Appendix C

Cultural Resources Inventory Report

DRAFT

Cultural Resources Inventory Report

Talbert Regional Park Master Plan Project

NOVEMBER 2025

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National Archaeological Database (NADB) Information

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Project Proponent:	Orange County Department of Public Works
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Acreage:	182 acres
Keywords:	OC Parks; Negative; Talbert Regional Park; Phase I Inventory

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Acronyms and Abbreviations

Acronym/Abbreviation	Definition
AB	Assembly Bill
CEQA	California Environmental Quality Act
CHRIS	California Historical Resources Information System
County	County of Orange
CRHR	California Register of Historical Resources
NAHC	Native American Heritage Commission
NRHP	National Register of Historic Places
OC Parks	Orange County Parks Department
OCPW	Orange County Department of Public Works
Park	Talbert Regional Park
PRC	California Public Resources Code
Project	Talbert Regional Park Master Plan Update
SLF	Sacred Lands File
SCCIC	South Central Coastal Information Center
USGS	United States Geological Survey

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Management Summary

This report presents the results of Dudek's cultural resources inventory efforts conducted for the Talbert Regional Park Master Plan Update Project (Project), located in the City of Costa Mesa, California. The Project falls within an unsectioned portion of Township 6 South and Range 10 West of the *Newport Beach, California* United States Geological Survey (USGS) 7.5 Minute Series Quadrangle (Figure 1, Project Location). The Project proposes key improvements, infrastructure improvements, and habitat restoration improvements to the 182-acre Talbert Regional Park as established by the 2025 Master Plan (Figure 2, Project Area).

The Orange County Department of Public Works Development Services (OCPW) is the lead agency responsible for compliance with the California Environmental Quality Act (CEQA). Dudek performed a Phase I cultural resources inventory that included a records search, a literature review, an archival information review, a review of the geomorphological context of the Project area, a Native American Heritage Commission (NAHC) Sacred Lands File (SLF) search, a pedestrian survey of the Project area, and the preparation of this cultural resources inventory report.

Dudek conducted a California Historical Resources Information System (CHRIS) records search of the Project area and surrounding 0.5-mile radius at the South Central Coastal Information Center (SCCIC). The records search identified six (6) previously recorded prehistoric archaeological resources, two (2) historic-era built environment resources, one (1) historic-era archaeological resource, and one (1) multicomponent archaeological resource within 0.5 miles of the Project area, none of which intersect with the Project area. Notably, P-30-000165 (CA-ORA-165), characterized as the archaeologically and tribally significant ethnohistoric Gabrielino village site of *Lukup*, is located directly adjacent to the eastern boundary of the Project area. *Lukup* likely referred to the broader area along the Santa Ana River that encompassed the six (6) prehistoric archaeological resources and the one (1) multicomponent archaeological resource identified in the SCCIC records search.

A NAHC SLF search was also requested for the Project, and results were positive for Native American cultural resources within 0.5 miles of the Project area, though the NAHC did not provide details on what the resource(s) are or where they are located. Additionally, a review of historical aerial photographs and topographic maps indicates that the Project area has remained largely undeveloped and undisturbed, aside from limited disturbances associated with the channelization of the Santa Ana River and Banning Channel along the western boundary of the Project area.

Dudek archaeologists conducted an intensive-level cultural resources pedestrian survey of the Project area on November 22, 2019, and an updated reconnaissance-level pedestrian survey of the Project area on October 29, 2025. Though no cultural resources were identified during either survey, dense vegetation obscured approximately 85 percent of the ground surface, significantly limiting surface visibility.

Based on the presence of significant archaeological resources adjacent to the Project area, and in consideration of the broader pattern of prehistoric use along the coast and near the Santa Ana River, there is a moderate potential for the inadvertent discovery of archaeological resources during Project implementation. Dudek recommends archaeological and Native American monitoring during initial ground disturbing activities for the Project. If disturbed sediments (e.g., fill) or other sediments and formations are identified that do not have the potential to contain significant archaeological resources as defined by CEQA, then monitoring may be reduced or terminated. The requirement for Native American monitoring, while recommended, shall be determined by the lead agency in consultation with the traditionally culturally affiliated tribes with geographic ties to the Project area. Management

recommendations to reduce potential impacts to unanticipated archaeological resources and human remains during construction activities are provided in the Summary and Management Recommendations section of this report.

1 Introduction

Dudek conducted a cultural resources inventory for the Talbert Regional Park Master Plan Update Project (Project) located in the City of Costa Mesa, California. The Orange County Department of Public Works Development Services (OCPW) is the lead agency responsible for compliance with the California Environmental Quality Act (CEQA). Dudek performed a Phase I cultural resources inventory that included a records search, a literature review, an archival information review, a review of the geomorphological context of the Project area, a Native American Heritage Commission (NAHC) Sacred Lands File (SLF) search, a pedestrian survey of the Project area, and the preparation of this cultural resources technical report.

1.1 Project Location and Description

The Project is proposed by Orange County Parks Department (OC Parks) in conjunction with the OCPW to install trail, infrastructure, and access improvements within an approximately 182-acre area located both north and south of Victoria Street in the City of Costa Mesa, California (Figure 1, Project Location). The Project falls within an unsectioned portion of Township 6 South and Range 10 West of the *Newport Beach, California* United States Geological Survey (USGS) 7.5 Minute Series Quadrangle (Figure 1, Project Location). The 92.5 acres north of Victoria Street is known as North Talbert, while the 88.5 acres south of Victoria Street is known as South Talbert (collectively called the "Project area" herein).

The Project proposes key improvements, infrastructure improvements, and habitat restoration improvements to Talbert Regional Park as established by the 2025 Master Plan. The proposed key improvement areas are the Nature Center, the Balboa Boulevard Entrance, and Infrastructure Improvements. Specifically, proposed infrastructure improvements include enhancements to the interior circulation system to provide improved multi-modal trails to enhance user experience. The Master Plan also calls for the continuation of existing, permitted restoration practices including the removal of non-native vegetation throughout South Talbert, and at the Placentia Drain within North Talbert. Planting of native coastal sage and riparian tree species is also planned within South Talbert to expand the existing mitigation/restoration areas.

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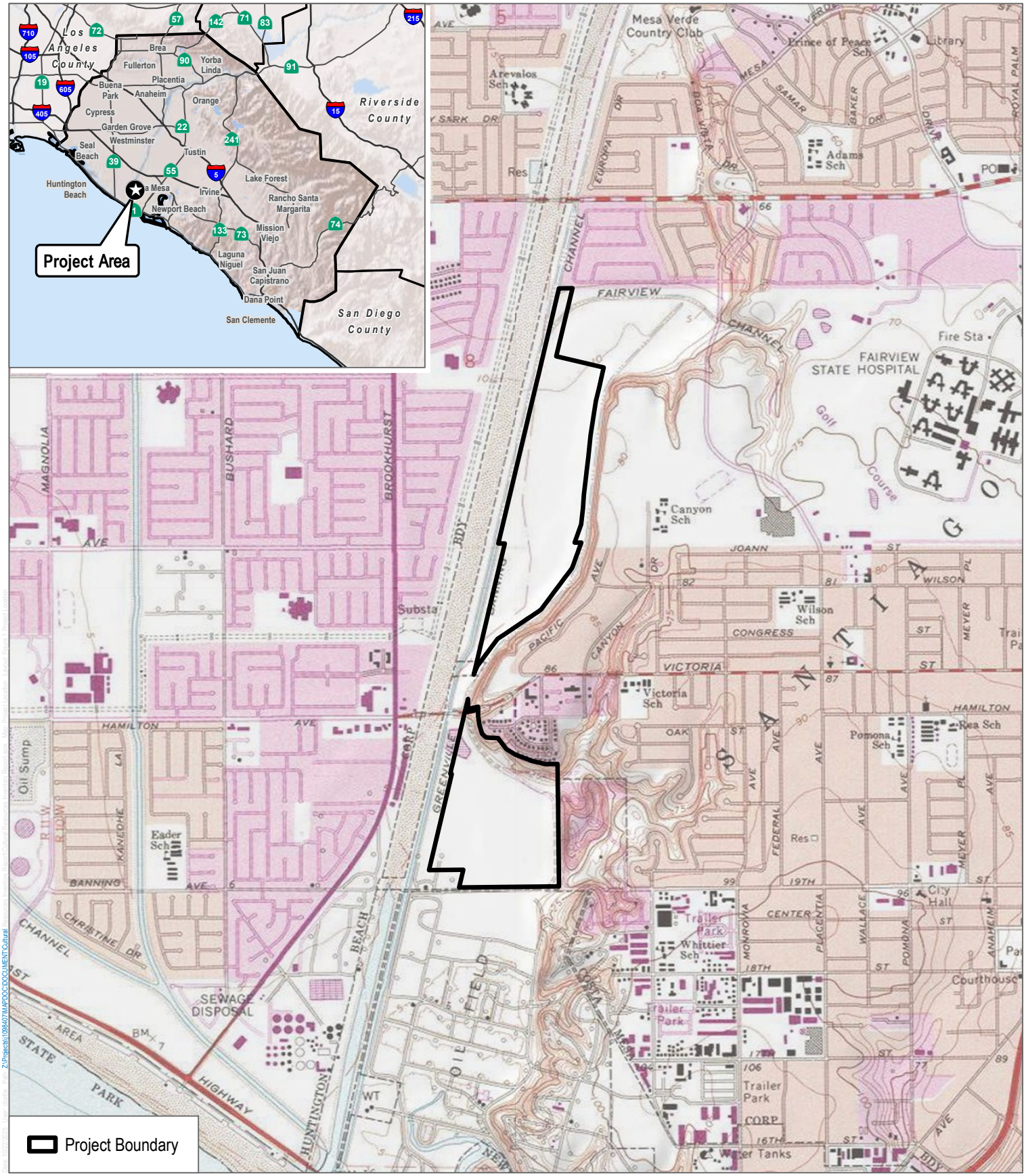

SOURCE: USGS 7.5-Minute Series Newport Beach Quadrangle

DUDEK

0 1,000 2,000 Feet
0 250 500 Meters
1:24,000

FIGURE 1

Project Location

Talbert Regional Park Master Plan Project

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SOURCE: County of Orange; Open Street Maps 2019; DigitalGlobe Accessed 2022

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0 380 760 Feet

FIGURE 2
Project Area
Talbert Regional Park Master Plan Project

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1.2 Regulatory Framework

The Project is subject to compliance with CEQA and local regulatory conditions. No federal nexus is presently anticipated.

1.2.1 California Register of Historic Resources

In California, the term "historical resource" includes, but is not limited to, "any object, building, structure, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California" (PRC Section 5020.1[j]). In 1992, the California legislature established the California Register of Historical Resources (CRHR) "to be used by state and local agencies, private groups, and citizens to identify the state's historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change" (PRC Section 5024.1[a]). The criteria for listing resources in the CRHR were expressly developed to be in accordance with previously established criteria developed for listing in the National Register of Historic Place (NRHP), enumerated as follows: According to California Public Resources Code (PRC) Section 5024.1(c)(1–4), a resource is considered historically significant if it (i) retains "substantial integrity" and (ii) 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 construction, or represents the work of an important creative individual, or possesses high artistic values.
4. Has yielded, or may be likely to yield, information important in prehistory or history.

To understand the historic importance of a resource, sufficient time must have passed to obtain a scholarly perspective on the events or individuals associated with the resource. A resource less than 50 years old may be considered for listing in the CRHR if it can be demonstrated that sufficient time has passed to understand its historical importance (14 CCR 4852[d][2]).

The CRHR protects cultural resources by requiring evaluations of the significance of prehistoric and historic resources. The criteria for the CRHR are nearly identical to those for the NRHP, and properties listed or formally designated as eligible for listing in the NRHP are automatically listed in the CRHR, as are state landmarks and points of interest. The CRHR also includes properties designated under local ordinances or identified through local historical resource surveys.

1.2.2 California Environmental Quality Act

The following CEQA statutes (PRC Section 21000 et seq.) and CEQA Guidelines (14 CCR 15000 et seq.) are of relevance to the analysis of archaeological, historic, and Tribal Cultural Resources (TCRs):

- PRC Section 21083.2(g) defines "unique archaeological resource."
- PRC Section 21084.1 and CEQA Guidelines Section 15064.5(a) defines "historical resources." In addition, CEQA Guidelines Section 15064.5(b) defines the phrase "substantial adverse change in the

significance of an historical resource"; it also defines the circumstances when a project would materially impair the significance of a historical resource.

- PRC Section 21074(a) defines "Tribal Cultural Resources."
- PRC Section 5097.98 and CEQA Guidelines Section 15064.5(e) set forth standards and steps to be employed following the accidental discovery of human remains in any location other than a dedicated cemetery.
- PRC Sections 21083.2(b) and 21083.2(c) and CEQA Guidelines Section 15126.4 provide information regarding the mitigation framework for archaeological and historic resources, including examples of preservation-in-place mitigation measures. Preservation in place is the preferred manner of mitigating impacts to significant archaeological sites because it maintains the relationship between artifacts and the archaeological context and may help avoid conflict with religious or cultural values of groups associated with the archaeological site(s).

More specifically, under CEQA, a project may have a significant effect on the environment if it may cause "a substantial adverse change in the significance of an historical resource" (PRC Section 21084.1; 14-CCR 15064.5[b]).

A "substantial adverse change in the significance of an historical resource," reflecting a significant effect under CEQA, means "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired" (14- CCR 15064.5[b][1]; PRC Section 5020.1[q]). In turn, the significance of a historical resource is materially impaired when a project does any of the following (14 CCR 15064.5[b][2]):

1. Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register [CRHR]; or
2. Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to Section 5020.1(k) of the PRC or its identification in an historical resources survey meeting the requirements of Section 5024.1(g) of the PRC, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or
3. Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register as determined by a lead agency for purposes of CEQA.

Pursuant to these sections, the CEQA inquiry begins with evaluating whether a project area contains any historical resources, then evaluates whether that project will cause a substantial adverse change in the significance of a historical resource such that the resource's historical significance would be materially impaired.

If it can be demonstrated that a project will cause damage to a unique archaeological resource, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. To the extent that they cannot be left undisturbed, mitigation measures are required (PRC Sections 21083.2[a]–[c]).

PRC Section 21083.2(g) defines a *unique archaeological resource* 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 any of the following criteria (PRC Section 21083.2[g]):

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.

Impacts on non-unique archaeological resources are generally not considered a significant environmental impact (PRC Section 21083.2[a]; 14 CCR 15064.5[c][4]). However, if a non-unique archaeological resource qualifies as a TCR (PRC Sections 21074[c] and 21083.2[h]), further consideration of significant impacts is required.

CEQA Guidelines Section 15064.5 assigns special importance to human remains and specifies procedures to be used when Native American remains are discovered. These procedures are detailed in PRC Section 5097.98.

1.2.3 Native American Historic Cultural Sites (California Public Resources Code section 5097 et seq.)

State law addresses the disposition of Native American burials in archaeological sites and protects such remains from disturbance, vandalism, or inadvertent destruction; establishes procedures to be implemented if Native American skeletal remains are discovered during construction of a project; and establishes the NAHC to resolve disputes regarding the disposition of such remains. In addition, the Native American Historic Resource Protection Act makes it a misdemeanor punishable by up to one year in jail to deface or destroy an Indian historic or cultural site that is listed or may be eligible for listing in the CRHR.

1.2.4 California Native American Graves Protection and Repatriation Act

The California Native American Graves Protection and Repatriation Act (California Repatriation Act), enacted in 2001, required all state agencies and museums that receive state funding and that have possession or control over collections of human remains or cultural items, as defined, to complete an inventory and summary of these remains and items on or before January 1, 2003, with certain exceptions. The California Repatriation Act also provides a process for the identification and repatriation of these items to the appropriate tribes.

1.2.5 California Health and Safety Code section 7050.5 and Public Resources Code Section 5097.98

CEQA Guidelines Section 15064.5 assigns special importance to human remains and specifies procedures to be used when Native American remains are discovered. As described below, these procedures are detailed in California Health and Safety Code Section 7050.5 and Public Resources Code Section 5097.98.

California law protects Native American burials, skeletal remains, and associated grave goods, regardless of their antiquity, and provides for the sensitive treatment and disposition of those remains. Health and Safety Code Section 7050.5 requires that if human remains are discovered in any place other than a dedicated cemetery, no further disturbance or excavation of the site or nearby area reasonably suspected to contain human remains shall occur until the County coroner has examined the remains (California Health and Safety Code Section 7050.5[b]). If the coroner determines or has reason to believe the remains are those of a Native American, the coroner must contact the NAHC within 24 hours (California Health and Safety Code Section 7050.5[c]). In accordance with California Public Resources Code Section 5097.98(a), the NAHC will notify the Most Likely Descendant (MLD). With the permission of the landowner, the MLD may inspect the site of discovery. Within 48 hours of being granted access to the site, the MLD may recommend means of treatment or disposition, with appropriate dignity, of the human remains and associated grave goods.

1.2.6 Assembly Bill 52

Assembly Bill (AB) 52 of 2014 amended PRC Section 5097.94 and added PRC Sections 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2, and 21084.3. AB 52 established that TCRs must be considered under CEQA and also provided for additional Native American consultation requirements for the lead agency. Section 21074 describes a TCR as a site, feature, place, cultural landscape, sacred place, or object that is considered of cultural value to a California Native American tribe and that is either:

- On or determined to be eligible for the California Register of Historical Resources or a local historic register; or
- 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.

AB 52 formalizes the lead agency–tribal consultation process, requiring the lead agency to initiate consultation with California Native American groups that are traditionally and culturally affiliated with the project area, including tribes that may not be federally recognized. Lead agencies are required to begin consultation prior to the release of a negative declaration, mitigated negative declaration, or environmental impact report.

Section 1(a)(9) of AB 52 establishes that "a substantial adverse change to a tribal cultural resource has a significant effect on the environment." Effects on TCRs should be considered under CEQA. Section 6 of AB 52 adds Section 21080.3.2 to the PRC, which states that parties may propose mitigation measures "capable of avoiding or substantially lessening potential significant impacts to a tribal cultural resource or alternatives that would avoid significant impacts to a tribal cultural resource." Further, if a California Native American tribe requests consultation regarding project alternatives, mitigation measures, or significant effects to TCRs, the consultation shall include those topics (PRC Section 21080.3.2[a]). The environmental document and the mitigation monitoring and reporting program (where applicable) shall include any mitigation measures that are adopted (PRC Section 21082.3[a]).

1.2.7 Guidelines for Determining Significance

According to CEQA (§15064.5b), 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. CEQA defines a substantial adverse change:

> Substantial adverse change in the significance of an historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired.

The significance of an historical resource is materially impaired when a project:

- Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for inclusion in, the CRHR; or
- Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to section 5020.1(k) of the Public Resources Code or its identification in an historical resources survey meeting the requirements of section 5024.1(g) of the Public Resources Code, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or
- Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its eligibility for inclusion in the CRHR as determined by a lead agency for purposes of CEQA.

Section 15064.5(c) of CEQA applies to effects on archaeological sites and contains the following additional provisions regarding archaeological sites:

- When a project will impact an archaeological site, a lead agency shall first determine whether the site is an historical resource, as defined in subsection (a).
- If a lead agency determines that the archaeological site is a historical resource, it shall refer to the provisions of Section 21084.1 of the Public Resources Code, and this section, Section 15126.4 of the Guidelines, and the limits contained in Section 21083.2 of the Public Resources Code do not apply.
- If an archaeological site does not meet the criteria defined in subsection (a) but does meet the definition of a unique archaeological resource in Section 21083.2 of the Public Resources Code, the site shall be treated in accordance with the provisions of section 21083.2. The time and cost limitations described in Public Resources Code Section 21083.2 (c–f) do not apply to surveys and site evaluation activities intended to determine whether the project location contains unique archaeological resources.
- If an archaeological resource is neither a unique archaeological nor a historical resource, the effects of the project on those resources shall not be considered a significant effect on the environment. It shall be sufficient that both the resource and the effect on it are noted in the Initial Study or Environmental Impact Report (EIR), if one is prepared to address impacts on other resources, but they need not be considered further in the CEQA process.

Section 15064.5(d) and (e) contain additional provisions regarding human remains. Regarding Native American human remains, paragraph (d) provides:

> When an initial study identifies the existence of, or the probable likelihood of, Native American human remains within the project, a lead agency shall work with the appropriate Native Americans as identified by the Native American Heritage Commission as provided in Public Resources Code SS5097.98. The applicant may develop an agreement for treating or disposing of, with appropriate dignity, the human remains and any items associated with Native American burials with the appropriate Native Americans as identified by the Native American Heritage Commission. Action implementing such an agreement is exempt from:
>
> 1. The general prohibition on disinterring, disturbing, or removing human remains from any location other than a dedicated cemetery (Health and Safety Code Section 7050.5); and
> 2. The requirement of CEQA and the Coastal Act.

Under CEQA, an EIR is required to evaluate any impacts on unique archaeological resources (California Public Resources Code section 21083.2). A "unique archaeological resource" is defined as:

> [A]n 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.

(California Public Resources Code section 21083.2(g)). An impact to a non-unique archaeological resource is not considered a significant environmental impact and such non-unique resources need not be further addressed in the EIR (Public Resources Code section 21083.2(a); CEQA Guidelines section 15064.5(c)(4)).

As stated above, CEQA contains rules for mitigation of "unique archaeological resources." For example, "[i]f it can be demonstrated that a project will cause damage to a unique archaeological resource, the lead agency may require reasonable efforts to be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. Examples of that treatment, in no order of preference, may include, but are not limited to, any of the following:

1. Planning construction to avoid archaeological sites.
2. Deeding archaeological sites into permanent conservation easements.
3. Capping or covering archaeological sites with a layer of soil before building on the sites.
4. Planning parks, greenspace, or other open space to incorporate archaeological sites." (Pub. Resources Code section 21083.2(b)(1)-(4).)

Public Resources Code section 21083.2(d) states that "[e]xcavation as mitigation shall be restricted to those parts of the unique archaeological resource that would be damaged or destroyed by the project. Excavation as mitigation shall not be required for a unique archaeological resource if the lead agency determines that testing or studies

already completed have adequately recovered the scientifically consequential information from and about the resource, if this determination is documented in the environmental impact report."

The rules for mitigating impacts to archaeological resources to qualify as "historical resources" are slightly different. According to CEQA Guidelines section 15126.4(b), "[p]ublic agencies should, whenever feasible, seek to avoid damaging effects on any historic resource of an archaeological nature. The following factors shall be considered and discussed in an EIR for a project involving such an archaeological site:

A. Preservation in place is the preferred manner of mitigating impacts to archaeological sites. Preservation in place maintains the relationship between artifacts and the archaeological context. Preservation may also avoid conflict with religious or cultural values of groups associated with the site.
B. Preservation in place may be accomplished by, but is not limited to, the following:
    1. Planning construction to avoid archaeological sites;
    2. Incorporation of sites within parks, greenspace, or other open space;
    3. Covering the archaeological sites with a layer of chemically stable soil before building tennis courts, parking lots, or similar facilities on the site[; and]
    4. Deeding the site into a permanent conservation easement.

Thus, although Section 21083.2 of the Public Resources Code, in addressing "unique archaeological sites," provides for specific mitigation options "in no order of preference," CEQA Guidelines section 15126.4(b), in addressing "historical resources of an archaeological nature," provides that "[p]reservation in place is the preferred manner of mitigating impacts to archaeological sites."

Under CEQA, "[w]hen data recovery through excavation is the only feasible mitigation," the lead agency may cause to be prepared and adopt a "data recovery plan," prior to any excavation being undertaken. The data recovery plan must make "provision for adequately recovering the scientifically consequential information from and about the historic resource." (CEQA Guidelines section 15126.4(b)(3)(C).) The data recovery plan also "must be deposited with the California Historical Resources Regional Information Center." (*Ibid*.) Further, "[i]f an artifact must be removed during project excavation or testing, curation may be an appropriate mitigation." (*Ibid*.)

However, "[d]ata recovery shall not be required for an historical resource if the lead agency determines that testing or studies already completed have adequately recovered the scientifically consequential information from and about the archaeological or historic resource, provided that determination is documented in the EIR and that the studies are deposited with the California Historical Resources Regional Information Center." (CEQA Guidelines Section 15126.4(b)(3)(D).).

1.2.7 County of Orange General Plan Resources Element

Chapter VI, Resources Element, of the Orange County General Plan contains a Cultural-Historic Resources component that includes the following applicable goals, objectives, and policies relevant to cultural resources (County of Orange 2010).

Goal 1: To raise awareness and appreciation of Orange County's cultural and historic heritage.

Objective 1.1: Facilitate and participate in activities that inform people about the social, cultural, economic, and scientific values of Orange County's heritage.

Objective 1.2: Work through the Orange County Historical Commission in the areas of history, paleontology, archaeology, and historical preservation.

Policy 1.1: To stimulate and encourage financial support for projects in the public and private sector.

Policy 1.2: To coordinate countywide programs and be the liaison for local organizations.

Policy 1.3: To advise and aid the public and private sectors in meeting museum needs and finding funding sources for same.

Policy 1.4: To stimulate and encourage research, writing, and publication of articles on Orange County subjects.

Policy 1.5: To develop and maintain a County archive for historically valuable records.

Policy 1.6: To encourage and facilitate cooperation among local historical societies.

Goal 2: To encourage through a resource management effort the preservation of the county's cultural and historic heritage.

Objective 2.1: Promote the preservation and use of buildings, sites, structures, objects, and districts of importance in Orange County through the administration of planning, environmental, and resource management programs.

Objective 2.2: Take all reasonable and proper steps to achieve the preservation of archaeological and paleontological remains, or their recovery and analysis to preserve cultural, scientific, and educational values.

Objective 2.3: Take all reasonable and proper steps to achieve the preservation and use of significant historic resources including properties of historic, historic architectural, historic archaeological, and/or historic preservation value.

Objective 2.4: Provide assistance to County agencies in evaluating the cultural environmental impact of proposed projects and reviewing Environmental Impact Reports.

Objective 2.5: Provide incentives to encourage greater private sector participation in historic preservation.

Goal 3: To preserve and enhance buildings structures, objects, sites, and districts of cultural and historic significance.

Objective 3.1: Undertake actions to identify, preserve, and develop unique and significant cultural and historic resources.

Objective 3.2: Develop and maintain a County archive for historically valuable records, thereby promoting knowledge and understanding of the origins, programs, and goals of the County of Orange.

Policy 3.1: To pursue grants and innovative funding strategies for acquisition or development of significant properties.

Policy 3.2: To develop, utilize, and promote effective technical conservation and restoration strategies.

Policy 3.3: To appraise, collect, organize, describe, preserve, and make available County of Orange records of permanent, historical value.

Policy 3.4: To serve as a research center for the study of County history.

General Policies:

1. dentification of resources shall be completed at the earliest stage of project planning and review such as general plan amendment or zone change.
2. Evaluation of resources shall be completed at intermediate stages of project planning and review such as site plan review, subdivision map approval, or at an earlier stage of project review.
3. Final preservation actions shall be completed at final stages of project planning and review such as grading, demolition, or at an earlier stage of project review.

Archaeological Resources Policies:

1. To identify archaeological resources through literature and records research and surface surveys.
2. To evaluate archaeological resources through subsurface testing to determine significance and extent.
3. To observe and collect archaeological resources during the grading of a project.
4. To preserve archaeological resources by:
   - Maintaining them in an undisturbed condition, or
   - Excavating and salvaging materials and information in a scientific manner.

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2 Environmental and Cultural Setting

2.1 Environmental Setting

The Project area is located within the coastal plain, less than one mile from the Pacific Ocean. It is in a Mediterranean climate characterized by mild, dry summers and wet winters. Average temperatures near Newport Beach range from approximately 55°F to 68°F, and the area generally receives an average rainfall of less than 11 inches per year (WRCC 2019).

The topography within the Project area is relatively flat and varies from approximately 5 feet above mean sea level in the southern portion, to approximately 16 feet above mean sea level in the northern portion. The eastern portion of the Project area is bordered by a mesa that is approximately 50 to 80 feet above mean sea level, and the western portion of the Project area is bordered by the concrete-lined Santa Ana River and Banning Channel. The Project area was historically part of the Santa Ana River floodplain prior to channelization of the Santa Ana River and is currently indirectly connected to the Santa Ana River through groundwater sources.

The Project area is adjacent to residential development to the east and north, the Banning Ranch property to the south, and the Santa Ana River and Banning Channel to the immediate west followed by additional residential development further to the west. The Project area is bisected by Victoria Street, which divides the Project area into North Talbert and South Talbert.

2.2 Cultural Setting

Evidence for continuous human occupation in the region spans the last 10,000 years. Various attempts to parse out variability in archaeological assemblages over this broad time frame have led to the development of several cultural chronologies; some of these are based on geologic time, most are based on temporal trends in archaeological assemblages, and others are interpretive reconstructions. Each of these reconstructions describes essentially similar trends in assemblage composition in more or less detail. This research employs a common set of generalized terms used to describe chronological trends in assemblage composition: Paleoindian (pre-5500 BC), Archaic (8000 BC–AD 500), Late Prehistoric (AD 500–1750), and Ethnohistoric (post-AD 1750).

2.2.1 Paleoindian (pre-5500 BC)

Evidence for Paleoindian occupation in the region is tenuous; the knowledge of associated cultural pattern(s) is informed by a relatively sparse body of data that has been collected from within an area extending from coastal San Diego through the Mojave Desert and beyond. One of the earliest dated archaeological assemblages in this area (excluding the Channel Islands) derives from SDI-4669/W-12, in La Jolla, San Diego County. A human burial from SDI-4669 was radiocarbon dated to 9,590–9,920 years before present (95.4 percent probability) (Hector 2006). The burial is part of a larger site complex that contained more than 29 human burials associated with an assemblage that fits the Archaic profile (i.e., large amounts of groundstone, battered cobbles, and expedient flake tools). In contrast, typical Paleoindian assemblages include large stemmed projectile points, high proportions of formal lithic tools, bifacial lithic reduction strategies, and relatively small proportions of groundstone tools. Prime examples of this pattern are sites that were studied by Emma Lou Davis (1978) on China Lake Naval Air Weapons Station near Ridgecrest, California. These sites contained fluted and unfluted stemmed points and large numbers

of formal flake tools (e.g., shaped scrapers, blades). Other typical Paleoindian sites include the Komodo site (MNO-679), a multicomponent fluted point site, and MNO-680, a single component Great Basined stemmed point site (Basgall et al. 2002). At MNO-679 and MNO-680, groundstone tools were rare, while finely made projectile points were common.

Warren et al. (2004) claimed that a biface manufacturing tradition present at the Harris site complex (SDI-149) is representative of typical Paleoindian occupation in the Southern California region that possibly dates between 10,365 and 8200 BC (Warren et al. 2004, p. 26). Termed San Dieguito (Rogers 1945), assemblages at the Harris site, located in the area now occupied by City of Escondido, are qualitatively distinct from most others in the region because the site has large numbers of finely made bifaces (including projectile points), formal flake tools, a biface reduction trajectory, and relatively small amounts of processing tools (Warren 1964, 1968). Despite the unique assemblage composition, the definition of San Dieguito as a separate cultural tradition is debated. Gallegos (1987) suggested that the San Dieguito pattern is simply an inland manifestation of a broader economic pattern. Gallegos' interpretation of San Dieguito has been widely accepted in recent years, in part because of the difficulty in distinguishing San Dieguito components from other assemblage constituents. In other words, it is easier to ignore San Dieguito as a distinct socioeconomic pattern than it is to draw it out of mixed assemblages.

The large number of finished bifaces (i.e., projectile points and non-projectile blades), along with large numbers of formal flake tools at the Harris site complex, are very different than nearly all other assemblages throughout the region, regardless of age. Warren et al. (2004) made this point, tabulating basic assemblage constituents for key early Holocene sites. Producing finely made bifaces and formal flake tools implies that relatively large amounts of time were spent for tool manufacture. Such a strategy contrasts with the expedient flake-based tools and cobble-core reduction strategy that typifies non-San Dieguito Archaic sites. It can be inferred from the uniquely high degree of San Dieguito assemblage formality that the Harris site complex represents a distinct economic strategy from non-San Dieguito assemblages.

If San Dieguito truly represents a distinct socioeconomic strategy from the non-San Dieguito Archaic processing regime, its rarity implies that it was not only short-lived, but that it was not as economically successful as the Archaic strategy. Such a conclusion would fit with the general trends in Southern California deserts, wherein hunting-related tools are replaced by processing tools during the early Holocene (Basgall and Hall 1990).

2.2.2 Archaic (8000 BC–AD 500)

The more than 1500-year overlap between the presumed age of Paleoindian occupations and the Archaic period highlights the difficulty in defining a cultural chronology in the region. If San Dieguito is the only recognized Paleoindian component in the region, then the dominance of hunting tools implies that it derives from Great Basin adaptive strategies and is not necessarily a local adaptation. Warren et al. (2004) admitted as much, citing strong desert connections with San Dieguito. Thus, the Archaic pattern is the earliest local socioeconomic adaptation in the region (Hale 2001, 2009).

The Archaic pattern is relatively easy to define with assemblages that consist primarily of processing tools: millingstones, handstones, battered cobbles, heavy crude scrapers, incipient flake-based tools, and cobble-core reduction. These assemblages occur in all environments across the region, with little variability in tool composition. Low assemblage variability over time and space among Archaic sites has been equated with cultural conservatism (Byrd and Reddy 2002; Warren 1968; Warren et al. 2004). Despite enormous amounts of archaeological work at Archaic sites, little change in assemblage composition occurs until the bow and arrow is adopted at around AD 500,

as well as ceramics at approximately the same time (Griset 1996; Hale 2009). Even then, assemblage formality remains low. After the bow is adopted, small arrow points appear in large quantities, and already low amounts of formal flake tools are replaced by increasing amounts of expedient flake tools. Similarly, shaped millingstones and handstones decrease in proportion relative to expedient, unshaped groundstone tools (Hale 2009). Thus, the terminus of the Archaic period is equally as hard to define as its beginning because basic assemblage constituents and patterns of manufacturing investment remain stable, complimented only by the addition of the bow and ceramics.

2.2.3 Late Prehistoric (AD 500–1750)

The period following the Archaic and prior to Ethnohistoric times (AD 1750) is commonly referred to as the Late Prehistoric (Rogers 1945; Wallace 1955; Warren et al. 2004). However, several other subdivisions continue to be used to describe various shifts in assemblage composition, including the addition of ceramics and cremation practices. The post-AD 1450 period is called the San Luis Rey complex (Meighan and True 1977). Rogers (1929) also subdivided the last 1,000 years into the Yuman II and III cultures, based on the distribution of ceramics. Despite these regional complexes, each is defined by the addition of arrow points and ceramics and the widespread use of bedrock mortars. Vagaries in the appearance of the bow and arrow and ceramics make the temporal resolution of the San Luis Rey complex difficult. For this reason, the term Late Prehistoric is well suited to describe the last 1,500 years of prehistory in the region.

Temporal trends in socioeconomic adaptations during the Late Prehistoric period are poorly understood. This is partly due to the fact that the fundamental Late Prehistoric assemblage is very similar to the Archaic pattern but includes arrow points and large quantities of fine debitage from producing arrow points, ceramics, and cremations. While steatite was commonly the material of choice for vessel production, it was generally replaced near the time of missionization by locally procured clay to produce ceramic vessels. The appearance of mortars and pestles is difficult to place in time because most mortars are on bedrock. Some argue that the Ethnohistoric intensive acorn economy extends as far back as AD 500 (Bean and Shipek 1978). However, there is no substantial evidence that reliance on acorns, and the accompanying use of mortars and pestles, occurred prior to AD 1400. True (1980) argued that acorn processing and ceramic use in the region did not occur until the San Luis Rey pattern emerged after approximately AD 1450.

2.2.4 Ethnohistoric (post-AD 1750)

The Native American inhabitants affiliated with the Project area would have generally spoken Luiseño-Juaneño (Acjachemen) and the Gabrielino (Kizh) varieties of Takic, which may be assigned to the larger Uto-Aztecan family (Golla 2007, p. 74). Golla has interpreted the amount of internal diversity within these language-speaking communities to reflect a time depth of approximately 2,000 years. Other researchers have contended that Takic may have diverged from Uto-Aztecan ca. 2600 BC–AD 1, which was later followed by the diversification within the Takic-speaking tribes, occurring approximately 1500 BC–AD 1000 (Laylander 2000). The Luiseño-Juaneño and Gabrielino represent the descendants of local Late Prehistoric populations. They are generally considered to have migrated into the area from the Mojave Desert, possibly displacing the prehistoric ancestors of the Yuman-speaking Kumeyaay (Ipai-Tipai) that lived to the south during Ethnohistoric times. The Luiseño-Juaneño shared boundaries with the Gabrielino and Serrano to the west and northwest, the Cahuilla to the east, the Cupeño to the southeast, and the Kumeyaay to the south (Bean and Shipek 1978; Kroeber 1925). Southern Native American tribal groups of the San Diego and southern Imperial region have traditionally spoken Yuman languages, a subgroup of the Hokan Phylum.

The Gabrielino territory included the Los Angeles Basin, the coast of Aliso Creek in Orange County to the south, and Topanga Canyon in the north; the four southern Channel Islands; and watersheds of the Los Angeles, San Gabriel, and Santa Ana Rivers. At the time of European contact, the Gabrielino were actively involved in trade using shell and beads as currency. The Gabrielino produced pipes, ornaments, cooking implements, inlay work, and basketry. Dwellings were constructed of tule mats on a framework of poles, but size and shape have not been recorded (Kroeber 1925). Basketry and steatite vessels were used rather than ceramics until near the end of the mission period in the nineteenth century (Garcia et al. 2011).

The Juaneño (Acjachemen) territory was bounded to the north by Aliso Creek, the east by the crest of the Santa Ana Mountains, the south by San Onofre Creek, and west by the Pacific Ocean (Kroeber 1925:, p. 636). Ethnographic, linguistic, and archaeological evidence indicate that Juaneño and Luiseño are one cultural/tribal group. There is no existing record of the Juaneño population during the pre-contact period. Records indicated that approximately 1,300 individuals culturally affiliated with the Juaneño resided at Mission San Juan Capistrano in the year 1800 (Engelhardt 1922). The mission death register shows as many as 4,000 native burials in the mission cemetery (White 1963). It is clear from that the arrival of the Spanish decimated Native peoples through disease and changed living conditions (Bean and Shipek 1978).

The tribes of the region were organized into patrilineal clans or bands centered on a chief, composed of 25 to 30 people (Kroeber 1925), each of which had their own territorial land or range where food and other resources were collected at different locations throughout the year (Sparkman 1908). The title of chief was heritable along family lines. Inter-band conflict was most common over trespassing. Sparkman observed that “when questioned as to when or how the land was divided and subdivided, the Indians say they cannot tell, that their fathers told them that it had always been thus” (1908). Place names were assigned to each territory, often reflecting common animals, plants, physical landmarks, or cosmological elements that were understood as being related to that location. Lukup, recorded immediately outside, to the east of the Project area, is one such place named village. Marriages were generally arranged by parents or guardians. Free and widowed women had the option to choose their partner. Polygamy occurred though was not common, often with a single man marrying a number of sisters and wives. Shamanism was a major component in tribal life. The physical body and its components was thought to be related to the power of an individual, and wastes such as fluids, hair, and nails were discarded with intent. Hair, once cut, was often carefully collected and buried to avoid being affected negatively or controlled by someone who wished them harm. Some locations and natural resources were of cultural significance. Springs and other water-related features were thought to be related with spirits. These resources, often a component of origin stories, had power that came with a variety of risks and properties to those who became affected. Puberty ceremonies for both boys and girls were complex and rigorous. Mourning ceremonies were similar throughout the region, generally involving cutting of the hair, burning the deceased’s clothes a year after death, and redistributing personal items to individuals outside of the immediate tribal group (Sparkman 1908; Kroeber 1925). The center of the Gabrielino 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 religious beliefs. The most obvious expression of the religion was the *Wankech*, a brush-enclosed area where religious observances were performed. The *Wankech* contained an inner enclosure housing a representation of *Chinigchinich*, a coyote skin stuffed with feathers, claws, beaks, and arrows. Interestingly, early American ethnographers recorded a Gabrielino man named Salvador Cuevas who sang a song called “Song of To-mami-yo-wit” that was given by Chung-itch-nish at the location of the village of Lukup, just outside the Project area (Gray and Schupman Jr. 1909, pg. 209).

Acorns were the staple food of the Native American inhabitants of this region during the Ethnohistoric period (Sparkman 1908). Of the six or more oak species within this traditional territory, the most desirable of these was

the black oak (*Quercus kelloggii*), due to its ease of processing, protein content, and digestibility. Acorns were stored in granaries to be removed and used as needed. The acorns were generally processed into flour using a mortar and pestle. Other edible and medicinal plants of common use included wild plums, choke cherries, Christmas berry, gooseberry, elderberry (*Sambucus nigra*), willow (*Salix*), Juncus grass, buckwheat (*Eriogonum fasciculatum*), lemonade berry (*Rhus integrifolia*), sugar bush (*Rhus ovata*), sage scrub (*Artemisia californica*), currents, wild grapes, prickly pear (*Opuntia*), watercress, wild oats, and other plants. More arid plants such as Yucca, Agave, mesquite, chia, bird-claw fern, Datura, yerba santa (*Eriodictyon*), Ephedra, and cholla were also of common use by some Juaneño and Gabrielino populations. A number of mammals were commonly eaten. Game animals included black-tailed deer, antelope, rabbits, hares (*Leporidae*), birds, ground squirrels, woodrats (*Neotoma*), bears, mountain lions (*Puma concolor*), bobcats (*Lynx rufus)*, coyotes (*Canus latrans*), and others. In lesser numbers, reptiles and amphibians may have been consumed. Fish and marine resources provided some portion of many tribal communities' food sources, though most notably those nearest the coast. Shellfish would have been procured and transported inland from three primary environments, including the sandy open coast, bay and lagoon, and rocky open coast.

2.2.5 Historic Period (Post 1542)

European activity in the region began as early as AD 1542, when Juan Rodríguez Cabrillo landed in San Diego Bay. Sebastián Vizcaíno returned in 1602, and it is possible that there were subsequent contacts that went unrecorded. These brief encounters made the local native people aware of the existence of other cultures that were technologically more complex than their own. Epidemic diseases may also have been introduced into the region at an early date, either by direct contacts with the infrequent European visitors or through waves of diffusion emanating from native peoples farther to the east or south. Father Juan Crespí, a member of the 1769 Spanish Portolá expedition, authored the first written account of interaction between Europeans and the indigenous population in the region that makes up Orange County today. It is possible, but as yet unproven, that the precipitous demographic decline of native peoples had already begun prior to the arrival of Gaspar de Portolá and Junípero Serra in 1769.

Spanish colonial settlement was initiated in 1769, when multiple expeditions arrived in San Diego by land and sea, and then continued northward through the coastal plain toward Monterey. A military presidio and a mission were soon firmly established at San Diego, despite violent resistance to them from a coalition of native communities in 1776. Mission San Juan Capistrano was established this same year, on November 1. Private ranchos subsequently established by Spanish and Mexican soldiers, as well as other non-natives, appropriated much of the remaining coastal or near-coastal locations (Pourade 1960–1967).

Locally, and less than 0.5 mile north of the Project area, the Diego Sepulveda Adobe was built sometime between 1817 and 1820 as a way station affiliated with Mission San Juan Capistrano as housing for local herdsman, and as headquarters for Diego Sepulveda (Earle 2007). The adobe became an estancia by 1820 to facilitate conversion of local Native Americans to the Christian Faith. This is not surprising given the adobe's immediate proximity to the Gabrielino village of Lukup just to the south.

Mexico's separation from the Spanish empire in 1821 and the secularization of the California missions in the 1830s caused further disruptions to native populations. Some former mission neophytes were absorbed into the work forces on the ranchos, while others drifted toward the urban centers at San Diego and Los Angeles or moved to the eastern portions of the county where they were able to join still largely autonomous native communities. United States conquest and annexation, marked by the Mexican-American war and California Sur's ceding to the

United States in 1851, together with the gold rush in Northern California, brought many additional outsiders into the region. Development during the following decades was fitful, undergoing cycles of boom and bust. With rising populations in the nineteenth century throughout the Southern California region, there were increased demands for important commodities such as salt.

3 Methods and Results

3.1 Records Search

On October 22, 2019, Dudek archaeologist Kira Archipov conducted a records search of the California Historical Resources Information System (CHRIS) at the South Central Coastal Information Center (SCCIC), located on the campus of the California State University, Fullerton. An update to the original records search was conducted by Dudek archaeologist Brenda Rogers on October 14, 2025. The records search encompassed the entire Project area and 0.5-mile search radius. The purpose of the records search is to identify any previously recorded cultural resources that may be located in or adjacent to the Project area and to identify previous studies in the Project vicinity. In addition to a review of previously prepared site records and reports, the records search also included a review of historical maps of the Project area, ethnographies, the NRHP, the CRHR, the California Historic Property Data File, and the lists of California State Historical Landmarks, California Points of Historical Interest, and Archaeological Determinations of Eligibility.

3.1.1 Previous Cultural Resources Studies

The SCCIC records search indicates that 56 previous cultural resource studies have been conducted within the 0.5-mile search radius of the Project area. Of these, five (5) overlap with the Project area (Table 1). These include three (3) archaeological resources inventories, one (1) archival information review, and one (1) cultural resources inventory and evaluation. Reports relevant to the Project area are discussed in further detail below Table 1. Approximately 30 percent of the Project area has been subject to past cultural resources investigations. See Appendix A for the complete SCCIC records search results and associated documentation.

Table 1. Previous Cultural Resources Studies Overlapping the Project Area

Report Number	Year	Author	Title
Overlapping Project Area			
OR-00270	1975	Leonard, Nelson N. III and Mathew C. Hall	Description and Evaluation of Cultural Resources within the US Army Corps of Engineers' Santa Ana River Project
OR-00299	1978	Van Horn, David M.	A Compilation of Archaeological, Historical and Paleontological Data for the City of Costa Mesa
OR-00801	1985	Langenwalter, Paul E. and James Brock	Phase II Archaeological Studies Prado Basin and the Lower Santa Ana River
OR-03497	2007	McKenna, Jeanette A.	A Section 106 Evaluation of the Proposed Fairview Park Bike Trail, Approximately 0.75 Linear Miles within the Existing Park in Costa Mesa, Orange County, California
OR-04593	2017	Wilson, Zach	Archaeological Survey Report for Southern California Edison's (SCE) Deteriorated Pole Project on the Huntington Beach-Lafayette 66 kV Sub-Transmission Line (TD1260603), Orange County, California

LA-00801

Phase II Archaeological Studies Prado Basin and the Lower Santa Ana River (Langenwalter and Brock 1985) documents the inventory and evaluation of numerous cultural resources within the Prado Basin and Lower Santa Ana River, encompassing portions of Orange, Riverside, and San Bernardino Counties. The study included a records search, archival research, pedestrian survey, an inventory of 23 prehistoric resources and 164 historic-era resources, test excavations, and significance evaluations for 23 prehistoric and 27 historic-era resources. Of these, 27 cultural resources were recommended eligible for inclusion in the NRHP. Overall, the study overlaps with approximately 20 percent of the Project area. No cultural resources identified in this study overlap with the currently proposed Project area.

3.1.2 Previously Recorded Cultural Resources

The SCCIC records search identified 10 previously recorded cultural resources within a 0.5-mile radius of the Project area, none of which are located within the Project area. These include six (6) prehistoric archaeological resources, two (2) historic-era built environment resources, one (1) historic-era archaeological resource, and one (1) multicomponent archaeological resource. See Appendix A for the complete SCCIC records search results and associated documentation, and below Table 2 for a summary of the significant archaeological resources located within the Project vicinity.

Table 2. Previously Recorded Cultural Resources within One Mile of Project Area

Primary Number	Trinomial	Age	Resource Description	Eligibility for CRHR/NRHP
Outside Project Area				
P-30-000058	CA-ORA-58	Prehistoric	Complex habitation site with numerous burials	Eligible for the CRHR; Listed on the NRHP
P-30-000165	CA-ORA-165	Prehistoric	Contact period artifact scatter	Eligible for the CRHR and NRHP
P-30-000506	CA-ORA-506	Multicomponent	Prehistoric shell midden and historic-era trash deposit	Recommended eligible for the CRHR and NRHP
P-30-000839	-	Prehistoric	Prehistoric midden with associated artifacts	Recommended eligible for the CRHR and NRHP
P-30-000845	CA-ORA-845	Prehistoric	Prehistoric shell midden	Unknown
P-30-000906	-	Prehistoric	Prehistoric shell midden	Unknown
P-30-001667	-	Prehistoric	Redeposited prehistoric shell midden	Unevaluated
P-30-001740	CA-ORA-1740H	Historic-era	Two historic-era trash scatters	Unknown
P-30-177464	-	Historic-era	Transmission Tower	Recommended ineligible for the NRHP
P-30-177612	-	Historic-era	Transmission Tower	Recommended in ineligible for the NRHP

A number of significant archaeological resources lie adjacent to the Project area. P-30-000165 (CA-ORA-165) is the recorded location of the ethnohistoric Gabrielino village of *Lukup*. This site is mentioned frequently in

anthropological literature and has direct ethnohistoric links. The "Federal Cylinder Project" includes voice recordings of a Native American man named Salvador Cuevas who sang a song that originated from this village. The Federal Cylinder Project records the following information from Salvador Cuevas: "Song of To-mami-yo-wit. No one composed it, but it was given by Chung-itch-nish himself. This is in the old dead language of the coast. Loo-coop was large rancheria S. of Santa Anna near the ocean. This came from there" (Gray and Schupman Jr. 1990, pg. 209).

The concept of a village being a precise location of settlement is not accurate for all place named areas (Kroeber 1925). Hunter-gatherer settlement may have focused on specific landforms that convey a singular place, while at other times settlement occurred over a broader area that shared a single name. The village of *Lukup* likely referred to a broader area covering the bluffs and banks of the Santa Ana River and included the prehistoric and multicomponent resources identified in the SCCIC records search results. Archaeologically, deciphering the sites that can be associated with the ethnohistoric village requires definition of temporally consistent archaeological deposits that date to the pre- and post-Mission historic period (i.e., post AD 1769). For the purposes of this report, a conservative approach tentatively links all the identified prehistoric resources into the broader village concept associated with the place name *Lukup*.

Archaeological research at the sites identified in the SCCIC records search has focused primarily on P-30-000058 (CA-ORA-58), the Banning/Norris Site (Fairview Site), located on the bluff just outside the eastern boundary of the Project area and within Fairview Park (Koerper and Desautels 1996). First recorded in 1949, the site has undergone many excavation efforts and is considered one of the most important such sites in Southern California, having numerous burials and many unique and/or diagnostic artifacts (Eberhart and Eberhart 1949). The site contains evidence of long-distance trade with Classic period Hohokam of the Sonoran Desert and was likely an important political and trade center during the Late Prehistoric period. The prehistoric resources identified in the SCCIC records search are located primarily on top of bluffs located east of the current Project area. However, the distribution of sites is more likely related to the focus of archaeological research in those areas. No focused, subsurface archaeological exploration has occurred in the low-lying floodplain of the Santa Ana River to the west and inside of the Project area.

3.2 Review of Historic Aerials and Topographic Maps

Dudek consulted historic topographic maps and aerial photographs to understand development of the Project area and surrounding properties. Historic topographic maps are available for the years 1896, 1899, 1901, 1907, 1915, 1925, 1932, 1935, 1943, 1945, 1951, 1958, 1968, 1975, 1977, 1981, 1982, 2012, 2015, and 2018. Historic aerials are available for the years 1938, 1953, 1963, 1972, 1994, 2002, 2003, 2004, 2009, 2010, 2012, 2014, and 2016 (NETR 2025).

The first USGS topographic map showing the Project area dates to 1896, and depicts the braided, natural channel of the Santa Ana River and the unimproved, natural landforms surrounding the mouth of the river. The Project area is undeveloped at that time, though a few structures and roads are visible to the northeast. No changes are apparent on the topographic maps until the year 1932, when the Santa Ana River appears as the channelized alignment it is today. In addition, a few additional roads are visible around the Project area. By 1951, a small two-track road is visible extending along the western boundary of the Project area. The 1958 map shows additional development. By 1968, the area surrounding Talbert Regional Park is largely developed and subdivided. No other major changes are visible on the maps up to the current day (NETR 2025).

The first historic aerial showing the Project area dates to 1938 and shows that at this time the Project area was entirely undeveloped and braided with remnant channels of the Santa Ana River. By 1953, the landform appears to have undergone some sort of alteration as three distinct vegetation zones are visible. The 1963 aerial depicts increased development surrounding Talbert Regional Park. The 1972 aerial shows the former agricultural land west of the Santa Ana River as largely developed, as residential neighborhoods are now observed. By 1994, the area looks much as it appears today. Within the reserve, it appears that minor surface grading occurred after the year 2000, likely for habitat restoration (NETR 2025).

3.3 Review of Geomorphological Context

According to U.S. Department of Agriculture Natural Resources Conservation Services, there are five soil types mapped within the Project area: Bolsa silt loam; Hueneme fine sandy loam; Hueneme fine sandy loam, drained; Myford sandy loam, 9 to 30 percent slopes, eroded; and Metz loamy sand, moderately fine substratum (USDA 2019).

Bolsa silt loam is a poorly drained soil that is derived from mixed alluvium and contains silt loam and silty clay loam. Hueneme fine sandy loam is comprised of fine sandy loam and stratified sand to silt loam. Myford sandy loam, 9 to 30 percent slopes, eroded, is similar to the previous description but often very shallow because of erosion. Metz loamy sand is deep, excessively drained soil formed in alluvial material from mixed, but dominantly sedimentary rocks (USDA 2019).

3.4 Sensitivity Analysis

Examination of the historic topographic maps, aerial photographs, and geomorphological context indicates that the Project area remains largely undeveloped, undisturbed, and underlain by native alluvial soils. The channelization of the Santa Ana River and development of the Banning Channel impacted the western margin of the Project area. Minor agricultural activity and habitat restoration after channelization likely only affected the top 1 to 2 feet of sediments. This suggests that the Project area retains subsurface integrity. Additionally, the USDA's soil types mapped within the Project area demonstrate that alluvial soils are present, which generally have moderate potential to contain subsurface archaeological deposits.

Extensive archaeological deposits, most of which are likely related to the ethnohistoric village of *Lukup*, border the eastern margin of the Project area, lining the bluffs. These deposits have archaeological and tribal significance. The density of aboriginal occupation on the bluffs is a strong predictor of adjacent buried archaeological deposits in the Santa Ana flood plain east of the river channel. Floodplains next to major waterways, including marshes, in Southern California have been frequently demonstrated to contain significant, buried archaeological deposits, such as those found at Bolsa Chica (see Couch et al. 2009). For these reasons, the Project area is characterized as moderately sensitive for archaeological resources.

3.5 Native American Heritage Commission Sacred Lands File Search

Dudek requested an NAHC search of the SLF for the Project area and a 0.5-mile radius on October 9, 2019, and on October 9, 2025. The SLF consists of a database of known Native American resources. These resources may not be included in the SCCIC database. The NAHC replied via email on October 23, 2019, and October 15, 2025,

respectively, stating that the SLF search was completed with positive results. Positive results indicate the presence of Native American cultural resources within 0.5 miles of the Project area, and not necessarily directly within the Project area. The NAHC did not provide details on what the resource(s) are or where they are located. Additionally, the NAHC provided a list of Native American tribes and individuals/organizations with traditional geographic associations that might have knowledge of cultural resources in the area. To date, Dudek has not sent outreach letters to the any of the tribes listed by the NAHC. See Appendix B for complete documentation of SLF search results and tribal correspondence.

In compliance with AB 52, OCPW, as lead agency, is responsible for conducting AB 52 government-to-government consultation with tribal entities.

3.6 Pedestrian Survey

Dudek Archaeologists Loukas Barton, Patrick Hadel, and Ted Roberts conducted an intensive-level archaeological resources pedestrian survey of the Project area on November 22, 2019. To assess current site conditions, Dudek archaeologist Roshanne Bakhtiary conducted an updated reconnaissance-level archaeological resources pedestrian survey of the Project area on October 29, 2025. Standard archaeological procedures and techniques consistent with the Secretary of the Interior's Standards and Guidelines for a cultural resources inventory were employed during the survey. When possible, 10-meter interval survey transects were conducted and oriented in cardinal direction. Where visible, the ground surface was examined for prehistoric artifacts (e.g., flaked stone tools, tool-making debris, stone milling tools, ceramics, fire-affected rock, imported marine shell), soil discoloration that might indicate the presence of a cultural midden, soil depressions, features indicative of the current or former presence of structures or buildings (e.g., standing exterior walls, post holes, foundations), and historic-era artifacts (e.g., metal, glass, ceramics, building materials). Ground disturbances such as rodent/reptile burrows and backdirt piles, cut banks, and drainages were also visually inspected for exposed subsurface materials. During the reconnaissance-level pedestrian survey, exposed ground surfaces, cut banks and drainages, rodent/reptile burrows and backdirt piles, and other areas of increased ground visibility were opportunistically inspected for observable cultural materials or features.

The majority of the 182-acre Project area is characterized by dense vegetation interspersed with informal dirt roadways, pedestrian trails, and narrow bike tracks. South Talbert consists primarily of coastal salt-marsh habitat and includes plant species such as Pacific glasswort (*Salicornia pacifica*) and saltgrass (*Distichlis spicata*). In contrast, North Talbert supports plant species such as California sagebrush (*Artemisia californica*), coyote brush (*Baccharis pilularis*), mallow (*Malva* spp.), and coastal goldenbush (*Isocoma menziesii*), and also contains sycamore groves and landscaped lawns.

Ground surface visibility was non-existent (0 percent) within areas of dense vegetation, which accounted for approximately 85 percent of the Project area (Exhibit 1). Within dirt roadways, pedestrian trails, and narrow bike tracks, ground visibility was excellent (80 to 100 percent); this accounted for the remainder of the Project area (Exhibit 2). Disturbances observed during the survey include weather-related erosion in several areas, trail cutting and maintenance, evidence of vehicle overland travel, and bike use. No cultural resources were identified within the Project area during the 2019 and 2025 pedestrian surveys.

Exhibit 1. Example of non-existent ground surface visibility, view facing west.

Exhibit 2. Example of excellent ground surface visibility, view facing north.

4 Summary and Management Recommendations

Dudek's cultural resources inventory in support of the Project suggests that there is a moderate potential for the inadvertent discovery of archaeological resources during Project implementation. Dudek conducted a records search of the Project area and surround 0.5-mile radius. The records search identified six (6) previously recorded prehistoric archaeological resources, two (2) historic-era built environment resources, one (1) historic-era archaeological resource, and one (1) multicomponent archaeological resource within 0.5 mile of the Project area, one of which is adjacent to, but outside the Project area (P-30-000165 or *Lukup*). The ethnohistoric Gabrielino village site of *Lukup*, recognized as archaeologically and tribally significant, likely corresponds to the broader Santa Ana River area encompassing the six (6) prehistoric archaeological resources and the one (1) multicomponent archaeological resource documented in the SCCIC records search.

A NAHC SLF search was also requested for the Project, and results were positive for Native American cultural resources within 0.5-miles mile of the Project area. Additionally, a review of historical aerial photographs and topographic maps indicates that the Project area has remained largely undeveloped and undisturbed, aside from limited disturbances associated with the channelization of the Santa Ana River and Banning Channel.

Dudek archaeologists conducted an intensive-level cultural resources pedestrian survey of the Project area on November 22, 2019, and an updated reconnaissance-level pedestrian survey of the Project area on October 29, 2025. Though no cultural resources were identified during either survey, dense vegetation obscured roughly 85 percent of the ground surface, significantly limiting surface visibility.

Based on the presence of significant archaeological resources adjacent to the Project area, and in consideration of the broader pattern of prehistoric use along the coast and near the Santa Ana River, there is a moderate potential for the inadvertent discovery of archaeological resources during Project implementation. Management recommendations to reduce potential impacts to unanticipated archaeological resources and human remains during construction activities are provided below.

Worker Environmental Awareness Program. Prior to commencement of construction activities for all phases of Project implementation, The Orange County Department of Public Works Development Services (OCPW) shall retain a qualified archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for Archaeology, to prepare a Worker Environmental Awareness Program (WEAP). The WEAP shall be submitted to the OCPW for review and approval. All construction personnel and monitors shall be presented the WEAP training prior to the start of construction activities. The WEAP shall be prepared to inform all personnel working on the proposed Project about the archaeological sensitivity of the area, to provide specific details on the kinds of archaeological materials that may be identified during construction, to explain the importance of and legal basis for the protection of significant archaeological resources, and to outline the actions to be taken in the event of a discovery of cultural resources. The WEAP shall define "tribal cultural resources" and include appropriate management requirements relating to inadvertent discovery of a potential tribal cultural resource. Each worker shall also learn the proper procedures to follow in the event that cultural resources or human remains are uncovered during ground-disturbing activities. These procedures include work curtailment or redirection, and the immediate contact of the site supervisor and archaeological monitor.

Cultural Resources Monitoring and Inadvertent Discovery Protocols. A monitoring plan should be prepared by an archaeological principal investigator, meeting the Secretary of the Interior's Standards, and implemented upon approval by OCPW. It is also recommended that an archaeological monitor be present during all initial ground-disturbing activities for the Project. Archaeological monitoring may be adjusted (increase, decreased, or discontinued) at the recommendation of the archaeological principal investigator and based on inspection of exposed cultural material and the observed potential for soils to contain intact cultural deposits or otherwise significant archaeological material. The archaeological monitor shall be provided a copy of this technical report and its pertinent appendices to inform their monitoring efforts. The archaeological monitor shall have the authority to temporarily halt work to inspect areas for potential cultural material or deposits.

In the event that unanticipated archaeological deposits or features are exposed during construction activities, all construction work occurring within 50 feet of the find shall immediately stop until the archaeological principal investigator is provided access to the Project area and can assess the significance of the find and determine whether or not additional study is warranted. The work exclusion buffer may be adjusted as appropriate to allow work to feasibly continue at the recommendation of the archaeological principal investigator. Should it be required, temporary flagging shall be installed around this resource in order to avoid any disturbances from construction equipment. The potential for avoidance should be the primary consideration of this initial process. Significance of the find shall be assessed as outlined by CEQA (14 CCR 15064.5[f]; PRC Section 21082). If the archaeological principal investigator observes the discovery to be potentially significant under CEQA, additional efforts, such as the preparation of an archaeological treatment plan, testing, and/or data recovery, may be warranted prior to allowing construction to proceed in this area.

Daily monitoring logs shall be completed by the on-site archaeological monitor. Within 60 days following completion of construction, the archaeological principal investigator shall provide an archaeological monitoring report to OCPW. This report shall include the results of the cultural monitoring program (even if negative), including a summary of any findings or evaluation/data recovery efforts, and supporting documentation that demonstrates all mitigation measures defined in the environmental document were appropriately met. Appendices shall include archaeological monitoring logs and documentation relating to any newly identified or updated cultural resources. This report shall be submitted to the SCCIC once considered final.

While recommended, the requirement to include a Native American Monitor should be determined by OCPW, having reviewed cultural resources technical findings, through government-to-government consultation with the traditionally culturally affiliated tribes with geographic ties to the Project area and in review of the present report findings. If appropriate, Tribal Cultural Resources, as a separate resource category under CEQA, should be subject to separate management strategies, while taking into account and working in tandem with the present cultural resources mitigation.

Human Remains. In the event that human remains are encountered on the project site, work within 50 feet of the discovery shall be redirected and the County of Orange (County) Coroner notified immediately consistent with the requirements of California Code of Regulations (CCR) Section 15064.5(e). State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code (PRC) Section 5097.98. If the remains County Coroner shall notify the Native American Heritage Commission (NAHC), which shall determine and notify a Most Likely Descendant (MLD). With the permission of the property owner, the MLD may inspect the site of the discovery. The MLD shall complete the inspection within 48 hours of notification by the NAHC. The MLD may recommend scientific removal and non-destructive analysis of human remains and items associated with Native American burials. Consistent with

CCR Section 15064.5(d), if the remains are determined to be Native American and an MLD is notified, the OCPW shall consult with the MLD as identified by the NAHC to develop an agreement for treatment and disposition of the remains. Prior to the issuance of grading permits, OCPW, or designee, shall verify that all grading plans specify the requirements of CCR Section 15064.5(e), State Health and Safety Code Section 7050.5, and PRC Section 5097.98, as stated above.

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5 References

Basgall, M. E., L. Johnson, and M. Hale. 2002. "An Evaluation of Four Archaeological Sites in the Lead Mountain Training Area, Marine Corps Air Ground Combat Center, Twentynine Palms, California." Submitted to U.S. Army Corps of Engineers, Fort Worth, Texas.

Basgall, M.E., and M. Hall. 1990. "Adaptive Variation in the North-Central Mojave Desert." Paper presented at the 55th Annual Meeting of the Society for American Archaeology, Las Vegas, Nevada.

Bean, L.J., and F.C. Shipek. 1978. "Luiseño." In *Handbook of North American Indians*, Vol. 8, *California*, edited by Robert F. Heizer, 550–563. Washington, D.C.: Smithsonian Institution.

Boscana, G. 1846. "Chinigchinich; A Historical Account of the Origin, Customs, and Traditions of the Indians at the Missionary Establishment of St. Juan Capistrano, Alta California." In *Life in California*, by Alfred Robinson, 227–341. New York, New York: Wiley & Putnam.

Byrd, B.F., and S.N. Reddy. 2002. "Late Holocene Adaptations along the Northern San Diego Coastline: New Perspectives on Old Paradigms." In *Cultural Complexity on the California Coast: Late Holocene Archaeological and Environmental Records*, edited by J.M. Erlandson and T.L. Jones, 41–62. Los Angeles, California: University of California–Los Angeles Press.

Couch, J., J. Couch, and N. Wiley. 2009. "Saved by the Well: The Keystone Cache at CA-ORA-83, the Cogged Stone Site." *Proceedings of the Society for California Archaeology* 21:*147–156.*

County of Orange. 2010. The County of Orange General Plan. Access November 2025. https://ocds.ocpublicworks.com/service-areas/oc-development-services/planning-development/codes-and-regulations/general-plan

Davis, E.L. 1978. *The Ancient Californians: Rancholabrean Hunters of the Mojave Lakes Country*. Los Angeles, California: Natural History Museum of Los Angeles County.

Earl, J. (2007). "History You Want to Repeat: The Diego Sepulveda Estancia of Costa Mesa." *The Orange Coast Voice* (9):5–6.

Eberhart, J., and H. Eberhart. 1949. California Department of Parks and Recreation Site Record for P-30-000058. Updated in 1959, 2003, and 2007. On file at the SCCIC.

Engelhardt, Z. 1922. *The San Juan Capistrano Mission*. Los Angeles, California: Zephyrin Engelhardt.

Fages, P. 1937. *A Historical, Political, and Natural Description of California* (1775). Translated by Herbert Ingram Priestly. Berkeley, California: University of California Press.

Gallegos, D.R. 1987. "San Dieguito-La Jolla: Chronology and Controversy." San Diego County Archaeological Society, Research Paper No. 1.

Gallegos D.R., and Kyle. 1988. Five Thousand Years of Maritime Subsistence at CA-SDI-48, on Ballast Point, San Diego County, California. Coyote Press.

Garcia, K., M. Gonzalez, and J. Wilson. 2011. Phase I Cultural and Paleontological Resources Assessment for the Proposed Sky Ridge Project, Orange County, California. Prepared for Vandermost Consulting Services Inc.

Geiger, M. and C.W. Meighan. 1976. *As the Padres Saw Them: California Indian Life and Customs as Reported by the Franciscan Missionaries, 1813–1815*. Santa Barbara Mission Archive Library, Santa Barbara, California.

Golla, V. 2007. "Linguistic Prehistory." In *California Prehistory: Colonization, Culture, and Complexity,* edited by T.L. Jones and K.A. Klar, 71–82. New York, New York: Altamira Press.

Gray, J., and E. Schupman, Jr. 1990. "The Federal Cylinder Project: A Guide to Field Cylinder Collections in Federal Agencies, Vol. 5: California Indian Catalog Middle and South American Indian Catalog Southwestern Indian Catalog – I." American Folk Life Center, Library of Congress, Washington.

Griset, S. 1996. "Southern California Brown Ware." Unpublished PhD dissertation; University of California, Riverside.

Hale, M. 2001. "Technological Organization of the Millingstone Pattern in Southern California." Master's Thesis; California State University, Sacramento.

Hale, M. 2009. "San Diego and Santa Barbara: Socioeconomic Divergence in Southern California." PhD dissertation; University of California, Davis.

Harrington, J.P. 1934. "A New Original Version of Boscana's Historical Account of the San Juan Capistrano Indians of Southern California." *Smithsonian Miscellaneous Collections* 92(4).

Hector, S.M. 2006. Cultural Resources Study for the Maintenance of Old Mission Dam, Mission Trails Regional Park, San Diego, California. Prepared for the City of San Diego. On file at the SCCIC.

Johnson, J.R., and J.G. Lorenz. 2006. "Genetics, Linguistics, and Prehistoric Migrations: An Analysis of California Indian Mitochondrial DNA Lineages." *Journal of California and Great Basin Anthropology* 26:33–64.

Koerper, H.C., and N.A. Desautels. 2002. "A Glycymeris Bracelet from CA-ORA-58." *Pacific Coast Archaeological Society* Quarterly, 38(2–3).

Kroeber, A. 1925. *Handbook of the Indians of California.* Washington DC: Smithsonian Institution.

Langenwalter, P.E., and J. Brock. 1985. Phase II Archaeological Studies Prado Basin and the Lower Santa Ana River. Accessed November 2025. On file at the SCCIC.

Laylander, D. 2000. *Early Ethnography of the Californias, 1533–1825*. Salinas, California: Coyote Press Archives of California Prehistory.

Lightfoot, K.J. 2005. *Indians, Missionaries, and Merchants*. Berkeley, California: University of California Press.

Luomala, K. 1978. "Tipai-Ipai." In *California*, edited by R.F. Heizer. 592–609. Washington, DC: Smithsonian Institution.

Meighan, C.W., and D.L. True. 1977. "Additional Comments on Molpa Archaeological Site." *The Journal of California Anthropology* 4(2).

NETR (National Environmental Title Research). Historic Topographic Maps and Aerial Photographs Viewer for Costa Mesa, California. Accessed December 2019 and November 2025. https://www.historicaerials.com/

OHP (California Office of Historic Preservation). 1995. "Instructions for Recording Historical Resources." March 1995. Sacramento, California: OHP.

Pourade, R.F. 1960–1967. *The History of San Diego*. 6 vols. San Diego, California: Union-Tribune Publishing Company.

Rogers, M.J. 1929. "The Stone Art of the San Dieguito Plateau." *American Anthropologist* 31:454–467.

Rogers, M.J. 1945. "An Outline of Yuman Prehistory." *Southwestern Journal of Anthropology* 1:167–198.

True, D.L. 1980. "The Pauma Complex in Northern San Diego County: 1978." *Journal of New World Archaeology* 3(4):1–39.

Sparkman, P.S. 1908. "The Culture of the Luiseno Indians." *University of California Publications in American Archaeology and Ethnology* 8(4):187–234.

USDA (U.S. Department of Agriculture), Natural Resources Conservation Service, Web Soil Service. Accessed December 2019. https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

Wallace, W. 1955. "A Suggested Chronology for Southern California Coastal Archaeology." *Southwestern Journal of Anthropology* 11(3):214–230.

Warren, C.N. 1964. "Cultural Change and Continuity on the San Diego Coast." Unpublished PhD dissertation; University of California, Los Angeles.

Warren, C.N. 1968. "Cultural Tradition and Ecological Adaptation on the Southern California Coast." In *Archaic Prehistory in the Western United States*, edited by C. Irwin-Williams, 1–14. Portales, New Mexico: Eastern New Mexico University Contributions in Anthropology.

Warren, C.N., G. Siegler, and F. Dittmer. 2004. "Paleoindian and Early Archaic Periods." In *Prehistoric and Historic Archaeology of Metropolitan San Diego: A Historic Properties Background Study*. Prepared for the Metropolitan Wastewater Department, City of San Diego. Encinitas, California: ASM Affiliates.

