence is characterized in the archaeological record by scrapers, choppers, core hammer stones, scraper planes, and projectile points. These tools are primarily made from local fine-grained basalt, quartzite, porphyry, chalcedony, and chert. Milling stones and manos indicate the processing of hard seeds, and a limited number of mortar fragments and pestles attest to the use of acorns.

The Middle Period comprises from 5,000-2,500 years B.P. This period is defined by small projectile points, incised and cogged stones, fewer core tools, large rock lined ovens of a circular plan, flexed burials, mortars, pestles, pressure flaked points, and plentiful milling stones.

The culture represented may be the prehistoric Gabrielino, Fernandeño and Juaneño, or another Uto-Aztecan language group. There is indication of trade between inland and coastal areas; this trade is illustrated in the archaeological record by a shared milling stone technology and diverse flora and fauna remains. Subsistence related artifacts indicate that seeds and other vegetal foods, fish, mollusks, waterfowl, and both land and sea mammals were taken from diverse littoral and terrestrial environments.

The Late Period spans from 2,500 years B.P. to the protohistoric period. This era is characterized by the presence of Uto-Aztecan speakers. These people subsequently divided into cultures that are represented in this area by the Gabrielino, Fernandeño, and Juaneño peoples. These names are derived from the missions with which these people were associated. The archaeological record is very heterogeneous during this period and includes *Haliotis* and *Olivella* beads, clam disk and cylindrical beads. There is also a shift from ornamentation to economic affinities in these bead types. Lithic material for this period consists of small projectile points, scrapers, core tools, mortars, pestles, numerous hand and milling stones, and bedrock milling stations. The initiation and use of ceramics, made from local clays and varying in color from yellowish brown to very dark brown, dates to this period. Basketry and asphaltum use are also hallmarks of this period.

Orange County

The early prehistoric archaeological period in Orange County is similar to that of the Topanga I phase for Los Angeles County. The Orange County archaeological record, however, does differ at approximately 6,000 years B.P. This period has been termed the La Jolla Complex in Orange County. The La Jolla Complex exists throughout southern California from Orange County to central Baja California. The age of the La Jolla Complex has been well established with radiocarbon dates taken from the Harris site by Warren in 1967. These radiocarbon dates registered at 6,300+/-240 years B.P. and 4,720+/-160 years B.P. for the upper stratum. Some scholars divide the La Jolla Complex into two to three stratified phases. However, a synopsis of the complex is adequate.

The prevalent cultural marker of this complex consisted of flexed burials, increased use of milling stones, evidence of trade with inhabitants of the Channel Islands, crude percussion flaked scrapers, discoidal ground stones, and a variety of projectile points. It is notable that perhaps the oldest ceramic industries in California occur during this time period, as established by C.E. Drover

from the Irvine site near upper Newport Bay. Colors of the ceramics vary from dark brown to yellowish gray. The La Jolla Complex also has incised and cogged stones. Two examples occur at CA-ORA-83 near Bolsa Chica (Herring 1968). The precise function of these cogged stones is unknown. Many hypotheses have been considered, including use of the stones as club heads, gaming pieces, oil lamps, or ceremonial devices. Further inquiry into these stones is required to accurately determine their function.

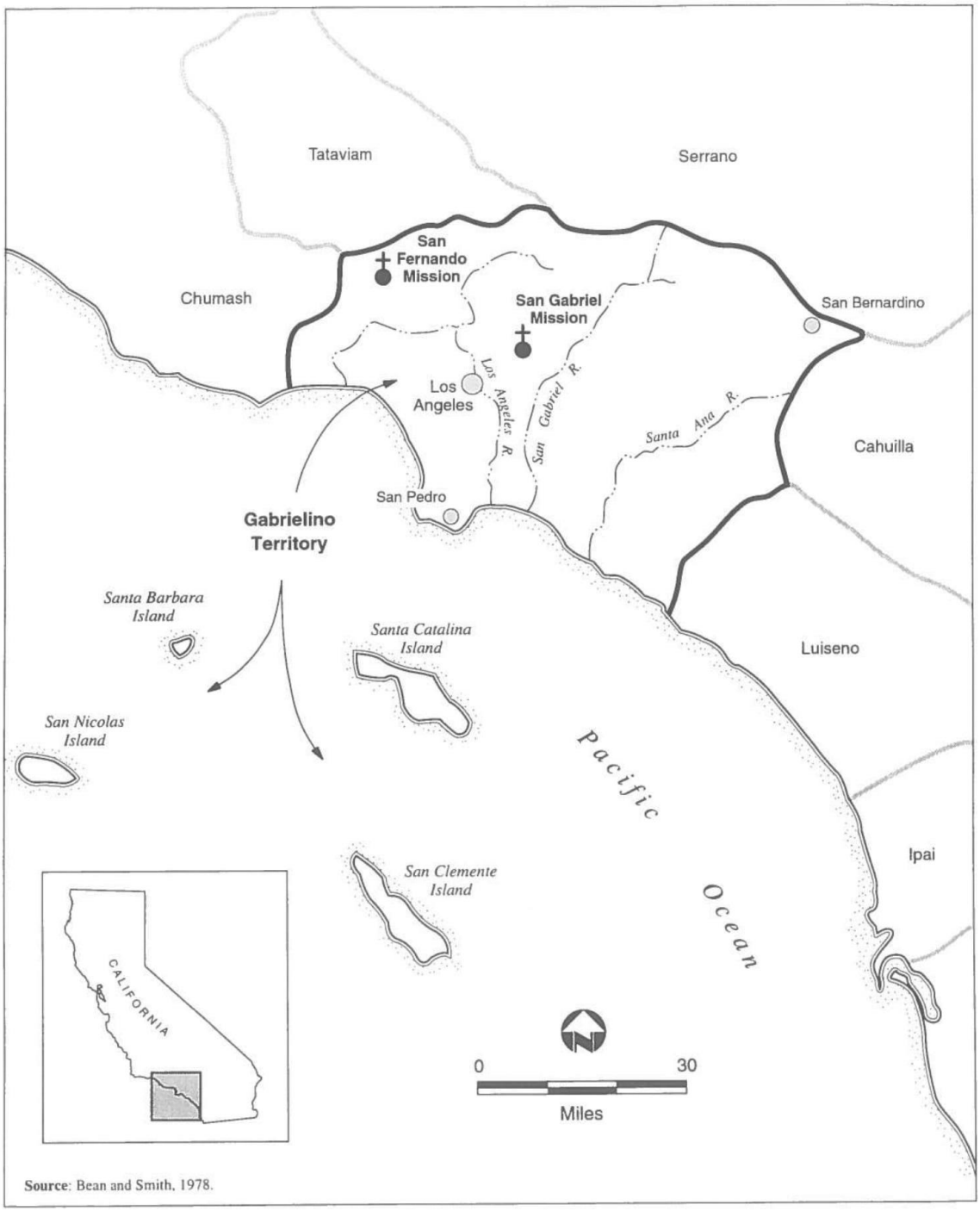
California's natural environment enabled diversity to develop among many cultures in Orange County. An array of cultural variability and transformation was brought about by trait diffusion, trade, and migration. "Along the coast, subsistence practices in the later phases of the La Jolla Complex evolved in response to changes in the littoral environment after circa 4,000-3,000 B.P." (Warren 1964). A dramatic resource shift in the form of acorn processing occurred during this era, as evidenced by mortar and pestle use. This new subsistence focus brought about many changes. Resource procurement became reliable in the inland area, allowing storage of surplus. The added surplus allowed for specialization in basketry, ceramics, tool manufacture, and religious specialization. The availability of resources allowed for trade with other cultural groups and an influx of new technology and craft specialization. This variance transcends to examples of prehistoric culture that are not found elsewhere in the state.

Ethnography

When Spanish explorers and missionaries first visited the southern coastal areas of California, the indigenous inhabitants of the Los Angeles area were given the Spanish names Gabrielino, Fernandeño, and Juaneño, after the respective missions in the vicinity. However, these European names do not reflect any real differences between these cultures prehistorically, so for the purposes of this section they will be referred to collectively as Gabrielino. Gabrielino territory included the watersheds of the San Gabriel, Santa Ana, and Los Angeles Rivers; portions of the Santa Monica and Santa Ana mountains; the Los Angeles basin; the coast from Aliso Creek to Topanga Creek; and San Clement, San Nicolas, and Santa Catalina Islands (Bean and Smith 1978) (Figure 2). The Gabrielino language is classified as belonging to the Takic family, Uto-Aztecan stock, and is subdivided into four or more separate dialects (Shipley 1978). The project study area is in the region where the Gabrielino dialect of the Uto-Aztecan language was spoken.

Because the Gabrielino culture disintegrated soon after contact with Europeans, little is known of the group's way of life. Much of the available ethnographic information about the Gabrielino comes from the letters of Hugo Reid, a Scottish settler who married a Gabrielino woman and subsequently observed their ways of life throughout the early 1850s. Other ethnographic details were collected in the early 1900s by Harrington (1942), Kroeber (1925), and others. The available information has been summarized by Bean and Smith (1978).

Like their Chumash neighbors to the north, the Gabrielino had an elaborately developed material culture. Technological and artistic items included shells set in asphaltum; carvings;



Jones & Stokes Associates, Inc.

Figure 2
Gabrielino Territory

paintings; an extensive steatite industry; basketry; and a wide range of stone, shell, and bone objects that were both utilitarian and decorative.

Gabrielino subsistence was based on a varied hunting and gathering strategy that included large and small land mammals, sea mammals, river and ocean fish, and a variety of plant resources. Deep sea fishing was accomplished from boats made of wooden planks tied together and sealed with asphaltum. Sea mammals were taken with harpoons, spears, and clubs. River fishing was undertaken with the use of line and hook, nets, basket traps, spears, and poisons. Land mammals were hunted with bow and arrow, trapped, clubbed, or taken with the use of deadfalls.

The Gabrielino were apparently first contacted by Europeans in 1542, when Cabrillo entered the area. Following other Spanish visits to the region, colonization began in 1769 and resulted in the establishment of Missions San Fernando, San Gabriel Arcangel, and San Juan Capistrano. Because of EuroAmerican-introduced diseases and the harsh effects of mission life, the Gabrielino population and culture was greatly diminished. Following the secularization of the missions, most surviving Gabrielino became wage laborers on the ranchos of Mexican California. In the early 1860s, a smallpox epidemic nearly wiped out the remaining population.

Historic Context

Exploration

In 1542, Juan Rodriguez Cabrillo became the first European to sail along the coast of California. Sailing from San Diego to Mendocino, he visited bays near Ventura and Santa Barbara. In 1602, Sebastian Vizcaino explored the coast of California, providing a detailed map of the coastline. Gaspar de Portola and his expedition traveled north from the first mission at San Diego to establish a presidio and settlement at Monterey. The party followed a route northward paralleling the coast that was later designated El Camino Real. The California mission chain was later established along the same route. The party camped in Los Angeles, Ventura, and Santa Barbara on its journey to Monterey. (Gudde 1969; Beck and Haase 1974; Hoover et al. 1990.)

The inadequacy of a sea route for settlers and livestock prompted official encouragement for the charting of a land route to the new colony. In 1774, Juan Bautista de Anza, accompanied by Father Francisco Garces and Father Juan Diaz, demonstrated that a route traveled by Garces 3 years earlier was feasible for travel by colonists. In 1775, de Anza, Garces, and Father Pedro Font left Sonora with 240 colonists and 1,000 head of livestock. They stayed at Mission San Gabriel before continuing north, arriving in Monterey in 1776. (Beck and Haase 1974; Hoover et al. 1990.)

In the first half of the 19th century, Mexican California was increasingly well traveled by fur trappers and EuroAmerican explorers. Jedediah Smith followed the Santa Fe Trail, the popular route into California, and arrived at Mission San Gabriel in 1827, where he was asked to explain his intrusion to Governor Jose Maria Echeandia. After promising to leave California immediately,

Smith instead proceeded up the San Joaquin Valley and eventually to Monterey. James O. Pattie and Ewing Young were other early explorers who visited the Los Angeles area in the early 19th century.

Presidios, Pueblos, and Missions

Spain employed a three-part strategy in the occupation and colonization of California: missions, presidios, and pueblos. Each of these institutions had a significant role in the settlement of California.

Presidios. Presidios were military outposts. Four existed in California, located at San Francisco, Monterey, Santa Barbara, and San Diego. The presidio at San Diego was established on July 16, 1769, along with Mission San Diego. Later, Mexican Governor Jose Maria Echeandia established his headquarters at the presidio at San Diego. (Hoover et al. 1990.)

Pueblos. Pueblos were civilian settlements designed to provide a politically reliable population not under ecclesiastical control. Settlers signed contracts of enlistment and served essentially as representatives of the Spanish crown in frontier areas in exchange for land, livestock, tools, and military protection. Only one pueblo was established in Southern California, El Pueblo de Nuestra Senora la Reina de los Angeles. This settlement was established on September 4, 1781 by 11 settlers and their families who traveled from Mission San Gabriel Arcangel. They totaled 44 people and were accompanied by a corporal's guard of four soldiers who remained at the pueblo for the first 2 years. Governor Felipe de Neve laid out the settlement and established the northeast-southwest orientation of streets prescribed by the king of Spain. This orientation remains today in parts of the oldest sections of the modern city of Los Angeles. The original plaza, replaced after a flood in 1818, was located just northwest of the plaza that exists today. The settlers farmed the land, and in 1785, Governor Pedro de Fages was able to discontinue grain shipments to California because the pueblo was able to provide grain for the entire province. (Beck and Haase 1974; Hoover et al. 1990; Dillon 1994.)

Missions. Designed to convert the indigenous peoples of California to Christianity and assimilate them under Spanish rule, missions were not intended to be permanent, and their establishment was not accompanied by any conveyance of land from the Spanish crown. Under both Spanish and Mexican governments, missions were permitted to occupy and use land for the benefit of their neophytes (referred to historically as "mission Indians"), but not to own land. In theory, when the native population of a region had been assimilated, mission settlements were to become pueblos, and the land was to belong to the neophytes, who were expected to continue to manage it in Spanish colonial fashion. Twenty-one missions were eventually established from San Diego to Sonoma, each approximately 1 day's journey from the next. The Mission San Gabriel Arcangel was the first Spanish outpost in the Los Angeles area, founded on September 8, 1771. This mission is located some 10 to 12 miles north of the project route. (Robinson 1948; Beck and Haase 1974.)

The Mexican Period

On August 17, 1833, the Congress of Mexico decreed the secularization of California missions, freeing both the mission lands and the native neophytes from church jurisdiction. Thousands of native neophytes were separated from their missions and forced to seek wage labor on ranchos or in the pueblo itself. Between 1835 and 1846, land used by the missions was for the most part divided into private ranches. Despite legal provisions awarding half of all mission property to the neophytes of the mission, few rancho parcels were ever granted to the missionized natives.

Californians who possessed many livestock were able to petition the governor for land on which to graze their stock. Although popularly referred to as "Spanish" ranchos, land grants were made only during the Mexican period. The land grant movement did not become active until after mission secularization, which triggered a land rush and a shifting of the population outward from the pueblos (Robinson 1948). From that time until the end of Mexican rule, liberal incentives were offered to persons wishing to raise livestock. More than 500 ranchos existed in California in 1846. All but approximately 30 of these were the result of land grants from the Mexican government of California (Robinson 1948).

In June 1846, an American surveying party led by John C. Fremont initiated the Bear Flag Revolt in the town of Sonoma in northern California; and on July 4, 1846, a proclamation was issued declaring California independent. On February 2, 1848, the Treaty of Guadalupe Hildago was signed between the United States and Mexico, which ceded California, Nevada, Utah, most of New Mexico and Arizona, and parts of Colorado and Wyoming to the United States for $15,000,000, officially ending the war with Mexico. (Hoover et al. 1990.)

Although security in property was guaranteed to Mexican landholders by the Treaty of Guadalupe Hildago, many Mexicans eventually lost their land after the United States acquired California. Unsurveyed land boundaries created a loophole through which squatters could occupy plots on the fringes of land grants and eventually come to own the land through squatters' rights. Outside pueblos, landowners were forced to verify their claims according to provisions of the Land Law of 1851. From 1852 to 1856, a Board of Land Commissioners was established to determine the validity of grant claims. Rejected land reverted to the public domain and became fair game for squatters. Ranch titles represented little as collateral, and some owners whose claims were eventually substantiated lost their land through bankruptcy or the inability to meet the exorbitant interest on their legal debts (12% weekly was not uncommon). (Robinson 1948.)

Land Grants and Ranchos

The project route passes through areas that were once part of three Spanish/Mexican land grants: the Manuel Nieto land grant, Rancho San Pedro, and Rancho San Antonio.

The Manuel Nieto Land Grant. One of the earliest land grants in the area was made by the Spanish government to Manuel Nieto in 1784. This grant originally included all the land lying

between the Santa Ana and San Gabriel Mountains from the Coyote Hills to the sea (Hoover et al. 1990). This land was later divided among four heirs, creating the Los Alamitos, Los Cerritos, Santa Gertrudes, Los Coyotes, and Los Bolsas ranchos. The project route passes through lands that were originally part of the Los Cerritos, Santa Gertrudes, and Los Coyotes ranchos.

Rancho Los Cerritos was patented by Don Juan Temple in 1867, encompassing 27,054 acres (Lewis Publishing Company 1889). An adobe mansion had been built by Temple on Rancho Los Cerritos in Long Beach in 1844 (Hoover et al. 1990) on land he had acquired by buying the shares of Manuel Nieto's grandchildren. Temple also opened the first general store in Los Angeles (Hoover et al. 1990).

Rancho Los Coyotes was granted to Andres Pico on March 9, 1875, and covered 48,806 acres. It was located at the site of present-day Buena Park.

Rancho Santa Gertrudes was originally granted to Antonio María Nieto, and the Mexican government confirmed the title transfer to his widow in 1834. Doña Josefa Cota de Nieto later sold the land to Lemuel Carpenter, an American from Kentucky. In 1855, Carpenter conveyed a portion of the grant to Jose M. Ramirez. Carpenter held on to the remainder of the rancho while under Mexican rule. However, Carpenter failed to maintain solvency when the land was acquired by the United States government, and eventually he took his own life. On November 4, 1859, the rancho was sold by the sheriff to John G. Downey and Dr. James P. McFarland. Downey, an Irishman, worked in Washington, DC, Mississippi, and Ohio as a druggist before coming to California in 1849. He and his partner, McFarland, opened a drugstore in Los Angeles. Naturalized in 1851, Downey was also active in politics. After serving on the Los Angeles City Council, he became governor of California in 1860. (Hoover et al. 1990.)

Rancho San Pedro. Rancho San Pedro, one of the earliest land grants, was granted to Juan Jose Domínguez prior to 1799, and again to his heir, Sargento Cristobal Domínguez, in 1822. It covers 43,119 acres and has continued to be held in part in the hands of Domínguez descendants. Descendant Manuel Domínguez took possession of the land in 1826 and remained there until his death in 1882. The adobe in which he resided still stands. (Hoover et al. 1990; Lewis Publishing Company 1889.)

Rancho San Antonio. Rancho San Antonio was granted to Antonio Maria Lugo in 1810. Covering 29,513 acres, Rancho San Antonio adjoined the Pueblo of Los Angeles grant on the southeast. Modern communities within the boundaries of the rancho include Bell, Bell Gardens, Huntington Park, Lynwood, Southgate, Vernon, and Walnut Park. (Hoover et al. 1990.)

Livestock and Agriculture

Livestock. Most of the missions had several ranches for the purpose of raising livestock, some situated at considerable distances from the mission proper. Mission San Gabriel owned 17 ranches for raising cattle and horses and 15 ranches for raising sheep, goats, and pigs. The trade in

hides and tallow began in the early 1800s and grew rapidly after Mexico gained independence from Spain in 1821. Ships from all nations brought a variety of articles to be sold and bartered for hides, pelts, and tallow. (Robinson 1948; Beck and Haase 1974; Burcham 1982.)

By the mid-1840s, livestock ranching was firmly established as the foremost activity throughout much of California. With the discovery of gold in northern California, the livestock industry became secondary in production to mining. However, the tremendous demand for meat brought on by the flood of people into California caused phenomenal growth in the stock-raising industry. It also provided a way to turn cattle into cash, and enabled ranchers to firmly enter the market economy. The demand began to decline in the late 1850s. This decline was followed by severe droughts in the 1860s that permanently curbed the raising of livestock on a speculative basis in California. (Burcham 1982.)

Agriculture. Modern California agriculture has its roots in the early missions, where European plant species and methods of cultivation were introduced. After secularization, cultivation of vineyards, orchards, and fields was neglected. Eventually, however, the distance from the other agricultural regions and high prices for produce led to intensive EuroAmerican agricultural efforts in the state.

The Los Angeles area was a center of viticulture in the mid-and late-1800s. Mathew Keller, a native of Cork County, Ireland, came to Los Angeles in 1850 and opened a small store in Los Angeles. This endeavor led to the packing and shipping of grapes. Eventually, Keller purchased 10 to 20 acres between Aliso and Alameda Streets and planted a vineyard. He also introduced cotton to the area. This area has since been developed and the vineyards are gone. However, grapes continue to be a crop grown in the Los Angeles area. (Hoover et al. 1990; Kronzek 1993.)

The Los Angeles basin also was once one of the most favored locations for cultivating orange trees. The first commercial grove in California was planted in 1857 by William Wolfskill on his ranch near the pueblo of Los Angeles. For a number of years it was the largest citrus grove in the United States and yielded very heavy crops. When the railroad opened lines in the area in 1885, and the fruit could easily be transported, the citriculture industry exploded. Wolfskill's orchard was sold to the Southern Pacific Railroad in 1885, and the remainder of the famous orchard was sold and subdivided soon thereafter. Many other orchards have given way to urban expansion, and citrus groves have been transplanted to the San Joaquin Valley. (Hoover et al. 1990.)

Transportation

Trails and Wagon Roads. Early transportation corridors in the Los Angeles area were trails established by Spanish missionaries, soldiers, and explorers. The major routes were the Old Spanish Trail and the Butterfield Overland Mail Route.