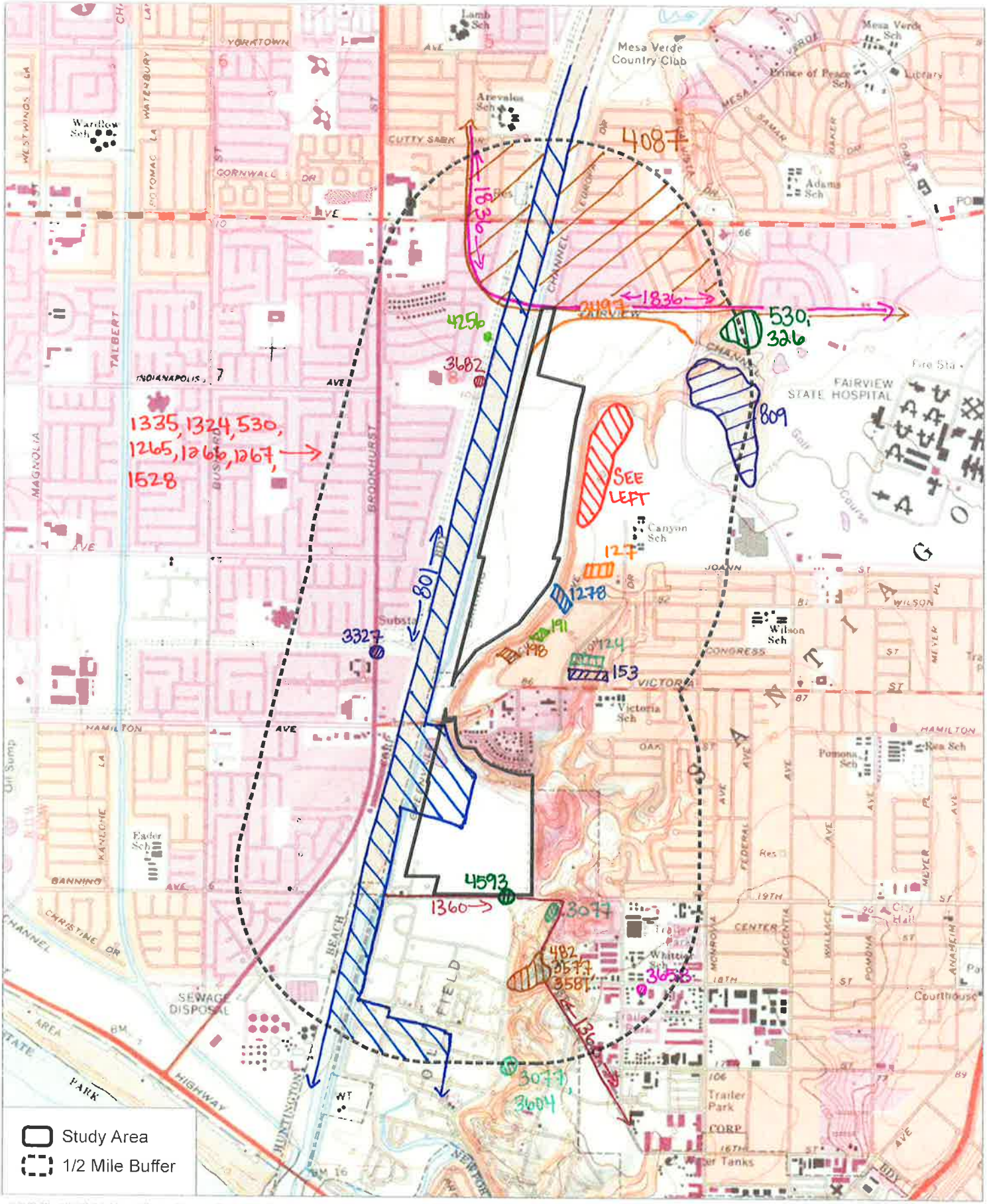
White, R.C. 1963. "Luiseno Social Organization." *University of California Publications in American Archaeology and Ethnology* 48(2): 91–194. Berkeley, California: University of California.

Wilken, M.A. 2012. "An Ethnobotany of Baja California's Kumeyaay Indians." Unpublished Master's Thesis on file at San Diego State University.

WRCC (Western Regional Climate Center). 2019. Accessed December 2019. https://wrcc.dri.edu/

Confidential Appendix A

SCCIC Records Search Results



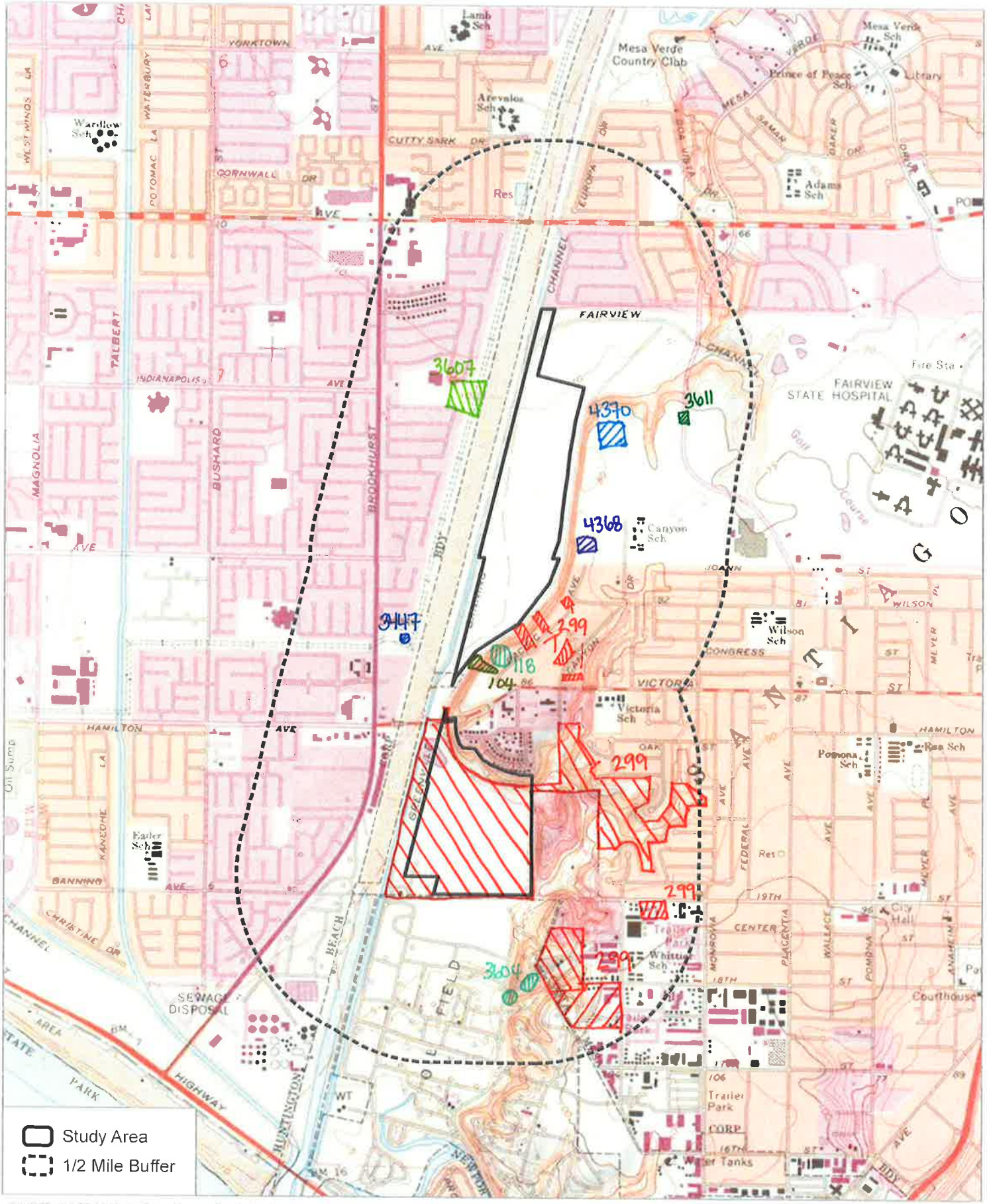
SOURCE: USGS 7.5 Minute Series Newport Beach Quadrangle
Township 6S; Range 10W; Sections 4, 5, 7, 8, 9, 16, 17, 18, 19, 20, 21

DUDEK

Records Search

Talbert Regional Park Master Plan

REPORTS MAP 1 of 5



SOURCE: USGS 7.5-Minute Series Newport Beach Quadrangle
Township 6S Range 10W, Sections 4, 5, 7, 8, 9, 16, 17, 18, 19, 20, 21

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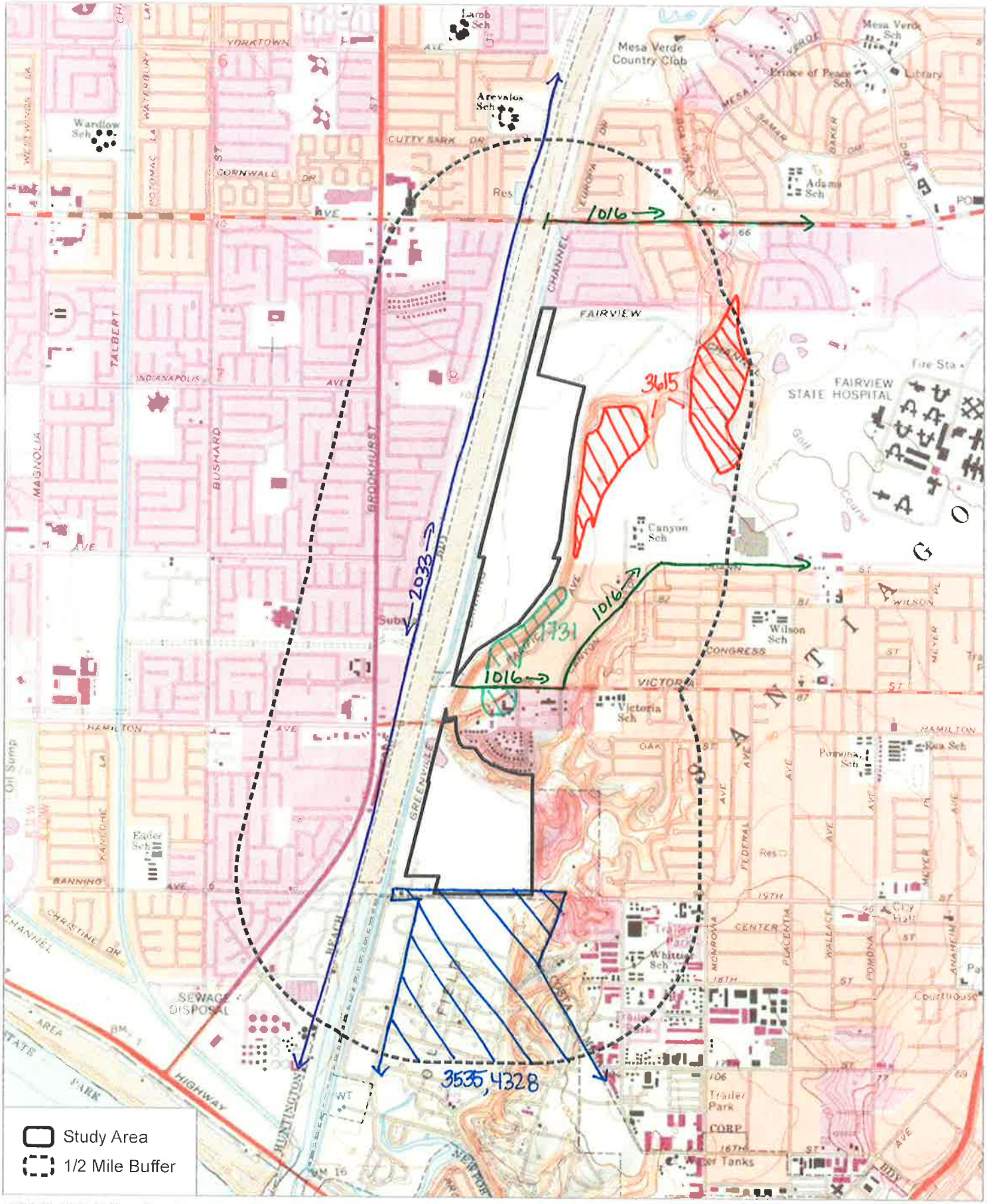
0 285 570 Meters

DUDEK

Records Search
Talbert Regional Park Master Plan

REPORTS MAP 2 of 5



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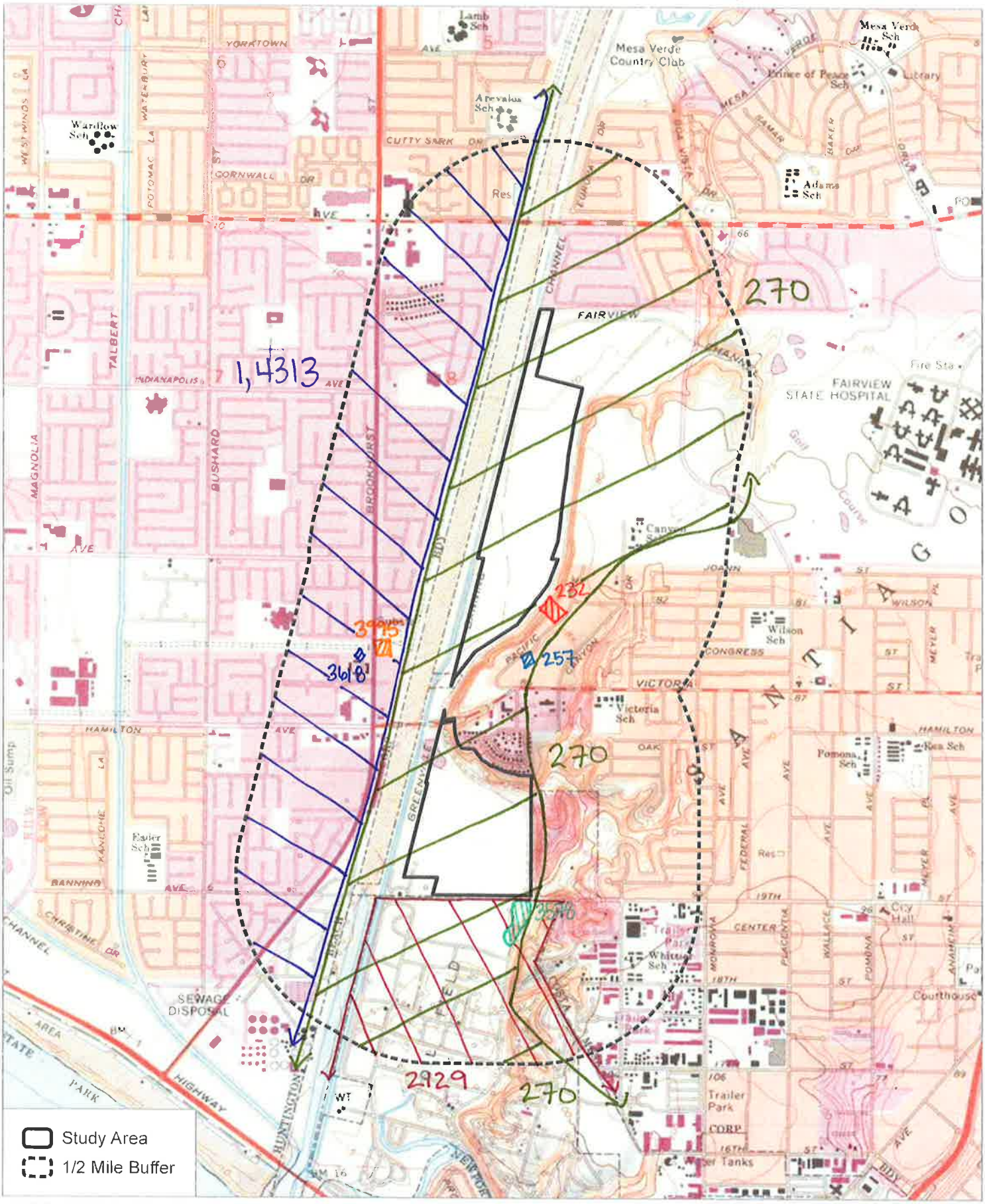
Records Search

Talbert Regional Park Master Plan

REPORTS MAP 3 of 5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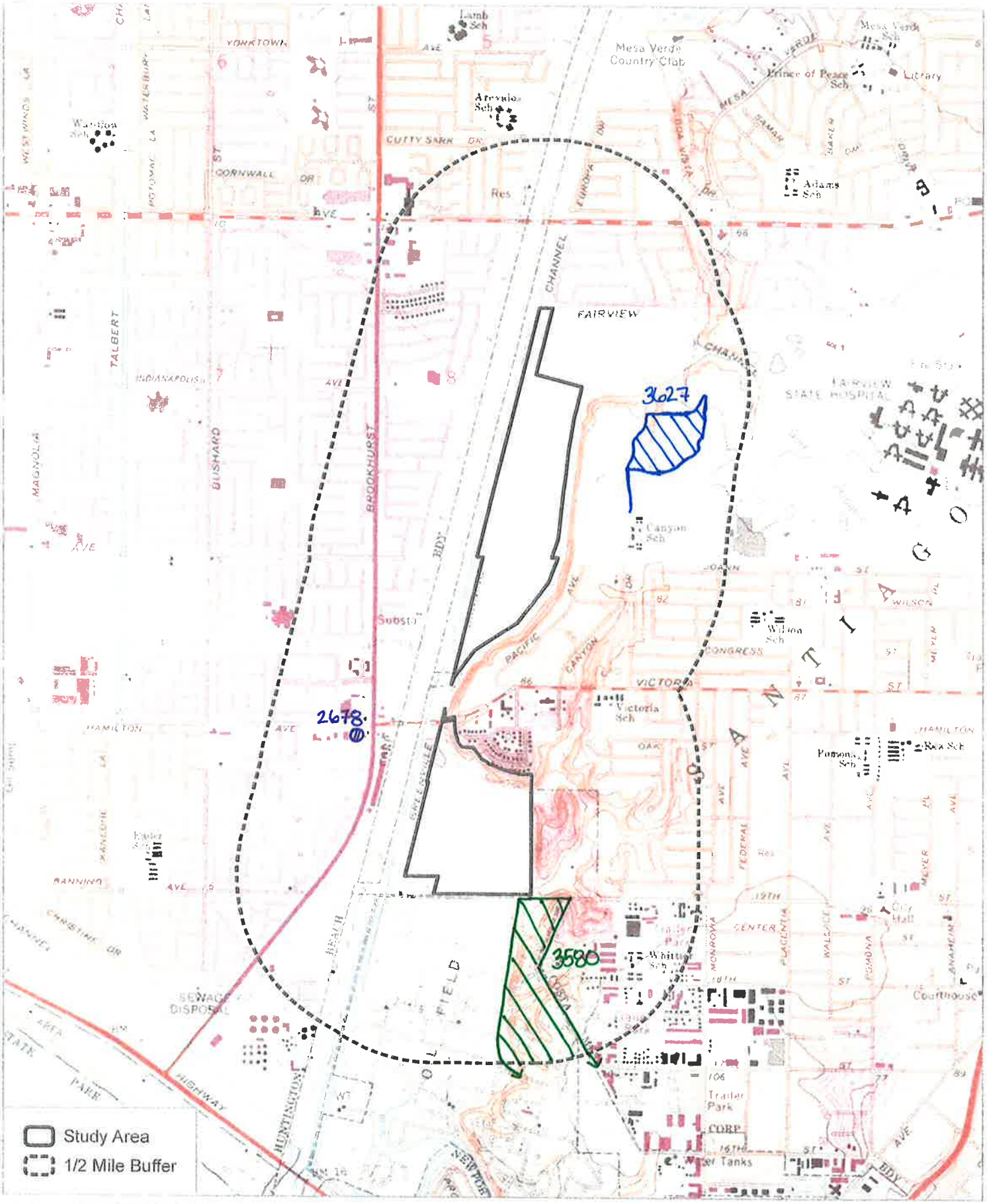
1/2 Mile Buffer
1,4313
270
2929
270
270
232
257
3618
3615
3576
YORKTOWN
CUTTY SARK
CORNWALL
FAIRVIEW
INDIANAPOLIS
HAMILTON
VICTORIA
CONGRESS
19TH
18TH
16TH
CHANNEL
BROOKHURST
BUSHARD
TALBERT
MAGNOLIA
GREENVILLE
HUNTINGTON
NEWPORT
HIGHWAY
PARK
SEWAGE DISPOSAL
FAIRVIEW STATE HOSPITAL
Mesa Verde Country Club
Mesa Verde Sch
Prince of Peace Sch
Library
Adams Sch
Lamb Sch
Arevalos Sch
WardBow Sch
Canyon Sch
Wilson Sch
Victoria Sch
Pomona Sch
Fisler Sch
Whittier Sch
City Hall
Courthouse
Trailer Park
Water Tanks
Fire Sta
Golf Course
Res
SANTA ANA
DUDEK
Records Search
Talbert Regional Park Master Plan
REPORTS MAP 4 of 5



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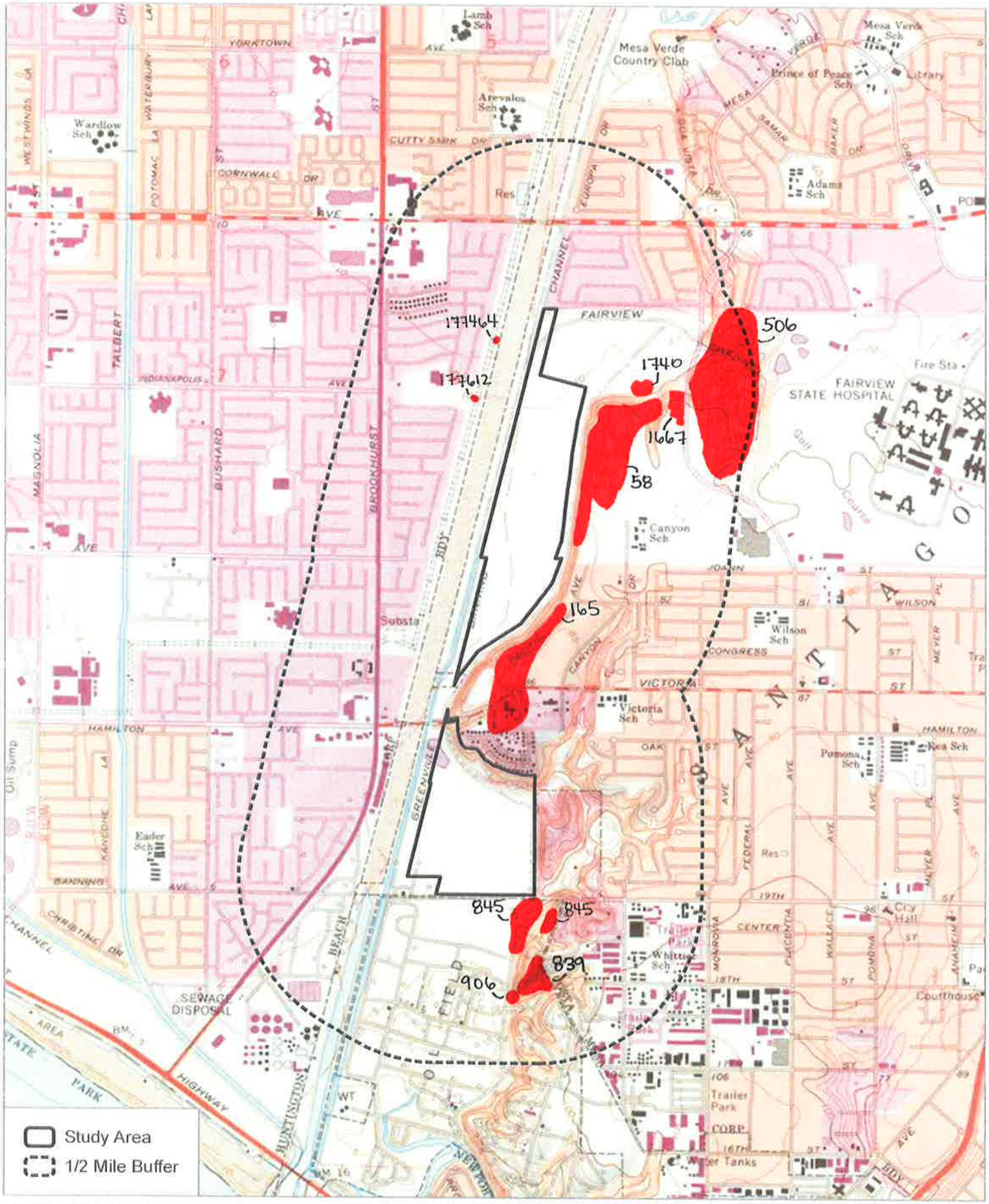
Records Search

REPORTS MAP 5 of 5



SOURCE: USGS 7.5-Minute Series Newport Beach Quadrangle
Township 6S; Range 10W; Sections 4, 5, 7, 8, 9, 16, 17, 18, 19, 20, 21

DUDEK

0 1,000 2,000 Feet
0 285 570 Meters

Records Search

Talbert Regional Park Master Plan

RESOURCES MAP 1 of 1

Report List

Talbert 13230.70

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
OR-00001		1973	Ahlering, Michael L.	Report of a Scientific Resources Survey and Inventory: Conducted for the City of Huntington Beach, California	Archaeological Research, Inc.	30-000078, 30-000082, 30-000084, 30-000085, 30-000086, 30-000087, 30-000088, 30-000142, 30-000145, 30-000149, 30-000183, 30-000185, 30-000276, 30-000288, 30-000289, 30-000290, 30-000291, 30-000292, 30-000293, 30-000302, 30-000346, 30-000356, 30-000358, 30-000359, 30-000363, 30-000365
OR-00104		1976	Desautels, Roger J.	Archaeological Survey Report on Lot 83, Tract 658, Located in the Costa Mesa Area of Orange County, California	Scientific Resource Surveys, Inc.	
OR-00118		1977	Desautels, Roger J. and Perry, Robert	Archaeological Survey Report on 1.44 Acres Located on Pacific Avenue in the Costa Mesa Area, County of Orange	Scientific Resource Surveys, Inc.	
OR-00124		1976	Anonymous	Archaeological Survey Report on One Acre of Land Located in the Costa Mesa Area of the County of Orange	Scientific Resource Surveys, Inc.	
OR-00127		1976	Desautels, Roger J.	Archaeological Survey Report on Tract 563, Lot No. 68 Located in the Costa Mesa Area of the County of Orange	Scientific Resource Surveys, Inc.	
OR-00153		1977	Desautels, Roger J.	Archaeological Survey Report on a Parcel of Property Located in the Costa Mesa Area of the County of Orange	Scientific Resource Surveys, Inc.	
OR-00191		1977	Desautels, Roger J.	Archaeological Test Excavation Report on the Richard M. Brandt Property Located on Pacific Avenue in the Costa Mesa Area of Orange County	Scientific Resource Surveys, Inc.	
OR-00198		1977	Perry, Robert	Archaeological Survey Report on 2.8 Acres Located in the Costa Mesa Area, County of Orange	Scientific Resource Surveys, Inc.	
OR-00232		1978	Cottrell, Marie G.	Report on the Archaeological Resource Assessment Conducted for Tentative Tract No. 10389	Archaeological Resource Management Corp.	30-000165
OR-00257		1978	Desautels, Roger J.	Archaeological Survey Report on Lot 10, Tract No. 653 Located at 2182 Pacific Avenue in the Costa Mesa Area of the County of Orange, California	Scientific Resource Surveys, Inc.	

Report List

Talbert 13230.70

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
OR-00270		1975	Leonard, Nelson N. III and Mathew C. Hall	Description and Evaluation of Cultural Resources Within the US Army Corps of Engineers' Santa Ana River Project	Archaeological Research Unit, UC Riverside	30-000277
OR-00299	Paleo -	1978	Van Horn, David M.	A Compilation of Archaeological, Historical and Paleontological Data for the City of Costa Mesa	Archaeological Associates, Ltd.	30-000058, 30-000076, 30-000163, 30-000165, 30-000174, 30-000297, 30-000357, 30-000506, 30-000687
OR-00326		1978	Desautels, Roger J.	Archaeological Report on the Proposed Orange County Water District Costa Mesa/ Huntington Beach Area of the County of Orange,	Scientific Resource Surveys, Inc.	30-000076, 30-000087, 30-000113, 30-000142, 30-000145, 30-000174, 30-000296, 30-000358, 30-000492
OR-00482		1979	McCawley, William	An Interim Report of Initial Site Testing at ORA-839	Archaeological Associates, Ltd.	30-000839, 30-000843, 30-000844, 30-000845
OR-00530		1935	Anonymous	Orange County California Historical Research Project Report of Limestone Canyon Excavations Limestone-Sand Hill-Adams-Fairview-Sandstone Cave-Newland Hillside & Norris Excavations	Scientific Resource Surveys, Inc.	30-000058, 30-000076, 30-000090, 30-000237, 30-000238, 30-000239, 30-000279, 30-000282
OR-00801		1985	Langenwalter, Paul E. and James Brock	Phase Ii Archaeological Studies Prado Basin and the Lower Santa Ana River		30-000089, 30-000817
OR-00809		1985	Martz, Patricia, Marie G.Cottrell, and Stephen R. Van Wormer	Report of Preliminary Test Level Investigations Conducted at CA-ORA-506, Fairview Regional Park Site, Orange County, California	Archaeological Resource Management Corporation	30-000058, 30-000506
OR-01016		1975	Leonard, Nelson N. III	Environmental Impact Evaluation: Route Alternates Between the Michelson Treatment Plant and Plants on the Santa Ana River, Orange County, California	University of California, Riverside	30-000057, 30-000076, 30-000121, 30-000164, 30-000165, 30-000170, 30-000174, 30-000193, 30-000347, 30-000348, 30-000351
OR-01265		1968	Dixon, Keith A.	Cogged Stones and Other Cerimonial Cache Artifacts in Stratigraphic Context at ORA-58, a Site in the Lower Santa Ana River Drainage, Orange County	Pacific Coast Archaeological Society	30-000058
OR-01266		1971	Dixon, Keith A.	Archaeological Site Preservation: the Neglected Alternative to Destruction	Pacific Coast Archaeological Society Quarterly	30-000058
OR-01267		1970	Dixon, Keith A.	A Brief Report on Radiocarbon and Obsidian Hydration Measurements From ORA-58 (the Banning-Norris Or Fairview Hospital Site) Orange County California	Pacific Coast Archaeological Society	30-000058

Report List

Talbert 13230.70

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
OR-01278		1993	Brock, James P.	A Cultural Resources Assessment of the Stapakis Property, 2221-2223 Pacific Avenue, Costa Mesa, California (Vesting Tentative Tract No. 14546)	Archaeological Advisory Group	30-000165
OR-01324		1993	Koerper, Henry C.	Report on Investigations to Delineate Site Boundaries and Further Characterize Cultural Remains at CA-ORA-58, Costa Mesa California	The Keith Companies Archaeological Division	30-000058
OR-01335		1971	Dixon, Keith A.	A Proposal for the Development of a "Fairview Park" Open-Air Archaeology Museum and Educational Resource, Costa Mesa, California	CSULB Department of Anthropology	30-000058
OR-01360	Paleo -	1992	Boxt, Matthew A. and Christeen M. Barretta	Archaeological and Paleontological Assessment Surveys for the Proposed Costa Mesa/newport Beach Pipe Line Route, Orange County, California	Scientific Resource Surveys, Inc.	30-000839, 30-000845, 30-000906
OR-01528		1996	Padon, Beth	Archaeological Monitoring Report for the Vernal Pool Restoration, Fairview Park Project, Costa Mesa, Orange County, California	Petra Resources, Inc.	30-000058
OR-01731		1961	Unknown	Index to the Artifacts Collected During the Second Part of the WPA Project	Unknown	30-000057, 30-000124, 30-000163, 30-000165, 30-000183, 30-000197, 30-000280, 30-000282
OR-01836		1998	Padon, Beth	Cultural Resource Review for Groundwater Replenishment System Program EIR/Tier I/EIS, Orange County Water District and County Sanitation Districts of Orange County	Discovery Works, Inc.	
OR-02033		1987	Mason, Roger D.	Research Design for Evaluation of Coastal Archaeological Sites in Northern Orange County, California	Scientific Resource Surveys, Inc.	30-000078, 30-000082, 30-000083, 30-000084, 30-000085, 30-000086, 30-000088, 30-000143, 30-000145, 30-000183, 30-000256, 30-000257, 30-000258, 30-000259, 30-000260, 30-000261, 30-000262, 30-000263, 30-000264, 30-000288, 30-000290, 30-000291, 30-000292, 30-000294, 30-000302, 30-000322, 30-000365, 30-000366, 30-000368, 30-000555
OR-02129		1999	Drover, Christopher E.	A Cultural Resources Inventory for the Newport Banning Ranch, City of Newport Beach, Orange County	The Keith Companies Archaeological Division	30-000148, 30-000839, 30-000843, 30-000844, 30-000845, 30-000906, 30-001599, 30-001600, 30-001601, 30-001602, 30-001610

Report List

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Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
OR-02618		1997	Donovan, James	Planning Report, Re: Old Towne Brewing Co. (j.r. Guerin Brewing Co., L..l..c.)	J. R. Guerin Brewing co., L.L.C.	
OR-02678	Cellular -	2002	Duke, Curt	Cultural Resource Assessment Cingular Wireless Facility No. Sc 133-01 Orange County, California	LSA Associates, Inc.	
OR-03077		2000	Drover, Christopher E. and Smith, David M.	Research Design Outline for an Archaeological Test Evaluation of Five Sites on the Newport Banning Ranch Property, Newport Beach, California	The Keith Companies Archaeological Division	30-000844, 30-000845, 30-001599, 30-001600, 30-001601, 30-001610
OR-03327		2005	Bonner, Wayne H. and Kathleen A. Crawford	Direct APE Historic Structural Assessment for Cingular Telecommunications Facility Candidate Lsanca3086d (Indianapolis & Magnolia) South of Atlanta Avenue, West of Brookhurst Street, Huntington Beach, Orange County, California	Michael Brandman Associates	
OR-03447	Cellular -	2006	Bonner, Wayne H. and Kathleen A. Crawford	Cultural Resource Records Search and Site Visit Results for Royal Street Communications, LLC Candidate La2740a (SCE Hamilton), Behind and East of the Hamilton Substation, Huntington Beach, Orange County, California	Michael Brandman Associates	30-000165
OR-03497		2007	McKenna, Jeanette A.	A Section 106 Evaluation of the Proposed Fairview Park Bike Trail, Approximately .75 Linear Miles Within the Existing Park in Costa Mesa, Orange County, California	McKenna et al.	30-000058, 30-000506
OR-03535		2008	Strudwick, Ivan H. and Riordan L. Goodwin	Cultural Resource Assessment Survey, For the 403-Acre Banning Ranch Property, City of Newport Beach, Orange County, California.	LSA Associates, Inc.	30-000059, 30-000060, 30-000148, 30-000153, 30-000165, 30-000297, 30-000351, 30-000839, 30-000843, 30-000844, 30-000845, 30-000906, 30-001599, 30-001600, 30-001601, 30-001602, 30-001610
OR-03577		1980	J.R. Murray and D.M. Van Horn	Archaeological Survey Report: Limited Posthole Tests at Ora-839, located in the Mobil Oil Field adjacent to Costa Mesa, Orange County, California	Archaeological Associates	30-000839
OR-03578		1981	David M. Van Horn	Test Excavation Report: Ora-845 (ACE-SAR-8) Located on the Banning Oil Lease, Newport Beach, California	Archaeological Associates	30-000845
OR-03580		1979	Carole Colquehoun	Archaeological Survey Report: Mobil Oil Land, near Costa Mesa, in the County of Orange, CA - includes addendum	Archaeological Associates, Ltd.	30-000058, 30-000076, 30-000165, 30-000297, 30-000357, 30-000506

Report List

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Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
OR-03581		1980	David M. Van Horn	Initial Archaeological Test Excavations at ORA-839 on the Banning Oil Lease near Newport Beach, California (includes addendum)	Archaeological Associates	30-000168, 30-000189, 30-000193, 30-000203, 30-000227, 30-000275, 30-000839
OR-03604		2000	Schlesinger, Mike	An Archaeological Test Evaluation of Eight Sites on the Newport Banning Ranch Property, Newport Beach, California	The Keith Companies Archaeological Division	30-000839, 30-000844, 30-000906, 30-001599, 30-001600, 30-001601, 30-001602, 30-001610
OR-03607		2005	Mason, Roger D.	Cultural Resources Survey Report for the Le Bard Park Extension Project, Huntington Beach, Orange County, California	ECORP Consulting, Inc.	
OR-03611		2006	Brown, Joan C.	Archaeological Controlled Demolition and Monitoring of Excavations for Bridge Footings at Fairview Park, Costa Mesa, California	SWCA Environmental Consultants, Inc.	30-000058, 30-000506
OR-03615		2003	Brown, Joan C.	A Review of the Cultural Resources in Fairview Park, Located in the City of Costa Mesa, Orange County, California	SWCA Environmental Consultants, Inc.	30-000058, 30-000506
OR-03627		2004	Brown, Joan C.	Positive Archaeological Survey Report, Fairview Park Proposed Multi-Purpose Bicycle/Pedestrian Trail, Costa Mesa, California	SWCA Environmental Consultants, Inc.	30-000058, 30-000076, 30-000165, 30-000506
OR-03627A		2004	Brown, Joan C.	Extended Phase I Report (XPI) Fairview Park Proposed Multi-Purpose Bicycle/Pedestrian Trail, Costa Mesa, California	SWCA Environmental Consultant	
OR-03627B		2003	Brown, Joan C.	A Review of the Cultural Resources in Fairview Park, Located in the City of Costa Mesa, Orange County, California	SWCA Environmental Consultants	
OR-03658	Cellular -	2007	Bonner, Wayne H.	Cultural Resources Records Search and Site Visit Results for T-Mobile Candidate LA03863J (PCW Contractors), 981 West 18th Street, Costa Mesa, Orange County, California	Michael Brandman Associates	30-000839, 30-000844, 30-000845, 30-000906
OR-03682	Cellular -	2007	Bonner, Wayne H. and Kathleen A. Crawford	Direct APE Historic Architectural Assessment for Royal Street Commuications, LLC Candidate LA2812A (SCE Lebard Park), SCE Tower M2 T5 Ellis/HB Number 2 South of Ravenwood, Huntington Beach, Orange County, California	Michael Brandman Associates	30-177612

Report List

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Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
OR-03995	Cellular -	2011	Wlodarski, Robert J.	Record Search and Field Reconnaissance for the Proposed AT&T Wireless Telecommunications Site LA3086, located at 21261 Brookhurst Street, Huntington Beach, California 90640	Cellular Archaeological Resource Evaluation	
OR-04087	Paleo -	1998	Salenius, Sylvia	Program EIR/Tier 1 EIS, for the Groundwater Replenishment System	P&D Consultants, Inc.	
OR-04256	Cellular -	2012	Supernowicz, Dana	Cultural Resources Study of the SCE-Monroe Pacific Nursery Project, MetroPCS California, LLC Site No MLAX04188, 20462 Ravenwood Lane, Huntington Beach, Orange County, California 92646	Historic Resource Associates	30-177464
OR-04313		2013	Unknown	Historic and Cultural Resources Element - Huntington Beach	City of Huntington Beach	
OR-04328	Paleo -	2010	Maxon, Patrick and Drover, Christopher	Archaeological Resources Assessment Newport Banning Ranch, Newport Beach, California	BonTerra Consulting	30-000148, 30-000839, 30-000843, 30-000844, 30-000845, 30-000906, 30-001599, 30-001600, 30-001601, 30-001602, 30-001610
OR-04368		2014	Wiley, Nancy and Koerper, Henry	The Fairview Park Storm Drain: Archaeological Testing and Monitoring	Scientific Resource Surveys	30-000058
OR-04370	Paleo -	2014	Wiley, Nancy, Chace, Paul, and Koerper, Henry	Archaeological Phase I: Cultural Resource Survey of the South West Quadrant of Fairview Park, Costa Mesa	Scientific Resource Surveys	30-000058, 30-000076, 30-000165, 30-000506, 30-001667, 30-156521, 30-177464, 30-177735
OR-04593		2017	Wilson, Zach	Archaeological Survey Report for Southern California Edison's (SCE) Deteriorated Pole Project on the Huntington Beach-Lafayette 66 kV Subtransmission Line (TD1260603), Orange County, California	ENVIRONMENTAL INTELLIGENCE, LLC	

Resource List

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Primary No.	Trinomial	Other IDs	Type	Age	Attribute codes	Recorded by	Reports
P-30-000058	CA-ORA-000058	Resource Name - Fairview Hospital Indian Site; Other - Banning - Norris Site; Other - NR# 72000243; Other - Site OR-13	Site	Prehistoric	AP02; AP09; AP15		OR-00299, OR-00530, OR-00809, OR-01265, OR-01266, OR-01267, OR-01324, OR-01335, OR-01528, OR-01995, OR-03497, OR-03580, OR-03605, OR-03611, OR-03615, OR-03627, OR-04034, OR-04266, OR-04368, OR-04370
P-30-000165	CA-ORA-000165	Resource Name - BANNING TRACT, PORTION "A"; Other - Lukup	Site	Prehistoric	AP02; AP15		OR-00232, OR-00299, OR-01016, OR-01278, OR-01731, OR-01995, OR-03447, OR-03535, OR-03580, OR-03618, OR-03627, OR-04034, OR-04370
P-30-000506	CA-ORA-000506		Site	Prehistoric, Historic	AP02; AP15		OR-00299, OR-00809, OR-01995, OR-03443, OR-03497, OR-03580, OR-03605, OR-03611, OR-03615, OR-03627, OR-04266, OR-04370
P-30-000839	CA-ORA-000839	Resource Name - Mobil 1	Site	Prehistoric	AP02; AP15		OR-00482, OR-01360, OR-02129, OR-02370, OR-03397, OR-03535, OR-03577, OR-03581, OR-03604, OR-03658, OR-04328

Resource List

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Primary No.	Trinomial	Other IDs	Type	Age	Attribute codes	Recorded by	Reports
P-30-000845	CA-ORA-000845	Resource Name - ACE-SAR-8	Site	Prehistoric	AP02; AP15		OR-00482, OR-01360, OR-02129, OR-02370, OR-03077, OR-03535, OR-03578, OR-03658, OR-04328
P-30-000906	CA-ORA-000906		Site	Prehistoric	AP15; AP16		OR-01360, OR-02129, OR-03397, OR-03535, OR-03604, OR-03658, OR-04152, OR-04328
P-30-001667		Resource Name - Redeposited Material	Site	Prehistoric	AP02; AP15		OR-03443, OR-04370
P-30-001740		Resource Name - SRS1759-1	Site	Historic	AH04; AH11		
P-30-177464		Resource Name - SCE Transmission Tower M2-T6, Ellis-Huntington Beach No.2	Structure	Historic	HP11		OR-04256, OR-04370
P-30-177612		Other - Royal Street Communications LLC SCE Lebard Park LA2812A; Resource Name - SCE Tower M2 T5 Ellis/HB No. 2	Structure	Historic	HP11		OR-03682, OR-04618

DESCRIPTION AND EVALUATION OF CULTURAL RESOURCES WITHIN THE U.S. ARMY CORPS OF ENGINEERS' SANTA ANA RIVER PROJECT

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ABSTRACT

This report evaluates the cultural resources that may be affected by proposed developments within the Santa Ana River Basin. The U.S. Army Corps of Engineers plans modifications to the channel of the Santa Ana River below Prado Dam, a portion of Santiago Creek, Prado Flood Control Basin, the Oak St. Drain, and the flood plain of the Santa Ana River north of Mentone. These specific project areas, and a stretch of the Santa Ana River between Prado Dam and the proposed Mentone Dam were investigated in detail. Data were collected through review of archival resources and field reconnaissance. Sixty-three sites were considered in this evaluation; 16 were newly recorded. The Prado Flood Control Basin is the only segment of the project that may have a significant impact upon cultural resources. Ten sites may be adversely affected by current and proposed development; flooding poses a problem for two sites, these two sites and the remaining eight sites may be directly and indirectly affected by proposed recreational development. Adverse affects may be mitigated through a program of protection.

Introduction

This report addresses the archaeological resources of the Santa Ana River Basin and the Tustin Plain. Field reconnaissance was limited to the Santa Ana River Channel from Mentone to the Pacific Ocean, a portion of the channel of Santiago Creek, Prado Dam and Flood Control Basin, and the proposed Mentone Dam and Flood Control Basin. The project area will first be described in general then discussed by specific areas based upon topography and the type and degree of development. Areas subject to field inspection will be categorized as follows: Santa Ana River Channel (Pacific Ocean to Prado Dam), Santiago Creek Channel, Prado Flood Control Basin, Oak St. Drain, Santa Ana River Channel (Prado Basin to Mentone Dam), and Mentone Dam.

The Santa Ana River and its tributaries drain a wide range of environments. The interior basin is defined on the north by the San Gabriel and San Bernardino Mountains. The southern slopes of these mountains; the broad valley including the San Bernardino and Riverside Valley, and the Chino Basin; and the valleys and hills of the Perris Upland exhibit environments ranging from coniferous forest to grassland. Reliable sources of water are limited to a few streams in the mountains, portions of the Santa Ana River and larger tributaries, and springs. The Santa Ana Mountains and the Puente Hills focus the interior drainage into Santa Ana Canyon. The river flows through approximately six miles of relatively narrow canyon before the canyon opens onto the Tustin Plain. The river flows southwest across the plain; only one major drainage, Santiago Creek, joins the river before it empties into the Pacific Ocean. The Tustin Plain is a broad and relatively flat feature, bordered on the east by the Santa Ana Mountains and on the west by the Pacific Ocean. The coastal portion of the study area is dominated by coastal sage and chaparral plant communities. A system of estuaries existed

along the shore. Perennial water sources are limited to the upper portions of the Santa Ana River, the eastern limits of several estuaries, and springs.

The project segment downstream from Prado Dam consists of the present day channel of the Santa Ana River and Santiago Creek. Much of this right of way has been channelized; only within Santa Ana Canyon does the river exist in a relatively natural state. Proposed improvements will be limited to construction within the existing channel. The project area for Prado Dam is the existing dam site and those areas that would be affected by an increase in the flood control capacity of the dam - all areas behind the dam that do not exceed the 570 foot contour line. This includes a sizable area of existing riverine thickets and low rolling terrain surrounding the existing debris basin. The Oak St. Drain is a short stretch of channel within the City of Corona. An existing drainage channel through a heavily developed region will be improved. No improvements are presently planned for the Santa Ana River between Prado Flood Control Basin and the proposed Mentone Dam. Some developments exist along the channel in urban areas; however, for the most part, the river occupies a relatively broad flood plain. The proposed Mentone Dam is a large earth fill dam and small debris basin for flood control measures. The project site is on a broad alluvial fan at the base of the San Bernardino Mountains.

The Santa Ana River and the lower portion of Santiago Creek supported a rich riverine environment: a wide range of aquatic plants, shrubs, and trees lined the channel or grew on the flood plain. The water and the flora attracted an equally diverse fauna. For the most part surrounding terrain was relatively arid and supported open coastal sage or chaparral plant associations. The Prado Flood Control Basin is the confluence of several

large drainage systems. As such the lower elevations supported a rich riverine habitat; the surrounding hills were probably covered with open chaparral vegetation. The Mentone Dam site is situated on an arid alluvial fan which supports a low chaparral vegetation.

For the most part the natural environment of the project right of way was very attractive to aboriginal Man. The Santa Ana River, lower Santiago Creek and Prado Dam represented sources of water and supported a rich and diverse fauna and flora.

The culture history of the Santa Ana River region can be divided into five periods. The prehistoric period, which may span fifteen to twenty thousand years, represents an occupation of the study area by peoples whose economy evolved from one oriented toward the hunting of large land mammals augmented by plant collection, to a generalized exploitation of all resource zones. This period is terminated by the first Spanish expedition to the coast of southern California in 1540. This period, the proto-historic, dating between 1540 and 1769, is still dominated by the development of hunting and gathering peoples; however, during this time these peoples are exposed to several Spanish expeditions. This is the period of time to which ethnographic data, concerning aboriginal populations, best applies. The mission period (1769-1833) represents a major change in land use and a re-ordering and re-distribution of populations. This period is dominated by the Spanish mission system. Agriculture and animal husbandry are introduced to the region. The rancho period (1833-1846) represents the development of private estates as the missions declined. The American period (1846 to present) includes the development of towns and small farms. Development of wells and transportation systems facilitated the spread of agricultural and residential development.

Man has been present within the study area for at least the last ten to fifteen thousand years, and perhaps for a great deal longer. There is very little data for cultural reconstruction prior to eight thousand years ago. Man is pictured as a hunter of big game, living in small mobile bands during this earliest phase of occupation. The emphasis upon the hunting of large land mammals is perhaps exaggerated; however, it is likely that population sizes were relatively small with hunting playing an important role in the economy. No occupation sites within the study area are known for this period. Small relatively mobile populations do not tend to leave extensive remains. Small camps and kill sites probably tend to occur about water sources. Early remains may be found in old alluvial deposits which were once stream banks or sand bars, or on knolls overlooking water sources.

By eight thousand years ago, and perhaps earlier populations were becoming more sedentary. On the coast large campsites, evidencing a generalized collecting economy, are found. Hunting of large mammals was replaced by the collection of shellfish and capture of intertidal vertebrates. The collection and processing of plant resources dominated the subsistence economy. Populations, between 15 and 40 people, were based at such sites for most of the year. Similar types of sites occurred along the flanks of the coastal mountains and in the interior valleys about the base of the mountains or along major drainage systems. The settlement pattern consisted of one base camp. Small temporary camps, seasonally occupied, have not been dated to this time period. However, it is likely that populations broke down into family units during periods of stress, founding small temporary camps in environments similar to those occupied by the base camp.

Over time, these populations added new resources and intensified their use of those previously utilized. The expansion of the resource base and increases in the size and organization of cemeteries suggests that populations were increasing. The degree of intervillage interaction increased also. Materials derived from sources several hundred miles away are represented in the grave goods of high status individuals. These changes probably accelerated at a greater rate on the coast. Settlement patterns for interior peoples remained much the same, while on the coast the addition of small temporary camps is apparent. These temporary sites are located adjacent to the shore or about reliable sources of water along the flanks and the interior of the coastal mountains.

The trends of the preceding phase continued. Village sites occurred along the coast and margin of the mountains, they might also have occurred in the interior of the mountains. The number and variety of temporary camps increased, as a greater proportion of the environment was utilized. The village had become a base camp with a variety of satellite temporary camps. Populations of a single village may approach several hundred individuals. Trade with other regions, particularly the southern Channel Islands, continued to increase. The number of villages and the range of environments in which they occurred increased in the interior also. The complexity of the settlement pattern approached that of the coast. Raw material and finished products indicated exchange relationships with coastal and desert peoples. Camps may be found in all environments; villages in large mountain flats and large canyon systems, in addition to those locations inhabitated earlier. Many of the temporary sites consisted of limited activity locales - single function camps such as hunting camps or acorn grinding locations.

The proto-historic period represents an unbroken continuum of aboriginal development. Several Spanish expeditions visited the southern California area between 1540 and 1769; however, the Spanish presence did not have a significant affect upon the aboriginal system. The ethnographic representations of aboriginal peoples may be best applied to populations during this time period.

Four subdivisions of the Shoshonean language family occurred within the study area: the Cahuilla, Gabrielino, Luiseno, and the Serrano. Map 2 illustrates the distribution of these peoples and the location of villages named in the San Gabriel and San Juan Capistrano Mission Baptismal Registers.[1]

All four groups shared many cultural similarities; differences may be attributed to the divergent environmental settings for these populations. The Cahuilla populations were centered in the Coachella Valley and the Santa Rosa Mountains of the Peninsular Range. With respect to the study area the Luiseno occupied the interior valleys of the Peninsular Range. Within the study area the Serrano were restricted to the foothills and interior of the San Bernardino Mountains. The Gabrielino held the San Bernardino and Riverside Valley, the Chino Basin, Puente Hills, the western slopes of the Santa Ana Mountains and the Tustin Plain.

The village was the basic political unit, however, certain villages did exercise influence on other, usually smaller, villages. The village was the base camp, in the case of the Cahuilla nearly 80% of all food resources lay within a five mile range of the village (Bean 1972). Villagers would move to temporary camps to take advantage of localized seasonal abundance, when these resources could not be easily gained from the village site. The village population would also disperse during times of generalized scarcity. All

four linguistic groups interacted with one another. Village intermarriage maintained bonds between groups from differing environments. Exchange of raw materials, exotic finished products, and food was frequent between these groups.

European exploration in California began in 1540 with the sea expedition of Francisco Vasques de Coronando and the land expedition of Hernando de Alarcon. These were followed by several other sea expeditions by Juan Rodriguez Cabrillo, Sir Francis Drake, and Juan Vizcaino. The first expedition to have direct and lengthy contact with peoples of the study area was that lead by Gaspar de Portola. This land expedition entered southern California in 1769, crossing the Santa Ana River on the Tustin Plain.

The major purpose of the Portola expedition was to assess the California landscape and determine suitable locations for missions. During the period 1769 to 1834 two missions, San Gabriel and San Juan Capistrano, drew neophytes from the study area. An asistencia of the San Gabriel Mission was also founded; this outpost was located in the Loma Linda-Redlands area. Indians were first drawn from the villages nearest the missions. Disruption of the aboriginal lifestyle and introduced disease quickly disseminated the aboriginal populations. The Mission introduced animal husbandry and agriculture to coastal southern California - wheat, olives, figs, and grapes were cultivated at the Missions. Grants of land to individuals were not frequent during the Mission period. The first settlement on the Santa Ana River was found at the present site of Olive in 1810. Juan Pablo Peralta and Jose Antonio Yorba were granted Rancho Santiago de Santa Ana (Friis 1965). The major impact the mission system had upon the study area was the relocation and dissemination of aboriginal peoples. The Gabrielino speakers were the first to be directly affected, the

decrease and redistribution of these peoples probably allowed for the movement of Serrano, Cahuilla, and Luiseno into territories previously included within the Gabrielino sphere.

In 1833 mission land was secularized, and this lead to the development of large ranchos throughout the study area. Land use was significantly changed. Agricultural development occurred about the adobe and cattle grazed over large tracts of land. Tracts of land were developed along the Santa Ana River. Seven families owned land from the ocean to Santa Ana Canyon. The majority of the founding families built adobes for each off-spring. The Yorba-Peralta unit of Rancho de Santa Ana contained at least 33 known adobes. The highly fragmentized aboriginal populations lived in settlements about reliable water sources that were not directly associated with the developing ranches. A portion of this population worked within the European system, as laborers, vaqueros, and servants. Settlement sites were selected on the same basis as aboriginal villages - well drained land not subject to flooding, near a reliable source of water. Development of irrigation expanded the range of occupation and adobe locations.

After California became a U.S. territory the Board of Land Commissioners was set-up to examine titles of California ranchos. The break-up of the large ranchos was a major factor in the founding of numerous towns (Parker 1963). Ethnic groups founded settlement such as the German colony of Anaheim and the Morman settlement of San Bernardino. Vine culture had been introduced during the mission period, the development of this crop and other mission introductions, plus the addition of citrus became the basis of production for these new settlements and the numerous farms. The utilization of irrigation rapidly

increased the amount of available land. Expansion of the railroad and other systems of commerce and communication brought southern California out of rural isolation and into the twentieth century. Industrialization allowed for the continued growth of populations in southern California. The range of settlement was expanded as more elaborate systems of irrigation and the use of wells developed. The Santa Ana River was still an important locating factor - for it was a major water source and a natural communication route. The eastern San Bernardino and Riverside Valleys developed due to their proximity to two major travel routes into southern California - Cajon and Banning Pass. The fertility of these large interior valleys and the coastal plain encouraged large scale development of agriculture. Large tracts of land were leveled and cultivated.

Within the project area the Santa Ana River was a focusing factor for populations during all periods of occupation. With the exception of the Mentone Dam the specific project right of ways are likely to include or be directly adjacent to major occupation sites for each time period. Aboriginal villages and temporary camps occurred along the total length of the River. Aboriginal occupation sites during the mission period remained along the major water sources. European and aboriginal settlements during the rancho and early American period focused on the major water sources. Development along the Santa Ana River could endanger cultural resources of all time periods.

Definition of an Archaeological Site

During the long culture history of the project area Man has utilized every environment to some degree. Evidence of human occupation may be found throughout the project area. It is thus important to distinguish what types of remains are important to the reconstruction and interpretation of extinct cultures. By definition archaeological sites are important features;

archaeological sites represent a significant level of use. For the most part, sites do not represent single events, they tend to represent re-occurrent use over a long period of time or short term intensive use. The activities of Man modify the natural environment, the extent and degree of these modifications serve to define the presence and limits of cultural resource areas. The presence of significant concentrations of one or more of the following criteria was utilized to define the location and extent of archaeological sites: food waste, manufacturing waste, broken and whole tools, concentrations or alignments of stones, soil discoloration or accumulation, modification of natural rock exposures, or the presence of human skeletal remains. Archaeological finds that do not conform to this definition were also noted. Limited evidence locales identified remains dispersed finer than allowed in the definition of archaeological sites. These remains were noted as well as isolated artifacts because they may represent archaeological sites that have been obliterated through modern agencies or obscured by heavy vegetation cover. The introduction to the appendices provides a detailed definition of archaeological remains and recording procedures.

Methodology

Data for this report were collected from archival investigation and field reconnaissance. Archival research consisted of a review of recorded prehistoric and early historic sites within the study area; particular emphasis was placed on sites within or directly adjacent to the project right of ways. These data provided a core of comparative information. Sites within the project right of ways are contrasted against the overall patterns of occupation. Field reconnaissance was limited to the specific project right of ways. An on foot, detailed investigation of channel improvements and area to be directly impacted by construction or flooding within the Prado Dam and proposed Mentone Dam

was conducted. Known sites and highly likely site areas directly adjacent to the project right of ways were also investigated. Field work as limited to surface reconnaissance, no subsurface investigations were initiated.

The right of way of lower Santiago Creek and Santa Ana River below Prado Dam, was channelized with the exception of the Sana Ana River within Santa Ana Canyon. Where channelized through field reconnaissance was limited to the areas within the channel, the remainder of this segment was defined by the overflow limits in a standard project flood. The limit of intensive investigation was the standard project flood for the segment of Santa Ana River between Prado Dam Basin and Mentone Dam. The Oak St. Drain investigation was limited to the existing channel. All areas within the proposed take lines from Prado Dam Basin and Mentone Dam were covered in detail. The field phase of investigation was directed by Matthew C. Hall. The field crew consisted of Mr. Hall, Stanley Wilmoth, Suzanne Crowley, Peggy McGuckian, Richard Weaver, and Toni Synder. This crew spent a total of 75 man days in the field. A total of 63 sites and seven limited evidence locales or isolated artifacts were considered. Forty-seven sites had previously been recorded within or directly adjacent to the project right of ways; 23 of these locations were re-examined. Sixteen new sites were recorded during the field reconnaissance; all seven limited evidence locations or isolated artifacts were recorded during this field work. The general distribution of aboriginal sites with respect to the project right of ways are illustrated on Map I. Detailed site descriptions and locations are available in Appendices I, II, and III.

Archaeological Resources

No archaeological sites were recorded within the project limits for the Santa Ana River, below Prado Dam and Santiago Creek. Twenty-four archaeological sites were recorded adjacent to the project right of way, or on the upper

portion of Santiago Creek. All sites on the Tustin Plain, located near the Santa Ana River and Santiago Creek, were probably major campsites. There is a cluster of large middens on the bluffs and at the base of the bluffs toward the mouth of the Santa Ana River; these sites probably represent a series of villages that may span six to eight thousand years of occupation. Large sites were also noted on well-drained rises in the Tustin Plain; these too were probably village sites. Many of these sites have been heavily impacted by urbanization of the Tustin Plain. A series of temporary camps sites were located on terraces or high knolls within Santa Ana Canyon. These sites were apparently used during the late spring or summer for the collection of plant resources. The Yorba Cemetery still remains intact. This feature is located at the point where the Santa Ana Canyon opens onto the Tustin Plain. The cemetery is located outside the project right of way. Numerous archaeological sites exist on the upper reaches of Santiago Creek (at some distance upstream from proposed modifications). These sites probably consist of village and temporary camp sites. All sites on the lower portion of the Santa Ana River and Santiago Creek were aboriginal sites, except the Yorba Cemetery. Appendices I, II, and III provide detailed descriptions of these sites.

Prado Basin

Eleven sites were recorded during the investigation of Prado Dam Basin, nine of these may be directly affected by flooding - they are within the present take line or fall within the proposed take line.

RIV-653 is located on a bluff at the southern end of a small promentory between Chino Creek and Mill Creek. The site is approximately 250 meters on a east-west axis and 100 meters on the north-south axis. The depth of deposit is probably shallow, less than 50 centimeters. Chipping waste dominated the artifactual debris on the surface; mano and metate fragments were also present.

The deposit overlaps with that of the historic Bandini-Cota Adobe; although most of the material defined as RIV-653 is concentrated to the west of the adobe. RIV-653 is an aboriginal deposit and probably represents a prehistoric use of this location and is probably not culturally associated with the historic rancho and American period remains. The site area is covered by heavy stands of grass. The western extreme of the site has been disturbed by grading; however, the majority of the deposit is relatively undisturbed.

RIV-556 is about 425 meters east of Chino Creek and about 260 meters west of Cucamonga Avenue. No copy of the site record was available. Two attempts were made to relocate the deposit. No evidence of this site was observed. The probable site area was heavy overgrown with dense grass; thus it is possible that a light scatter of material could go undetected.

RIV-100 is situated on a terrace at the base of the bluffs north of Mill Creek. The site is about 450 meters each of Cucamonga Avenue and 190 meters north of Mill Creek. According to the site form this is a burial site covering an area 100 by 100 feet. Burials, pot sherds, flakes, and a large stemmed chert blade were found at this location. No remains of RIV-100 were observed; it is likely that most of the site has become buried under alluvium. Several flakes and two manos were found on the bluff overlooking the site area. This site is probably a late village site.

ACE-SAR-4 is situated atop low bluffs on the west side of Chino Creek, approximately 1000 to 1200 meters east-northeast of the junction of Euclid Avenue and Highway 71. The site consists of a large and varied surface scatter, roughly 250 by 160 meters, of aboriginal remains. The greatest concentration of material is along the southeastern rim of the peninsula formed by the bluffs.

Chipping waste, grinding tools (manos, metates, and mortars), and hammerstones were noted on the surface. This site may have been a village or a large multi-purpose temporary campsite. Occupation probably dates within the Christian era. No historic remains were noted at this site.

RIV-652 was located on the north bank of the Santa Ana River roughly 800 meters west of River Road and about 700 meters southwest of the intersection of River Road and Archibald Avenue. The site record described the site as an elongated strip (70 x 30 m) of flaking debris along the Santa Ana River. Apparently this was a temporary campsite. This site was destroyed by construction in 1972.

ACE-SAR-H2A and H2B consist of disturbed structural remains on the hillside on the south of the existing debris basin. All remains fall within the existing take lines. These structure are houses that date between 1900 and 1910, based upon the kind of cement utilized, mason jar necks, and broken glassware found in association with the foundations.

ACE-SAR-H3 is the historic Bandini-Cota Adobe. The site is located on a bluff at the southern end of a promentory between Chino Creek and Mill Creek. The lower courses of adobe wall and the wall footings remain intact (the structure was standing and in use during the 20th Century). The structural remains are surrounded by a scatter of historic debris dating to the late 19th and early 20th Centuries. Outbuilding, outside features, and dumps probably exist about the structure. The house was built in 1840-41; structures and debris from this period until the 1920's remain at this site. Some looting is evident; however, for the most part, the midden surrounding the structure is intact.

ACE-SAR-H4 is located approximately 200 meters northwest of ACE-SAR-4 atop a small rise west of Chino Creek. This site consists of the remains of an historic structure and associated activity areas that may date to the end of the 19th Century and early 20th Century.

ACE-SAR-H5 is the Yorba Slaughter Adobe, which is located at the northwestern extreme of the project area. The structure has been restored and is currently utilized as a Museum by San Bernardino County Parks. The structure was one of the original adobes of the Don Bernardo Yorba lands.

Several isolated artifacts and limited evidence locales were located within the project area (see Appendix I). These finds were located on the grass covered knolls surrounding the present debris basin. Three areas of cultural remains were noted adjacent to the project site. RIV-675 is located directly adjacent to the proposed take line. This site is located above Temescal Wash, near the southeast corner of the Prado Flood Control Basin. The site measures approximately 400 x 120 meters and consists primarily of chipping waste. An historic site and an isolated artifact were also observed near the Basin.

Twentieth Century agriculture and dairy development had had an impact upon the archaeological resources surrounding the Prado Basin. Heavy vegetation cover posed a major problem in the location of light scatters of cultural material. Additional sites may be recorded in the areas about Prado Basin. Those that have been recorded represent aboriginal villages and temporary camps, and European occupation sites dating from the 1840's.

Oak Street Drain

No archaeological sites were observed on or adjacent to the proposed Oak Street Drain.

Mentone to Prado

Twenty-two archaeological sites are recorded within or adjacent to the Santa Ana River between Prado Flood Control Basin and the proposed Mentone Dam. Six of these sites are within the overflow limits of a standard project flood. Two limited evidence locales were also observed. Archaeological sites ranged from limited use, grinding stations, to large villages. For the most part they are located on the high terraces overlooking the river. Those sites that occurred within the standard project flood were granite boulder outcrops that had been used as grinding stations. At one time there may have been deposit associated with these features; these remains have either been covered by flooding or washed away. One site of questionable authenticity was said to consist of few artifacts; it was not possible to locate this area.

At least two large aboriginal villages, occupied until the historic period, were identified. Another village occupation may date back several thousand years. The majority of the sites identified were limited use, seed processing stations, located about the base of the hills adjacent to the river. No archaeological sites were located within the area of the proposed Mentone Dam and Flood Control Basin.

Sensitivity (Effect of Proposed Project on Cultural Resources)

With the exception of boulders that exhibit grinding features, all of the archaeological sites considered in this report are highly sensitive. Sites, for the most part, are relatively shallow deposits with extensive surface exposure of materials. Disturbance of the surface or excavation into the deposit would cause significant, adverse effects. The major factor in the process of reconstructing extinct cultures is the relationship of cultural remains within a site. Disturbance of these relationships, through brushing, grading, or excavation, causes significant lose of information. Thus

archaeological sites not within the specific project limits may be adversely affected during the construction phase by such activities as access road construction, construction equipment yards and supply depots, or borrowing of soil.

The significance of these sites is that they represent an important segment of the archaeological record. During all periods of cultural development major occupation sites existed along the Santa Ana River. Furthermore, the Santa Ana River cross cuts a wide range of environments. The variability expressed along the length of the river is important to a basic understanding of the east-west ties between peoples and differential rates of cultural development between coastal and interior populations. All sites contain a unique set of information that is important to an understanding of the cultural history of a region. Proposed development that may adversely affect these sites should be mitigated by programs of preservation or archaeological salvage. Proposed developments will not adversely affect archaeological resources with the exception of the Prado Dam Flood Control Project. All development below Prado Dam will be restricted to the existing channel of the Santa Ana River or Santiago Creek. No archaeological remains were found within these project sites. Archaeological sites are numerous along these watercourses. These sites should not be affected by secondary impacts during the construction phase due to the fact that access routes to the construction sites exist. The Oak St. Drain construction will not directly or indirectly have an adverse impact upon archaeological resources, as no sites were found within or directly adjacent to the construction site. No development is planned for the Santa Ana River between Prado Flood Control Basin and the proposed Mentone Dam; therefore 21 archaeological sites along this right of way will not be affected

by development. The high density of archaeological remains indicates that future improvements along this segment of river channel should be reviewed against existing data and steps be taken to protect cultural resources. No archaeological sites were located within the limits of the proposed Mentone Dam and debris basin, no sites were observed directly adjacent to this construction. Archaeological sites probably occur at the base of the foothills, particularly near Mill Creek and the Santa Ana River. If construction roads and construction related activity are limited to terrain to the west or south of the project site there should be no significant adverse secondary impacts during the construction phase. Long term secondary impacts may have significant affects upon cultural resources. Changes in land use within a mile radius of the project site could bring about the destruction of archaeological sites.

The Prado Flood Control Basin is a very sensitive area archaeologically. Nine archaeological sites have been recorded within the proposed take line and two sites directly adjacent to this line. Ten of these sites may be adversely affected by current and proposed development of the Prado Flood Control Basin, the eleventh was destroyed previous to this investigation. Flooding would probably not have a significant affect upon archaeological sites that lack standing adobe construction. Only the Yorba Slaughter Adobe and the Bandini-Cota Adobe (ACE-SAR-H5 and H3) would be adversely affected. The remainder of the sites are aboriginal camps with no surface architecture or historic European sites that lack standing architecture or the architectural remains are cement. Raising the level of Prado Dam would not have significant direct affects upon archaeological resources. This construction would have a significant secondary affect upon two sites in the event the basin was flooded; the Bandini-Cota Adobe would be affected by flooding given the present basin

capacity, the Yorba Slaughter Adobe would be affected by the proposed increase in capacity. Flooding of the remaining six archaeological sites would not significantly disturb the surface; deposition of soil and debris on the surface of these sites would in effect serve to decrease the visibility and accessibility of these sites - this would decrease vandalism. Development of lands adjacent to the debris basin may have a significant affect upon the eight sites within the project area and the two directly adjacent to the project. Recreational development may adversely affect the sites directly, through grading and landscaping of the land; and indirectly through the increased public access to archaeological sites. The archaeological sites within and adjacent to the Prado Flood Control Basin are shallow deposits, usually with extensive surface remains. Much information is exposed on the surface, increased accessibility to these sites would result in the disturbance of surface patterning, the removal of certain categories of archaeological remains, and disturbance from uncontrolled excavation.

The Prado Flood Control Basin is the only segment of the proposed development that requires extensive mitigation programs. Development of Santiago Creek and Santa Ana River below Prado Dam will not have a significant affect upon archaeological resources, as long as sites outside the project area are avoided during the construction phase. Development of the Oak St. Drain will not adversely affect sites. No development is currently planned on the Santa Ana River between Prado Flood Control Basin and the proposed Mentone Dam. Mentone Dam and debris basin will not directly affect archaeological sites. Short term adverse effects may be avoided by planning construction related activities to the south and west of the project site. Long term impacts may affect sites in the project vicinity. If the project is constructed

an inventory of archaeological sites in the project vicinity should be made. These locational data should be combined with the vast amounts of historic data available and presented to local planning agencies. The variety and number of historic resources in the Prado Dam Basin required special attention. The Western American Studies Program, UCR, has completed an inventory and evaluation of these sites.

Potential adverse impacts from development in the Prado Flood Control Basin may be mitigated through a program of testing and protection. Two sites require two levels of protection: protection from flooding and protection from direct and indirect affects of recreational development. The remainder of the sites require only the latter form of protection. Protection of the Yorba Slaughter and Bandini-Cota Adobes from flooding would require the construction of dams about the perimeters of the archaeological sensitive areas. Protection of these sites and others that may be affected by recreational development requires a program of limited data collection followed by burial of the sensitive areas. Data collection would include the production of an accurate map of the limits and surface complexities of the site, a surface collection of archaeological remains, and limited test excavations. These data would provide an accurate description of the remains to be protected. Protection may be brought about through burial of the sensitive areas with silt from the debris basin. Fifty to one hundred centimeters of soil, stabilized to avoid rapid erosion, would be sufficient to protect the sites from vandalism and permit landscaping of the area without extensive damage to the deposits. Excavations for trees, that would exceed the depth of the protective overburden, could be carried out by archaeologists. The data collection phase for 20th Century structures could be minimized through the use of records and local informants; surface collection and excavation would not be necessary.

RIV-653 and the Bandini-Cota Adobe form a continuous deposit which may be treated as one archaeological deposit. The aboriginal deposit and the historic European structures and deposit will be submitted for nomination to the National Register of Historic Places. These remains should be protected as discussed previously. It is further suggested that these remains should be developed as an interpretive resource within the recreational plan for land about the Flood Control Basin. A cultural center may be developed utilizing the extant remains in situ; displays of remains, recovered from excavations, housed in a museum facility and open air displays; and the archaeological excavations themselves. The interpretive themes would include local cultural development and the methods archaeologists employ to reconstruct past lifestyles. A program of this nature would protect these important resources and allow for a flow of information to the public.

RIV-556 was not relocated during the field work for this project. If this area is to be developed, the heavy mat of grass should be burned off and the exact location and extent of remains recorded and protected.

The exact location of RIV-100 is not known; this important site, possibly the historic village of Totabit, is probably buried by alluvium. Any construction planned for the site region should be reviewed by an archaeologist prior to development. At present this site is protected from indirect impacts from increased use of the area for recreation.

ACE-SAR-H2A and H2B are relatively recent remains. If this area is to be developed the exact location of these foundations and debris should be mapped and a search made of extant records. These remains may be protected by burial. ACE-SAR-H4 may be treated in a similar manner.

ACE-SAR-4 is a large aboriginal midden that should be protected from direct and indirect impacts stemming from recreational development. The data collection phase of a protection program would probably yield sufficient information to make a determination as to the eligibility of this site for the National Register of Historic Places.

ACE-SAR-H5, the Yorba Slaughter Adobe, should be protected from flooding. This site is presently utilized as an interpretive center.

Sites outside the proposed take line, such as RIV-675, but subject to direct or indirect impacts related to recreational development should be treated in a manner similar to that outlined for sites within the project area.