The Old Spanish Trail was a popular route beginning in the 1820s. The route began in Santa Fe, New Mexico, passed through Durango, Colorado, and crossed the Colorado River at Moab, Utah. The route passed through Las Vegas in southern Nevada and crossed the Mojave Desert, passing

through Barstow before crossing the Cajon Pass and ending in Los Angeles (Berry 1993). This route was traversed by Jedediah Smith in 1826, William Wolfskill in 1830, Ewing Young in 1832, and the Workman-Rowland party in 1841 (Beck and Haase 1974; Hoover et al. 1990). The route was also well traveled during the Gold Rush by argonauts seeking to avoid harsh winter conditions along more northern routes. Later the route became known as the Santa Fe Trail, and eventually as the Mormon Trail in the late 1840s and early 1850s (Hoover et al. 1990).

The Butterfield Stage was one of the largest and best organized lines for mail delivery service in California. Service began on September 15, 1858, employing some 800 people to handle 100 Concord coaches and 1,500 mules and horses. Relay stations were located every 8 to 25 miles and furnished supplies, guards against Indian attacks, and fresh horses and mules (Beck and Haase 1974). The route of the Butterfield Overland Mail Route in California dipped south of the border after passing through Fort Yuma. It re-entered the state at the New River and skirted the inside edge of the mountains into Los Angeles, passing through Palm Springs, Warner's Ranch, Temecula, Temescal, and El Monte (Beck and Haase 1974). The Butterfield Stage operated until March 1861, when the Civil War forced the federal government to suspend its subsidy to the company (Henderson 1968:10).

Railroads. The introduction of rail lines to the western landscape ushered in a new era in California and an end to the region's geographic isolation. Railroads initially connected the Los Angeles area to the sea, making it a port town and raising property values. Further integration into the national fold ensued when the principal organizers of the Central Pacific Railroad (Central Pacific), Mark Hopkins, Collis P. Huntington, Leland Stanford, and Charles Crocker (known collectively as the Big Four), began work on a southern route across the United States. This capital-intensive project involved the consolidation of a number of local and regional lines under the control of the Big Four (Hofsommer 1986). A number of these historic rail lines run through the Los Angeles area, in or near the project study area, including lines run by the Southern Pacific Railroad Company (Southern Pacific), the Pacific Electric Railway Company, the Los Angeles and San Pedro Railroad Company, the Santa Fe Railroad Company, and the Los Angeles and Salt Lake Railroad Company (Figure 3).

Southern Pacific. Construction of the southern transcontinental line (later called the Sunset Route) began in December 1869, when Southern Pacific began constructing a line from Lathrop (6 miles south of Stockton) heading south through the San Joaquin Valley to Yuma, Arizona. In May 1877, the Southern Pacific line reached the Arizona border at Yuma (Brown 1985:70). The remainder of the route to New Orleans was linked through the acquisition of regional lines in Texas and Louisiana. The Sunset Route was eventually completed on January 12, 1883, with passenger service from San Francisco to New Orleans commencing on February 5, 1883 (Southern Pacific 1955:18-25).

The route of the Southern Pacific line through southern California had not been determined by 1870. Two routes were under consideration: one through the Soledad Pass with a costly tunnel into Los Angeles, and the other through flatter terrain into Needles. Los Angeles County petitioned Southern Pacific, pointing out their willingness to subsidize the project in order to bring the railroad through the pueblo of Los Angeles. After numerous town meetings, committee meetings, and

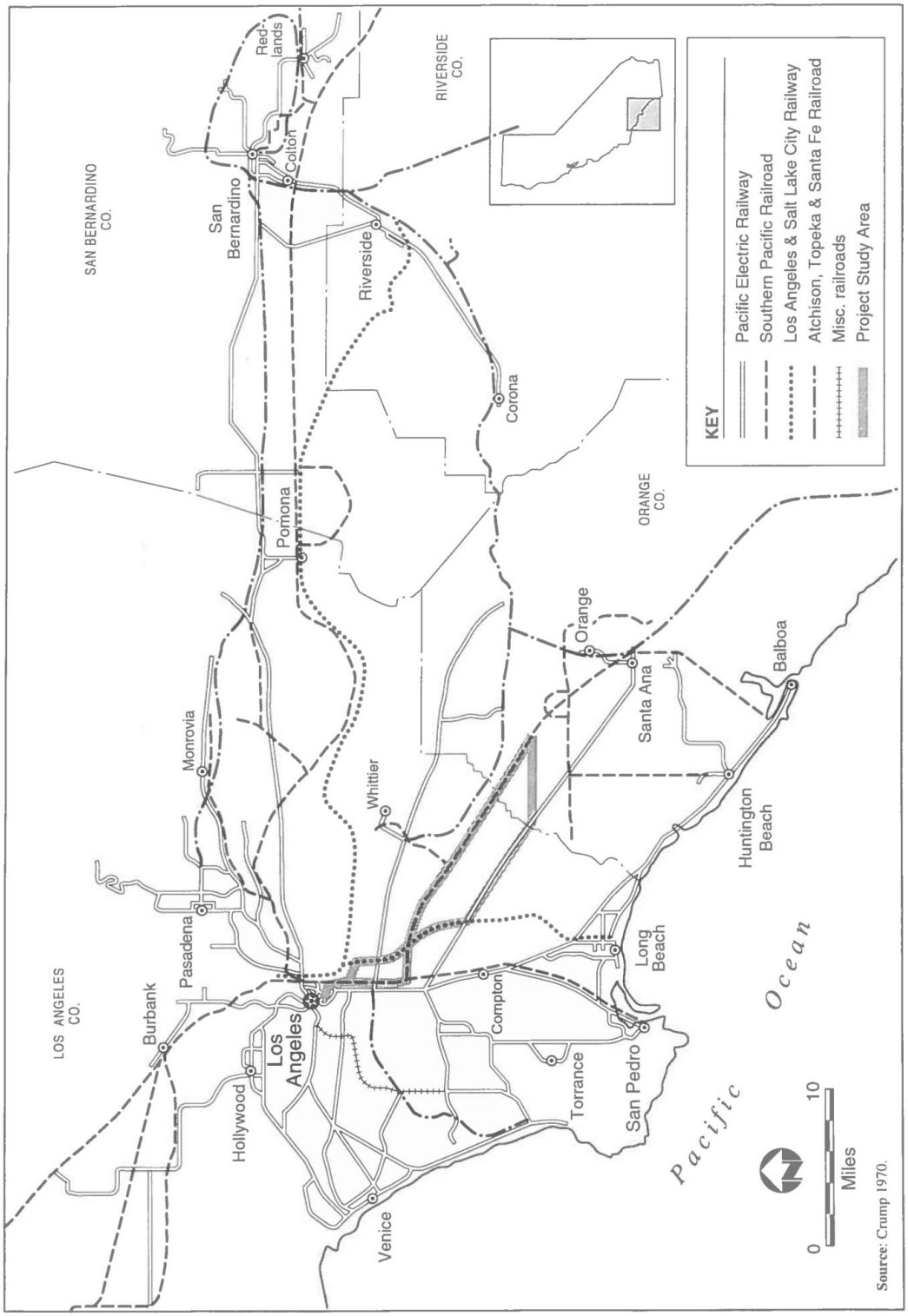


Figure 3
Historic Railroad Routes in the Los Angeles Area

Jones & Stokes Associates, Inc.

conferences between Los Angeles County representatives and representatives of Southern Pacific, the railroad company agreed to build 50 miles of its mainline through Los Angeles County and to build a branch into Anaheim. In turn, the county agreed to sell its stock in the Los Angeles and San Pedro Railroad to Southern Pacific. In 1877, a golden spike was driven by Southern Pacific president Charles Crocker at a ceremony at Lang's Station in Soledad Pass, finalizing the connection of the northbound line to the southbound line. (Eargle 1979; Bean and Rawls 1983:178)

The Big Four sought to maintain the illusion that Central Pacific, Southern Pacific, and a number of other railroad companies were under separate control. However, "the railroad" was actually a giant monopoly which the public referred to as "the Octopus". Southern Pacific emerged as the name for the entire system in 1884 when the Southern Pacific Company of Kentucky was incorporated and took a lease on all property of Central Pacific. Southern Pacific rapidly expanded, becoming the largest private landowner in California. (Bean and Rawls 1983:177-180)

Los Angeles and San Pedro Railroad. In 1863, the California legislature approved an act authorizing the construction of a railroad between Los Angeles and San Pedro. The Los Angeles and San Pedro Railroad Company (LA & SP) was incorporated in February 1868 to build the first railroad in southern California; construction of the railroad began in 1869. The railroad started north from Wilmington, reaching Compton by July 1869. By October 1869, the railroad was completed to 9th and Alameda Street in Los Angeles (Stamps 1965:84). Two trains a day operated back and forth between Los Angeles and Wilmington, with the passenger fare set at $1.50 for a one- way ticket (Robinson 1979:53).

In the 1870s, Southern Pacific proposed to build a line running south through the Central Valley to the Tehachapi Pass. From that point, surveyors considered three possible routes. The people of Los Angeles lobbied for the third proposed route, which would turn south through Soledad Canyon to Los Angeles. However, Southern Pacific threatened to bypass the city unless the County would give Southern Pacific a 5% subsidy and the stock of LA & SP. LA & SP consolidated with Southern Pacific in 1874 and the track became the Harbor Division of Southern Pacific's Los Angeles Division. (Dunscomb 1967:386; Robinson 1978:84)

Atchison, Topeka, and Santa Fe Railroad. On February 11, 1857, the Kansas Territorial Legislature granted approval of Cyrus K. Holliday's charter for the Atchison and Topeka Railroad Company. Although groundbreaking did not occur until 1868, construction progressed rapidly. As work began toward Santa Fe, New Mexico, the company was renamed the Atchison, Topeka and Santa Fe Railroad Company (Santa Fe). After reaching New Mexico, the railroad headed toward the Pacific Coast. The purchase of the Atlantic and Pacific Railroad brought the line to the California border. At this time, Santa Fe signed an agreement with Southern Pacific to lease trackage, thereby gaining entry into California. However, by the time Santa Fe reached California, they had already struggled with competing interests of powerful Southern Pacific, and renting the Southern Pacific tracks proved financially unrewarding for Santa Fe. However, Santa Fe soon gained control of tracks between Needles and Waterman (Barstow), where the railroad was able to join the California Southern Railroad Company, giving Santa Fe access into San Diego. Los Angeles was Santa Fe's ultimate goal because it was the new center of trade along the Pacific coastline. (Lavender 1980; Serpico 1988.)

To gain access into Los Angeles, Santa Fe purchased the Los Angeles and San Gabriel Valley Railroad Company (LA & SGV), which built track between Los Angeles and San Bernardino through Pasadena. As with other small railroads in the area, LA & SGV had troubles because their materials had to be shipped by Southern Pacific. Not only did Southern Pacific charge the fledgling company exorbitant rates, but carloads of materials were lost all over the country as well. Eventually, both Southern Pacific and Santa Fe expressed interest in purchasing the line. Not surprisingly, the owners of the small line sold to Santa Fe in 1886. As a result of the purchase, Santa Fe gained access into Los Angeles. It's the first cars arrived in May 1887. (Marshall 1945; Duke and Kistler 1963; Lavender 1980; Serpico 1988.)

Pacific Electric Railway Company. Henry E. Huntington, nephew of Collis P. Huntington, formed the Pacific Electric Railway Company (Pacific Electric) in 1902. Although Henry Huntington was regarded as the logical successor to the presidency of Southern Pacific, financiers blocked his attempt to take over the company following his uncle's death. Huntington subsequently sold his Southern Pacific holdings to E. H. Harriman for $50 million. Huntington proceeded to build Pacific Electric in direct competition with Southern Pacific in southern California (Crump 1970:11). Pacific Electric connected 42 incorporated cities within a 35-mile radius of Los Angeles (Bean & Rawls 1983:210). The cars on this line were known as the Big Red Cars. At its peak in 1926, the company operated 1,164 miles of track between the San Fernando Valley to Redlands and from the seashore into the San Gabriel and San Bernardino Mountains (Crump 1970:7).

Huntington eventually tired of the railroad business and sold his share of Pacific Electric to Southern Pacific in 1910. In 1911, Southern Pacific merged the Los Angeles and Pacific, Pacific Electric, Los Angeles Inter-Urban, Los Angeles and Redondo, San Bernardino Valley Traction, San Bernardino Inter-Urban, Redlands Central, and Riverside and Arlington railroad companies under the Pacific Electric name. Southern Pacific expanded the system, providing service from Pomona to Los Angeles and from Los Angeles to San Bernardino. (Crump 1970:16.)

Events in the 1930s dramatically affected Pacific Electric's passenger service. The rise of automobiles and the construction of new highways conflicted with the railroad's right-of-way. Passengers turned to buses and automobiles for a more expedient means of transportation. The Great Depression brought the company into deeper debt. Further, Pacific Electric tracks were removed in areas to allow for the construction of freeways. Pacific Electric sold its passenger service on October 1, 1953, to Metropolitan Coach Lines, a firm that operated buses, which continued to operate trolleys to Long Beach, Bellflower, and San Pedro. The Metropolitan Transit Authority succeeded Metropolitan Coach Lines in 1958, discontinuing rail service to Bellflower and San Pedro. Service between Los Angeles and Long Beach officially ended on April 8, 1961, signaling the end of the Big Red Cars. (Crump 1970:26-28.)

Los Angeles and Salt Lake Railroad. The San Pedro, Los Angeles and Salt Lake Railroad Company (SP, LA, & SL) was formed in 1901 for the purpose of constructing a route from Los Angeles to Salt Lake. Recognizing the threat of competition, Southern Pacific president Edward H. Harriman fought against the new company with competitive construction and litigation. SP, LA,

& SL president William A. Clark recognized that he would not prevail against Southern Pacific's power. As such, the company soon came under Harriman's management while retaining its original name. SP, LA, & SL also adopted the Southern Pacific's rates so as not to compete with Southern Pacific. (Hofsommer 1986:46.)

The SP, LA, & SL line formally opened on May 1, 1905, extending north from Los Angeles through Las Vegas to Salt Lake City. The company operated over 1,260 miles of track. In 1916, the company reorganized and shortened its name to the Los Angeles and Salt Lake Railroad Company (LA & SL). Clark sold his half interest in LA & SL to UPRR in 1921, and the line became the southwestern arm of UPRR. (Myrick 1992; Fickewirth 1992.)

Cities and Towns

The project route passes entirely through urban and suburban areas, through a series of cities and towns.

Los Angeles. In 1781, a civilian pueblo was established and named El Pueblo de Nuestra Senora la Reina de Los Angeles (The Town of Our Lady the Queen of the Angels). Spanish Second Lieutenant Jose Dario Arguello assigned house lots and fields to the 44 people who had arrived to build the new town. Governor Felipe de Neve laid out the settlement and established the northeast-southwest orientation for the streets prescribed by the king of Spain. The original plaza, replaced after a flood in 1818, was located just north of the plaza that exists today. (Hoover et al. 1990; Dillon 1994.)

In 1848, California came under the control of the United States. The shift in leadership dramatically affected the inhabitants and economy of California. However, it was the coming of the railroads and the resulting influx of new residents in the late 1800s that irreversibly changed the character of Los Angeles. The population grew and EuroAmericans became the majority, while residential communities sprouted up in the larger basin area to house the new inhabitants. The industry and economy in southern California burgeoned, and industrial areas developed in Los Angeles to take advantage of the new countrywide freighting capabilities. (Beck and Haase 1974:163-167; Hoover et al. 1990:37).

Vernon. Vernon was part of Rancho San Antonio, which was granted to Antonio Maria Lugo in 1810. In 1855, the Rancho was partitioned and sold (Atkinson 1988). The community was originally named Vernondale after Civil War Captain George R. Vernon, who settled in the area in 1871. The name was shortened to Vernon when the town was incorporated in 1905 (Gudde 1969:354).

Huntington Park. Huntington Park was originally a portion of Rancho San Antonio. Developers A. L. Burbank and E. V. Baker were among the first Americans to settle the area in 1899. The town was laid out in 1903 by Baker. Baker named the town after his friend Henry E. Huntington, the nephew of Collis P. Huntington of railroad fame. Weber-Garlow-Hubbard-Walters

and Tate formed the Huntington Park Improvement Association to assist in the development of the area. The town was incorporated in 1906. (Atkinson 1988:68; Gudde 1969:148.)

Bell. James George Bell erected a home known as the Bell Ranch in 1875. Bell raised cattle and farmed while encouraging others to do the same. In 1902, the first tract of land was sold in the area. Bell served as the town's first postmaster, promoting growth and arranging for the railroad to be built through the area. The post office was originally called Obed until it was changed to Bell in 1898. The community of Bell attained cityhood in 1927. (Atkinson 1988: 16-17; Gudde 1969:25.)

La Palma. Originally called Dairyland, the city was incorporated in October 1955 to assure the continuance of dairy and poultry farms in the area. Dairyland included a 2-square-mile area encompassing 36 dairies, 500 people, and 15,000 cows. By 1963, there were 651 persons living in Dairyland. On February 2, 1965, Dairyland's name was formally changed to La Palma. (Friis 1965:188-89,173; Talbert 1963:183.)

Cudahy. In 1893, Michael Cudahy purchased the 2,777-acre Nadeau Ranch for $105 an acre. The ranch was originally a portion of Rancho San Antonio, established in 1810, and partitioned and sold in 1855. Cudahy, who immigrated to America from Ireland in 1849, worked as a partner with Phillip Armour in the Armour Packing Company in Chicago before establishing the Cudahy Packing Company. Cudahy finally settled in Los Angeles and founded the community which acquired his name in 1908. (Atkinson 1988:41-42.)

South Gate. South Gate is located on the site of Rancho San Antonio. Michael Cudahy purchased portions of the rancho in 1893. W. I. Hollingsworth, president of the Southern Extension Company, subdivided the property of Cudahy following his death. In 1917, the Southern Extension Company auctioned off several lots, and within 1 year, 32 houses had been built. The town was named South Gate Gardens in 1918. The area was a center of sheep grazing, farming, and dairying. The Chinese also leased several acres of the Cudahy Ranch for the production of cauliflower. The name was shortened to South Gate when the city was incorporated in 1923. (Gudde 1969:317; Stamps 1965:229-230.)

Downey. John Gateley Downey and his partner, Dr. J. P. McFarland, purchased 17,600 acres of land in the Los Nietos Valley at a sheriff's auction in 1859. The land included the Santa Gertrudes portion of the Nietos Rancho. Downey divided the land into small parcels and sold off the parcels at low prices to settlers. The town was officially platted in 1873. By 1876, Downey City was located on the Anaheim branch of the Southern Pacific Railroad and served as a major agricultural shipping point. Downey produced a variety of fruits, nuts, and vegetables while serving as a center of several dairy, chicken, and rabbit farms. During the 20th century, Downey developed as an industrial and manufacturing town. By 1954, North American Aviation, Inc. (later North American Rockwell), which developed rocket engines, employed 10,000 people in Downey. Downey's citizens voted for incorporation on December 4, 1956. (Stamps 1965:111-140.)

Bellflower. In 1904, Jotham Bixby granted the Pacific Electric Railroad right-of-way through his Rancho Los Cerritos. In 1906, Charles McWilliams, E. H. Skinner, E. F. Skinner, W. E. James, and F. E. Woodruff purchased 1,440 acres from the Bixby family and began subdividing

the land and selling the lots. Originally called Somerset in 1909 when the post office was established, the name was rejected because there was already a settlement of the same name in Colorado. An orchard of Bellfluer apples located on the northern section of the ranch inspired the name Bellflower. The community had grown rapidly to 1,200 residents by 1912, prospering as a center of agriculture and industry. In 1957, Bellflower was incorporated as a city with a population of more than 45,000. (Stamps 1965:47-57.)

Cerritos. Cerritos (Spanish for "little hills") was named for Rancho Los Cerritos, an 1834 land grant on which it was situated. A post office was established at Cerritos on December 31, 1888. The City of Cerritos was incorporated on April 24, 1956. By 1990 some 53,240 people were recorded living within the city limits. (Hurnon 1997:71; Salley 1991:39.)

Norwalk. Gilbert and Atwood Sproul immigrated to the San Gabriel Valley from Windsor, Maine in 1868, purchased 457 acres of land, and settled in the area. Other settlers arrived in the area in the mid-1860s. The Southern Pacific Railroad constructed a station at Norwalk in 1875. A post office was established in 1879, and the settlement was named after Norwalk, Connecticut. In 1882, D. D. Johnston and Tom Lumbard opened a cheese factory in the town. The community also grew as a center of sheep raising, ranching, and dairy industries. Norwalk experienced rapid population growth during the 1940s as World War II spurred a production boom in southern California factories. Norwalk became an incorporated city in 1957 with a population of 83,010. (Gudde 1969: 224; Stamps 1965:177-194.)

Artesia. There are conflicting accounts of the founding and naming of Artesia. According to Stamps (1965:35-43), the town of Artesia was established in 1875 by an organization of farmers who called themselves the Los Angeles Immigration and Land Cooperative Association. The group had auctioned off over 3,500 acres of land to over 50 farmers by 1876. According to Gudde (1969:15), however, the town was established and named in the 1870s by the Artesia Company, which drilled artesian wells in the area. Artesia has traditionally served as the business center of an agricultural and dairy district. The development of the Pacific Electric Railway through Artesia in 1907 significantly encouraged the growth of the community. On May 29, 1959, the City of Artesia was incorporated, including an area of 1.64 square miles and a population of 9,500.

Anaheim. Laid out by the Los Angeles Vineyard Society in 1857, Anaheim was originally established as a German agricultural colony (Gudde 1969:10). The community was divided into 50 twenty-acre lots for small farms and vineyards. One of the colony leaders, George Hansed, constructed the first frame house in Anaheim, called the Pioneer House of the Mother Colony. A port, warehouse, and dock called Anaheim Landing (which served supplies to the entire Santa Ana Valley) were also constructed. Today, Anaheim is the home of Disneyland, which opened in 1955 and quickly became one of the world's most popular theme parks (Hoover 1990:254-55).