As a whole the Prado Flood Control Basin is a very sensitive area archaeologically, any projects that involve modification of the existing terrain or projects that would induce increased use of the region should be reviewed by an archaeologist prior to approval of the plans. Excavations within the existing basin should be viewed by an archaeologist, it is likely that additional archaeological remains exist buried in the basin. This region has been a center of human activity for thousands of years, as such, it is an important source of information ofor archaeologists and an ideal location for educational displays.

NOTES

[1]The map of the Santa And River villages named in the San Gabriel and San Juan Capistrano Mission Baptismal Registers was constructed on information from Bernice Johnston's book, California's Gabrielino Indians, Clemence's abstracts of Mission registers published by R. F. Heizer, footnotes to annotated Boscana notes by J. P. Harrington, Hugo Reid's Gabrielino papers, Strong's Serrano chapters of Aboriginal Society in Southern California; A. L. Kroeber's Shoshonean Dialects of California, and the UCLA Archaeological Survey site records.

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The cooperation of the following institutions and organizations is also greatly appreciated: UCLA Archaeological Survey, Archaeological Research Incorporated, Bowers Museum, the Pacific Coast Archaeological Society, the Santa Ana College Library, the San Bernardino County Museum, and the Riverside County Museum.

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PUBLICATIONS CONSULTED

Allen, Helena G., editor
1974 A Bicentenial County. Allen-Greendale Publishers, Redlands.

Anderson, Eugene N., Jr.
1972 Man on the Santa Ana: A Brief Account of Human Management of a Landscape. Tri-County Conservation League, Riverside.

Barrows, David Prescott
1900 The Ethno-Botany of the Coahuilla Indians of Southern California. Ph.D. thesis, University of Chicago. Reprinted by Malki Museum Press, Morongo Indian Reservation, 1967.

Bean, Lowell John
1972 Mukat's People: The Cahuilla Indians of Southern California. University of California Press, Berkeley.

Bean, Lowell and Harry Lawton
1965 The Cahuilla Indians of Southern California. Malki Museum Brochure No. 1, Malki Museum Press, Morongo Indian Reservation.

Bean, Lowell John and Katherine Siva Saubel
1972 Temalpakh: Cahuilla Indian Knowledge and Usage of Plants. Malki Museum Press, Morongo Indian Reservation.

Billington, Ray A.
1956 The Far Western Frontier 1830-1860. Harper & Brothers, New York.

Blackburn, Thomas
1963 Ethnohistoric Descriptions of Gabrielino Material Culture. UCLA Archaeological Survey Annual Report 1962-1963.

Boyd, James, editor (for Riverside County)
1922 History of San Bernardino and Riverside Counties, Volume I. Lewis Publishing Co., Chicago.

Cook, S. F.
1943 The Conflict Between the California Indian and White Civilization. Ibero-Americana 21-24, University of California Press, Berkeley and Los Angeles.

Friis, Leo J.
1965 Orange County Through Four Centuries. Pioneer Press, Santa Ana.

Fages, Pedro
1775 A Historical, Political, and Natural Description of California by Pedro Fages (written for the Viceroy in 1775). Translated by Herbert I. Priestley, Ballena Press, Ramona, 1972.

Hinckley, Edith Parker
1951 On the Banks of the Zanja. The Saunders Press, Claremont.

Holmes, Elmer W.
1912 History of Riverside County, California. Historic Record Company, Los Angeles.

Hoover, M. B.
1958 Historic Spots in California. Stanford University Press, Stanford.

Iovin, June
1963 A Summary Description of Luiseno Material Culture. UCLA Archaeological Survey Annual Report 1962-1963.

Johnston, Bernice Eastman
1962 California's Gabrielino Indians. Southwest Museum, Los Angeles.

Johnston, Francis J.
1965 The Serrano Indians of Southern California. Malki Museum Brochure No. 2, Malki Museum Press, Morongo Indian Reservation.

Klase, Nilson
1963 California, Basic History and Government. Harry Walter Kach, San Francisco.

Kroeber, A. L.
1925 Handbook of the California Indians. Smithsonian Institution Bureau of American Ethnology Bulletin 78. GPO, Washington, D.C.

Landberg, Leif C.W.
1965 The Chumash Indians of Southern California. Southwest Paper No. 19, Southwest Museum, Highland Park.

Lawton, Harry W.
1969 A History of Citrus in Southern California: A History of Citrus in the Riverside Area. Riverside Museum Press, Riverside.

Leonard, N. Nelson
1971 Natural and Social Environments of the Santa Monica Mountains (6000 B.C. to 1800 A.D.). Archaeological Survey Annual Report, Vol. 13. University of California, Los Angeles.

Orange County, California Genealogical Society
1969 Saddleback Ancestors, Rancho Families of Orange County, California. Orange.

Parker, C. E.
1964 A Manual of Orange County History. First American Title Insurance and Trust Co., Santa Ana.

Parker, Marilyn and C. E. Parker
n.d. Indians to Industry. First American Title Insurance and Trust Company, Santa Ana.

Patterson, T.
1964 Landmarks of Riverside, and the Stories Behind Them. Press-Enterprise Co., Riverside.

Rhodes, E.
1951 Break of Day in Chino. Progress Bulletin Press, Pomona.

Roberts, C. E.
1936 Adobes of Orange County, California. WPA Research Project No. 3105.

Sidler, W. A.
1968 Agua Mansa and the Flood of January 22, 1962, Santa Ana River. San Bernardino County Flood Control District.

Sparkman, Philips
1908 The Culture of the Luiseno Indians. University of California Publications in American Archaeology and Ethnology 8(4). Berkeley.

Stephenson, T.
1963 Don Bernardo Yorba. Glen Dawson, Los Angeles.

Strong, William D.
1929 Aboriginal Society in Southern California. University of California Publications in American Archaeology and Ethnology 26. Berkeley. Reprinted by Malki Museum Press, Morongo Indian Reservation, 1972.

United States Army Corps of Engineers
1971 Flood Plan Information, Santa Ana River (Imperial Highway to Prado Dam), Orange and Riverside Counties, California. Los Angeles District.

Van Hemert-Engert, Adolph and Frederick J. Teggart, editors
1910 The Narrative of the Portola Expedition of 1769-1770 by Miguel Costanso. Publications of the Academy of Pacific Coast History 1(4). University of California, Berkeley.

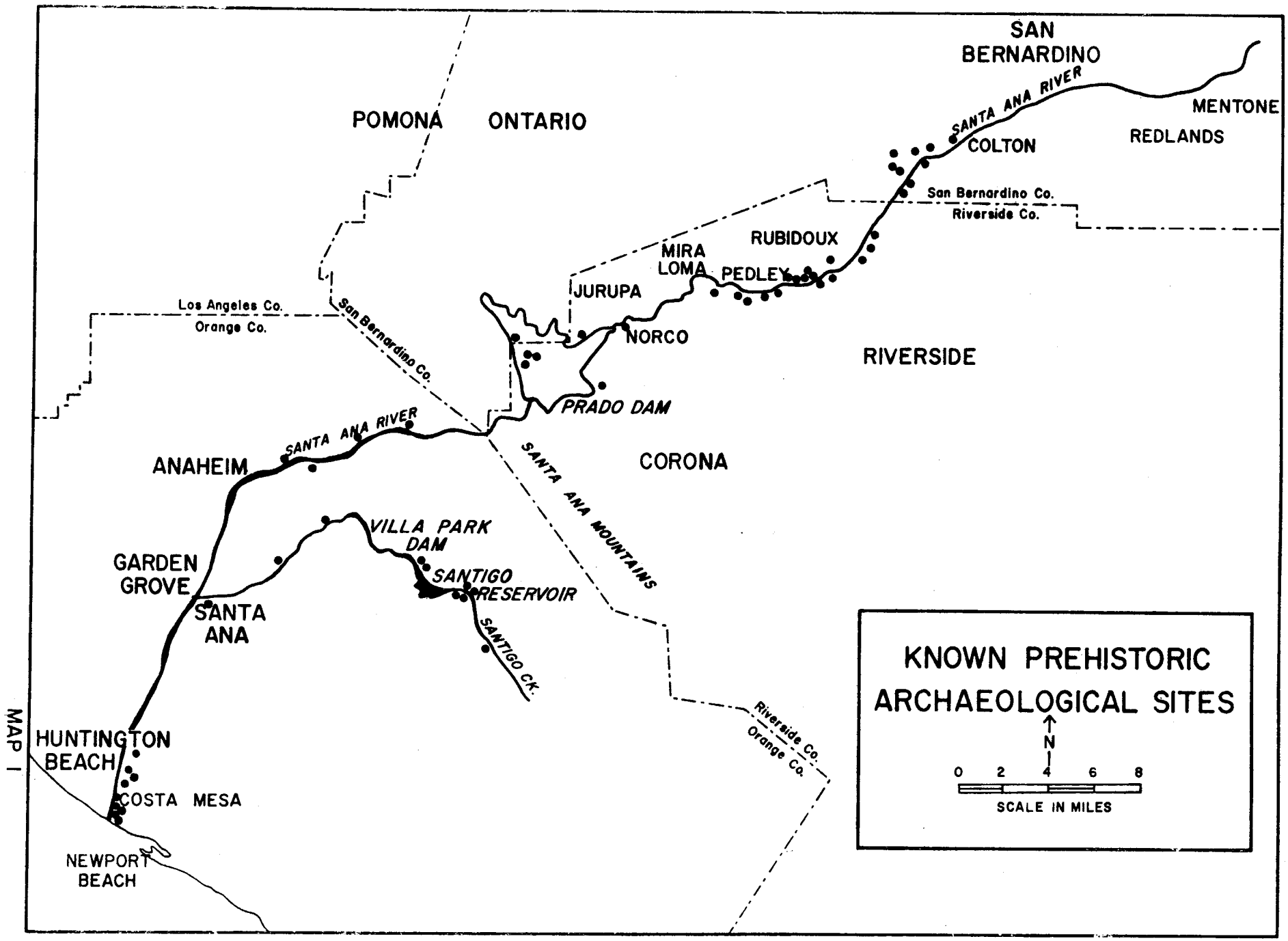
Wallace, William
1955 A Suggested Chronology for Southern California Coastal Archaeology. Southwestern Journal of Anthropology 11:3:214-230.

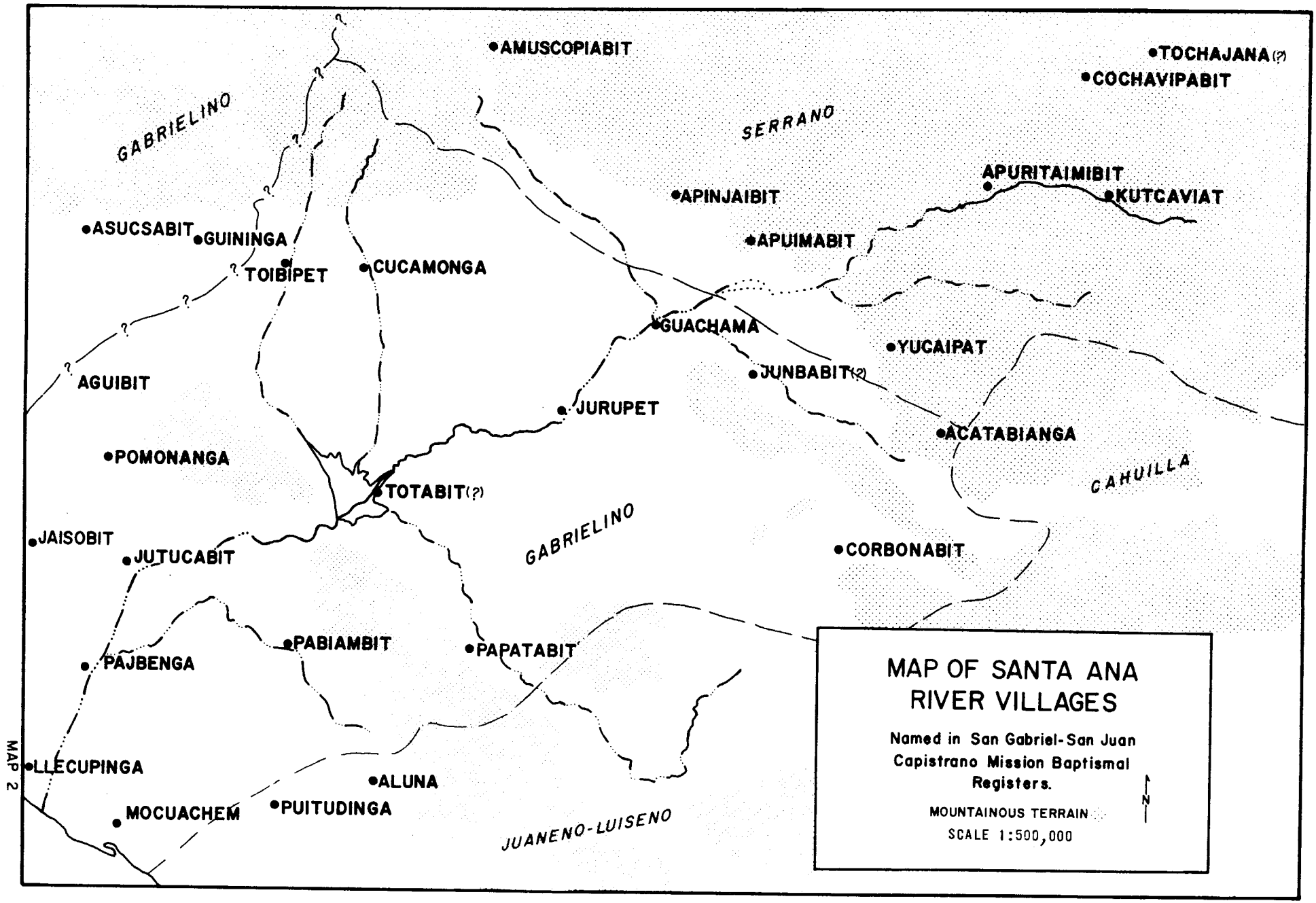
Warren, Claude N.
1964 Cultural Change and Continuity on the San Diego Coast. Doctoral Dissertation, University of California, Los Angeles.

1968 Cultural Tradition and Ecological Adaption on the Southern California Coast. Eastern New Mexico University Contributions in Anthropology 1:3.

Wilke, Philip J.
1971 Bandini-Cota Adobe (Cota Adobe): Information on Preservation of an Adobe structure in the Prado Basin. MS on file at the Riverside County Parks Department.

1969 Special Sepulveda Rancho Number. PCAS Quarterly 5(3). Costa Mesa.


SAN BERNARDINO
SANTA ANA RIVER
MENTONE
REDLANDS
COLTON
POMONA
ONTARIO
San Bernardino Co.
Riverside Co.
RUBIDOUX
MIRA LOMA
PEDLEY
JURUPA
Los Angeles Co.
Orange Co.
San Bernardino Co.
NORCO
RIVERSIDE
PRADO DAM
SANTA ANA RIVER
ANAHEIM
SANTA ANA MOUNTAINS
CORONA
VILLA PARK DAM
GARDEN GROVE
SANTIGO RESERVOIR
SANTA ANA
SANTIGO CK.
Riverside Co.
Orange Co.
HUNTINGTON BEACH
COSTA MESA
NEWPORT BEACH
KNOWN PREHISTORIC ARCHAEOLOGICAL SITES
N
0 2 4 6 8
SCALE IN MILES
MAP 1


AMUSCOPIABIT
TOCHAJANA (?)
COCHAVIPABIT
GABRIELINO
SERRANO
APURITAIMIBIT
APINJAIBIT
KUTCAVIAT
ASUCSABIT
GUININGA
APUIMABIT
TOIBIPET
CUCAMONGA
GUACHAMA
YUCAIPAT
JUNBABIT (?)
AGUIBIT
JURUPET
ACATABIANGA
POMONANGA
CAHUILLA
TOTABIT (?)
JAISOBIT
GABRIELINO
CORBONABIT
JUTUCABIT
PABIAMBIT
PAPATABIT
PAJBENGA
LLECUPINGA
ALUNA
MOCUACHEM
PUITUDINGA
JUANENO-LUISENO
MAP OF SANTA ANA RIVER VILLAGES
Named in San Gabriel-San Juan Capistrano Mission Baptismal Registers.
MOUNTAINOUS TERRAIN
SCALE 1:500,000
N

MAP 2

APPENDICES: FIELD DATA

Introduction to Appendices

Three appendices are provided to delineate observations made in the course of field survey and to describe information previously recorded for known archaeological sites. For the sake of simplicity, the data are presented in three sections. Appendix I offers descriptive accounts of all aboriginal sites situated along the Santa Ana River and within the Prado Flood Control Basin. These accounts focus on sites that have been recorded and were not relocated, recorded sites that were rechecked, and sites newly discovered by the Archaeological Research Unit. The second appendix summarizes recorded information for aboriginal sites along Santiago Creek from its confluence with the Santa Ana River to the upper end of Santiago Creek Canyon. In Appendix III, brief descriptions are given of historical sites found along the Santa Ana River and within the Prado Flood Control Basin. In addition to the appendices, topographic maps are included in the report to indicate site locations and distributions.

Broadly speaking, an archaeological site is the scene of some past human activity. A site represents the accumulation of materials and indications of wear and use that are the products of man's former presence. These products may be the result of either long term habitual use or short term intensive use of a location. It is, however, necessary to differentiate between evidences that can be collectively treated as an archaeological site and evidences that can be considered reflective of limited use of a location. For example, single, isolated artifacts can usually be found in any location, yet it would be misleading to label such phenomena as sites and place them on par with

sites consisting of a much larger and more varied number of evidences. This is not to play down the importance of limited evidence locales, but rather to emphasize recurrent, patterned behavior. Thus for the purposes of this presentation, an archaeological site will be defined as a significant accumulation of evidences. The evidences that comprise an archaeological site may take the form of, for example, production waste stemming from the fashioning and repair of tools, fragmented or complete tools, food residues, modifications of natural and fixed environmental components (e.g., bedrock grinding features, depictions on rock faces), rearrangements of natural environmental components (e.g., construction of a hunting blind from field stones), or human skeletal remains. These evidences must derive from human activity and not from natural phenomena. "Significant accumulation" shall be defined by the occurrence of one or more evidences of past human activity per square meter in at least five contiguous square meter units. Those occurrences that do not conform to the site concept will be described by employing the terms "limited evidence locale" and "isolated artifact." "Limited evidence locale" identifies remains that are dispersed in a manner not falling within the category of "site." For example, two metate fragments situated 40 m apart in the absence of other cultural evidences will be described under the heading "limited evidence locale" (LEL). Similarly, singular occurrences of human products in the absence of other evidences will be identified by the heading "isolated artifact" (IA). Limited evidence locales and isolated artifacts are included in the presentation because they may represent archaeological sites. Many portions of the project area exhibit extensive modification of the topography or exhibit thick cover vegetation. These

factors tend to obliterate or obscure archaeological remains. Therefore, in Appendices I and II, recorded archaeological sites are listed and described by county and number; newly discovered sites by the designations ACE-SAR-1, ACE-SAR-2, and so on; limited evidence locales by the designation ACE-LEL-1, ACE-LEL-2, and so on; and isolated artifacts by the designation ACE-IA-1, ACE-IA-2, and so on. Historical remains outlined in Appendix III are designated ACE-SAR-H1, ACE-SAR-H2, and so on.

Two terms used extensively in the description of field data are "artifact" and "feature." An artifact is an object of any type used, modified or created by human hands. Artifacts can be considered cultural modifications - transformations of suitable raw materials into properly appearing and performing aspects of the cultural system. Features are associations of artifacts and/or other cultural evidences, or relatively unique artifacts or facilities. A projectile point is an artifact whereas a bedrock metate is more conveniently referred to as a feature.

The format utilized in site description consists of several essential elements. Initially, a synopsis is offered of previous record and assessment for a particular site. Locational data for a site is expressed in three ways: (1) relative to local landmarks such as roads and railroads; (2) in accordance with the appropriate USGS topographic quad sheet; and (3) with respect to the required project right-of-way on lower Santiago Creek and along the Santa Ana River below Prado Dam, or with respect to existing and recommended reservoir take lines within the Prado Flood Control Basin, or with respect to the overflow limit in a standard project flood of the Santa Ana River above the Prado Flood Control Basin. It should be noted, however, that several known sites located in Santiago Creek Canyon upstream from Villa

Park Dam are described although no flood control plans were available to serve as points of reference. Finally, if a site was rechecked or discovered for the first time during field survey, a description is provided regarding the site's current status. This assessment includes comments on previous or potentially destructive impact from local land use developments.

#O-270-B

SANTA ANA RIVER PROJECT DESCRIPTION AND EVALUATION OF CULTURAL RESOURCES APPENDICES: FIELD DATA

MAPPED

Prepared by:

MATTHEW C. HALL

Acres 2000
Quadrangle: Newport Beach

Submitted by:

N. NELSON LEONARD, III, Chief Archeologist
ARCHEOLOGICAL RESEARCH UNIT
UNIVERSITY OF CALIFORNIA, RIVERSIDE

Sites ORA-1,
ORA-
ORA-
ORA-
ORA-
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ORA-

Prepared for:

U.S. ARMY CORPS OF ENGINEERS
LOS ANGELES DISTRICT

DECEMBER 1975

APPENDIX I
ABORIGINAL SITES ALONG THE SANTA ANA RIVER AND WITHIN THE PRADO FLOOD CONTROL BASIN

APPENDIX I

ABORIGINAL SITES ALONG THE SANTA ANA RIVER AND WITHIN THE PRADO FLOOD CONTROL BASIN

ORA-148

This site was recorded in 1964 and was described as an area, possibly 1-2 acres, featuring shell remains. No midden was observed. ORA-148 is located on bluffs east of the mouth of the Santa Ana River at an elevation of 65 f.s.l. The site is ca. 170 m north of the Pacific Coast Highway, and roughly 650 m west-southwest of the intersection of Monrovia Avenue and 15th Street. USGS topographic map for the site is Newport Beach 7.5 minute series), T6S, R10W, the northwest 1/4 of the northeast 1/4 of Section 29. ORA-148 lies outside the required right-of-way for the U.S. Army Corps of Engineers' Santa Ana River Project. The site is located ca. 1150 m southeast of the right-of-way delineated on ACE Map Sheet 25 (Plate G-34, Sta. 13+00 to Sta. 70+00).

ORA-148 was visited on July 29, 1975. The site area has been heavily impacted by oil drilling activities. ORA-148 was probably a light shell scatter, depth of deposit probably did not exceed 20 cm. It is not possible to determine the surface extent of the deposit. Fossil shell is abundant on the surface and embedded in the bluff profile. Macoma sps? (probably bent-nosed clam) and Tagelus sps? (probably jacknife clam) are the dominant species of fossil shell. Pecten and Chione are the most frequent shellfish in aboriginal sites in this vicinity, the presence of these species on the surface and not in the stratified beds in the bluff profile suggests the presence of an aboriginal site. No soil discoloration, manufacturing waste, or tools were noted at this location. It is very likely that a light scatter of shellfish remains was continuous from this site area to ACE-SAR-6.

ACE-SAR-6 ORA-844

This site was located on July 29, 1975. It is situated at the base of the bluff, which forms the southeastern limit of the flood plain of the Santa Ana River, approximately 1.2 km from the ocean. The site is bisected by an oil company access road which runs east/west; a north/south trending access road forms the western margin of the site area. ACE-SAR-6 is located on the Newport Beach USGS 7.5 minute Quadrangle, T6S, R10W, and on the 15 foot contour interval. The site is located approximately 800 m east of the project right-of-way, as illustrated on the U.S. Army Corps of Engineers' Map Sheet 25 (Plate G-34, Sta. 13+00 to Sta. 70+00).

The site area has been heavily impacted by the construction and operation of oil drilling platforms. The only intact midden is located on the northern extreme of the site area; traces of deposit are found on the southern extreme. The total midden area once probably measured 30 by 80 m. Maximum depth of deposit observed was 60 cm. The deposit is characterized by fragmented and whole shell, a slight darkening of the soil, and an occasional piece of fire burnt rock. Pecten and Chione dominate the shellfish remains, traces of Ostrea and Astraea were also present. No artifacts were observed. The midden represents a small camp situated at the margin of the marsh area on a low knoll that was not subject to frequent flooding.

ACE-SAR-7 ORA-839

This site was recorded on July 29, 1975. It is located on top of the bluff overlooking the flood plain of the Santa Ana River. The site is approximately 1.5 km from the ocean. Oil company access roads cross through the center of the site and define the northeastern border. ACE-SAR-7 is located on the Newport

Beach USGS 7.5 minute Quadrangle; T6S, R10W, on the 90 foot contour interval. The site is approximately 800 m east of the project right-of-way, as illustrated on the U. S. Army Corps of Engineers Map Sheet 25 (Plate G-34, Sta. 13+00 to Sta. 70+00).

The site has been heavily impacted by road construction and grading for oil well pads; however, approximately 10% of the deposit remains intact. The site covers the top of a promontory of the bluff; this prominance is defined by a deep arroyo to the south, the Santa Ana River flood plain to the west and a small arroyo to the north. The deposit is typified by the presence of whole and fragmentary shellfish remains, a darkening of the soil and the presence of fire cracked rock. Shellfish are dominated by Chione and Pecten. Fossil shell occurs in beds 70 to 100 cm below the present surface. Original extent of the site was probably 100 m by 50 m; a maximum depth of 60 cm was observed. No artifacts were noted.

ACE-SAR-8 ORA-845

This site was located on July 29, 1975. It is situated on the lower portion of the gentle slope from the bluff to the marsh. The site is approximately 1.7 km from the ocean. Oil company access roads cross the center of the site. ACE-SAR-8 is located on the Newport Beach USGS 7.5 minute Quadrangle, T6S, R10W, on the 20 foot contour interval. The site is approximately 800 m east of the project right-of-way, as illustrated on the Army Corps of Engineers' Map Sheet 25 (Plate G-34, Sta. 13+00 to Sta. 70+00).

This site has been heavily impacted by road construction and soil borrow. The center of the site has been destroyed by a large borrow source. Approximately 20% of the site remains intact. The site covers the lower portion of a gentle

slope and a narrow strip of high ground at the base of the bluff. It is possible that archaeological deposits were once continuous from ACE-SAR-6 to ACE-SAR-8. Traces of shell exist along the base of the bluff and in the lower portions of the deep arroyo that forms the south and east border of ACE-SAR-7. Road construction, oil well pads and soil borrow sources have heavily impacted this area. The probable extent of remains described as ACE-SAR-8 is 150 m by 50 m; 70 cm of deposit depth was observed in the field. The site is defined by the presence of whole and fragmentary shellfish remains (Pecten and Chione predominate), soil darkening and occasional pieces of fire cracked rock. No artifacts were observed.

ORA-165

This site was recorded in 1960 and was described as a large site with midden irregularly distributed over an area of ca. 24 acres. ORA-165 is situated atop a bluff immediately east of the Santa Ana River at an elevation of 90 f.s.l. USGS topographic map for the site is Newport Beach (7.5 minute series), T6S and R10W. ORA-165 lies outside the required right-of-way for the U.S. Army Corps of Engineers' Santa Ana River Project. The site is located ca. 100 m east of the right-of-way delineated on Army Corps of Engineers' Map Sheet 24 (Plate G-25, Sta. 70+00 to Sta. 142+00). The original site record indicated that ORA-165 extends ca. 100 m to the north and south of Victoria Street (above Hamilton Avenue bridge, west of the Valley Road and Victoria Street intersection), and perhaps 100 m east of the bluff's edge. Aside from the shell midden observed in 1960, fragments of stone bowls and pestles, jasper and chalcedony chipping detritus were also reported.

ORA-165 was field rechecked on July 9, 1975 and is no longer of the size determined in 1960. Tract housing and a church now stand where the site extended south of Victoria Street. In a disced, vacant lot adjacent to the church on the east, three shell fragments (unidentified clam) were found in grey, semi-compact soil. No buried component could be discerned in strata exposed by the church's driveway. To the north of Victoria Street, a grassy play area (Vista Park) now covers much of the site. West of the park, stratigraphic indications along the edge of the bluff show that the site is relatively shallow. A vacant lot north of the park contains remnants of a shell midden which terminate approximately 50 m east of the bluff's edge.

ORA-58

ORA-58 was recorded in 1949 as a deep, extensive shell midden site, possessing an east-west axis of 100 yds. and a north-south axis of 500 yds. The site is located on bluffs east of the Santa Ana River at an elevation of 75-80 f.s.l., approximately 1.1 km north of ORA-165. The Fairview drainage channel is ca. 450 m north of ORA-58, and Estancia Drive is ca. 750 m east of the site. USGS topographic map for the site is Newport Beach (7.5 minute series), T6S and R10W. ORA-58 lies outside the required right-of-way for the U.S. Army Corps of Engineers' Santa Ana River Project. The site is located almost 400 m east of the right-of-way delineated on Army Corps of Engineers' Map Sheet 24 (Plate G-25, Sta. 70+00 to Sta. 142+00). The 1949 site sheet stated that a great number of stone tools, e.g., metates and projectile points, had been removed by relic hunters. A supplemental information sheet attached to the record in 1960 indicated that from 1957-1960, ORA-58 was partially excavated by Long Beach State College.

ORA-58 was field rechecked on July 9, 1975 and remains largely intact. Moreover, the recheck suggests that the site may extend southward along the bluff ca. 150 m beyond the recorded southern boundary. Exposed strata near the top of the bluff on the west and north sides of the site indicate that ORA-58 may have a maximum depth of two meters.

ORA-506

This site was recorded in January, 1975 and was not field rechecked by the Archaeological Research Unit. ORA-506 is located on the western edge of Newport Mesa atop bluffs (40-75 f.s.l.) overlooking the Santa Ana River drainage further to the west. At one time, ORA-506 may have been continuous with ORA-58 which lies ca. 500 m to the southwest. Estancia Drive presently separates the two sites. The site is a large shell midden perhaps 60 cm deep in places. Recorded dimensions are 350 m east-west, and 800 m north-south. ORA-506 is situated along the upper reaches of the Fairview channel, south of Adams Avenue. USGS topographic map for the site is Newport Beach (7.5 minute series), T6S and R10W. ORA-506 lies outside the required right-of-way for the U.S. Army Corps of Engineers' Santa Ana River Project. The site is 800-1000 m east of the right-of-way delineated on Army Corps of Engineers' Map Sheet 23 (Plate G-24, Sta. 142+00 to Sta. 214+00). Fairview Park is to be developed on the site, although destructive contouring is not planned and the site may be covered by a soil overburden.

ORA-76

ORA-76 was recorded in 1949 and was described as a large (500 x 100 yds) shell midden located on bluffs east of the Santa Ana River at an elevation of

ca. 100 f.s.l. The site at one time extended north and south of Adams Avenue, west of Mesa Verde Drive and Estancia Drive. According to a site supplement sheet dated 1960, most of ORA-76 was situated north of Adams Avenue. USGS topographic map for the site is Newport Beach (7.5 minute series), T6S and R10W. ORA-76 lies outside the required right-of-way for the U.S. Army Corps of Engineers' Santa Ana River Project. The site is nearly 700 m east of the right-of-way delineated on Army Corps of Engineers' Map Sheet 23 (Plate G-24, Sta. 142+00 to Sta. 214+00). ORA-76 was excavated in 1957 and 1958 by Long Beach State College. Previous to excavation, ORA-76 yielded an enormous variety of artifacts. The 1949 site sheet reported that J. W. Winterbourne had collected pottery, steatite pipes, bowls, whale and boat effigies, hammerstones, pestles, mortars, manos, metates, cogstones, charmstones, concave base projectile points, a stone hoe, large mammal bone, a spatulate bone object, crescents, scraper planes, a bifacial chopper and a glass bead. Winterbourne also supposedly found a number of burials.

Presently, ORA-76 is covered by an historical park and local homes. The park contains an adobe way station that operated from 1823 to 1825 on the route to San Juan Capistrano Mission.

ORA-163

This site was discovered in 1938 and, at that time, consisted of a heavy shell midden covering an area ca. 170 x 100 m on a bluff east of the Santa Ana River. ORA-163 is situated roughly 280 m northwest of Mesa Verde Drive and ca. 300 m northeast of Boa Vista Drive at an elevation of 40-50 f.s.l. USGS topographic map for the site is Newport Beach (7.5 minute series), T6S and R10W. ORA-163 lies outside the required right-of-way for the U.S. Army

Corps of Engineers' Santa Ana River Project. The site is ca. 400 m east of the right-of-way delineated on Army Corps of Engineers' Map Sheet 23 (Plate G-24, Sta. 142+00 to Sta. 214+00). ORA-163 was largely destroyed in 1960 and Mesa Verde Country Club and local homes now cover the site. Previous to 1960, ORA-163 must have been comparable in extent and intensity to ORA-58 and ORA-76. According to a 1966 site sheet, the WPA partially excavated the site in 1938 and uncovered a great many artifacts, as well as some firepits and a dozen burials. Cultural remains included pottery, bone awls, projectile points, an obsidian flake, hammerstones, manos, mortars, pestles, a fishhook, cogstones, charmstones, a stone hoe, and steatite objects such as pipes, a whale effigy and a boat-shaped bowl. Abalone shell fragments and whale vertebra were also found.

ORA-278

ORA-278 was recorded in 1965 and was destroyed that same year by a housing subdivision. At one time the site was situated atop a small knoll east of the Santa Ana River at an elevation of ca. 100 f.s.l., approximately 100 m southwest of the intersection of Tamy Lane and 21st Street in Santa Ana. USGS topographic map for the site is Ahaheim (7.5 minute series), T5S and R10W. What remains of ORA-278, if anything at all, lies outside the required right-of-way for the U.S. Army Corps of Engineers' Santa Ana River Project. The site is ca. 550 m east of the right-of-way delineated on Army Corps of Engineers' Map Sheet 18 (Plate G-19, Sta. 500+00 to Sta. 562+00). The only reported artifacts from ORA-278 were some broken mortars unearthed during the construction of irrigation lines in 1915. A field recheck undertaken in 1968 was unable to locate any cultural remains.

ORA-277

This site was recorded in 1970 and reportedly contained stone bowls, pestles and a cogstone. ORA-277 is located on the north side of the Santa Ana River, ca. 150 m southwest of the end of Richfield Road, at an elevation of 245 f.s.l. The artifacts were found deeply buried in flood alluvium within the confines of the Pharris Sand Pit Company. USGS topographic map for the site is Orange (7.5 minute series), T4S add R9W. The site lies outside the required right-of-way for the U.S. Army Corps of Engineers' Santa Ana River Project. ORA-277 is ca. 150 m north of the right-of-way delineated on Army Corps of Engineers' Map Sheet 11 (Plate G-12, Sta. 957+50 to Sta. 1025+90). Most of the artifacts mentioned on the site sheet were collected when the site was recorded, although an occasional artifact may still be found in the area.

ACE-SAR-1 ORA-519-(613)

A new site was discovered on August 8, 1975 by the Archaeological Research Unit and it is located south of the Santa Ana River off Walnut Canyon Road. ACE-SAR-1 is situated at the mouth of Walnut Canyon at an elevation of 340-345 f.s.l., ca. 250 m south-southwest of Santa Ana Canyon Road, and ca. 75 m east of Walnut Canyon Road. USGS topographic map for the site is Orange (7.5 minute series), T4S and R9W. The site lies outside the required right-of-way for the U.S. Army Corps of Engineers' Santa Ana River Project. ACE-SAR-1 is roughly 1000 m south-southeast of the right-of-way delineated on Army Corps of Engineers' Map Sheet 9 (Plate G-10, Sta. 1069+00 to Sta. 1129+85).

ACE-SAR-1 covers an area ca. 75 x 40 m and consists of a light surface scatter of lithic implements. Observed at the site were 4 basaltic flakes, 2 basaltic cores, and an end fragment of a basaltic biface.

ACE-SAR-2 ORA-614

Two unrecorded sites were located in Santa Ana Canyon on July 10 and 11, 1975. The first site, ACE-SAR-2, consists of a light, sparse surface scatter of flaking debris and a single mano. ACE-SAR-2 is situated on a low bluff to the north of the Santa Ana River at an elevation of 385-390 f.s.l. The site is southwest of Horseshoe Bend, ca. 100 m south of Esperanza Road, and ca. 90 m south of an A.T. & S.F. railroad line. Also located on the bluff are a Metropolitan Water District reservoir tank, and two transmission line towers. ACE-SAR-2 was found immediately north of transmission tower 21/3. The site is located in the extreme southwest corner of USGS topographic map Prado Dam (7.5 minute series), T3S and R8W. ACE-SAR-2 lies outside the required right-of-way for the U.S. Army Corps of Engineers' Santa Ana River Project. The site is ca. 100 m northwest of the right-of-way delineated on Army Corps of Engineers' Map Sheet 7 (Plate G-8, Sta. 1198+80 to Sta. 1210+00).

ACE-SAR-2 covers an area ca. 65 x 30 m and although the high, thick grass and scrub impaired field observation, several artifacts were noted in exposed dirt tracks. Aside from the granite mano, 15-20 flakes of basalt and of a reddish cryptocrystalline material, and a quartzite core were found. Two possible cores and some flakes of the reddish stone were also found ca. 350 m northeast of ACE-SAR-2 on the slope of a small hill north of Esperanza Road. It is likely that a great deal more archaeological remains could be located at the site once the grass was cleared off, the continuing maintenance of the reservoir and transmission lines constitute a threat to site preservation.

ACE-SAR-3 ORA-615

ACE-SAR-3 is situated on bluffs overlooking the Santa Ana River from the north. ACE-SAR-3 lies within the confines of Rancho Santa Ana. The site is

southeast of Horseshoe Bend, almost due east of ACE-SAR-2. ACE-SAR-3 is located at an elevation of 425 f.s.l., ca. 75 m northeast of the A.T. & S.F. track, and ca. 140 m northeast of Esperanza Road. A dirt road branching off from Esperanza Road terminates ca. 110 m east of ACE-SAR-3. The site can be found on USGS topographic map Prado Dam (7.5 minute series), T3S and R8W. ACE-SAR-3 lies outside the required right-of-way for the U.S. Army Corps of Engineers' Santa Ana River Project. The site is ca. 200 m northeast of the right-of-way delineated on Army Corps of Engineers' Map Sheet 6 (Plate G-7).

ACE-SAR-3 covers an area ca. 100 x 50 m and consists of a relatively large surface scatter of milling tools. Among the artifacts found were five granite manos, one large granite metate fragment, a quartzite core and a core of the same reddish cryptocrystalline material observed at ACE-SAR-3. At present, the area in which ACE-SAR-3 is located has been utilized as a hay field by Rancho Santa Ana.

RIV-653

This site was recorded in 1972 and was described as a moderate scatter, ca. 180 x 35 m, of lithic chipping waste also featuring three manos and a pottery sherd. RIV-653 is located on a bluff (530 f.s.l.) at the southern end of a small range of low hills between Chino Creek and Mill Creek, the Santa Ana River currently flows ca. 1500 m to the south. The closest road, Cucamonga Avenue, lies roughly 200 m to the east of RIV-653. The site is located on Army Corps of Engineers pooperty and, for the most part, extends west and north of the historic Bandini-Cota Adobe. USGS topographic map for the site is Prado Dam (7.5 minute series), T3S, R7W, the northeast 1/4 of the southwest 1/4 of Section 8. RIV-653 falls within both the existing reservoir take line and the approximate

take line of the U.S. Army Corps of Engineers' recommended plan for the Prado Flood Control Basin.

RIV-653 was field rechecked on July 17, 21, and 31, 1975. Despite the difficulties encountered because of high, thick scrub grass, the rechecks suggest that RIV-653 is far more complex than was indicated on the 1972 site sheet. Moreover, the rechecks have shown that the site has an east-west axis of ca. 250 m, and a north-south axis of at least 100 m. A preliminary list of aboriginal artifacts associated with RIV-653 includes the following: at least 60 basaltic flakes, 8-10 flakes of reddish cryptocrystalline material (jasper ?), 2 granite flakes, a chalcedony flake, 3 quartzite nodules, 4 basaltic biface fragments, 2-3 quartzite cores, 3 basaltic cores, 5 granite manos and 2 granite metate fragments. Within the site, two dense concentrations of chipping detritus were observed. The shell and faunal remains strewn over the surface, especially northeast and east of the adobe towards Cucamonga Avenue, may be the result of relatively recent use of the area as a hog farm. Nonetheless, it may be that some of the shell remains are associable with either aboriginal occupation or former inhabitants of the adobe. The pot sherd noted on the 1972 site sheet may, in reality, have been a crude piece of historic earthenware. This possibility is indirectly supported by the fact that no aboriginal ceramics were observed during the three rechecks, and directly supported by the fact that crude, brown historic earthenware was seen during the rechecks.

The relationship between the aboriginal site, RIV-653, and the historic adobe can not be determined at the moment strictly on the basis of limited surveys of surface artifact distribution. However, it is apparent that the aboriginal remains are located primarily west and north of the adobe, while historic remains (see Appendix III, ACE-SAR-H3) which might relate to the adobe are dispersed primarily to the north and east.

RIV-556

No copy of the site record form for RIV-556 could be obtained, although its approximate location has been recorded by the Bureau of Land Management. RIV-556 is situated near the crest of a small rise almost 400 m due north of the Bandini-Cota Adobe at an elevation of 530 f.s.l. The site is ca. 425 m east of Chino Creek, and ca. 260 m west of Cucamonga Avenue. USGS topographic map for the site is Prado Dam (7.5 minute series), T3S, R7W, the northeast 1/4 of the southwest 1/4 of Section 8. RIV-556 falls within both the existing reservoir take line and the approximate take line of the U.S. Army Corps of Engineers' recommended plan for the Prado Flood Control Basin.

Two attempts were made at relocating RIV-556, on July 21, 1975 and on August 12, 1975. The lack of positive field results is probably due to the presence of high, thick cover grass in the immediate area. Thus until the surface can be made more readily visible, e.g., following discing or burning, no assessment can be offered as to the current status of RIV-556.

RIV-100

This site was recorded in 1941 and had a previous designation as AASC RV-34. RIV-100 is situated on a terrace at the base of bluffs on the north side of Mill Creek. The site is ca. 450 m east of Cucamonga Avenue, ca. 800 m northeast of the Bandini-Cota Adobe, and ca. 190 m north of Mill Creek. RIV-100 is located at an elevation of 500 f.s.l. USGS topographic map for the site is Prado Dam (7.5 minute series), T3S, R7W, the northwest 1/4 of the southeast 1/4 of Section 8. RIV-100 falls within both the existing reservoir take line and the approximate take like of the U.S. Army Corps of Engineers' recommended plan for the Prado Flood Control Basin. The 1941 site sheet described RIV-100

as a house, workshop and burial site covering an area 100 x 100 feet. According to the site form, the burials were uncovered when trenches, dug for irrigation pipes, cut through the site. However, both the burials and the house reported on the site sheet were described from informant-provided information, and were not based on field observations made by the site recorder. Pot sherds, flakes and a large stemmed chert blade have also been found at RIV-100.

RIV-100 was field rechecked on July 21, 1975. No remains of RIV-100 were observed during the recheck, although it is likely that most of the site has become buried under alluvium since 1941. Approximately 40 feet above RIV-100, near the edge of the bluff, 3 basaltic flakes, a flake of reddish cryptocrystalline material, and two granite manos were found while attempting to relocate RIV-100.

ACE-SAR-4

A new site within the Prado Flood Control Basin was discovered on August 8, 1975. ACE-SAR-4 is situated atop low bluffs on the west side of Chino Creek at an elevation of 535 f.s.l. The site lies ca. 1000-1200 m east-northeast of the junction of Euclid Avenue and Highway 71 (Corona Freeway) in San Bernardino County, and ca. 300-400 m east of the Pomona-Rincon Road. ACE-SAR-4 consists of a large and varied surface scatter, roughly 250 x 160 m, of aboriginal tools and items, and is most intense along the southeastern rim of the peninsula formed by the bluffs. USGS topographic map for the site is Prado Dam (7.5 minute series), T3S, R7W, the northeast 1/4 of the southwest 1/4 of Section 5. ACE-SAR-4 falls within both the existing reservoir take line and the approximate take line of the U.S. Army Corps of Engineers' recommended plan for the Prado Flood Control Basin.

Among the cultural remains observed at ACE-SAR-4 were 3 granite metate fragments, 4 granite mano fragments (one bifacial), a complete granite mano, a granite mortar (embedded in dirt track), a granite mortar fragment (possibly a piece of the embedded mortar), 3 basaltic hammerstones, 3 fire-cracked rocks, a basaltic core, 15 or more basaltic flakes, and at least 8 flakes of the reddish cryptocrystalline material noted in Santa Ana Canyon. One unique item noted at ACE-SAR-4 was a rounded, elongated oval quartz stone that had been well ground and polished to smooth finish. The object measured 5 cm in length, and had a maximum diameter of 2.3 cm. Colloquially, the artifact might be called a "charmstone."

Approximately 200 m northwest of ACE-SAR-4 is a small rise upon which were found two large granite manos (one bifacial) and a few historic remains. Whether the aboriginal artifacts are associated with ACE-SAR-4 cannot be determined at this moment, although since it appears that there was once some sort of structure atop the small rise it might be that the occupants had removed the two manos from ACE-SAR-4. The historic remains are described in Appendix III under the heading ACE-SAR-H4.

ACE-LEL-1

ACE-LEL-1 is located ca. 85 m east of Cucamonga Avenue on a low ridge west of a small ravine that drains into Mill Creek from the north. The area lies within Riverside County and is ca. 170 m north of Mill Creek at an elevation of 525-530 f.s.l. A granite mano was found toward the southern end of the ridge, while a piece of mussel shell was noted ca. 100 m north of the mano alongside the ravine. No other aboriginal or historical remains were encountered in the vincinity of these two items. USGS topographic map for ACE-LEL-1 is Prado Dam

(7.5 minute series), T3S, R7W, the southwest 1/4 of the southeast 1/4 of Section 8. ACE-LEL-1 falls within both the existing reservoir take line and the approximate take line of the U.S. Army Corps of Engineers' recommended plan for the Prado Flood Control Basin.

ACE-1A-1

ACE-1A-1 is a granite metate fragment located on the east bank of Chino Creek ca. 600 m west of the intersection of Cucamonga Avenue and McCarty Road in San Bernardino County. The artifact lies at an elevation of 495 f.s.l. and is not associated with any other aboriginal or historical remains. USGS topographic mpa for ACE-1A-1 is Prado Dam (7.5 minute series), T3S, R7W, the northwest 1/4 of the northwest 1/4 of Section 8. ACE-1A-1 is situated within both the existing reservoir take line and the approximate take line of the U.S. Army Corps of Engineers' recommended plan for the Prado Flood Control Basin.

ACE-LEL-2

ACE-LEL-2 is located ca. 75 m south of Chino Corona Road on the north side of Mill Creek. The area lies within Riverside County at an elevation of 560 f.s.l. A single line of transmission towers that run through ACE-LEL-2 is ca. 840 m west of Hellman Avenue. Two granite metate fragments, approximately 85 m apart, were found in the area. A basalt flake was also observed near one of the metate fragments. Rodent backdirt is substantially darker than the surface soil, although the darker undersoil does not resemble midden. Previous impact from transmission line, house construction, and cattle grazing may have caused the destruction of what appears to have been a site at one time. No other aboriginal or historicl remains were encountered in the vicinity of the three artifacts noted above. USGS topographic map for ACE-LEL-2 is Corona

North (7.5 minute series), T3S, R7W, the southwest 1/4 of the southwest 1/4 of Section 33. ACE-LEL-2 falls within both existing reservoir take line and the approximate take line of the U.S. Army Corps of Engineers' recommended plan for the Prado Flood Control Basin.

ACE-1A-2

ACE-1A-2 is a granite metate fragment located in an olive grove on the west side of Mill Creek ca. 300 m south of McCarty Road.in San Bernardino County. The artifact lies along the eastern edge of the grove at an elevation of 520 f.s.l. No other aboriginal or historical remains were observed in the vicinity of ACE-1A-2. USGS topographic map for the artifact location is Corona North (7.5 minute series), T3S, R7W, the northeast 1/4 of the northeast 1/4 of Section 8. ACE-1A-2 falls within both the existing reservoir take line and the approximate take line of the U.S. Army Corps of Engineers' recommended plan for the Prado Flood Control Basin.

ACE-1A-3

ACE-1A-3 is a bifacial granite mano located atop a low rise on the north side of the Santa Ana River in Riverside County. Prado County Park Museum, the former site of RIV-652, lies ca. 400 m to the southeast. ACE-1A-3 is roughly 550 m southwest of River Road at an elevation of 610 f.s.l. No other aboriginal or historical remains were observed in the vicinity of the artifact. USGS topographic map for ACE-1A-3 is Corona North (7.5 minute series), T3S, R7W, the northwest 1/4 of the northwest 1/4 of Section 10. ACE-1A-3 falls outside both the existing reservoir take line and the approximate take line of the U.S. Army Corps of Engineers' recommended plan for the Prado Flood Control Basin.

RIV-652

RIV-652 was recorded in 1972 and was destroyed during construction of the Prado County Park Museum. At one time the site was situated on the north bank of the Santa Ana River (560 f.s.l.) roughly 800 m west of River Road and ca. 700 m southwest of the intersection of River Road and Archibald Avenue. USGS topographic map for RIV-652 is Corona North (7.5 minute series), T3S, R7W, the northeast 1/4 of the southwest 1/4 of Section 10. RIV-652 falls within both the existing reservoir take line and the approximate take line of the U.S. Army Corps of Engineers' recommended plan for the Prado Flood Control Basin.

The 1972 site sheet for RIV-652 described the site as an elongated strip (70 x 30 m) of flaking debris along the Santa Ana River. Also reported found were a hammerstone and two manos.

RIV-675

No copy of the site record form for RIV-675 could be obtained although its approximate location has been recorded by the Bureau of Land Management. Two field rechecks, undertaken on July 16, 1975 and on July 31, 1975, have enabled a more concrete assessment. RIV-675 is located above Temescal Wash, at an elevation of 600-625 f.s.l., near the southeast corner of the Prado Flood Control Basin. The site measures approximately 400 x 120 m. RIV-675 is situated ca. 75 m west-northwest of Goodwin Street and roughly 450 m southwest of River Street. USGS topographic map of the site is Corona North (7.5 minute series), T3S, and R7W. RIV-675 lies ca. 130 m north of the approximate reservoir take line of the U.S. Army Corps of Engineers' recommended plan for the Prado Flood Control Basin.

Among the cultural remains observed during the two rechecks of RIV-675 were: 10 basaltic cores and nodules, 3-5 basaltic scraper/bifaces, at least 80 worked, unworked and utilized flakes of basalt and jasper, 2 granite metate fragments and 2 granite manos. Except for a single mano, the artifacts were restricted in distribution to the crest region of four centralized bluffs immediately above Temescal Wash and were greatest in number along the top of one ridge. Thus the mano, which was found near the bottom of a ravine between two of the bluffs, may have washed down from above. No midden was encountered at the site, although it is apparent that the basaltic stone, which was the primary material utilized in tool manufacture, has eroded from the ridges.

ACE-LEL-3

ACE-LEL-3 is located ca. 250 m west of Alhambra Street in Norco (Riverside County) on the south side of the Santa Ana River. The area is situated above the river along the edge of a bluff at an elevation of 620 f.s.l. ACE-LEL-3 is roughly 300 x 50 m and contains 2 basaltic flakes and, possibly, 3-4 basalt chips. The limited remains are spread out over an area so large that a site designation would be inappropriate and misleading. There is no indication of a buried component. No other aboriginal or historical remains were encountered in the vicinity of ACE-LEL-3. The remains lie approximately 700 m downriver (southwest) from ACE-LEL-4 on the same side of the Santa Ana River. USGS topographic map for ACE-LEL-3 is Corona North (7.5 minute series), T3S, R7W, the southeast 1/4 of the southeast 1/4 of Section 2 and the southwest 1/4 of the southwest 1/4 of Section 1. ACE-LEL-3 is located above and ca. 20 m south of the overflow limit in a standard project flood of the U.S. Army Corps of Engineers' Santa Ana River Project.

ACE-LEL-4

ACE-LEL-4 is located on the south side of the Santa Ana River, ca. 100 m north of Alhambra Street and ca. 750 m west of Hamner Avenue in Norco (Riverside County). The remains are situated upriver from ACE-LEL-3 along the edge of a bluff at an elevation of 620 f.s.l. As is the case with ACE-LEL-3, the artifacts found within ACE-LEL-4 are distributed in a sparse fashion over an area so large (400 x 50 m) as to not warrant a site designation. Cultural remains consisted of 2 small granite metate fragments, possibly a large granite hammerstone, and 5 basalt flakes. There is no indication of a buried component. No other aboriginal or historical remains were encountered in the vicinity of ACE-LEL-4. Grading and dumping within the area may have caused the destruction of what might have been a site at one time. USGS topographic map for ACE-LEL-4 is Corona North (7.5 minute series), T3S, R7W, the northwest 1/4 of the northwest 1/4 of Section 1. ACE-LEL-4 is located above and ca. 60 m south of the overflow limit in a standard project flood of the U.S. Army Corps of Engineers' Santa Ana River Project.

RIV-625

This site was recorded in 1973 and was not field rechecked by the Archaeological Research Unit. RIV-625 is located at the foot of north-facing slopes south of the Santa Ana River at an elevation of 800 f.s.l. The site is roughly 300 m south of the edge of bluffs overlooking the Santa Ana River drainage channel. RIV-625 lies ca. 400 m southeast of the east end of the Hidden Valley Airstrip. Situated on the north side of a dirt track in a cultivated field, RIV-625 consists of an outcrop of bedrock granite boulders featuring several bedrock metates in an area 20 x 15 m. No midden or other

aboriginal remains were reported for RIV-625. USGS topographic map for the site is Riverside West (7.5 minute series), T2S, R6W, the northwest 1/4 of the northeast 1/4 of Section 34. RIV-625 is located approximately 400 m south of the overflow limit in a standard project flood of the U.S. Army Corps of Engineers' Santa Ana River Project.

RIV-624

This site was recorded in 1973 and was not field rechecked by the Archaeological Research Unit. RIV-624 is located at the foot of north-facing slopes south of the Santa Ana River at an elevation of 800 f.s.l. The site is ca. 320 m south of the edge of bluffs overlooking the Santa Ana River drainage channel. RIV-624 lies ca. 1200 m east-southeast of the east end of the Hidden Valley Airstrip and ca. 1300 m northwest of Norte Vista High School. A dirt road passes by the site immediately to the south. RIV-624 consists of an outcrop of bedrock granite featuring several bedrock metates in a 15 m square area. No midden or other aboriginal remains were reported for RIV-624. USGS topographic map for the site is Riverside West (7.5 minute series), T2S, R6W, the northeast 1/4 of the northwest 1/4 of Section 35. RIV-624 is located approximately 400 m south of the overflow limit in a standard project flood of the U.S. Army Corps of Engineers' Santa Ana River Project.

RIV-623

This site was recorded in 1973 and was not field rechecked by the Archaeological Research Unit. RIV-623 is located ca. 30 m southeast of a small reservoir at the foot of north-facing slopes south of the Santa Ana River. The site is roughly 650 m south of the edge of bluffs overlooking the Santa Ana

River drainage channel and lies at an elevation of 830 f.s.l. Norte Vista High School is ca. 1000 m southeast of RIV-623. The site consists of two large granite boulders, one of which features a single bedrock metate, while the other exhibits 6 grinding slicks. No midden or other aboriginal remains were reported for RIV-623. USGS topographic map for the site is Riverside West (7.5 minute series), T3S, R6W, the southeast 1/4 of the northwest 1/4 of Section 35. RIV-623 is located approximately 700 m south of the overflow limit in a standard project flood of the U.S. Army Corps of Engineers' Santa Ana River Project.

RIV-622

This site was recorded in 1973 and was described as a bedrock outcrop featuring metate slicks and 3 bedrock mortars in an area 5 x 1 m. RIV-622 is located near the base of bluffs that overlook the Santa Ana River to the north. The site is situated just south (ca. 70 m) of the current river channel at an elevation of 670 f.s.l. RIV-622 lies roughly 1100 m west of Van Buren Blvd. and almost 700 m south-southwest of Horseshoe Lake on the north side of a dirt road running along the base of the bluffs. USGS topographic map for the site is Riverside West (7.5 minute series), T2S, R6W, the southwest 1/4 of the southeast 1/4 of Section 26. RIV-622 is located within overflow limits of both an intermediate flood and a standard project flood of the U.S. Army Corps of Engineers' Santa Ana River Project.

RIV-622 was field rechecked on July 24, 1975. During the recheck a total of 9 grinding slicks, 4 bedrock mortars (two incipient), and a bedrock metate were noted on four granite boulders in an area 20 x 10 m. No midden or other aboriginal remains were encountered in the vicinity of RIV-622.

RIV-621

This site was recorded in 1973 and was described as a large boulder outcrop featuring a grinding slick. RIV-621 is located near the base of bluffs that overlook the Santa Ana River to the north. The site is situated just south (ca. 250 m) of the current river channel at an elevation of 680 f.s.l. RIV-621 lies roughly 800 m west of Van Buren Blvd. and almost 900 m south-southeast of Horseshoe Lake. The site is immediately adjacent to a dirt road which passes by the site on the south. Two small ravines meet at the base of the bluffs approximately 70 m southeast of RIV-621. USGS topographic map for the site is Riverside West (7.5 minute series), T2S, R6W, the southeast 1/4 of the southeast 1/4 of Section 26. RIV-621 is located within overflow limits of both an intermediate flood and a standard project flood of the U.S. Army Corps of Engineers' Santa Ana River Project.

RIV-621 was field rechecked on July 24, 1975 and 3 grinding slicks were noted on three boulder outcrops in an area ca. 45 x 8 m. No midden or other aboriginal remains were encountered in the vicinity of RIV-621.

RIV-700

No copy of a site record form for RIV-700 could be obtained, and no attempt was made by the Archaeological Research Unit to relocate the site. However, the Bureau of Land Management has been able to provide an approximate location for RIV-700. The site has been designated SBCM-179 by the San Bernardino County Museum, although that institution has no information concerning site composition. Purportedly, RIV-700 is situated on bluffs north of the Santa Ana River at an elevation of 720 f.s.l. The site lies ca. 50 m east of Van Buren Blvd. and roughly 260 m south of a Union Pacific railroad line. USGS topographic

map for the site is Riverside West (7.5 minute series), T2S, R6W, the northeast 1/4 of the southwest 1/4 of Section 25. RIV-700 is located ca. 90 m north of the overflow limit in a standard project flood of the U. S. Army Corps of Engineers' Santa Ana River Project.

RIV-494

RIV-494 was recorded in 1971 as the Pedley Pipeline site and was described as an area (750 x 400 feet) containing abundant cultural debris. The site is located on bluffs north of the Santa Ana River at an elevation of 760 f.s.l. A buried aqueduct transects RIV-494 from the northwest to southeast. RIV-494 lies opposite the Riverside Sewage Disposal Plant ca. 130 m south of a Union Pacific railroad line. The site is roughly 900 m east of Van Buren Blvd. and almost 1100 m south of Limonite Avenue. USGS topographic map for the site is Riverside West (7.5 minute series), T2S, R6W, the northwest 1/4 of the southeast 1/4 of Section 25 and the northeast 1/4 of the southeast 1/4 of Section 25. RIV-494 is located approximately 200 m north of the overflow limit in a standard project flood of the U.S. Army Corps of Engineers' Santa Ana River Project.

RIV-494 was field rechecked on July 24, 1975. Among the artifacts noted were a granite metate fragment, a large schist metate fragment, 3 granite hammerstones, 2 bifacial granite manos, 5 granite mano fragments, a basalt mano, 5 basaltic cores, at least 25 flakes of basalt, quartz and quartzite, and a fragment of purple glass with one edge sharpened by pressure flaking. There was no indication of a buried aspect to RIV-494. The recheck suggests site dimensions of ca. 280 x 115 m.

RIV-619

This site was recorded in 1973 and reportedly contained a portable metate, a mano and a mano fragment. The site is located near the edge of a bluff that overlooks the Santa Ana River from the north at an elevation of 760 f.s.l. RIV-619 is ca. 200 m south of a Union Pacific railroad line and ca. 500 m west of the Metropolitan Water District's Upper Feeder. Van Buren Blvd. is roughly 1100 m to the west-southwest, while Limonite Avenue is approximately 1000 m to the north. RIV-494 lies ca. 250 m west of RIV-619. USGS topographic map for RIV-619 is Riverside West (7.5 minute series), T2S, R6W, the northeast 1/4 of the southeast 1/4 of Section 25. RIV-619 is located approximately 100 m north of the overflow limit in a standard project flood of the U.S. Army Corps of Engineers' Santa Ana River Project.

RIV-619 was field rechecked on July 24, 1975 and among the cultural remains found were a portable metate (embedded in a dirt road that crosses the site), 3-4 basaltic cores, and 19 flakes of basalt, quartz and quartzite. One small, localized scatter of basaltic chipping detritus was noted. There was no indication of a buried aspect to RIV-619. Approximate site dimensions are 100 x 75 m.

RIV-651

This site was recorded in 1972 and was described as a very light flake scatter with a possible rock feature present. RIV-651 is located near the edge of bluffs that overlook the Santa Ana River to the south. The site is at an elevation of 750 f.s.l. Limonite Avenue is ca. 1000 m to the north, a Union Pacific railroad line passes roughly 300 m to the north, and the Metropolitan Water District's Upper Feeder is ca. 170 m to the west of RIV-651.

USGS topographic map for the site is Riverside West (7.5 minute series), T2S, R5W, the southeast 1/4 of the northwest 1/4 of Section 30. RIV-651 is located approximately 25 m north of the overflow limit in a standard project flood of the U.S. Army Corps of Engineers' Santa Ana River Project.

RIV-651 was field rechecked on July 24, 1975 and it was not possible to relocate the flake scatter or rock feature. There is a possibility that a mix-up occurred in which RIV-561 was re-recorded as RIV-651 and inaccurately mapped. RIV-561 does, apparently, consist of a small flake scatter. However, an isolated bifacial granite mano was found ca. 200 m northwest of where RIV-651 presumably is located.

RIV-561

No copy of the site record form for RIV-561 could be obtained, although its approximate location has been recorded by the Bureau of Land Management. The site is situated near the edge of bluffs on the north side of the Santa Ana River at an elevation of 730-735 f.s.l. A Union Pacific railroad line is ca. 320 m to the north and the Metropolitan Water District's Upper Feeder is ca. 400 m to the west. RIV-561 is approximately 150 m east of the purported location of RIV-651. USGS topographic map for RIV-561 is Riverside West (7.5 minute series), T2S, R5W, the southwest 1/4 of the northeast 1/4 of Section 30. RIV-561 is located ca. 40 m north of the overflow limit in a standard project flood of the U.S. Army Corps of Engineers' Santa Ana River Project.

RIV-561 was field rechecked on July 24, 1975 and the site, ca. 60 x 20 m, contains 17 flakes of basalt, quartz and quartzite. A quartzite core was also found. There was no indication of a buried aspect to RIV-561.

RIV-679

Although no site record form could be obtained for RIV-679, correspondence with San Bernardino County Museum and the Bureau of Land Management has made it possible to correlate field results with the records. RIV-679 consists of a severely impacted rock shelter on the south bank of the Santa Ana River. The site was disturbed during construction of the Riverside County Sewage Disposal Plant which is situated on the west, north and east sides of the site. RIV-679 is located 780 m east of Van Buren Blvd., ca. 400 m north of Jurupa Avenue, at an elevation of 710 f.s.l. USGS topographic map for the site is Riverside West (7.5 minute series), T2S, R6W, the southeast 1/4 of the southeast 1/4 of Section 25. RIV-679 is located within the overflow limits of both an intermediate flood and a standard project flood of the U.S. Army Corps of Engineers' Santa Ana River Project.

RIV-679 was field rechecked on July 25, 1975. The boulder formation within which the rock shelter is situated has been disturbed, by the removal and repositioning of large boulders, in the process of clearing areas for sewage ponds at the plant. Hence, little remains that could readily be designated a rock shelter. A close examination revealed, however, that certain faces of large, fragmented boulders feature a thin deposit of carbon - usually attributed to a campfire(s). Aside from the destroyed rock shelter, a grinding slick and two bedrock mortars (one very wide and deep) were also observed. A good indication of the amount of site disturbance is provided by one mortar which is, at present, facing downward. The boulder upon which the mortar was developed has apparently been turned over. Blade scars on the boulder suggest that this movement occurred during construction of the sewage plant. There has also been

reports of light pictographs at the site, presumably on the walls of the rock shelter.

RIV-620

This site was recorded in 1973 and was described as a 5 x 2 m outcrop of bedrock granite boulders featuring several grinding slicks. RIV-620 is located south of the Santa Ana River near the base of bluffs at an elevation of 710 f.s.l. The site lies ca. 200 m east of a sewage disposal plant and ca. 620 m north of Jurupa Avenue. A bulldozed terrace is immediately south of the site. USGS topographic map for the site is Riverside West (7.5 minute series), T2S, R5W, the northwest 1/4 of the southwest 1/4 of Section 30. RIV-620 is located within overflow limits of both an intermediate flood and a standard project flood of the U.S. Army Corps of Engineers' Santa Ana River Project.

RIV-620 was field rechecked on July 24, 1975,and a total of 13 grinding slicks were counted in an area ca. 18 x 9 m. An incipient mortar was also noted. No other aboriginal or historical remains were encountered in the vicinity of RIV-620 and there was no indication of buried component at the site.

RIV-127

This site was recorded in 1951 and was described simply as a "village site." RIV-127 is located on the south bank of the Santa Ana River at an elevation of 720-740 f.s.l. The site is ca. 460 m north of Jurupa Avenue and a Union Pacific railroad line and bridge cross directly over the site. USGS topographic map for RIV-127 is Riverside West (7.5 minute series), T2S, R5W, the northwest 1/4 of the southwest 1/4 of Section 29. RIV-127 is located within overflow limits of both an intermediate flood and a standard project flood of the U.S. Army Corps of Engineers' Santa Ana River Project.

RIV-127 was field rechecked on July 24, 1975 and consists of a large bedrock boulder exposure (ca. 75 x 15 m) featuring 35 grinding slicks, 3 bedrock metates, 5 bedrock mortars and 5 incipient mortars. The site has already suffered substantial impact due to the construction of the railroad bridge. Bridge supports are established on bedrock towards the western extension of the exposure. Undoubtedly, a number of bedrock features were destroyed on overturned during bridge construction. A mano was found near the edge of the bluff above the site. Aside from the mano, no other aboriginal remains were encountered in the vicinity.of RIV-127 and there was no indication of a buried aspect to the site. On the bluff above RIV-127, and west of the railroad, a few historic items were found. There are described in Appendix III under the heading ACE-SAR-H6.

RIV-325

This site was recorded in 1967 and was described as groups of unspecified artifacts along the floor of the Santa Ana River drainage channel. However, the site sheet was made out on the basis of informant-provided information and not on the basis of field observations by the recorder. Furthermore, a brief attempt to relocate the site, on July 25, 1975, proved fruitless. RIV-325 is recorded as being located ca. 150 m north of Jurupa Avenue, ca. 600 m east of a Union Pacific railroad line, and at an elevation of 730 f.s.l. USGS topographic map for the site is Riverside West (7.5 minute series), T2S, R5W, the northwest 1/4 of the southeast 1/4 of Section 29. If RIV-325 does indeed exist, the site is located within overflow limits of both an intermediate flood and a standard project flood of the U.S. Army Corps of Engineers' Santa Ana River Project.

RIV-650

This site was recorded in 1972 and was described as a 80 x 80 yd. site consisting of a boulder formation with grinding slicks and pottery sherds and flakes among the boulders. Metates and manos had, reportedly, been found before the site was recorded. Some disturbance of the site apparently occurred when the park in which the site is located was developed. RIV-650 is situated on the gradually sloping north bank of the Santa Ana River at an elevation of 750 f.s.l. Park headquarters are roughly 90 m south of the boulder formation. Riverview Drive is ca. 100 m west-northwest of RIV-650. USGS topographic map for the site is Riverside West (7.5 minute series), T2S, R5W, the southwest 1/4 of the southeast 1/4 of Section 20. RIV-650 is located approximately 60 m north of the overflow limit in a standard project flood of the U.S. Army Corps of Engineers' Santa Ana River Project.

RIV-650 was field rechecked on July 25, 1975. During an examination of the boulder formation a total of 33 grinding slicks, 5 bedrock metates, and 3 incipient mortars were observed in an area ca. 95 x 60 m. Also found were a large fragment of brown pottery (Tizon Brownware), a poor granite hammerstone and a piece of flaked quartz. There was no indication of a buried aspect to RIV-650.

RIV-678

RIV-678 marks the approximate site of an historic Indian camp based on an undated photograph available at the San Bernardino County Museum. Identification of the cultural affiliation of persons shown in the photograph is not possible at the moment. An attempt was made to locate remains of the camp on July 25, 1975, but success was not achieved. This may be due to the heavy grass ground

cover in the area, or to the eradicating effects of subsequent development in the area. Judging from the photograph, the camp was occupied sometime near the end of the 19th century, or during the early 20th century. RIV-678 is situated north of Mount Rubidoux along the base of hills on the southeast side of the Santa Ana River. The site lies at an elevation of 780 f.s.l., ca. 500 m northeast of Mission Blvd. and ca. 240 m northwest of Redwood Drive. USGS topographic map for the site is Riverside West (7.5 minute series), T2S and R5W. RIV-678 is located roughly 500 m southeast of the overflow limit in a standard project flood of the U.S. Army Corps of Engineers' Santa Ana River Project.

RIV-677

This site was recorded in 1939 as SBCM-43 and was not field rechecked by the Archaeological Research Unit. Artifacts reportedly found at the site were metates, chipping detritus and pottery sherds. Also recorded are some bedrock metates. RIV-677 is located on the southeast side of the Santa Ana River atop hills above Lake Evans (Fairmount Park) at an elevation of 840 f.s.l. The site is ca. 160 m southeast of Redwood Drive and roughly 550 m northeast of 3rd Street. USGS topographic map for the site is Riverside West (7.5 minute series), T2S, R5W. RIV-677 is situated ca. 800 m southeast of the overflow limit in a standard project flood of the U.S. Army Corps of Engineers' Santa Ana River Project.

ACE-SAR-5

A new site was discovered on July 25, 1975 and it is located near the southeast edge of the La Loma Hills at an elevation of 940-960 f.s.l.

ACE-SAR-5 consists of bedrock milling features situated upon a series of centralized hilltops. Most of the features were found atop the westernmost hilltop which is also the hilltop closest to the Santa Ana River. In all, 25 grinding slicks, 6 bedrock metates, 3 bedrock mortars and 3 incipient bedrock mortars were observed. A possible collapsed rock shelter is located at the southern edge of the hilltop exhibiting the predominant number of milling features. Three shell fragments (unidentified clam) were found ca. 140 m west of ACE-SAR-5 along the border of Orange Street. An association between the shell and the site can not presently be established. No midden or other aboriginal remains were encountered in the vicinity of ACE-SAR-5. The site is ca. 140 m east of Orange Street, ca. 400 m north of the intersection of Orange Street and Center Street. USGS topographic map for the site is San Bernardino South (7.5 minute series), T2S and R5W. ACE-SAR-5 lies ca. 1200 m southeast of the overflow limit in a standard project flood of the U.S. Army Corps of Engineers' Santa Ana River Project.

SBCM-65

This site was recorded in 1949 and was described as a large (320 x 60 m) surface site situated on a terrace overlooking the Santa Ana River to the northeast. SBCM-65 is located along the northeast edge of the La Loma Hills, roughly 400 m southwest of the current river channel. The site is ca. 400 m west of 8th Street and lies at an elevation of 975 f.s.l. USGS topographic map for the site is San Bernardino South (7.5 minute series), T1S, R4W, the southeast 1/4 of the northeast 1/4 of Section 31. SBCM-65 is located approximately 200 m southwest of the overflow limit in a standard project flood of the U.S. Army Corps of Engineers' Santa Ana River Project.

SBCM-65 was field rechecked on July 25, 1975 and little remains of the site. The recheck was able to locate only 4 basaltic flakes and a crudely fashioned rhyolite biface. The San Bernardino County Museum has surface collected this site. Data concerning cultural remains are available at the Museum.

SBCM-113

This site was recorded in 1964 and was not field rechecked by the Archaeological Research Unit. SBCM-113 was described on the site sheet as a light artifact scatter (100 x 50 feet) featuring pottery sherds and a projectile point. The site is situated on the northwest side of the Santa Ana River immediately inside the western boundary of the historic Agua Mansa Cemetery (see Appendix III, ACE-SAR-H8). SBCM-113 lies at an elevation of 920 f.s.l., west of Agua Mansa Road ca. 320 m northeast of the intersection of Agua Mansa Road and Riverside Avenue. USGS topographic map for the site is San Bernardino South (7.5 minute series), T1S, R5W, the southwest 1/4 of the northwest 1/4 of Section 36. SBCM-113 is located approximately 190 m west of the overflow limit in a standard project flood of the U.S. Army Corps of Engineers' Santa Ana River Project.