Buena Park. Buena Park is located on Manuel Nieto's 1784 land grant. Buena Park is situated on what became Rancho Los Coyotes after Nieto's land was divided in 1834 for his heirs. Originally called Buena, the town was founded in 1887. The Santa Fe Railroad constructed a line through the area that same year. By 1900, there were 995 people living in the town. As the town grew, it reached the railroad station at Northham, which Santa Fe renamed Buena Park in 1929. On

January 27, 1953, the city was incorporated. Knotts Berry Farm remains the biggest tourist attraction in the area. (Gudde 1969:40; Talbert 1963:161.)

20th Century Development

The early 20th century saw the spread of industrial and commercial development within downtown Los Angeles. Residential development spread to outlying areas and tracts. Railroad consolidation led to the planning and eventual construction of Union Station in downtown Los Angeles.

The Automobile Club of Southern California was founded in 1900 by 46 motor enthusiasts. With the laying of new roads, the car culture came naturally to the greater Los Angeles area. By 1910, the frequency of car accidents in the city earned Los Angeles the title of "City of the Quick and the Dead." This car culture was reinforced by poor public transportation. Though commuter trains ran from the somewhat distant settlements of tracts into the city, no circle line connecting the tracts was ever developed. Further reinforcement came with the construction of the Pasadena freeway in the 1950s and the construction of other freeways in subsequent years. (Greenwood et al. 1992)

METHODS

Records Search

A records search was conducted at the South Central Coastal Information Center of the California Historical Resources Information System at UCLA. The records search encompassed the project route and a 0.25-mile radius around the project route. The state's database of previously conducted cultural resource surveys and previously recorded cultural resource sites was consulted. Historic inventories (including the National Register of Historic Places [NRHP], Historic Resources Index, and Los Angeles Historic-Cultural Monuments) and historic maps were also examined.

Historic research was conducted primarily at the information center, Jones & Stokes Associates' reference library, the U.S. Bureau of Land Management, and the California State Library.

Native American Contacts

Jones & Stokes Associates contacted the Native American Heritage Commission (NAHC), requesting that it conduct a search of its sacred lands files and provide a list of Native American contacts for the project route. On receipt of the list of 28 representatives, Jones & Stokes Associates sent letters to the representatives informing them of the intended project and asking for their input

regarding any concerns or information they might have about the study area. A sample letter and the list of Native American representatives contacted is provided in Appendix B.

Field Survey

An archaeological survey team from Jones & Stokes Associates examined the project route on June 22 and June 23, 1999. The project route is parallel with the UPRR or city streets, and runs through urban and suburban areas. In many areas the railroad right-of-way consists of a narrow corridor between industrial or residential buildings. Because the project area is heavily disturbed, the project route was examined using cursory survey techniques. Where continuous access roads did not exist, the railroad was accessed every few miles for examination. Areas were examined that appeared to be sensitive for cultural resources, as determined by landscape or the presence of previously recorded sites. Previously recorded sites were located and examined, and site records were updated as necessary. Site records and updates are provided in Appendix C.

RESULTS

Records Search

The records search indicates that 12 previous studies have been conducted within the study area, with eight of those studies conducted in the last decade (Allen 1996; City of Los Angeles 1995; Greenwood 1993; Myra L. Frank & Associates, Inc. 1995; Peak & Associates 1992; Self 1998; Wlodarski 1992a, 1992b). These studies cover less than 20% of the project route. The records search indicates that while a number of cultural resource sites are located within a 0.25-mile radius of the project route, only one is within the project study area. This resource is a spur or siding of the UPRR. The property was recorded, evaluated, and recommended as not eligible for listing in the NRHP. The siding may have been removed for construction of the metropolitan railway.

Native American Contacts

No sacred lands are located within the study area according to the NAHC's sacred lands file. A list of 27 Native American representatives was provided by the NAHC. Contact letters were sent by Jones & Stokes Associates on August 10, 1999, to all the representatives listed, informing them of the proposed project and project location and requesting information regarding concerns or issues pertinent to the project area.

On September 2, 1999 Anthony Morales, Tribal Chairman of the Gabrielino/Tongva Tribal Council and Samuel Dunlap, Director of Professional Native American Cultural Resource Monitors,

responded to the public notice circulated by the CPUC (Appendix B). The two men have been in contact with one another and recommend that a Native American Cultural Resource monitor be present during ground disturbing activities in areas that may have buried cultural resource deposits. In a telephone conversation with a Jones & Stokes Associates archaeologist, Mr. Dunlap agreed to provide a map to Jones & Stokes Associates indicating sensitive areas. These areas will be monitored (Appendix D). As of October 19, 1999, no other responses have been received from the Native American representatives contacted.

Field Survey

The field survey resulted in the recording of one cultural resource site, the railroad (C-Los Angeles-A-1). The previously recorded cultural resource site, the siding and depot, was located and the site record was updated (C-Whittier-A-1) (See Appendix C for site records).

Previously Recorded Cultural Resources

The previously recorded site consisted of a railroad spur and the associated depot (C-Whittier-A-1). The resource was located. The spur has been removed, but the depot building still stands. The windows are boarded up and the structure is no longer in use. No original site record was located for this resource, but photographs and site maps are included in the associated report (Self 1998). Jones & Stokes Associates located the site and photographed and described the depot building. Department of Parks and Recreation forms were filled out for the property and the site was flagged for avoidance.

Newly Recorded Cultural Resources

The project route is the right-of-way of the UPRR. UPRR acquired much of the rail lines that the project area encompasses during the 1990s. However, all the lines are historic rail lines. Historic maps indicate that the project route follows portions of the historic Pacific Electric; Los Angeles and Salt Lake City; Southern Pacific; and Atchison, Topeka and Santa Fe Railroads. Department of Parks and Recreation Forms were completed for the railroad (C-Los Angeles-A-1).

Isolated Artifacts

No isolated artifacts were located.

CONCLUSIONS AND RECOMMENDATIONS

The two cultural resources located within the study area can easily be avoided during construction. It is likely that the railroad is a significant resource, but the properties that will likely make it eligible for NRHP listing will not be affected by the project. Recommendations made to Williams for construction include keeping the fiber optic cable out of the railroad grade and boring under the railroad when crossing is necessary. The depot building (C-Whittier-A-1) would be avoided during construction by installing the cable on the opposite side of the railroad tracks. Sensitive areas identified by Native American representatives will be monitored during construction.

In all cases, the possibility exists that subsurface cultural resources within the project area may be located during construction. If any archaeological artifacts, non-native rock, or unusual amounts of shell or bone are uncovered during implementation of project activities, all work in the area must stop immediately, and a qualified archaeologist must be retained to evaluate the find. If the discovery consists of human remains, the San Joaquin County coroner must be contacted (Section 7050.5 of the California Health and Safety Code). The coroner is responsible for contacting the Native American Heritage Commission if the remains appear to be those of a Native American (Sections 5097.98 and 5097.99 of the Public Resources Code, and Section 5097.94 of the Public Resources Code as amended).

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Appendix A. Cultural Resources Monitoring Plan

INTRODUCTION

As part of the effort to ensure that significant historical and archaeological resources located on the project route are not affected, qualified archaeologists will monitor selected locations during construction activities. Archaeologists will systematically inspect ground-disturbing activities at specified locations. This document constitutes a plan for monitoring cultural resources during installation of the proposed fiber optic cable system.

Although reasonable efforts have been made to identify and protect significant historical and archaeological resources on the project route, buried, unidentified sites may be present. This monitoring plan describes the purpose of and need for monitoring, the role and authority of the monitors, the conditions warranting cessation and resumption of construction work, the procedures for agency notification and consultation, the procedures for documenting identified cultural resources, and the procedures for documenting the methods and results of all monitoring performed for this project.

REGULATORY FRAMEWORK AND PURPOSE

This monitoring plan has been prepared in accordance with California Code of Regulations (CCR) Section 21081.6(a)[1], which pertains to the adoption of a monitoring program. The purpose of this plan is to provide for the treatment of any archaeological resources discovered during project construction and to ensure that pertinent regulations implementing the California Environmental Quality Act (CEQA) are complied with at the time of any discovery. The regulations governing the treatment of archaeological resources discovered during implementation of a project do not necessarily require the agency official to stop work on the project; however, depending on the nature of the property and the project's apparent impacts on it, the agency official should make reasonable efforts to avoid or minimize damage to the property until the requirements of CEQA are met. This project also requires the issuance of a permit by the U.S. Army Corps of Engineers (USACE) under Section 404 of the federal Clean Water Act; therefore, the project is considered a federal undertaking. As a result, the USACE must comply with Section 106 of the National Historic Preservation Act (NHPA). This plan also provides for compliance with Section 106 of the NHPA for any historic properties inadvertently discovered during construction that fall under the USACE's jurisdiction.

EFFORT TO IDENTIFY SIGNIFICANT HISTORICAL AND ARCHAEOLOGICAL PROPERTIES DURING IMPLEMENTATION OF THE PROJECT

To identify previously unidentified significant historical and archaeological properties that may be eligible for inclusion in the National Register of Historic Places (NRHP) and California

Register of Historical Resources (CRHR) and to identify any unanticipated or inadvertent impacts on known historical or archaeological properties, qualified archaeological monitors will be present during project construction activities at selected locations. The areas selected for systematic onsite archaeological monitoring are described below. Monitoring will focus on ensuring that ground disturbance does not occur within the bounds of significant historical and archaeological resources. Other areas considered to be potentially sensitive for the presence of buried cultural material but where no archaeological remains or cultural resource sites were identified on the surface also will be subject to monitoring or intermittent inspections during construction where ground disturbance will occur. These areas are identified below. Other locations on project routes not specifically identified as areas to be monitored may be subject to random inspection by qualified archaeological monitors and agency archaeologists.

The effort to identify significant historical and archaeological resources during the construction phase of the project will include the following:

- Continuous or intermittent monitoring will be conducted for selected areas that may be sensitive for the presence of buried archaeological remains but where the cultural resource inventory did not result in the identification of a site. These locations consist of the vicinities of the Ethnographic villages of Hautnga and Yanga. Both these villages were located in what is now modern downtown Los Angeles. Sites in the area have yeilded burials in the past. Because there is a high potential for buried resources in both areas, the presence of an archaeological monitor is recommended during construction. The nature and duration of monitoring to be performed at these locations will be determined during construction by members of Jones & Stokes Associates' cultural resources staff in consultation with project engineers and other construction personnel.

- On-call monitoring will be conducted for any location at the direction of a California Public Utilities Commission (CPUC) archaeologist.

Role and Authority of Monitors

Qualified archaeological monitors will be present onsite at the locations specified above and shall inspect all ground-disturbing activities, excavation spoil, and visible trench profiles for the presence of cultural material. The responsibilities of the archaeological monitors will include inspecting, documenting, and describing any cultural material identified during monitoring; communicating with construction personnel; and notifying CPUC or USACE officials, as relevant, if previously unidentified historical or archaeological resources that may be eligible for inclusion in the CRHR are identified or if known historical or archaeological resources may be affected in an unanticipated manner. Cultural resource monitors shall have the authority to stop activities that have the potential to disturb significant historical or archaeological resources until appropriate measures are implemented.

Conditions Warranting Cessation of Work and Notification of Agency Officials

Ground-disturbing activities associated with the project will cease if the archaeological monitor determines that continuation of the activity would affect a significant or potentially significant historical or archaeological property or if human remains are identified. Work in the area shall cease and the monitor will contact the appropriate agency official at the USACE or CPUC. If the monitor identifies cultural material but is unable to determine whether the resumption of the construction activity will continue to affect a historical or archaeological property that may be eligible for inclusion in the CRHR or NRHP, the monitor will contact the appropriate agency official. The agency official will determine the appropriate measures to be completed before resumption of ground-disturbing activities in the affected area and will ensure compliance with regulations pertaining to evaluation of significance, assessment of effects, and consultation with the State Historic Preservation Officer (SHPO) and the Advisory Council on Historic Preservation, as appropriate (36 CFR, Part 800.4 through 800.9).

Notification Procedures

If a previously unidentified historical or archaeological property that may be eligible for inclusion in the NRHP or CRHR is discovered, or if it is determined that a known historical or archaeological property may be affected in an unanticipated manner, the archaeological monitor will ensure that all ground-disturbing activities cease in that area and that the appropriate agency official is notified immediately. If an historical or archaeological property is discovered during construction, the appropriate agency official will be notified immediately. The agency official, or the official's designee, will respond to the notification within 24 hours. Consultation with the SHPO (if necessary) and the appropriate Native American group will be the responsibility of the CPUC or the USACE.

If human remains are discovered during project construction, it will be necessary to comply with state and federal laws relating to the disposition of Native American burials, which falls within the jurisdiction of the Native American Heritage Commission (Pub. Res. Code, Sec. 5097). If any human remains are discovered or recognized in any location other than a dedicated cemetery, there will be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until:

- the coroner of the county has been informed and has determined that no investigation of the cause of death is required, and
- if the remains are of Native American origin,
  - the descendants from the deceased Native Americans have made a recommendation to the landowner or the person responsible for the excavation work regarding the

treatment or disposal of, with appropriate dignity, the human remains and any associated grave goods as provided in Pub. Res. Code, Sec. 5097.98, or

- the Native American Heritage Commission was unable to identify a descendant or the descendant failed to make a recommendation within 24 hours after being notified by the commission.

Inadvertent Disturbance of Intact Cultural Resources

If intact cultural deposits are inadvertently disturbed during project construction, the archaeological monitor will ensure that all work causing this disturbance ceases and that the appropriate agency official with jurisdiction is notified immediately. The archaeological monitor also will assess the extent of the disturbance to the intact cultural deposit both quantitatively and qualitatively, to the best of that person's ability.

If damage that has not been approved occurs at a cultural resource site, the CPUC or USACE, in consultation with the SHPO and Advisory Council on Historic Preservation, may require compensatory mitigation at the site that was damaged or at another site in the project study area that may be likely to yield information important in prehistory or history. The type and extent of mitigation would be commensurate with the damage done during project construction. Such damage includes construction at a known site without the presence of a required archaeological monitor, construction in violation of this monitoring plan, or construction in violation of the requirements of CEQA.

Collected archaeological materials will be curated at a facility selected by the USACE or CPUC. The costs of curation of any collected archaeological materials will be the responsibility of the project proponent.

Documentation Procedures

Any previously undisturbed and unidentified cultural material identified during archaeological monitoring will be documented. Documentation will include a description of the type, material, quantity, condition, and location of all cultural material. The documentation of the location of identified cultural material will include the locations plotted on a U.S. Geological Survey 7.5-minute topographic map; notes on the depth and spatial extent of the find, if discernable; and photographs. Identified cultural material will be documented on California Department of Parks and Recreation archaeological site record forms, if appropriate.

Following completion of project construction, a report will be prepared describing the methods and results of the cultural resource monitoring for the project route. This report will include descriptions of any cultural material identified during project construction, actions taken,

notifications made, disposition of identified cultural material, and any archaeological site record forms, if appropriate.

Appendix B. Contacts with Native American Representatives

Native American Representatives Contacted

Los Angeles County

Charles Cook
32835 Santiago Road
Acton, CA 93510

Beverly Salazar Folkes
1931 Shadybrook Drive
Thousand Oaks, CA 91362

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

Samuel H. Dunlap
P.O. Box 1391
Temecula, CA 92593

Melissa M. Para-Hernandez
119 North Balsam Street
Oxnard, CA 93030

Rudy Ortega
San Fernando Mission Indians
11640 Rincon Avenue
Sylmar, CA 91342

Julie Lynn Tumamait
365 North Pole Avenue
Ojai, CA 93023

Patrick Tumamait
992 El Camino Corto
Ojai, CA 93023

Jim Velasquez
5657 Arlington Avenue
Riverside, CA 92703

Dwayne Vigil
909 North Walnut Drive
Santa Maria, CA 93454

Mark Steven Vigil
315 South Elm Street
Arroyo Grande, CA 93420

Anwa Wilanii
P.O. Box 3241
Idyllwild, CA 92549

Qun-tan Shup
Owl Clan
48825 Sapaque Road
Bradley, CA 93426

Art Alvitre
1302 Camden Lane
Ventura, CA 93001

Cindi Alvitre
Ti'At Society
P.O. Box 1138
Avalon, Ca 90204

Ron Wermuth, Chairperson
Kern Valley Indian Community
P.O. Box 168
Kernville, CA

Paul (Valenzuela) Varela
3290 Lang Ranch Parkway
Thousand Oaks, CA 91362

Louise Jeffredo-Warden
160 Los Banos
Moss Beach, CA 94038

Ernest P. Salas
Gabrielino/Tongva Tribal Council
514 East Main Street
San Gabriel, CA 91776

John Jeffredo
Island Gabrielino Group
P.O. Box 669
San Marcos, CA 92079

Robert F. Dorame
P.O. Box 490
Bellflower, CA 90707

Delia Dominguez
981 North Virginia
Covina, CA 91722

Diane Garcia Napoleone
1450 Camellia Circle
Carpinteria, CA 93013

Gabrielino/Tongva Tribal Council
P.O. Box 693
San Gabriel, CA 91778

Jim Velasquez
5657 Arlington Avenue
Riverside, CA 92703

Orange County

Lillian Roblese
Juaneno Band of Mission Indians
2830 East 56th Way
Long Beach, CA 90805

David Belardes
Juaneno Band of Mission Indians,
Acjachemen Nation
31745 Via Belardes
San Juan Capistrano, CA 92675

Sonia Johnston, Chairperson
Juaneno Band of Mission Indians
P.O. Box 25628
Santa Ana, CA 92799

-04-99 15:56 FROM:JONES & STOKES ASSOC. ID: PAGE 3/3

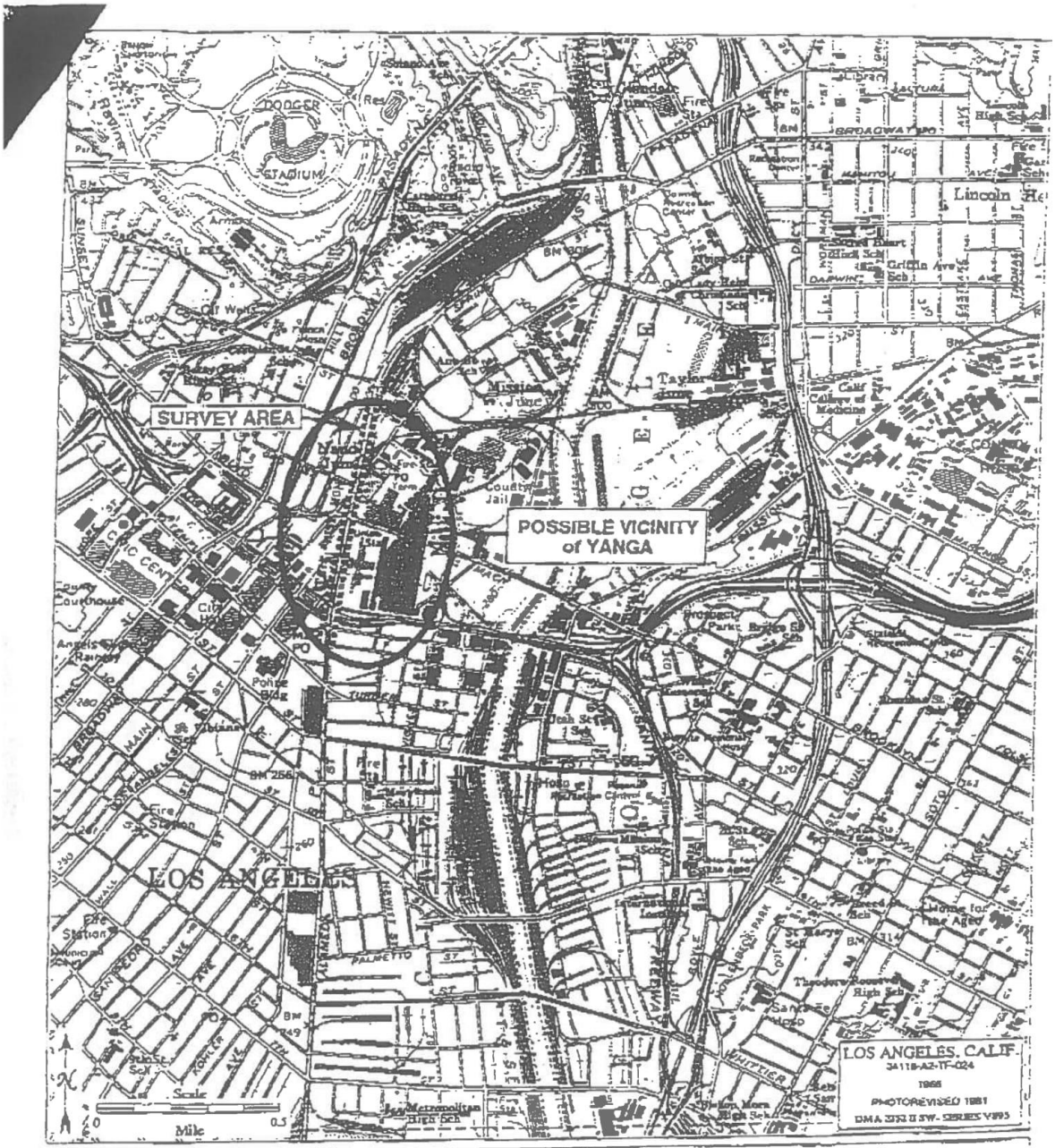


Figure 6

POSSIBLE VICINITY OF ETHNOHISTORIC VILLAGE YANGA

T- 2892

I-04-99 15:54 FROM:JONES & STOKES ASSOC. ID: PAGE 1/3

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to: Name Shihira Ashkar
Company J&S
Telephone
Fax 916-737-3030

from: Name Sam Dunlap
Company PNACRM
Telephone 909-507-1958 Voice
Fax 909-676-8598

Comments

Hi Shihira,

Here's the info on the two village sites we discussed a few days ago. LAN-1595-H yielded 19 burials (5 cremation). Give me a call if you have any questions.