SBCM-759

This site was recorded in 1969 and consisted of a portable metate (which was collected) and a possible "trail" running southeast towards the Agua Mansa Cemetery. SBCM-759 is located on the southeast corner of the Willow Avenue and Santa Ana Avenue intersection at an elevation of 1000 f.s.l. USGS topographic map for the site is San Bernardino South (7.5 minute series),

T1S, R5W, the northeast 1/4 of the southwest 1/4 of Section 26. SBCM-759 lies ca. 1700 m northwest of the overflow limit in a standard project flood of the U.S. Army Corps of Engineers' Santa Ana River Project.

SBCM-759 was field rechecked on July 25, 1975 and no aboriginal or historical materials were observed. The "trail" noted on the 1969 site sheet appears to have been an overgrown, raised, narrow dirt road of indeterminable age that at present trends southeast from the intersection of Willow Avenue and Santa Ana Avenue.

SBCM-711

This site was recorded in 1963 and was not field rechecked by the Archaeological Research Unit. SBCM-711 was originally described as a small site containing projectile points and chipping detritus. The site is located northwest of the Santa Ana River at an elevation of 1020 f.s.l., ca. 50 m west of Riverside Avenue and ca. 180 m north of Slover Avenue. USGS topographic map for the site is San Bernardino South (7.5 minute series), T1S, R5W, the southeast 1/4 of the southeast 1/4 of Section 23. SBCM-711 lies approximately 2100 m northwest of the overflow limit in a standard project flood of the U.S. Army Corps of Engineers' Santa Ana River Project.

SBCM-57

This site was recorded in 1956 and was not field rechecked by the Archaeological Research Unit. The 1956 site sheet indicated that SBCM-57 was largely destroyed by gravel pit operations in the local area. Originally, SBCM-57 was described as a series of charcoal pits 5-8 feet below the ground surface. The features were, apparently, exposed by the gravel pit operations.

SBCM-57 is located northwest of the Santa Ana River at an elevation of 960 f.s.l., ca. 80 m south of Santa Ana Avenue and ca. 490 m east of Riverside Avenue. USGS topographic map for the site is San Bernardino South (7.5 minute series), T1S, R5W, the northwest 1/4 of the southwest 1/4 of Section 25. SBCM-57 lies approximately 1000 m northwest of the overflow limit in a standard project flood of the U.S. Army Corps of Engineers' Santa Ana River Project.

SBCM-40

This site was recorded in 1938 and was described as an area (1000 x 1000 m) featuring a series of camp sites atop sand hills north of the Santa Ana River. Artifacts reportedly found in blow-outs (deflated places within the dunes) included metates, manos, dart and arrow projectile points, shell, choppers, scrapers and charmstones. SBCM-40 is located immediately north of Agua Mansa Road, southeast of Slover Mountain, at an elevation of 960-1000 f.s.l. USGS topographic map for the site is San Bernardino South (7.5 minute series), T1S, R5W, most of Section 25 and primarily the southeast 1/4 of that section. SBCM-40 is situated ca. 100 m north of the overflow limit in a standard project flood of the U.S. Army Corps of Engineers' Santa Ana River Project.

SBCM-40 was partially field rechecked on July 25, 1975. Field inspection of the site was limited to the southeastern portion of the dune area. Essentially, five blow-outs were examined in an area ca. 250 x 150 m. Among the cultural remains noted were worked, unworked and utilized flakes of basalt (50+), quartzite (30+), granite (21), quartz (17), and chalcedony (5+); 11 basalt cores, 6 quartizite cores, 4 granitic cores; biface fragments of basalt (4), quartzite (3) and one of chalcedony; a polished basalt scraper plane; 12 basalt and 10 granite manos, 3 bifacial granite manos; and metate fragments of

basalt (10), schist (6) and granite (3). A large mammal astragulus bone and 5-6 fragments of small mammal bone were found. Also observed was a large chunk of charcoal deflating from a bank of one of the blow-outs. Several fragments of blue and purple historic glass were discovered.

An encroaching modern dump hill threatens the site from the north and northeast.

SBCM-34

This site was recorded in 1946 and was largely destroyed during the construction of San Salvador School. SBCM-34 was originally described as a five acre area containing some manos. No other data was provided on the site record form. SBCM-34 is located in the city of Colton ca. 900 m north of the current channel of the Santa Ana River at the corner of 3rd Street and Agua Mansa Road. The site lies at an elevation of 920 f.s.l. USGS topographic map for the site is San Bernardino South (7.5 minute series), T1S, R4W, the northeast 1/4 of the northwest 1/4 of Section 30. If anything remains of SBCM-34, it is located approximately 75 m north of the overflow limit in a standard flood of the U.S. Army Corps of Engineers' Santa Ana River Project.

SBCM-190

This site was recorded in 1939 and according to a 1971 site sheet update, SBCM-190 was destroyed by construction of local homes and paved roads. SBCM-190 was originally described as a 20 acre area containing scattered manos, metates and mortars. The site was located atop low bluffs ca. 180 m west of Warm Creek, approximately 1200 m north of the creek's confluence with the Santa Ana River. SBCM-190 was situated ca. 300 m southeast of Washington School,

ca. 400 m north of the San Bernardino Freeway, at an elevation of 960-980 f.s.l. USGS topographic map for the site is San Bernardino South (7.5 minute series), T1S, R4W, the northeast 1/4 of the southwest 1/4 of Section 21. SBCM-190 was located roughly 90 m west of the overflow limit in a standard project flood of the U.S. Army Corps of Engineers' Santa Ana River Project.

National Register Eligibility

Many of the resources described in this appendix were sufficiently distant from the study area that they were not visited by the field crews or the field check was limited to verification of the site's existence. Therefore questions of eligibility cannot be addressed for many sites. The potential value of resources within or directly adjacent to the project limits may be better assessed.

All archaeological sites have the potential for yielding information important to the reconstruction of local or region prehistory and/or history. Our estimations of site eligibility were based on the probable range of problems that may be addressed by data contained within a site, how well a site typified an activity or set of activities from a scientific and interpretive point of view, the size and complexity of the remains, associations with extant ethnic communities, and the state of preservation of the resource.

Sites fall into several categories; those felt to be eligible, those when considered singly may not be eligible but would be eligible if considered as part of a district, and those not eligible for listing.

The majority of the sites from the mouth of the Santa Ana River to Prado Dam have been destroyed or heavily impacted. All of these sites fell outside the project right-of-way. ORA-58 and ORA-506 would be

eligible for listing on the National Register. They are extensive complex deposits, probably representing a long period of occupation. Few archaeological deposits in this region have survived agricultural and residential development. ORA-148, ORA-76, ORA-163, ORA-278, ORA-277, ACE-SAR-6, ACE-SAR-7, and ACE-SAR-8 have either been totally destroyed or very heavily impacted by development. These sites, based on their physical existence, would not be eligible for listing on the National Register. ACE-SAR-1, ACE-SAR-2, and ACE-SAR-3 represent light use of the Santa Ana Canyon region; separately these sites would probably not be considered eligible for listing; as part of a district they may be considered eligible.

Thirteen resource locations were identified within or in close proximity to the Prado Basin. RIV-653 and ACE-SAR-4 appear to be eligible for listing on the National Register. RIV-653 was a large complex site which was physically associated with historic remains of the Bandini-Cota Adobe. The cultural relationship to the adobe is presently unknown. ACE-SAR-4 appears to be a habitation site. This extensive site probably displays a long period of occupation. The eligibility of RIV-675 is questionable; it is an extensive surface scatter of cultural remains. It would be appropriate to submit this site for determination of eligibility as part of a district. As part of a district this resource should be eligible for listing. RIV-556 and RIV-100 could not be located. If RIV-100 is still relatively intact it would be eligible for listing. The other resources were either isolated finds, a very limited scatter of remains, or have been destroyed. ACE-LEL-1, ACE-1A-1, ACE-LEL-2, ACE-1A-2, ACE-1A-3, ACE-LEL-3, ACE-LEL-4, and RIV-652 would not be eligible for listing on the National Register of Historic Places.

Twenty-six resource locations were identified upstream from the Prado Basin; of these only six (RIV-622, RIV-621, RIV-679, RIV-620, RIV-127, and RIV-325) are within the project limits. SBCM-40 was an extensive and complex site; it appeared that this site would be eligible for listing on the National Register. The majority of sites observed along this portion of the project were milling stations or light scatters of milling tools. The collection and processing of hard seeds was an important activity in this region. A single seed processing site would probably not be considered eligible; however a district application that included a number of sites, representative of this form of land use would be appropriate. RIV-625, RIV-624, RIV-622, RIV-621, RIV-494, RIV-619, RIV-561, RIV-620, RIV-650, ACE-SAR-5 could be included in such an application. RIV-127 has been described as a village; however, only bedrock grinding features were observed. This site may be eligible if submitted as part of a district. The remaining 13 sites would not be eligible for listing or cannot be submitted for the following reasons: SBCM-65 has been surface collected to the point that little of archaeological value remains; RIV-679, SBCM-34, and SBCM-190 have been destroyed; and RIV-700, RIV-651, RIV-325, RIV-678, RIV-677, SBCM-113, SBCM-759, SBCM-711, and SBCM-57 were either not checked or the resources were not located.

APPENDIX II
RECORDED ABORIGINAL SITES ALONG SANTIAGO CREEK

APPENDIX II

RECORDED ABORIGINAL SITES ALONG SANTIAGO CREEK

ORA-89

This site was recorded in 1963 and was described as a relatively small (one square acre), shallow site containing milling tools and hammerstones. ORA-89 was largely destroyed in 1963 by construction of two apartment buildings on the site. The site lies ca. 45 m west of Santiago Creek at an elevation of 300 f.s.l. ORA-89 is (or was) located ca. 50 m east of Mallard Street and roughly 300 m south of Collins Avenue. USGS topographic map for the site is Orange (7.5 minute series), T4S, R9W, the northwest 1/4 of the northwest 1/4 of Section 27.

ORA-369

ORA-369 was recorded in 1972 and was not field rechecked by the Archaeological Research Unit. At the time of recording the site consisted of a 300 x 300 m cleared area covered with some shell material, cores and tool-flaking debris. A polyhedral core was also reported. ORA-369 is located roughly 100 m north of Santiago Creek at an elevation of 400 f.s.l. The site lies roughly 85 m south of Serrano Avenue and almost 400 m north of Santiago Canyon Road. USGS topographic map for the site is Orange (7.5 minute series), T4S, R9W, the northwest 1/4 of the southeast 1/4 of Section 4.

ORA-319

ORA-319 was recorded in 1971 and was not field rechecked by the Archaeological Research Unit. The site is located near the mouth of Fremont Canyon ca. 900 m east of the confluence of Santiago Creek and the Fremont

Canyon drainage. Santiago Dam (Irvine Lake) is approximately 800 m southwest of ORA-319. The site is located on the north side of the Fremont Canyon drainage near the edge of a long ridge running northeast-southwest. ORA-319 is situated at an elevation of 745 f.s.l. USGS topographic map for the site is Black Star Canyon (7.5 minute series), T4S, R8W, the northwest 1/4 of the northeast 1/4 of Section 70. Recorded artifacts for ORA-319 were 2 polished granite discoidals, perhaps 20 manos, a number of scraper/bifaces and many worked stone flakes.

ORA-320

ORA-320 was recorded in 1971 and was not field rechecked by the Archaeological Research Unit. The site is located near the mouth of Fremont Canyon ca. 950 m east-southeast of the confluence of Santiago Creek and the Fremont Canyon drainage. ORA-320 lies on the opposite side of Fremont Canyon from ORA-319 (ca. 100 m). Santiago Dam (Irvine Lake) is approximately 750 m southwest of ORA-320. The site consists of a rock shelter on the south face of Fremont Canyon roughly 55 feet above the creek bed (760 f.s.l.). Found within the 8 x 23 x 20 foot shelter were tool fragments, quartz chipping detritus, and broken stones and cobbles. The site sheet contains no information concerning the subsurface extent of the cultural deposit. USGS topographic map for ORA-320 is Black Star Canyon (7.5 minute series), T4S, R8W, the southwest 1/4 of the northeast 1/4 of Section 70.

ORA-237

ORA-237 was officially recorded in 1969 and was not field rechecked by the Archaeological Research Unit. The site has also been known as the Limestone Canyon site or as the Santiago Canyon site. ORA-237 is located on the south

bank of Santiago Creek, east of Santiago Reservoir, at an elevation of 830 f.s.l. The site is ca. 30 m north of Irvine Road, approximately 600 m west of the intersection of Irvine Road and Black Star Canyon Road. Recorded dimensions for the site are 90 x 70 feet, with a possible depth of 30 inches. ORA-237 was partially excavated in 1935 and 1937, and among the cultural remains uncovered in the adobe soil were flexed burials, cremations, cairns, hearths, manos, pestles, mortars and deer bone whistles. Steatite objects found included bowls, rings and an arrowshaft straightener. As of 1969, rodent activity at the site was extensive. USGS topographic map for ORA-237 is Black Star Canyon (7.5 minutes series), T4S, R8W, the south 1/4 of the north 1/4 of Section 111.

ORA-238

ORA-238 was officially recorded in 1969 and was not field rechecked by the Archaeological Research Unit. The site has also been known as the Limestone Canyon site or as the Santiago Canyon site. ORA-238 is situated on the south bank of Santiago Creek, east of Santiago Reservoir, at an elevation of 830 f.s.l. The site is ca. 25 m north of Irvine Road, approximately 450 m west of the intersection of Irvine Road and Black Star Canyon Road. Recorded dimensions for the site are 35 x 85 feet, with an estimated depth of 30 inches. ORA-238 was partially excavated in 1935 and 1937. Reportedly discovered in sandy soil were several hearths and a single flexed burial. The site record form indicated that rodent disturbance at the site has been substantial. USGS topographic map for ORA-238 is Black Star Canyon (7.5 minute series), T4S, R8W, the east 1/4 of the north 1/4 of Section 111.

ORA-239

ORA-239 was officially recorded in 1969 and was not field rechecked by the Archaeological Research Unit. The site has also been known as the Santiago Canyon site or as the Limestone Canyon site. ORA-239 is situated on the north side of Santiago Creek near the mouth of a small canyon east of Santiago Reservoir. The site lies at an elevation of 850 f.s.l. ORA-238 is ca. 240 m north of Irvine Road, approximately 530 m northwest of the intersection of Irvine Road and Black Star Canyon Road. Recorded dimensions for the site are 50 x 175 feet, with an estimated depth of 14 inches. Soil at the site is rocky with concentrations of sand and adobe. ORA-239 was largely destroyed as a result of excavations in 1935 and 1937. Small triangular projectile points of agate and jasper were reportedly found during the excavations, probably indicating relatively recent occupation. Erosion has been confined to minimal run-off from the hills north of the site. USGS topographic map for the site is Black Star Canyon (7.5 minute series), T4S, R8W, the east 1/4 of the north 1/4 of Section 111.

ORA-240

ORA-240 was officially recorded in 1968 and was not field rechecked by the Archaeological Research Unit. The site is located at the base of hills ca. 200 m northwest of the confluence of Santiago Creek and Black Star Canyon. ORA-240 lies at an elevation of 840 f.s.l. and is situated ca. 120 m north of Irvine Road, east of Santiago Reservoir. The 1968 site record form did not specify as to the nature or extent of evidences at ORA-240, merely stating that the site had once been considered a "habitation midden." USGS topographic map for ORA-240 is Black Star Canyon (7.5 minute series), T4S, R8W, the west 1/4 of the west 1/4 of Section 112.

APPENDIX III
HISTORICAL SITES ALONG THE SANTA ANA RIVER AND WITHIN THE PRADO FLOOD CONTROL BASIN

APPENDIX III

HISTORICAL SITES ALONG THE SANTA ANA RIVER AND WITHIN THE PRADO FLOOD CONTROL BASIN

ACE-SAR-H-I -- Yorba Cemetery ORA-581H

Don Bernardo Yorba deeded land in his will thus: "Second: 100 sq. ft. for a cemetery, the plot selected being on the hill where are the corrals called LaMesita" (Stephenson 1963:61).

Don Yorba died shortly thereafter and his remains were buried in Los Angeles County. It wasn't until 65 years later, that his descendents brought the remains of all the family back to Orange County to sleep again by the waters of the Santa Ana River overlooking the Valley. Resting there are members of the Yorba and Peralta families.

The Yorba Cemetery is located on the Orange USGS 7.5 minute Quadrangle; T3S, R9W. The cemetery area is not sectioned. The site falls outside the limits of a standard project flood. The cemetery is hemmed in by housing tracts and trailer parks and is in danger of destruction if heavy flooding occurs.

ACE-SAR-H2A and ACE-SAR-H2B

These two historic sites consist of disturbed structural ruins within the property lines of Prado Dam. The ruins date ca. 1900-1910 based on the kind of cement utilized, and mason jar necks and colored glasses found in the vicinity of the ruins. Disturbance has come about in the process of clearing adjacent fields for cultivation. ACE-SAR-H2A is comprised of five sets of

ruins, while ACE-SAR-H2B features only a single set. ACE-SAR-H2A covers an area ca. 360 x 250 m northeast of the Pomona-Rincon Road, ca. 700-800 m north of an AT & SF Railroad line. ACE-SAR-H2B covers an area 40 x 30 m, roughly 950 m northeast of the Pomona-Rincon Road and ca. 1400 m north of the AT & SF Railroad line. USGS topographic map for the sites is Corona North (7.5 minute series), T3S, R7W. ACE-SAR-H2A and H2B are located within both the existing reservoir take line and the approximate take line of the U.S. Army Corps of Engineers' recommended plan for the Prado Flood Control Basin.

ACE-SAR-H3

ACE-SAR-H3, the historic Bandini-Cota Adobe, was field examined on July 17, 21 and 31, 1975. Although a model reconstruction of the structure is available for viewing in the Prado County Park Museum, a description of the present condition of the adobe is provided here. ACE-SAR-H3 is located on a bluff (530 f.s.l.) at the southern end of a small range of low hills between Chino Creek and Mill Creek, the Santa Ana River currently flows ca. 1500 m to the south. Cucamonga Avenue lies roughly 200 m to the east of ACE-SAR-H3. USGS topographic map for the site is Prado Dam (7.5 minute series), T3S, R7W, the northeast 1/4 of the southwest 1/4 of Section 8. ACE-SAR-H3 falls within both the existing reservoir take line and the approximate take line of the U.S. Army Corps of Engineers' recommended plan for the Prado Flood Control Basin.

At present, the Bandini-Cota Adobe consist of several extremely weathered adobe wall remnants and a variety of possibly associated historical remains in the surrounding area. High, thick grass has overrun the ruins and effectively covers the ground surface around the adobe. Nevertheless, a great deal of historic china, crockery and other items were observed during the rechecks in

exposed dirt tracks in the vicinity of ACE-SAR-H3 (see description in Appendix II of RIV-653). Also, at least two depressions, possibly representing former floor supporting beam inserts, were noted in one of the remnant walls. China and crockery remains were comprised of some light blue European crockery, 19th Century English white stoneware, early 19th Century china with a tea-leaf pattern (a possible cup fragment and cup handle fragment), early 19th Century flown blue china with an acorn pattern, and some possible Stradfordshire ware (oak-leaf pattern). Porcelin fragments, probably 19th Century, were found to be of various colors, e.g., white, pink, light-green, and green. One thick procelin fragment had a red-etched pattern. Purple, blue, green and red glass was found in a number of places and silverplated teaspoon (19th Century) was also observed. A fragment of a hand-forged oxen shoe was noted as well as several hand-forged nails and bolts. More recent china fragments, probably plate china from the 1930's, was found near Cucamonga Avenue.

ACE-SAR-H4

A limited number of historic remains were found ca. 200 m northwest of ACE-SAR-4 atop a small rise west of Chino Creek. ACE-SAR-H4 consists of a large chunk of fired adobe, several fragments of unidentified 19th Century china, and a complete, amber-colored bottle with the label "BEN-HUR." It may be that a structure of some sort existed on this site at one time. ACE-SAR-H4 lies at an elevation of 530 f.s.l., ca. 90 m east of the Pomona-Rincon Road, and ca. 800 m northeast-east of the junction of Euclid Avenue and Highway 71 (Corona Freeway) in San Bernardino County. USGS topographic map for the site is Prado Dam (7.5 minute series), T3S, R7W, the northwest 1/4 of the southwest 1/4 of Section 5. ACE-SAR-H4 falls within both the existing reservoir take line

and the approximate take line of the U.S. Army Corps of Engineers' recommended plan for the Prado Flood Control Basin.

ACE-SAR-H5 - Yorba Slaughter Adobe

One of the original adobes of the Don Bernardo Yorba lands. Was part of the El Rincon Rancho inherited by Rumundo Yorba. Three hundred and twenty acres were sold to Fenton M. Slaughter who was married to an Alvardo. Slaughter imported Moreno sheep from France to improve the wool stock, the Slaughter holdings expanded to over 300,000 acres.

At one time the adobe was used as a Butterfield Stage stop. The adobe and outbuildings are still standing; the adobe functions as a museum. The barn has been rebuilt recently and was at one time used as a winery.

The Yorba Slaughter Adobe is located on the Prado Dam USGS 7.5 minute series Quadrangle; T3S and R8W, southeast 1/4 of the northeast 1/4 of Section 1. It is located within the limits of the proposed take line of the Prado Flood Control Basin.

ACE-SAR-H6

Several historic items were discovered on the bluff above RIV-127 in the course of relocating the aboriginal site. ACE-SAR-H6 consists of a Gebhardt Eagle chili powder bottle (late 19th-early 20th Centuries), several fragments of Japanese procelin bowls (orange, while, red pattern), and a zinc mason jar lid with a ball design on top. These historic remains are located south of the Santa Ana River at an elevation of 760 f.s.l. ACE-SAR-H6 is ca. 430 m north of Jurupa Avenue and a Union Pacific Railroad line passes the site immediately to the east. USGS topographic map for ACE-SAR-H6 is Riverside West (7.5 minute series), T2S, R5W, the northwest 1/4 of the southwest 1/4 of

Section 29. ACE-SAR-H6 is located above and ca. 30 m south of the overflow limit in a standard project flood of the U.S. Army Corps of Engineers' Santa Ana River Project.

ACE-SAR-H7

This site was recorded in 1966 as SBCM-868 and was not field rechecked by the Archaeological Research Unit. SBCM-868 consists of a small ceramic candle-holder featuring a faint red design. The item was uncovered by a local resident while digging in the vicinity of an historic cantina. SBCM-868 has been referred to as the La Placita site. The site is situated near the southeast edge of the La Loma Hills, ca. 300 m northwest of ACE-SAR-5, at an elevation of 860 f.s.l. SBCM-868 is located ca. 50 m east of the end of Orange Street and ca. 1150 m east of Riverside Avenue. USGS topographic map for the site is San Bernardino South (7.5 minute series), T2S and R5W. SBCM-868 lies ca. 900 m southeast of the overflow limit in a standard project flood of the U.S. Army Corps of Engineers' Santa Ana River Project.

ACE-SAR-H8 - Agua Mansa Cemetery

All that remains of the once thriving community of Agua Mansa is the cemetery that stands on the bluff overlooking the Santa Ana River.

The flood of 1862 roared down the valley devastating the town and changing the basic character of the bottom farmland.

The cemetery given by Bandini to the San Salvador Parish, stood at an elevation of 900 feet, it and the church were all that remained standing after the flood passed. Sidler quotes Peter C. Peters of Colton telling him of how he stood on the bluff by the cemetery the next morning and watched the adobe houses melt down in the flood and disappear.

This feature is located on the San Bernardino South USGS 7.5 minute series Quadrangle; T1S and R5W. The cemetery area is unsectioned. It is located outside the limits of a standard project flood.

National Register Eligibility

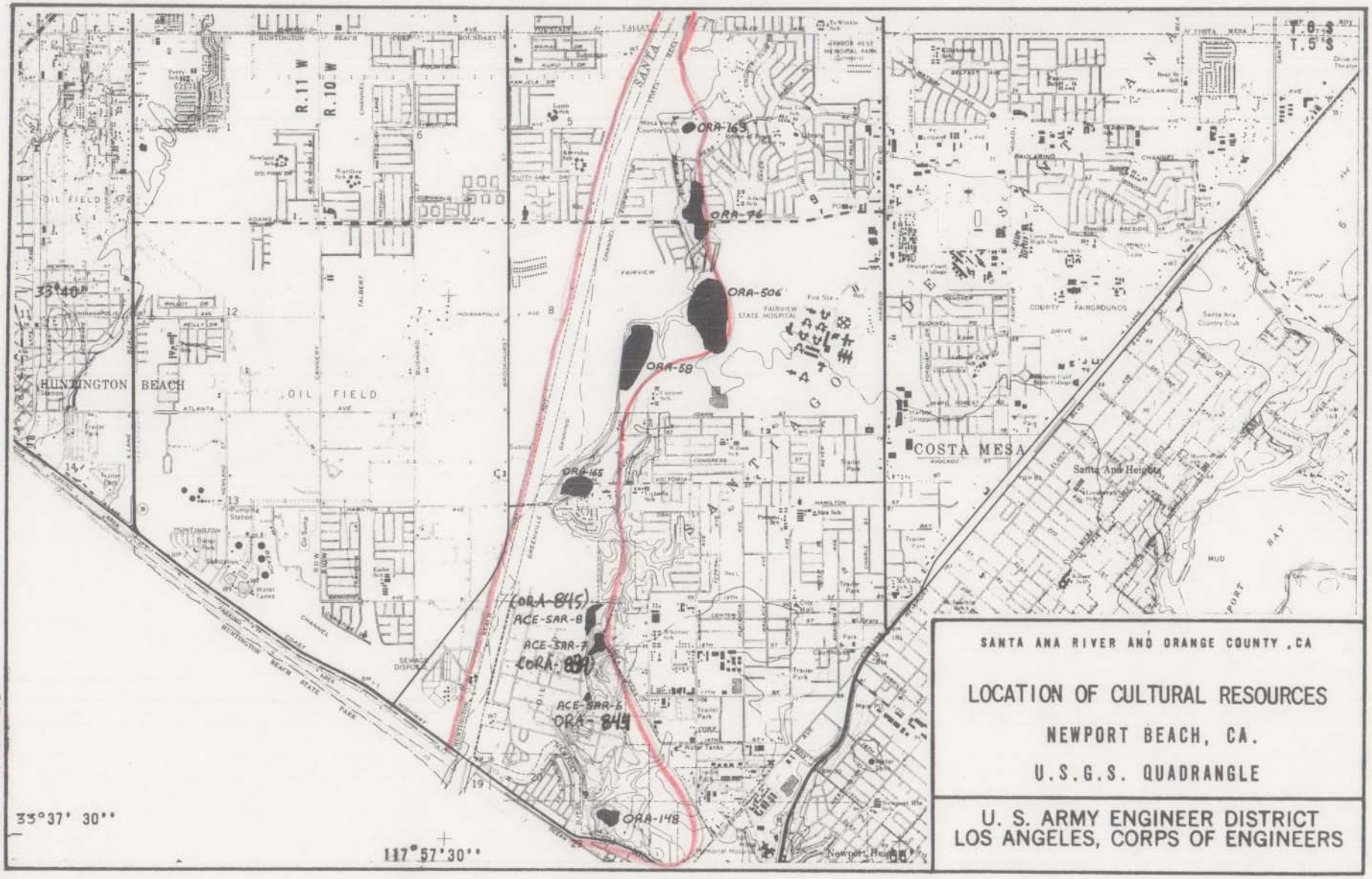
The historical resources within the Prado Basin have been assessed in a separate study. These were the only historic resources identified within the project limits. ACE-SAR-H-1, the Yorba Cemetery, should be eligible for listing on the National Register if the exact location can be identified and it determined the site is relatively intact. The Yorba Ranch House site is a California Historical Landmark. ACE-SAR-H7 was not field checked; sufficient information for a determination of eligibility is lacking. ACE-SAR-H8, Agua Mansa Cemetery, is a component of a California Historical Landmark; this site would be eligible for listing on the National Register.

ORA-79

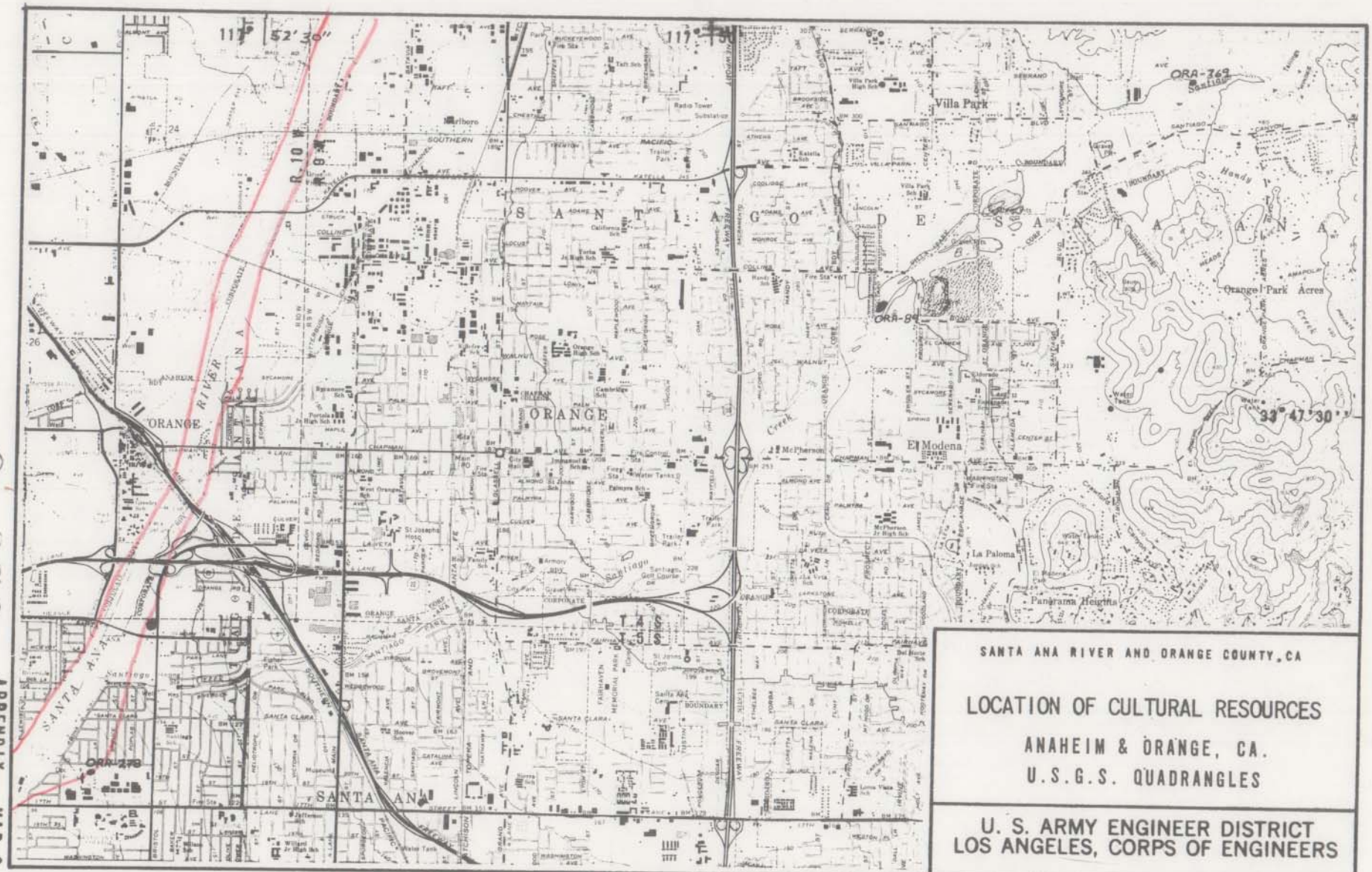
ORA-79 was recorded in 1952 and was not field rechecked by the Archaeological Research Unit. Known as Santiago Canyon Cave, ORA-79 is located on the west side of Santiago Canyon at an elevation of 1100 f.s.l. Santiago Canyon Road passes by the site ca. 270 m to the east. A power transmission line lies approximately 60 m west of ORA-79. The only reported cultural remains for the site are some basketry and cordage materials. USGS topographic map for the site is El Toro (7.5 minute series), T4S, R8W, the northeast 1/4 of the southeast 1/4 of Section 149.

National Register Eligibility

None of these sites fall within the project right-of-way. None were visited. It is apparent from the site records that several of these sites have been severely impacted. These resources and others within the Santiago Creek drainage should be reviewed and assessed for eligibility for listing on the National Register.



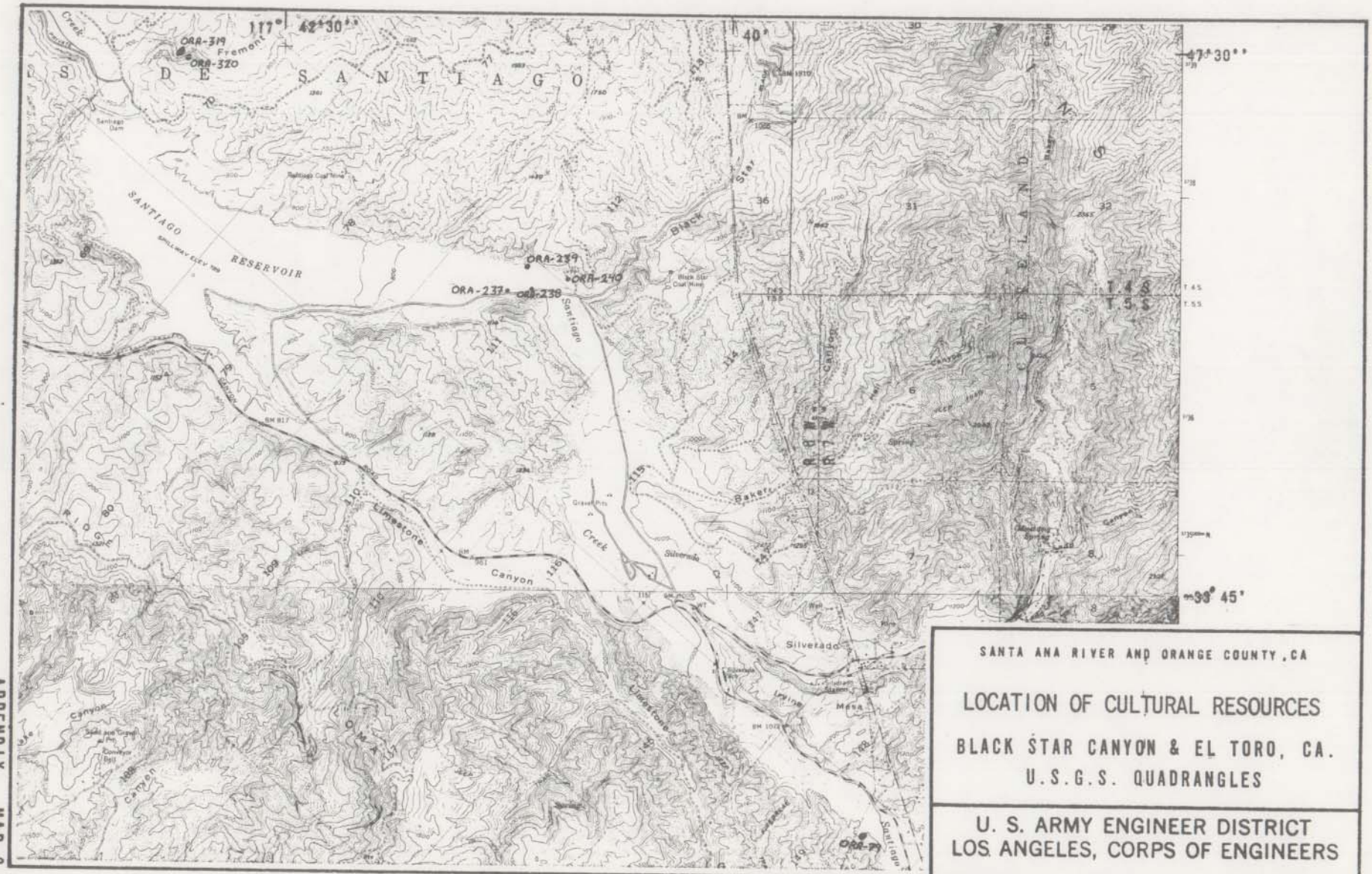
O—270 APPENDIX MAP 1



O-270

APPENDIX MAP 2

NO FIELD CHECKS IN SANTIAGO CREEK



SANTA ANA RIVER AND ORANGE COUNTY, CA

LOCATION OF CULTURAL RESOURCES

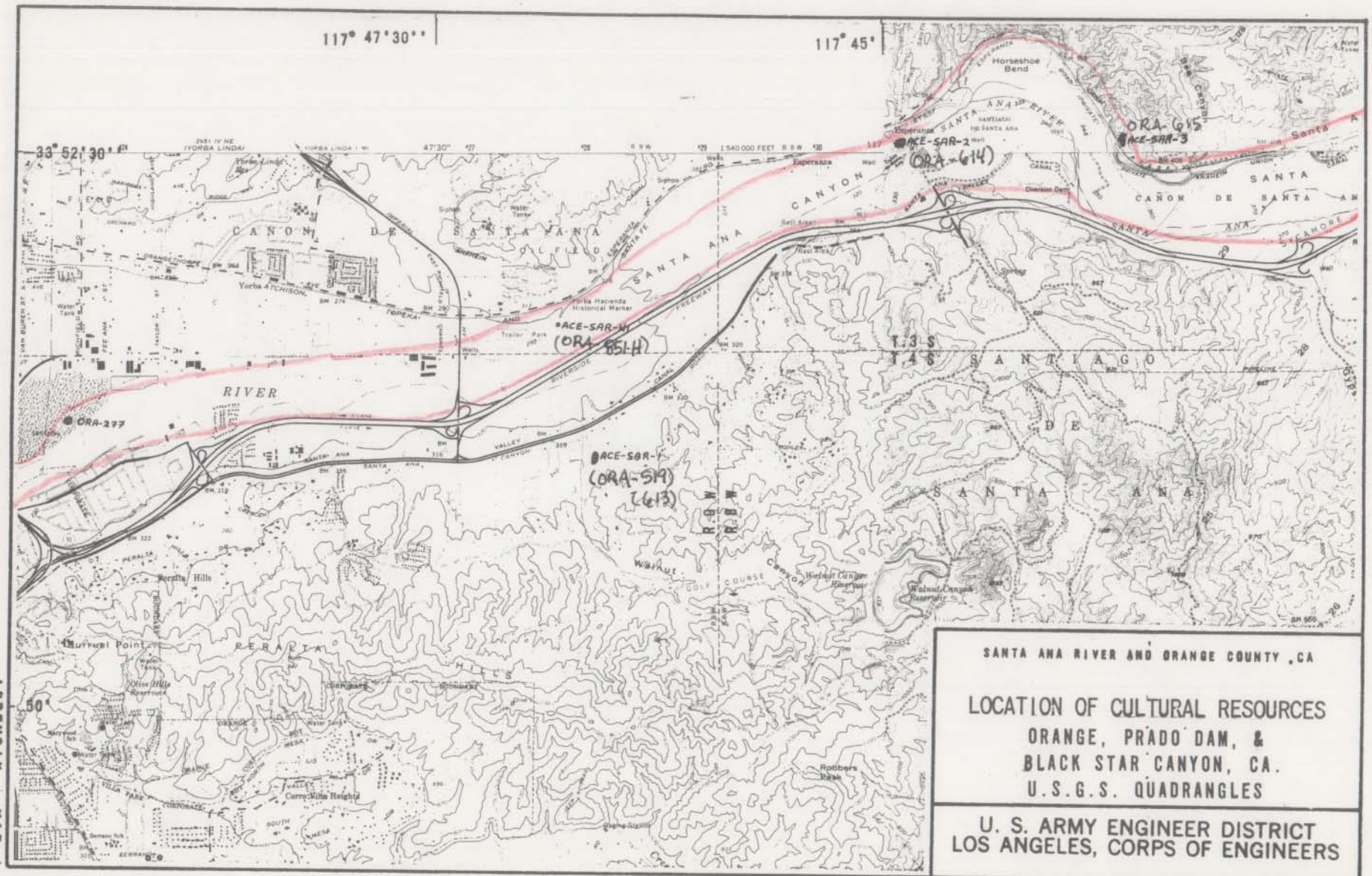
BLACK STAR CANYON & EL TORO, CA.
U.S.G.S. QUADRANGLES

U. S. ARMY ENGINEER DISTRICT
LOS ANGELES, CORPS OF ENGINEERS

O—270

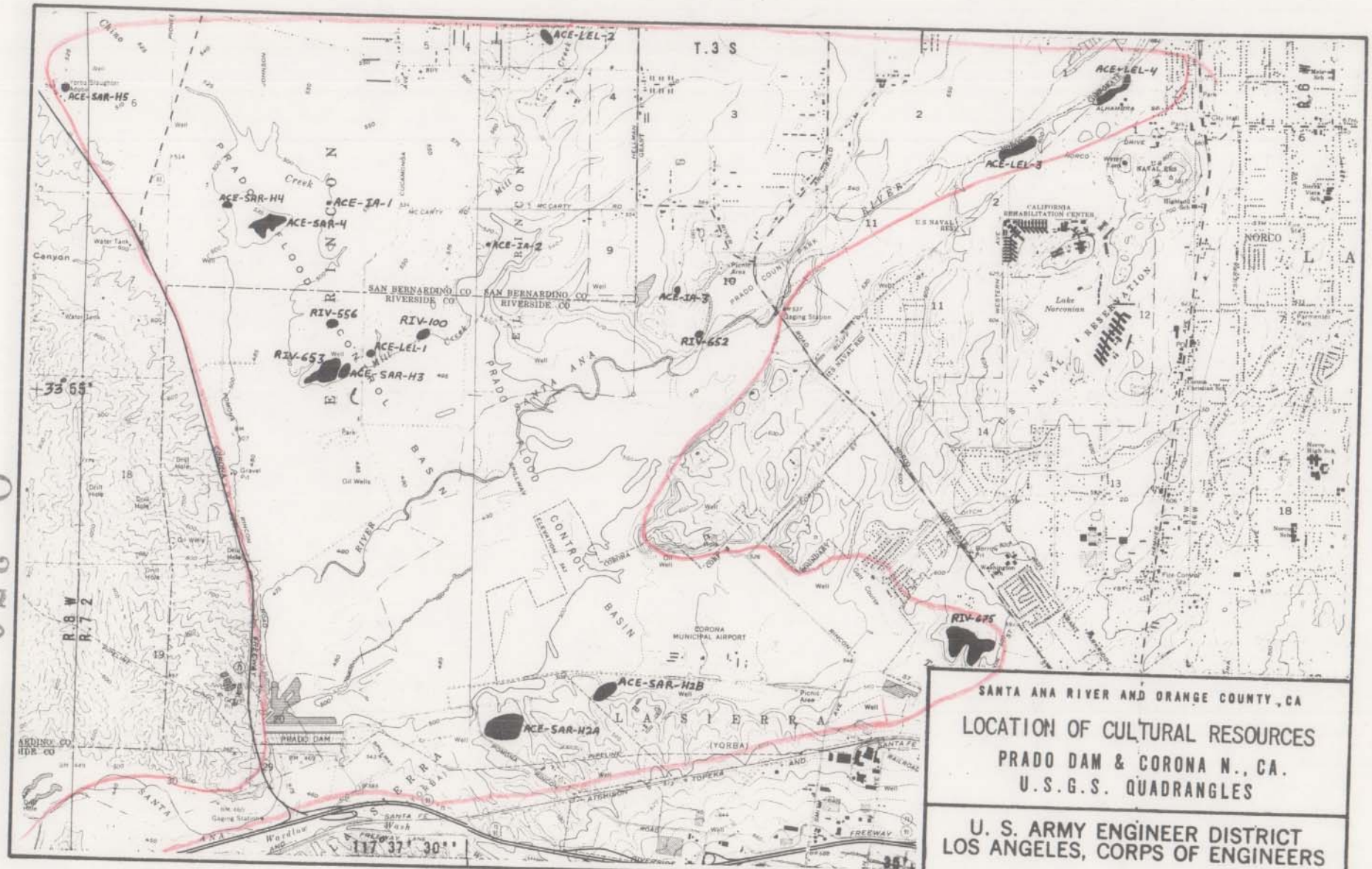
APPENDIX MAP 3

NO FIELD CHECKS HERE EITHER



O—270

APPENDIX MAP 4



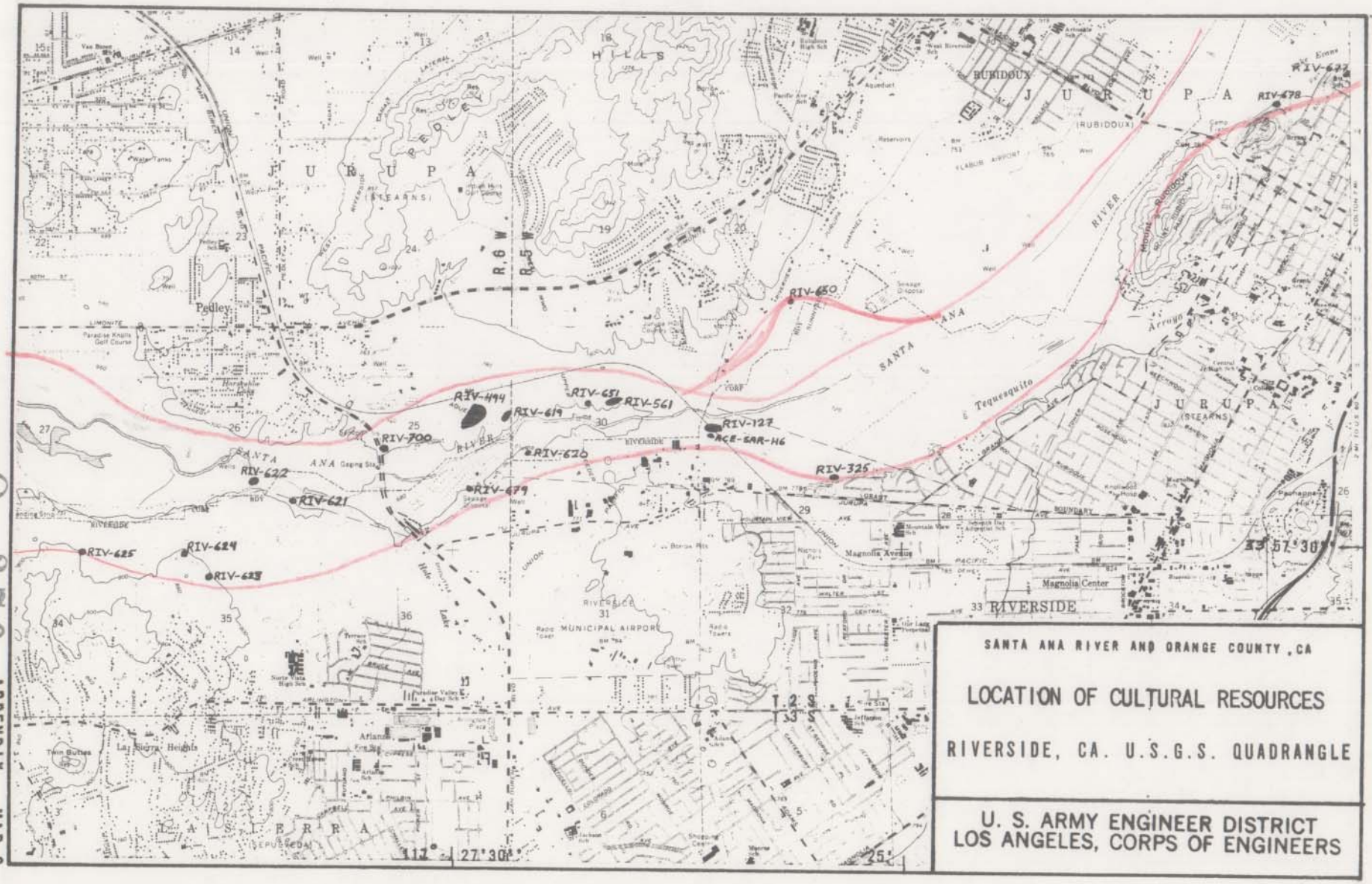
SANTA ANA RIVER AND ORANGE COUNTY, CA

LOCATION OF CULTURAL RESOURCES

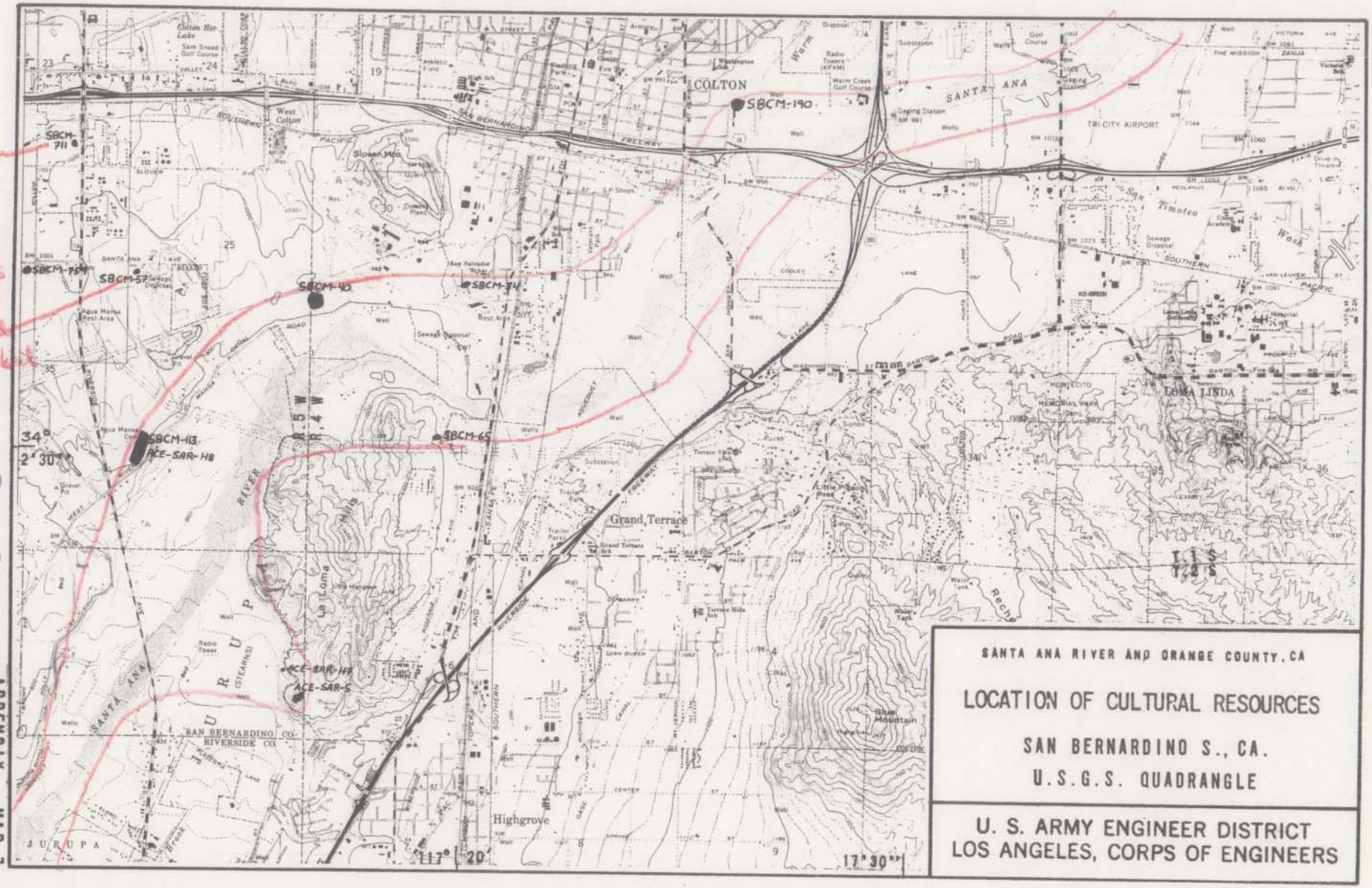
PRADO DAM & CORONA N., CA.
U.S.G.S. QUADRANGLES

U. S. ARMY ENGINEER DISTRICT
LOS ANGELES, CORPS OF ENGINEERS

O—270 APPENDIX MAP 5



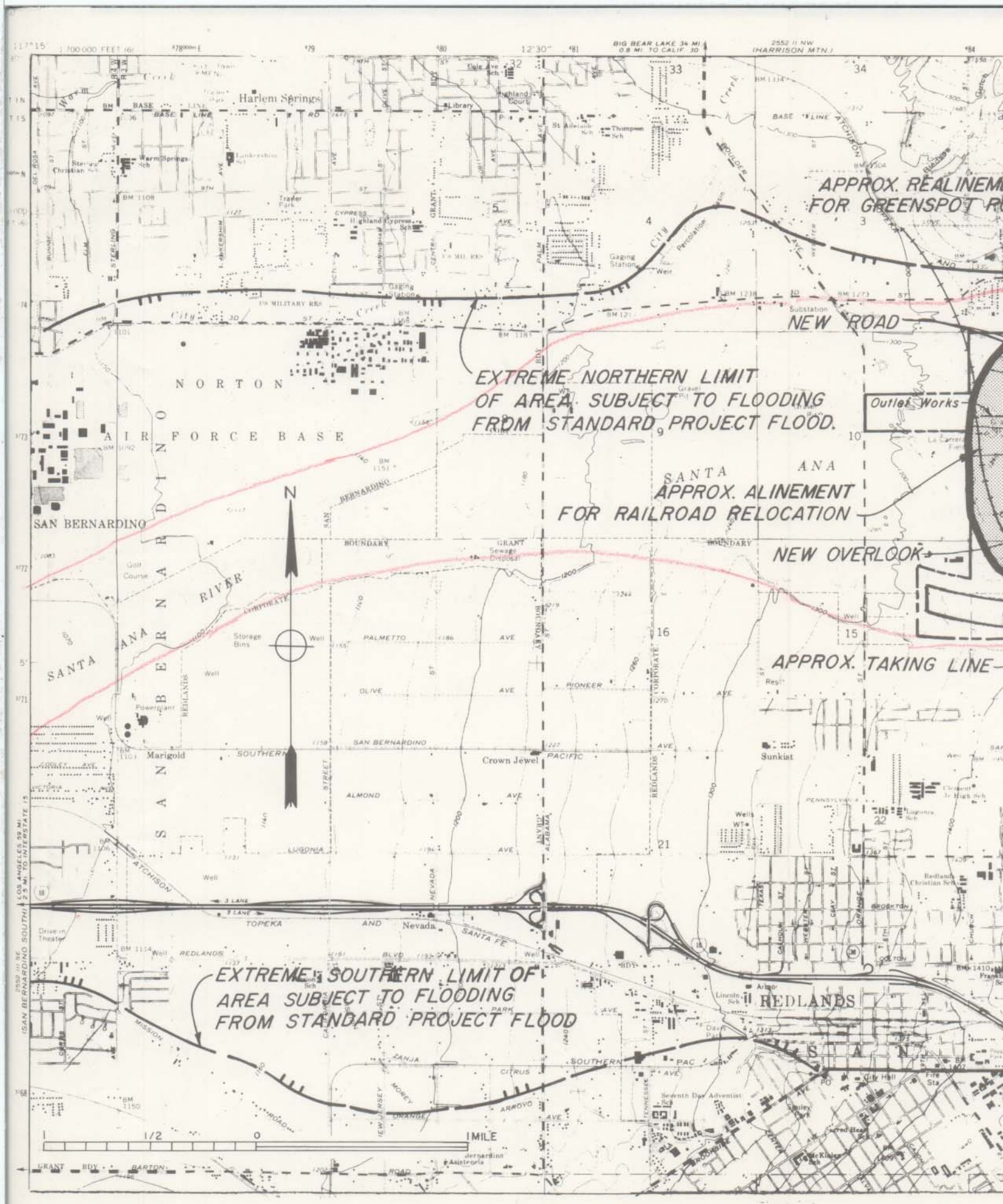
O—270 APPENDIX MAP 6



2 1 Sites not field checked

O-270

APPENDIX MAP 7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NEW ROAD
EXTREME NORTHERN LIMIT
OF AREA SUBJECT TO FLOODING
FROM STANDARD PROJECT FLOOD.
Outlet Works
SANTA ANA
APPROX. ALINEMENT
FOR RAILROAD RELOCATION
NEW OVERLOOK
APPROX. TAKING LINE
EXTREME SOUTHERN LIMIT OF
AREA SUBJECT TO FLOODING
FROM STANDARD PROJECT FLOOD
NORTON AIR FORCE BASE
SAN BERNARDINO
REDLANDS
Harlem Springs
Marigold
Crown Jewel
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BOUNDARY
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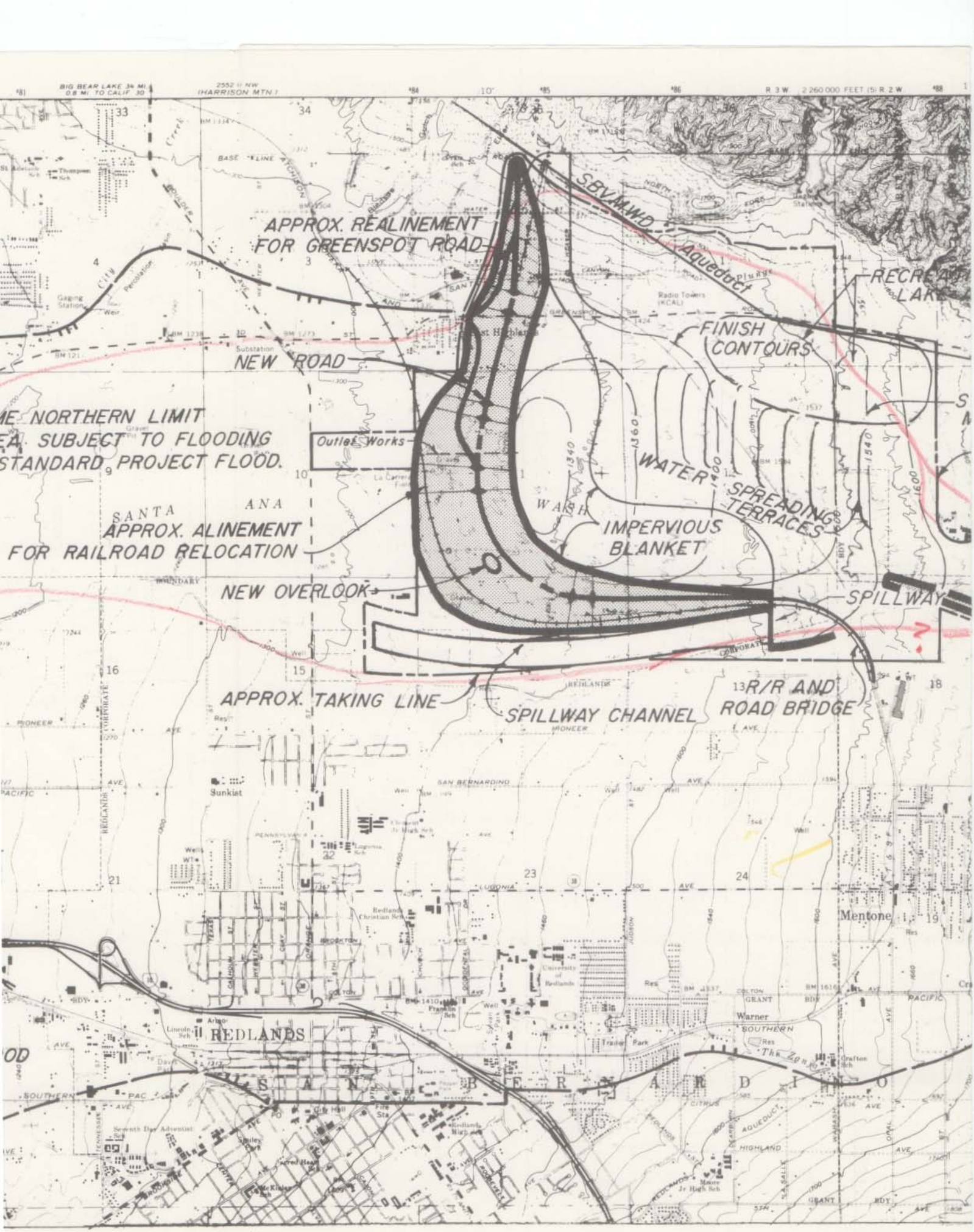
SOUTHERN PACIFIC
ATCHISON
1 MILE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SBVAMWD
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FINISH
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WATER
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TERRACES
IMPERVIOUS
BLANKET
NEW OVERLOOK
SPILLWAY
APPROX. TAKING LINE
SPILLWAY CHANNEL
R/R AND
ROAD BRIDGE
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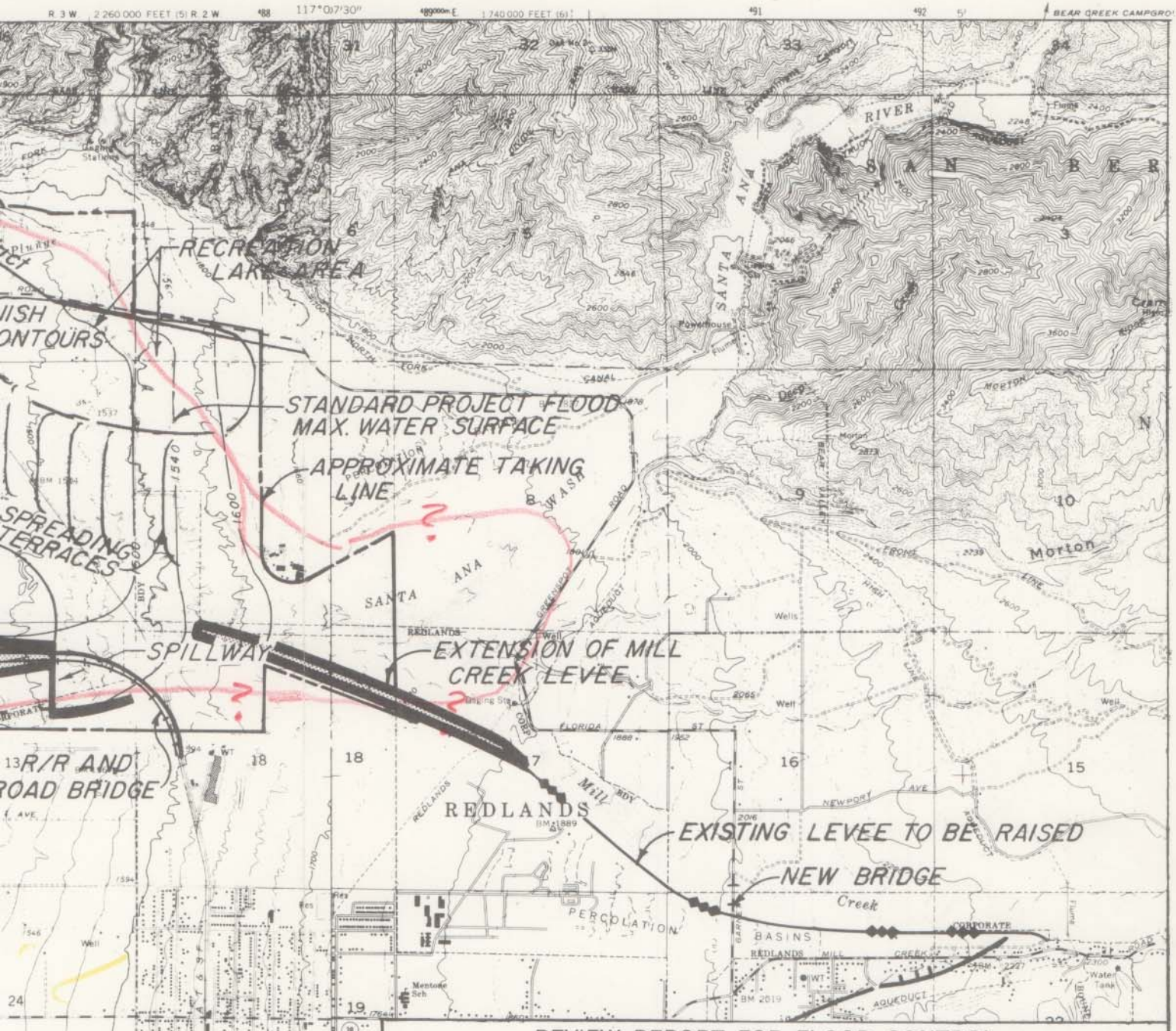
FOR RAILROAD RELOCATION
SANTA
ANA
WASH
REDLANDS
Mentone
Warner
SOUTHERN
PACIFIC



REVIEW REPORT FOR FLOOD CONTROL
AND RELATED PURPOSES
SANTA ANA RIVER BASIN AND ORANGE COUNTY, CA
INTERIM REPORT ON SANTA ANA RIVER

MENTONE DAM & VICINITY

O-270-B O-270

U S ARMY ENGINEER DISTRICT
LOS ANGELES, CORPS OF ENGINEERS

MAP 3

#0-299

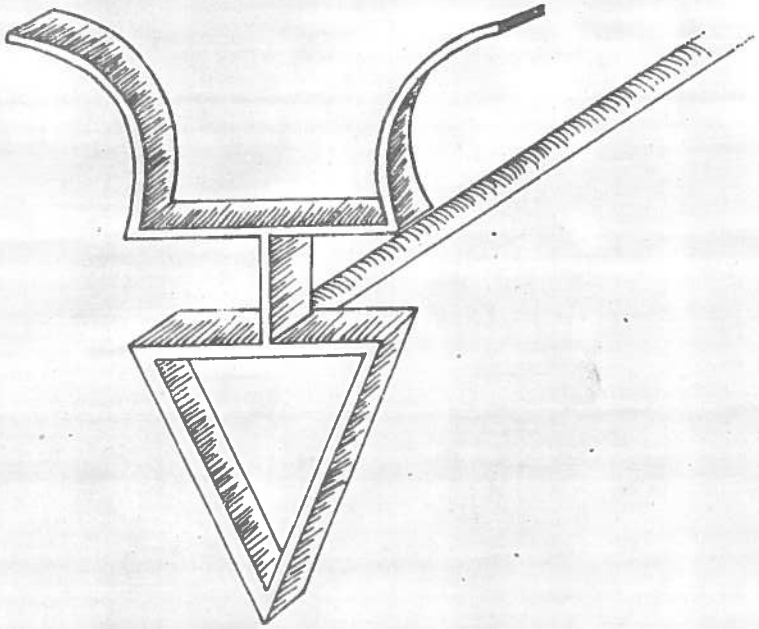
author: David Van Horne

MAPPED

A Compilation of Historical, Archaeological, and Paleontological Data for Costa Mesa

Archaeological Associates

Newport Beach
Tustin



BRAND OF RANCHO
SANTIAGO DE SANTA ANA

Survey + Record Search

* Highlighted Areas Mapped in GIS

OR-00299a-299

A COMPILATION OF ARCHAEOLOGICAL, HISTORICAL, AND PALEONTOLOGICAL DATA FOR THE CITY OF COSTA MESA

By:

Archaeological Associates
1022-B Victoria St.
Costa Mesa, Ca. 92627
(714) 965-3638

For:

City of Costa Mesa
Office of the Planning Department
P.O. Box 1200
Costa Mesa, Ca. 92627

August 11, 1978

PART I

ARCHAEOLOGICAL DATA

INSTITUTIONS, AGENCIES AND INDIVIDUALS CONSULTED

The following institutions, agencies and individuals kindly provided information that aided in this study:

Institutions and Agencies

Costa Mesa Historical Society
City of Costa Mesa Planning Department
Costa Mesa Branch, Orange County Public Library
City of Costa Mesa Fire Department
Sherman Research Library, Corona Del Mar, California
Santa Ana College
University of California, Los Angeles. Archaeological Survey Office
California State University, Fullerton. Archaeological Survey Office
California State University, Long Beach. Department of Anthropology

Individuals

Ms. Joan Morrow, Costa Mesa Historical Society
Mr. Perry Valentine, City of Costa Mesa Planning Department
Ms. Helen Smith, Pacific Coast Archaeological Society
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INTRODUCTION

The following report has been written in accordance with the proposal submitted to the City of Costa Mesa by Archaeological Associates (proposal dated June 9, 1978). The city requested that the work be performed and subsequently issued a purchase order to that effect (P.O. no. 732069).

The city RFP requested that archaeological, historical, and paleontological data be gathered in order to facilitate compilation of an "Historical Resources" element of the General Plan. It is to be emphasized that the solicitation explicitly stated that the city did not desire that a narrative Historical Resources Element be drafted but only that the data be compiled. Therefore, the report which follows is intended to supply the needed data but is not intended to represent a narrative or an overview.

The report has been organized with a view toward facilitating its use as a cultural resource management tool. Consequently, the archaeological, historical, and paleontological data are treated in separate sections (Parts 1-3 respectively). Part 1 (Archaeology) includes sections dealing with site records searches, a list of areas surveyed for previously unrecorded sites, and an evaluation of the significance of the known archaeological resources. The areas of Costa Mesa which have been surveyed either by Archaeological Associates or by previous researchers are plotted on copies of the city Planning Area Maps. Locations of known sites are plotted on a separate series of the same base maps. So far as we know, every undeveloped area of Costa Mesa has now been surveyed for archaeological resources except for lots which were inaccessible due to closed fences, posting or denial of entry by owners (such cases are cited in the list of areas surveyed). Sites of possible archaeological significance are cross-correlated with city Planning Areas in Table 2.

Part 2 (Historical Structures) includes a breakdown of the city's history into phases. These phases are useful for organizational purposes and are cross-correlated with the city plan according to Planning Area in Table 1. The historical breakdown is followed by a section which addresses problems of determining the historical significance of the structures. A list of structures with photograph(s) for each is then presented. It is to be emphasized that inclusion of a structure on the list indicates only that a building could be regarded as significant by the citizens of the city and should not be taken to imply that the structure is historically significant in an academic or technical sense.

The Paleontological data comprises Part 3. This information was compiled by Dr. John Cooper (Geology, Cal. State University, Fullerton) and has been presented in the same form in which it was submitted to Archaeological Associates.

Archaeological Site Records Survey and Literature Search:

In order to identify previously recorded archaeological sites within the City of Costa Mesa corporate boundaries, record searches were conducted at the University of California at Los Angeles, and California State University at Fullerton. Additional record searches and reviews of literature were conducted at California State University at Long Beach and through the Office of the Planning Department of the City of Costa Mesa.

The site files record search at U.C.L.A. produced a total of seven (7) previously recorded site locations within or adjacent to the corporate boundaries of the city. Copies of the pertinent U.C.L.A. site records are appended to this report. The records search conducted at C.S.U.F. produced no additional previously recorded sites.

The locations of the seven sites have been plotted on Planning Area Maps 1, 2, and 6 (figs. 35, 36 and 40). They are designated as: CA-ORa-58/506, 76, 163, 165, 174, 297, and 357. Additional information regarding CA-ORa-58/506 and 163 was made available from the Planning Department of Costa Mesa, records and is included in the "Site Description and Evaluation" section of this report.

One additional site was located during review of Planning Department records. This is Ora-687 which was reported by Archaeological Resource Management in May 1978. Therefore, a total of eight (8) previously recorded archaeological sites are located in or adjacent to Costa Mesa.

Archaeological Site Description and Evaluation

Summary descriptions of the previously recorded sites have been listed in outline form below. Evaluations of the significance of these sites are based upon potential for scientific research, necessity for preservation of cultural resources, and feasibility of mitigation.

Ca-Ora-58: Planning Area 2 (fig. 36)

This site is located along the upper edge of a bluff overlooking the east bank of the Santa Ana River at an elevation of seventy-five (75) feet above MSL. The eastern extremity of Ora-58 is approximately 600 feet west of Placentia Avenue. The southern extremity is some 700 feet north west of the end of Canyon Drive at Canyon School. The location of the site is such that it would have provided access to both fresh water and marine resources for its aboriginal inhabitants as well as terrestrial coastal and inland faunal and floral resources.

The site consists of a dense shell midden of triangular surface configuration and measuring approximately 305 meters on both the north/south and east/west axes. Field reconnaissance by Archaeological Associates revealed indications of a depth of two meters in the erosion cuts at the north-west corner of the site.

Previous designations for Ora-58 include the Fairview Indian Site, Costa Mesa Site, and Winterbournes Griset Site. Previous excavation includes work by J.W. Winterbourne, 1938 and more recently, by Calif. State University at Long Beach in 1957-58 (excavation report in progress; Prof. Keith Dixon, Anthropology, CSULB).

The site is now on the National Register of Historic Places in conjunction with Ca-Ora-506. Investigation of

records and literature indicate that Ora-506 and Ora-76 (see below) are separate loci of the same occupation area as represented at Ora-58. This has lead to confusion of previous descriptions prior to numerical designation of the site.

Current and previous impacts to Ora-58 have been limited to test excavations and erosion of the western and northern peripheries of the site. Field reconnaissance indicates continued erosion in these areas and increasing impact of foot traffic to the Santa Ana River.

Ca-Ora-76

This site is located approximately 3,500 feet north-east of Ora-58, again along the east bluff overlooking the Santa Ana River. It encompasses the intersection of Adams and Placentia ave. Elevations at the site range from fifty to seventy feet above MSL.