Also, the Williams Comm. route from L.A. to Riverside would be something I could comment on, on behalf of the Gabrieleno/Tongva Tribal Council. Let me know, or just fax something to me.

Thanks,

Sam

Sometimes, it's not just what you say, but how you say it.

-04-99 15:55 FROM:JONES & STOKES ASSOC. ID: PAGE 2/3

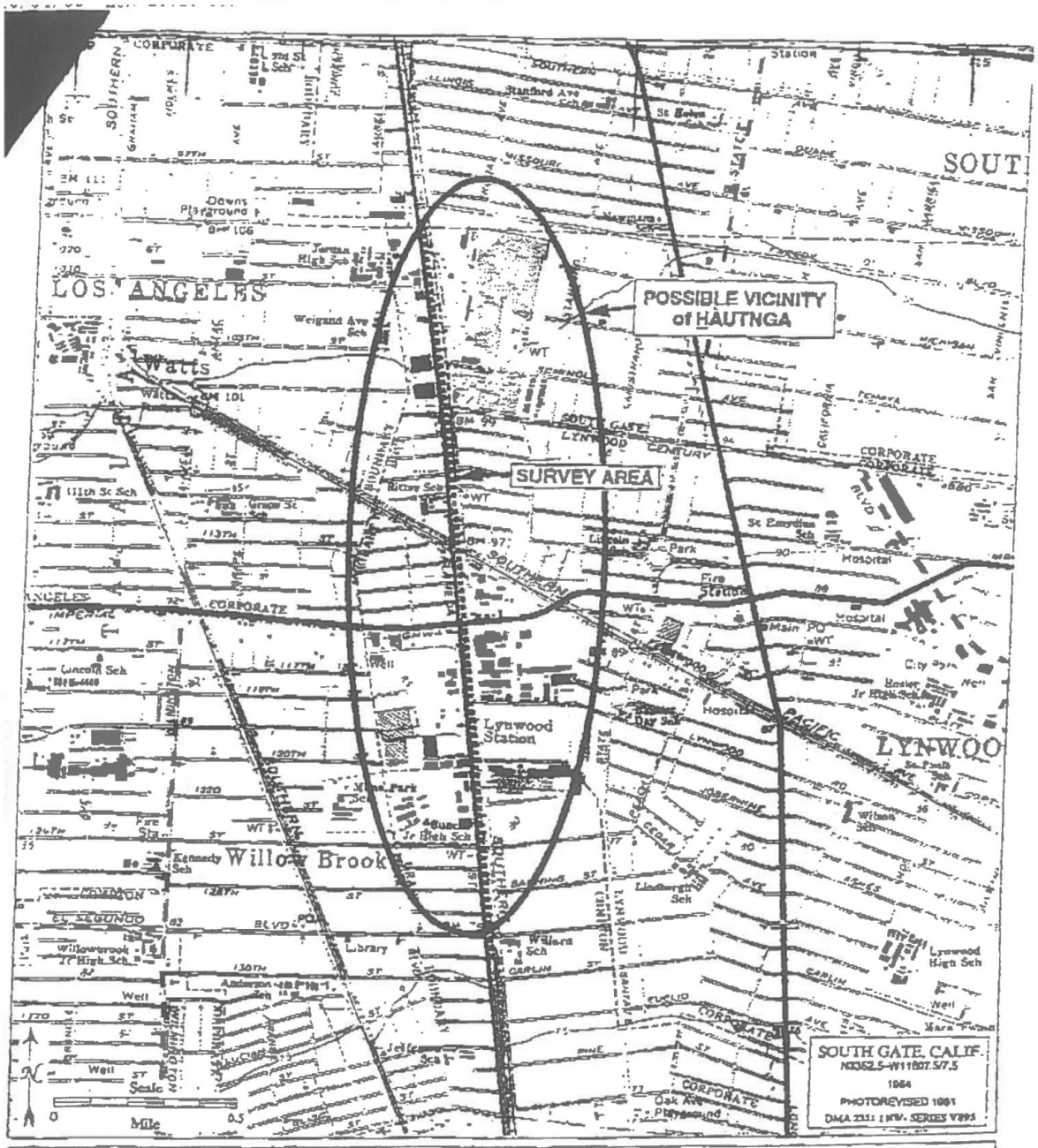


Figure 5

POSSIBLE VICINITY OF ETHNOHISTORIC VILLAGE HÀUTNGA

L— 2892

AUG-10-99 TUE 11:31 AM NAHC FAX NO. 9166575390 P. 01

STATE OF CALIFORNIA Gray Davis, Governor

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-4082

August 10, 1999

REPLY SENT VIA FAX (916) 737-3030

Shahira Ashkar
Jones & Stokes Associates, Inc.
2600 V Street
Sacramento, CA 95818-1914

RE: Williams Fiber Optic route Los Angeles to Anaheim

Dear Ms. Ashkar:

A record search of the Sacred Lands file has failed to indicate the presence of Native American cultural resources in the immediate project area of the above referenced projects. The absence of specific site information in the sacred land 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.

I have enclosed a list of Native American individuals/organizations who may be able to assist you regarding cultural resources on the sites you identified. The Commission makes no recommendation or preference of a single individual, or group over another. I suggest that all of those indicated are contacted, you must allow a minimum of two weeks for responses after your mailing. If the Native Americans are unable to supply information regarding your project they may recommend others with specific knowledge of the area.

If you receive notification of change of addresses or 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,

Gail McNulty

Gail McNulty
Associate Program Analyst

Post-it® Fax Note 7671	Date 8/10	# of pages ▶ 3
To Shahira Ashkar	From Gail McNulty	
Co./Dept.	Co.	
Phone # 737-3030	Phone # 653-4040	
Fax #	Fax #	

Example of contact letter with attached map

Jim Velasquez
5657 Arlington Avenue
Riverside, CA 92703

August 10, 1999

Dear Jim Velasquez:

Jones & Stokes Associates is conducting environmental and cultural resource studies for Williams Communications. The project goal is to install a fiber optic cable between Los Angeles and Anaheim, California (see enclosed map). The alignment is primarily in city streets and in the Union Pacific right-of-way.

We are seeking comments from Native American representatives, and your name was supplied to us by the Native American Heritage Commission as a contact for this area. A cultural resource record search was conducted at the South Central Coastal Information Center, at the University of California, Los Angeles Institute of Archaeology, and a cursory field survey of the project alignment was completed in July 1999. These efforts resulted in the recording or updating of two historic sites: the railroad and a railroad depot. We would appreciate your comments identifying any concerns or issues pertinent to this project.

Thank you for your cooperation in this matter. If you have any questions, please call me.

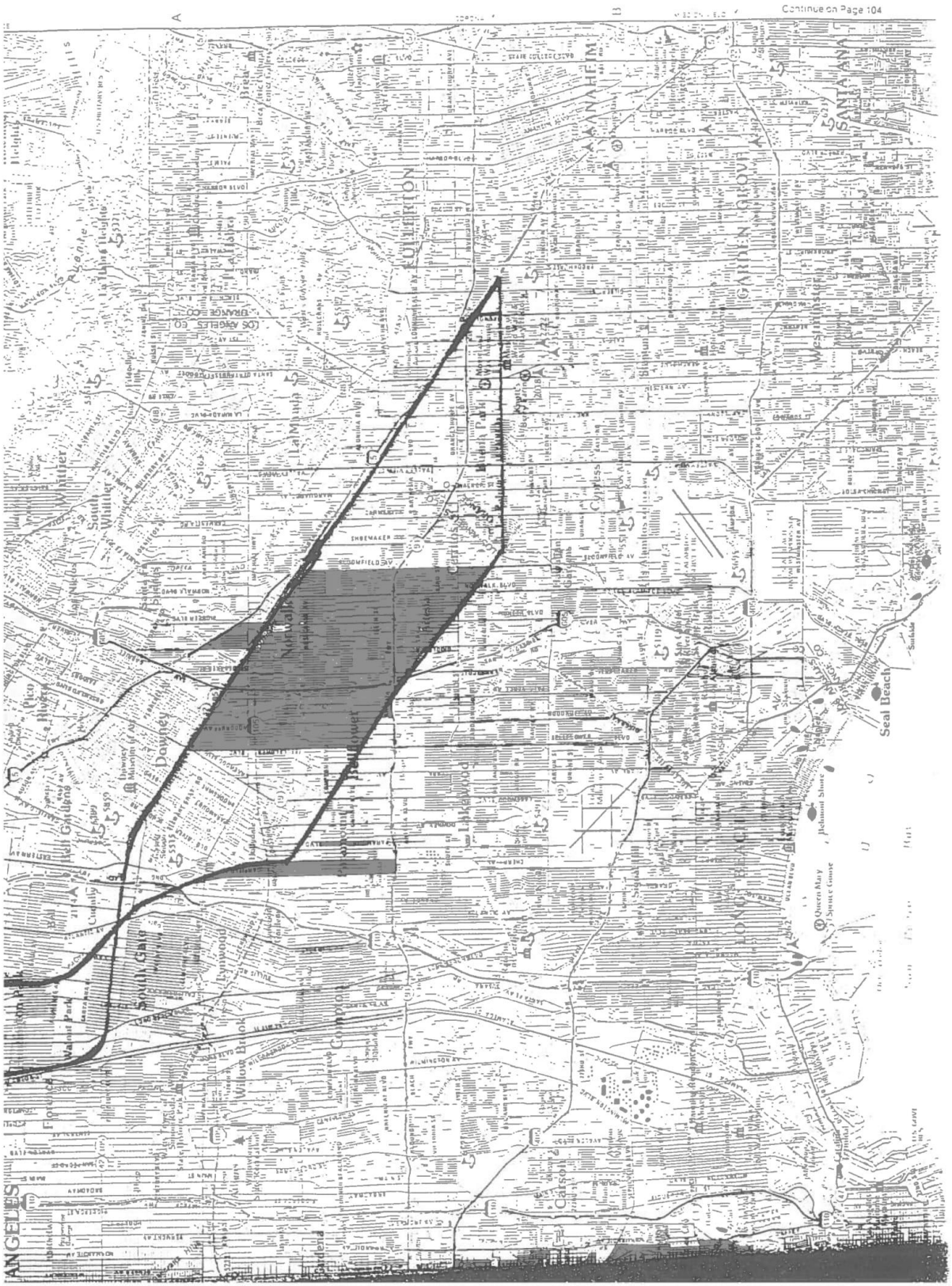
Sincerely,

Shahira Ashkar
Cultural Resource Specialist

Jones & Stokes Associates, Inc.
2600 V Street, Suite 100 • Sacramento, CA 95818-1914 • Fax 916/737-3030 • 916/737-3000


Angeles National Forest
La Crescenta
La Canada Flintridge
Altadena
PASADENA
GLENDALE
Sierra Madre
Monrovia
Arcadia
San Marino
Huntington Library Art Gallery and Botanical Gardens
Highland Park
South Pasadena
Temple City
Alhambra
San Gabriel
Rosemead
El Monte
South El Monte
Monterey Park
EAST LOS ANGELES
Montebello
Pico Rivera
Commerce
Hacienda Heights
Scale 1:150,000
Contour interval 100 meters
(100 meters = 328.08 feet)
Continue on Page 103
Project Alignment

[redacted]


Continue on Page 104
ANAHEIM
SANTA ANA
FULLERTON
GARDEN GROVE
Whittier
La Habra
Norwalk
Downey
Lakewood
Seal Beach
Long Beach
Carson
Torrance
Wilmington
Compton
Lynwood
Paramount
Bellflower
Hawaiian Gardens
Artesia
Cerritos
Los Alamitos
Rossmoor
Los Angeles
Orange Co.

GABRIELENO / TONGVA TRIBAL COUNCIL

September 2, 1999

Sent by Facsimile and U.S. Mail

John McCullogh
KEA Environmental
601 University Ave., Ste 185
Sacramento, CA 95825

RE: Williams Communications, Inc. Fiber Optic Cable Installation Project

Dear Mr. McCullogh:

This letter is in response to a public notice circulated by the California Public Utilities Commission on the above named project. This tribal council wishes to express our appreciation for the opportunity to comment directly to the parties responsible for preparing the Initial Study/Draft Mitigated Negative Declaration. As the proposed project lies within the cultural and tribal boundaries of this tribal group, it is our responsibility to respond with our recommendations and concerns.

Our designated cultural resource representative, Mr. Samuel H. Dunlap, has been in contact with us and has recommended that a qualified Native American monitor be present during subsurface activities in areas that may have buried cultural resource deposits. It is a concern of this tribe that any known and/or unknown prehistoric archaeological sites may be impacted during the course of the proposed project. We therefore recommend that a qualified Native American monitor appointed by this tribal council be included for the duration of the project to observe and report any unknown cultural resource deposits that may be encountered. Mr. Dunlap may be reached at (909) 507-1958 (voice mail) if you have any further questions.

Thank you for your time in this matter and please feel free to contact us at any time.

Sincerely,

Anthony Morales
Tribal Chairman

cc: John Boccio - CPUC Project Manager
Shahira Ashkar - Jones & Stokes Assoc.
Samuel H. Dunlap

THE EXECUTIVE BOARD OF THE GABRIELENO/TONGVA TRIBAL COUNCIL

Anthony Morales, Chairperson
Joanne M. Garcia, Secretary
Eleanor Soto, Treasure
Message Phone (626) 286-1632

Roger Castillo, Spokesperson
Linda Longshore, Packet/Membership
Mary Ann Moore, Cultural Affair
Fax (626) 286-1262

P.O. BOX 693 • SAN GABRIEL, CA 91778

PROFESSIONAL NATIVE AMERICAN CULTURAL RESOURCE MONITORS
P. O. BOX 1391
TEMECULA, CA 92593
(909) 507-1958 (voice)

September 2, 1999

Sent by Facsimile and U. S. Mail

Ms. Shahira Ashkar
Jones & Stokes Assoc.
2600 V Street, Ste 100
Sacramento, CA 95818-1914

RE: Williams Communications Fiber Optics Project

Dear Ms. Ashkar:

In response to your letter dated August 10, 1999, I am commenting on the above named project. Your letter and the enclosed maps indicate that the route of this project will be between Los Angeles and Anaheim California. As this project will proceed through areas sensitive to the Gabrieleno/Tongva Tribal Council, the possibility of impacting cultural resource deposits and/or unknown archaeological sites cannot be discounted. I would therefore recommend that a Native American monitor appointed by the Gabrieleno/Tongva Tribal Council of San Gabriel be retained for his or her services to provide monitoring and liaison for that tribal group.

After consultation with Mr. Anthony Morales, Tribal Chairman, I am forwarding a copy of this letter to the parties listed below. Please feel free to contact me with any questions you may have.

Thank you for your courtesy and cooperation.

Very truly yours,

Samuel H. Dunlap
Director

SHD/nec

cc: Gabrieleno Tongva Tribal Council - San Gabriel
John Boccio - CPUC Project Manager
John McCullogh - KEA Environmental

FIGURES

PHOTOGRAPHS

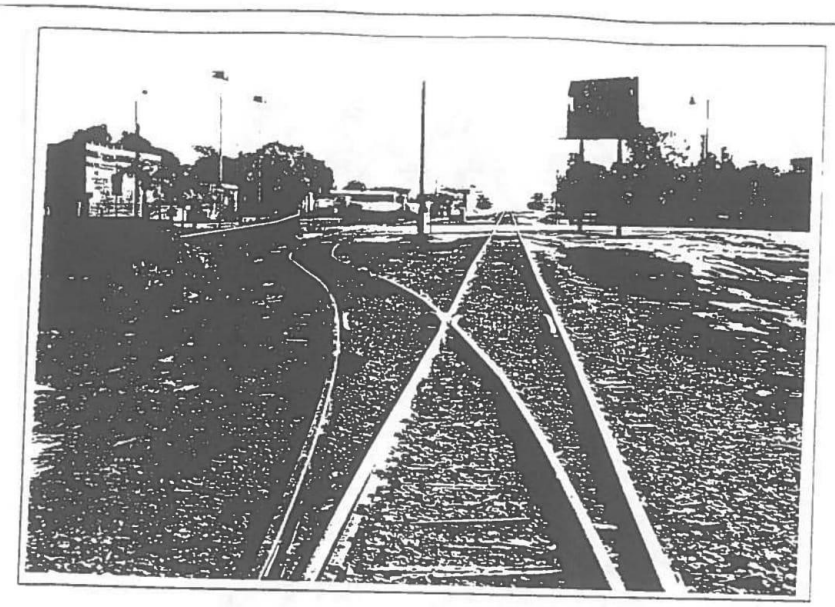
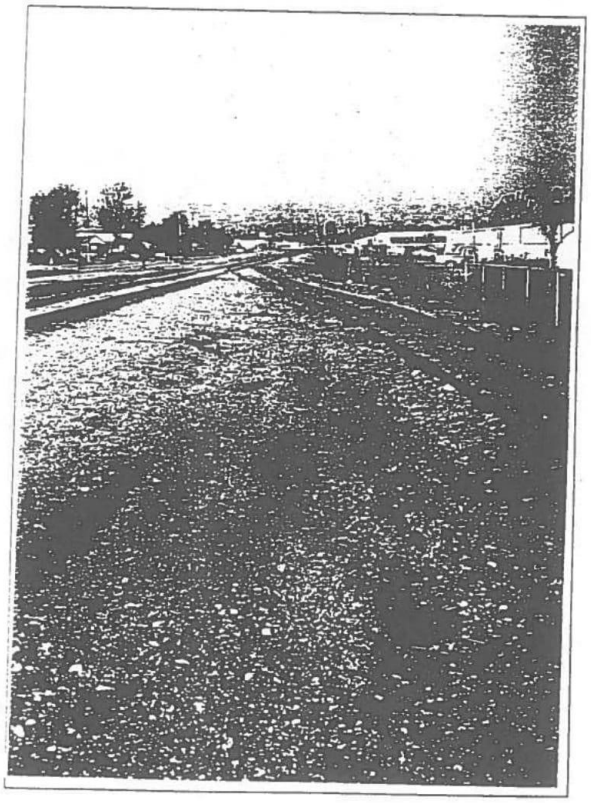


Photo 1
Railroad spur diverging from SPRR main line.
Facing east.

Photo 2
Railroad spur and main SPRR line.
Facing west.



PHOTOS 1 & 2

Carson to Norwalk Pipeline Project

Kinder Morgan Energy Partners

Prepared by William Self Associates



Photo 3 Embossed "1910" date on spur rail.

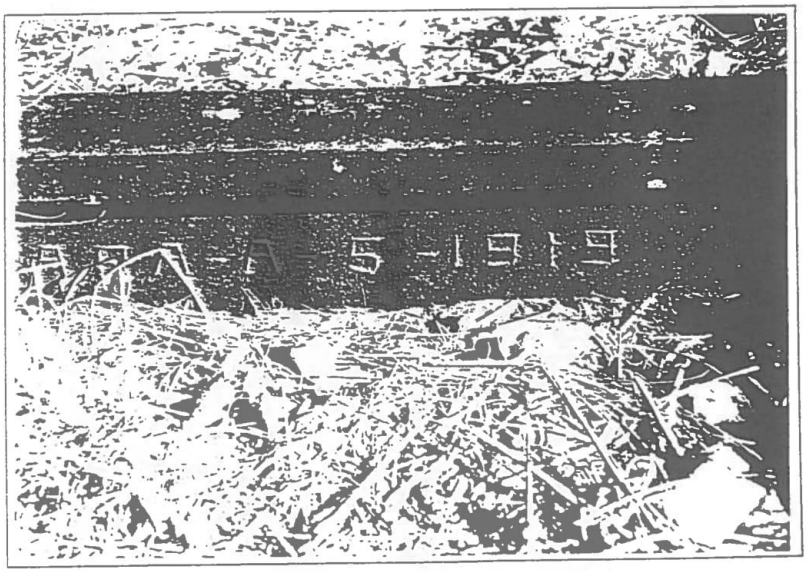


Photo 4 "1919" date on spur rail.

PHOTOS 3 & 4	Carson to Norwalk Pipeline Project Kinder Morgan Energy Partners

Prepared by William Self Associates

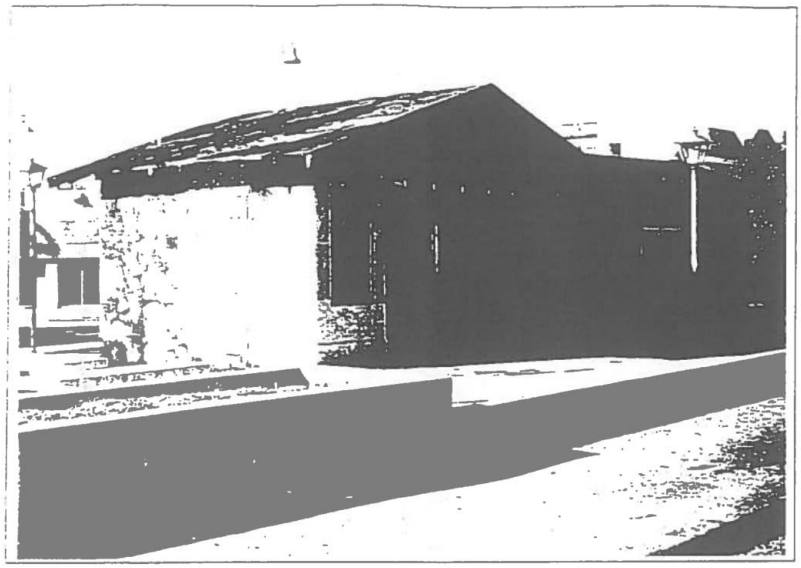


Photo 5 Depot bui'ding, north elevation. Facing south.