The site consists of an elongated shell midden approximately 460 meters N/S by 95 meters E/W.

Current and previous impacts to the site include excavation by J.W. Winterbourne 1938 (Report of the Excavation of the Griset Site at Costa Mesa, Orange County, Ca., OCCAP, 1938) and California State University at Long Beach, 1957-58. The construction of Adams Avenue, Placentia Avenue, Mesa Verde Drive, and surrounding residential buildings has destroyed much of the site.

Survey records indicate that Ora-76 has two habitation levels in a total depth of six feet. These were observed in the Adams Avenue Road cut. Portions of Ora-76 midden remain in the north west, and south-east corners of the intersection and around and possibly under the Estancia Adobe.

Remaining portions of the site should be preserved, particularly the part adjacent to the Estancia Adobe. Further development on other portions of the site should be preceded by a carefully designed archaeological salvage program.

Ca-Ora-163

Previously recorded as the "Griset Site" #7680 when published by the WPA in 1938, most of this site has been destroyed by construction of the Mesa Verde Country Club (however, it is possible that some parts are preserved but have been covered with fill).

Consistent with the settlement pattern of major sites in Costa Mesa, Ora-163 is also located along the top of the east bluff of the Santa Ana River Bed. Lying some 2200 feet north-west of Ora-76, the densest midden area was (is) located under what is now Country Club Drive, the adjoining suburban streets, and Mesa Verde Country Club facilities. An additional midden area extends south-west along the bluff top to 1000 feet north of Boa Vista Drive. Portions of the midden in this area and in undeveloped parcels of the residential area remain intact.

Previous studies indicate that Ora-168 contains burials and extensive quantities of artifactual materials. A potentially significant early historic component may also be present at this site. The UCLA record forms appended to this report give exhaustive details relating to the history and ownership of Ora-163.

In general, the site may be characterized as a large elongated (east/west) shell midden ranging from one to four feet in depth. It has been subjected to considerable previous

impacts by the construction of the Country Club and adjacent residential areas and surface streets. Further destruction of the resources contained in the remaining portions of the site should be avoided by preservation if possible. A statistically reliable sample of cultural materials should be recovered from the site in lieu of preservation.

Ca-Ora-165

This site was located at the corner of Valley Road and west Victoria Street, at an elevation of approximately 85 feet above MSL.

The site comprised a shell midden in an adobe and loam matrix and included chipped and ground stone artifacts. A.A. found no record of excavations ever having been conducted at Ora-165 and the site is assumed to have been destroyed by residential construction since it was recorded at UCLA in 1959.

Ca-Ora-174

This site was located south east of Santa Ana Avenue along Mesa Drive. No records of its excavation have been located and the site is presumed to have been destroyed by development which took place prior to 1966. However, it is possible that small portions of Ora-165 remain and we recommend that these be sought prior to any further development of the area.

Ca-Ora-297

This shell midden site covers a surface area of approximately 1000 sq. meters at the north-west corner of 17th St. and Pomona in Costa Mesa. This area is currently occupied by single family dwellings. The site, as recorded, possibly represents a portion of a larger habitation area. Estimates

of depth range from 30 to 60 cms. of midden matrix. Ground stone implements were visible on the surface at the time of survey (1971).

Potentially significant sub-surface portions of this site may still be present and testing for such is recommended prior to further development or alterations of the area.

Ca-Ora-357

Located in the south-west corner of the intersection of Placentia and 15th Street, the surface area of this site has been estimated to measure 40 by 25 meters with a depth of 40-60 cm. The site is characterized as a shell and light lithic scatter in a matrix of reddish brown loam. It is thought to be a campsite habitation.

When initially surveyed in 1973, this parcel was scheduled for the development of apartment buildings No record of subsequent mitigation has been found and the site is assumed to have been destroyed.

Ca-Ora-506

This extensive shell midden has been associated with Ora-58 and Ora-76 in that all three are thought to be loci of a single large habitation complex on the east bluff of the Santa Ana River. Previous designations have included this site under the general "Fairview Indian Site" description. Ora-506, like Ora-58, is currently listed on the National Register of Historic Places.

Previous impacts to Ora-506 include excavations by J.W. Winterbourne for the WPA in 1938 and subsequent testing by California State University at Long Beach in the late 1950's and early 1960's. Previous survey of the site placed the central midden directly east of Ora-58, across a natural

erosion cut. Previous surveys indicate that approximately equal portions of the central midden are situated on either side of Placentia Avenue. However, subsequent surface survey by Archaeological Associates indicates that the larger portion of the site extends east of Placentia Ave. some 600 to 800 feet. An additional associated light-to-moderate shell scatter and intermittent midden areas extend east to the terminus of the Fairview channel and the western boundary of the Fairview Golf Course. This additional area extends north along the east side of Placentia approximately 1400 feet from the main midden and is bordered by areas of residential development east of Placentia.

Developmental impacts to date indicate destruction of a portion of the central midden by the construction of Placentia Avenue, and peripheral destruction by the construction of the Fairview channel, residences to the north, and the Fairview Golf Course to the east. Random surface grading for control of vegetation is currently disturbing the surface of the site.

Substantial portions of Ora-506 have already been destroyed and further destruction of the site should be avoided if possible. Alternatively, an extensive archaeological salvage program should be developed and implemented. Further surface disturbance should be avoided if possible.

Ca-Ora-687

Ora-687 lies east of the Santa Ana Delhi Channel along Palisades Road, south-east of Red Hill Ave. This site has been recently tested by Scientific Resource Surveys, Inc. and Archaeological Resource Management, Inc. (1978).

The site is characterized by a two locus shell midden of sequential horizons and including burials. Both loci have been salvage excavated by Archaeological Resource Management. No further testing or excavation has been recommended.

Summary of Previously Recorded Archaeological Resources

A total of eight (8) archaeological sites have been previously recorded within or adjacent to the corporate boundaries of the City of Costa Mesa. Recorded locations for these sites place them in Planning Areas 1, 2, and 6.

Three of these sites, Ca-Ora-165, Ora-174 and Ora-357 are presumed to have been completely or nearly completely destroyed. Limited scientifically reliable data may still be available from any portions which remain. Prior to further construction or alterations to the locations of these sites, an archaeological examination should be made to determine the feasibility of salvage excavation of remaining cultural materials.

Ca-Ora-297 has been severly impacted by previous construction. However, records indicate that a substantial portion of sub-surface materials may remain. An archaeological investigation, including testing of potential sub-surface materials should preceed any further alteration of this area. Should significant quantities of deposit be located, a scientifically excavated statistically reliable sample of materials should be salvaged.

The remaining four sites (Ca-Ora-58, 506, 76 and 163) represent large village habitation areas of the dominant east Santa Ana River Bluff settlement pattern of the Costa Mesa area.

Two of these sites (Ca-Ora-76 and Ora-163) have been subjected to considerable previous impacts through a variety of developmental activities.

Archaeological reconnaissance should be required prior to any further construction or modification of the areas within or around the site perimeters as plotted on the Planning

Area 2 map (fig. 36).

Two major habitation sites in the city, Ca-Ora-58 and Ora-506, remain relatively intact. Listing on the National Register of Historic Places assures minimal future disturbance of these two important sites.

Current impacts include the natural erosion of Ca-Ora-58 along the north and west peripheries at the bluff's edge and increasing pedestrian traffic where erosion provides access down the bluff to the Santa Ana River. Discing and surface grading for the control of vegetation growth are moderately disturbing the surface of Ca-Ora-506. Surface field reconnaissance indicates that the eastern portion of Ora-506 is more expansive than originally recorded. Therefore, the site area has been enlarged to include the associated moderate to light shell scatter and sporadic midden north east of the main habitation area. Any future testing of the site should include provisions for determining the extent and significance of these associated areas.

FIELD SURVEY

A systematic archaeological field reconnaissance of open parcels of land within the corporate boundaries of the City of Costa Mesa was completed on July 29, 1978.

Areas to be surveyed were identified from open spaces plotted on the official Land Use Map of the city. Areas which had been previously surveyed were spot checked by A.A. but no formal survey was projected for these. Once the previously unsurveyed open spaces were known, each was assigned a number. These numbers correspond to the numerical designations on the parcels mapped in figures 29 to 34. The numbered open spaces were then surveyed.

The survey teams consisted of from two to four members. These teams traversed all accessible portions of the designated parcels walking in parallel approximately ten meters apart and carefully examining the surface for evidence of archaeological materials. Visibility was good-to-excellent over a large percentage of the areas surveyed due to recent discing of many of the open space areas. Areas of poor visibility or limited access which may require additional investigation have been included in the survey notes which follow.

A breakdown of the survey results is presented below. These were compiled directly from the survey field notes. The numerical sequence can be directly cross-referenced to the parcel numbers plotted on figures 29-34. Figures 35-40 represent previously recorded site locations with revisions based upon Archaeological Associates' field reconnaissance. A tabulation of archaeological resources arranged according to planning area is presented in Table 2. A summary overview of the survey results follows the survey notes.

Lots 1 and 2

These parcels have been developed and were not surveyed.

Lot 3

Area is relatively flat; ploughed. Light shell scatter on surface (avg. density=½-1/sq. ft.). Small mounds of fill located intermittently. Visibility is excellent but no artifactual material observed. Soil is a loose light brown to brown loam. Property should be tested for archaeological resources prior to development.

Lots 4 and 5

These lots have been developed and were not surveyed.

Lot 6

Three shell fragments were found on this lot which is covered with sparse weeds--visibility good. Soil ranges from light brown to reddish compact sandy loam. No clear evidence of archaeological resources.

Lot 7

Property has been ploughed; soil is a loose sandy loam. Visibility good in spite of dry grass and weeds. Rocks and trash are scattered throughout the parcel. No evidence of archaeological resources.

Lot 8

Surface is covered with a mowed lawn. Visibility poor. No evidence of archaeolocial resources.

Lot 9

Property is used to park vehicles and is compact in these areas. In other places it is a loose light brown loam covered with weeds--visibility fair. One shell fragment found on surface. No evidence of archaeological resources.

Lot 10

Surface heavily disturbed; covered with fill, asphalt, and concrete fragments as well as trash and weeds. No evidence of archaeological resources.

Lot 11

Lot appears to have slight fill toward northern end. Soil is sandy light brown loam. Area covered by weeds and trash--visibility fair-to-good. No evidence of archaeological resources.

Lot 12

Lot is covered by dry lawn grass. Surface is flat and visibility fair-to-good. One shell fragment found between 170 and 180 East Rochester. No evidence of archaeological resources.

Lot 13

Parcel has been ploughed but is covered with a scatter of dry weeds and grasses. Soil is a soft,sandy light brown loam. Very light shell scatter observed; approximately 30-50 shell fragments on entire parcel. Shell density is too light to constitute a significant archaeological resources.

Lot 14

This parcel is being developed at the present time. It has been graded and house frames are installed.

Lot 15

Parcel is fenced and access was not possible.

Lot 16

Parcel is fenced and access was not possible. Surface has been ploughed and planted with fruit trees and truck crops.

Lot 17

Soil is a soft sandy light brown loam which has been planted with truck crops. Visibility excellent. No evidence of archaeological resources.

Lot 18

Surface is flat and has been recently disced. Soil is a soft, very sandy, loose light brown loam. Visibility very good. No evidence of archeological resources.

Lot 19

Parcel is located behind the Dirt Cheap Plant Co. The leasee refused entrance to the survey staff.

Lot 20

Lot is covered with asphalt. A demolished shack is also situated on the parcel. No evidence of archaeological resources.

Lot 21

Surface covered with dry lawn grass and weeds. Owner of parcel said entire surface comprises fill obtained from road construction. No evidence of archaeological resources (visibility good).

Lot 22

Parcel has been ploughed but dry grasses and weeds cover the surface. Soil is a soft, sandy light brown loam. Visibility good in spite of trash scattered about the surface. Finds included one shell umbo and several mammal bone fragments (some recent, some weathered). None of these finds necessarily indicate that an archaeological deposit is present and the survey staff agreed that the parcel does not contain significant archaeological resources.

Lot 23

The entire lot seems to be covered with fill as evidenced by intermittent mounds of light colored soil. The surface was littered with trash and cement fragments but visibility was fairly good. No evidence of archaeological resources.

Lot 24

The surface has been ploughed and the rear portion is planted with vegetables. Soils are light brown loam with some weed cover but visibility is good. The survey staff found five shell fragments between 121 and 131 Albert St. This shell density is too light to constitute a significant archaeological resource.

Lot 25

Soil on this parcel is a soft, sandy, light brown loam covered with dry grass and weeds. A cement slab (ca. 8' x 8') suggests previous impact. No evidence of archaeological resources were observed.

Lot 26

Surface of parcel is covered with trash, broken cement, dry grass and weeds. Visibility is poor-to-fair. No evidence of archaeological resources.

Lot 27

Parcel has been ploughed and dry grass and weeds covered the surface. Soil is brown to light brown clumpy loam. Trash and broken cement litter the surface. No evidence of archaeological resources.

Lot 28

Parcel is covered with an asphalt parking lot and office buildings.

Lot 29

Surface of parcel has been ploughed. Soil is hard and compact with some dry grass and weeds. Visibility fair-to good. A small scatter of shell was noted in the northeast corner of the lot but no artifacts were observed. This scatter probably does not represent a significant archaeological resource.

Lot 31

Soil is light brown and is quite hard and compact. Dry grass and weeds cover the surface and visibility is poor. A metal shed and a large pile of trash are also present. No evidence of archaeological resources.

Lot 32

Construction was in progress and the parcel was not surveyed.

Lot 33

All surface vegetation has been cleared--soil is brown to light brown and is hard and compact. Gravel and broken cement are scattered about the lot. Visibility is good. One shell fragment was observed. No evidence of archaeological resources.

Lot 34

Parcel has been fenced preventing access.

Lot 35

This parcel has been ploughed. Soil is a brown to reddish soft loose loam. Weeds and grass here and there but visibility was excellent. Twenty to thirty shell fragments were observed but no artifacts were found. This shell scatter probably does not represent a significant archaeological resource.

Lot 36

Parcel is covered with thick grass and weeds and visibility was judged to be poor. The surface was not traversed due to the presence of no trespassing signs.

Lot 37

The surface is covered with trash and gravel as well as dry grasses. Soil is compact and loose light brown loam. Visibility was good. No evidence of archaeological resources.

Lot 38

Soils are mostly a compact, hard reddish loam. The surface is covered with dry grass and weeds and visibility was poor-to-fair. No evidence of archaeological resources.

Lot 39

Soil is compact and hard due to use as a parking area. Weeds and dry grass cover the rear of the lot. Two shell fragments were found in the backdirt of a rodent hole. Visibility was good but no clear evidence of significant archaeological resources was observed.

Lot 40

Visibility on this parcel was judged to be poor. A fence prevented access for survey.

Lot 41

Soil comprises a loose light brown to reddish sandy loam. Fill covers the rear of the parcel; the remainder is covered with dry weeds. Visibility was fair-to-good. No evidence of archaeological resources.

Lot 42

Parcel comprises reddish ploughed soil with weeds and dry grass. Litter is scattered throughout the parcel. Visibility was good but no evidence of archaeological resources was observed.

Lot 43

Soil is loose light reddish loam covered with dry grass and weeds. Some trash is scattered about but visibility was good. No evidence of archaeological resources.

Lot 44

This parcel has been disced. Soil is hard and clumpy and varies in color from light brown to light reddish. The surface is partially covered with weeds and broken glass, cement, and asphalt. Visibility was good. No evidence of archaeological resources.

Lot 45

Soils on this parcel comprise hard compact loam varying in color from brown to reddish brown. Gravel and weeds are present but visibility was good. Several small shell fragments were observed. This shell probably does not represent a significan archaeological resource.

Lot 46

Soil is compact light brown loam. Surface is covered with dry grass and broken cement and asphalt. Visibility was poor-to-fair. Two shell fragments were observed. No evidence of archaeological resources.

Lot 47

Soil is a light brown loose clumpy loam. Dry grass and weeds present but visibility was good. Parcel has been partially planted with vegetables. No evidence of archaeological resources.

Lot 48

Surface soil color is light brown to brown and varies from loose to compact. It is covered with dry grass and weeds. Broken cement, bricks, and asphalt are present. A few small mounds of fill may be seen at the rear of the parcel. Visibility was good on the average. Shell fragments observed at the rear of the property near the fill mounds. A concentration of shell encompassing an area of approximately 10 x 10 meters was observed at the front of the property about 15 meters from Anaheim St. It is recommended that this shell concentration be investigated prior to any disturbance as it may represent a significant archaeological resource.

Lot 49

Thick grass and weeds cover this parcel which has compact light brown soil. Some litter and one shell fragment were observed. No evidence of significant archaeological resources.

Lot 50

Lot is covered with weeds and dry grass. Soil is light brown in color and soft and loose. Broken cement, brick, and asphalt,as well as litter are scattered over the surface. A very light scatter of shell was seen over the surface of the lot. However, shell density is too light to constitute a significant archaeological resource.

Lot 51

Soil is a light brown loose loam. Surface cover includes dry grass and weeds as well as a scatter of litter and debris. Visibility was good. No evidence of archaeological resources.

Lot 52

Soil is sand on the surface overlying a compact loam. Weeds, trash, and a few small fill mounds were observed. Visibility was good but no evidence of archaeological resources was seen

Lot 53

Property is transected by a dirt road covered with gravel. Surrounding soil is light brown and scattered with litter. Visibility was good. No evidence of archaeological resources.

Lot 54

Soil is a light brown loam covered with dry grass and weeds. Gravel and cement are scattered throughout the lot. Visibility was good. No evidence of archaeological resources.

Lot 55

Parcel is the site of a lumber yard and paint shop. A home is situated on the property as well. Consequently, it is unsurveyable.

Lot 56

Soil is a loose light brown loam. The surface is covered with grass and weeds. Trash, broken cement, and a cement slab were observed as well as 1 x 1 x 1 meter hole. One shell fragment was found on the surface. No evidence of archaeological resources.

Lot 57

This lot is apparently used as an access road and parking area for the mobile homes situated at the rear of the parcel. Surface soil is hard and compact. Weeds cover portions of the surface but visibility was very good. One shell fragment was observed. No evidence of archaeological resources.

Lot 58

This parcel is ploughed and visibility is good except for areas with grass and weeds. A concentrated shell scatter was found on the northeastern portion of the property. Soil is mostly a soft, loose, brown loam. It is recommended that the shell concentration be investigated prior to any disturbance as it may represent a significant archaeological resource.

Lot 59

The surface of this parcel has been ploughed. Soil is a loose brown clumpy loam. Weeds and dry grass are present but visibility is good. Shell is lightly scattered about most of the surface of the lot. One utilized metavolcanic flake was observed in addition to a quartzite core. It is recommended that this shell scatter be investigated prior to any disturbance as it may represent a significant archaeological resource.

Lot 60

Soil varies from light brown to reddish loam. Weeds and dry grass cover most of the lot. The field has been plowed and broken cement is scattered sporadically over the surface. Visibility was fair-to-good. A very light shell scatter was observed on the surface of the property adjacent to Victoria St. but the scatter was not sufficiently dense to warrant futher archeological investigation.

Lot 61

Surface soil is sandy and loose but subsurface soil is hard and compact. Visibility was excellent in spite of sporadic weeds. Trash, broken glass, and cement fragments litter the surface. The lot has apparently been used as a parking area for Desiree's restaurant. No evidence of archaeological resources were observed.

Lot 62

Surface has been partially plowed. Soil is loose and clumpy and varies in color from brown to reddish. Visibility was good in spite of grass and weeds. No archaeological resources were observed.

Lot 63 and 64

Two abandoned homes are situated on these lots. The rear of the parcel was posted and consequently was not surveyed. The front yards were examined but no evidence of archaeological resources was observed.

Lot 65

Soil color varies from a light brown to brown. The rear half of the lot is covered with dry grass and weeds. The middle of the lot has been cleared of all vegetation and gravel, broken cement, and fill mounds cover this area. The front of the proptery (adjacent to Newport Blvd.) is covered with grass and weeds. Visibility here was poor. No evidence archaeological resources was observed.

Lot 66

Soil ranges from a light brown to a dark brown. Weeds and dry grass cover the surface. The lot has been ploughed. Gravel, broken cement, glass and a litter are scattered over the surface of the entire parcel. Visibility was fairly good however. No evidence of archaeological resources was observed.

Lot 67

Soil ranges from light brown to a dark brown. The surface is loose and clumpy and has been ploughed. Vegetation consists of mustard plants and dry grasses. Bedrock material, broken cement, gravel deposits, and litter are present throughout the parcel. Visibility was good. No evidence of archaeological resources was observed.

Lot 68

Soil consists of hard, clumpy light brown to reddish loam. Visibility is poor due to dry grass and weeds, as well as a considerable amount of trash and tar. Some small shells were noted on one boundary of the parcel but these are not regarded as representing a significant archaeological resource.

Lot 69

This parcel has been ploughed. Soil color ranges from a light brown to reddish. Visibility was excellent since very little vegetation is present. A light shell scatter was found in a strip extending parallel to College St. from one end of the parcel to the other. The backdirt of several rodent holes was inspected but only one shell fragment was observed. The shell scatter is not regarded as representing a significan archaeological resource.

Lot 70

The soil of this property is light brown, loose, and clumpy. It has been ploughed but weeds and dry grass are present. Visibility was good. Trash, broken cement, and wood litter the surface. No evidence of archaeological resources was observed.

Lot 71

This parcel has been developed and was not surveyed.

Lot 73

A large cement slab (ca. 14 x 10 m.) is situated on this parcel near its frontage on Victoria St. Other cement fragments occured as well. Soil is a light brown and dry grass and weeds are present. A small shell scatter was found at the rear of the lot but this is not regarded as archaeologically significant.

Lot 72

This parcel is largely covered with asphalt. No significant archaeological material was observed in other areas of the lot.

Lot 74

This parcel is covered with small mounds of fill, litter and broken cement. Soil is a light brown. The front of the lot has been cleared of vegetation and a hard compact soil with some gravel was observed. Visibility was fair to good. Two shell fragments were seen. No evidence of archaeological resources was observed.

Lot 75

The soil of this lot is a light brown color. Dry grass and weeds as well as gravel, broken cement, and litter are scattered about. Visibility was good. No archaeological resources were observed.

Lot 76

Soil is a light brown color. Vegetation consists of dry grass and weeds in small patches. A mound of gravelly fill and broken cement, litter, and debris were observed on the surface. Visibility was very good but no evidence of archaeological resources was seen.

Lot 77

Construction on this parcel had already begun at the time of the survey. Foundations were already installed and no survey was attempted.

Lot 78

This lot has been ploughed exposing loose, clumpy light brown loam. Dry grass and weeds are present. Visibiliy was good but no archaeological resources were observed.

Lot 79

Soil color varies from light brown to light orange on this parcel. The lot has been disced, providing fair to good visibility throughout. A moderate scatter of modern trash is present including broken cement and brick. No archaeological materials were found.

A light shell scatter approximately 7 x 10 meters in area was found on undisturbed soil below the first terrace. A second very light shell scatter was located on the parcel along the boundary with Red Hill Avenue. This scatter covers approximately two square meters. The southern most portion of the terraced area appears to consist of fill overlying the local soil. Further development on this parcel should be carefully observed for further evidence of potential archaeological materials.

Lot 80

The front one quarter of this lot (bordering Canyon) has been subjected to filling activities including gravel and asphalt. The soil is light brown in color and loose in consistancy. Dry grass and weeds cover much of the surface and a row of eucalyptus border the left side of the property. Visibility was good and a handfull of shell was found over the back three quarters of the lot. No definite association of this shell can be made with potential archaeological materials. No additional materials were observed, and the lot should be considered as not archaeologically significant.

Lot 81

Construction on this parcel is nearing completion. Frames are up and the homes are nearly complete. No survey was attempted.

Lot 82

This lot has been disced. Tall grass and weeds are present as well as a small vegetable garden. The soil is light brown to orange and of loose consistancy. One shell fragment was observed. No other materials were found.

Lot 83

The parcel has been disced. Soil ranges in color from light brown to orange. Filling activities include a chalk-white material including cement fragments and beach sand for a volleyball court in the north west corner. Despite the presence of grass and weeds, visibility was good. A small shell concentration was found in the south west portion of the lot which represents the south-east portion of Ca-Ora-76. This area will require further investigation of potential significance.

Lot 84

This parcel has been partially impacted by the construction of a small drive-through bank. The structure is nearly complete and the parking lot has been laid. The remaining portion of the lot has been disced, exposing a light brown soil of hard consistancy. Small amounts of fill are present. Visibility was good. No archaeological materials were found.

Lot 85

Construction is in process on this parcel. Present activities include extensive excavation and filling. No survey was attempted.

Lot 86

Visibility was good on this lot. The soil is hard and compact, ranging in color from light brown to orange. No archaeological materials were observed.

Lot 87

The surface has been disced and some land moving activities have been undertaken. Filling is evidenced by quantities of broken cement on the surface. A pile of large boulders in the north east corner suggests clearing. Visibility was good and no archaeological materials were observed.

Lot 88

The soft loose soil of the lot varies in color from light brown to light red-orange. Very little vegetation is present on the lot, and visibility was excellent. One shell fragment was observed. No other materials were found.

Lot 89

Visibility was excellent over the entire parcel. The disced surface exposes a light brown to light red-orange soft loose soil. Broken cement and rocks, as well as a light refuse scatter are present. A small shell cocentration of approximately twenty fragments was observed. No other materials were located.

Lot 90

The eastern three quarters of this lot has been disced, providing excellent visibility of the loose brown to orange soil. One shell fragment was found. The remaining portion of the property along the western boundary has not been disced and visibility was very poor due to thick ground cover. No other materials were observed.

Lot 91

Surface disturbance on this lot includes limited grading, filling, and discing. Fill materials include a red soil and broken cement and rocks. Abundant wildlife includes ground squirrels, gophers and at least five small owls. Surface visibility was good. An insignificant amount of shell fragments were observed, scattered diffusely over the property.

Lot 92

Present disturbance to this lot is extensive, including excavation, and filling with gravel and broken asphalt. Survey was not attempted.

Lot 93

Portions of this lot have been disced providing fair to good visibility. A considerable portion of the surface area has been filled including broken cement and asphalt and soils of red and chalk white color. The soil of the property includes light brown and light orange colors. Dried grass and weeds are present. No archaeological materials were observed.

Lot 94

The surface of this lot has been partially leveled by grading activities and unsanitary land fill. Despite the presence of grass, visibility was excellent. A few shell fragments, including umbos, were observed. However these may have been contained in the fill materials present. No other materials were observed.

Lot 95

The disced soil is light brown on the surface of this lot, and soft and loose. Few weeds are present providing excellent surface visibility. No archaeological materials were found.

Lot 96

A heavy trash scatter obscures surface visibility over the eastern portion of the property. The remaining portion has been disced to provide fair to good surface visibility of the dry loose soil. No archaeological resources were found.

Lot 97

Broken cement, asphalt and rocks are scattered over the entire surface of this lot. Soil of the property ranges in color from light brown to a light orange-yellow. Surface visibility was fair to good. No archaeological materials were observed.

Lot 98

Surface visibility on this lot was fair to poor. The hard, compact soil has not been disced and tall grass is present over most of the surface. No archaeological resources were found.

Lot 99

The lot has been partially disced providing fair visibility. Extensive fill includes cement, asphalt and sand. A very light shell scatter was observed, and may require further investigation. However, initial observations indicate a lack of significance. No other materials were found.

Lot 100

Advanced construction activities were present. No survey was attempted.

Lot 101

The local soil of the lot is hard and compact, and light brown in color. Trash heaps and fill mounds were present as well as cement, asphalt and brick. Tall dry grass obscures the remaining portions of the surface. No archaeological materials were found.

Lot 102

The surface of this lot has previously been paved. Unpaved portions are obscured by trees, grass and cactii. Visibility of the surface was poor. No archaeological materials were found.

Lot 103

Surface visibility was poor over the surface of this lot. The soil is hard and compact and light brown in color. The surface area is obscured by tall grass and weeds and a scatter of broken cement and gravel. No archaeological materials were observed.

Lot 104

No lot was present at this location as indicated on the Costa Mesa Land Use Map. Homes are present the entire length of the block.

Lot 105

Fill mounds are present over much of the light brown local soil of the lot. Vegetation includes weeds, grass and eucalyptus trees. No archaeological materials were observed.

Lot 106

Approximately one quarter of the surface of this lot has been graded level. The remaining soil is loose and light brown in color. Despite dried grass and weeds, surface visibility was good at the time of survey. No archaeological resources were located.

Lot 107

The local soil of the parcel is hard and compact and of a light brown color. Most of the surface of the lot is obscured by fill mounds and gravel. A heavy concentration of modern trash is approximately centered on the lot. Surface visibility of the remaining portions of the lot was good. A light shell scatter was found in association with the land fill areas. This shell is not considered indiginous to the lot and therefore of no archaeological significance.

Lot 108

Surface visibility on this lot was very good despite the presence of tall dry grass and scattered weeds. Soil colors include light brown and orange. The soil is loose and soft with a light scatter of broken cement on the surface. No materials of archaeological interest were observed.

Lot 109

The soil is soft and a light brown in color. Sporadic scatters of gravel fill are present. Surface visibility was good to excellent over the entire lot. No archaeological materials were found.

Lot 110

The surface of this lot has been disced, exposing a soft, light brown soil. A light natural rock scatter is present over much of the surface. No materials of archaeological interest were found.

Lot 111

This lot has been cleared of all vegetation. The surface has been graded and leveled, leaving mounds of excavated soil around the periphery. These mounds and the graded surface were investigated. No archaeological materials were observed.

Lot 112

Nearly the entire surface area of this lot has been filled. with a wide variety of soil types. The natural surface area was inspected where possible. No archaeological materials were found.

Lot 113

Access to this lot was not possible due to fencing of the Newport Freeway (Rt. 55) and the accompanying drainage system. Weeds and tall grass provide poor surface visibility. The original surface of the lot appears to have been previously impacted by grading for the freeway and drainage.

Lot 114

The south western half of this lot consists of fill areas a heavy trash dump, and piles of broken concrete. The remaining portion is similar, but less obscured. Vegetation consists of tall grass and weeds. Soil ranges from light brown to light orange, and is compact and hard. One shell umbo was found. No additional materials were observed.

Lot 115

Portions of the lot have been disced or plowed. The soil is light brown in color and loose. Vegetation includes grass, weeds and four palm trees in the north east corner. Several fill mounds are located in this portion of the property. No materials of an archaeological nature were found.

Lot 116

Soil on the lot is light brown to reddish color and loose, Vegetation includes grass and weeds. Visibility was fair to good on the parcel. No archaeological materials were observed.

Lot 117

The soil is light brown and sandy in consistancy. Rocks, broken cement and a light trash scatter are present. Surface visibility is fair to good on the lot although tall grass and weeds are present. No archaeological resources were found.

Lot 118

This lot is fenced off, denying access to the property. No survey was conducted on this lot.

Lot 119

This lot is fenced off, denying access to the property. No survey was conducted on this lot.

Lot 120

Surface visibility on the lot was good despite the presence of litter, broken cement, asphalt, gravel and broken glass. The surface is partially disced. The soil is light brown in color and hard. No archaeological materials were observed.

Lot 121

Remnants of dry grass and weeds remain on this lot although recently disced. Visibility was fair to good at the time of survey. Soil on the parcel consists of soft, loose, surface material of a light brown to red-orange color.
No materials of an archaeological nature were found.

Lot 122

Previous impacts to this parcel are extensive, including the construction of industrial buildings, parking lots, and a large area of agricultural activities. The currently undeveloped areas are covered with tall grass, shrubs and weeds. These areas and the immediate vicinity of the presently developed portions were surveyed despite only fair to poor surface visibility. No archaeologically relevant materials were observed.

Lot 123

This lot is currently devoted to agricultural activities in its entirety. Peripheral areas and accessable portions of the parcel were surveyed. No archaeological materials were found.

Lot 124

This lot is similar in nature to lot 123 and was surveyed in a similar manner. Although no archaeological resources were observed on either lot, an additional survey is recomended prior to development.

Lot 125

This lot has been disced to expose a loose soft soil of light brown to brown color. Sporadic weeds are scattered throughout the parcel. Visibility was excellent. No archaeological materials were observed.

Lot 126

This lot is currently being agriculturally cultivated. Portions of the lot plowed and seeded at the time of survey while other portions were bearing crops. Surface visibility was excellent in the freshly seeded areas and fair elsewhere. Soil color is brown and the consistancy is soft and loose. No archaeological materials were observed.

Lot 128

This lot is currently divided between cultivated agricultural and developed industrial portions. The agricultural portion is bearing crops and the developed protion includes buildings and parking facilities. Peripheral areas of the industrial and agricultural areas were surveyed. A light shell scatter was observed, located along the S.W. boundary of the property which should require further investigation. An additional survey of the current agricultural areas is recommended prior to industrial or business development of this portion of the property.

Lot 127

Lot 127 is currently under development. Activities include excavation and grading. These areas as well as those not yet under construction were surveyed. Dense weeds and tall grass hindered surface visibility in the undeveloped areas. No archaeological resources were found.

Lot 129

This lot has been subject to surface impacts through discing, grading and terracing activities. Local soil ranges in color from light brown to orange. The southern portion of the parcel has been terraced twice in an east/west direction.

Lot 130

Visibility on this parced was very good due to recent discing. The soil was comprized of a loose light brown loam. No a4chaeological materials were observed on the parcel.

Lot 131

Visibility on this lot was excellent due to recent discing. Soil on the property is hard and compact where not disced and ranges from light brown to red-orange. Remaining vegetation consists of sporadic grass and weeds. No materials of archaeological interest were observed.

Lot 132

Most of the surface area of this parcel has been disced. Vegetation is therefore minimal and surface visibility fair to good. Soil texture is soft and loose where disced, hard and compact where not. Soil color varies from light brown to orange. Several small fill mounds and quantities of broken cement and asphalt are located in the north west portion of the property. One isolated shell fragment was found. No other materials were observed.

Lot 133

A small park is situated at the northern end of this lot. The surface has been disced and vegetation is minimal providing good visibility. Soil colors include light brown and gray-brown. No archaeological materials were observed.

Lot 134

The vegetation has been removed from the north eastern peripheries of this lot and subsequent land filling has taken place. Visibility is good over the entire parcel, exposing a light brown soil, sawdust, broken cement, rocks and a moderate scatter of modern trash. No archaeological materials were observed.

Lot 135

Visibility was very poor over the majority of this lot due to natural vegetation. The remaining areas are currently being usedfor a nursery and horse grazing. All portions of the property were surveyed. No materials of an archaeological nature were located.

Lot 136

This parcel consists of four smaller lots divided by an existing series of fences. All of these lots have been subject to extensive previous impacts including paving, land filling, previous cement foundation structures, grading and excavation. The extreme south portion of the lot has been paved and subsequently covered with unsanitary land fill. A light shell scatter is located on the surface adjacent to the land fill. This shell scatter may or may not be the result of land filling. No shell material was observed in the fill materials.

Lot 137

Two isolated shell fragments were found on this lot. The surface has been disced, providing excellent visibility. The local soil is hard and compact. Land filling has taken place in the north west corner of the property. No materials of archaeological interest were located.

Lot 138

The north and east portions of this lot have been land filled. A small area has been graded in the central portion of the property. The soil is hard and compact, a light brown in color. A total of five shell fragments were observed on the surface of the entire property. No other materials were found.

Lot 139

This parcel is currently fenced off and subject to agricultural activities. Therefore a surface survey of the parcel was not attempted.

Lot 140

Vegetation on this lot includes weeds, grass and trees. A surface scatter of broken cement and rock is located in the south western portion of the property. Seven isolated shell fragments were found. No other materials were observed.

Lot 141

Discing of this lot has reduced ground cover providing excellent visibility. Soil on the parcel is soft and loose and light brown to brown in color. The western portion of the lot has been land filled. Several isolated shell fragments were found. No other materials were observed.

Lot 142

This lot consists of previously undeveloped or currently developing areas along the palisades and floor of an old extension of the Newport Back bay area. Although no definitive archaeological evidence of occupation of the area was located by field survey, large deposits of paleontological interest were observed. Current impacts to the area include quarrying, land filling, grading and excavation. Much of the north western portion of the old bay floor has been or is currently under development. The surrounding palisade areas have previously been developed, thereby eliminating the most likely areas of archaeological interest. Consi eration of paleontological mitigations of the area should provide for monitoring of potential archaeological associations or discoveries.

Lot 143

This lot is divided by an existing asphalt access road. Mounds of land fill including asphalt and cement parallel both sides of this road. The remaining areas have been disced, providing fair to good surface visibility of the light brown soft soil. Six shell fragments were found. No other materials of archaeological interest were located.

Lot 144

A tall chain link fence surrounds this property which contains oil drilling-pumping equipment. A moderate shell scatter was located along the south fence line of the parcel. The geographic location of this parcel along the edge of an old back bay palisade, combined with the presence of a shell scatter, observed in spite of poor visibility, may indicate the existance of a potentially significant archaeological deposit on the property. The property was not sufficiently surveyed due to limited access.

Lot 145

This parcel consists of an old back bay extention and flood plain subsequent to the silting in of the bay. The area was surveyed despite dense ground cover including tall grass, weeds, and bamboo. The soil of the parcel consists of fine alluvial silt, gray to light brown in color. Archaeologically significant marine deposits are located along the palisade walls below the previously recorded site (Ca-Ora-58) on the overlooking bluff. Light shell scatters are present at the foot of the palisades. These are the results of erosion and foot traffic impacts upon the upper deposits and not in situ archaeological deposits. Future possible developments of this parcel should include considerations of possible indirect impact potentials to the existing archaeological resources in the vicinity.

Lot 146

This lot consists of an open space area east of Placentia Avenue on the western boundary of the Costa Mesa Golf and Country Club. The area encompasses the eastern portion of a previously recorded site, Ca-Ora-506. Field reconnaissance of the parcel indicated the presence of a larger surface scatter than had been previously recorded. This extension of the site has been plotted on the Planning Area 2 Map, figure 36. Evaluation of future potential impacts to Ca-Ora-506 should include this extended area.

PART II

HISTORICAL DATA

INTRODUCTION TO HISTORICAL DATA

Since the purpose of this section of the report is to compile data regarding existing physical historical resources, research was directed at structures, or existing physical properties within the incorporated boundaries of the study area. In order to define the temporal significance of the existing structures it was necessary to divide the history of the city into general phases, or periods of development. These developmental phases often overlap and in some cases continue until the present day (e.g., the Agricultural Period). However, each of the developmental phases is characteristic of the dominant life style of a particular period in the history of Costa Mesa.

The general developmental phases of the city are:

1. Spanish/Mexican Rancho Period. Circa 1784-1848. During this time period Costa Mesa, as well as all of California, was under the political control of Spain (until 1823) and Mexico (until 1849). Cattle grazing was the major economic activity during this period.
2. Early statehood-Grazing Period. Circa 1848 to 1880. Animal grazing continued as the major economic activity during this period.
3. Agricultural Period. Circa 1880 to 1922. Agricultural enterprises become the major economic activity during this period. Several small communities appeared in the Costa Mesa area.
4. Community Development Period. Circa 1923-1953. Agriculture continues to be the major economic activity during this period. The area's population increases dramatically and Costa Mesa gradually develops into a city.
5. Urban Expansion Period. Circa 1953 to present. With its incorporation in 1953, the city experiences rapid growth, both in terms of population and business enterprises. Agriculture declines as an economic activity, although it has continued on a diminished scale until today.

EVALUATION OF HISTORICAL PERIODS

1. The Spanish/Mexican Period (ca. 1784-1848)

European control of what was later to become the city of Costa Mesa was established in 1810. The Spanish Governor of California, Jose Joaquin Arrillaga, awarded the 62,500± acre Rancho Santiago de Santa Ana to the heirs of Juan Pablo Peralta (Yorba's nephew). Grijalva, a member of the Anza expedition of 1776, had received a grant from the Spanish authorities to the territory between the Santa Ana River and the mountains to the east. The 1810 land grant to Grijalva's decendants (Yorba and Peralta) was a confirmation of the earlier grant to Grijalva (Meadows 1963: 94; Miller 1970: 2).

During this period, three adobe structures were built within the boundaries of the study area (see fig.28). All three were situated on the eastern bluffs along the Santa Ana River. When the adobe structures were built is unknown. Meadows suggests that the adobe known as the Estancia, or the Gabe Allen Adobe, was constructed prior to 1810 by "the missionary fathers of Mission San Juan Capistrano" (Meadows 1963: 199). The other two adobe structures, called the Rice Adobe and the Polloreno Adobe, were probably built at some point in time after the Estancia (WPA-1935: 83).

The three adobes were an intergal part of the early economic history of the area. This was a period of cattle raising and the adobes must have afforded shelter for the vaqueros working for the Mission San Juan Capistrano and the later Rancho Santiago de Santa Ana. It is traditionally thought that the padres from Mission San Juan Capistrano used the oldest of the adobes, the Estancia, as a substation to administer religion to the Indians living along the Santa Ana

River (WPA 1935: 83; Miller 1970: 3; Meadows 1963: 199).

The Estancia is the only one of the adobes which exists today. It is located on the northwest corner of Adams and Placentia Avenues and has been restored by the City of Costa Mesa. The general locations where the Rice and Polloreno Adobes were situated are known. However, the property upon which the Rice Adobe stood has been developed as part of a housing tract. The property upon which the Polloreno Adobe stood has not been developed. It may, therefore, be possible to locate the foundations of the adobe through sub-surface testing of the property.

2. Early Statehood-Grazing Period. (ca. 1848-1880)

This period may be considered an economic continuation of the Spanish/Mexican Period. Although the ownership of the land in the study area changed, no new structures were built. The three adobe structures discussed in the previous section were still being utilized.

The principle historical feature of this period was a land ownership controversy between the Peralta, Yorba, Sepulveda, and Nieto families (for further information see Miller 1970 and Adobes, WPA Research Project #3105).

3. Agricultural Development (ca. 1880-1923)

The next phase in the history of Costa Mesa may be characterized as one of (large and small) farming activity. As this period progressed, the raising of stock animals diminished rapidly, as an increasing amount of acreage was planted with grain, vegetable crops, and orchards (Miller 1970; Meadow 1963: 199; WPA Project #3105: 32; Priest 1970: no pagination). During this time period, three communities were established within the boundaries of present day Costa Mesa--Fairview, Paularino, and Harper (renamed Costa Mesa in 1923).

The town of Fairview was created as a result of a land speculation enterprise during the late 1880's (see Fig. 28). During the brief period that Fairview was in existence it maintained a business district, newspaper, post office, school, hotel and railroad connection with Santa Ana (the Santa Ana, Fairview and Pacific Railroad). By the turn of the century, Fairview was only a small farming community. In 1905 the only business that remained was the Fairview Hotel. The Fairview school closed its doors in 1915. The Fairview Hotel remained in business until 1920 (Miller 1970; Meadows 1963: 199).

Paularino was a small farming community that sprang into existence in the latter 1880's. It was situated to the east of Fairview (see fig. 28). Paularino was a "small farming community" in the full sense of the term. It did not have a business district and therefore its residents had to purchase needed commodities in either Fairview or Santa Ana. However, Paularino did have it's own public school (see below- the Paularino Schoolhouse) and a railroad siding that was connected with the Santa Ana and Newport Railroad (purchased in 1899 by the Southern Pacific Railroad - see below- 655 Baker St.; Miller 1970:62-70).

Harper began its existence in the early 1890's as a railroad siding of the Santa Ana & Newport Railroad. A railroad siding was needed along the route to accommodate the grain farmers living in the area. The siding was named Harper in honor of one of the principle farmers in the area, Gregory Harper, who had requested that the siding be built (Friis 1965: 127).

Harper was not destined to experience the fates of Fairview and Paularino. The community of Harper prospered

and grew and it was laid out as a township in 1910 (Friis 1965: 127). Land subdivisions around Harper began in 1906 (Miller 1970: 90) and a business district was subsequently established between Eighteenth and Nineteenth Streets along Newport Road opposite the railroad siding (Meadows 1963: 200). By the time that the citizens changed the name of the town to Costa Mesa in 1920, the community was firmly established.

Ten structures have been identified as being built during this time period. One of the buildings, located at 2545 Santa Ana Ave, was originally constructed in Santa Ana and moved to Costa Mesa in 1954. Mr. William Huscroft, 2529 Santa Ana Avenue, told the Archaeological Associates' surveyors that in the 1950's he personally assisted in the relocation of dozens of houses from the Santa Ana area to Costa Mesa.

4. Community Development Period (ca. 1923-1953)

The Community Development Period in the history of Costa Mesa may be generally characterized as one of growth and vitality although agriculture continued to be economically important. The community experienced an increase in population, with a resulting growth of business establishments, civic organizations, public services, churches and schools.

During World War II, the federal government built the Santa Ana Army Air Base, within the boundaries of Costa Mesa. After the war the government dismantled the base and made the property available for public use. At present two higher educational institutions are situated on the property (Orange Coast College-established 1948, and Southern California College-established 1950). The County of Orange established the Orange County Fairgrounds on a portion of the property. Some of the army buildings are still standing (see below). They are primarily located on the fairgrounds and the Southern California College campus (Miller 1970: 192-193; Meadows 1963: 200).

The Costa Mesa Grange and St. Joachin Catholic Church (1964 Orange Ave.) were also structures on the Santa Ana Army Air Base at one time.

In 1952 Costa Mesa confronted the possibility of oil exploration operations being conducted within its unincorporated boundaries. Concerned citizens formed into committees both to support and defeat the possibility of oil drilling activities in the business and residential areas of Costa Mesa. It was felt that by incorporating, Costa Mesa could protect itself from unwanted development. After a spirited campaign, the citizens of Costa Mesa voted to incorporate and the incorporation took place on June 29, 1953. The problem of oil drilling was over (Friis 1965: 172; Miller 1970: 202).

5. Urban Expansion (1953 to present)

Since 1953, Costa Mesa has experienced an accelerated period of rapid growth and expansion, in a pattern similar to many other cities in southern California. Agriculture has disappeared as a major economic activity within the boundaries of the city. Housing tracts and commercial developments now dominate the landscape of what was once open farmland.

EVALUATION OF HISTORICAL SIGNIFICANCE

Evaluating the historical significance of a specific structure can be somewhat problematic for two reasons: (1) such determinations are fundamentally subjective and (2) any given structure may be academically or technically significant and/or significant in the view of the local citizenry. Many state and local agencies accept the criteria of the federal government for determining historical significance. We regard these criteria as academic and technical. The federal criteria, which are part of the Historic Sites Act of 1935 and the Historic Preservation Act of 1966, may be briefly summarized as follows:

A structure is historically significant if it pertains to American history, architecture, archaeology, or culture and is associated with either: (a) historical events, (b) the lives of historical figures, (c) information important in history or prehistory, or (d) a distinctive type or style of construction. With regard to item (d), it should be added that the type or style might be representative of the work of an individual master or a high artistic value as well as being representative of a particular artistic period.

We know of only one structure located within the city limits of Costa Mesa which meets these criteria. This is the Estancia (Diego Sepulveda) Adobe which is significant because it is representative of an early type of construction which is now rare. The Estancia Adobe is already on the National Register of Historic Places and is presently under the care of the Costa Mesa Historical Society.

Thus far, we have discussed criteria related to historical significance in the technical terms employed by the federal government. It must also be realized that what is

historically significant to the citizens of Costa Mesa may have little to do with the federal criteria. Citizens may be concerned over the preservation of a particular structure for its local sentimental or aesthetic value. Archaeological Associates cannot speak for the aesthetic or sentimental values of the individuals in the city but it is the responsibility of city government to take these values into consideration. Therefore, we recommend that the Costa Mesa Historical Society be consulted in the event that a structure of possible local significance becomes subject to impacts.

A list of structures which could be regarded as significant to the citizens of the city is included in this report. Most of these structures would not be regarded as historically significant under the federal criteria described above. Almost all were built within the last fifty years and none are associated with major historical figures. However, they are tangible representatives of the history of the development of Costa Mesa and in this sense, they might be held as "significant" to the local citizenry.

LIST OF STRUCTURES OF HISTORICAL INTEREST

SPANISH/MEXICAN PERIOD (figs. 1-3)

1. The "Estancia." 1900 Adams (fig. 1a). A restored adobe located on a five acre public park on the northwest corner of Adams and Placentia Avenues. The original adobe was constructed in the first half of the 19th century. This structure has been placed on the National Register.

A. Interior of the Estancia: the parlor (fig. 1b).

B. Interior of the Estancia: the kitchen (fig. 2a).

C. Interior of the Estancia: the bedroom (fig. 2b).

D. Interior of the Estancia: glass case of historical and prehistoric artifacts (fig. 3a).

E. Exterior of the Estancia: A horsedrawn plow, a wagon wheel and other farm equipment representing the early agricultural history of Costa Mesa on display near the Estancia (fig. 3b).

AGRICULTURAL PERIOD (figs. 4-10)

Residences

2. Station Master's House, 2150 Newport Blvd. (fig. 4a). The Stations Master's House was originally located behind the old Paularino and Southern Pacific Railroad siding and pre-dates 1900. It has subsequently been moved to its present location. The present owner, Mr. Pope, has lived in the building since 1951.

3. 301 Mesa St. (fig. 4b). This restored structure appears to have been built around 1900±. The Archaeological Associates' surveyors attempted on several occasions to contact the owners of the house but were unsuccessful.

4. Segestrom Place. 3315 Fairview (fig. 5a). Mr. Hal Segestrom, third generation owner of the structure, stated that the house had been built in 1915.

5. Rochester House. 2051 Newport Blvd. (fig. 5b). This structure, originally located at 18th and Rochester, was built around 1909 by the Rochester family. It was moved to its present location in the 1950's. The Rochester House currently being utilized as a commercial building.

6. Old Laperle House. 1549 Tustin (fig. 6a). The date of manufacture is unknown for this structure (house and surrounding property purchased by the Laperle family). However, Mrs. Laperle stated that the house was built at the same time as the old Pheonix House (1915) that used to be located across the street (Tustin).

7. 2172 Orange. (fig. 6b). This structure appears to have been build around 1900±. The present owner has lived in the house since 1941. She could offer no historical information about the history of the house except that the house may possibly be on the register of homesteads in Santa Ana, Calif.

8. Old Ashley Home. 204 E. 22nd. St. (fig. 7a). This structure was built in 1912 as a farmhouse. The Old Ashley House is currently being restored and upgraded by its present owner.

9. Old Goodwin Place. 3156 Bear St. (fig. 7b). The Old Goodwin Place was probably constructed in the latter 1880's by the Josiah Goodwin family. According to Mrs. Jenny L. Shiffer, who with her husband resides in the house, stated that the structure had been moved to its present location by the City of Costa Mesa within the recent past. The Goodwin Place was once located further south on Bear St. near Paularino Avenue.

10. Opp House. 2450 Orange Avenue (fig. 8a). This structure, built in 1922, is still occupied by its original owners, Mr. and Mrs. Fred Opp. During the 1920's, the house constituted part of the Opp Gourd Farm, which at the time was reknowed throughout Orange County (Miller 1970:153; fig. 8b).

11. 2545 Santa Ana (fig. 8b). This structure, which was built approximately 70 years ago, was relocated onto its present location from Ross Street in Santa Ana, Calif.

Public Structures

12. 655 Baker Street (fig. 9a). A metal windmill and two wooden storage tanks are present on the property at this address. The specific function of these structures is unknown, although the wooden storage tanks may predate the metal windmill. Considering the location of these structures, we feel that they may, at one time, have been a part of the Paularino and Southern Pacific Railroad siding which predates 1900. The siding was "located on

what is now the west side of Newport Boulevard between Paularino Avenue and Baker Street" (Miller 1970: 68). The location of the railroad siding was situated within the vicinity of 655 Baker Street.

13. Blacksmith Shop. 137 Magnolia (fig. 9b). The Blacksmith shop was constructed in 1909 by Mr. H.H. Schleepe (Miller 1970: 103). The Blacksmith shop is presently the location of a wood customizing shop. The occupants of the customizing shop informed the Archaeological Associates' surveyors that the wood framed house situated behind the blacksmith shop was constructed by the blacksmith (Mr. Schleepe) and served as his home (fig. 10a).

14. Paularino Schoolhouse. 3144 Bear St. (fig. 10b). The Paularino Schoolhouse was constructed in 1912 and functioned as a schoolhouse until 1922. It was later converted into a private residence. According to E.J. Miller (1970: 70), the schoolhouse was once situated near the northeast corner of Paularino and Newport Boulevard. Mrs. Jenny L. Shaffer stated that the structure had been moved onto its present location by the City of Costa Mesa within the recent past. A small kitchen has been added onto the back of the structure.

COMMUNITY DEVELOPMENT (figs. 11-24)

Residences

15. Loretta Prangle House. 624 W. Wilson (fig. 11a). This structure built in November and December, 1932, was constructed from wood salvaged from the old Fairview Hotel.

16. Segerstrom Barn. 3315 Fairview (fig. 11b). This structure constructed in 1928, replacing the original Segerstrom barn that was destroyed by fire.

17. Woodframed structure located at 1656 Orange (fig. 12a). Although we did not have the opportunity to discuss the history of the house with the owner, the architecture of the house suggests that it was built prior to or during the 1920's.

18. McClintock Place, Baker Street (figs. 12b, 13a). Construction on this residence was began in 1927 and was completed in 1930.

19. Two-story plastered structure with a tile roof (fig. 13b). Probably built in the late 1920's or the 1930's. May have been constructed around the same time as the McClintock structure.

20. "The Lord's House." 521 Center St. (fig. 14a). Possibly the first hotel in Costa Mesa. Ownership of this building has changed since it was occupied as a hotel. Photo of this structure in Pink's Drugs, 1820 Newport Blvd.

Civil and Social Structures

21. Friday Afternoon Club. 1785 Newport Blvd. (fig. 14b). Constructed in 1923, it is now a retail store (the Old English Antique Co.).

22. Costa Mesa Veterans Hall (C.M. American Legion Hall). 565 West 18th Street (fig. 15a). Structure built in 1937-1938.

23. First Methodist Church. 420 W. 19th. Street (fig. 15b). Church constructed in 1928.

24. Clara McNally High School (fig. 16a-b). Original address--the corner of 19th and Center St. Present address--1901 Newport Blvd. School constructed 1923. Portions of the school restored after the 1933 earthquake.

25. Rochester Street Fire Station. 111 Rochester St. (fig. 17a). Fire Station constructed in 1938. It has subsequently been remodeled.

26. Costa Mesa Post Office (fig. 17b). Original address--117 East Eighteenth St. Present address--1809 Newport Blvd. Post office building constructed in 1950. At present a retail business occupies this address.

27. Costa Mesa City Library. 526 Center Street (fig. 18a). The library building was constructed in 1951. The building is presently a retail establishment.

28. Santa Ana Army Air Base. 1941-1946 (figs. 18b, 19a-b, 20a-b). The Santa Ana Army Air Base comprised 1283 acres and stretched from Harbor to Newport Blvd. At present Orange Coast College, Southern California College, and the Orange County Fairgrounds are situated on the base. A few of the original structures and a memorial garden are still intact on the fairgrounds and the Southern California College Campus. Some of the buildings have been relocated in Costa Mesa-see 15 and 16.

29. St. Joachin Catholic Church (fig. 21a). 1964 Orange Ave. This structure, originally a chapel on the Santa Ana Army Base, was moved to its present location in 1947.

30. Costa Mesa Grange (fig. 21b). Corner of Thurin and Victoria Street. This structure, originally a barracks on the Santa Ana Army Air Base, was moved to its present location and briefly served as the home of the St. Joachin Catholic Church.

Commercial Structures

31. Pink's Drugs. 1820 Newport Blvd. (fig. 22a). Pink's Drug store has been in the same location since 1933. The buildings comprising the entire 1800 block of Newport Blvd. predate 1930.

32. Costa Mesa Mattress Co. sign. 2150 Newport Blvd. (fig. 22b). This is the original sign for a commercial business owned by a Mr. Pope. The sign was erected in circa 1941. A brass tag, located on the right post, is a sign license issued from Orange County. The City of Costa Mesa has declared Mr. Pope's sign illegal and its destruction is foreseeable in the near future.

33. The Shamrock. 1824 Newport Blvd. (fig. 23a). The Shamrock cocktail bar has been in operation since 1944 and represents the oldest extant liquor bar in Costa Mesa. Dick's Horseshoe Bar, located at 2394 Newport Blvd., is the oldest beer bar in Costa Mesa, predating 1940.

34. Mesa Theatre. 1884 Newport Blvd. (fig. 23b). The Mesa is Costa Mesa's first movie theatre. It first opened in 1948.

35. Mesa Center (fig. 24). Sevententh and Orange Avenue. The Mesa Center represents the first major shopping center in Costa Mesa. The Alpha Beta market, located within the shopping center, opened for business in 1951.

URBAN EXPANSION (figs. 25-27)

36. First City Hall. 1996 Newport Blvd (fig. 25a). This structure functioned as Costa Mesa's first city hall from the period of the city's incorporation (1953) to 1957.

37. Costa Mesa Post Office. 117 East Eighteenth Street (fig. 25b). A United States Post Office was located at this address and served the citizens of Costa Mesa from circa 1950 to 1964. The building is now a commercial establishment.

38. Second City Hall. 695 West Nineteenth Street (fig. 26a). This structure functioned as Costa Mesa's second city hall from 1957 to 1967.

39. Fairview State Hospital. 2501 Harbor Blvd (fig. 26b). Construction of this state hospital was began in the later 1950's. The hospital was officially dedicated in 1961.

40. Basil H. Patterson Gymnasium. Orange Coast College (fig. 27). 2107 Fairview Road. The Orange Coast College gymnasium was constructed in 1961-1962. This structure, like the rest of the Orange Coast College campus, is situated on the old Santa Ana Army Air Base.

PERIOD	PLANNING AREA 1	2	3	4	5	6
SPANISH MEXICAN RANCHO	1					
EARLY STATEHOOD						
AGRICULTURAL	5		2 3 6 7 8 10 11 13		4 9 14	12
COMMUNITY DEVELOPMENT	15 20 21 22 23 24 27 30		17 19 25 26 29 31 32 33 34 35	18 28	16	
URBAN EXPANSION	38	39	36 37	40		

TABLE 1. Correlation of structures of Historical Interest with Costa Mesa Planning areas. Numbers entered correspond to list of Historical Structures in text.

PLANNING AREA

1	2	3	4	5	6
Ora-165	Ora-506		Ora-136	Lot 128	Ora-687
Ora-297	Ora-58				
Ora-357	Ora-76			Lot 124	Lot 129
Lot 144	Ora-163			Lot 128	
Lot 48					
Lot 58	Lot 83				
Lot 59					
Lot 3	(Lot 145)				
Lot 58	Lot 146				
Lot 59					
Lot 142*					
Lot 144					

TABLE 2. Prehistoric Distribution According to Planning Area. "Ora" prefixes indicate previously recorded sites. "Lot" prefixes indicate areas located during Archaeological Associates survey. *For consideration of possible paleontological material

BIBLOGRAPHY

Archaeological Research, Inc.
1974-1977 A series of letters concerning the archaeological resources within the incorporated boundaries of Costa Mesa on file with the Planning Department, City of Costa Mesa.

Friis, Leo J.
1965 Orange County Through Four Centuries. Santa Ana: Pioneer Press.

Meadows, Don
1963 Ranchos of Orange County. In Orange County Historical Volume I. Whitter: Historical Publications.

1963 Costa Mesa Background. In Orange County Historical Volume III. Whitter: Historical Publications.

1966 Some Notes on the Costa Mesa Estancia Area. From a Map Made in 1868. Pacific Coast Archaeological Society 2:3:18-19.

Miller, Edrick J.
1970 A Slice of Orange. Irvine: Hendricks Printing Co.

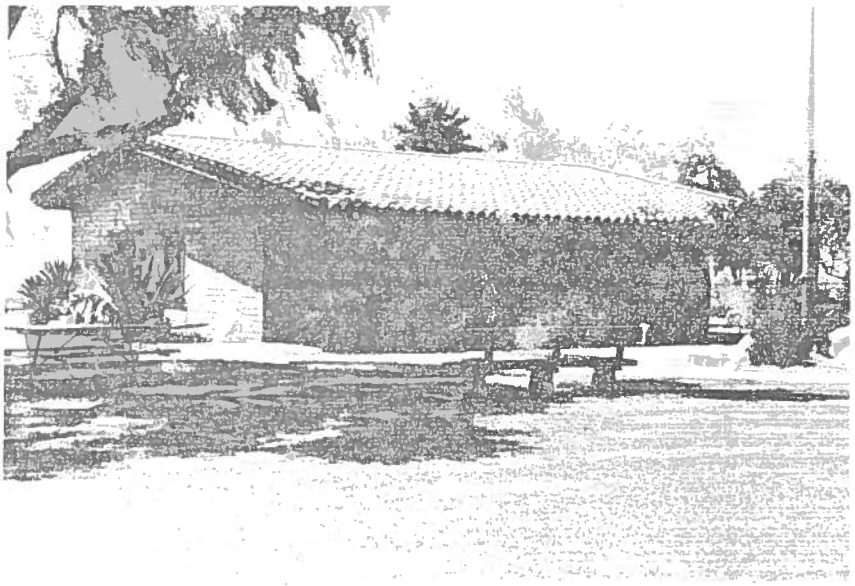
Priest, C.K.
1970 Reminisences of a City Clerk. Newport 1948-1955, Costa Mesa 1962-1970. A Talk Delievered at the Annual Banquet of the Costa Mesa Historical Society. Costa Mesa: Costa Mesa Historical Society.

Works Projects Adminstration
1935 Orange County, California. Cities and Towns. WPA Research Project #3105. Sponsored by the Santa Ana Board of Education. Ms. on file at the Serman Research Library, Corona Del Mar, Calif.

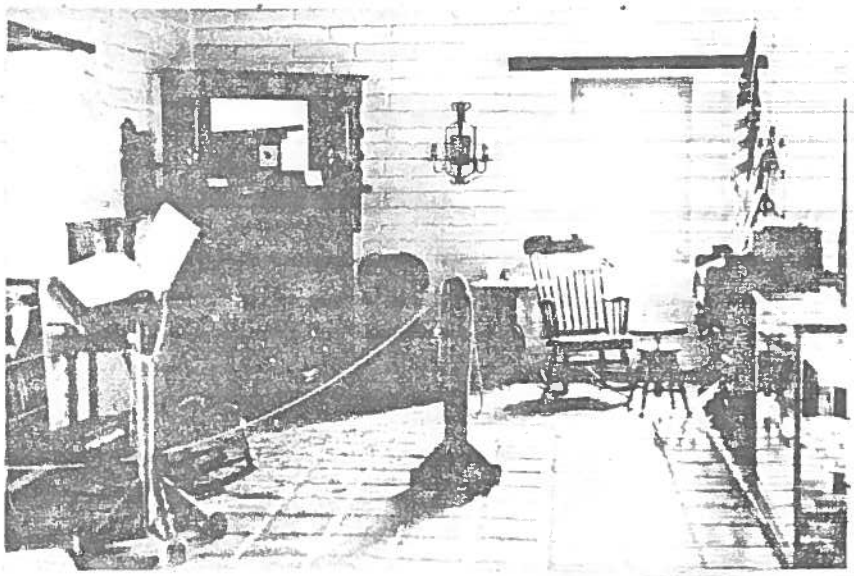
1935 Orange County California. 1769-1889. Adobes. WPA Research Project sponsered by the Santa Ana Board of Education. Ms. on file at the Santa Ana College Library.

1938 Report of the Excavation of the Griset Site at Costa Mesa, Orange County, Ca., OCCAP, 1938. Ed. by J.W. Winterbourne.