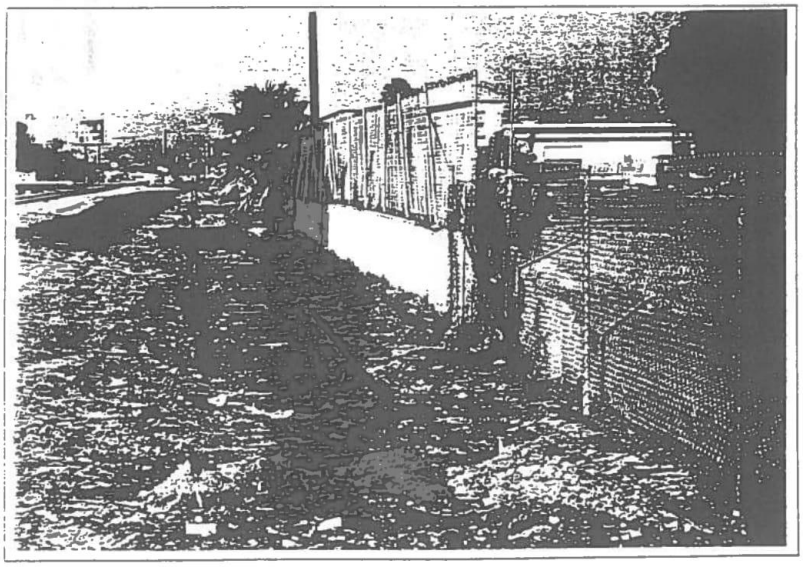
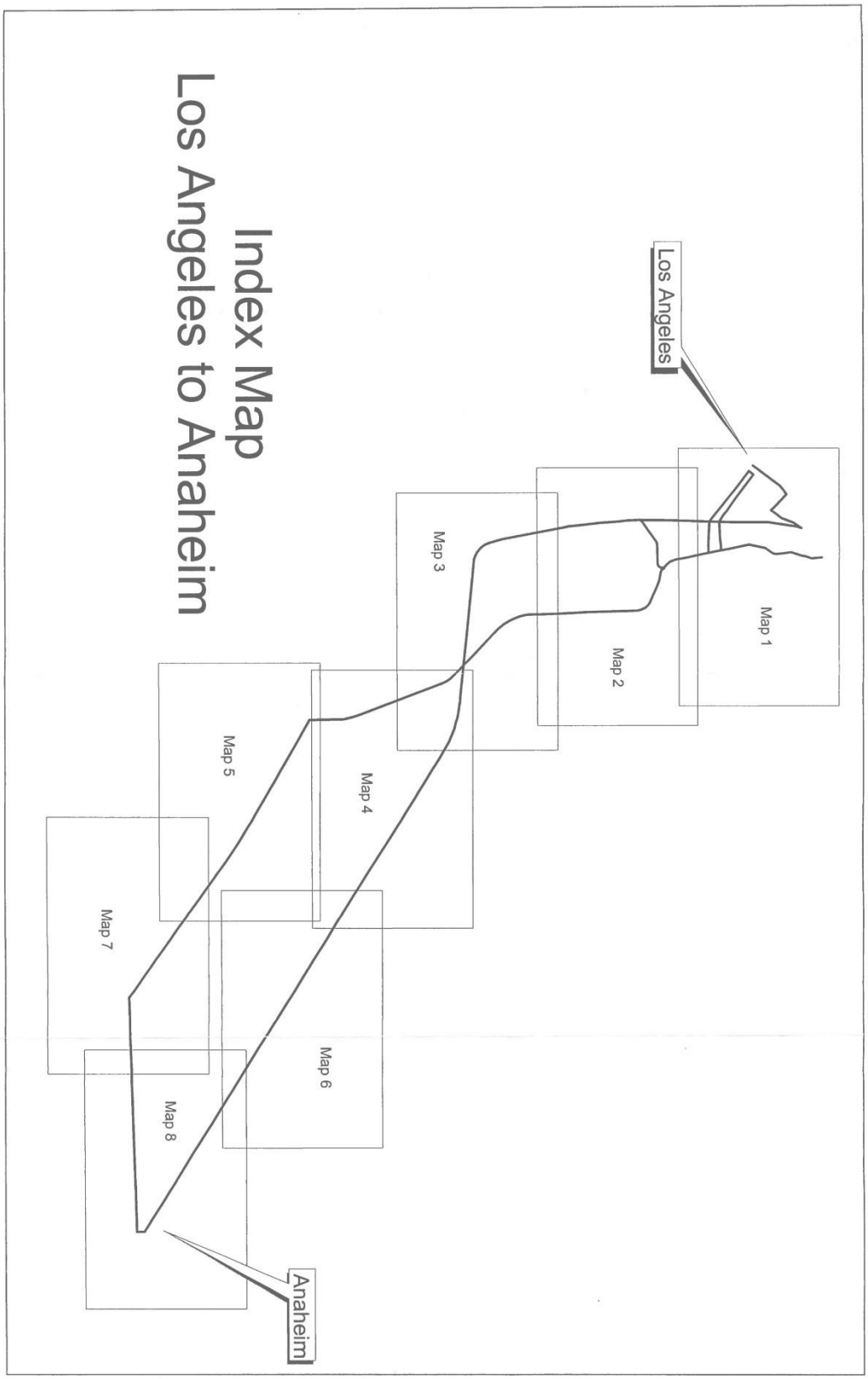


Photo 6 Termination of rail spur. Facing west.

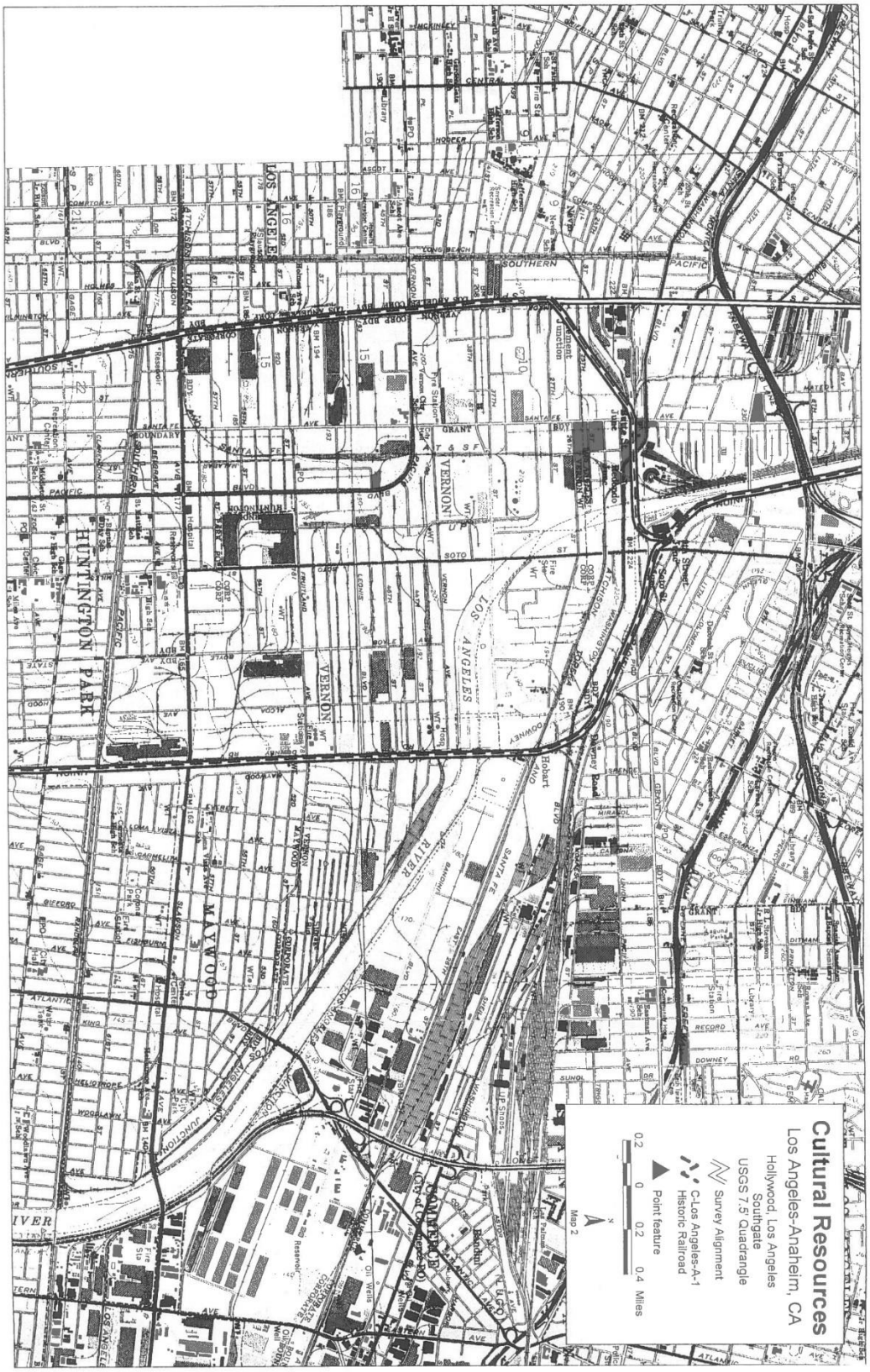
PHOTOS 5 & 6	Carson to Norwalk Pipeline Project Kinder Morgan Energy Partners

Prepared by William Self Associates

Appendix D. Maps of Cultural Resource Sites in Project Study Area

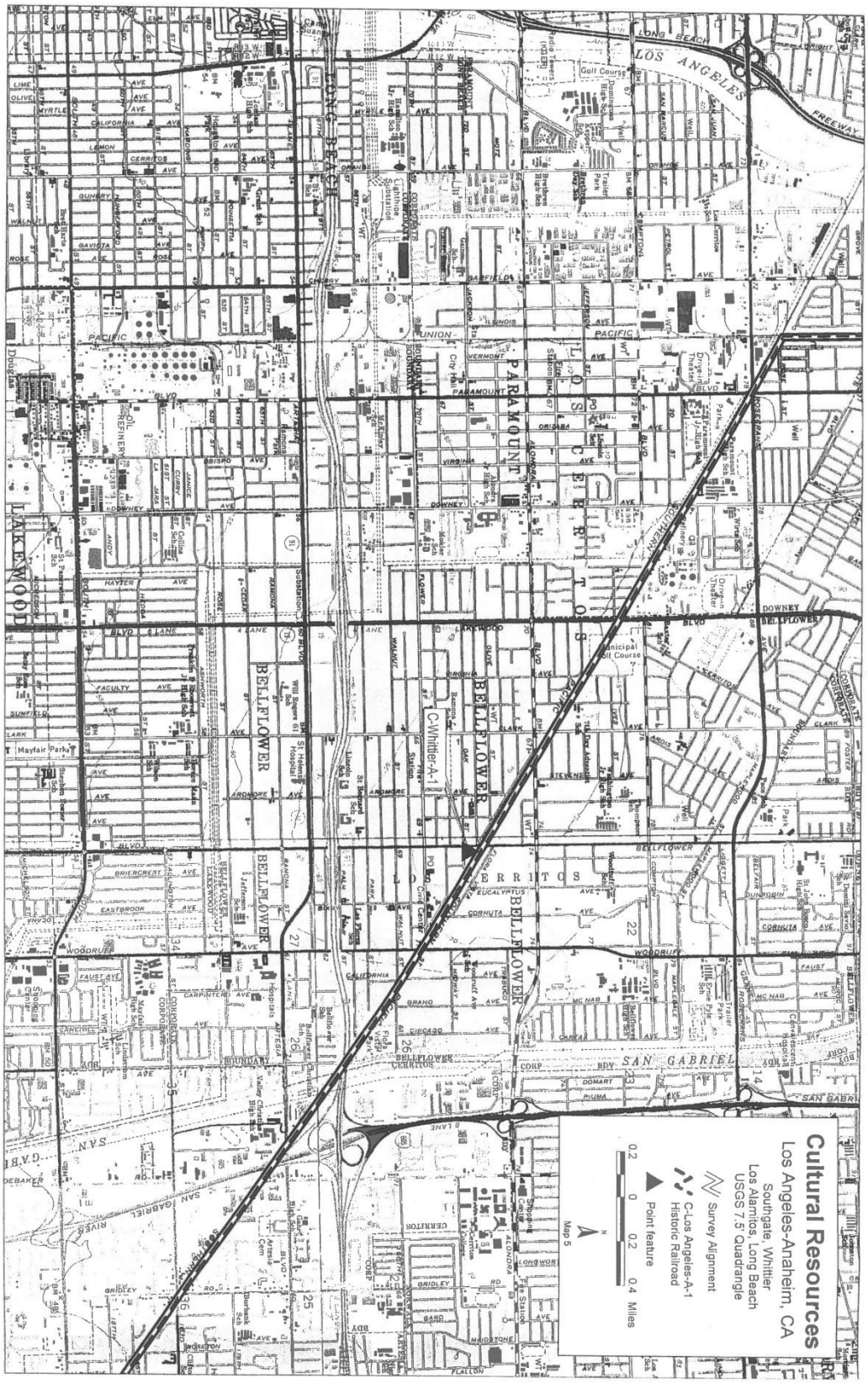

Index Map
Los Angeles to Anaheim
Los Angeles
Map 1
Map 2
Map 3
Map 4
Map 5
Map 6
Map 7
Map 8
Anaheim


Cultural Resources
Los Angeles-Anaheim, CA
Hollywood, Los Angeles
USGS 7.5' Quadrangle
Survey Alignment
C-Los Angeles-A-1
Historic Railroad
Point feature
0.2 0 0.2 0.4 Miles
Map 1
LOS ANGELES
EAST LOS ANG


Cultural Resources
Los Angeles-Anaheim, CA
Hollywood, Los Angeles
Southgate
USGS 7.5' Quadrangle
Survey Alignment
C-Los Angeles-A-1
Historic Railroad
Point feature
0.2 0 0.2 0.4 Miles
Map 2
HUNTINGTON PARK
VERNON
MAYWOOD
LOS ANGELES RIVER
SOUTHERN PACIFIC
SANTA FE
Hobart BLVD


Cultural Resources
Los Angeles-Anaheim, CA
Los Angeles, Southgate
USGS 7.5' Quadrangle
Survey Alignment
C-Los Angeles-A-1
Historic Railroad
Point feature
0 0.2 0.2 0.4 Miles
Map 3
SOUTH GATE
HUNTINGTON PARK
Walnut Park
CUDAHY
BELL
LOS ANGELES
RIVER


Cultural Resources
Los Angeles-Anaheim, CA
Southgate, Whittier
USGS 7.5' Quadrangle
Survey Alignment
C-Los Angeles-A-1
Historic Railroad
Point feature
0.2 0 0.2 0.4 Miles
Map 4
RIVER
TRANSMISSION
LINE
LOS ANGELES
GARFIELD
SANTA FE
DOWNEY
SAN GABRIEL RIVER FREEWAY
NORWALK


Cultural Resources
Los Angeles-Anaheim, CA
Southgate, Whittier
Los Alamitos, Long Beach
USGS 7.5' Quadrangle
Survey Alignment
C-Los Angeles-A-1
Historic Railroad
Point feature
0.2 0 0.2 0.4 Miles
Map 5
LONG BEACH
LOS ANGELES
FREEWAY
PARAMOUNT
LOS CERRITOS
LAKEWOOD
BELLFLOWER
CERRITOS
SAN GABRIEL
C-Whittier-A-1


Cultural Resources
Los Angeles-Anaheim, CA
Whittier, Los Alamitos
Los Alamitos, La Habra
USGS 7.5' Quadrangle
Survey Alignment
C-Los Angeles-A-1
Historic Railroad
Point feature
0.2 0 0.2 0.4 Miles
Map 6
NORWALK
CERRITOS
LA MIRADA
BUENA PARK
SANTA FE SPRINGS


Cultural Resources
Los Angeles-Anaheim, CA
Los Alamitos, Long Beach
USGS 7.5' Quadrangle
Survey Alignment
C-Los Angeles-A-1
Historic Railroad
Point feature
0.2 0 0.2 0.4 Miles
Map 7
BELLFLOWER
BARTLETT
ARTESIA
GERRITOS
Hawaiian Gardens
Cypress Park
La Palma
Moody Creek


Cultural Resources
Los Angeles-Anaheim, CA
Los Alamitos, Whittier
Anaheim, La Habra
USGS 7.5' Quadrangle
Survey Alignment
C-Los Angeles-A-1
Historic Railroad
Point feature
0.2 0 0.2 0.4 Miles
Map 8
BUENA PARK
LOS ANGELES CO
ORANGE CO
Fullerton Creek
Brea
Coyote Creek
Carbon Creek
Knotts Berry Farm
MAGNOLIA
BOUNDARY
BROOKHURST
KNOTT
BEACH
STANTON
LINCOLN
VALLEY VIEW
CERRITOS
LA PALMA

Appendix C:
Native American Heritage Commission and Tribal Correspondence

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Local Government Tribal Consultation List Request

Native American Heritage Commission
1550 Harbor Blvd, Suite 100
West Sacramento, CA 95691
916-373-3710
916-373-5471 – Fax
nahc@nahc.ca.gov

Type of List Requested

■ **CEQA Tribal Consultation List (AB 52)** – *Per Public Resources Code § 21080.3.1, subs. (b), (d), (e) and 21080.3.2*

☐ **General Plan (SB 18)** - *Per Government Code § 65352.3.*

Local Action Type:

☐ General Plan ☐ General Plan Element ☐ General Plan Amendment
☐ Specific Plan ☐ Specific Plan Amendment ☐ Pre-planning Outreach Activity

Required Information

Project Title: 5037 Patata Street Industrial Project

Local Government/Lead Agency: City of South Gate

Contact Person: Stefanie Griffin

Street Address: 967 Kendall Drive # A-537

City: San Bernardino **Zip:** 92407

Phone: 209-608-0028 **Fax:**

Email: sgriffin@fcs-intl.com; mdolan@fcs-intl.com

Specific Area Subject to Proposed Action

County: Los Angeles County **City/Community:** City of South Gate

Project Description:

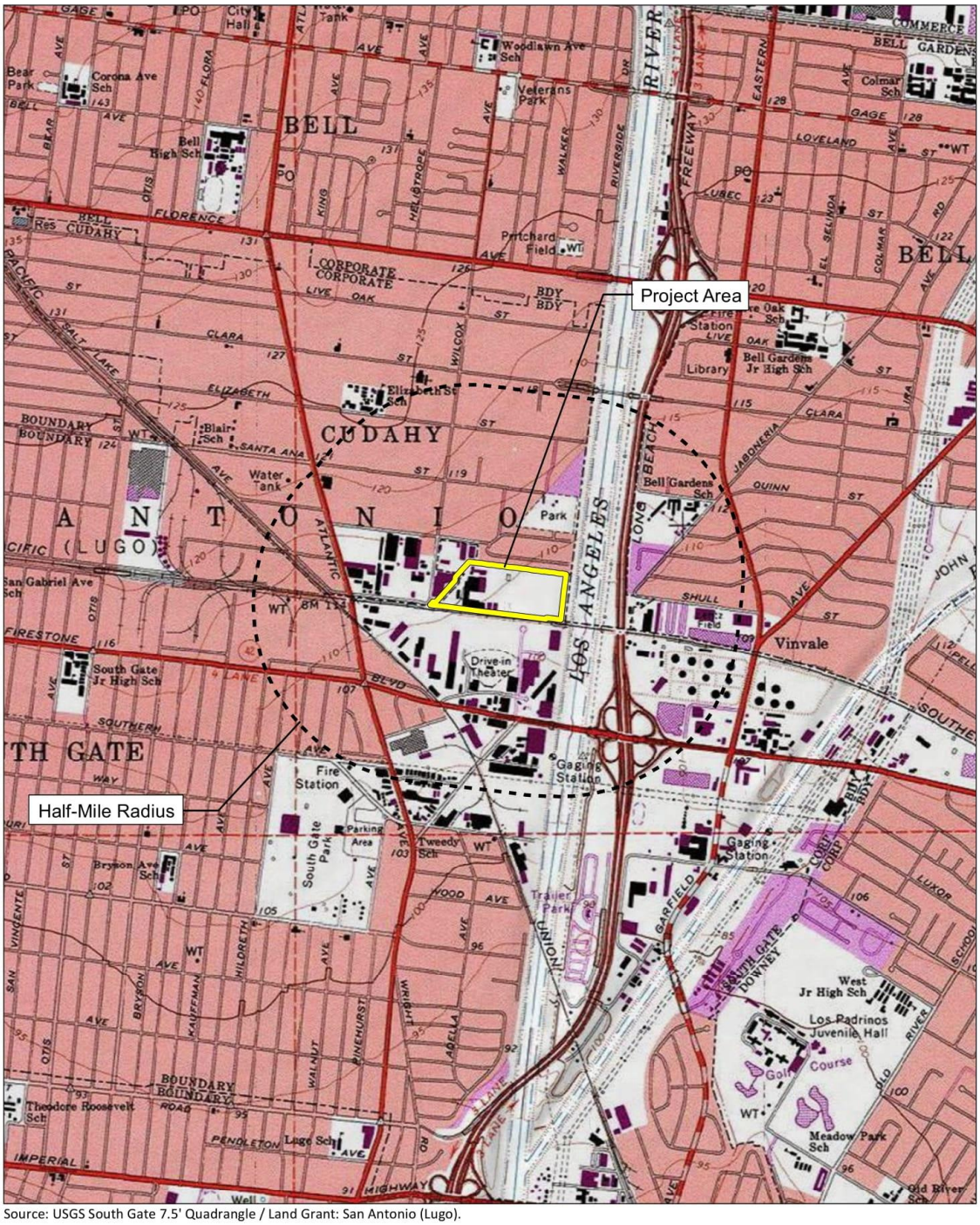
The Applicant is proposing to remove the existing uses and develop a total of 447,420 square feet of warehouse, office, and maintenance space in two buildings. Demolition of all existing on-site buildings and parking lots have already occurred under a separate ministerial demolition permit. The primary building would have a building footprint of 409,920 square feet and would consist of office, warehouse, and cooler space, as well as mezzanine space. The second building would consist of a 12,000-square-foot truck maintenance workshop to be located at the southeast corner of the project site.

Additional Request

■ **Sacred Lands File Search** - ***Required Information:***

USGS Quadrangle Name(s): South Gate
Land Grant: San Antonio (Lugo).