Larry Seeman Associates
1978 Initial Study: Bristol/Red Hill Commercial Site, Costa Mesa, Ca. Ms. on file with the Planning Department, City of Costa Mesa.



a. The "Estancia"



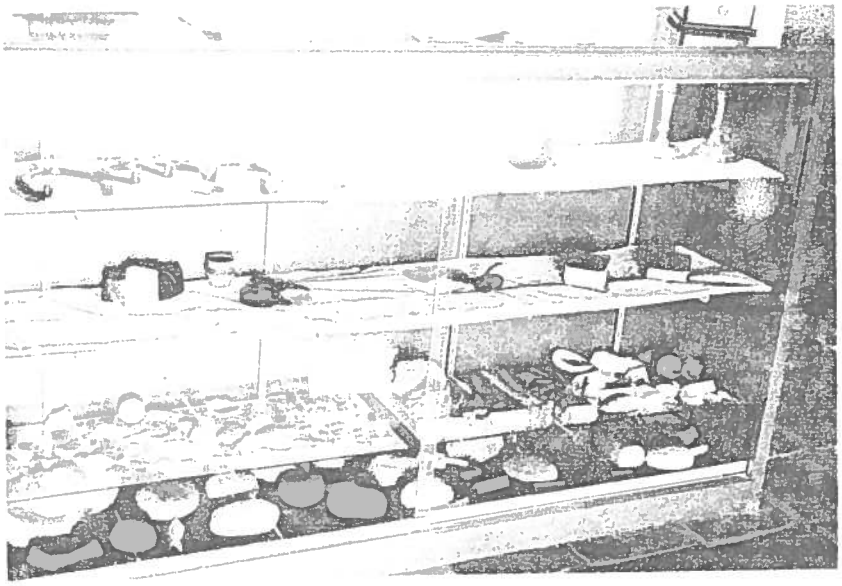
b. Estancia Parlor

Figure 1

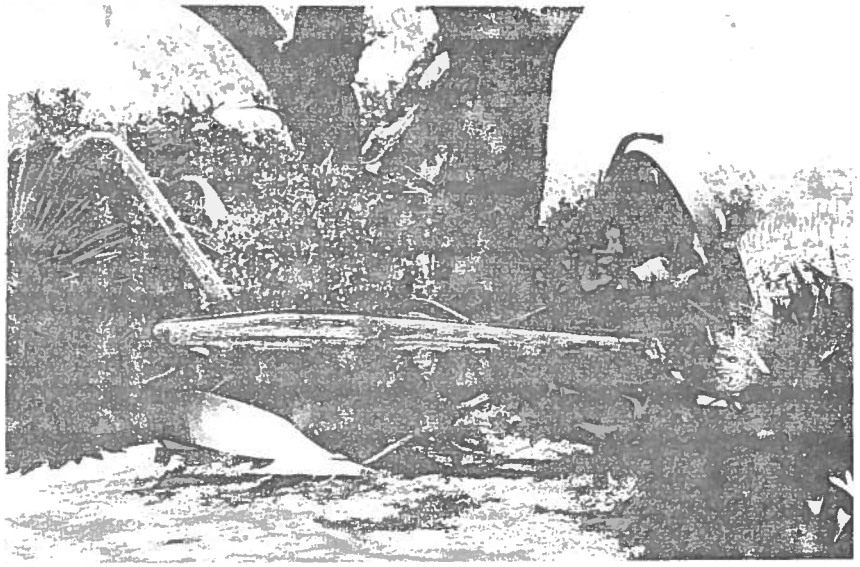
a. Estancia Kitchen

b. Estancia Bedroom

Figure 2

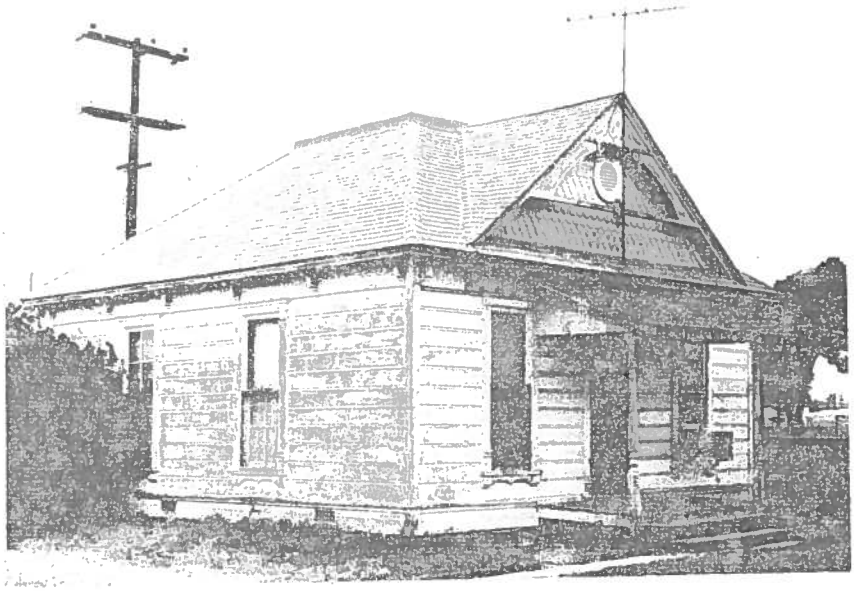


a. Case with artifacts in Estancia

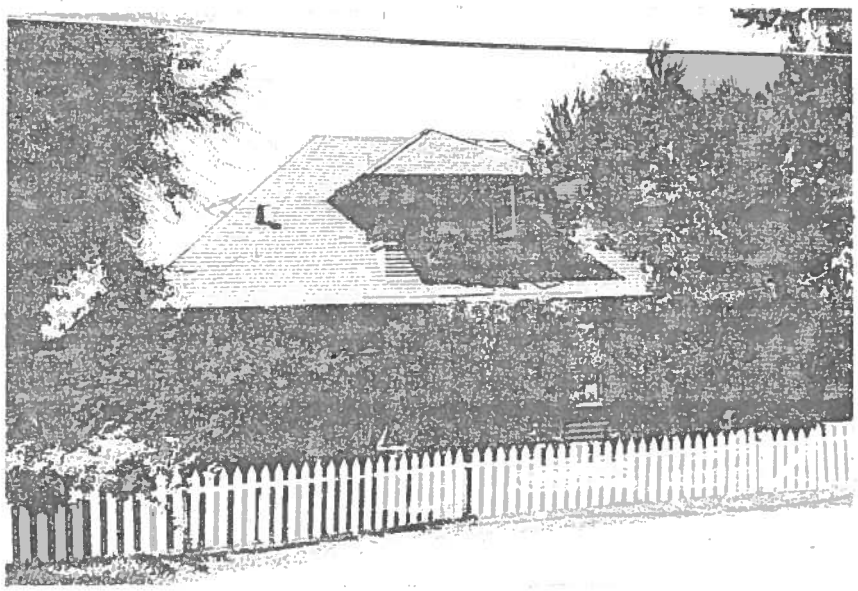


b. Horsedrawn plough and wagon wheel outside the Estancia

Figure 3

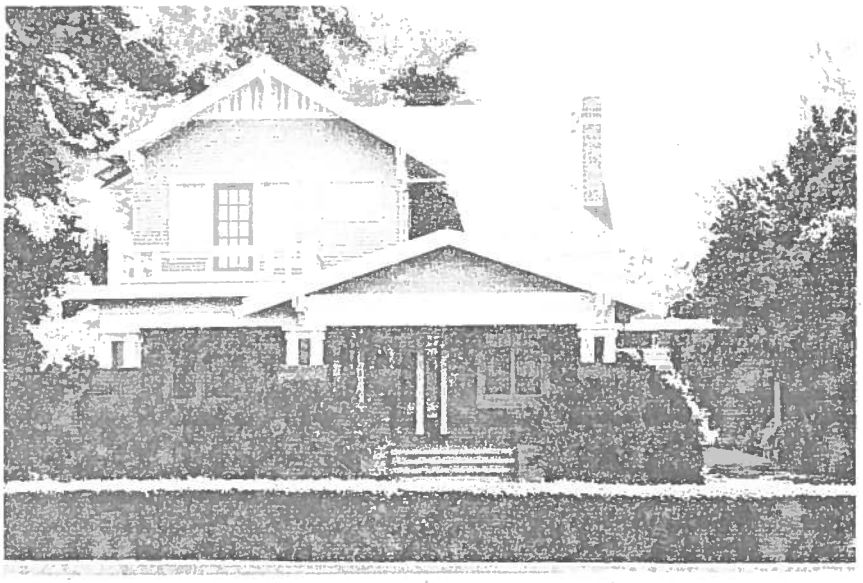


a. Station Master's House



b. 301 Mesa Street

Figure 4



a. Segestrom Place

b. Rochester House

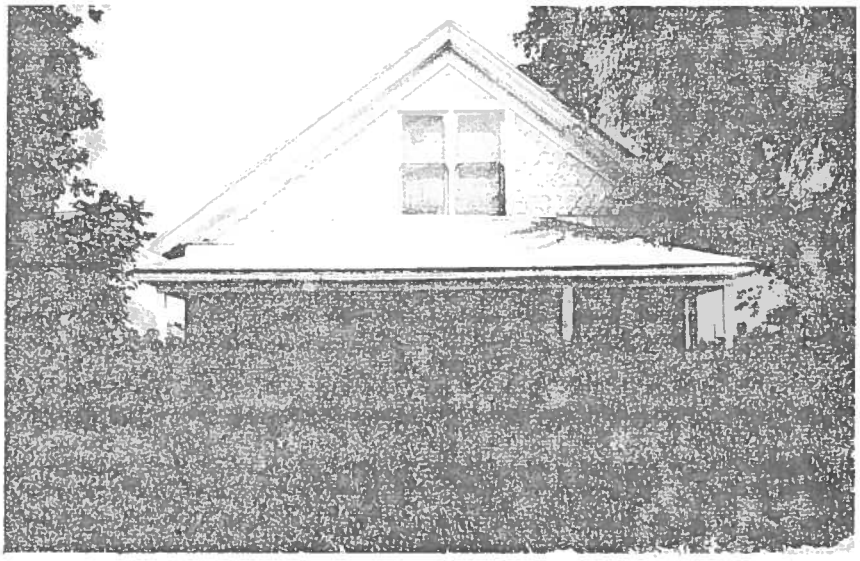
Figure 5

a. Old Laperle House

b. 2172 Orange

Figure 6

a. Old Ashley Home



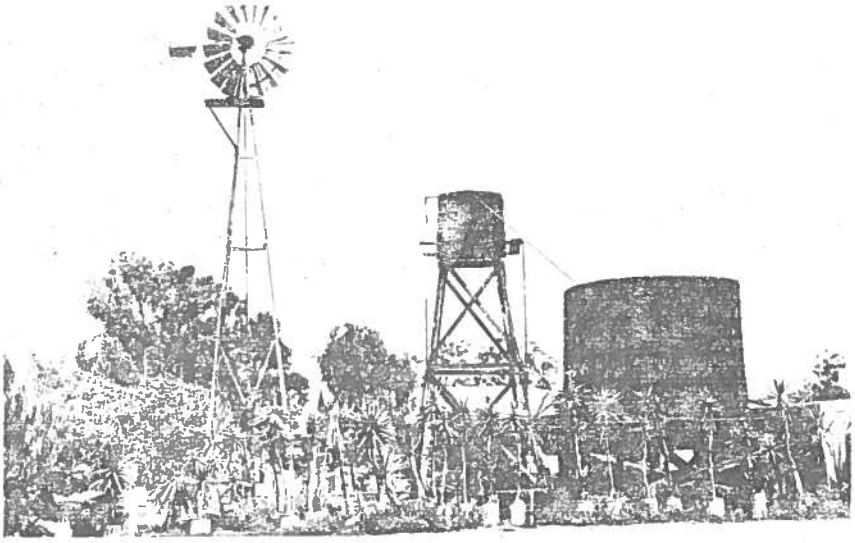
b. Old Goodwin Place

Figure 7

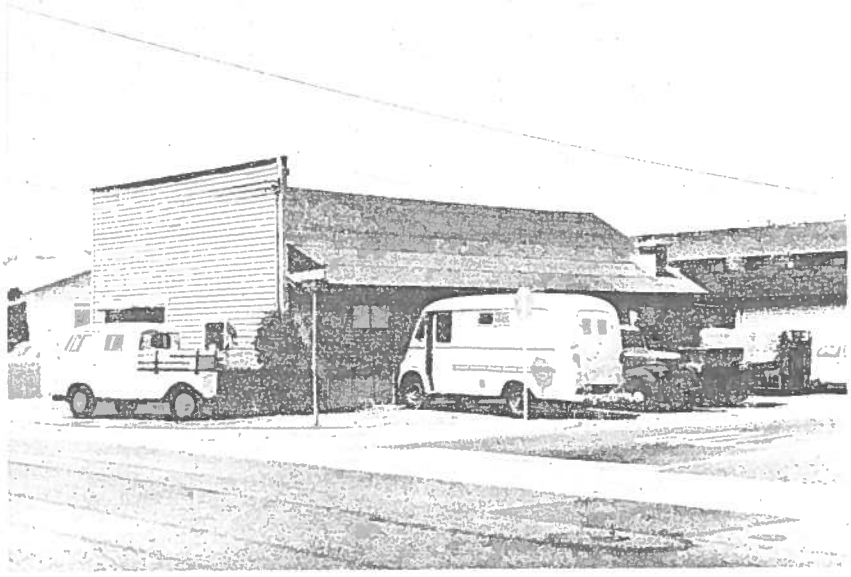
a. Opp House

b. 2545 Santa Ana

Figure 8



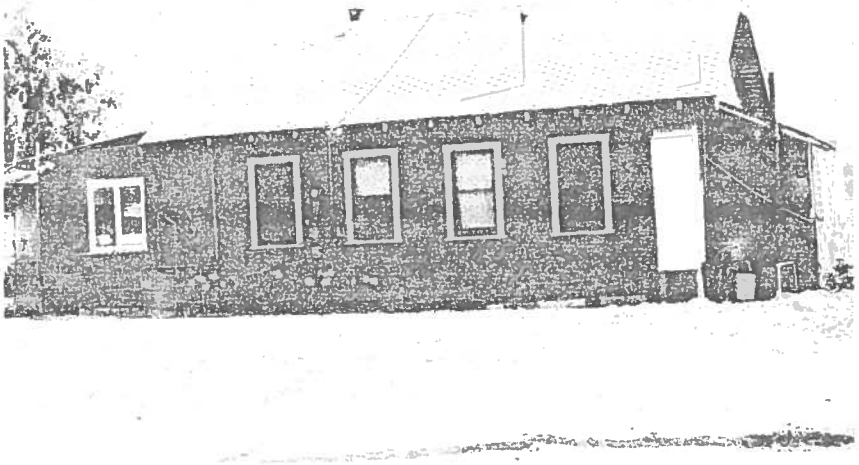
a. 655 Baker Street



b. Blacksmith Shop

Figure 9

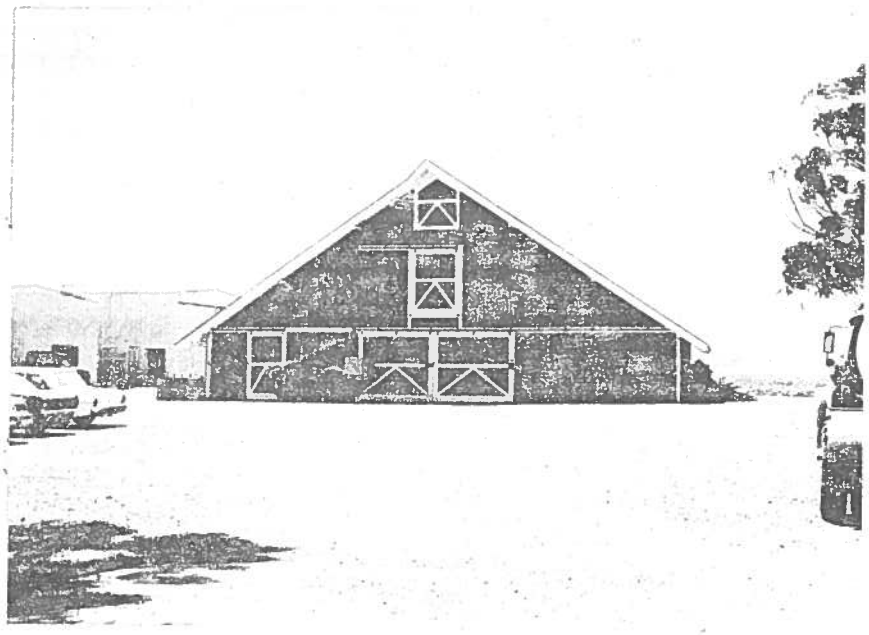
a. Blacksmith's House



b. Paularino Schoolhouse

Figure 10

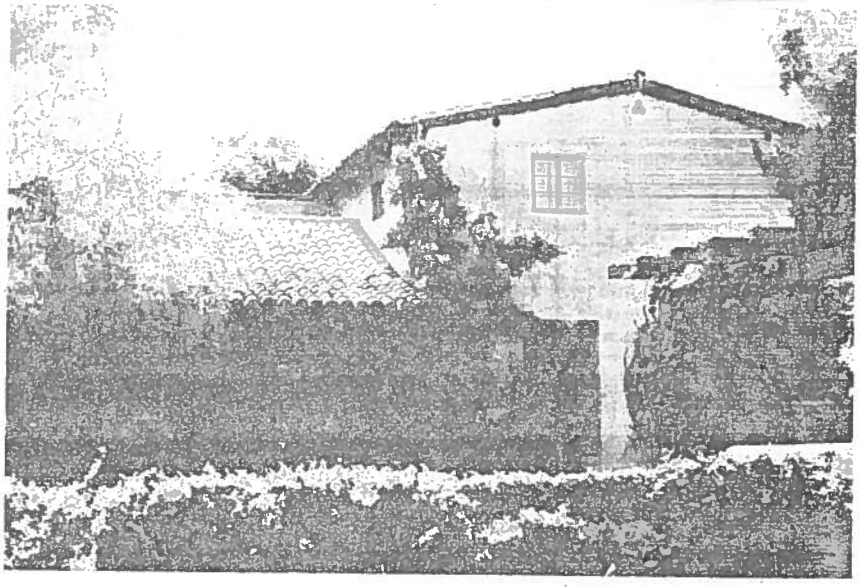
a. Loretta Prangle House



b. Segerstrom Barn

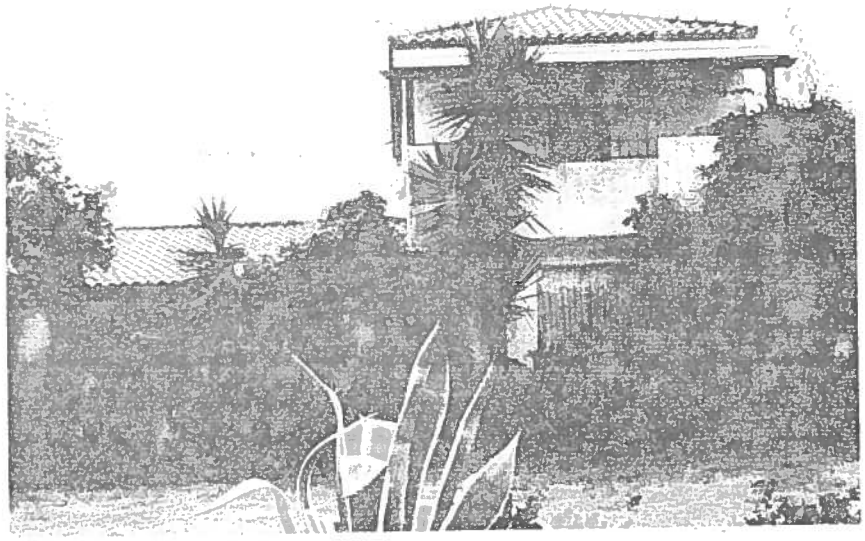
Figure 11

a. 1656 Orange



b. McClintock Place

Figure 12



a. McClintock Place

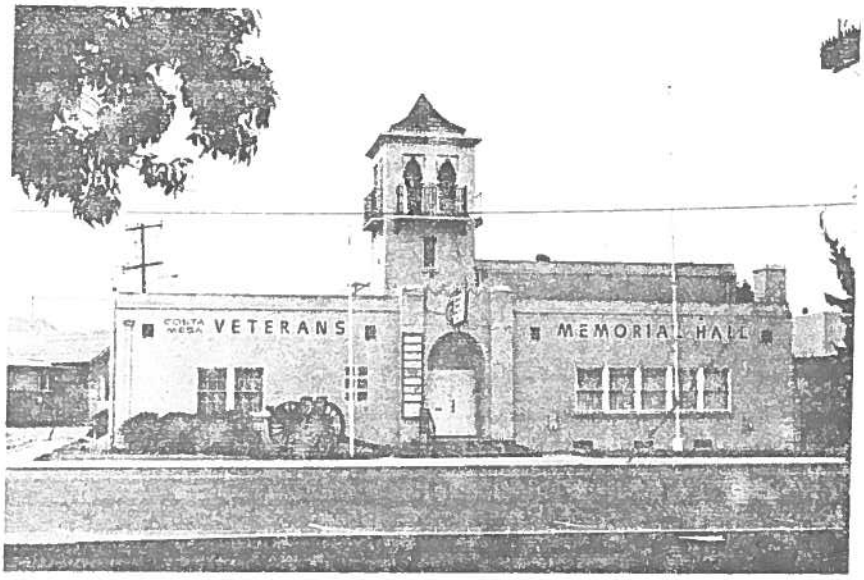
b. 2028 Santa Ana St.

Figure 13

a. "The Lord's House"

b. Site of the Friday Afternoon Club

Figure 14



a. Veteran's Hall

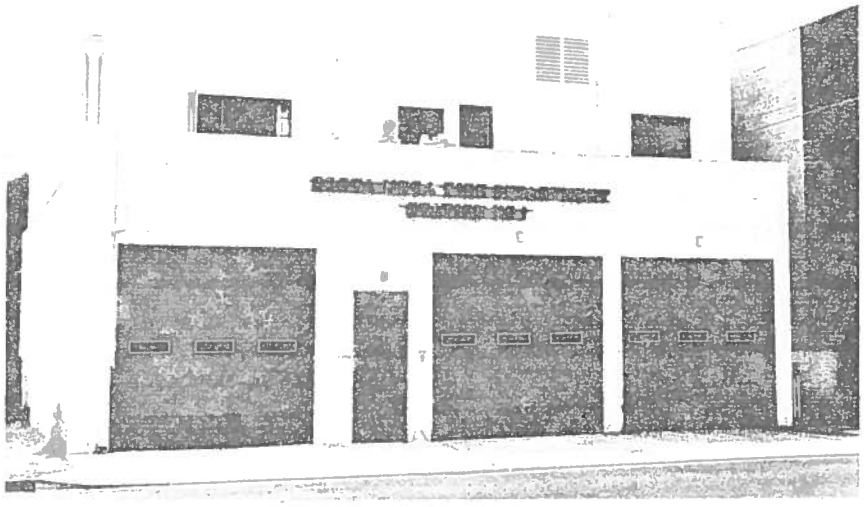
b. First Methodist Church

Figure 15

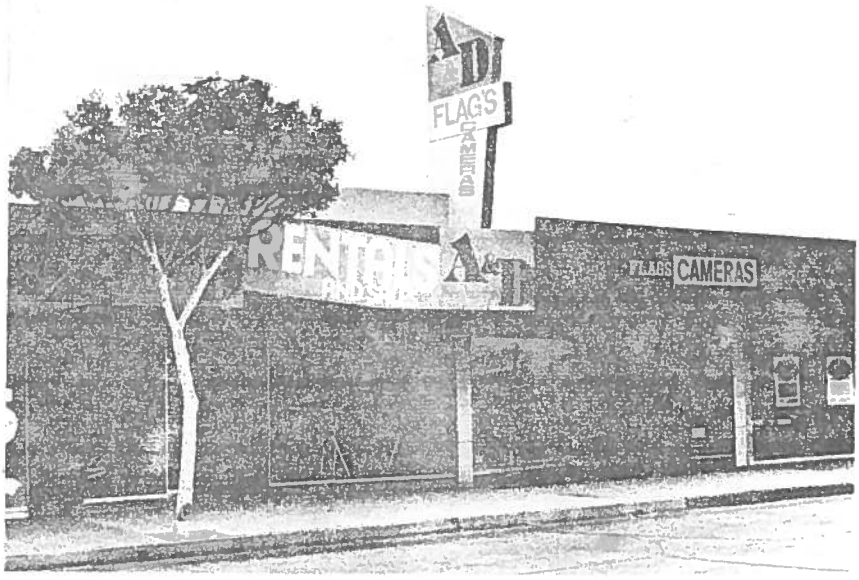
a. Clara McNally High School

b. Clara McNally High School

Figure 16

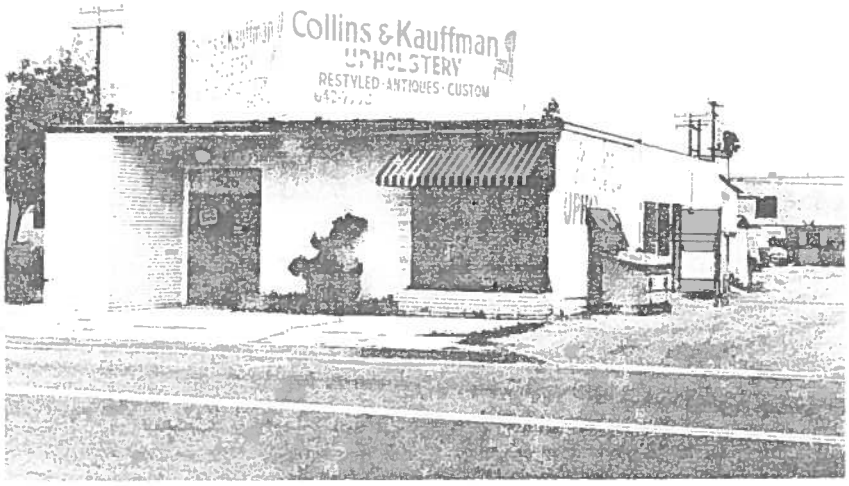


a. Rochester Street Fire Station

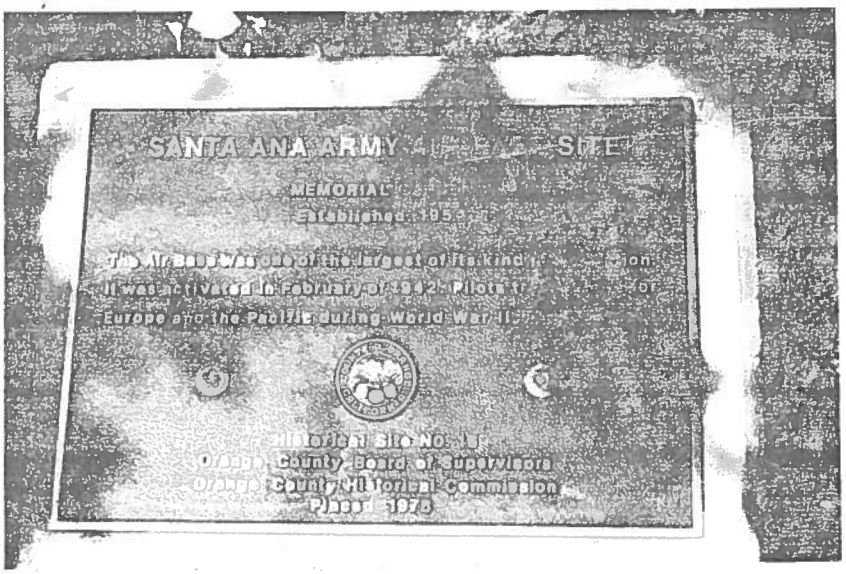


b. Building which once Housed the Costa Mesa Post Office

Figure 17



a. Old Costa Mesa
Library building



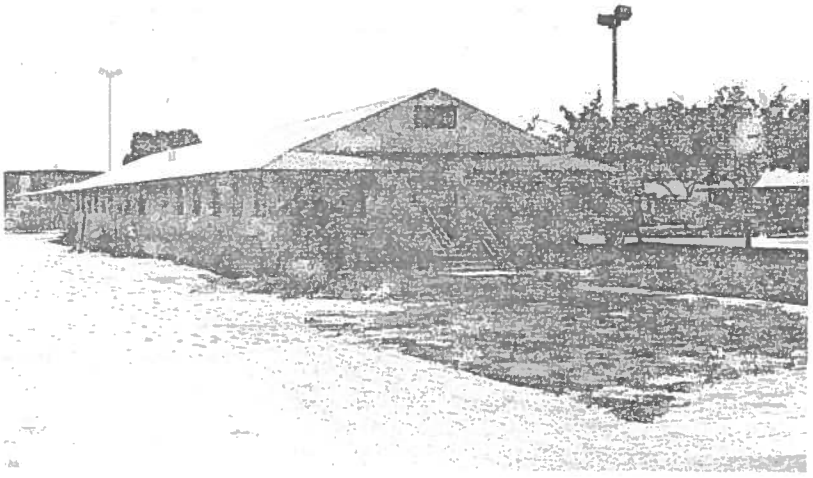
b. Plaque at Santa Ana
Army Air Base

Figure 18

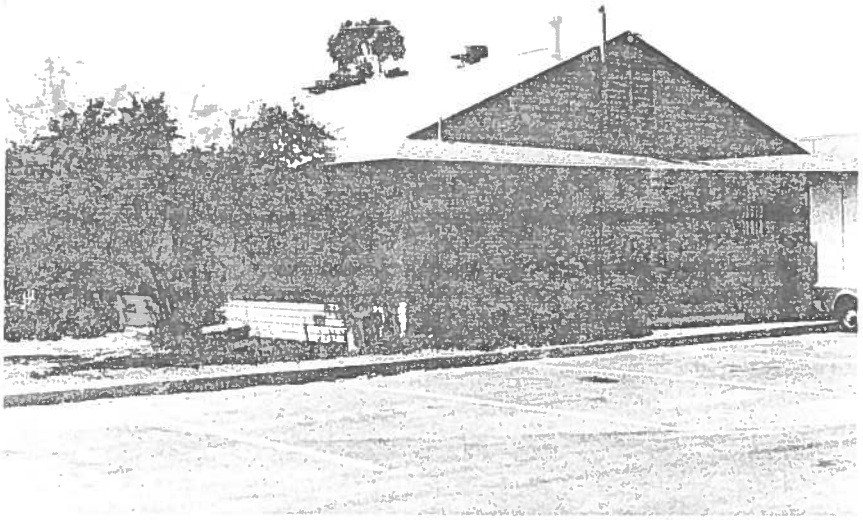
a. Memorial Garden at Santa Ana Army Air Base

b. Barracks used as Memorial Garden Center

Figure 19

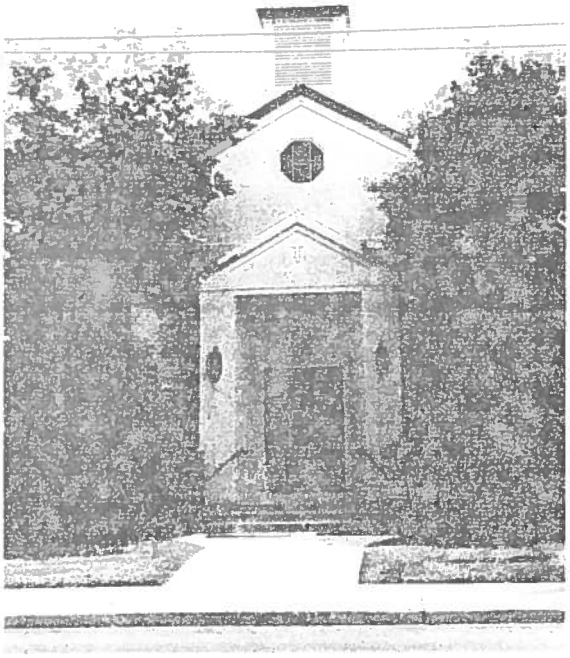


a. Army Barracks on
County Fairgrounds

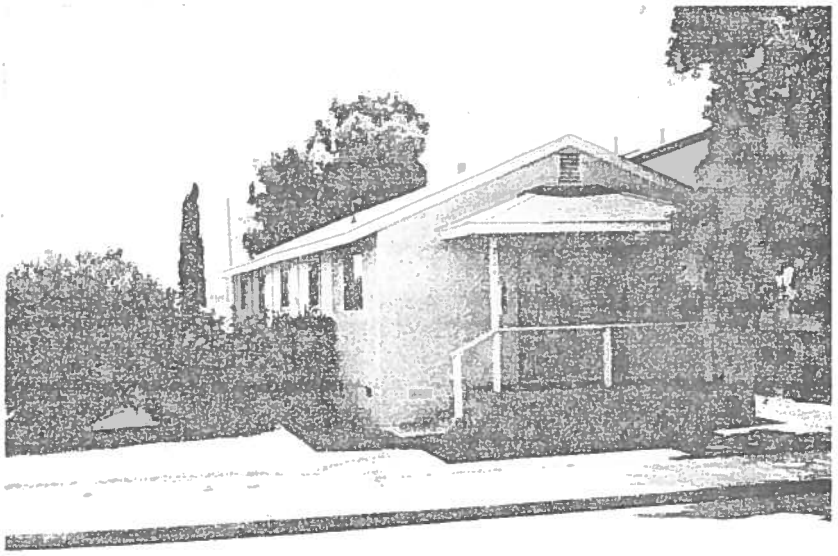


b. Army Barracks on
Campus of S.C. Bible
College

Figure 20



a. St. Joachin Church



b. Costa Mesa Grange

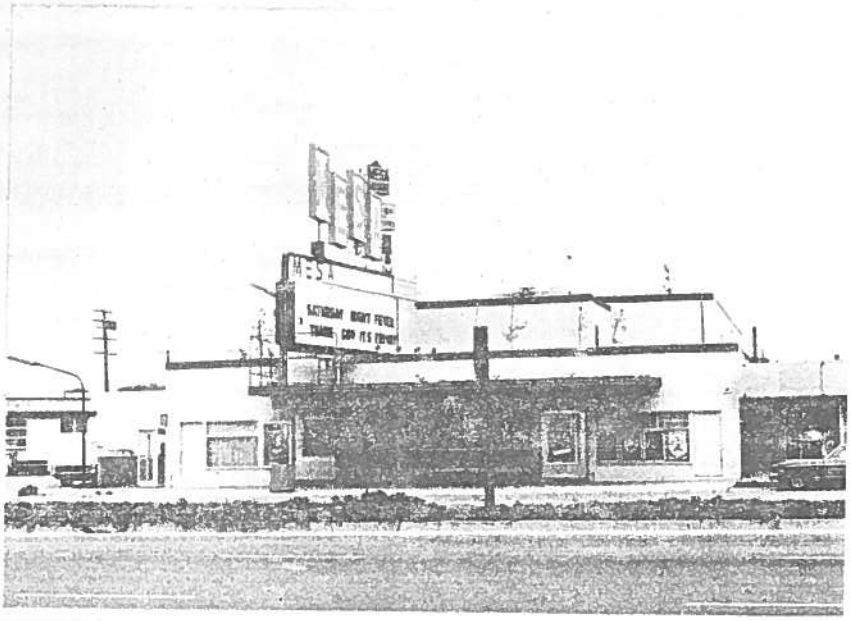
Figure 21

a. Pink's Drug Store

b. Sign for Costa Mesa Mattress Co.

Figure 22

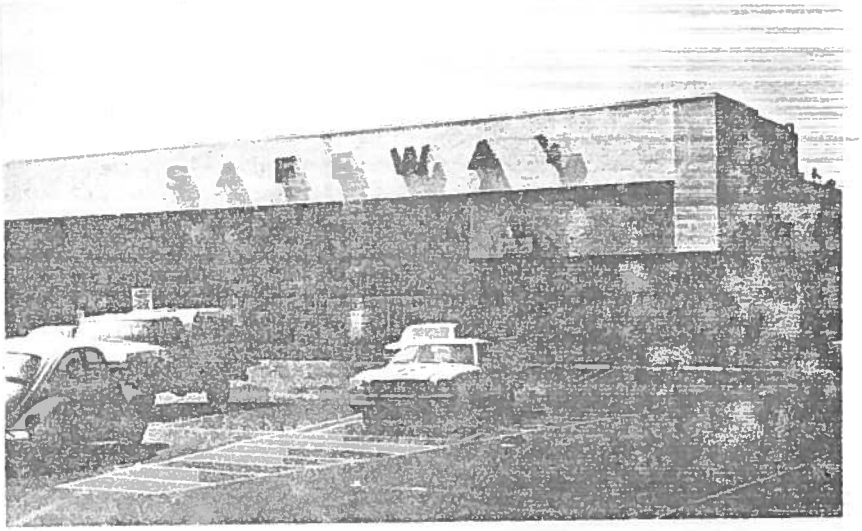
a. Shamrock Bar



b. Mesa Theatre

Figure 23

a. Mesa Center



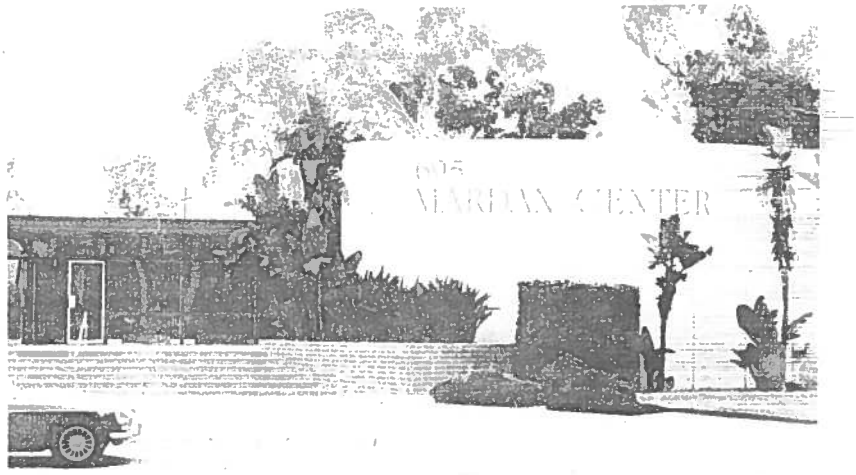
d. Safeway Grocery Store at Mesa Center

Figure 24

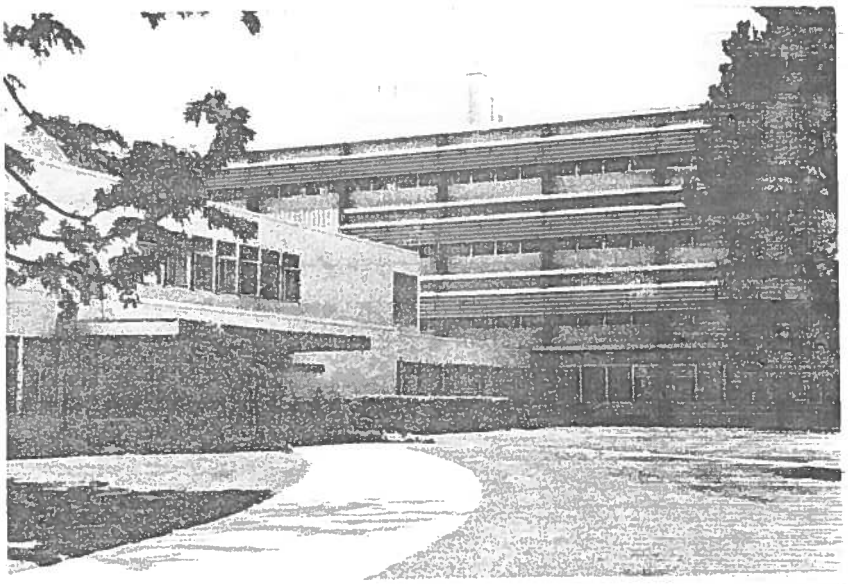
a. First City Hall

b. Former Costa Mesa
Post Office

Figure 25



a. Second City Hall



b. Fairview State Hospital

Figure 26

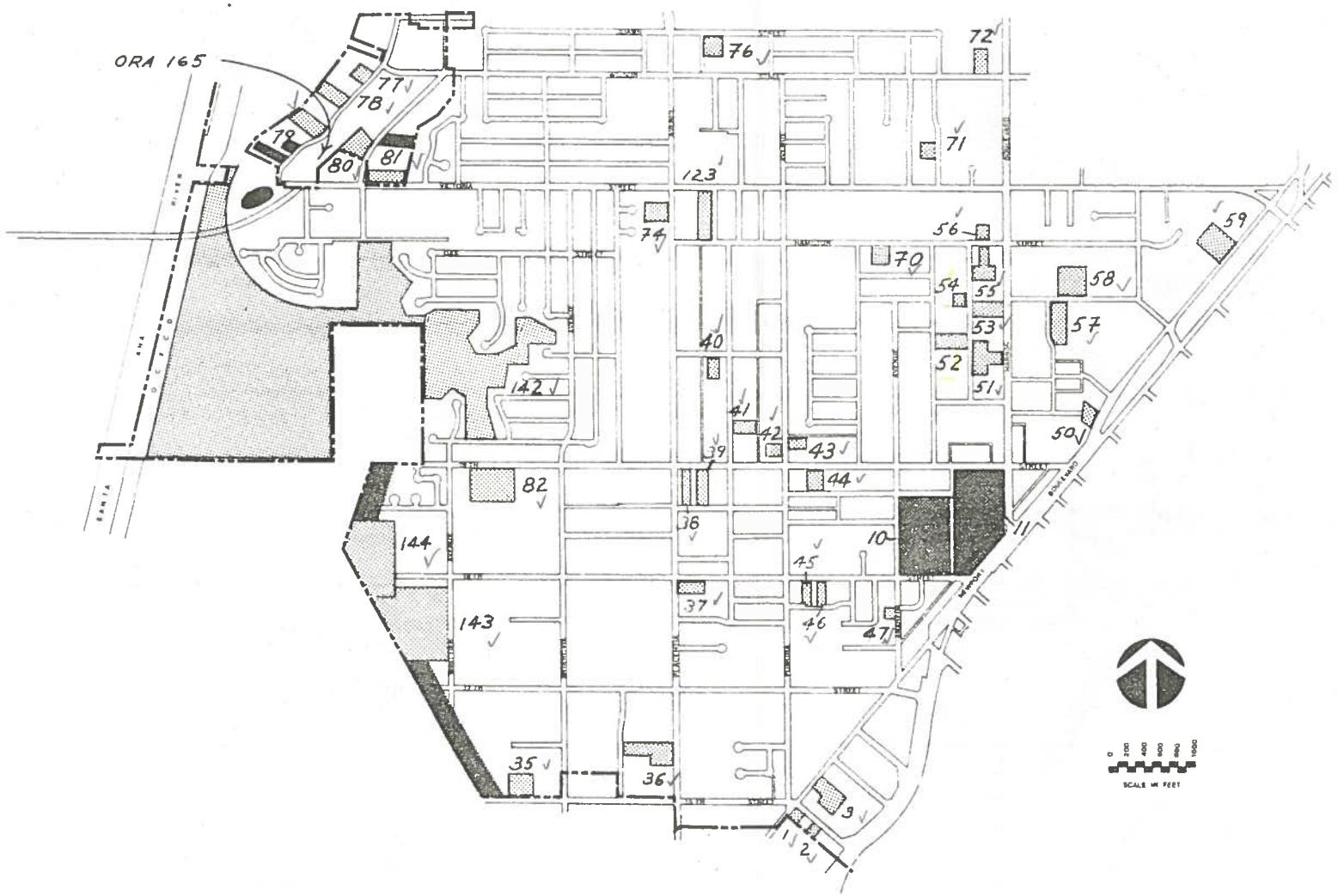
a. Basil H. Patterson
Gymnasium

Figure 27

Fig. 28. Map Showing Early Communities in Costa Mesa.

OR-00299

PLANNING AREA 1



PROPERTY PREVIOUSLY SURVEYED.

PROPERTY SURVEYED BY ARCHAEOLOGICAL ASSOCIATES.

Figure 29.

OR-00299

PLANNING AREA 2

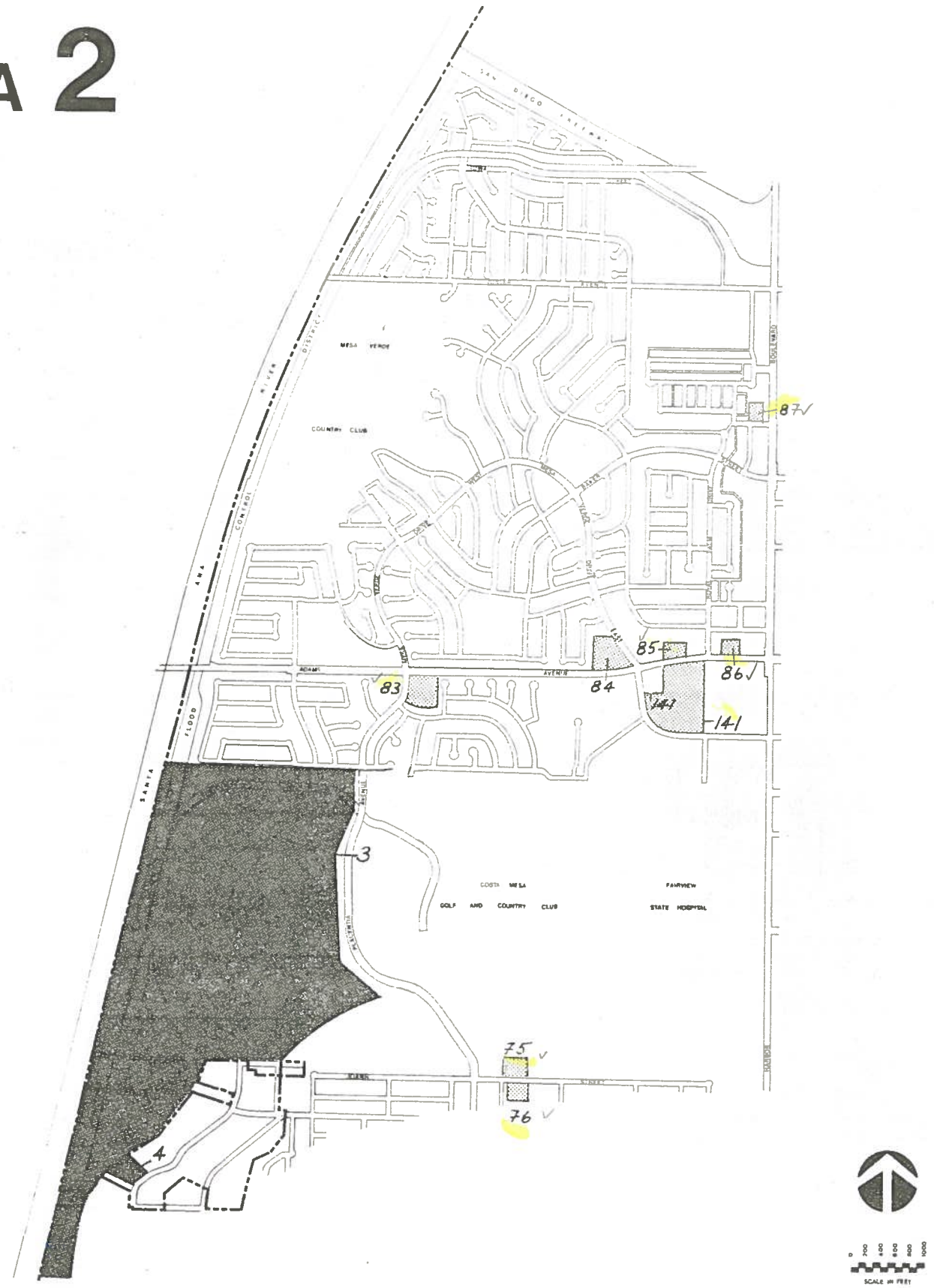


Figure 30.

See Legend in Fig. 29

OR-00299

PLANNING AREA 3

Figure 31

See Legend in F

OR-00299

PLANNING AREA 4

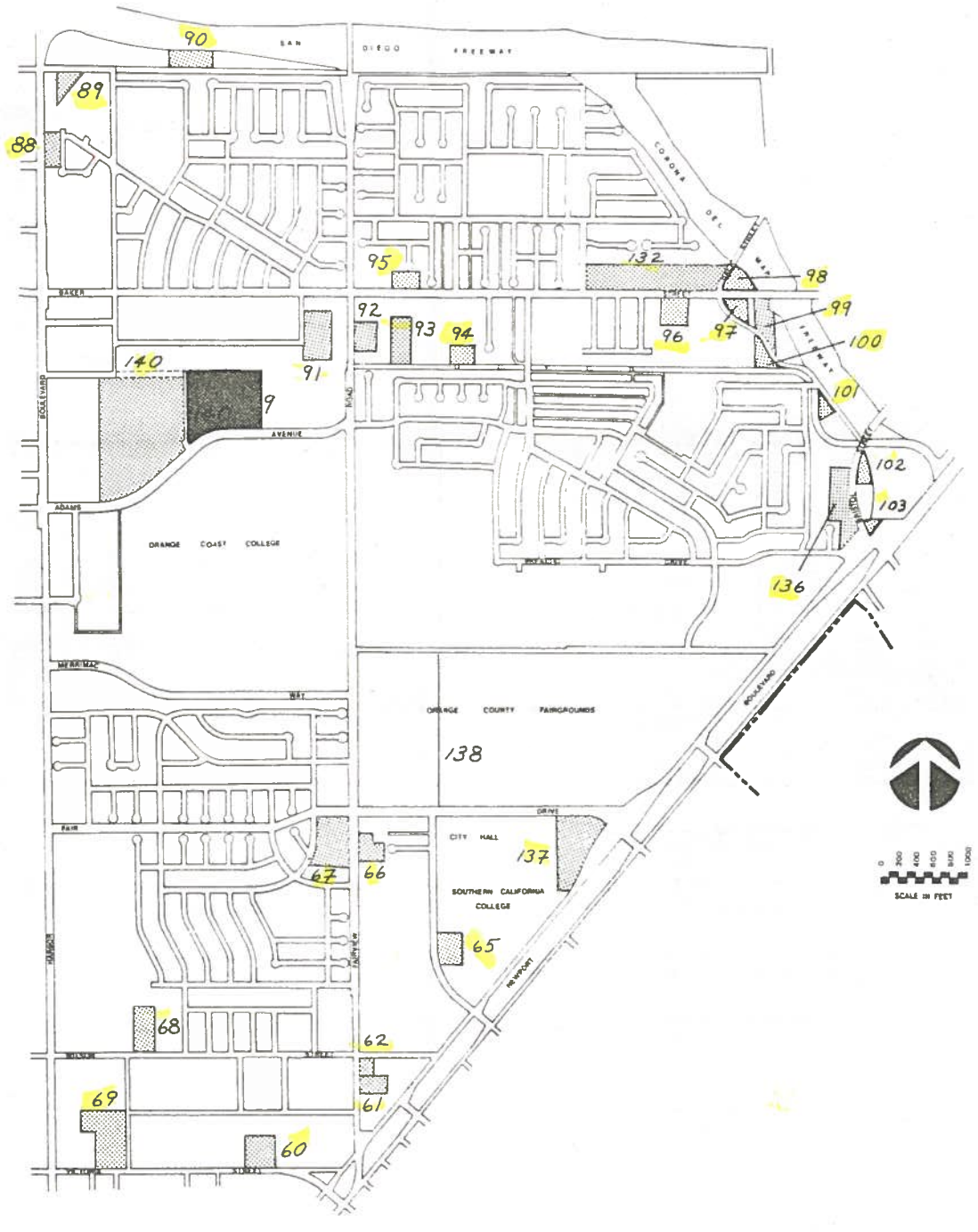


Figure 32

See Legend in Fig. 29

OR-00299

PLANNING AREA 5

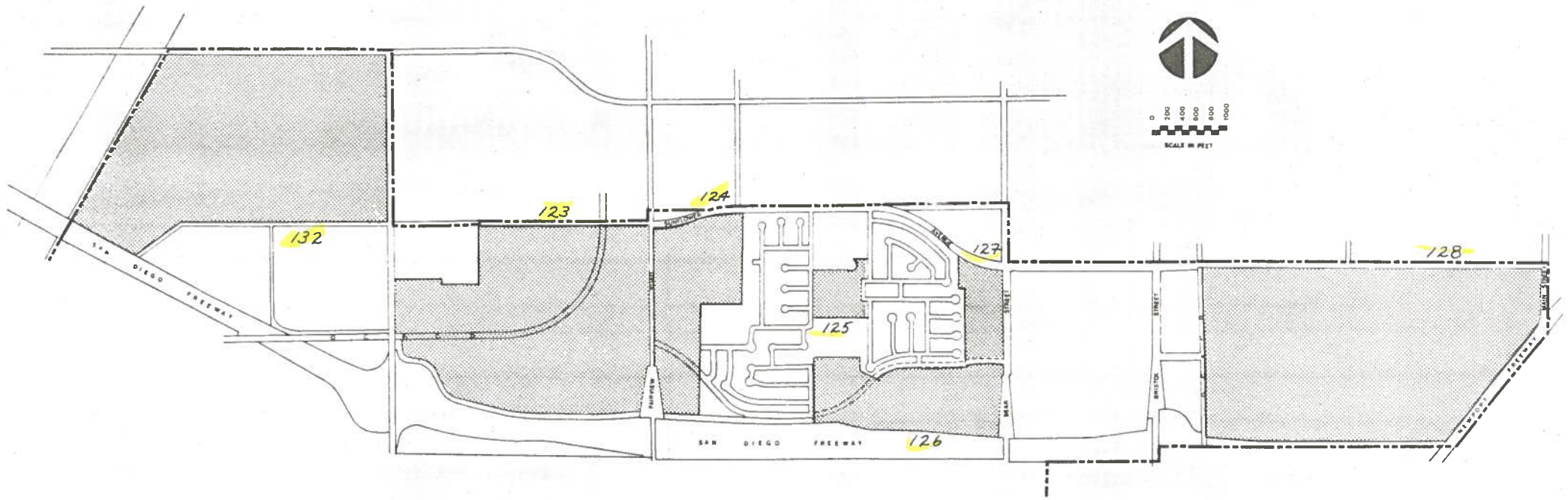


Figure 33

See Legend in Fig. 29

OR-00299

PLANNING AREA 6

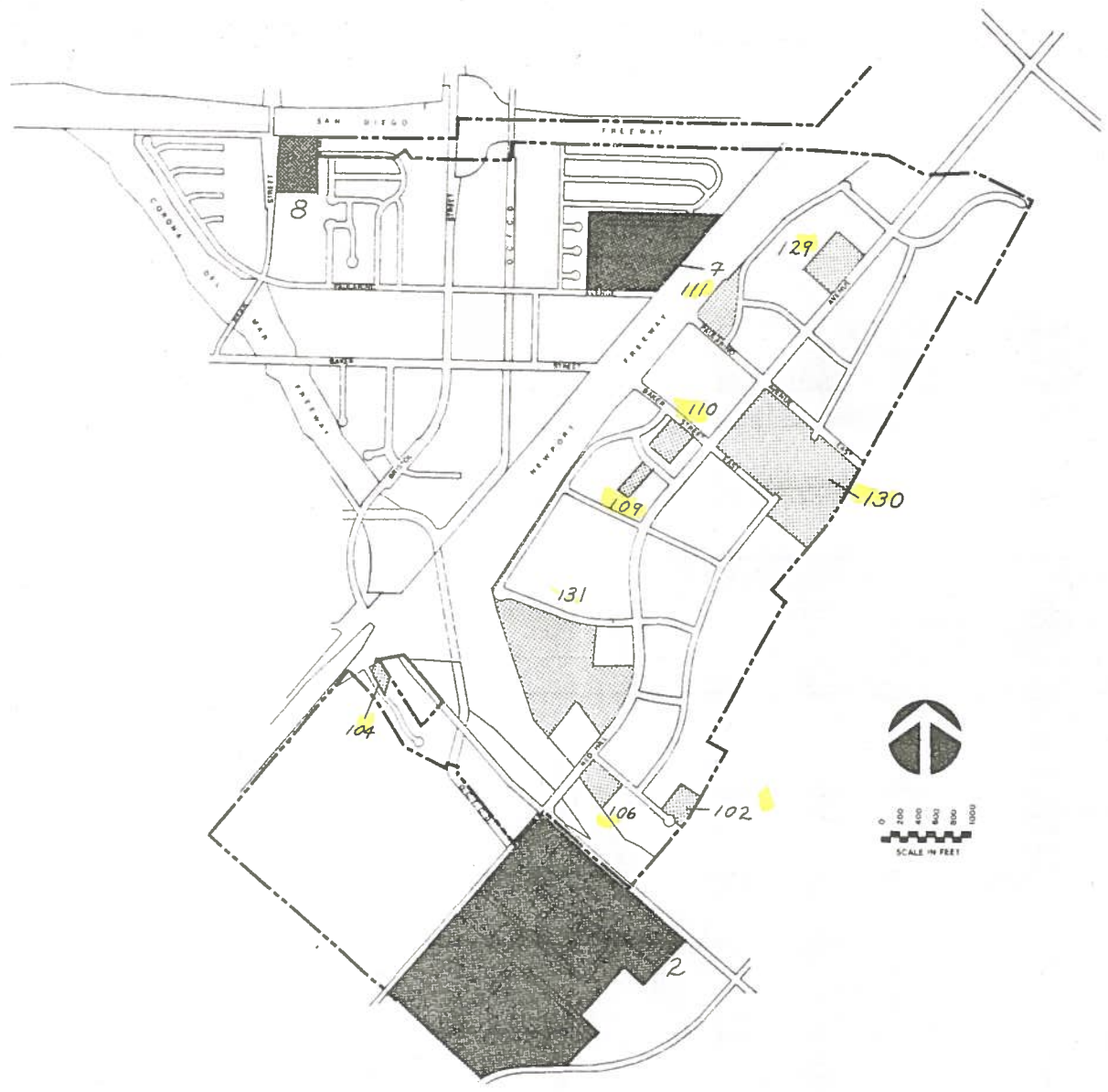
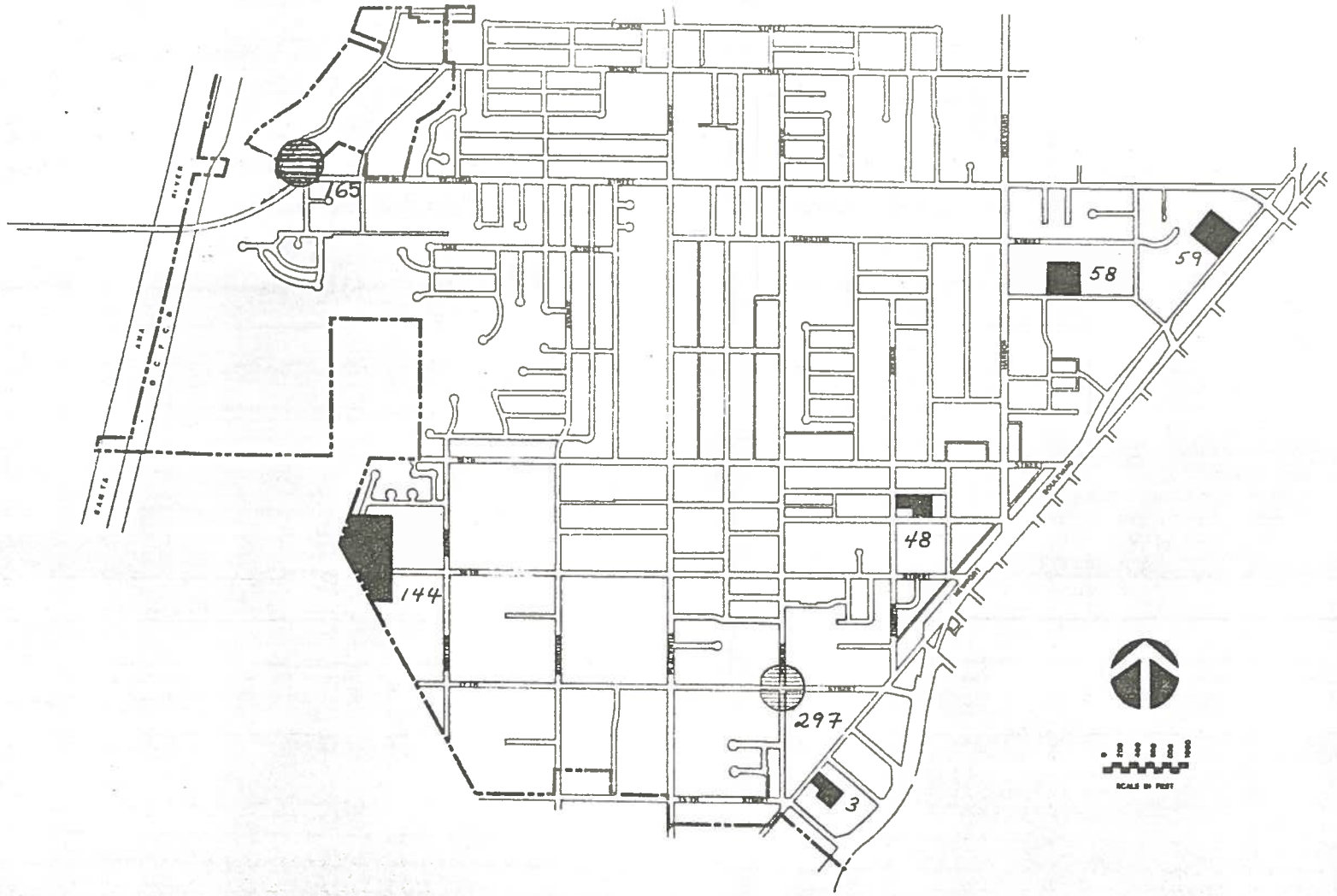


Figure 34

See Legend in Fig. 29

OR-00299

PLANNING AREA 1



ARCHAEOLOGICAL ASSOCIATES POSITIVE SURVEY RESULTS

PREVIOUSLY RECORDED SITES

Figure 35

OR-00299

PLANNING AREA 2

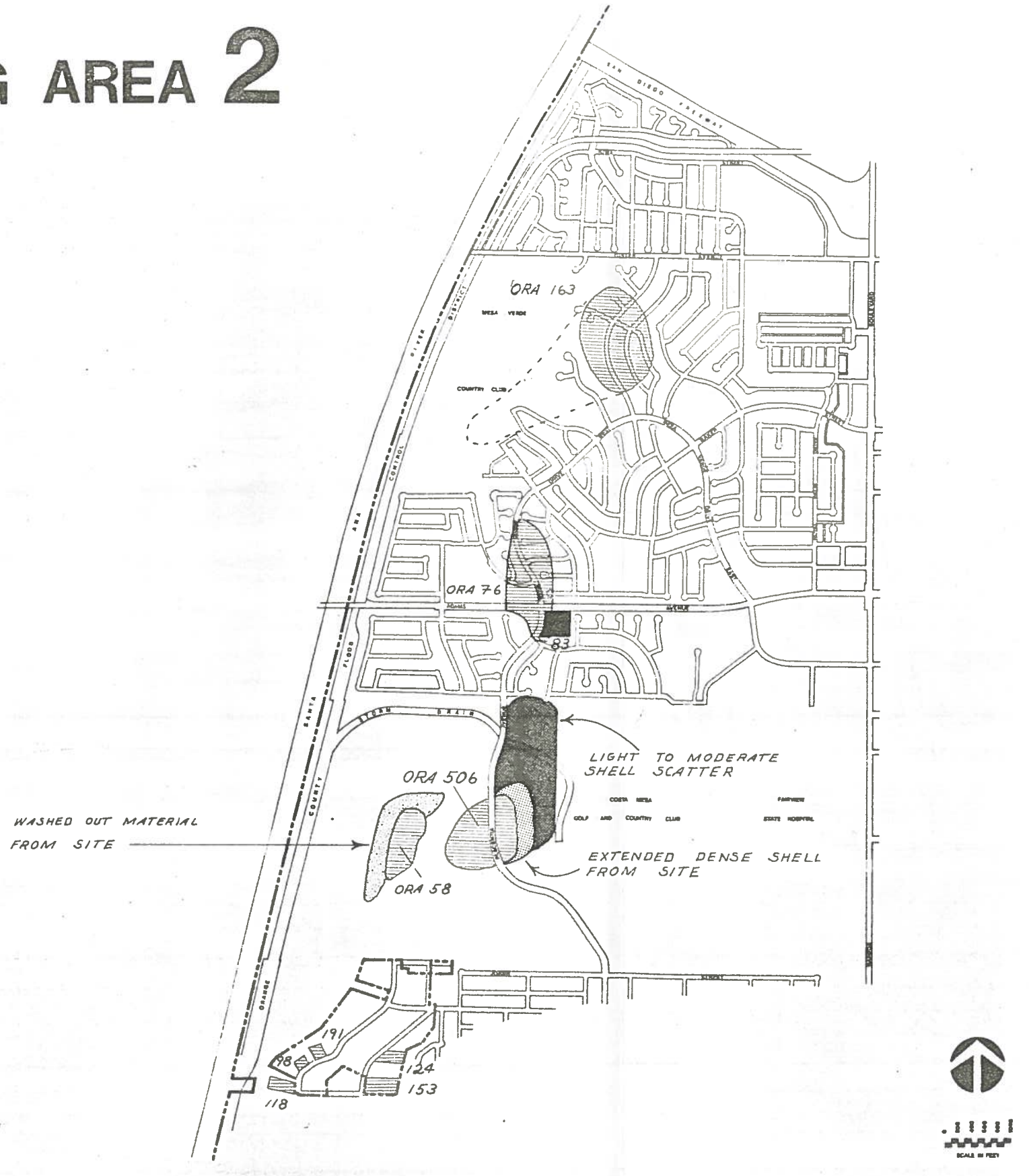


Figure 36

See Legend in Figure 35

OR-00299

PLANNING AREA 3

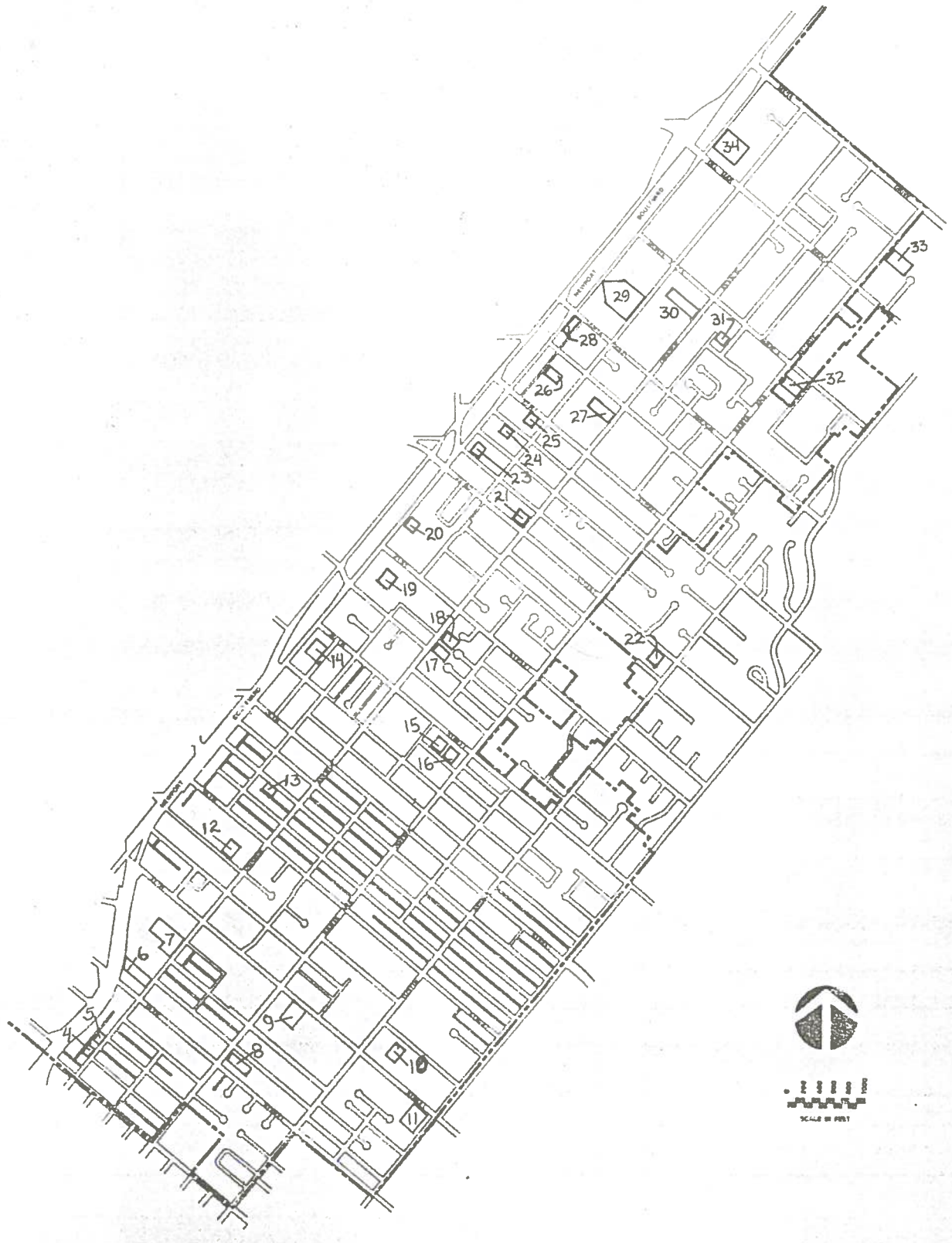


Figure 37

See Legend in Figure 35

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PLANNING AREA 4

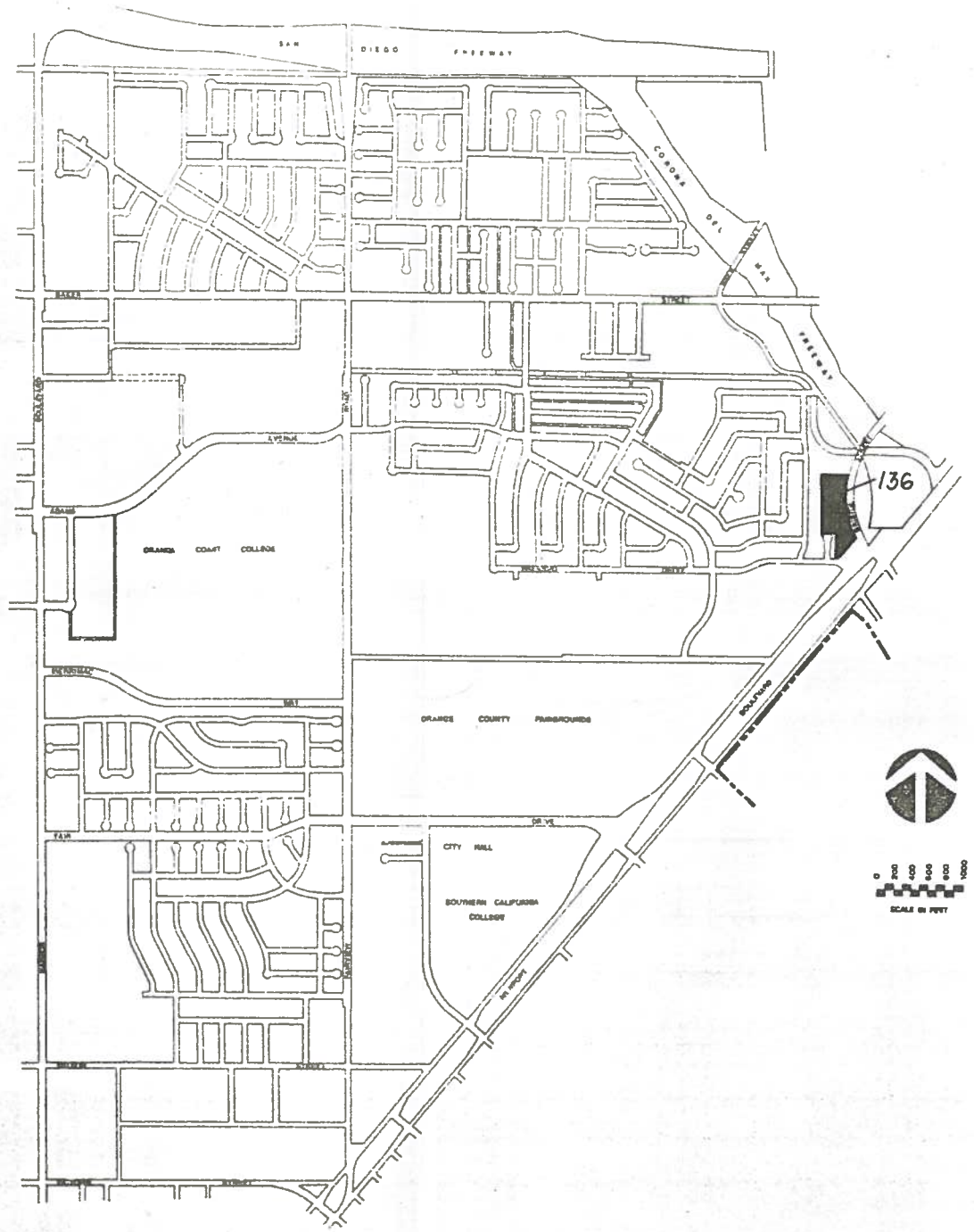

Figure 38

See Legend in Figure 35

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PLANNING AREA 5

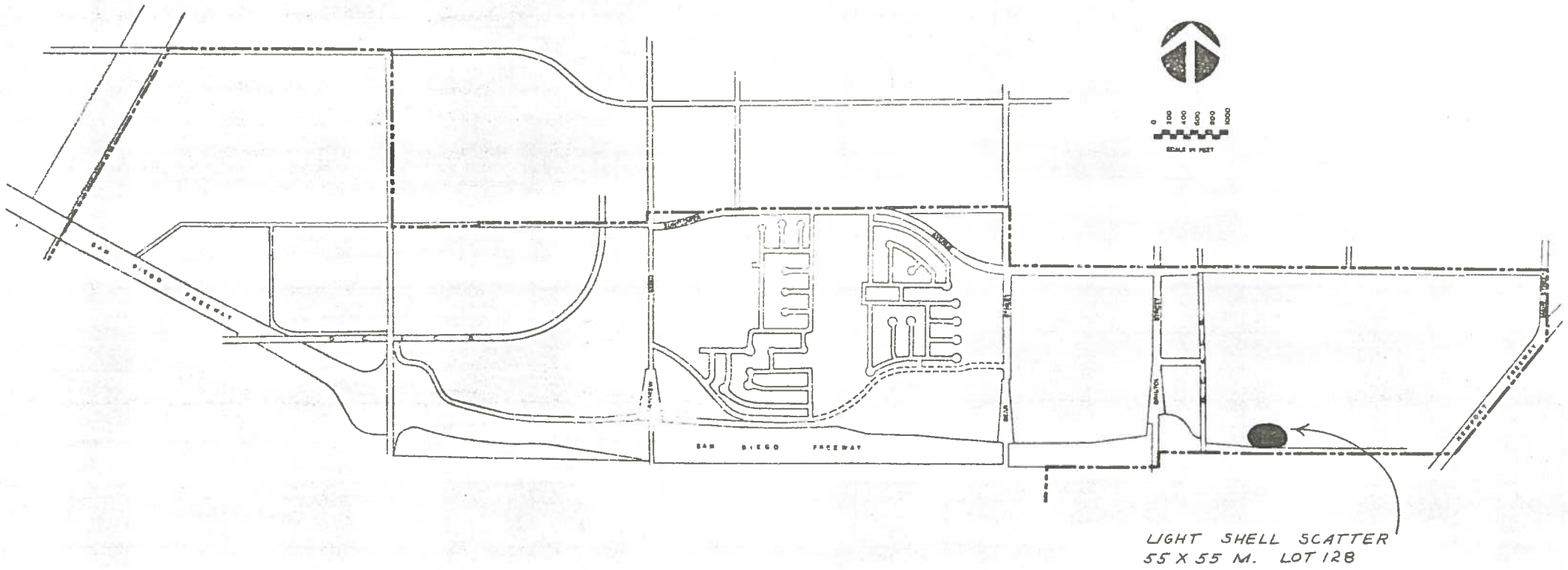

Figure 39

See Legend in Figure 35

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PLANNING AREA 6

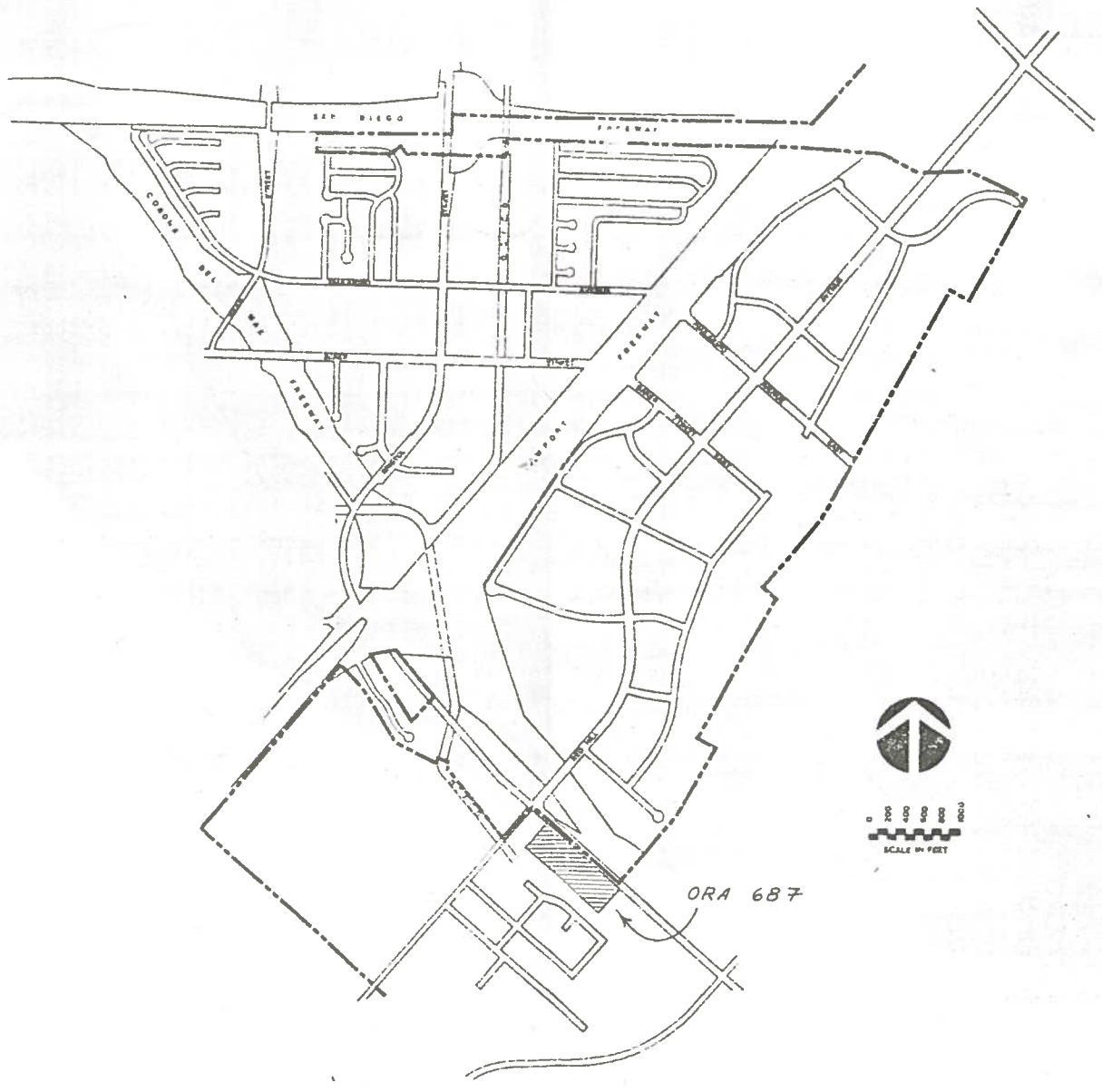

Figure 40

See Legend in Figure 35

PART III

PALEONTOLOGICAL DATA

By
Dr. John C. Cooper

INTRODUCTION

The City of Costa Mesa, Orange County, California, is situated on the Costa Mesa Plateau (= Newport Bay Mesa), which faces the Santa Ana River to the northwest, the inner Newport Bay on the southeast and the barrier beach of Newport Beach on the southwest (Figure 1). The mesa is approximately 100 feet in elevation near the present sea cliff that borders the Newport lagoon and oceanfront; it dips about 20 feet per mile and coalesces with the Santa Ana alluvial plain to the north. The mesa terminates to the east and west by river cut bluffs, in places approximately 100 feet in elevation, facing the present channel of inner Newport Bay and the Santa Ana River gap (Figure 1).

The surface of the Mesa platform is veneered with deposits of poorly consolidated sand and gravel mapped (Morton and Miller, 1973; Kanakoff and Emerson, 1959; Vedder, et al. 1957) as the Palos Verdes Formation. This formation is Late Pleistocene in age (approximately 100 thousand years old as determined by Fanale and Schaeffer (1965) and varies in thickness from about 10 to 40 feet; it unconformably overlies (Figure 2) a northwesterly dipping succession of older Tertiary (Middle Miocene to Pliocene sediments of the Monterey and Capistrano Formations) rocks, and is in turn capped by a thin (several feet thick) unit of brownish red silty sand and a thin surface layer of reddish soil. The key stratigraphic unit with respect to the paleontologic resources of the Costa Mesa area is the Palos Verdes Formation, which will be referred to herein as the Palos Verdes Sand.