Township: **Range:** **Section(s):**



Source: USGS South Gate 7.5' Quadrangle / Land Grant: San Antonio (Lugo).

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2,000 1,000 0 2,000 Feet

Record Search Map

29310008 • 08/2021 | 29310008_record_search_map.mxd

CITY OF SOUTH GATE
5037 PATATA STREET INDUSTRIAL PROJECT

STATE OF CALIFORNIA Gavin Newsom, *Governor*

NATIVE AMERICAN HERITAGE COMMISSION

CHAIRPERSON
Laura Miranda
Luiseño

VICE CHAIRPERSON
Reginald Pagaling
Chumash

SECRETARY
Merri Lopez-Keifer
Luiseño

PARLIAMENTARIAN
Russell Attebery
Karuk

COMMISSIONER
William Mungary
Paiute/White Mountain Apache

COMMISSIONER
Julie Tumamait-Stenslie
Chumash

COMMISSIONER
[**Vacant**]

COMMISSIONER
[**Vacant**]

COMMISSIONER
[**Vacant**]

EXECUTIVE SECRETARY
Christina Snider
Pomo

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

October 12, 2021

Stefanie Griffin
FirstCarbon Solutions

Via Email to: sgriffin@fcs-intl.com & mdolan@fcs-intl.com

Re: Native American Tribal Consultation, Pursuant to the Assembly Bill 52 (AB 52), Amendments to the California Environmental Quality Act (CEQA) (Chapter 532, Statutes of 2014), Public Resources Code Sections 5097.94 (m), 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2 and 21084.3, 5037 Patata Street Industrial Project, Los Angeles County

Dear Ms. Griffin:

Pursuant to Public Resources Code section 21080.3.1 (c), attached is a consultation list of tribes that are traditionally and culturally affiliated with the geographic area of the above-listed project. Please note that the intent of the AB 52 amendments to CEQA is to avoid and/or mitigate impacts to tribal cultural resources, (Pub. Resources Code §21084.3 (a)) ("Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource.")

Public Resources Code sections 21080.3.1 and 21084.3(c) require CEQA lead agencies to consult with California Native American tribes that have requested notice from such agencies of proposed projects in the geographic area that are traditionally and culturally affiliated with the tribes on projects for which a Notice of Preparation or Notice of Negative Declaration or Mitigated Negative Declaration has been filed on or after July 1, 2015. Specifically, Public Resources Code section 21080.3.1 (d) provides:

Within 14 days of determining that an application for a project is complete or a decision by a public agency to undertake a project, the lead agency shall provide formal notification to the designated contact of, or a tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, which shall be accomplished by means of at least one written notification that includes a brief description of the proposed project and its location, the lead agency contact information, and a notification that the California Native American tribe has 30 days to request consultation pursuant to this section.

The AB 52 amendments to CEQA law does not preclude initiating consultation with the tribes that are culturally and traditionally affiliated within your jurisdiction prior to receiving requests for notification of projects in the tribe's areas of traditional and cultural affiliation. The Native American Heritage Commission (NAHC) recommends, but does not require, early consultation as a best practice to ensure that lead agencies receive sufficient information about cultural resources in a project area to avoid damaging effects to tribal cultural resources.

The NAHC also recommends, but does not require that agencies should also include with their notification letters, information regarding any cultural resources assessment that has been completed on the area of potential effect (APE), such as:

1. The results of any record search that may have been conducted at an Information Center of the California Historical Resources Information System (CHRIS), including, but not limited to:

- A listing of any and all known cultural resources that have already been recorded on or adjacent to the APE, such as known archaeological sites;
- Copies of any and all cultural resource records and study reports that may have been provided by the Information Center as part of the records search response;
- Whether the records search indicates a low, moderate, or high probability that unrecorded cultural resources are located in the APE; and
- If a survey is recommended by the Information Center to determine whether previously unrecorded cultural resources are present.

2. The results of any archaeological inventory survey that was conducted, including:

   - Any report that may contain site forms, site significance, and suggested mitigation measures.

     All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for public disclosure in accordance with Government Code section 6254.10.

3. The result of any Sacred Lands File (SLF) check conducted through the Native American Heritage Commission was negative.

4. Any ethnographic studies conducted for any area including all or part of the APE; and

5. Any geotechnical reports regarding all or part of the APE.

Lead agencies should be aware that records maintained by the NAHC and CHRIS are not exhaustive and a negative response to these searches does not preclude the existence of a tribal cultural resource. A tribe may be the only source of information regarding the existence of a tribal cultural resource.

This information will aid tribes in determining whether to request formal consultation. In the event that they do, having the information beforehand will help to facilitate the consultation process.

If you receive notification of change of addresses and phone numbers from tribes, please notify the NAHC. With your assistance, we can assure that our consultation list remains current.

If you have any questions, please contact me at my email address: Andrew.Green@nahc.ca.gov.

Sincerely,

Andrew Green

Andrew Green
Cultural Resources Analyst

Attachment

Native American Heritage Commission
Tribal Consultation List
Los Angeles County
10/12/2021

Gabrieleno Band of Mission Indians - Kizh Nation
Andrew Salas, Chairperson
P.O. Box 393 — Gabrieleno
Covina, CA, 91723
Phone: (626) 926 - 4131
admin@gabrielenoindians.org

Gabrieleno/Tongva San Gabriel Band of Mission Indians
Anthony Morales, Chairperson
P.O. Box 693 — Gabrieleno
San Gabriel, CA, 91778
Phone: (626) 483 - 3564
Fax: (626) 286-1262
GTTribalcouncil@aol.com

Gabrielino /Tongva Nation
Sandonne Goad, Chairperson
106 1/2 Judge John Aiso St., #231 — Gabrielino
Los Angeles, CA, 90012
Phone: (951) 807 - 0479
sgoad@gabrielino-tongva.com

Gabrielino Tongva Indians of California Tribal Council
Christina Conley, Tribal Consultant and Administrator
P.O. Box 941078 — Gabrielino
Simi Valley, CA, 93094
Phone: (626) 407 - 8761
christina.marsden@alumni.usc.edu

Gabrielino Tongva Indians of California Tribal Council
Robert Dorame, Chairperson
P.O. Box 490 — Gabrielino
Bellflower, CA, 90707
Phone: (562) 761 - 6417
Fax: (562) 761-6417
gtongva@gmail.com

Gabrielino-Tongva Tribe
Charles Alvarez,
23454 Vanowen Street — Gabrielino
West Hills, CA, 91307
Phone: (310) 403 - 6048
roadkingcharles@aol.com

Santa Rosa Band of Cahuilla Indians
Lovina Redner, Tribal Chair
P.O. Box 391820 — Cahuilla
Anza, CA, 92539
Phone: (951) 659 - 2700
Fax: (951) 659-2228
lsaul@santarosa-nsn.gov

Soboba Band of Luiseno Indians
Isaiah Vivanco, Chairperson
P. O. Box 487 — Cahuilla, Luiseno
San Jacinto, CA, 92581
Phone: (951) 654 - 5544
Fax: (951) 654-4198
ivivanco@soboba-nsn.gov

This list is current only as of the date of this document. Distribution of this list does not relieve any person of 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 consultation with Native American tribes under Public Resources Code Sections 21080.3.1 for the proposed 5037 Patata Street Industrial Project, Los Angeles County.

FIRSTCARBON SOLUTIONS
FCS INTERNATIONAL, INC.

Request Letter

UNITED STATES

T +1 888 826 5814
T +1 714 508 4100
F +1 714 508 4110
E info@fcs-intl.com

Irvine
250 Commerce
Suite 250
Irvine, CA 92602

Bay Area
1350 Treat Boulevard
Suite 380
Walnut Creek, CA 94597

Central Valley
7726 N. First Street
#413
Fresno, CA 93720

Inland Empire
967 Kendall Drive
#A-537
San Bernardino, CA 92407

Sacramento Valley
2351 Sunset Boulevard
Suite 170-301
Rocklin, CA 95765

Utah
2901 Bluegrass Boulevard
Suite 200-62
Lehi, UT 84043

Connecticut
2 Corporate Drive
Suite 450
Shelton, CT 06484

New York
10 Monument Street
Deposit, NY 13754

56 Broome Corporate Parkway
Conklin, NY 13748

CANADA

UNITED KINGDOM

PORTUGAL

FRANCE

KENYA

AUSTRALIA

PHILIPPINES

CHINA

MALAYSIA

SINGAPORE

October 15, 2021.

Gabrielino-Tongva Tribe
Charles Alvarez
23454 Vanowen Street
West Hills, CA, 91307

Subject: **Proposed 5037 Patata Street Industrial Project**

Dear Charles Alvarez:

FirstCarbon Solutions (FCS) is preparing a cultural resources assessment for the proposed 5037 Patata Street Industrial Project on behalf of the City of South Gate. As part of the environmental review process, we are conducting a cultural analysis.

The Applicant is proposing to remove the existing uses and develop a total of 447,420 square feet of warehouse, office, and maintenance space in two buildings. Demolition of all existing on-site buildings and parking lots have already occurred under a separate ministerial demolition permit. The primary building would have a building footprint of 409,920 square feet and would consist of office, warehouse, and cooler space, as well as mezzanine space. The second building would consist of a 12,000-square-foot truck maintenance workshop to be located at the southeast corner of the project site.

As part of the cultural resources assessment, FCS conducted a Sacred Lands File (SLF) search and California Historical Resource Information System (CHRIS) search. The results of the SLF records search was negative. The CHRIS search showed that there are no recorded resources located within the project site. However, there are two resources recorded within a 0.5 mile radius of the project site. There is one report recorded within the project site and six reports recorded with a 0.5 mile radius of the project site. The Native American Heritage Commission (NAHC) suggested you might be able to provide further information. If you have any additional information regarding potential historic or cultural resources in proximity or relation to the proposed project area, we would greatly appreciate your input.

Please note that this letter is a request for information pertaining to a cultural resources assessment and is not notification of a project under Senate Bill (SB) 18, Assembly Bill (AB) 52 or Section 106 of the National Historic Preservation Act. Designated lead agencies under the California Environmental Quality Act (CEQA) and National Environmental Policy Act

FIRSTCARBON SOLUTIONS
FCS INTERNATIONAL, INC.

Request Letter

(NEPA) are handling project notification and consultation requirements. Please feel free to contact me at 209.608.0028 or via email at sgriffin@fcs-intl.com and thank you for your valuable assistance.

Sincerely,

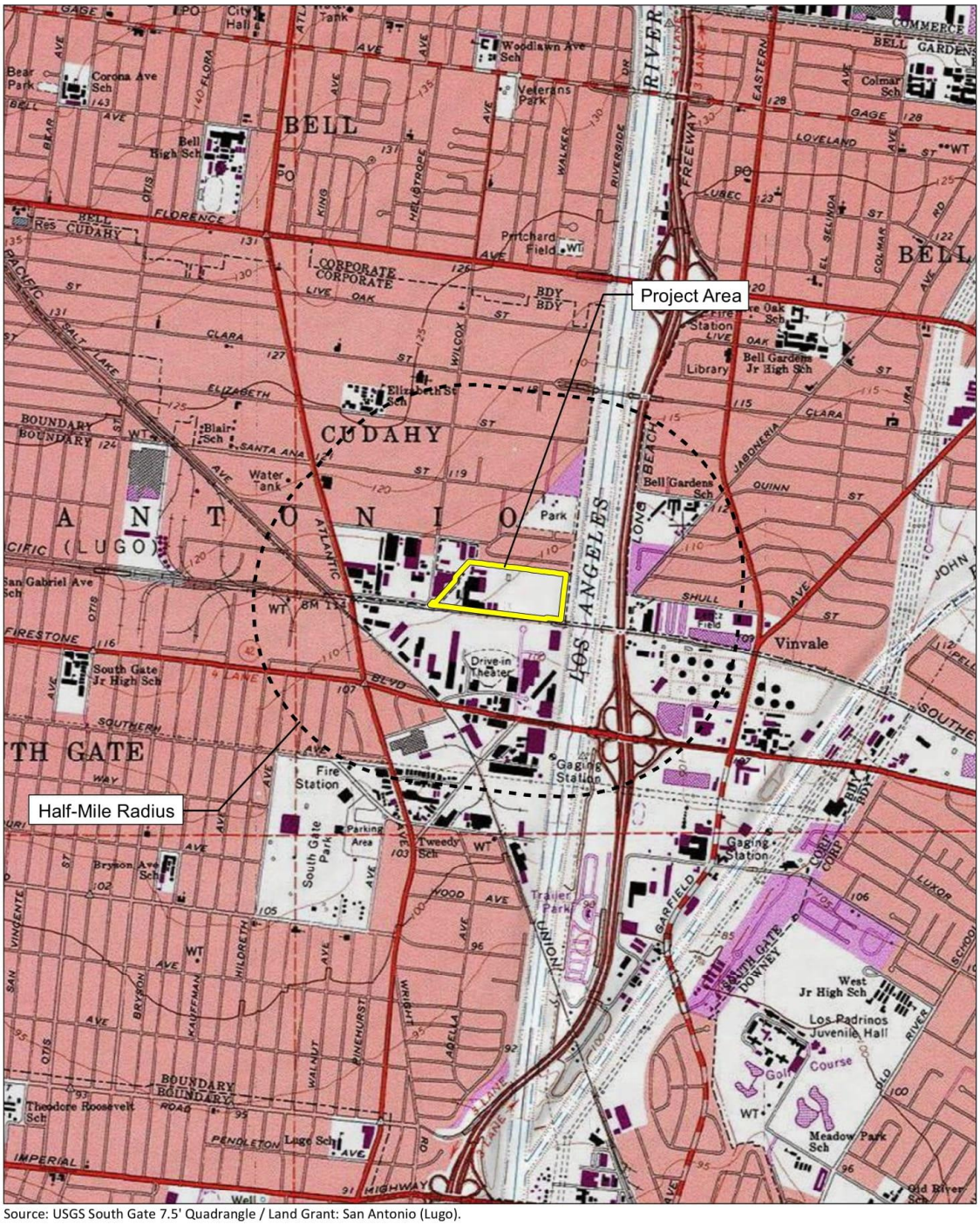


Stefanie Estelle Griffin, MA,
Archaeologist
FirstCarbon Solutions
967 Kendall Drive # A-537
San Bernardino, CA 92407

Enc: Attachment A: Records Search Map

FIRSTCARBON SOLUTIONS
FCS INTERNATIONAL, INC.

Attachment A:
Records Search Map



Source: USGS South Gate 7.5' Quadrangle / Land Grant: San Antonio (Lugo).

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2,000 1,000 0 2,000 Feet

Record Search Map

29310008 • 08/2021 | 29310008_record_search_map.mxd

CITY OF SOUTH GATE
5037 PATATA STREET INDUSTRIAL PROJECT

FIRSTCARBON SOLUTIONS
FCS INTERNATIONAL, INC.

Request Letter

UNITED STATES

T +1 888 826 5814
T +1 714 508 4100
F +1 714 508 4110
E info@fcs-intl.com

Irvine
250 Commerce
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Irvine, CA 92602

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1350 Treat Boulevard
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Walnut Creek, CA 94597

Central Valley
7726 N. First Street
#413
Fresno, CA 93720

Inland Empire
967 Kendall Drive
#A-537
San Bernardino, CA 92407

Sacramento Valley
2351 Sunset Boulevard
Suite 170-301
Rocklin, CA 95765

Utah
2901 Bluegrass Boulevard
Suite 200-62
Lehi, UT 84043

Connecticut
2 Corporate Drive
Suite 450
Shelton, CT 06484

New York
10 Monument Street
Deposit, NY 13754

56 Broome Corporate Parkway
Conklin, NY 13748

CANADA

UNITED KINGDOM

PORTUGAL

FRANCE

KENYA

AUSTRALIA

PHILIPPINES

CHINA

MALAYSIA

SINGAPORE

October 15, 2021.

Gabrielino Tongva Indians of California Tribal Council
Christina Conley, Tribal Consultant and Administrator
P.O. Box 941078
Simi Valley, CA, 93094

Subject: **Proposed 5037 Patata Street Industrial Project**

Dear Chairperson Conley:

FirstCarbon Solutions (FCS) is preparing a cultural resources assessment for the proposed 5037 Patata Street Industrial Project on behalf of the City of South Gate. As part of the environmental review process, we are conducting a cultural analysis.

The Applicant is proposing to remove the existing uses and develop a total of 447,420 square feet of warehouse, office, and maintenance space in two buildings. Demolition of all existing on-site buildings and parking lots have already occurred under a separate ministerial demolition permit. The primary building would have a building footprint of 409,920 square feet and would consist of office, warehouse, and cooler space, as well as mezzanine space. The second building would consist of a 12,000-square-foot truck maintenance workshop to be located at the southeast corner of the project site.

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FIRSTCARBON SOLUTIONS
FCS INTERNATIONAL, INC.

Request Letter

(NEPA) are handling project notification and consultation requirements. Please feel free to contact me at 209.608.0028 or via email at sgriffin@fcs-intl.com and thank you for your valuable assistance.

Sincerely,

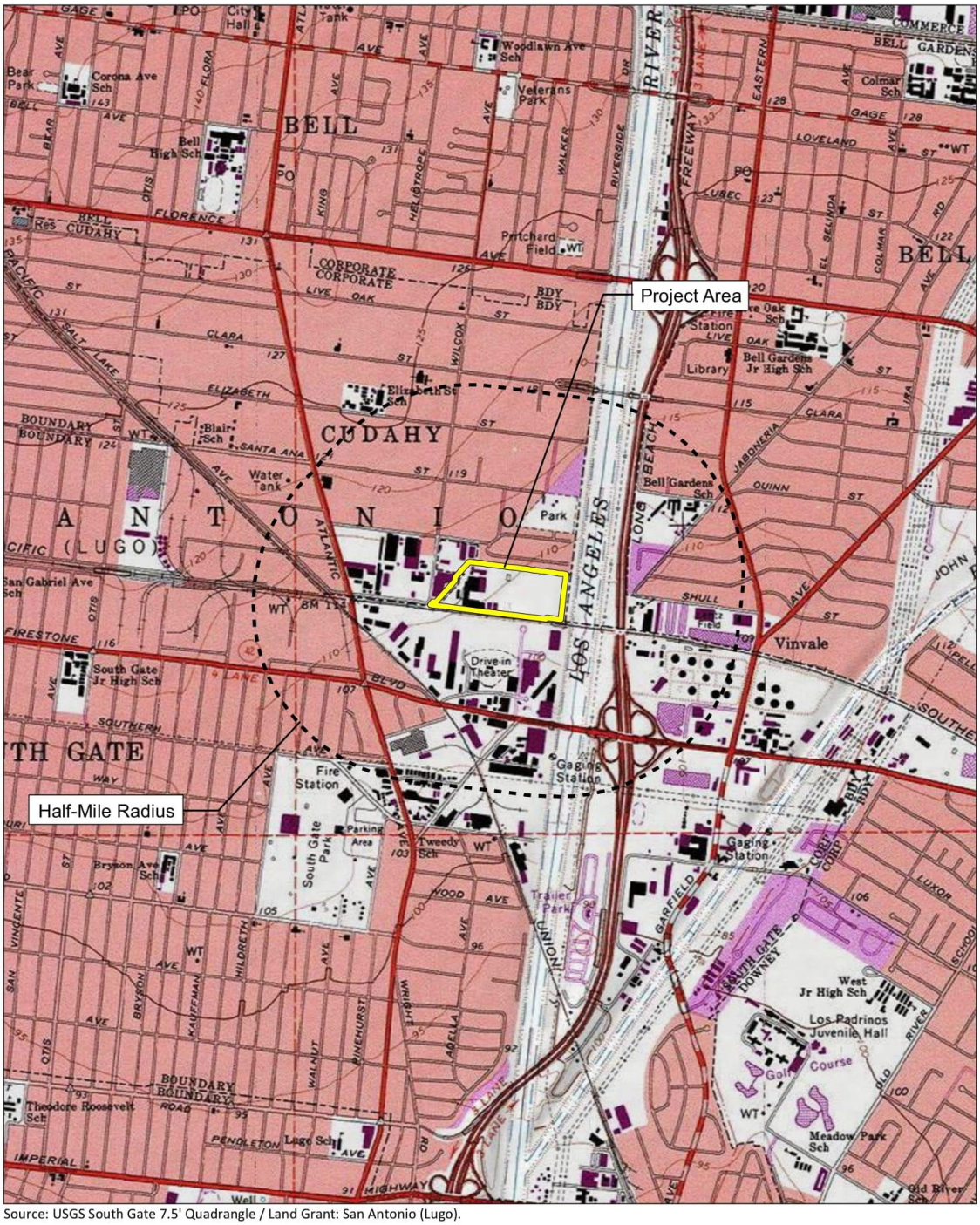


Stefanie Estelle Griffin, MA,
Archaeologist
FirstCarbon Solutions
967 Kendall Drive # A-537
San Bernardino, CA 92407

Enc: Attachment A: Records Search Map

FIRSTCARBON SOLUTIONS
FCS INTERNATIONAL, INC.

Attachment A:
Records Search Map



Source: USGS South Gate 7.5' Quadrangle / Land Grant: San Antonio (Lugo).

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Record Search Map

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CITY OF SOUTH GATE
5037 PATATA STREET INDUSTRIAL PROJECT

FIRSTCARBON SOLUTIONS
FCS INTERNATIONAL, INC.

Request Letter

UNITED STATES

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T +1 714 508 4100
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E info@fcs-intl.com

Irvine
250 Commerce
Suite 250
Irvine, CA 92602

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Fresno, CA 93720

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Conklin, NY 13748

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CHINA

MALAYSIA

SINGAPORE

October 15, 2021.

Gabrielino Tongva Indians of California Tribal Council
Robert Dorame, Chairperson
P.O. Box 490
Bellflower, CA, 90707

Subject: **Proposed 5037 Patata Street Industrial Project**

Dear Chairperson Dorame:

FirstCarbon Solutions (FCS) is preparing a cultural resources assessment for the proposed 5037 Patata Street Industrial Project on behalf of the City of South Gate. As part of the environmental review process, we are conducting a cultural analysis.

The Applicant is proposing to remove the existing uses and develop a total of 447,420 square feet of warehouse, office, and maintenance space in two buildings. Demolition of all existing on-site buildings and parking lots have already occurred under a separate ministerial demolition permit. The primary building would have a building footprint of 409,920 square feet and would consist of office, warehouse, and cooler space, as well as mezzanine space. The second building would consist of a 12,000-square-foot truck maintenance workshop to be located at the southeast corner of the project site.

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Please note that this letter is a request for information pertaining to a cultural resources assessment and is not notification of a project under Senate Bill (SB) 18, Assembly Bill (AB) 52 or Section 106 of the National Historic Preservation Act. Designated lead agencies under the California Environmental Quality Act (CEQA) and National Environmental Policy Act

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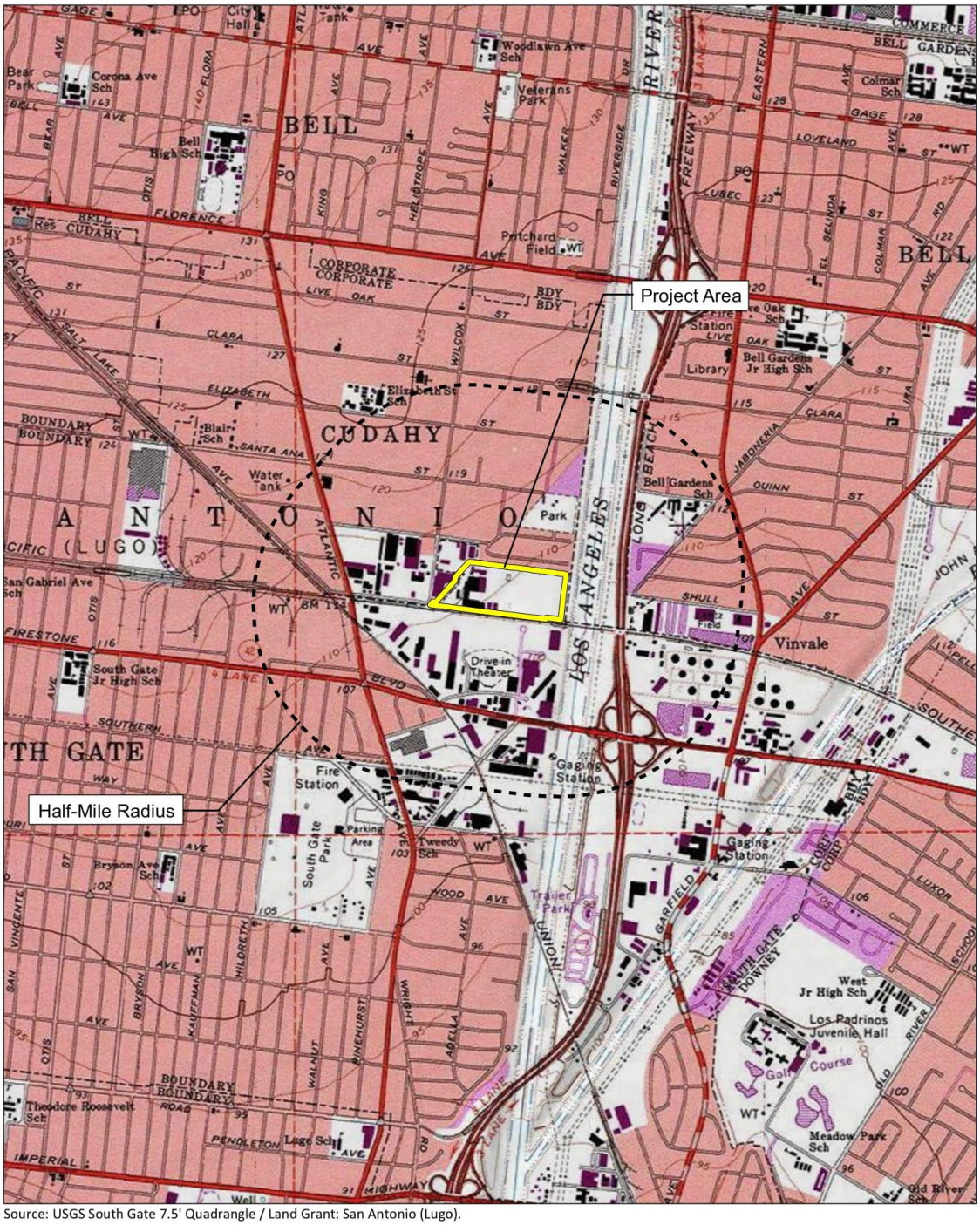


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5037 PATATA STREET INDUSTRIAL PROJECT

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October 15, 2021.

Gabrielino /Tongva Nation
Sandonne Goad, Chairperson
106 1/2 Judge John Aiso St., #231
Los Angeles, CA, 90012

Subject: **Proposed 5037 Patata Street Industrial Project**

Dear Chairperson Goad:

FirstCarbon Solutions (FCS) is preparing a cultural resources assessment for the proposed 5037 Patata Street Industrial Project on behalf of the City of South Gate. As part of the environmental review process, we are conducting a cultural analysis.

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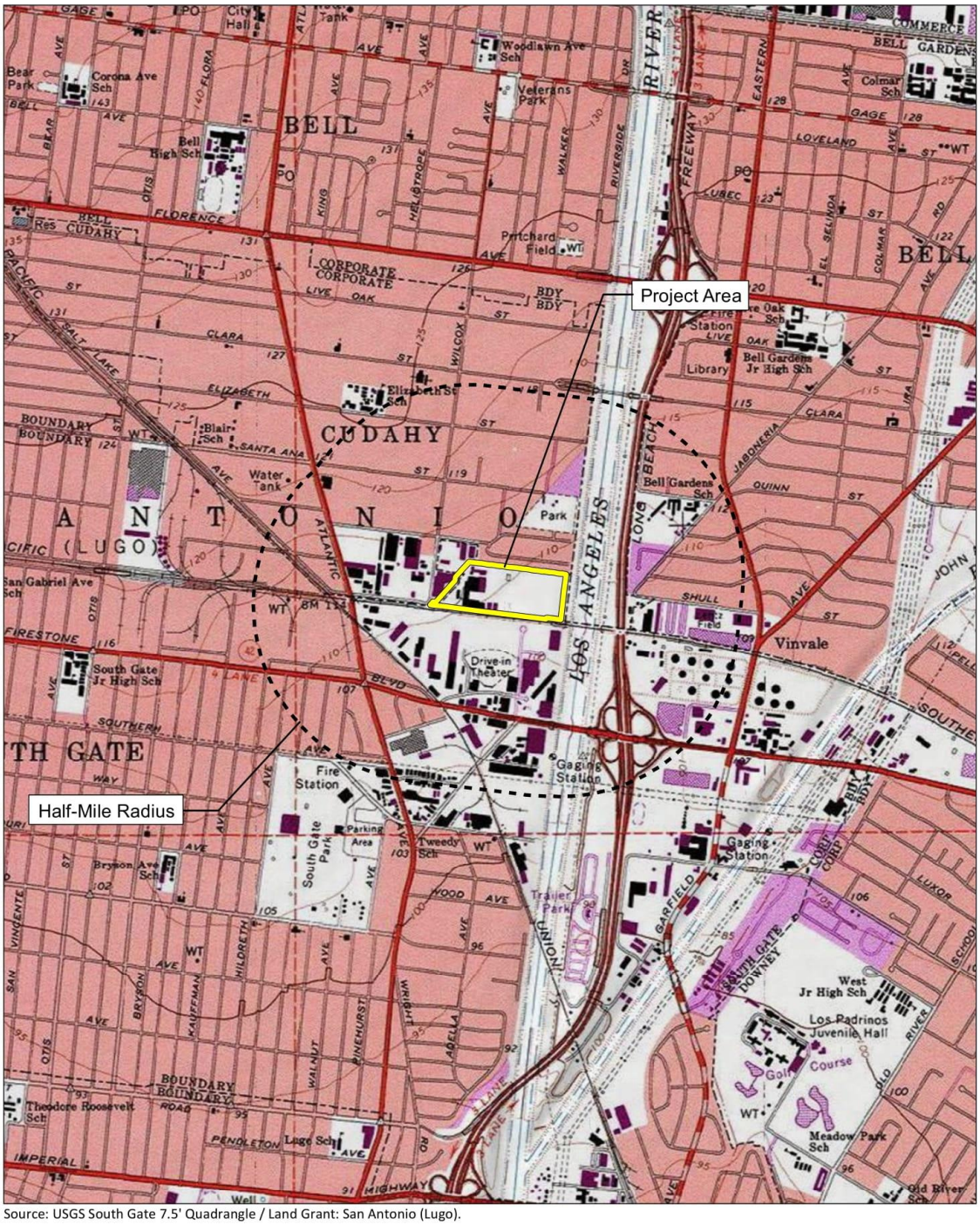


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5037 PATATA STREET INDUSTRIAL PROJECT

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SINGAPORE

October 15, 2021.

Gabrieleno/Tongva San Gabriel Band of Mission Indians
Anthony Morales, Chairperson
P.O. Box 693
San Gabriel, CA, 91778

Subject: **Proposed 5037 Patata Street Industrial Project**

Dear Chairperson Morales:

FirstCarbon Solutions (FCS) is preparing a cultural resources assessment for the proposed 5037 Patata Street Industrial Project on behalf of the City of South Gate. As part of the environmental review process, we are conducting a cultural analysis.

The Applicant is proposing to remove the existing uses and develop a total of 447,420 square feet of warehouse, office, and maintenance space in two buildings. Demolition of all existing on-site buildings and parking lots have already occurred under a separate ministerial demolition permit. The primary building would have a building footprint of 409,920 square feet and would consist of office, warehouse, and cooler space, as well as mezzanine space. The second building would consist of a 12,000-square-foot truck maintenance workshop to be located at the southeast corner of the project site.

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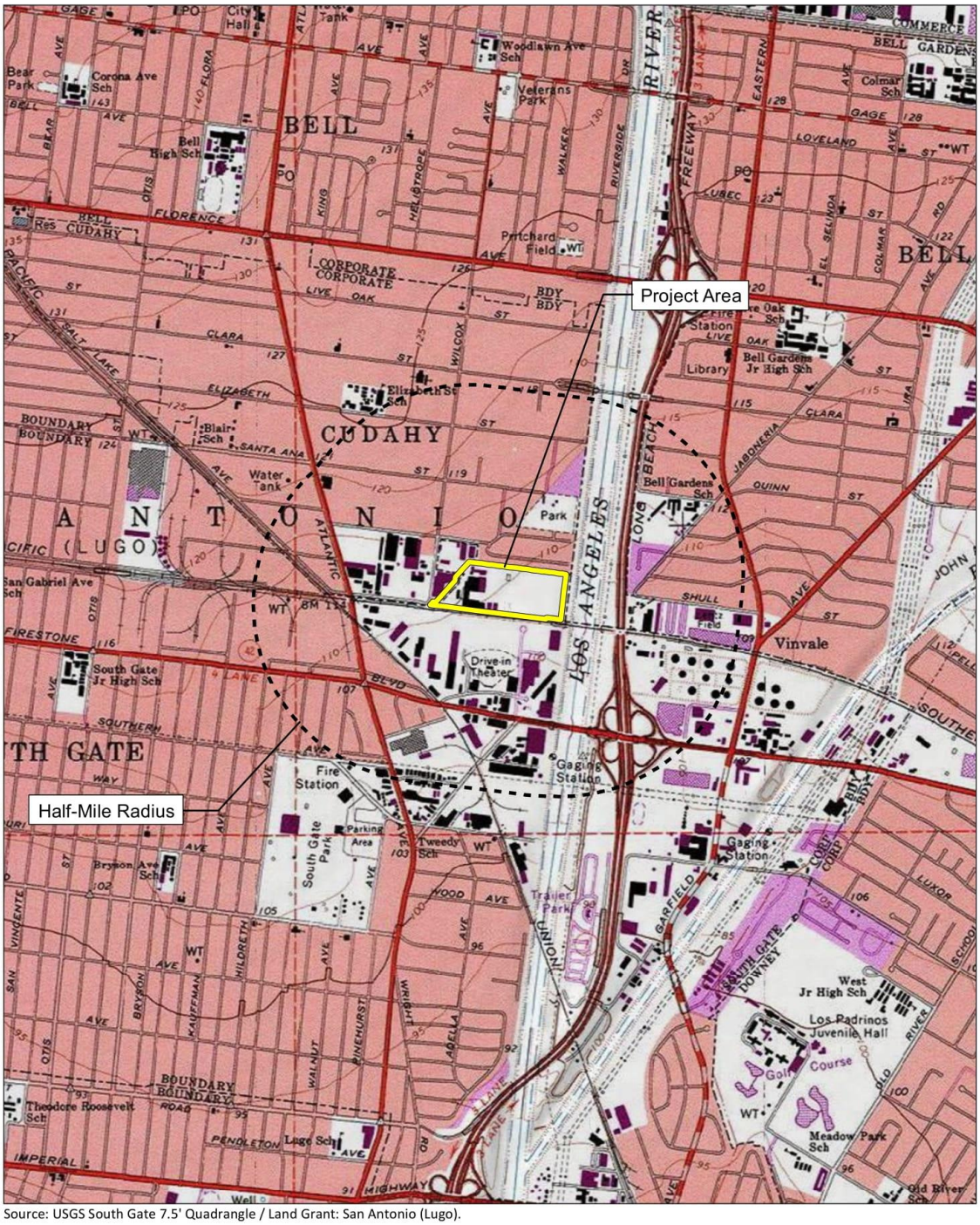


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October 15, 2021.

Santa Rosa Band of Cahuilla Indians
Lovina Redner, Tribal Chair
P.O. Box 391820
Anza, CA, 92539

Subject: **Proposed 5037 Patata Street Industrial Project**

Dear Tribal Chair Redner:

FirstCarbon Solutions (FCS) is preparing a cultural resources assessment for the proposed 5037 Patata Street Industrial Project on behalf of the City of South Gate. As part of the environmental review process, we are conducting a cultural analysis.

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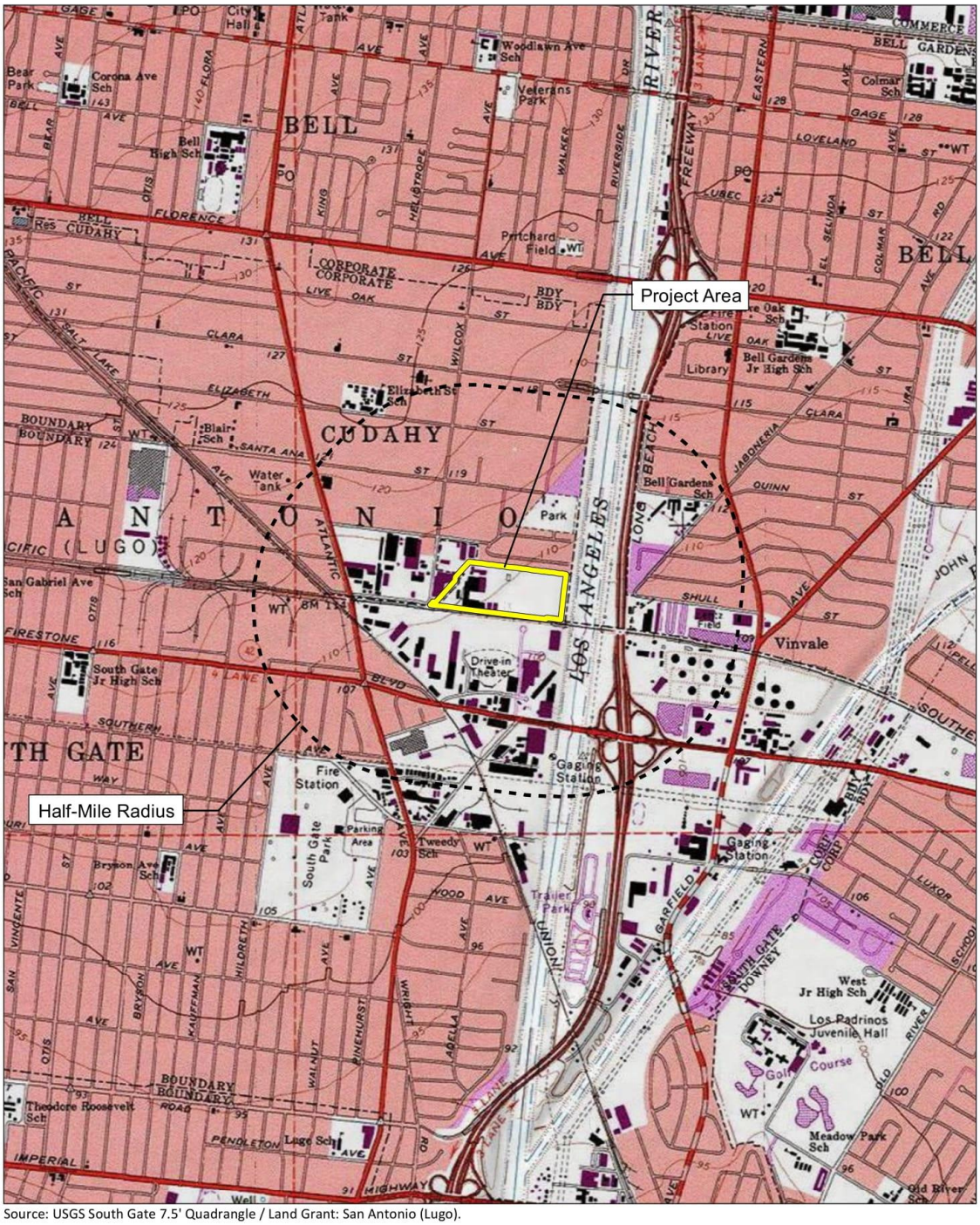


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October 15, 2021.

Gabrieleno Band of Mission Indians - Kizh Nation
Andrew Salas, Chairperson
P.O. Box 393
Covina, CA, 91723

Subject: **Proposed 5037 Patata Street Industrial Project**

Dear Chairperson Salas:

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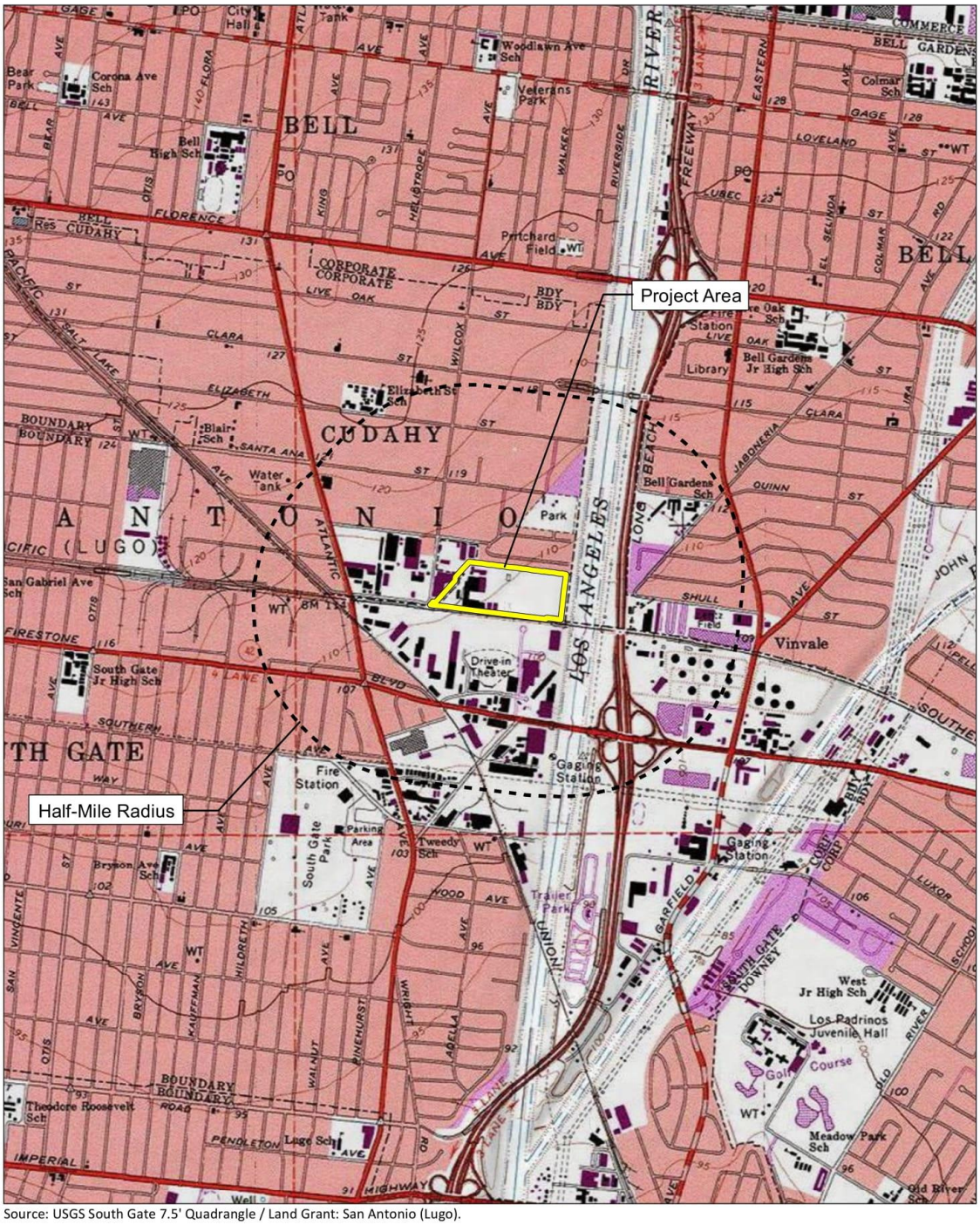


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October 15, 2021.