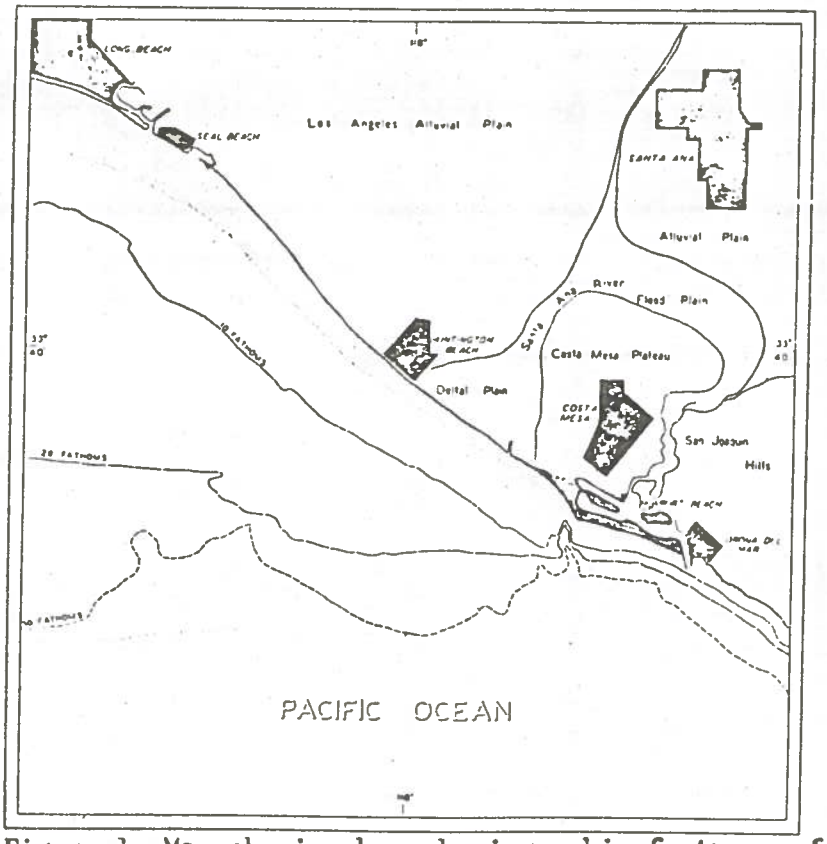

Figure 1. Map showing key physiographic features of southern California coastal area from Long Beach to Corona del Mar.

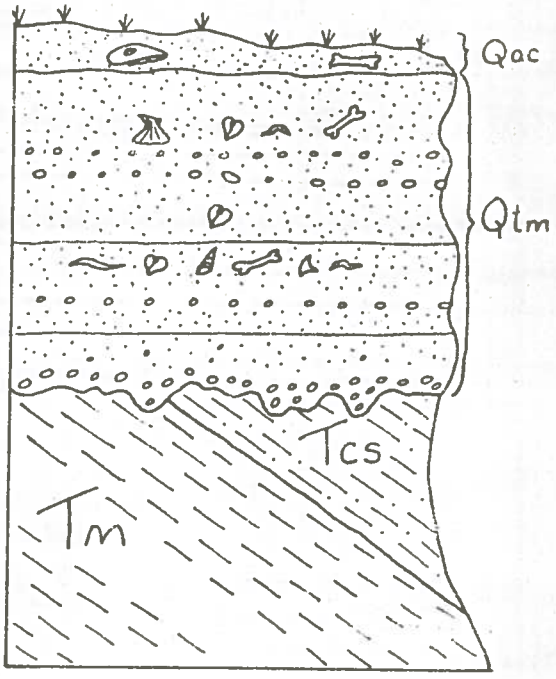

Figure 2. Schematic stratigraphic column showing unconformable relationship between Palos Verdes Sand (Qtm) and older Tertiary strata of the Middle to Upper Miocene Monterey Formation (Tm) and Upper Miocene to Pliocene Capistrano Formation (Tcs)

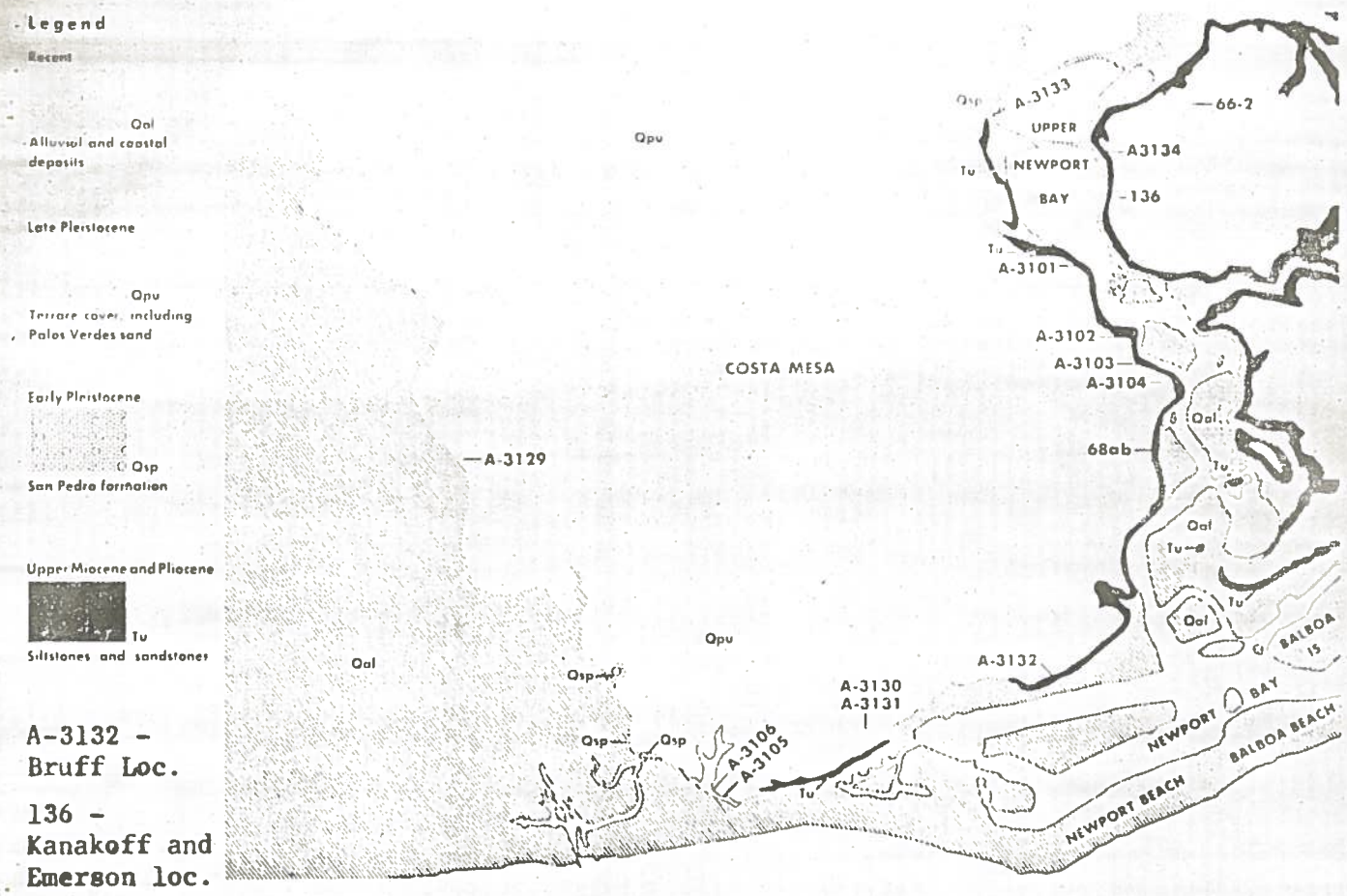

Figure 3. Geologic Map of Newport Bay area showing fossil localities of Bruff (1946) and Kanakoff and Emerson (1959). Sedimentary rocks designated Tu include the Middle to Upper Miocene Monterey Formation, the Upper Miocene to Pliocene Capistrano Formation, as well as unnamed Upper Pliocene beds.

PALEONTOLOGY

The Late Pleistocene sediments of the Newport Bay area have been the subject of several important paleontologic studies and the target for some outstanding systematic collections. Marine invertebrates dominate the fauna, but significant occurrences of both marine and non-marine vertebrate fossils add greatly to the paleontologic richness of the Palos Verdes Sand.

Figure 3, taken from Kanakoff and Emerson (1959), shows the surface geology, and the paleontologic localities as recorded by them and Bruff (1946). Kanakoff and Emerson (1959) enumerated the largest assemblage of invertebrate fossils known from the marine Pleistocene deposits of western North America. More than 500 species, including 436 mollusks, from more than 20 localities, constitute a truly significant fauna. The work of Bruff (1946) and Kanakoff and Emerson (1959) are classic studies on the Late Pleistocene history, paleontology, paleoecology, and marine paleobiogeography of southern California. Collections of Newport Mesa invertebrate fossils are housed at the Natural History Museum of Los Angeles County; the Department of Geology, U.C.L.A.; Department of Earth Science,

California State University, Fullerton; Department of Geology, University of California at Riverside; Department of Geology, Chapman College; and the Natural History Foundation of Orange County. A number of private collectors, in particular, Mr. and Mrs. Frank Gronard, also have excellent collections.

In addition to the invertebrates, numerous remains of marine and terrestrial vertebrates have been reported from Late Pleistocene deposits of the Newport Bay area. Two major and several minor or miscellaneous vertebrate localities have been recorded in the vicinity of Upper Newport Bay. The vertebrate faunas have been described and summarized by Miller (1971) and include a variety of bony fish, shark and ray, marine turtle, sea-going and coastal birds (Howard 1948, 1958), a toad, and a rich mammalian assemblage including terrestrial (rabbit, rodent, sloth, coyote, horse, tapir, deer, camel, bison, mammoth, etc.) and marine (whale, dolphin, porpoise, sea cow, sea lion, fur seal, elephant seal, sea otter) forms. Miller assigned a Rancholabrean age to the terrestrial assemblage from LACM 1066 (= invertebrate locality 66) and postulated a grassland and associated woodland paleoenvironment. According to Miller (1971, p. 43), "The environment was probably very similar to the one at Rancho La Brea during the period of deposition there, as based on its faunal constituents".

The foregoing discussion, although not pertaining directly to the City of Costa Mesa, provides an areal context within which the existing and potential paleontologic resources within the corporate boundaries of the City of Costa Mesa might be better appreciated and understood. Fossils have also been collected in the vicinity of Newport Bay from the stratigraphic units that unconformably underlie the Palos Verdes Sand. Fossil remains of fish, shark, marine mammals, scattered invertebrates, and abundant microorganisms (foraminifera, diatoms, radiolarians; Ingle, 1962, Berger, 1971) have been collected from a number of localities in the Monterey and Capistrano Formations (Figures 2, 3). These beds do not crop out within the City of Costa Mesa and would be exposed only by excavating more than several tens of feet below the present surface.

PALEONTOLOGIC LOCALITIES, COSTA MESA

Paleontologic localities within the corporate boundaries of the City of Costa Mesa are shown on the large scale map (Plate I). Of the seven localities discussed, four were previously recorded and three were identified during the field investigation phase of the present study. Five of the seven localities are in the Palos Verdes Sand; the stratigraphic position of two is not clear, but is probably in the Late Pleistocene terrestrial deposits that overlie the Palos Verdes Sand.

Locality A-3129 — This locality, reported by Bruff (1946), occurs in coarse gray sand in an exposure in the western cliffs of the mesa. Fifty-two species of molluscs were identified and worn and broken shells were common. According to Bruff (1946, p. 236), "The pelcypods (bivalve mollusks) show a strong affinity for the bay type of habitat, whereas the gastropods (snails) are equally divided between bay and the protected beach habitats".

Locality JDC-CM-1 — This locality occurs near the base of the exposures in the cliff on the north side of Victoria Street. Fragmented shell material from bivalve and gastropod molluscs occurs in a thin interval in a medium to coarse gray sand. Abundant species include, Donax gouldi Dall, Semele decisa (Conrad), and Polinices lewisii (Gould).

Locality JDC-CM-2 — This locality occurs in a well exposed cliff face several hundred feet southeast of the corner of Canyon Drive and Sea Bluff Drive. Fossil mollusks, including fragmental and complete shells, occur in at least two separate thin intervals in a coarse buff sand and fine pebbly sand. Fossiliferous exposures can be traced laterally for perhaps 15 to 20 yards. This appears to be a good locality with moderate abundance of specimens and species diversity. Systematic collecting would no doubt yield several tens of species. Trachycardium sp., Donax gouldi (Dall), Nassarius sp., Macoma sp., and Conus sp. were observed.

Locality JDC-CM-3 — This locality occurs in a small cliff exposure near the west end of 19th Street. The molluscan shells are in a thin dark brown muddy to silty fine sand stratum. Species diversity here appears low and forms represented include thin-shelled Ostrea sp., Anomia sp., and Tagelus sp. The assemblage has a distinct bay-type character.

Locality LACM-3267 — This locality is on file in the Vertebrate Paleontology Section, Natural History Museum of Los Angeles County. The location is a former excavation near the intersection of Anaheim Avenue and 19th Street, and produced an elephant (not sure whether of mastodon or mammoth affinity, L. G. Barnes, LACM, personal communication) limb bone and mammoth tooth. Both specimens are in the vertebrate fossil research collections at the Los Angeles County Museum (LACM).

Locality F-91 — This locality is on file with the Natural History Foundation of Orange County; the specimen is on loan to the Foundation from the Costa Mesa Historical Society. The location is near the intersection of Boa Vista Drive and Navis Circle. The locality produced a mastodon limb bone from an excavation in 1962. The stratigraphic unit for this and LACM-3267 is most likely the non-marine Late Pleistocene alluvium overlying the Palos Verdes Sand.

Locality LACM 4219 — This locality is on file in the Vertebrate Paleontology Section, Natural History Museum of Los Angeles County. According to Dr. L. G. Barnes, Curator of fossil vertebrates, this is a locality of considerable importance and concern to the Museum. An assortment of vertebrate fossils have been recovered and include fish, bird, shark, sea lion, and seal. The location is between the opposing lanes of Newport Boulevard (southwesterly extension of the Newport Freeway, State Highway 55), approximately 250 feet west of Santa Isabel Avenue. This area is part of a fenced-in corridor that is under the jurisdiction of Cal-Trans (State of California Department of Transportation). Abundant invertebrate fossils have been collected from the site from a 15-foot thick interval of the Palos Verdes Sand, and an extensive faunal list from Peska (1975) is included as an appendix. Other good collections from this important locality are with the Natural History Foundation of Orange County (locality F-58), the University of California, Riverside (locality No. 7724), the Southern California Paleontological Society (locality No. 199, and the Natural History Museum of Los Angeles County (locality No. LACMIP-5062), and the private collection of Mr. George Lee of Costa Mesa. The overwhelmingly molluscan fauna includes more than 100 species and the faunal composition suggests an open, shallow marine sandy bottom paleo-environment.

ANALYSIS

The specific paleontologic localities described above are color coded on the map (Plate I) to symbolize their relative importance (significance) and sensitivity to environmental impact. The color-coded scheme represents a priority scale that rates the sites/localities/resources; the scale, and thus the rating, is based on considerations of the following criteria: location and accessibility; mode of preservation; quality and abundance of specimens; ease of collecting; taxonomic composition and diversity of the fossil assemblage; unique or special attributes of the assemblage; occurrence of new (previously undescribed), unusual or otherwise noteworthy taxa; past, present, and future (potential) contributions to academic research and public education. The priority scale is intended to reflect the spectrum of fossil occurrences in Orange County; as regards the present study, the scale and accompanying text discussion should be viewed within the context of Orange County paleontologic resources.

Priority Scale

First Order — highest priority ● - sites, localities, areas recommended for preservation in natural state, and which should be rendered available and accessible for scientific study and research and public education. To merit such a rating paleontologic resources necessarily must be scientifically and/or educationally significant and should occur within an aesthetically pleasing area or in association with other noteworthy geologic or other (e.g. archaeologic) resources. No paleontologic resources within the City of Costa Mesa are presently recognized as being first order.

Second Order — very high priority ◉ - areas, sites, localities containing very significant paleontologic resources, but which are not amenable to open-space, park-type preservation in the natural state. Such designates should be systematically quarried for fossils prior to grading as well as systematically salvaged during grading. Some testing may be warranted prior to systematic collecting. Second Order resources carry a connotation of urgency. No paleontologic resources in the City of Costa Mesa are considered to be second order.

Third Order — high priority ◉ - localities, sites, areas that should be rendered available for further search for fossils prior to and during grading operations. Sites and adjacent areas as defined (in initial reports or later) should be monitored closely during grading or other surface cutting, and accompanied by an appropriate salvage program. Such designates bear fossils deemed significant (vertebrate material as well as significant paleobotanical and invertebrate fossils), but less so than second order; third order rating does not carry quite the message of urgency as second order. Locality LACM 4219 (= locs. UCR 7724, F-58, LACMIP 5062, FP 32, SCPS 199) is considered to be third order.

Fourth Order — ⊛ - vertebrate localities that are one (or a few) specimen occurrences (either previously recorded or identified during EIR survey). Their present importance is not so much for the quality of material itself, but rather for the fact that these occurrences are a signboard to what may be discovered below the surface--during grading. They indicate a potential for this and other areas of the formation yielding significant fossils (perhaps third, second, and even first order) at later date (during surface cutting phase of project). Also

included (depending on situation) are other types of fossils (invertebrates, plants, microfossils) as may be deemed significant (possibility for systematic collections). Grading and cutting operations on site and nearby should be monitored by qualified paleontologic inspector(s), with appropriate salvage of specimens as warranted. Two localities, LACM 3267 and F-91 are designated fourth order within the City of Costa Mesa.

Fifth Order — ● - all remaining invertebrate (and perhaps others such as plant remains, microfossils, etc.) sites, localities, areas where no site-specific impact is foreseen. These occurrences represent situations where some salvage could be accomplished if site were destined for destruction (or access lost). Fossils could be collected non-systematically (or possibly systematic collections depending on nature of material) such as for hands-on educational purposes. Four localities, A-3129, JDC-CM-1, JDC-CM-2, and JDC-CM-3 are considered to be fifth order. Of the four, JDC-CM-2 would apprear to have the best potential for becoming a third order site after thorough examination and collecting.

Sixth Order — ● - general microfossil localities. No impact foreseen, no salvage recommended. Also included are very poorly preserved non-diagnostic fossils (invertebrate fragments, plant fragments, fish scales, etc.).

These ratings primarily represent assessments made during initial surveys. Subsequent discoveries, research and analysis could very possibly (highly likely in some cases) change the status (rating) of any particular site/locality/resource. Also, these ratings belong to a system that I developed and represent only my interpretation.

IMPACTS AND RECOMMENDED MITIGATION

The Late Pleistocene deposits (viz, the approximately 100,000 year old Palos Verdes Sand) of the Newport Mesa-Newport Bay area are richly fossiliferous, and contain a wealth of vertebrate and invertebrate remains. The association of terrestrial and marine vertebrates and marine invertebrates in the same deposits is particularly significant because this facilitates the correlation of terrestrial and marine sequences in other areas.

This area has served as one of the key reference secitons of Late Pleistocene age in western North America. It has provided a wealth of scientific information on the complexion of life forms, paleoecology, paleobiogeography, and depositional history for coastal southern California for an important interval of Late Pleistocene time. The section has also provided outstanding collections for public education/research institutions as well as private collectors. Despite this wealth of information, there are still many important scientific questions to be answered concerning these deposits and their fossil content. As one example, more material needs to be examined for a better understanding of the paleoenvironmental patterns that existed in the Newport Bay area during Palos Verdes time. Richly fossiliferous deposits that are exposed in the cliff faces on both sides of Newport Bay and to some extent on the Santa Ana gap side of Newport Mesa also) underlie the City of Costa Mesa (Figure 4). This condition makes it imperative that future excavations, particularly where sizeable volumes of overburden will be removed, should be monitored by a qualified paleontologist. Cuts within the top of the Costa Mesa platform such as the Cal-Trans right-of-way along Newport Boulevard

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(Locality LACM 4219) and the Orange County Flood Control District canals expose appreciable thicknesses of the Palos Verdes Sand.

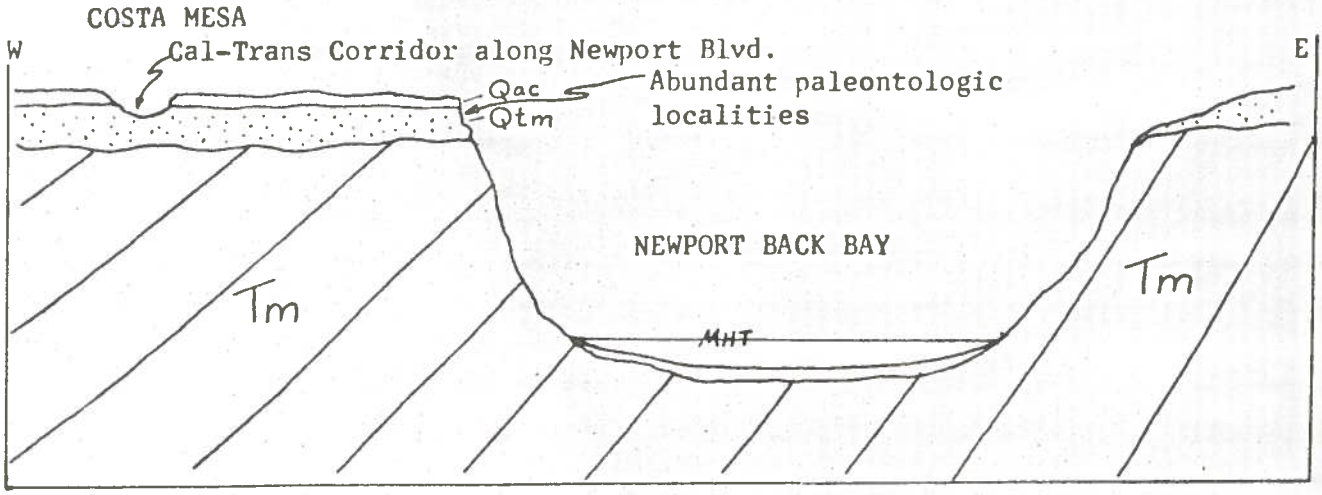

Figure 4. Schematic cross-section from East to West across Newport Back Bay depicting large scale stratigraphic relations. Qac represents Late Pleistocene to Recent terrace alluvium; Qtm refers to marine terrace deposits, identified mainly as Palos Verdes Sand. Note greatly exaggerated dips on Tertiary beds.

Future excavations within the Cal-Trans right-of-way corrisor between Mesa Street and Fairview Avenue (along the westerly extension of State Highway 55) should be closely monitored by a qualified paleontologist. Pre-grading collection of specimens from the present site (LACM 4219) and other parts of the corridor is highly recommended. To date, the existing locality appears to be the most fossiliferous, but field examination has indicated that some fossil material is present in other parts of the corridor also.

Locality JDC-CM-2, near Canyon Drive and Sierra Vista Drive, needs to be examined and collected more thoroughly. This locality is in a well exposed cliff outcrop of the Palos Verdes Sand and is quite accessible. I recommend that permission be granted for members of the Orange County Natural History Foundation to collect this locality.

Again, I would like to emphasize the importance of future excavations in Costa Mesa being monitored by a qualified paleontologist. This paleontological supervision should be conducted by an individual(s) on the EMA, County of Orange approved paleontological consultant list. Significant fossils that are discovered in the future should be donated to the Natural History Foundation of Orange County. It is essential that efforts be made to insure that the loss of important scientific information will not occur. During the early 1970's, massive excavation of the Late Pleistocene marine terrace deposits in the East Bluff area of Newport Back Bay resulted in the loss of numerous fossil specimens. Today we have the philosophy and guidelines to hopefully eliminate future occurrences of this sort.

John D. Cooper

Addenum to Report on Paleontologic Assessment of City of Costa Mesa, California

John D. Cooper
July 28, 1978

Locality VAC-CM-4 (see Plate I) was discovered during examination of the Mesa Street to Delmar Drive segment of the Cal-Trans right-of-way corrider west of the Newport Freeway (State Highway 55). Excellent exposures of the Palos Verdes Sand occur the entire length of this segment, and a prolific molluscan fauna comparable to that at near-by locality LACM 4219 is present. Preliminary examination indicates the fossils occur at the same stratigraphic horizon as LACM 4219, and the material is in good condition. It is my recommendation that the Orange County Natural History Foundation be granted permission to collect Locality VAC-CM-4. It is rated third order and should be collected prior to any future grading or cutting activity.

REFERENCES

Bergen, F. W., ed., 1971, Geologic Guidebook, Newport Lagoon to San Clemente, Orange County, California: Pacific Section SEPM Guidebook for October 23, 1971 field trip.

Bruff, S. C., 1946, The paleontology of the Pleistocene molluscan fauna of the Newport Bay area, California: Univ. Calif. Public. Geol. Sci. Bull., vol. 27, p. 213-240.

Fanale, F. P., and Schaeffer, 1965, Helium-Uranium ratios for Pleistocene and Tertiary fossil aragonites: Science, vol. 149, p. 312-316.

Howard, H., 1948, Later Cenozoic avian fossils from near Newport Bay, Orange County, California: Geol. Soc. Amer. Bull., vol. 59, p. 1372-1373.

_____, 1958, Further records from the Pleistocene of Newport Bay Mesa, California: Condor, vol. 60, p. 136.

Ingle, J. C., Jr., 1962, Paleoecologic, sedimentary, and structural history of the Late Tertiary Capistrano Embayment, California: unpub. M.S. thesis, U.S.C.

Kanakoff, G. P., and Emerson, W. K., 1959, Late Pleistocene invertebrates of the Newport Bay area, California: Los Angeles County Museum, Contrib. Sci., No. 31, p. 1-47.

Lance, J. F., 1948, Mammals from the Palos Verdes Pleistocene: Geol. Soc. Amer. Bull., vol. 59, p. 1375.

Miller, W. E., 1971, Pelistocene vertebrates of the Los Angeles Basin and vicinity (exclusive of Rancho La Brea): Bull. Los Angeles Co. Mus. Nat. Hist., Science, No. 10.

Morton, P. K., and Miller, R. V., 1973, Geologic Map of Orange County, California (scale 1:48000) in Geoenvironmental maps of Orange County, California: Calif. Div. Mines and Geology, Prelim. Report 15.

Peska, F., 1975, A Late Pleistocene molluscan fauna from Costa Mesa, California: Preliminary Report: Bull. of the So. Calif. Paleontological Society, vol. 7, no. 11, p. 141-145.

Savage, D. E., Downs, T., and Poe, O. J., 1954, Cenozoic Land Life of Southern California: Clif. Div. Mines and Geol. Bull. 170, p. 43-58.

Vedder, J. G., et al., 1957, Geologic map of the San Joaquin Hills--San Juan Capistrano area, Orange County, California: U.S. Geol. Survey Oil and Gas Inves. map, OM 193.

Stevenson, R. E., and Emery, K. O., 1958, Marshlands at Newport Bay, California: A. Hancock Found. Publ., Occas. Papers, v. 20, p. 1 - 109.

APPENDIX A

Table 1. Costa Mesa Late Pleistocene Fauna--SCPS locality 199--A preliminary list. [?=identification questionable; *=no specimens in my collection but seen in other collections]

GASTROPODA

Acanthina spirata (Blainville)
Acmaea mitra Rathke
Acteocina culcitella (Gould)
Amphissa sp.
Antiplanes perversa (Gabb)
Astraea undosa (Wood)
Balcis sp.
Bulla gouldiana Pilsbry
Bursa californica (Hinds)
Calliostoma canaliculatum (Lightfoot)
C. gemmulatum Carpenter
C. tricolor Gabb
Ceratostoma nuttalli (Conrad)
Cerithidea californica (Haldeman)
Collisella asmi (Middendorf) ??
C. conus (Test) ?
C. scabra (Gould) ?
Conus californicus Hinds
Crepidula adunca Sowerby
C. coei Berry
C. norrissiarum Williamson ?
C. onyx Sowerby
C. perforans (Valenciennes)
Crepipatella lingulata (Gould)
Crucibulum spinosum (Sowerby)
Cypraea spadicea Swainson
Diodora arnoldi McLean
D. aspera (Rathke)
Epitonium cooperi Strong
E. indianorum (Carpenter)
E. sp.
Eupleura muriciformis (Broderip)
Fissurella volcano Reeve
Forreria belcheri (Hinds)
Fusinus barbarensis (Trask)
F. sp.
Fusitriton oregonensis (Redfield) ??
Haminoea virescens (Sowerby)
Hipponix tumens Carpenter
Homalopoma sp.
Lacuna sp.
Macron lividus (A. Adams)
Mangelia variegata Carpenter
Megasurcula carpenteriana (Gabb)
Megatebennus bimaculatus (Dall)
Melampus olivaceus Carpenter
Mitra idae Melvill
Mitrella carinata (Hinds)
M. carinata gausapata (Gould)
M. sp.
Murex type--one fragment
Nassarius cerritensis (Arnold)
N. delosi (Woodring)
N. mendicus (Gould)
N. perpinguis (Hinds)
N. tegulus (Reeve)
N. sp.
Neverita reclusiana (Deshayes)
N. reclusiana alta (Pilsbry)
Norrisia norrisi (Sowerby)
Notoacmea insessa (Hinds)
Ocenebra cf. *O. coryphaena* (Woodring) ??
O. foveolata (Hinds)
Olivella baetica Carpenter
O. biplicata (Sowerby)
Ophiodermella ophioderma (Dall)
Polinices lewisii (Gould)
Pteropurpura festiva (Hinds)
Pterynotus leeanus (Dall)
Roperia poulsoni (Carpenter)
Serpulorbis squamigerus (Carpenter)
Sinum scopulosum (Conrad)
Tegula aureotincta (Forbes)
T. eiseni Jordan
T. funebralis (A. Adams)
T. gallina (Forbes)
T. pulligo (Martin)
Terebra danai Berry
T. pedroana Dall
Thais biserialis (Blainville)
Trivia californiana (Gray)
**T. solandri* (Sowerby)
Turcica caffea Gabb
Volvarina taeniolata Mörch

BIVALVIA

Amiantis callosa (Conrad)
Anomia peruviana Orbigny
Argopecten aequisulcatus (Carpenter)
Chaceia ovoidea (Gould)
Chama pellucida Broderip
Chione californiensis (Broderip)
C. fluctifraga (Sowerby)
C. gnidia (Broderip and Sowerby)
C. undatella (Sowerby)
Corbula luteola Carpenter
Cooperella subdiaphana (Carpenter)
Crassinella branneri (Arnold)
Cryptomya californica (Conrad)

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Cumingia californica Conrad
Diplodonta orbellus (Gould)
D. sericata (Reeve)
**Donax californicus* (Conrad)
D. gouldi Dall
Florimetis obesa (Deshayes)
Glycymeris subobsoleta (Carpenter)
G. sp. ?
Heterodonax pacificus (Conrad) ?
Hinnites multirugosus Gale
Kellia cf. *K. laperousi* (Deshayes) ??
Laevicardium substriatum (Conrad)
Leptopecten latiauratus (Conrad)
Lima hemphilli Hertlein and Strong
Lithophaga plumula (Hanley)
Lucinisca nuttalli (Conrad)
Macoma indentata Carpenter
M. nasuta (Conrad)
M. secta (Conrad)
Mactra californica Conrad
Modiolus capax (Conrad)
M. capax flabellatus Gould
M. modiolus (Linnaeus)
Mulinia pallida (Broderip and Sowerby)
Mytilus californianus Conrad
Nucula exigua Sowerby
Ostrea lurida Carpenter
O. sp.
Pandora punctata Conrad
Panope generosa Gould ?
Penitella cf. *P. conradii* Valenciennes ?
P. penita (Conrad)
P. fitchi Turner ??
Periploma planiusculum Sowerby
Petricola californiensis Pilsbry and Lowe
P. carditoides (Conrad)
**P. gracilis parallela* Pilsbry and Lowe
Platyodon cancellatus (Conrad)
Protothaca laciniata (Carpenter)
P. staminea (Conrad)
P. tenerrima (Carpenter)
Pseudochama exogyra (Conrad)
Sanguinolaria nuttalli (Conrad)
Saxidomus nuttalli Conrad
Semele decisa (Conrad)
Siliqua lucida (Conrad)
Solen sicarius Gould
Spisula catilliformis Conrad
S. dolabriformis (Conrad)
S. hemphilli (Dall)
Septifer bifurcatus (Conrad)
Tagelus californianus (Conrad)
T. subteres (Conrad)
Tellina bodegensis Hinds
Tivela stultorum (Mawe)
Trachycardium procerum (Sowerby)
T. quadragenarium (Conrad)
Tresus nuttalli (Conrad)
Yoldia cooperi Gabb
Zirfaea pilsbryi Lowe

AMPHINEURA

Chitons--three valves

SCAPHOPODA

Dentalium neohexagonum Sharp and Pils
D. pretiosum Sowerby

CRUSTACEA

Crab claws--four species
Balanus tintinnabulum Pilsbry
B. sp.
Cryptolepas murata Zullo

ECHINOIDEA

Echinoid spines

Newport-Costa Mesa area.

Fauna

There is a fairly large faunal assemblage well in excess of 100 species (see table 1). It appears to indicate an open, sandy bottom environment. There are few back-bay, intertidal representatives such as *Melampus olivaceous*, although *Cerithidea californica* is fairly common in one of the fossiliferous layers. There is a large *Nassarius-Conus californicus* community with underlying layers of abunda *Amaiantis callosa-Tivela stultorum* community at the bottom. The more abundant spe in the faunal assemblage are as follows--Bivalvia: *Amiantis callosa, Donax gouldi Modiolus rectus, Periploma planiusculum, Platyodon cancellatus, Tivela stultorum* a *Trachycardium procerum;* Gastropoda: *Conus californicus, Crepidula onyx, C.* spp., *Crucibulum spinosum, Nassarius cerritensis, N. fossatus, N. perpinguis, Neverita reclusiana, Ophiodermella* spp., *Polinices lewesii, Serpulorbis squamigerus, Tegula*

ARCHAEOLOGICAL SITE SURVEY RECORD

OR-00299

1. Site Lot 3 2. Map Costa Mesa Planning Area-1 3. County Orange

4. Twp. _____ Range _____ _____ 1/4 of _____ 1/4 Sec. ___

5. Location South east of Newport Blvd. North east of Industrial Wa

6. Contour elevation 85-90' amsl

7. Previous designation for site None

8. Owner Unknown 9. Address _____

10. Previous owners, dates Unknown

11. Present tenant None

12. Attitude toward excavation Unknown

13. Description of site Light shell scatter over vacant lot, ave. densit ½ to 1 per sq. foot.

14. Area 500 sq. meters 15. Depth Unknown 16. Height N/A

17. Vegetation grass 18. Nearest water Newport Bay

19. Soil of site loose light brown loam 20. Surrounding soil type same

21. Previous excavation None

22. Cultivation None 23. Erosion Minimal

24. Buildings, roads, etc. Newport blvd, Industrial Way. Commercial Devel

25. Possibility of destruction Fair

26. House pits None observed

27. Other features None observed

28. Burials None observed

29. Artifacts None observed

30. Remarks Area has been disced, portions of site may be under fill mounds on parcel

31. Published references None

32. Accession No. _____ 33. Sketch map Attatched

34. Date 8-14-78 35. Recorded by B. Bickford 36. Photos _____

Archaeological Associates
1022-B Victoria St.
Costa Mesa, Ca. 92627
(714) 631-3638

No maps - unable to map - leave in report

ARCHAEOLOGICAL SITE SURVEY RECORD

OR-00299

1. Site Lot 48 2. Map Costa Mesa Planning Area-1 3. County Orange

4. Twp. _____ Range _____ _____ 1/4 of _____ 1/4 Sec. ___

5. Location South east corner of the intersection of Anaheim Ave. an 19 th. St.

_____ 6. Contour elevation 85' amsl.

7. Previous designation for site None

8. Owner Unknown 9. Address _____

10. Previous owners, dates Unknown

11. Present tenant None

12. Attitude toward excavation Unknown

13. Description of site 10 x 10 meter shell concentration.

14. Area 100 sq. meters 15. Depth Unknown 16. Height N/A

17. Vegetation Grass 18. Nearest water Newport Back Bay

19. Soil of site light brown loam 20. Surrounding soil type same

21. Previous excavation None

22. Cultivation None 23. Erosion Minimal

24. Buildings, roads, etc. Comercial development, Anaheim St. 15 meters N.W.

25. Possibility of destruction Good

26. House pits None observed

27. Other features None observed

28. Burials none observed

29. Artifacts None observed

30. Remarks Portions of site under existing land fill on property.

31. Published references None

32. Accession No. _____ 33. Sketch map Attatched

34. Date 8-14-78 35. Recorded by B. Bickford 36. Photos _____

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ARCHAEOLOGICAL SITE SURVEY RECORD

OR-00299

1. Site Lot 144 2. Map Costa Mesa Planning Area 3. County Orang

4. Twp. _____ Range _____ _____ 1/4 of _____ 1/4 Sec. _

5. Location West terminus of 18 th. Street next to the Costa Mesa Corporate boundary.

6. Contour elevation 75' amsl.

7. Previous designation for site None

8. Owner Unknown 9. Address _____

10. Previous owners, dates Unknown

11. Present tenant Unknown

12. Attitude toward excavation Unknown

13. Description of site Eastern periphery moderate surface shell scatt

14. Area 30 meters 15. Depth Unknown 16. Height N/A

17. Vegetation Grass, shrub 18. Nearest water Santa Ana Rive

19. Soil of site Compact loam 20. Surrounding soil type Same

21. Previous excavation None

22. Cultivation None 23. Erosion Possible along weste Periphery

24. Buildings, roads, etc. Terminus of 18 th. St. Oil wells on property

25. Possibility of destruction Unknown

26. House pits None observed

27. Other features None observed

28. Burials None observed

29. Artifacts None observed

30. Remarks Possible eastern periphery only portion surveyable due to limited access. Moderate shell scatter indicative of bluff top site overlooking Santa Ana River bed to the west.

31. Published references None

32. Accession No. _____ 33. Sketch map attatched

34. Date 8-14-78 35. Recorded by B.Bickford 36. Photos _____

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ARCHAEOLOGICAL SITE SURVEY RECORD

OR-00299

1. Site Lot 59 2. Map Costa Mesa Planning Area-1 3. County Orange

4. Twp. _____ Range _____ _____ 1/4 of _____ 1/4 Sec. ___

5. Location West of Newport Blvd. Between intersections with Bay and Victoria Streets.

6. Contour elevation 80-85' amsl

7. Previous designation for site None

9. Owner Costa Mesa Memorial Hosp. Address _____

10. Previous owners, dates Unknown

11. Present tenant Costa Mesa Memorial Hosp.

12. Attitude toward excavation Unknown

13. Description of site Shell scatter, one utilized metavolcanic flake, one quartzite core.

14. Area 2700 sq. meters 15. Depth Unknown 16. Height N/A

17. Vegetation Grass 18. Nearest water Newport Back Bay

19. Soil of site loose brown loam 20. Surrounding soil type same

21. Previous excavation None

22. Cultivation None 23. Erosion Minimal

24. Buildings, roads, etc. Newport Blvd. Costa Mesa Memorial Hosp.

25. Possibility of destruction Unknown

26. House pits None observed

27. Other features Non observed

28. Burials None observed

29. Artifacts Utilized flake, quartzite core.

30. Remarks

31. Published references None

32. Accession No. _____ 33. Sketch map Attatched

34. Date 8-14-78 35. Recorded by B. Bickford 36. Photos _____

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ARCHAEOLOGICAL SITE SURVEY RECORD

OR-00299

1. Site Lot 58 2. Map Costa Mesa Planning Area-1 3. County Orange
4. Twp. _____ Range _____ _____ 1/4 of _____ 1/4 Sec. _____
5. Location North of Bay St. between Parsons and Thurin Sts.

6. Contour elevation 80-85' amsl
7. Previous designation for site None
8. Owner Unknown 9. Address _____
10. Previous owners, dates Unknown
11. Present tenant None
12. Attitude toward excavation Unknown
13. Description of site Concentrated surface shell scatter in the N.E. corner of the currently vacant lot.

14. Area 900 sq. meters 15. Depth unknown 16. Height N/A
17. Vegetation Grass, weeds 18. Nearest water Newport Back Ba
19. Soil of site loose brown loam 20. Surrounding soil type same
21. Previous excavation None
22. Cultivation None 23. Erosion Minimal
24. Buildings, roads, etc. Residential area, Bay, Parsons and Thurin Sts
25. Possibility of destruction Fair
26. House pits None observed
27. Other features None observed
28. Burials None observed
29. Artifacts None observed

30. Remarks

31. Published references None
32. Accession No. _____ 33. Sketch map attatched
34. Date 8-14-78 35. Recorded by B. Bickford 36. Photos _____

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OR-00299

1. Site [illegible] 2. Map [illegible] 3. [illegible]

4. Twp. _____ Range _____ _____ 1/4 of _____ 1/4 Sec

5. Location South of Sunflower Ave. Between Bristol and Main, north of the San Diego Freeway (405).

6. Contour elevation 30-35' amsl.

7. Previous designation for site None

8. Owner Sakiaka Farm 9. Address _____

10. Previous owners, dates Unknown

11. Present tenant Sakiaka Farm

12. Attitude toward excavation Good

13. Description of site Light shell scatter 60 x 60 meters

14. Area 3600 sq. meters 15. Depth Unknown 16. Height N/A

17. Vegetation Cultivated 18. Nearest water Artificial irrig.

19. Soil of site brown loam 20. Surrounding soil type same

21. Previous excavation None

22. Cultivation Multiple 23. Erosion Minimal

24. Buildings, roads, etc. Sakiaka Farm, San Diego Fwy.(405)

25. Possibility of destruction Good

26. House pits None observed

27. Other features None observed

28. Burials None observed

29. Artifacts None observed

30. Remarks Surface diturbed by discing and ploughing.

31. Published references None

32. Accession No. _____ 33. Sketch map Attatched

34. Date 8-14-78 35. Recorded by B. Bickford 36. Photos _____

D.M. Van Horn

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(714) 631-3638

ARCHAEOLOGICAL SITE SURVEY RECORD

OR-00299

1. Site Lot 136 2. Map Costa Mesa Planning Area 3. County Orange

4. Twp. _____ Range _____ _____ 1/4 of _____ 1/4 Sec. ___

5. Location West of Bristol St. at Newport Blvd.

6. Contour elevation 40-45' amsl.

7. Previous designation for site None

8. Owner Unknown 9. Address _____

10. Previous owners, dates Unknown

11. Present tenant None

12. Attitude toward excavation Unknown

13. Description of site Shell scatter- adjacent to and possibly under land fill.

14. Area Indeterminate 15. Depth Unknown 16. Height N/A

17. Vegetation grass, weeds 18. Nearest water Santa Ana Chann

19. Soil of site brown loam 20. Surrounding soil type same

21. Previous excavation Previous construction on site

22. Cultivation None 23. Erosion Minimal

24. Buildings, roads, etc. Foundations of old buildings on lot.

25. Possibility of destruction Good

26. House pits None observed

27. Other features None observed

28. Burials None observed

29. Artifacts None observed

30. Remarks Prior impacts include excavation, buildings, paving, land fill. Shell does not appear to be from land fill.

31. Published references None

32. Accession No. _____ 33. Sketch map Attatched

34. Date 8-14-78 35. Recorded by B. Bickford 36. Photos _____

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Blue Star Canyon / Orange / Prado Dam / Anaheim / Newport Beach

OR-801

1 Complete

7 Eligible Sites

No Acres

Ora-89,817, many historic

446

PHASE II ARCHAEOLOGICAL STUDIES

PRADO BASIN AND THE LOWER SANTA ANA RIVER

Prepared for:

U.S. Army Corps of Engineers
Los Angeles District

Contract No. DACW09-83-C-0033

Prepared by:

Paul E. Langenwalter II, M.A., Co-Principal Investigator
and
James Brock, M.A., Co-Principal Investigator

ECOS Management Criteria, Inc.
5300 Orange Avenue, Suite 220
Cypress, CA 90630

May 1985

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EXECUTIVE SUMMARY

A study of archaeological and historical resources along the Lower Santa Ana River and in the Prado Flood Control Basin was undertaken in conjunction with planned improvements of these facilities. Alterations are expected in the foreseeable future to provide increased flood control protection along the Santa Ana River. The current study was undertaken by ECOS Management Criteria, Inc. under contract to the Los Angeles District of the U.S. Army Corps of Engineers. The project area includes the Prado Basin, Santa Ana River channel extending from Prado Dam to the Pacific Ocean, the Oak Street Drain in Corona, and Santiago Creek below the Villa Park Dam.

The authority for this study lies in various public laws and regulations which require the identification and conservation of cultural resources on public lands. The object of this study was to develop a documented body of information to be used in planning management strategies for the conservation of resources in the project area. The specific goals pursued to accomplish this objective were to locate and identify individual resources, to provide sufficient data for the evaluation of each resource, and to evaluate the eligibility of each resource for inclusion in the National Register of Historic Places.

The scope of work pursued to meet these goals consisted of four areas of investigation: field survey, test excavation, archival research, and oral historical interviews.

As a result of these studies, the number of known prehistoric and historic sites in the project area is significantly increased. An additional 10 pre-historic sites were recorded, bringing the number of known sites to 23. An additional 149 historic sites were recorded, increasing the number of known sites to 164. Among these are five known or putative cemeteries.

The majority of the sites within the study area are in the Prado Flood Control Basin where 21 prehistoric and 145 historic sites are located. No sites were found along the Oak Street Drain. The Santa Ana River channel right-of-way between Prado Dam and the Pacific Ocean contains 1 prehistoric site and 19 historic sites. All but two of these are located in the Santa Ana Canyon. One of the historical sites is located along the Santa Ana River channel, while the other is on the lower portion of Santiago Creek. The lower stretch of Santiago Creek also includes one previously recorded prehistoric site.

Of the 23 prehistoric sites, 7 appear to be eligible for nomination to the National Register of Historic Places. The rationale for this estimation is that these sites contain data which provide additional information about settlement patterns and regional cultural chronology. Included in these are Riv-653 (and its adjunct Riv-1098) and SBr-1543 which were large activity

centers among prehistoric peoples several thousand years ago. Another 11 sites are regarded to be ineligible for the National Register because they are severely damaged or have minimal value for scientific studies. The remaining five prehistoric sites could not be evaluated because they were not available for study during this project. Two of these (Riv-100, Riv-2797) are obscured by sedimentation in the lower basin behind Prado Dam. Two others (Riv-2803, Riv-2804) were found near the end of the study and not tested. One (SBr-5242) is located on private property where access was denied.

Twenty-seven historical sites were individually evaluated for National Register potential. Of these, one site, the Yorba-Slaughter Adobe (SBr-2317), is already on the Register. Twenty-one other historical sites are believed to be eligible for inclusion on the National Register of Historic Places. These are: Riv-653H (Bandini-Cota Adobe), Riv-1044 (Homer Pate Ranch), Riv-2203 (Fear Ranch), Riv-2778 (Francisco Serrano Adobe), Riv-2802, CSULB 2, PB-41 (McCarty Homestead), PB-62 (Wells Ranch), PB-67, PB-70, PB-83, PB-84, PB-85, PB-86, PB-90 (Rincon Cemetery), PB-114, PB-140, PB-141, PB-143, PB-102 (Town of Rincon), and PB-136 (Pacific Electric Bridge). One site is considered to be too new to be eligible: the Lt. Cook Memorial (PF-3). Another site, the Pioneer School and associated cemetery (PB-53), requires further research prior to evaluation. The three remaining sites that were individually evaluated are believed to be ineligible for inclusion on the National Register: PB-61, PB-87, and PB-93.

A total of 123 other historic sites are considered to be ineligible for inclusion in the National Register of Historic Places. Among these are 24 sites which are substantially altered but have surface remains. Another 58 sites are more completely disrupted with little or no remaining superficial material. Both categories may have unidentified subsurface remains, some of which may have scientific value. Land alteration in the vicinity of these sites should be monitored. The remaining 41 historic sites identified during this study have undergone substantial land alteration through building, flooding, or agricultural activity. No evidence of cultural remains were found at these sites and the extent of the land alteration suggests that they are completely destroyed.

Fourteen historic sites were not available for study. These are located in the lower flood control basin behind Prado Dam. All are covered by sediments and some are now under the water table. The value of these sites is not presently determinable.

A number of general and site-specific mitigation recommendations are given for those sites which appear to be eligible for nomination to the National Register of Historic Places. One general recommendation is that the cluster of intact prehistoric

sites in the Prado Basin be nominated as a "district" because of their collective importance to regional prehistory. Secondly, a recommendation is made to undertake an overall historical study of the Rincon District (Prado Basin) to document the 19th and early 20th century occupation of the area as a case history in regional development.

Additional mitigation recommendations which should be applied to the sites in the project area include periodic monitoring of sites and guidance to tenants using portions of the study area where sites are located. Periodic monitoring will enable identification of new impacts to sites which, in at least some instances, would allow these to be averted or minimized. Instruction to tenants about the proper handling of historic properties can preclude unintentional damage by the tenant to many of the sites. This can be done through the addition of clauses to leases and discussions aimed at educating the land user.

Periodic reassessment is another recommended mitigation procedure. The values which make a given site significant or insignificant may change through time in response to the social and scientific parameters used to define them. As these change, some of the sites in the project area may lose significance. Periodic reassessment would allow the culling of properties which no longer need protection or mitigation. In turn, some sites not previously considered important may be considered valuable at a future date.

The site-specific mitigation recommendations given in this study vary from impact without study to impact avoidance. Most of the sites included in this study are so altered that they are not considered to be eligible for inclusion in the National Register of Historic Places. These can be impacted without further mitigation. Some sites, 7 prehistoric and 15 historic, should receive mitigation through further research prior to impacting because they are socially or scientifically significant.

Some sites are located in areas which are unlikely to be inundated or otherwise damaged except on rare occasions. These can be preserved in place with relatively little effort or cost. Impact avoidance is recommended in the case of the Yorba-Slaughter Adobe and the McCarty Homestead.

Additional work is needed for further planning. Test excavations at prehistoric sites Riv-2803 and Riv-2804 are necessary to determine eligibility. Similarly, testing at historic sites needs to be undertaken. Additional historical research would be a valuable tool for further evaluating the significance of the sites in the Prado Basin.

The prehistoric and historic sites in the project area present varied research potential. The study of prehistoric and historic settlement patterns, dating, trade, biological and technological

studies valuable to regional prehistoric archaeology can be undertaken using samples from the sites in the project area. Samples from the historic sites could include 19th and early 20th century architecture, material culture studies, and studies of ethnicity.

CHAPTER 1

INTRODUCTION

A study of archaeological and historic resources along the Lower Santa Ana River and in the Prado Flood Control Basin was undertaken in conjunction with planned improvements of these facilities. This study was undertaken by ECOS Management Criteria, Inc. under contract to the Los Angeles District of the U.S. Army Corps of Engineers. The study is executed under the assumption that "The Recommended Plan" detailed in the Phase I General Design Memorandum for the Santa Ana River Main Stem (Army Corps of Engineers 1980) will be implemented as defined. The area studied includes the Prado Basin, the Santa Ana River channel extending from Prado Dam to the Pacific Ocean, the Oak Street Drain in Corona, and Santiago Creek below the Villa Park Dam. Alterations in these areas are expected to be necessary in the foreseeable future to provide increased flood control protection along the Santa Ana River.

The authority for this study lies in various public laws and regulations which require the identification and conservation of cultural resources on public lands. In particular, these laws are directed toward those lands where adverse impacts may occur or are occurring. In the past, the principal authorization lay with the Historic Sites Act of 1935 P.L. 74-292 which provided for documentation, study and preservation of significant cultural resources. In 1960, the Reservoir Salvage Act (P.L. 86-523) specifically applied the philosophy of preservation to projects involving the construction of dams and the reservoirs created behind them.

More recently the conservation of cultural resources has been legislated through the enactment of more powerful laws. Among these are the National Environmental Policy Act of 1969 (P.L. 91-190), Public Law 93-291, which deals expressly with historical and archaeological data preservation, and the National Historic Preservation Act (P.L. 96-515). These are supported by Executive Order 11593, which requires the inventory and evaluation of all cultural resources on federal lands. These laws are the basis for a variety of federal regulations and agency regulations which provide articulation for their application; most notably 36 CFR 800.

Prior archaeological and historical studies in the region indicate that the Santa Ana River played an important role in the distribution of human populations adjacent to it. Today the river continues to shape human activity along its channel. This study examines aspects of the native and historic significance of that activity.

The object of this study is to develop a documented body of information to be used in planning management strategies for the conservation of resources in the project area. The specific goals pursued to accomplish this objective are to attempt to locate and identify individual resources, to provide sufficient data for the evaluation of each resource, and to evaluate the eligibility of each resource for inclusion in the National Register of Historic Places. A number of procedures were utilized to obtain these goals. Literature and records searches were conducted to identify resources or to document them. Oral history is used for the same purpose. A systematic survey of most of the project area was conducted to identify resources which were not recorded or remembered in living memory. Selected sites were test excavated to provide data about content. The information resulting from this study is presented in this report.

CHAPTER 2

PROJECT LOCATION AND ENVIRONMENTAL SETTING

INTRODUCTION

This discussion describes the locations and environmental attributes of the specific regions of the study area. Particular attention is paid to environmental factors that would have influenced prehistoric and historic human populations. Attention is also given to what natural and cultural factors have resulted in the preservation or destruction of archaeological resources. The discussion follows the format employed by D'Altroy and Stickel (1980:4-8). It considers the particular environmental attributes of six areas identified within the study area.

GENERAL SETTING

The project area comprises portions of Orange, Riverside, and San Bernardino Counties, California. The general location can be found on the USGS 1:250,000 Western United States Series Santa Ana map (Figure 1). More specific mapping of the study area can be found in Figures 6-1 through 6-20 (Chapter 6). The outstanding feature of the study area is the Santa Ana River, with its tributaries (e.g. Santiago Creek, Chino Creek) and its main flood water retention area, the Prado Basin. Elevations within the study area range from 566 feet (the proposed new maximum taking line for the Prado Basin) to sea level (at the mouth of the Santa Ana River).

Climatic zones in the study area consist of the Maritime Fringe near the coast and Intermediate Valley and Transition in the interior regions (Bailey 1966:24). The Maritime Fringe area is characterized by cool summers and warm winters (average annual temperature range 50 to 72 degrees), making it a pleasant area to inhabit and providing a long growing season (Bailey 1966:25-26). The Intermediate Valley region typically has mild winters and warm summers, while the Transition region has a variety of different attributes.

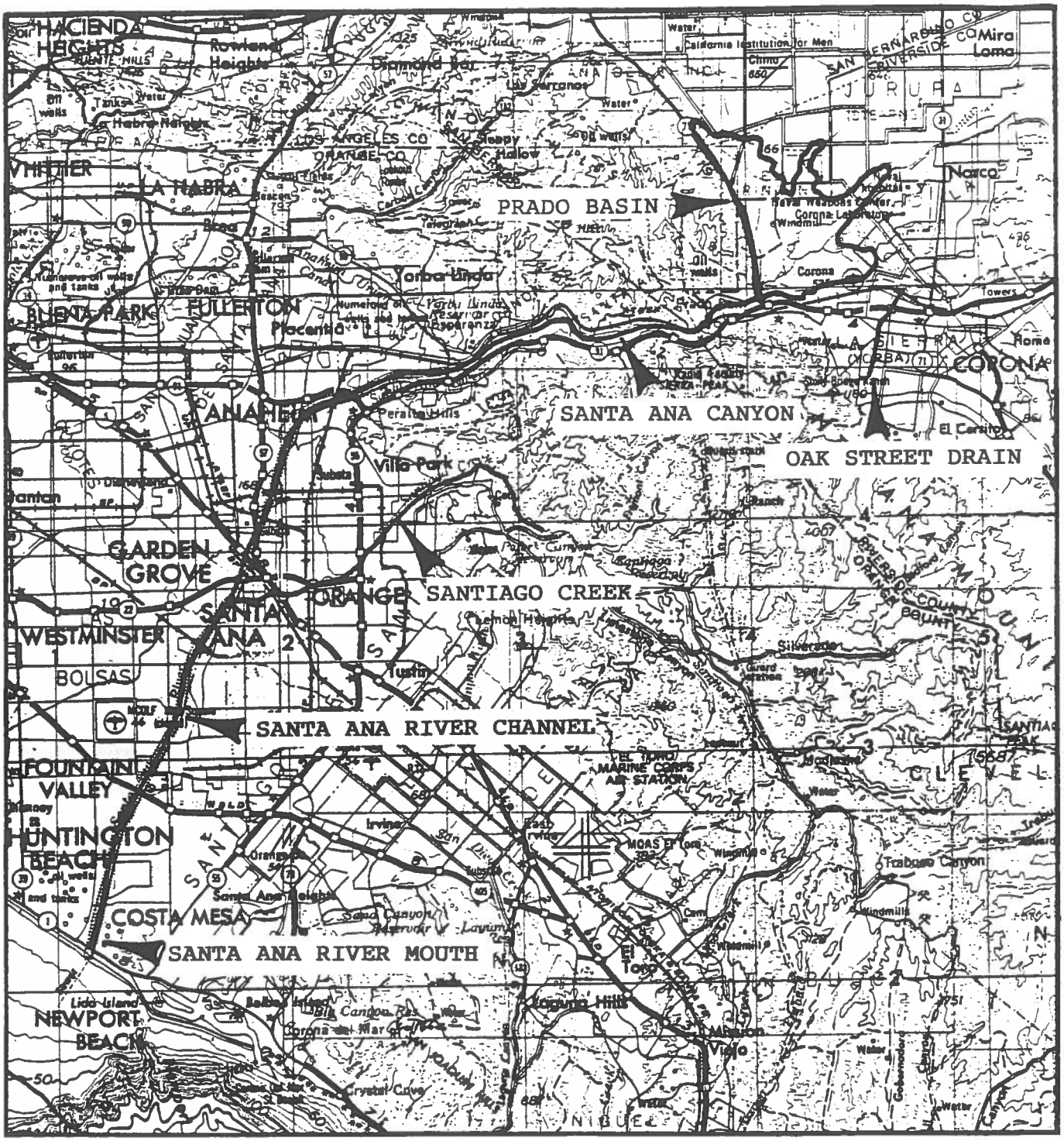

Figure 2-1. General location of the study area plotted on the USGS Western States Series Santa Ana Quadrangle (1979). The scale is 1:250,000.

PRADO BASIN

Location

The Prado Basin is located immediately north-northwest of Corona and about 2.8 km south of Chino. It is to be found on the USGS Prado Dam and Corona North 7.5 minute topographic quadrangles (Figures 6-3 to 6-7). The shape of the study area in the Prado Basin is very irregular--representing all land falling under the proposed 566 feet MSL maximum taking line. Its western boundary consists of the base of the Chino Hills, which corresponds fairly well with the route of Highway 71. The northern boundary goes almost as far as Kimball Avenue in the northwest corner of the project area and roughly follows Chino-Corona Road along the central northern border. The most northeasterly point of the Prado study area (and for the entire study area) is approximately at the intersection of Chandler Street and Cleveland Avenue. A bluff at the western end of the City of Norco basically defines the eastern boundary, while the southern border runs just north of the Atchison, Topeka, and Santa Fe railroad line which cuts across the northern end of the City of Corona.

Topography

The topography of the Prado Basin study area consists of the fairly level southern end of the Chino Plain. This plain terminates where the Santa Ana River and its tributaries have carved out the Prado Basin. The Chino Hills to the west and the low foothills of the Santa Ana Mountains to the south, with their higher elevations, are important topographic features in defining the extent of the study area. Elevations within the Prado Basin study area range from 566 feet MSL (the proposed new maximum taking line) to about 480 feet just north of Prado Dam.

Hydrology

The hydrology of the Prado Basin is of fundamental importance to this discussion. The basin, constricted by the Chino Hills to the west and the Santa Ana Mountains to the south, acts as a natural funnel for different water systems flowing towards the Pacific Ocean. Being a point of confluence, the Prado Basin is one of few areas in southern California with an indigenous abundance of water. This fact has made the basin a focal point of human activity throughout prehistory and history, and more particularly, has resulted in a number of major prehistoric and historic archaeological sites being present today.

The Santa Ana River is, of course, the major hydrological feature of the Prado Basin. It flows from northeast to southwest across the basin. On the northwestern side, the river is fed by Chino Creek and Mill Creek. On the southeastern side, it is fed by Temescal Wash and Oak Street Drain.

Geology

The geology of the Prado Basin consists mainly of upper Miocene marine sedimentary rock represented by the Puente Formation and the Monterey Formation (Rogers 1965). The lower elevations of the basin contain alluvial sand and silt, along with river cobbles. The indigenous lithic materials of the Prado Basin are not particularly well suited for use as ground or chipped stone artifacts. This is an important factor when considering the early trade of lithic materials in the region.

Biology

The indigenous biotic communities of the Prado Basin have been greatly impacted by historic activities (see Land Use Patterns below). The native biotic community on the Chino Plain portion of the basin consisted of a Coastal Sage Scrub habitat with attendant populations of fauna such as harvest mice, gophers, ground squirrels, cottontails, jack rabbits, and coyotes (U.S. Army Corps of Engineers 1980:4-8). The lower elevations along the river once consisted primarily of a riparian environment with cottonwoods, sycamores, and willows. With the building of the dam, the environment has become more of a wetland/willow woodland habitat. Willows have thrived with the increased moisture while the cottonwoods and sycamores tend to be less adaptive (U.S. Army Corps of Engineers 1980:4-8). The presence of varied biotic habitats and the consistent presence of water created ideal conditions for prehistoric habitation. Certainly the large quantities of seed milling equipment found on the various prehistoric sites of the basin attest to the aboriginal exploitation of the formerly abundant native grasses and shrubs. Also, the faunal collections from sites like SBr-1543 and Riv-2754 indicate that a wide range of faunal species were being regularly exploited.

Land Use Patterns

Probably the most intensive impacts to the natural habitats of the Prado Basin have been caused by agricultural use. Farming and grazing of this land has gone on for a comparatively long time (since the early 1800s). This use was undoubtedly stimulated by the presence of abundant water. Early agriculture in the area revolved around cattle ranching and dry-farming of crops for human consumption. This pattern has changed to dairy farming and the growing of irrigated crops mainly earmarked for livestock consumption. Crops observed growing in the basin during the archaeological fieldwork include hay, Sudan grass, beans, grain and alfalfa. Currently, dairies take up most of the area around the perimeter of the basin. They are extremely concentrated, with large populations of cows living on small acreages. This results in having insufficient grazing land thereby necessitating the importation of feeds. Also, having such a dense concentration of cows in the area results in wastewater problems and the localized odors associated with dairy operations.

Other land uses occurring in the Prado Basin include oil production, fertilizer production, recreation (fishing, shooting, horseback riding, etc.), which is expected to increase in the next ten years, and floodwater retention. Use of the basin for flood control has greatly impacted the remains of former land use patterns. Lower areas of the basin, which were once used for agricultural purposes and habitation (e.g. Town of Prado), are now used primarily for flood control. This prime agricultural land and a portion of the town itself are covered with one meter of silt. The basin provides protection for downriver property during major flooding.

SANTA ANA CANYON

Location

Santa Ana Canyon is located immediately west-southwest of the Prado Basin, between the cities of Anaheim (to the west) and Corona (to the east). It is the main topographic feature that divides the Santa Ana Mountains (to the south) from the Chino Hills (to the north). Santa Ana Canyon is found on the USGS 7.5 minute Black Star, Prado Basin, and Orange topographic quadrangles (Figures 6-7 to 6-10). The canyon is basically defined by the floodplain of the Santa Ana River. As such, the eastern boundary consists of the Prado Dam, the northern boundary is the base of the Chino Hills, the southern border more or less corresponds with the 91 Freeway (Riverside Freeway), and the western boundary is where the channelization of the river begins at about the new Weir Canyon Road Bridge. The canyon comprises parts of Orange, Riverside, and San Bernardino Counties.

Topography

Topographically, Santa Ana Canyon comprises a narrow, relatively flat floodplain that is constricted to the north and south by sharply-rising hills. Elevations of the Santa Ana Canyon study area range from about 500 to 320 feet above mean sea level. The hills on either side of the canyon jump to over 1000 feet within one-quarter mile of the river.

Hydrology

The major hydrological feature of Santa Ana Canyon is, of course, the Santa Ana River. The river created the canyon and has naturally impacted it by flooding, before the building of Prado Dam, at 20 to 30 year intervals. Small seasonal tributaries flow into Santa Ana Canyon from the north and south (e.g. Gypsum Canyon, Weir Canyon, Bee Canyon, Coal Canyon, Aliso Canyon, and Fresno Canyon).

Geology

The study area in Santa Ana Canyon consists of sedimentary sand and cobbles overlying a number of sedimentary rock formations. These include the Fernando, Puente, Topanga, Vaqueros-Sespe, Santiago, and Silverado Formations (Scientific Resource Surveys 1979:6).

Biology

Santa Ana Canyon supports a largely riparian habitat. Willows, cottonwoods, and sycamores are intermixed with riparian thicket including cattail, bulrush, duckweed, mulefat, giant reed, and stinging nettle (U.S. Army Corps of Engineers 1980:4-13). Cattail, bulrush, and stinging nettle are known aboriginal food sources, while mulefat was used for medicinal purposes and as a building material (Bean and Saubel 1972). Giant reed, a European import, was used by local Mexicans in the early 1800s as a roofing material (Bean and Saubel 1972:102).

Animal life in the canyon is abundant and diverse. Forty-three species of birds along with such mammals as mice, rats, squirrels, gophers, skunks, raccoons, coyotes, and gray foxes are known from the area (U.S. Army Corps of Engineers 1980:4-13). These species provided a prime incentive for prehistoric people to utilize the area for hunting purposes.

Land Use Patterns

Current land use patterns in the Santa Ana Canyon portion of the study area consist primarily of recreation (golfing, horseback riding, hiking, camping) and agriculture (extensive citrus groves). Water procurement has been an important land use in the past, with the Anaheim Union Canal feeding off of the river just below the Orange County border line. This canal follows the course of the river along its northern bank and diverts inland at Imperial Highway. Santa Ana Canyon is important for its use as a transportation corridor, with the 91 Freeway running just south of the study area and the Atchison, Topeka, and Santa Fe railroad line running immediately outside of the study area to the north.

LOWER SANTA ANA RIVER CHANNEL

Location

The lower Santa Ana River Channel study area runs from the end of Santa Ana Canyon (Weir Canyon Road) in Anaheim to Victoria Street in Costa Mesa (Figures 6-10 to 6-16). This is a 32 kilometer stretch of channelized river that is located on the USGS 7.5 minute Orange, Anaheim, and Newport topographic quadrangles. Its boundaries simply comprise the dikes that were built to restrict the Santa Ana River from wandering over its natural floodplain (which takes up a large portion of Orange County).

Topography

The topography of the lower Santa Ana River Channel is basically flat. Elevations range from about 320 feet above mean sea level to sea level.

Hydrology

The channel study area itself is best viewed as a hydrological feature. The Santa Ana River has a number of tributaries flowing into it along this channelized stretch. These include a number of flood control channels (Fairview, Bitterbrush, Collins, East Richfield) and one major stream, Santiago Creek (see below).

Geology

The geology of the River Channel area consists of sedimentary sand and silt deposits overlying Miocene and later sedimentary rocks.

Biology

As the Santa Ana River Channel is a man-made feature, it really has no native biological community. In the past the floodplain area supported a marshland environment that would have supplied the aboriginal inhabitants with numerous plant and animal resources.

Land Use Patterns

The areas around the lower Santa Ana River Channel have been fully urbanized with residential and commercial development. The primary use of the channel area is flood control. Other uses are recreational: off-street bicycling, horseback riding, jogging, and walking.

MOUTH OF THE SANTA ANA RIVER

Location

For the purposes of this study the mouth of the Santa Ana River will be regarded as the final stretch of the River which goes from the Hamilton-Victoria Street Bridge to the Pacific Ocean, along with selected areas of marshland adjacent to the channel (Figure 6-17). Costa Mesa, Huntington Beach, and Newport Beach border this study area and its location is shown on the USGS 7.5 minute Newport Beach topographic quadrangle.

Topography

The topography of the area is flat. Elevations range from 0 to 5 feet above mean sea level.

Hydrology

The main hydrological features of the river mouth are the Santa Ana River and the Pacific Ocean. The Greenville-Banning Channel also enters into the study area at this location, running directly adjacent, and parallel to, the Santa Ana River Channel. These water systems produce a freshwater/saltwater environment which entices a wide range of floral and faunal species and has, in the past, formed a much-exploited aboriginal hunting/gathering locality.

Geology

The geology of this study area consists of sedimentary sand overlying Miocene and later sedimentary rocks.

Biology

The channel mouth study area is part of a once-extensive tidal marsh system. Vegetation consists primarily of wetland plant species such as pickleweed, sea blight, salt grass, alkali weed, and frankenia (U.S. Army Corps of Engineers 1980:4-14). Mule fat, castor bean, and arroyo willow are also among the plants present (Environmental Impact Reports, Inc. 1974:7). The wide range of faunal species present is evident from a list of 69 wintering birds noted in the area in 1974 (Environmental Impact Reports, Inc. 1974:14-15). Mammals, reptiles, marine fish, and invertebrates also abound. The combination of this tidal marsh, the sage scrub community and the adjacent bluffs, and the presence of abundant fresh water, made this particular region ideal for prehistoric exploitation and habitation. While the prehistoric peoples of the region did not inhabit the actual marsh areas, their presence is reflected in the major archaeological sites that exist on the bluffs east of the study area.

Land Use Patterns

Land use in this portion of the study area comprises oil extraction, flood control, and recreation (biking, jogging, walking, and sun bathing). The channelization of the river and the development of oil extraction facilities on the eastern side of the channel have greatly impacted the natural state of the area.

SANTIAGO CREEK

Location

The Santiago Creek study area runs from the Villa Park Dam to the point where the creek enters the Santa Ana River (Figures 6-18 and 6-19). This is a 14.5 kilometer stretch that runs through

portions of El Modena, Orange, and Santa Ana. This project area is located primarily on the USGS 7.5 minute Orange topographic quadrangle, although a small portion of it falls on the Anaheim map. The boundaries of this study area basically consist of the banks of Santiago Creek. However, one notable exception exists in the Conrock quarry location where the study area expands and is roughly bordered on the east by Santiago Boulevard, the south by Bond Avenue, the west by Prospect Street, and on the north by Villa Park Road.

Topography

The study area portion of Santiago Creek runs from the lower Santa Ana Mountains down to the coastal plain. Elevations range from about 500 to 120 feet above mean sea level.

Hydrology

Santiago Creek provides a main runoff for rainfall from the westernmost extent of the Santa Ana Mountains. Some smaller unnamed annual drainages run into the Creek. Santiago Creek was usually perennial until the building of the Santiago and Villa Park dams. This would have provided a very useful water source for prehistoric inhabitants of the area.

Geology

The geology of the Santiago Creek area is characterized by sedimentary sands, gravels, and stream-rolled cobbles. These overlie Miocene and later sedimentary rock formations.

Biology

The vegetation of this study area changes from mostly native and riparian plant life below Villa Park Dam to mostly introduced species further downstream. Wildlife inhabiting the area includes mice, rats, squirrels, cottontail, jackrabbits, along with numerous bird and reptile species. While the native plant and animal community has been almost totally impacted by human activities, it seems reasonable to assume that abundant resources were once present and exploited by aboriginal peoples.

Land Use Patterns

The lower portions of the creek have been heavily developed both commercially and residentially. The creek has also been channelized in these lower extremes. The creekbed is actually utilized as a parking lot in Hart Park. Further upstream, major gravel quarrying operations are present. These have dramatically impacted the environment of the study area by the creation of two huge pits. These pits supply much of Orange County's building material and have the potential to contribute to ground water recharge (U.S. Army Corps of Engineers 1980:4-19). Upstream from the quarry operations, the creek is used for recreational

purposes as part of Orange County's regional park just below Villa Park Dam.

OAK STREET DRAIN

Location

Oak Street Drain is located in the City of Corona. This runs parallel to Oak Avenue and eventually empties into the mouth of Temescal Wash. It is shown on the USGS 7.5 minute Corona South and Corona North topographic quadrangles (Figures 6-6 and 6-20). The length of the drainage is about 5 km and it flows (seasonally) in a north-northeasterly direction.

Land Use Patterns

Oak Street Drain is a linear, man-made drain that crosses land that has been impacted by agriculture and development. It was not present during prehistoric times.

CHAPTER 3

CULTURAL SETTING

This section is a survey of the principal features of the culture sequence in the coastal part of southern California. It begins with a brief discussion of paleo-environmental factors believed to have a bearing on the development of the prehistoric sequence. This is followed by a summary of the major units which comprise the prehistoric and historic parts of the culture sequence. The region discussed here is the approximate area controlled by Gabrielino-speaking peoples which encompasses the project area.

Paleo Climate and Culture History

After the end of the Pleistocene, southern California underwent considerable climatic change which altered environmental conditions throughout the Holocene Epoch. During the Late Pleistocene, the environment was much cooler. Subsequent cyclical trends in the climate led to a general drying of the region and increased annual temperatures. Antevs' (1948, 1953, 1955) palynological studies on the subject provided the first description of the nature of Holocene climatic changes in the western United States. He postulated a period of cool, moist climate, the Anathermal (ca. 10,000 to 7500 B.P.) which was followed by a period of warm temperatures and low humidity, the Altithermal (ca. 7500 to 4000 B.P.). The Altithermal was replaced by the Medithermal characterized by temperature and moisture conditions like those of today.