Soboba Band of Luiseno Indians
Isaiah Vivanco, Chairperson
P. O. Box 487
San Jacinto, CA, 92581

Subject: **Proposed 5037 Patata Street Industrial Project**

Dear Chairperson Vivanco:

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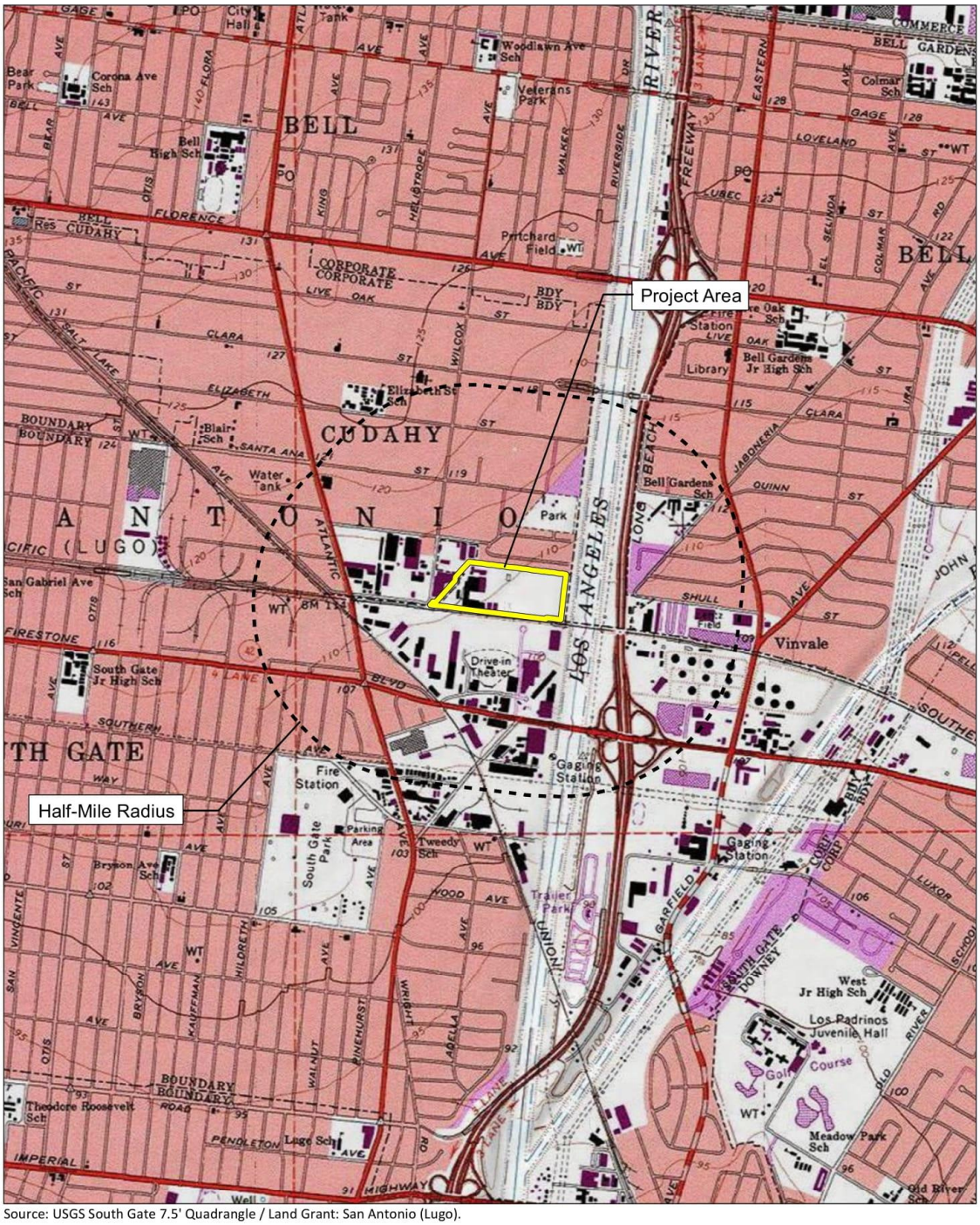


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CITY OF SOUTH GATE
5037 PATATA STREET INDUSTRIAL PROJECT

From: Gabrieleno Administration
To: Maddie Dolan
Subject: Re: 2931.0008 Tribal Consultation Request for the Proposed 5037 Patata Street Industrial Project
Date: Tuesday, October 19, 2021 11:49:59 AM

Thank you
Admin Specialist
Gabrieleno Band of Mission Indians - Kizh Nation
PO Box 393
Covina, CA 91723
Office: 844-390-0787
website: www.gabrielenoindians.org

The region where Gabrieleño culture thrived for more than eight centuries encompassed most of Los Angeles County, more than half of Orange County and portions of Riverside and San Bernardino counties. It was the labor of the Gabrieleño who built the missions, ranchos and the pueblos of Los Angeles. They were trained in the trades, and they did the construction and maintenance, as well as the farming and managing of herds of livestock. "The Gabrieleño are the ones who did all this work, and they really are the foundation of the early economy of the Los Angeles area " . "That's a contribution that Los Angeles has not recognized--the fact that in its early decades, without the Gabrieleño, the community simply would not have survived."

On Mon, Oct 18, 2021 at 6:45 PM Maddie Dolan <mdolan@fcs-intl.com> wrote:

> Hello,
>
> Here is the Lead Agency contact:
>
> Grace I. Martin, Interim Community Development Director
>
> City of South Gate Planning Division
>
> 8650 California Avenue
> South Gate, California 90280
> Phone: 323.563.9566
> Email: gmartin@sogate.org
>
> Best,
>
> Madelyn Dolan (she | her | hers)
> **Environmental Services, Analyst**

Mobile +1 925 451 7133

FirstCarbon Solutions (FCS)
An ADEC Innovation

LinkedIn | **Facebook** | **Twitter**

From: Gabrieleno Administration <admin@gabrielenoindians.org>
Sent: Friday, October 15, 2021 2:21 PM
To: Maddie Dolan <mdolan@fcs-intl.com>
Cc: bsalas@tcrmanagement.net
Subject: Re: 2931.0008 Tribal Consultation Request for the Proposed 5037 Patata Street Industrial Project

Hello Maddie

On behalf of our Tribe can you please provide the lead contact person's information from the city of South Gate that you are representing?

Thank you

Admin Specialist
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The region where Gabrieleño culture thrived for more than eight centuries encompassed most of Los Angeles County, more than half of Orange County and portions of Riverside and San Bernardino counties. It was the

labor of the Gabrieleño who built the missions, ranchos and the pueblos of Los Angeles. They were trained in the trades, and they did the construction and maintenance, as well as the farming and managing of herds of livestock. "The Gabrieleño are the ones who did all this work, and they really are the foundation of the early economy of the Los Angeles area ". "That's a contribution that Los Angeles has not recognized--the fact that in its early decades, without the Gabrieleño, the community simply would not have survived."

On Fri, Oct 15, 2021 at 1:57 PM Maddie Dolan <mdolan@fcs-intl.com> wrote:

> Hello,
>
> Attached is a request for information pertaining to a cultural resources assessment of the proposed 5037 Patata Street Industrial Project in the City of South Gate. Please feel free to contact Stefanie Griffin at sgriffin@fcs-intl.com if you would like to provide input. Thank you for your assistance.
>
> Best,
>
> Madelyn Dolan (she | her | hers)
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Appendix D:
Project Site Photographs

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Photo 1: Overview of project site from SW corner. View NE.



Photo 2: Overview of project site from central western border. View E.



Photo 3: Overview of the distribution center, from the western border. View NE



Photo 4: Overview of project site from the northern corner. View S.



Photo 5: Overview of the project area from the northern corner. View SE.



Photo 6: Overview of the project area from northern corner. View E.



Photo 7: View of the remaining debris from the former office. View N.



Photo 8: View of tile and debris. View plan.



Photo 9: Overview of distribution center, from SW corner. View E.



Photo 10: Overview of distribution center, from center-western border. View E.



Photo 11: Overview of distribution center, from NW corner. View E.



Photo 12: Overview of the undeveloped area. Start of T1 from NW corner. View S..



Photo 13: Overview of the undeveloped area. End of T1 from SW corner. View N.



Photo 14: Overview of the undeveloped area. Start of T4 from SW corner. View N.



Photo 15: Overview of the undeveloped area. End of 41 from NW corner. View S.

Appendix E: Regulatory Framework

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REGULATORY FRAMEWORK

Local, state, and federal government agencies have developed laws and regulations designed to protect significant cultural resources that may be affected by projects regulated, funded, or undertaken by the agency. Federal and state laws that govern the preservation of historic and archaeological resources of national, state, regional, and local significance include the National Environmental Policy Act (NEPA), the National Historic Preservation Act (NHPA), and California Environmental Quality Act (CEQA). In addition, laws specific to work conducted on federal lands include the Archaeological Resources Protection Act, the American Antiquities Act, and the Native American Graves Protection and Repatriation Act.

The following federal or CEQA criteria were used to evaluate the significance of potential impacts on cultural resources for the proposed project. An impact is considered significant if it would affect a resource eligible for listing in the National Register of Historic Places (NRHP) or the California Register of Historical Resources (CRHR), or if it is identified as a unique archaeological resource.

Federal-level Evaluations

National Historic Preservation Act

The National Historic Preservation Act of 1966 (NHPA), as amended, established the NRHP, which contains an inventory of the nation's significant prehistoric and historic properties. Under 36 Code of Federal Regulations 60, a property is recommended for possible inclusion on the NRHP if it is at least 50 years old, has integrity, and meets one of the following criteria:

- It is associated with significant events in history, or broad patterns of events;
- It is associated with significant people in the past;
- It embodies the distinctive characteristics of an architectural type, period, or method of construction; or it is the work of a master or possesses high artistic value; or it represents a significant and distinguishable entity whose components may lack individual distinction; or
- It has yielded, or may yield, information important in history or prehistory.

Certain types of properties are usually excluded from consideration for listing in the NRHP, but they can be considered if they meet special requirements in addition to meeting the criteria listed above. Such properties include religious sites, relocated properties, graves and cemeteries, reconstructed properties, commemorative properties, and properties that have achieved significance within the past 50 years.

Archaeological Resources Protection Act

The Archaeological Resources Protection Act (ARPA) amended the Antiquities Act of 1906 (16 United States Code [USC] §§ 431–433) and set a broad policy that archaeological resources are important to the nation and should be protected, and required special permits before the excavation or removal of archaeological resources from public or Indian lands. The purpose of the ARPA was to secure, for

the present and future benefit of the American people, the protection of archaeological resources and sites that are on public lands and Indian lands, and to foster increased cooperation and exchange of information between governmental authorities, the professional archaeological community, and private individuals having collections of archaeological resources and data that were obtained before October 31, 1979.

American Indian Religious Freedom Act

The American Indian Religious Freedom Act (AIRFA) established federal policy to protect and preserve the inherent rights of freedom for Native American groups to believe, express, and exercise their traditional religions. These rights include but are not limited to access to sites, use and possession of sacred objects, and freedom to worship through ceremonials and traditional rites.

Native American Graves Protection and Repatriation Act

The Native American Graves Protection and Repatriation Act of 1990 sets provisions for the intentional removal and inadvertent discovery of human remains and other cultural items from federal and tribal lands. It clarifies the ownership of human remains and sets forth a process for repatriation of human remains and associated funerary objects and sacred religious objects to the Native American groups claiming to be lineal descendants or culturally affiliated with the remains or objects. It requires any federally funded institution housing Native American remains or artifacts to compile an inventory of all cultural items within the museum or with its agency and to provide a summary to any Native American tribe claiming affiliation.

State Level Evaluation Processes

An archaeological site may be considered a historical resource if it is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California per Public Resources Code Section 5020.1(j) or, if it meets the criteria for listing on the CRHR per the California Code of Regulations, Title 14, Section 4850.

The most recent amendments to the CEQA Guidelines direct lead agencies to first evaluate an archaeological site to determine whether it meets the criteria for listing in the CRHR. If an archaeological site is a historical resource, in that it is listed or eligible for listing in the CRHR, potential adverse impacts to it must be considered as stated in Public Resources Code Sections 21084.1 and 21083.2(l). If an archaeological site is considered not to be a historical resource, but meets the definition of a "unique archaeological resource" as defined in Public Resources Code Section 21083.2, then it would be treated in accordance with the provisions of that section.

With reference to Public Resources Code Section 21083.2, each site found within a project area will be evaluated to determine whether it is a unique archaeological resource. A unique archaeological resource is described as an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets one or more of the following criteria:

1. Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.

2. Has a special and particular quality such as being the oldest of its type or the best available example of its type.
3. Is directly associated with a scientifically recognized important prehistoric or historic event or person.

As used in this report, a "non-unique archaeological resource" means an archaeological artifact, object, or site that does not meet the criteria for eligibility for listing on the CRHR, as noted in subdivision (g) of Public Resources Code Section 21083.2. A non-unique archaeological resource requires no further consideration, other than the simple recording of its components and features. Isolated artifacts are typically considered non-unique archaeological resources. Historic structures that have had their superstructures demolished or removed can be considered historic archaeological sites and are evaluated following the processes used for prehistoric sites. Finally, the California Office of Historic Preservation (OHP) recognizes an age threshold of 45 years. Cultural resources built less than 45 years ago may qualify for consideration, but only under the most extraordinary circumstances.

Title 14 of the California Code of Regulations, Chapter 3, Section 15064.5, is associated with determining the significance of impacts to archaeological and historical resources. Here, the term historical resource includes the following:

1. A resource listed in, or determined eligible by the State Historical Resources Commission, for listing in the CRHR (Public Resources Code [PRC] § 5024.1; Title 14 California Code of Regulations [CCR], § 4850, *et seq*.).
2. A resource included in a local register of historical resources, as defined in Public Resources Code Section 5020.1(k) or identified as significant in a historical resource survey meeting the Public Resources Code Section 5024.1(g) requirements, shall be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.
3. Any object, building, structure, site, area, place, record, or manuscript, which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered a historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered by the lead agency to be historically significant if the resource meets the criteria for listing on the California Register of Historical Resources (PRC § 5024.1; Title 14 CCR § 4852) including the following:
    a) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
    b) Is associated with the lives of persons important in our past.
    c) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
    d) Has yielded, or may be likely to yield, information important in prehistory or history.

Typically, archaeological sites exhibiting significant features qualify for the CRHR under Criterion D because such features have information important to the prehistory of California. A lead agency may determine that a resource may be a historical resource as defined in Public Resources Code Sections 5020.1(j) or 5024.1, even if it is:

- Not listed in or determined to be eligible for listing in the CRHR.
- Not included in a local register of historical resources pursuant to Public Resources Code Section 5020.1(k).
- Identified in a historical resources survey per Public Resources Code Section 5024.1(g).

California Register of Historical Resources

As defined by CEQA Guidelines Section 15064.5(a)(3)(A-D), a resource shall be considered historically significant if the resource meets the criteria for listing on the CRHR. The CRHR and many local preservation ordinances have employed the criteria for eligibility to the NRHP as a model, since the NRHP provides the highest standard for evaluating the significance of historic resources. A resource that meets the NRHP criteria is clearly significant. In addition, a resource that does not meet the NRHP standards may still be considered historically significant at a local or State level.

California Environmental Quality Act

The CEQA Guidelines state that a resource need not be listed on any register to be found historically significant. CEQA Guidelines direct lead agencies to evaluate archaeological sites to determine whether they meet the criteria for listing in the CRHR. If an archaeological site is a historical resource, in that it is listed or eligible for listing in the CRHR, potential adverse impacts to it must be considered. If an archaeological site is considered not to be a historical resource but meets the definition of a "unique archaeological resource" as defined in Public Resources Code Section 21083.2, then it would be treated in accordance with the provisions of that section.

Native American Heritage Commission Sacred Lands Inventory

Section 5097.91 of the Public Resources Code established whose duties include the inventory of places of religious or social significance to Native Americans and the identification of known graves and cemeteries of Native Americans on private lands. This inventory is referred to as the NAHC Sacred Lands File. Under Section 5097.9 of the Public Resources Code, a State policy of noninterference with the free expression or exercise of Native American religion was articulated along with a prohibition of severe or irreparable damage to Native American sanctified cemeteries, places of worship, religious or ceremonial sites or sacred shrines located on public property. Section 5097.98 of the Public Resources Code specifies a protocol to be followed when the NAHC receives notification of a discovery of Native American human remains from a County Coroner. Section 5097.5 defines as a misdemeanor the unauthorized disturbance or removal of archaeological, historic, or paleontological resources located on public lands.

California Assembly Bill 52—Effects on Tribal Cultural Resources

Assembly Bill (AB) 52 was signed into law on September 25, 2014, and provides that any public or private "project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment." TCRs include "[s]ites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are eligible for inclusion in the California Register of Historical Resources or included in a local register of historical resources." Under prior law, TCRs were typically addressed under the umbrella of "cultural resources," as discussed above. AB 52 formally added the category of "tribal cultural resources" to CEQA, and extends the consultation and confidentiality requirements to all projects, rather than just projects subject to Senate Bill (SB) 18 as discussed above.

The parties must consult in good faith, and consultation is deemed concluded when either: (1) the parties agree to measures to mitigate or avoid a significant effect on a tribal cultural resource (if such a significant effect exists); or (2) when a party concludes that mutual agreement cannot be reached. Mitigation measures agreed upon during consultation must be recommended for inclusion in the environmental document. AB 52 also identifies mitigation measures that may be considered to avoid significant impacts if there is no agreement on appropriate mitigation. Recommended measures include:

- Preservation in place.
- Protecting the cultural character and integrity of the resource.
- Protecting the traditional use of the resource.
- Protecting the confidentiality of the resource.
- Permanent conservation easements with culturally appropriate management criteria.

Thresholds of Significance

If a project will have a significant impact on a cultural resource, several steps must be taken to determine whether the cultural resource is a "unique archaeological resource" under CEQA. If analysis and/or testing determine that the resource is a unique archaeological resource and therefore subject to mitigation prior to development, a threshold of significance should be developed. The threshold of significance is a point where the qualities of significance are defined, and the resource is determined to be unique under CEQA. A significant impact is regarded as the physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of the resource will be reduced to a point that it no longer meets the significance criteria. Should analysis indicate that project development will destroy the unique elements of a resource; the resource must be mitigated for under CEQA regulations. The preferred form of mitigation is to preserve the resource in place, in an undisturbed state. However, as that is not always possible or feasible, appropriate mitigation measures may include, but are not limited to:

1. Planning construction to avoid the resource.
2. Deeding conservation easements.
3. Capping the site prior to construction.

If a resource is determined to be a "non-unique archaeological resource," no further consideration of the resource by the Lead Agency is necessary.

Tribal Consultation

The following serves as an overview of the procedures and timeframes for the Tribal Consultation process, for the complete Tribal Consultation Guidelines, please refer to the State of California Office of Planning and Research website.

Prior to the amendment or adoption of general or specific plans, local governments must notify the appropriate tribes of the opportunity to conduct consultation for the purpose of preserving or mitigating impacts to cultural places located on land within the local government's jurisdiction that is affected by the plan adoption or amendment. The tribal contacts for this list are maintained by the NAHC and are distinct from the Most Likely Descendant (MLD) list. It is suggested that local governments send written notice by certified mail with return receipt requested. The tribes have 90 days from the date they receive notification to request consultation. In addition, prior to adoption or amendment of a general or specific plan, local government must refer the proposed action to tribes on the NAHC list that have traditional lands located within the City or County's jurisdiction. Notice must be sent regardless of prior consultation. The referral must allow a 45-day comment period.

In brief, notices from government to the tribes should include:

- A clear statement of purpose.
- A description of the proposed general or specific plan, the reason for the proposal, and the specific geographic areas affected.
- Detailed maps to accompany the description.
- Deadline date for the tribes to respond.
- Government representative(s) contact information.
- Contact information for project proponent/Applicant, if applicable.

The basic schedule for this process is:

30 days: time the NAHC has to provide tribal contact information to the local government; this is recommended, not mandatory.

90 days: time the tribe has to respond indication whether or not they want to consult. Note: tribes can agree to a shorter timeframe. In addition, consultation does not begin until/unless requested by the tribe within 90 days of receiving notice of the opportunity to consult. The consultation period, if requested, is open-ended. The tribes and local governments can discuss issues for as long as necessary, or productive, and need not result in agreement.

45 days: time the local government has to refer proposed action, such as adoption or amendment to a general plan or specific plan, to agencies, including the tribes. Referral required even if there has been prior consultation. This opens the 45-day comment period.

10 days: time the local government has to provide tribes of notice of public hearing.

California Assembly Bill 52—Effects on Tribal Cultural Resources

AB 52 amended the CEQA statute to identify an additional category of resource to be considered under CEQA, called "tribal cultural resources." It added Public Resources Code Section 21074, which defines "tribal cultural resources" as follows:

(a) "Tribal cultural resources" are either of the following:
  (1) Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:
    A) Included or determined to be eligible for inclusion in the CRHR.
    B) Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.
  (2) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

Local Regulations

Los Angeles County Regulations General Plan 2035

Goals and Policies for Historic, Cultural, and Paleontological Resources

Historic, cultural, and paleontological resources are an important part of Los Angeles County's identity. This section sets forth goals and policies for the management and preservation of historic, cultural, and paleontological resources in the unincorporated areas.

Goal/Policies C/NR 14: Protected historic, cultural, and paleontological resources.

Policy C/NR 14.1	Mitigate all impacts from new development on or adjacent to historic, cultural, and paleontological resources to the greatest extent feasible.
Policy C/NR 14.2	Support an inter-jurisdictional collaborative system that protects and enhances historic, cultural, and paleontological resources.
Policy C/NR 14.3	Support the preservation and rehabilitation of historic buildings.
Policy C/NR 14.4	Ensure proper notification procedures to Native American tribes in accordance with Senate Bill 18 (2004 Policy C/NR 14.5: Promote public awareness of historic, cultural, and paleontological resources.
Policy C/NR 14.6	Ensure proper notification and recovery processes are carried out for development on or near historic, cultural, and paleontological resources

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