Antevs' work has held sway over research on the climatic influences of early man's activity in the western United States for several decades. More recently, Moratto, King and Woolfenden (1978) presented a much altered and refined climatic chronology for California. Where Antevs relied on pollen, the new chronology utilized data from pollen, fish scales, glaciation, meadow stratigraphy, tree line fluctuation and bristle cone pine tree-ring sequences. Moratto, King and Woolfenden's (1978) interpretation of these data indicate two major trends in climatic fluctuation during the Holocene. These include a period of warming beginning ca. 10,000 B.P. and lasting to ca. 3000 B.P. A cooling period followed this and lasted until ca. A.D. 1860 when a new warming period is supposed to have begun. Both of the periods are supposed to have contained short periods of warming and cooling.

Several theories about the relationship between prehistoric climate and settlement in the study region have been advanced. One theory is postulated based on the early warming trend at the end of the Pleistocene. Warren and Pavesic (1963:420-421) postulated that this caused inhabitants of the interior to migrate to the coastal strip ca. 7450 B.P. in response to increasingly unfavorable climatic conditions. Van Devender's (1977) study of pack rat middens in the Mojave and Sonora Deserts show that woodlands were replaced by grasslands by 8000 B.P. This forms a plausible base for Warren and Pavesic's hypothesis. Also, Kowta's (1969:36, 55-57) study of the Sayles Complex lithics and the hypothesized uses of them supports this argument.

If the migration theory is true, then a general restructuring of human populations occurred. Increased population density, adjusted land use patterns and territorial boundaries are a few of the major changes that would have occurred. Even though this theory is plausible, Kowta (1969:55) recognized that borrowing or diffusion was a possible alternative for the appearance of inland technology on the coast.

The second major hypothesis regarding climatic change and prehistoric man on the coast is Bickel's (1978) argument that changing sea levels along the California coast after 15,000 B.P. caused shifts in settlement. The analysis is based on Emery's (1969) study of sea level changes using radiocarbon dates of plant and animal remains and other data from varying depths along the coast. This and other data indicate that glacial melting occurred rapidly up to ca. 7000 B.P. resulting in significant sea level rises. After 7000 B.P. the rise became gradual, tapering off into modern times. Bickel (1978:16) states that during the past 15,000 years the sea level has risen 130 meters and, as a result, has submerged approximately 20,000 square km of coastal land, causing the formation of numerous estuaries.

Bickel (1978:8-9) hypothesizes several adjustments in human populations as a result. One is the forced shifting of coastal settlements inland. Such a shift would have been gradual, lasting over a period encompassing a large number of generations. The second effect postulated was abandonment of areas around San Francisco Bay and along the San Diego coast as the result of silting in of estuaries.

The implications of Bickel's research for archaeological studies are considerable. Older coastal settlements will have been lost. Shifts in settlements will have resulted in the relocation of various site types. However, the abandonment of certain areas would not have affected the coastal portion of the study area in the way Bickel states in her argument. The study area and some other areas (Palos Verdes Peninsula, Newport Bay) more strongly show evidence of uplifting. Much of the area along the coast which may have been submerged is only a kilometer or two wide, except in the San Pedro Harbor area. Submergence of such a

narrow strip over many generations may not have resulted in major relocations or the loss of many sites.

Regional Culture History

A number of cultural-historical schemes are used here to bring order to the events which have taken place in Southern California since man first entered the region. These schemes provide a framework in which human history can be organized and studied. The principal attempts at comprehensive synthesis of the prehistoric sequence are by Wallace (1955) and Warren (1968). Wallace's framework consists of a chronology organized by stages or horizons (Early Man, Milling Stone, Intermediate, Late Prehistoric Cultures). His organization allows for classifications which are most adaptable to areal studies within each horizon. The basic structure of this scheme is less amenable to the study of culture systems through time because diachronic relationships are de-emphasized.

In contrast, Warren's chronology is focused on traditions (San Diego, Encinitas, Campbell, Chumash, Shoshonean-Yuman) which are designed to allow diachronic study of culture systems. Also, his chronology is culturally-ecologically oriented, so that systemic change is closely linked to environmental change.

The differences between these approaches in large measure reflects the periods during which they were formulated. Wallace presented his framework at a time when the emphasis was on the description and classification of cultural materials, whereas Warren's was presented when there was a change in emphasis toward the "New Archaeology" and cultural-ecological explanations.

Both studies have undergone revision by various authors. Wallace (1978) has applied a modified framework to fit the sequence into an interpretation for the California area as a whole. This same study summarizes recent interpretation of the sequence as it is now understood. Koerper and Drover (1983) present a revised chronologic scale which is based on the most comprehensive radiocarbon dating yet done in the region.

Rice (1976) has proposed a substantive revision of Warren's chronology for the study region. His revision includes the ending of Encinitas Tradition several hundred years earlier than Warren, creating a gap which is filled by a new construct, the Encinitas II, which shares stylistic attributes with the Campbell Tradition.

Several other regional chronologies deserve mention. D.B. Rogers (1929) has proposed a multistage framework for the Santa Barbara coast. This includes a sequence happening ca. 10,000 years B.P. which is succeeded by a Hunting culture and the Canaliño which ends in the historic period. Two chronologies exist for the San Diego region. These are by M.J. Rogers (1966) and Moriarty

(1966). Rogers begins his during the Pleistocene with a multi-phased San Dieguito culture. This is succeeded by the La Jollan and the Diegueño/Luiseño who are present during the historic. In contrast, Moriarty has a pre-San Dieguito beginning in the Pleistocene, followed by a Holocene San Dieguito culture. His La Jollan culture is broken into three parts and succeeded by a Diegueño I and historic Diegueño II.

The cultural chronology used for this study is Wallace's (1955), using revisions made by Koerper and Drover (1983) for temporal placement. It is summarized below.

Wallace's (1955) Horizon I (Early Man) begins sometime in the Pleistocene. The time of first entry of man into the region is unknown. At present there are two schools of thought as to the antiquity of man on the south coast. One group advocates dates of 40, 50 or even more than 100,000 years. The major proponents use a variety of technological data from putative lithic assemblages, "cultural" features in ancient sedimentary contexts and racemization dates to argue their position. Their position has gained some popularity with publication of racemization dates of considerable antiquity (Bada, Shroeder and Carter 1974). These dates are not widely accepted because of operational problems with racemization dating. Also, recent studies of the same specimens using the radiocarbon dating technique indicate that the original dates are inaccurate (Taylor, et al. 1985).

The second group is conservative, normally preferring to accept only minimal dates with extensive documentation. Normally, this group is critical of dates older than 10 to 12 thousand years (cf. Meighan and Haynes 1970). Recently many members of this group are willing to accept possible entry dates of between 20 to 30 thousand years ago.

During the recent past, the oldest dates having a modicum of acceptance are those on Laguna Woman (17,150 +/- 1470 years B.P.) and Los Angeles Man (>23,000 years B.P.) which are based on radiocarbon dates (Berger, et al. 1971). The Los Angeles Man date has never been fully accepted and is believed to be too old by many researchers.

We know nothing about the physical appearance and culture of the initial settlers of the southern California coast. The only substantive evidence of early culture comes from San Dieguito assemblages dating near the end of Horizon I. San Dieguito assemblages are known from coastal southern California in San Diego County, the Colorado Desert, the Sonoran Desert in Arizona and in the southern San Joaquin Valley (Fredrickson and Grossman 1977). Drover, Koerper and Langenwalter (1983:68) suggest that a San Dieguito occupation occurred at Ora-64 on Newport Bay in Orange County. Level I at Malaga Cove on the Palos Verdes Peninsula, Los Angeles County is also believed to belong to this period (Treganza and Bierman 1958:74).

The San Dieguito culture was a hunter-gather society thought to have a band level social organization. Thus far, it is known primarily through lithic assemblages. These assemblages contain two types of leaf-shaped points, occasional lancolate and shouldered points ("Lake Mojave" and "Silver Lake" types), crescentics, eccentric crescentics, various scrapers, engraving tools, hammer stones, crudely flaked tools, atlatl engaging spurs, bone tools and microcores (Warren 1967:233; 1968:1; Fredrickson and Grossman 1977:177). This assemblage is traditionally considered a hunting assemblage, although the absence or near absence of seed grinding tools is the primary evidence for this. More recently, Warren has said that he believes that plant gathering was done as well (Koerper 1981:125).

The temporal placement of the San Dieguito cultures is thought to be prior to 9000 years B.P. and lasting to ca. 7600 years B.P. (Haynes, et al. 1967) Radiocarbon dates from San Dieguito assemblages fall within this time span.

Horizon II, or the Milling Stone Horizon (Wallace 1955) immediately succeeded the Early Man Horizon. Meighan (n.d.:19) has suggested that the Milling Stone Horizon began as early as 8500 years B.P. The terminal date for this period may vary from area to area. Leonard (1971:119) argues that the Milling Stone subsistence settlement system lasted to sometime between 3450 and 2950 years B.P. on the coast, while lasting to as late as 1650 to 1450 years B.P. in the interior. Koerper and Drover (1983) suggest that the Milling Stone Horizon ended ca. 3000 +/- 250 years B.P. along the Orange County coast.

Wallace (1955) recognized a number of cultures during the Milling Stone Horizon. These were the Oak Grove, Topanga, Little Sycamore, Malaga Cove and La Jolla. These cultures are characterized by Wallace (1978:28) as being food-collecting cultures focused on seed collecting. The material inventory is characterized by numerous milling stones and mullers, few projectile points which are usually leaf-shaped, crude service tools fashioned from cores or thick flakes, few bone and shell items, occasional polished stone discs (discoidals and cogstones), and charm stones. Projectile points were larger and heavier, implying spear and atlatl.

The general sparsity of bone is taken to suggest relatively little emphasis on hunting. In particular, the general absence of shell, fish and marine mammal bone in coastal sites is taken to imply a weak marine orientation. Warren's (1964:2) description of the Encinitas Tradition material culture points to most of the same features.

Recent study of Ora-64 has been used to suggest several changes in the composition and interpretation of the material inventory (Drover, Koerper and Langenwalter 1983). A variety of vertebrate and invertebrate fauna was found at the site. The types of fauna present suggested the use of a wide variety of capture techniques

using numerous tools, apparently made from perishable materials which left no archaeological remains. A number of bone tool fragments were present in the collection. These indicated considerable bone tool use, which may have been missed in earlier studies. Cogstones and discoidals were absent at Ora-64, which is an earlier Milling Stone assemblage, suggesting that they appeared near the end of the period.

King (1967:66-67) suggested that the Milling Stone cultures were sedentary village dwellers on the coast while they followed a more mobile settlement strategy inland. In part, this is not suggested by the variation in site types and apparently seasonal occupation of sites along the coast.

Two possible origins have been proposed for the Milling Stone cultures: indigenous development from the San Dieguito and a coast-ward spread of people from the interior (cf. Wallace 1978:28; Kowta 1969). Wallace suggests that either alternative may be correct, given the geographic area being considered (in the California culture area). Given the fullness of the marine-bay adaptation seen at Ora-64 it is probable that the development was indigenous on the Orange County coast. The distribution of cogstones and discoidals suggests that there was a strong indigenous cultural development along the Santa Ana River drainage and adjacent areas. Still, there are numerous culture traits with wide-spread distribution which indicate considerable inter-regional interaction (cf. Wallace 1978).

Horizon III or the Intermediate Horizon succeeded the Milling Stone. Wallace (1955:223) postulated that it lasted approximately 2000 years, ending ca. 950 years B.P. Drover and Koerper (1983) end it ca. 1200 +/- 250 years B.P. in the study region. Other authors assign earlier beginning dates and later ending dates for Intermediate assemblages in other regions (Meighan 1959:383, 386; Reinman and Townsend 1960).

Wallace's (1955) original description of this period is ambiguous because of the lack of satisfactory data for the period. He stated that the basket-hopper mortar, and mortar and pestle were introduced. Chipped stone implements were more diverse and more common. The points were longer and often stemmed. There were broad leaf-shaped blades. Bone tools were more common but not as numerous as in the following period. Beads of bone, shell and stone sometimes occurred but other ornaments were rare. Burials were flexed. Hunting was believed to have become much more important than in the preceding period, particularly on the Santa Barbara coast. Shellfish collecting and sea mammal hunting became important, although fishing was not considered to have been significant given the small number of fish bones from excavated Horizon III assemblages. The introduction of the mortar and pestle and proportional reduction in milling stones and mullers was interpreted as evidence of a shift toward acorn processing. Variation in projectile points suggests not only the use of spear and atlatl, but also the introduction of the bow and arrow.

Steatite was used along with asphaltum. The tobacco pipe appeared.

Analysis of the Intermediate Horizon assemblage at Ora-119A (Koerper 1981A; Koerper and Langenwalter n.d.) suggest some amendment to this summary so far as animal use is concerned. The fish bone in the assemblage shows the use of fish to be as diverse and as important as in the Late Horizon when compared to sites in comparable habitats. Perhaps shellfish collecting was more important.

The most important aspect of the Ora-119A fauna was the presence of the remains of birds of prey and the large number of dog remains. Apparently the use of hawks and owls occurred initially during the Intermediate Horizon. These animals and their parts were important to the Gabrielino and their neighbors for use in ceremonial and magico-religious contexts (Blackburn 1963; Johnston 1962).

Some technomic use was made of the feathers of birds of prey but these may have had symbolic implications. The presence of the bones of birds of prey in the Intermediate Horizon assemblage at Ora-119A is interpreted to be evidence of the entry of ceremonial and magico-religious activities which utilized these birds (e.g., Eagle ceremony, Chingnischish, etc.) into the region. The simultaneous heavy use of dogs for food at Ora-119A has a similar connotation. Similar occurrences are seen at village sites in the San Joaquin Valley where the killing and eating of dogs during ceremonial activity is documented (Langenwalter n.d.). The occurrence of both phenomena implies the occurrence of magico-religious or ceremonial activity not known to be present during the Milling Stone Horizon.

The Intermediate Horizon was succeeded by the Horizon IV or the Late Horizon. Wallace defined this as lasting from ca. 950 B.P. until historic contact (Wallace 1955:226). Koerper and Drover (1983) define it as having existed between ca. 1200 +/- 250 years B.P. and A.D. 1769. The peoples living at this time were the immediate ancestors of the historic occupants. In the study region, these were the Gabrielino speakers.

The information about the Late Horizon people is more diverse than that in earlier periods due to the larger number of classes of artifacts which have survived and the historic documentation of the climax cultures. The large projectile points were replaced by much smaller forms, indicating that the bow and arrow had replaced the atlatl and spear. Bone tools were commonly used and the number of known forms are more numerous. Stone, bone and shell ornaments were more widely utilized. Steatite containers and pottery vessels (late) were present. Circular shellfish hooks were used in fishing. Perforated stones (donut stones) and generous use of asphaltum were new developments. Mortuary customs included flexed burials, cremation and an abundance of grave goods. Also, Wallace (1955) postulated increased population

and larger settlements, along with increased food exploitation particularly in the area of sea mammal hunting and fishing. Blackburn (1963) and Johnston (1962) provide intensive descriptions of protohistoric material culture.

Warren (1968:4-5) considers the Late Horizon cultures to represent new peoples in the region. This hypothesis, the "Shoshonean Tradition" or wedge, argues for the movement of people speaking Uto-Aztecan languages toward the California coast, displacing and dividing the Hokan speakers to the north and south. Warren (1968:4-5) suggests that this occurred ca. A.D. 700. Small triangular-shaped projectile points are the main feature of his tradition which is otherwise poorly defined.

Kroeber (1925:580) recognized that a Shoshonean intrusion of some form had occurred, but he placed it as having conservatively occurred 1500 B.P., using linguistic evidence. Various authors using differing types of evidence argue for the presence of Shoshonean type culture traits, beginning in the Milling Stone Horizon or later with a variety of possible entry dates (Drover and Spain 1972; Hopkins 1965:57; Cochran 1965:36; Kowta 1969:47-50; True 1966; Rozaire 1967:370; Wallace 1962:178; Rogers 1966:140). Koerper (1979) argues for an early intrusion into the area and suggests that the evidence at this time is insufficient to resolve the argument.

Native American Ethnography (A.D. 1542 to 1769)

The Late Horizon culture in the study region ended in the sociopolitical unit known collectively as the Gabrielino. Their culture is summarized by Kroeber (1925:620-635), Johnston (1962) and Bean and Smith (1978). Other major works include Heizer (1968), Englehardt (1908-1915, 1927a, 1927b), Harrington (1934, 1942) and Blackburn (1963). The word Gabrielino refers to the Mission San Gabriel where peoples of this group were first gathered at the beginning of the Mission Period. Gabrielino as used here refers to the language spoken by this group, thus secondarily to the social and political groupings which formed the principal divisions among the speakers of this language. Gabrielino is a Cupan language in the Takic family which belongs to the Uto-Aztecan linguistic stock (Bean and Smith 1978:538). It is believed that this language was introduced to the area during the "Shoshonean Intrusion" (see above).

The distribution of Gabrielino speakers corresponds to the drainages of the Los Angeles, San Gabriel and Santa Ana Rivers. The boundaries of this distribution or territory are less well defined. To the north, they were bounded by the Chumash and Tataviam with boundary divisions located in the Santa Monica Mountains and San Gabriel Mountains (Kroeber 1925:620-621). The western boundary extended to the coast and included San Nicolas, Santa Barbara, Santa Catalina, and San Clemente Islands. The southern boundary ended at Aliso Creek, with the Luiseño

(Juaneno) to the south. This boundary extended roughly eastward across the Santa Ana Mountains, but not including the Luiseño and Cahuilla controlled lowlands to the east. On the east were the Serrano and Cahuilla who controlled lands in the eastern portion of the San Bernardino Valley. Gabrielino villages are recorded as far east as Colton and San Bernardino (Johnston 1962:16-17).

Lando (1978:1-9) makes the point that so-called "territorial boundaries" are not hard and fast divisions. There was an inter-fingering of social and political units for land use and the distribution of individuals in boundary areas. The main points Lando makes are that rights to the use of specific resources was inter-fingered in a mosaic over the landscape in boundary areas and that intergroup marriage, trade networks, other types of exchange and cooperative agreements between lineages of different languages tended to blur the boundaries.

The lower reaches of the Santa Ana River are certainly within Gabrielino territory. However, the Luiseño boundary closely approaches the eastern edge of the project area near Temescal Wash in the vicinity of Corona. The village of Paxauxa located in present day Corona included a mixture of Gabrielino and Luiseño (Johnston 1962:35-36). The nature of the bilingual cohabitation is not known. The site believed to be Paxauxa is east of the project boundary. Totabit is another village in the Corona area. Chester King (see Lando 1978:4) places this village in the Prado Dam area. While a late site like the prehistoric components at Riv-2797 (this report) could be Totabit, there has been a tendency to assign the name to a site immediately east of the project area. The word Totabit has a Luiseño or Serrano type location suffix and if King's work is correct, could extend the Luiseño territory, based on village distribution into the project area. However, the work conducted as part of the current study indicates that the area is so poorly known archaeologically that assigning a historic village name to a specific site is probably not justifiable. For this reason, the entire project area is considered to have been under Gabrielino control, in view of past research.

The Gabrielino were a hunter-gatherer people who earned their living through the exploitation of local resources without agriculture. They lived in the "most richly endowed coastal section in Southern California" (Blackburn 1963:6). In the words of Bean and Smith (1978:538) they were the "wealthiest, most populous, and powerful ethnic nationality in aboriginal Southern California", possibly excepting the Chumash. Relatively little is known of Gabrielino social organization because of the early date at which their culture was disrupted by missionization. They probably had a monetary system similar to that found among the Luiseño. Also, there was probably a hierarchy ordered class structure consisting of chiefs, the rich and their families, the well-to-do or socially prominent, and the remainder of society (Kroeber 1925:633). Similar organizations with variations are known throughout most of the California area. Villages were

autonomous and served as the core of a multifaceted settlement system which included camps, and various types of special use sites. These were used within the context of a restricted wandering adaptation for the periodic use of specific resources located within the land area belonging to specific lineages.

Technologically, the Gabrielino were an archaic culture. Their principal weapon was the bow and arrow. They utilized tools made of stone, bone and plant materials. Blackburn (1963) provides a detailed account of Gabrielino material culture. There was a distinct division of labor between men and women (Willoughby 1963). Men focused on hunting, exchange, political, and economical activities. Women were primarily focused on collection, maintenance, and household activities. Subsistence was generalized using a wide variety of plant and animal foods. The acorn was the principal plant food. Large game, and on the coast, fishing, were the major sources of animal foods.

MISSION PERIOD (AD 1769 TO 1834)

Hispanic colonization of California began in 1769 with the founding of the first mission in San Diego. The principal impact of colonization did not reach the project area until Missions San Gabriel and San Juan Capistrano were established in the region several years later (1771 and 1776, respectively). The mission fathers instituted a program to bring Christianity to the natives and turn them from their godless ways to those of productive citizens. Within a few years this program, which was sometimes forcibly implemented, permanently disrupted Gabrielino culture. The once dominant hunter-gatherer culture was replaced by a Hispanic, mission-oriented, peasant society.

Missionization had a number of impacts on the region. The Gabrielino were removed from their villages to the missions, resulting in abandonment of some areas and a general restructuring of land use. Aboriginal land use was replaced by localized farming and widely dispersed pasturing of livestock at various ranchos. The Mission San Gabriel established a subsidiary, the Asistencia, as far away as San Bernardino. By the early 19th century, some retired Spanish settlers began entering the area and establishing small settlements on small ranchos (Stephenson 1941). For the greater part, the missions had little impact on the project area, but within a few years, Spanish settlers actively used the area and the river.

During the Mission Period, the project area received local use but was largely uninhabited and unused. What is now the northeastern part of the Prado Flood Control Basin was a part of the Mission Rancho Guapa (Beattie and Beattie 1951). Guapa extended from the east to the area where the Auberndale Bridge crosses the Santa Ana River (Garner 1967:1). Guapa ultimately became the western portion of Abel Stearn's Rancho Jurupa. The origin of the word Guapa and what it encompassed are confused in the

literature. Bernice Johnson (1962:140) attributes it to a local survival of the Gabrielino village name Wapijangna. She locates this at the site of the modern town of Chino and on the Rancho del Chino. Local historian, Thomas Patterson (see Hammond 1978: Appendix B.8) identifies Guapa as a historic Indian village located at the springs immediately northwest of the intersection of Hellman Avenue and the Chino-Corona Road in the project area.

The question of the identification and location of the Guapa settlement remain outside the parameters of this study. The locations of the Guapa settlement given by Johnson and Patterson do not conform with information on Minto's (1878) map of the Rancho Jurupa. This shows a road running approximately parallel to the Santa Ana River on the north side which is labeled "Road to Guapa". The location of the road indicates that Guapa is east of the project area. Thus Guapa cannot have been on the Rancho del Chino, nor at the springs on Mill Creek. Only the lands encompassed by the Guapa Rancho extend into the project area. The use of these for anything beside possible cattle grazing, was not documented.

Lower down the Santa Ana River, at the area known as Olive, near Anaheim, the first ranches were settled by non-missionaries. Don Pablo Grijalva and Jose Antonio Yorba entered into a cattle raising business in the area. There is no definite record of their right to use the land until 1810 when a Spanish land grant was made to Yorba and his nephew, Juan Pablo Peralta (Stephenson 1941:6-7). This rancho, the Santiago de Santa Ana, served as the core of the settlement which took place within the project area. At this time the river became a focal point of agricultural activity. The earliest known irrigation ditches were dug to irrigate fields, vineyards, and orchards. These ditches which were in use ca. 1810 (Scott 1977) and probably earlier, represent the beginning of the use of the river as a source of water, and later, power. These and later ditches dug by the Yorbas, Peraltas, and their relatives formed the core of later development in regional water management.

The Mission Period began to end when Mexico assumed control of Alta California in 1822. Thereafter, a succession of Mexican governors with varying skills, philosophies, and degrees of honesty controlled a state which was beset by unrest resulting from personal and sectional rivalries (Chapman 1921:455). The governors introduced revolutionary ideas then current in Central and South America (Pitt 1970:1-25). Their activities negatively affected the missions in most cases, whether they were passively or actively aimed at disruption. Jose Muria Echeandia, the second appointee (1825-1831; 1832-1833), had the most disastrous effect. One of his most damaging acts was to free the Indians from mission control. By the time Mexico ordered secularization in 1833, the mission system was severely damaged (Chapman 1921:468-471).

RANCHO PERIOD (1834-1847)

The Mexican secularization laws of August and November 1833 and April 1834 effectively opened the region of study to a new period of social and economic growth. Although the Spanish government had allowed the establishment of private ranching in the region when it granted Jose Antonio Yorba and Juan Peralta the Santiago de Santa Ana grant in 1810, only after secularization did the era of large land grant ranchos become established, even though the Spanish government had begun the process in 1810 with the Santiago de Santa Ana grant to Yorba and Peralta.

The granting of lands led to the rise of the Californios, the gente de razon, of the state. These individuals had been included among the "white" residents of the state but were for the most part Mexican and Spanish soldiers who were not rated as soldados distinguidos (McWilliams 1973:50). The Californios established large ranchos, many on a baronial scale. These were primarily cattle ranchos operated for the production of hides and other saleable products. Crop production, except for family needs, was largely ignored. Bernardo Yorba was an exception. He established a major vineyard and fields (Stephenson 1941).

The project area includes parts of ten ranchos. The Prado Flood Control Basin covers parts of five ranchos. The core of the area encompasses the bulk of El Rincon granted to Juan Bandini in 1839 and sold to Bernardo Yorba in 1843. Much of the recorded history of the Corona-Chino area focuses on this ranch. The Rincon grant, and the Bandini-Cota home which was located there, have recently been the subject of extensive historical research (Theodoratus Cultural Research Inc. 1983). The northwestern boundary of the flood control basin extends onto Rancho Santa Ana del Chino. This ranch was granted to Antonio Maria Lugo in 1841 and later passed into the hands of Issac Williams, Lugo's son-in-law. It was the site of the Battle of Chino (Rhodes 1951; Beattie and Beattie 1939). The eastern edge of the basin extends onto Juan Bandini's Rancho Jurupa, granted to him in 1839 and later owned by his son-in-law, Abel Stearns (Beattie and Beattie 1939; Pitt 1970). The southern edge of the basin occupies lands once belonging to the Ranchos La Sierra, granted to Bernardo Yorba and Vicente Sepulveda on the same day in 1846 (Robinson 1957:49).

Downstream of Prado Dam the La Sierra (Yorba) boundary ends at what is now the Green River Golf Course. The northern boundary of Rancho Lomas Santiago extends along the south side of the Santa Ana River for about 0.5 km down stream. The remainder of the Santa Ana Canyon was included in Bernardo Yorba's, Cañon de Santa Ana, and the Yorba-Peralta Rancho Santiago de Santa Ana (Stephenson 1941). Rancho Santiago de Santa Ana extended along the eastern (south) side of the river to the sea. The opposite side included lands of San Juan Cajon de Santa Ana (Stephenson 1941) and Las Bolsas. The river acted as a boundary between the ranchos.

The ranchos were operated as virtual fiefdoms. The dons, who were all minor members of the "whites" during the preceding period, maintained strict class distinctions. The "grandees", to which they belonged, tended their ranchos, social life, politics and government. The cholos, "Mexicans" and Indians who comprised the new generation of soldiers, artisans and workers, executed most of the labor (McWilliams 1973:50-52). For a period of time the ranchos were successful in producing cattle and to a lesser extent horses, mules, and sheep.

The period was almost constantly plagued with political and military intrigues. The period was beset by even greater troubles than the preceding decade. The rule of the Mexican governors was challenged and they were forced to raise armies on several occasions to quell revolts. Several times the governors were deposed, only to regain control. The strife ended with California gaining independence during the "Bear Flag" revolt of 1847. The following year, the United States gained control of the state as the result of a war with Mexico and in 1848 the state became part of the union (Chapman 1921:35).

AMERICAN PERIOD (1847 TO PRESENT)

Various authors begin the American Period in California at several different points in history. Some begin it with the "Bear Flag Revolt" of 1846; others begin with the Treaty of Guadalupe Hidalgo in 1847 or statehood in 1850. Regardless of the recognized point of transition, the change did not have an immediate impact on the study region. The operation of the ranchos and towns remained relatively stable. The discovery of gold in the north created a demand for beef which enriched the Californios for a time. The dons with their progressive sons-in-law adopted American rules and American orientations openly (McWilliams 1973:52).

The greatest initial impact on the ranchos was the necessity for the dons to gain confirmation of their lands under the Land Act of 1851. This was a process frequently fraught with difficulty, and sometimes lasted more than a decade, depleting the finances of the owners (cf. Stevenson 1941). During the first decades of the period many of the dons, children of the original settlers, passed away and the ranchos divided among the heirs. This "second generation" (cf. Pitt 1966:249-276) was to face the greatest problems which confronted the Californios. A major drought between 1862 and 1864 destroyed about 71 percent of the cattle herds and five-sixths of the rancho lands became tax delinquent (McWilliams 1973:62). Many families, already financially strained by the costs of confirming title to their lands, new taxes and extravagant living, lost their property or were forced to sell parts of their lands. Litigation over land claims and imprudent living continued to reduce the Californios' lands and influence. The costs of Rancho El Rincon are a classic example of the process (Theodoratus Cultural Research Inc. 1983).

At the same time, there was a steady influx of Americans into the region. San Bernardino (1851) and Riverside (1870) were founded (Beattie and Beattie 1951). However, it was not until the 1880s when a great influx of immigrants entered California, that the general social structure became dominated by Americans (McWilliams 1973:64, 67). Within this decade the Californios became lumped with other "Mexicans" and their standing almost thoroughly diminished.

The same decade saw the ushering in of the railroads and with them the "Boom of the 80s" (Dumke 1944). Commerce expanded and land development became an intensive new industry. American developers moved into the area promoting new "Colonies" and settlements with the best of views, soils, climates, air, and anything else which could be used as a selling point. The flood control basin contains several of these developments. Rincon, later Prado, was established on the route of the California Central Railway in 1887 and lasted as a small hamlet until 1939 when the area was taken over for flood control (Desborough n.d.). Auberndale and the Grand Rapids Tract are included in the basin also. Neither prospered and both became farm lands within several years.

The "Boom of the 80s" brought with it many farmers and merchants. The farmers were able to settle the then available ranch lands. Establishing farms and dairies focused on intensive exploitation of the land, which contrasted sharply with the passive exploitation characteristic of the ranchos. The merchants settled in the new towns and in those already established. Within a decade the study region became an American agricultural community thoroughly transformed from the previous regime.

From this point onward life in the study region progressed toward the modernization of contemporary America. It was influenced by the same general trends which affected the rest of the nation. Within the project area, the settlement became more intense. The population density and the number of farms increased. Within the Prado Basin the community continued to contain a significant proportion of "Mexicans", many of them second and third generation Californios. The occupation of the inhabitants and the types of businesses tended to become more specialized. An example is the country store. Small stores in the study area were initially sidelines of various farms and ranches. During the early decades of the 20th century these seem to have been totally replaced by small independent businesses.

Water use and rights were of particular significance in the project area (Scott 1977). From the initial development of small irrigation canals mentioned above, the core of the water system in Orange County was developed. This expansion, along with the need for flood control due to the increasing settlement of the lower river flood plain, ultimately resulted in the construction of Prado Dam.

PREVIOUS RESEARCH

Prado Basin and Oak Street Drain

Prior to this study a considerable number of cultural resource studies have been conducted in the project area. Most studies have been archaeological site surveys and evaluations. Several were documentations of historic sites and three were excavations. The earliest work was the documentation of the Bandini-Cota Adobe as part of the Historic American Buildings Survey in 1936. This was a Works Progress Administration Official Project (No. 65-1715, Survey Cal. 332). The drawings and photographs from this are illustrated in Greenwood, Frierman and Foster (1983). In 1941, S.L. Peck recorded the first archaeological site, Riv-100, in the lower Prado Basin.

The first attempt at a comprehensive survey and evaluation of the cultural resources along the Santa Ana River was by the Archaeological Research Unit at the University of California, Riverside (Leonard 1975; Hall 1975). This survey covered approximately the same area as the present study as well as the Upper Santa Ana River, above the Prado Basin, and other areas not included in the present study. Both historic and prehistoric resources were considered in this study, many outside of the actual project boundary.

In 1980, the Environmental Resources Group conducted a supplemental study to that done by Leonard and Hall (D'Altroy and Stickel 1980). This study was based on a stratified random sample of survey area of the proposed reservoir area between the elevations of 560 and 580 feet in the Prado Basin. Selected areas at the mouth of the Santa Ana River and along Santiago Creek were surveyed along with other areas outside the present project areas. Only those areas at the mouth of the Santa Ana River, along Temescal Creek and Santiago Creek actually fall into the area presently being studied. Both historic and prehistoric resources were considered.

A number of smaller surveys have been conducted. In 1972 Kirkish and McCoy conducted a survey along portions of the Santa Ana River including part of the Prado Basin. Two of the sites found are located in the Prado Basin. Two surveys were conducted by the San Bernardino County Museum in 1975 (Simpson and Suss 1975 a,b). One covered the area of the San Bernardino County Prado Regional Park where two sites were located. The second dealt with the Prado Regional Golf Course and was negative. Peak (1975) surveyed two areas along Temescal Wash in the eastern portion of the Prado Basin with negative results.

A 1976 survey by the Archaeological Research Unit at the University of California, Riverside (Martz 1976) included several hundred meters of the northern portion of the project area along Cucamonga (Mill) Creek from the Riverside-San Bernardino County

line eastward. The result was negative. Appendix 2 of the Martz (1976) report is a San Bernardino County Museum report (Suss 1975) discussing a survey of approximately the same area but penetrating about 1 km further south into the project area.

A field party under the direction of Rosenthal and Schwartz (1979) from California State University, Long Beach surveyed a corridor for a bicycle and hiking trail which transversed a considerable portion of the Prado Basin. The corridor was to begin at the Green River Golf Course and extend along the western edge of Prado Basin north of Prado Dam to the Prado Regional Park and then turn roughly east, extend across the basin to a point about 0.5 km past River Road. Both historic and prehistoric sites were encountered on this survey.

Two surveys were conducted at the "Prado Fix" area adjacent to the dam by Schwartz (1980, 1981) as in-house studies by the Corps of Engineers. These studies resulted in the location of a variety of historic resources. Schwartz's (1981) study is the first to recognize the potential of historic aerial photograph analysis for resource identification in the region. Another in-house survey was conducted by Schwartz (U.S. Army Corps of Engineers 1983) of the area of the 1984 Olympic Shooting Range. The result was negative.

A corridor survey of a sewer line route which entered the north western edge of the Prado Basin was conducted by the San Bernardino County Museum (Lerch 1982). The result was negative.

Several studies have included data and comments on sites at the western edge of the basin. Greenwood and Associates (Greenwood and Foster 1980) provide data on SBr-4032 (SBr-5096) as part of a transmission line corridor study. Further comments on this site were included in a study of the Chino Hills by the Archaeological Planning Collaborative (Mabry and Douglas 1980).

Along with the surveys in the Prado Basin, there have been excavations at several prehistoric sites. The Archaeological Research Unit at the University of California, Riverside excavated Riv-652 in 1971 prior to construction at Prado Park (Kirkish 1972). The second prehistoric excavation was at SBr-4029 and was conducted by Applied Conservation Technology, Inc. (Macko, et al. 1983). Both sites were involved in the test excavation program for this study and one is discussed in Chapter 7.

A number of exclusively historical studies have been conducted in the Prado Basin. One, by the Department of History at the University of California, Riverside (Tobey, Suss and Burgess 1977), was a general survey of historic resources in the basin. The area covered is the same as is included in the present study. Seven resources were identified and a discussion of the Butterfield Stage Line was included.

Two studies have focused on the Bandini-Cota Adobe (Riv-653H). The first was an extensive documentary study of the site by Theodoratus Cultural Research, Inc. (1983). Shortly after that study was concluded, a test excavation was conducted at the site to determine significance by Greenwood and Associates (Greenwood, Frierman and Foster 1983). These will be discussed further in Chapter 8.

The most recent report on a historic excavation was prepared by ECOS Management Criteria, Inc. (Langenwalter and Brock 1984a). This was a brief interim report on Francisco Serrano's Rincon House (Riv-2778) prepared to assist the Corps of Engineers in obtaining a determination of significance of the site.

Lower Santa Ana River and Santiago Creek

The studies conducted by the Archaeological Research Unit at the University of California, Riverside (Leonard 1975; Hall 1975) and by the Environmental Resources Group (D'Altroy and Stickel 1980) discussed above included the lower river and Santiago Creek also. Both reports indicated that there are a considerable number of cultural resources in this part of the project area. Only one resource, Ora-89, was noted to be within or at the edge of the present project right of way in Santiago Creek. The transmission line corridor studied by Applied Conservation Technology, Inc. (Macko, et al. 1983) crosses this part of the project area within Santa Ana Canyon. Although one site, Ora-614, was found and tested immediately outside of the project boundary as part of their study, none were located within it.

A study of the Bryant Ranch by Scientific Resource Surveys, Inc. (Mason 1983) indicates the presence of two historic site clusters on the north side of Santa Ana Canyon. One is associated with the Bryant Ranch and the other with the Cajon Canal. Both are associated with the late 19th century use of the area.

Two studies conducted at Horseshoe Bend in Santa Ana Canyon indicate the presence of cultural resources within that part of the project area. A study by the Archaeological Planning Collaborative (Mabry 1979) of the Wier Ranch property immediately south of the river resulted in the discovery of four archaeological sites. One of these sites, Ora-817, is within the project right of way included in this study. The APC study indicated that this site included a Milling Stone Horizon occupation and may have been the site of an early Peralta adobe house (Mabry 1979:17). The study recommended preservation or, as an alternative, further study beginning with a test level excavation to determine significance.

Based on these recommendations, a test level study of the sites found by APC was conducted by Scientific Resource Surveys, Inc. (Scientific Resource Surveys 1980). Their test excavations of Ora-817 indicated that the site was a surface scatter which they

concluded to be a seasonal camp site. No evidence of an early adobe structure was found during the test excavation of Ora-817. Surface collection of the site was recommended as further and final mitigation for Ora-817.

In addition to the previously located cultural features, the SRS study suggested that the adobe house of Manuel Feliz was located in the vicinity of the existing Davenport residence within the project right of way. Test excavation in the vicinity revealed subsurface features. The study also located the Santa Ana Valley Irrigation Company Ditch which forms the southern boundary of the project right of way. The ditch which is supposed to be a realignment of an earlier ditch built by Manuel Feliz still was found to remain partly intact. The study recommended further testing at the Feliz and Davenport house sites and further documentation of the irrigation ditch.

Slightly further down river, two surveys for a pipe line have crossed the project right of way east of Imperial Highway (Archaeological Research, Inc. 1977; Cottrell 1977). Neither study located cultural resources within the project right of way.

Another study of a corridor crossing the Santa Ana River by Scientific Resource Surveys, Inc. (1982) identified a bridge believed to have historic significance. The bridge is a twin arch truss type structure on concrete pylons. According to the SRS (1982:70-74) study, it was built in 1905 and used as part of Pacific Electric Line. The structure was recommended for nomination to the National Register of Historic Places.

Three studies near the mouth of the Santa Ana River include the project right of way. One of these is a large area survey which encompassed the city of Huntington Beach (Archaeological Research, Inc. 1973). Two are surveys of corridors which cross the Santa Ana River. One study by Scientific Resource Surveys, Inc. was for pipe lines to be used in a reclamation project (Desautels and Roeder 1978). The other was by the California Department of Transportation in preparation for a proposed widening of the Pacific Coast Highway (Romani 1982). Each study showed that there are significant cultural resources in the area, but none found any within the project right of way.

A survey of Santiago Creek was conducted by Christopher Drover in 1976 for the county of Orange. The study area stretched from Villa Park Dam to the confluence of the creek with the Santa Ana River. Drover reported that the previously recorded site Ora-89 was destroyed and that another previously recorded site, Ora-369, was a very minimal deposit (Drover 1976).

The Pacific Coast Archaeological Society has conducted a survey of the Santiago Oaks Regional Park located below the Villa Park Dam in Santiago Creek (Cottrell 1983). This survey encompassed the uppermost part of the project right of way in the creek. A total of four sites were found. All are located off of the

project right of way. The sites are expected to be preserved although the Pacific Coast Archaeological Society may test them in the future. No cultural resources were located in the project right of way by this study.

CHAPTER 4

RESEARCH DESIGN

INTRODUCTION

A research design is the hierarchically ordered fashion in which scientific research is pursued. The highest level of the research design (RD) is the theoretical orientation behind it, the paradigm. The theoretical orientation or paradigm explains the basis by which we believe people and groups behave. Research domains, the next lower hierarchical level of the RD, are the broad concerns or topics which we believe can be addressed in the context of this study. The lowest level of the RD consists of the particular research questions or hypotheses which are applicable to the project area. The research questions or hypotheses explain how the study or research domains will be pursued.

The research design presented here was written prior to the initiation of any fieldwork on this project. It was submitted to the U.S. Army Corps of Engineers on June 7, 1983 as part of the research plan for these investigations (Crew, Brock and Langenwalter 1983:10-14). As such, it reflects the state of knowledge that existed at that time. For instance, the only formal excavation that had occurred previously in the Prado Basin was that at Riv-652 in 1972 (Kirkish 1972).

This research design, as originally assembled, was intended to be deductive. The deductive research process is the generally accepted format for modern archaeology. The acceptance of this deductive process can generally be traced to the work of Lewis Binford in the early 1960s (e.g. 1964). In order to keep with the spirit of this approach, what follows in this chapter is our original research design taken verbatim from our research plan. Test implications and comments have been added under the particular research questions for the purpose of clarification.

The discussion of how our research results relate to this research design is to be found in Chapter 9. Modifications to the research design and the generation of new research questions for the next phase of deductive study are found in Chapter 12, "Recommendations for Future Research."

THEORETICAL ORIENTATION [from original research design]

The theoretical orientation which structures the research design is cultural materialism. Cultural materialism assumes that decision making by people and groups is based upon economic considerations. It assumes that behavior, at least in the long term, is rational and therefore adaptive. It recognizes that people and groups have not and do not always behave in a rational manner but from the relatively gross temporal perspective of archaeology, such behavior is not statistically significant.

RESEARCH DOMAINS [from original research design]

The research domains or topics which will be considered are cultural chronology, subsistence practices, settlement systems, and exchange systems. Other research domains exist, of course, such as demography, but in the context of the limitations of a Phase II survey and limited testing, they are not generally applicable.

Cultural Chronology

The placement of a site into a temporal period (or periods) is a necessary first step in archaeological research. The archaeological evidence which will be utilized to address this research domain in the contexts of this project are temporally diagnostic artifacts, such as projectile points and beads, obsidian hydration dating and radiocarbon dating. The limited testing procedure will undoubtedly recover organic material. Obsidian has been found in several nearby sites (Macko, et al. 1983) and it can be expected to occur in the project area. Both may be useful in establishing the age of the sites.

Subsistence Practices

Ethnographic documentation of Gabrielino subsistence practices is minimal because of the early disruption of their culture by Spanish entry into California. Archaeological research on the subject is just now beginning to make substantial progress in this study area (for summary see Koerper 1981a). To date, the progress that has been made is limited to studies in localities within the coastal strip. Still no comprehensive understanding of subsistence exists. Even less is known about earlier periods except that past estimates about subsistence, particularly animal use, are largely inaccurate (Drover, Koerper and Langenwalter 1983). We propose to address the problems of this research domain by the study of the artifacts found and mapped during the survey and limited testing of sites, by the study of botanical remains, faunal studies, and comparative studies of ethnographic subsistence practices.

Settlement Systems

The study of settlement patterns became an important objective of archaeological research via the influence of Jullian Steward's development of cultural ecology (Willey and Sabloff 1974). Societies utilize the space available to them in a structured way which is controlled by a variety of economic and social factors which include resource distribution, politics, social organization, and world view (Beardsley, et al. 1956). Within the project area it has long been known that the Gabrielino used a variety of locations throughout the year which gave them access to seasonally available resources (Kroeber 1925; Johnston 1962). During one portion of the year a central village was occupied and had access to local resources through special use sites. At other times, camps were occupied adjacent to seasonally available resources in different locations. This kind of adaptation resulted in different sets of activities occurring at a given site, thus providing the basis for defining different site types (villages, hunting, seed processing camps, milling stations, etc.).

This kind of adaptation can be seen as a maximization strategy which optimizes resource availability relative to inputs of time and energy (cf. Winterholder and Smith 1981). Among hunter-gatherers with archaic technologies this type of adaptation is considered to have a payoff in terms of reduced dependence on resources in a single procurement area determined by the ability to transport basic resources and allowing a diversified economy.

Studies within the general region of the study area during the past 15 years indicate that this adaptation occurred as early as the Milling Stone Horizon (ca. 8000 to 3000 B.P.). The evidence for this in the coastal area is relatively well established (cf. Koerper 1981a) but less so for the inland portions of the region because of a paucity of studies in the area. One study in the Prado Basin/Santa Ana Canyon area suggests the adaptation occurred at least as early in that area as well (Macko, et al. 1983). There is still insufficient data for this portion of the study area to demonstrate the relationship of sites to resources.

Settlement patterns during the brief historic period (ca. A.D. 1800 to the present) differ considerably from the prehistoric period. The pattern is based on an agrarian economy later modified in the American Period by industrialization. Settlements are developed continuously throughout this time and are primarily sedentary. Community structure is strongly influenced by markets and administrative hierarchies (cf. Beardsley, et al. 1956). Again the interrelationships between site locations and local resources, given the types of technological skills available, have not been documented in the area.

Examination of site-resource interrelationships will be made during this study using cultural and geographic data. Analysis

of artifacts and ecofacts from sites will provide a basis for identifying different activities and in turn site type. This information will be used in conjunction with the distribution of local resources in an attempt to determine if correspondences between specific site types and resources exist.

Exchange Systems

The study of exchange systems in Orange County has usually been undertaken by the study of beads, steatite, etc. Recently obsidian has been found at a number of sites in the county (Macko, et al. 1983) and it was sourced to the Sierran sources at Casa Diablo and Coso. Obsidian will very likely be found on some of the sites in the project area, and the addition of obsidian sourcing will be a valuable and complementary aid to the more conventional study of beads, steatite, and pottery, for instance.

PARTICULAR TESTABLE QUESTIONS [from original research design; test implications and comments added]

Domain: Chronology

a. Is there pre-Milling Stone activity in the area?

Test implications: presence of San Dieguito or earlier artifacts, absolute dates in pre-Milling Stone range.

Comments: no pre-Milling Stone evidence was encountered, further excavation at major sites may reveal some.

b. Does the Milling Stone Phase in the interior valley last considerably longer than on the coast (cf. Leonard 1971)?

Test implication: Milling Stone material from sites with firm absolute dates in the later range.

Comments: no firm evidence verifies this hypothesis.

c. Is there evidence of post-Mission aboriginal habitation?

Test implications: prehistoric artifacts in historic contexts, aboriginal skeletons with historic artifacts, archival and oral data.

Comments: archival and oral data have confirmed this question, archaeological evidence is still lacking.

d. Was the project area inhabited continuously through prehistory and early history?

Test implication: absolute and relative dates for all known periods of occupation (as outlined in the "Culture History").

Comments: there is no evidence of pre-Milling Stone occupation or occupation between the early Intermediate and Late Horizons. It would appear that Riv-2797 and Riv-100 are Late Horizon sites; these provide the only evidence of post early Intermediate occupation. However, buried Intermediate sites may exist in the lower elevations of the Prado Basin.

Domain: Subsistence Practices

a. Is the selection of food resources and resource procurement areas controlled by a maximization strategy?

Test implication: presence of sites in areas of high food resource potential.

Comments: the presence of a high density of prehistoric sites on the bluffs overlooking the Santa Ana River Basin would support this hypothesis. If buried sites exist in the lower basin, they should also be in optimal resource exploitation areas, given Late Horizon subsistence patterns and technology.

b. Do subsistence patterns change through the chronological sequence?

Test implications: change in the settlement pattern through time, change in artifact types through time.

Comments: there is a very clear change in settlement pattern between the Milling Stone and Intermediate occupation of the Prado Basin and the Late Horizon occupation. The shift from bluff-top to river basin sites is indicative of a change in subsistence pattern.

c. Does animal food species selection change in response to technological change (i.e. bow and arrow)?

Test implication: change in faunal assemblage between earlier and later sites.

Comments: this was untestable due to the absence of a Late Horizon faunal assemblage from any sites tested.

d. Is there any evidence for walnut exploitation during the Milling Stone Period (see Macko, et al. 1983)?

Test implication: presence of walnut residue at Milling Stone sites.

Comments: no evidence was gathered that supports this hypothesis. It is not clear whether or not walnuts would have been readily available in the area. Also, native walnuts (Juglans californica) have a hard thick shell with a very small seed--it is possible that they were not being exploited at all (see Brock 1984).

e. How do food procurement strategies differ between the coast and inland areas?

Test implications: difference in artifact and faunal remains between coastal and inland sites.

Comments: no coastal sites were dug during this project. Signs point to a greater reliance upon plant food resources in the inland areas and marine food resources on coastal sites. Inland sites appear to have a greater percentage of ground stone implements.

f. Can ethnic differentiation be identified from historic refuse deposits?

Test implication: statistically meaningful distinction between refuse from differing cultural groups.

Comments: of the two main historical sites excavated (Serrano adobe and Pate Ranch house) distinctions in material culture appear to primarily represent differing periods of occupation, rather than ethnic background. The contrast between the Bandini-Cota adobe and these two sites also appears to be more temporal than social in nature. These sites generally represent three different periods of occupation.

Domain: Settlement Patterns

a. Does the settlement system in the area validate Hudson's (1969; 1971) Intermontane phase?

Test implications: evidence of territorial units centering around rancherias or villages located in optimal resource exploitation areas.

Comments: evidence is inconclusive, but tends to support it.

b. Is there a lack of specialized gathering camps in the Milling Stone Period as postulated by Leonard (1971)?

Test implications: lack of smaller seed processing stations.

Comments: the evidence from this project would tend to reject this hypothesis, as specialized gathering camps are present in the Prado Basin along with village sites.

c. Does an increase in special activity sites correspond to a population increase?

Test implication: evidence of a population increase with a corresponding reliance upon resources further away from the village site or base camp.

Comments: the question is unaddressable without greater temporal sensitivity.

d. What environmental factors dictated historic settlement patterns?

Test implication: non-random clustering of historical settlement around discrete environmental regimes.

Comments: it would appear that a perennial water source and good farm and pasture land were the primary factors.

Domain: Exchange Systems

a. Is Leonard (1971) correct when he postulates that there is only minimal evidence for exchange systems in the Milling Stone Horizon?

Test implications: lack of imported materials at Milling Stone sites; greater percentage of imported materials at later sites.

Comments: our study has tended to confirm this hypothesis--a greater percentage of imported materials was recovered from Intermediate sites than Milling Stone sites.

b. Do the obsidian artifacts found in the area correspond in age to the period of maximum production of the Sierran sources (Macko, et al. 1983)?

Test implication: corresponding obsidian hydration rim measurements for samples from Sierran sources.

Comments: sources identified were not Sierran; however, research can address similar questions pertaining to other source locations.

c. Are the beads found within the area indicative of trade relations?

Test implications: evidence of imported materials; evidence of beads functioning in a monetary sense.

Comments: of the three beads recovered during the project, two are shell--indicating inland-coastal relations. The paucity of beads argues against their function as currency. However, one assumes that something was given in exchange for the beads. The place of manufacture of the beads cannot be pinpointed by form alone.

d. Is there evidence of inland/coastal animal food source exchange?

Test implications: presence of coastal species at inland sites, and inland species at coastal sites.

Comments: no coastal sites were excavated. Inland sites yielded shellfish remains, indicating that shellfish were probably being traded inland. It is possible that hard seed foods were being exported to the coastal area. Mammal remains typically excavated at coastal sites almost always are locally available (e.g. Ora-64; Drover, Koerper and Langenwalter 1983:53-54). Seed data from coastal and inland sites is insufficient to draw conclusions about trade possibilities.

e. What differences are there in the sources and direction of flow of exchange items through time?

Test implications: presence of materials from different sources at sites of different periods.

Comments: there is evidence that prehistoric sources change through time. However, greater temporal sensitivity along with a larger sample size is needed in order to address this question adequately.

CHAPTER 5

METHODS

ARCHIVAL

Archival research was used to document or to supplement the documentation of many of the sites included in this study. The procedure was used to procure a variety of data including: 1) general regional and local historical data, 2) location of sites, 3) identification of sites (function, inhabitants, on site activities), 4) period of occupation, and 5) intersite relationships. The holdings of a number of libraries, historical societies, and governmental agencies were used.

Some of the research was of the most conventional type. Published sources about regional project area prehistory and history were consulted. Regional clearinghouses of the California Archaeological Inventory were contacted to determine what archaeological sites had been previously recorded and to obtain unpublished reports about prior research in the area. The National Register of Historic Places (Federal Register 1979, 1980, 1981, 1982, 1983, 1984), California Historical Landmarks (California Department of Parks and Recreation 1981), Historic Landmarks of San Bernardino County (Quinn 1980), and Visiting Orange County's Past (Schultz 1984) were consulted.

More specific archival work focused on the examination of documents explicitly related to the project area which are housed by regional and local institutions. The institutions consulted are listed in Appendix A. The types of records consulted were local unpublished manuscripts, previously documented oral history, genealogies, correspondence, newspaper accounts, surveyor's plats, assessor's records, titles and deeds, and photographic resources. These records were examined on a selective basis, primarily for sites where other types of documentation were not available and test excavations not a planned part of the project.

Research on activity inside the project area prior to the 1892-1895 period was severely hampered due to the destruction of some San Bernardino County records. Assessors records prior to 1895 are available only for the years 1871 and 1872. The Surveyor's office records are relatively complete.

ORAL HISTORY

The collection of oral historical data through interviews was used to locate sites and to obtain documentary data. Casual and formal interviews were conducted. Specific topical data was collected using a predetermined set of questions (phraseology varied with the context of given interviews). Questions were presented in a "frame" type structure.

One interview procedure was used during the survey phase of the project at the time when landowners and tenants were asked for permission to enter their property (also, employees were questioned at random when encountered during the survey). At this juncture they were asked a number of questions to determine what knowledge they had about local resources. The same questions were used in each instance: 1) Did they know of any prehistoric sites (tools, arrowheads, grinding stones, etc.) or historic sites (foundations, adobe walls, other types of construction, trash pits, etc.) on their property or other property in the project area, 2) Did they know anyone who had found things at sites in the area? If there was a positive response, then the interviewee was asked: 3) What kinds of things were found, where, when, and who found them? They were also asked: 5) Did the specimens or the sites still exist and would it be possible to see them? Long time residents were asked if they had photographs or other records about the region as it had been prior to 1940.

The success of the procedure varied with the background of the interviewee. Long time residents (present more than 20 years) were more knowledgeable than recent arrivals. Individuals using newer agricultural techniques which allowed less contact with the soil had less knowledge about cultural resources. Land owners were more knowledgeable than employees, except when the employee was a long term resident. In one case information was deliberately withheld.

This procedure was valuable in several respects. It allowed us to determine if sites were known and provided some idea of the amount of amateur collecting which has occurred on them. A number of previously unidentified prehistoric and historic sites were located using the procedure. In several cases the site was destroyed, obscured or not available for examination and would have been missed otherwise. We were able to record data on several sites adjacent to the project area. The Newman cogged stone collection (see Appendix C) was located using this procedure.

Selected individuals (see Appendix B) who were born in the project area or were long term residents were selected for more intensive interviews. The object of this exercise was to get information about known historic properties. In some cases this was the only source of data available.

Some of these interviews were conducted informally or over the telephone, particularly if only one or two pieces of information was required from the respondent. Initially, each person was contacted and their permission to do a thorough interview was obtained. At that time, an informal questioning was done to determine what portion of the project area the respondent was knowledgeable about, how thorough the knowledge was and the information reliability. Not all persons contacted consented to be interviewed. Some respondents were taken on field trips to various sites to discuss specific topics in preparation for the interview or during it.

The formal interviews were composed of one or two sessions of structured and informal questioning. Maps, aerial photographs and other photographs were used as aids to facilitate discussing individual properties or areas. The interview began with identifying the respondent and the reasons why they are knowledgeable about the project area. This was followed by a period of informal discussion which functioned as a warm up period. The core of the interview focused on specific topics (sites, ranches, districts). Each topic was identified and the respondent questioned about it (identity, associations, period of occupation, on site activities, intersite relationships). At the end of this structured interview period, the respondent was allowed to discuss various subjects at will.

The data gained from the formal interviews substantially augmented the data gathered for many sites. It served to clarify the accuracy of some information given by some informants which would otherwise have been regarded as hearsay. The interviews indicate that considerable oral historical data is available for sites in the project area. This data is particularly applicable to the period between 1900 and 1940.

FIELD SURVEY

The ultimate goal of the field reconnaissance phase of this study was to identify all cultural resources within the project area by intensive systematic walkover survey (Crew, Brock and Langenwalter 1983:17). This goal was unattainable for a number of reasons (discussed below). However, our coverage of the study area was very good nonetheless, as attested to by our discovery of new sites in previously surveyed areas. For the purposes of this study an archaeological site is defined as the total extent of the physical remains of human occupation or activity, either prehistoric or historic, that are greater than 50 years old.

Three basic walkover survey techniques were utilized. These achieved the various levels of intensity necessary to properly stratify the survey effort. These techniques are termed "unexclusive deployed," "exclusive deployed," and "localized intensive" or "gang" surveys. These techniques had been utilized within the study area by a field class from California State

University, Long Beach (Rosenthal and Schwartz 1979:10). It was decided to model our approach after theirs.

Briefly, an "unexclusive deployed" survey covers all of the particular area being surveyed in a systematic manner. This consisted of the surveyors walking in straight transects along a compass-determined direction, spaced at regular intervals apart (10 meters). This technique was effective in large, flat, generally unobstructed areas (e.g. the Chino Plain area of the Prado Basin).

"Exclusive deployed" surveys are designed to eliminate portions of the study area that for various reasons are unsurveyable. Reasons for excluding areas consisted of inundation, silting, extremely dense vegetation or manure cover, and steep slopes. The field methodology for exclusive deployed surveying was the same as for unexclusive deployed, with the exception of the elimination of the unsurveyable areas. Excluded areas were noted in the field logs and their potential for containing cultural resources is considered below.

"Localized intensive" or "gang" surveying was employed when specific cultural resources were being examined. This method consisted of multiple systematic passes over the site so that each portion of the site was viewed by several members of the field crew. This technique was utilized when conducting spot checks of sites in previously surveyed areas, when examining newly discovered sites, and when flagging artifacts for surface collection.

In the course of the survey, attention was paid to establish the degree of "systematic error" in the sample (see Cochran, Mosteller and Tukey 1954:31-33). In our case this consisted of the difference between the actual ground surface surveyed and the total project area under study. This took two forms: (1) surface visibility and (2) excluded areas. By understanding the systematic error we can assess the comprehensiveness of the survey as well as understand the probability of having further cultural resources extant in unsurveyed project areas.

TEST EXCAVATION

The purpose of the site test excavation phase was to determine, as accurately as possible, the horizontal and vertical extents of the sites, establish the densities and types of materials and features present, and from this, judge the significance and research potential of each site.

Definition of the Site

Two techniques were used to determine the horizontal extent of the sites. First, the surface artifact distribution was mapped as part of the surface collection activities. The surface

scatter proved to be the most reliable indicator of horizontal extent. Second, a series of postholes was dug over the site for the purpose of taking soil samples that were tested for pH, phosphate, and soil color. The backdirt from these postholes was screened through one-eighth inch mesh for artifact recovery. It was initially planned to dig a grid of postholes over each site. After finding that the soil tests were not proving to be of particular value, it was decided to dig systematic lines of postholes over the sites and to concentrate some of the allocated postholing time on surface collection instead.

Mapping and surface collection of the sites was accomplished using a transit. Fixed features of the landscape were used as datum points or as datum triangulation points. On some sites under agricultural use it was impossible to leave a permanent datum marker behind because it would have damaged farming machinery and would also have been dislodged as a consequence.

Unit Selection/Sampling Techniques

A sampling frame was developed for most of the sites. The extent of the sampling frame was determined by the above mapping and postholing procedures. Test excavation units were placed at the sites in such a manner that the samples allow a statistically viable estimate to be made about the nature of each entire site (i.e. the "target population"). Probability sampling as espoused, for instance, by Binford (1964), Redman (1974), and various authors in Mueller (1975), was utilized in order to to meet this goal. In our situation a program of weighted stratified random sampling was used.

The basic procedure utilized involved the subdivision of each site into "stratification quadrants." These were either 10 x 10, 20 x 20, or 40 x 40 meters squares. The use of these larger quadrants enabled the investigators to insure that the actual units excavated would not cluster too closely together. The sample of stratification quadrants was selected using computer generated random numbers. A number of strings (5-10) of random numbers were generated for each site. The Co-Principal Investigators selected the string that looked most appropriate for the site. This factor, along with hierarchical sampling on some of the sites, comprises the element of weighting introduced.

With the selection of the stratification quadrants complete the unit locations were chosen also by using computer generated random numbers. Only one unit was selected for each stratification quadrant.

The use of this technique has some distinct advantages over merely dividing the entire site into potential 1 x 2 meter unit locations. First, the use of the larger stratification quadrants saves time--it is not necessary to count out all of the possible unit locations (which numbered well into the thousands on some sites). Second, the use of the stratification quadrants insured

a good areal spread for the sample. Third, the use of the larger grid made it easier to map unit locations by providing a ready frame of reference. The one drawback to using these larger quadrants was that it was more difficult to fit the sampling frame neatly over the site. This, however, did not really matter too significantly as the extents of the sites could not be plotted with extreme accuracy anyway.

Excavation Techniques

Excavated units were either 1 x 2 or 1 x 1 meter in shape. The only exceptions were the foundation units at the Francisco Serrano Adobe. Whenever possible units were aligned on True North. The southwest corners of the units were used as unit data. All backdirt was screened through one-eighth inch mesh. Excavation was done with picks, mattocks, round and square nosed shovels, and at sensitive points, with trowels. Levels were dug in arbitrary 10 cm intervals measured from the southwest corner of the unit, or in some cases, the highest corner of the unit. Level report forms were completed for each level excavated. Features were planned and photographed in situ as encountered. Soil samples were taken from each unit at 10 or 20 cm intervals.

Test excavation units were dug to sterile and if any question existed about the deposit possibly continuing, a posthole was dug in the bottom of the unit. Profiles (sections) were drawn of the west and north walls of all units. All units were photographed. Each unit was carefully backfilled with an eye towards preventing future subsidence.

Analytical Techniques

The analytical techniques used in the classification and interpretation of debitage and ground stone are discussed here. The techniques used in the analysis of other artifact classes are included with the artifact descriptions.

Debitage

The analyses of chipped stone waste from the prehistoric components within the study area focus on the interaction between man and lithic raw materials. The raw material of all debitage was identified and calculated into percentages of the total sample of each site. Debitage was classified into six classes of waste flakes which result from lithic reduction processes beginning with decortification of raw material to re-working or maintenance of the edge of a biface.

The methodology employed in this study is based on a theory of lithic reduction developed by Collins (1975:15-34). Based on a flow model for the production of chipped stone tools (Collins 1975:18), inferences about human behavior can be correlated with

certain artifact (or waste by-product) attributes. The inference in each case is by analogy with experimentally determined correlates between behavior and artifact attributes. The most reliable application of this model is with a "population" of specimens. Inferences based on a single specimen are unreliable. Since the size of these samples is generally very small, the inferences drawn must be considered to be minimal statements. Also, the relative importance of various inferred behaviors for each site cannot be determined.

The model is composed of five stages: acquisition of raw material; core preparation and initial reduction; optional primary trimming; optional secondary trimming and shaping; and optional maintenance/modification (Collins 1975; Peak and Associates 1983). There is a linear relationship among these activities because all work done to the raw material is reductive; however, not all tools go through all stages. The archaeological evidence for the first two steps are cortical flakes, large tertiary flakes and many waste chunks, flake fragments and splinters. Biface thinning flakes (BTFs) and scraper retouch flakes (SRFs) are evidence of primary and secondary trimming, as well as maintenance/modification steps.

All unmodified and non-utilized flakes were classified as debitage. The debitage categories were cortical flakes, tertiary flakes, flake fragments, chunks, BTFs and SRFs. These categories may not be appropriate for other sites. These categories were further divided into size ranges: 0-1 cm, 1-2 cm, 2-3 cm, 3-5 cm, and 5+ cm. This information helps determine what reductive steps are represented and provides a necessary check. For example, cortical flakes should average larger in size (Peak and Associates 1983:117).

Cortical flakes are those flakes with some cortex left on their dorsal surface. They are the result of the initial stages of reduction (Peak and Associates 1983:117).

Tertiary flakes are flakes derived from initial and later stages of the reduction process. There is no cortex on them (Peak and Associates 1983:117). They may posses flake attributes such as bulbar scars, striking platform, etc.

Flake fragments are proximal (base), medial and distal fragments. These differ from chunks and splinters in that they may posses a portion of the attributes of a flake (bulb, platform, etc.) (Peak and Associates 1983: 118).

Chunks are the shatter of larger flakes. They are often shaped like small cores, except they do not have bulbar scars because no flakes have been removed from them (Crew, personal communication).

BTFs are those derived from the manufacture and maintenance of bifaces and points. They are convex flakes with scars like those

found on points and bifaces on their dorsal surface (Peak and Associates 1983:118). There were very few BTFs found in the study.

SRFs result from the manufacture or maintenance of scrapers. If the flake is removed from a plane scraper, the butt will be unfaceted and the edge between the striking platform and the dorsal surface will be abraded. This type of flake was nearly non-existent in the study collection. For further interpretation and elaboration of these categories, see Crew (Peak and Associates 1983:116-134).

Ground Stone

Mano Typology

In order to develop a comprehensive, regional approach to the manos found at the sties within our study area, a standardized mano typology is utilized in this study. It is based on work done in the southern Chumash area by Dillon (1978:105-106), Johnson (1980:202-215), and Van Horn and Brock (1981:20-21).

Type 1: An unshaped, ovoid to round cobble with a unifacial grinding surface which has been lightly abraded so that the original contour is mostly preserved. Equivalent to Dillon's Type 1A (1978:105).

A. A naturally flat grinding surface has been employed.

B. The grinding surface is naturally "domed," being equally convex all around the grinding area.

Type 2: An unshaped ovoid to round cobble with a unifacial grinding surface which has been altered to the extent that a "shoulder" angle is present where the grinding surface meets the unground area. Same as Dillon's Type 1B (1978:105).

A. The grinding surface is flat.

B. The grinding surface is domed.

Type 3: An unshaped ovoid to round bifacial cobble which has been only slightly abraded so that the original contour is largely preserved. The subdivisions are based mainly after Johnson (1980:202).

A. Both grinding surfaces are domed.

B. Both grinding surfaces are basically flat.

C. One grinding surface is flat, the other grinding surface is domed.

Type 4: An unshaped ovoid bifacial cobble which has been so heavily abraded that "shoulder" angles exist where the grinding surfaces meet the unground area. This is the same as Dillon's Type 2 (1978:106). The subdivisions are largely after Johnson (1980:202).

A. The two grinding surfaces are domed.

B. The two grinding surfaces are basically flat.

C. One grinding surface is flat, the other grinding surface is domed.

Type 5: An ovoid to round intentionally-shaped bifacial cobble. The artifact has been shaped by grinding and/or pecking along its edge. A distinct shoulder angle exists around the periphery of both grinding surfaces. Equivalent to Dillon's Type 3A (1978:105) and Johnson's Type 4 (1980:202).

A. Both grinding surfaces are domed.

B. Both grinding surfaces are relatively flat.

C. One grinding surface is domed, one is flat.

Type 6: An ovoid to round intentionally-shaped unifacial cobble. The artifact has been shaped by grinding and/or pecking along its edge and on its dorsal side. A distinct shoulder angle exists around the periphery of the grinding surface. A hand groove has been intentionally worked into the dorsal side to facilitate ease in grinding.

A. The grinding surface is domed.

B. The grinding surface is relatively flat.

Examples of Types 1 through 6 are found in our study area. However, a few of the sub-types are not represented. It should be assumed that, unless otherwise stated, all bifacial manos have generally parallel surfaces. Bifacial specimens which have grinding surfaces worn at an angle of 5 degrees or more will be considered as "wedge-shaped". This is noted by the addition of "W" after its typological number (e.g., 5A-W). Further characteristics of the manos are noted as "modifications" in the tables provided. Modifications including pecking, edge-grinding, thermal alteration (includes fire-cracking), battering, and pitting. Discussions regarding these modifications can be found in Greenwood (1969:20).

Metate Typology

Two basic metate types are distinguished in this study. The first will be termed "shallow basin". This form is generally oval in shape and contains a shallow grinding basin. The second type is termed "deep basin". This form is characterized by having a deep oval grinding impression. A deep basin metate can be distinguished from a shallow basin metate in that its grinding basin is deeper than one-half of its height. Modifications noted for manos occur for metates as well.

Other Ground Stone Typologies

Other forms of ground stone implements, distinct from manos and metates, have been recovered from the sites in the study area. These include mullers, pestles, bowls, charmstones, discoidals, and cogged stones. These forms can mostly be distinguished from one another by common sense; however, a couple of clarifications are needed. Mullers are differentiated from manos by their small dimensions and obvious one hand utilization characteristics. These generally have a length under 10 cm and approach a one-to-one length-to-width ratio. Discoidals, on the other hand, do not exhibit signs of utilization for grinding and are distinctly circular in form. In some cases, however, it is difficult to distinguish manos from discoidals and discoidals from cogged stones--the forms simply grade into one another (e.g., see Appendix C--The Newman Collection).

CHAPTER 6

FIELDWORK

INTRODUCTION

The fieldwork for this project can be broken into three distinct phases. The first stage entailed the field reconnaissance of all surveyable portions of the overall study area. The second stage consisted of the test excavation of previously recorded sites and isolated locations. The final stage involved the test excavation of newly discovered sites. This last stage was funded through a change order that augmented the project funding to allow for the excavation of these sites that had not initially been anticipated.

FIELD RECONNAISSANCE

General

The field reconnaissance began on July 11, 1983, and was substantially completed by August 2, 1983. The field reconnaissance was carried out under the supervision of the Co-Principal Investigators, Mr. Brock and Mr. Langenwalter. Rebecca Langenwalter functioned as Crew Chief. Crew members consisted of Mark Roeder, Steven Briggs, Ivan Strudwick, Alan Davis, Nina Harris, Richard Cerreto, and Jeff Binyon. The survey required approximately 1400 man hours to complete. Field conditions varied considerably--Figures 6-3 to 6-20 show the different field conditions and survey methodologies used in each of the regions of the study area. The key to the location maps is Figure 6-1 and the key to methods and conditions is Figure 6-2.

Logistics

Because hundreds of different individuals and organizations own portions of the study area it was difficult coordinating permission to access the properties. A list of landowners provided by the Corps proved to be insufficient and it was found that the best way to get permission to survey areas was to approach landowners, leasees, and tenants while actually in the field. For instance, the Co-Principal Investigators alternated arranging permission for the next day's work while the field crew was surveying previously accessed property. By getting permission immediately beforehand the property owner knew exactly

when we would be on his/her property and consequently did not have to wonder about who was walking over their property. The attitudes of the various landowners and tenants ranged from enthusiastic cooperation to downright rejection.

Restrictions

A variety of restrictions limited the activities of the survey crew. The most significant of these was the denial of access. This occurred in two instances, both in the extreme northern area of the Prado Basin. Permission was denied for entry onto the Stahl property (approximately 160 acres; Figure 6-3) and the Koopal property (approximately 40 acres; Figure 6-3).

Agricultural restrictions hampered the field reconnaissance but did not result in the omission of any areas. Denial of access because of agricultural reasons was always transitory and the survey crew was permitted to walk over the property at a later date (after the crop was harvested).

The use of areas for hunting and shooting also restricted the survey effort. Hunting and shooting areas tend to be in the lower elevations of the Prado Basin on the north side of the Santa Ana River. As with the agricultural areas, we were given permission to enter these areas when the time was opportune. This resulted in the safe survey of potentially dangerous areas.

Results of the Field Reconnaissance

This section gives a general synopsis of the prehistoric and historic sites examined in the course of the field survey. Particulars on each of the sites are presented in Chapters 7 and 8.

Prado Basin

The area of the Prado Basin examined during this study is indicated in Figures 6-3 to 6-7. A key to conditions and survey methods is found in Figure 6-2. Previously recorded prehistoric sites in the Prado Basin (or their recorded localities) examined during the course of the field survey consisted of the following: Riv-100, Riv-652, Riv-653, (sometimes referred to as Riv-556) Riv-1098, SBr-1543, SBr-1570, SBr-1571, SBr-2259, SBr-2260, SBr-2845, SBr-4032, and SBr-5096.

New prehistoric sites located in the Prado Basin through surface artifact evidence consist of: Riv-2754, Riv-2755, SBr-5243, and SBr-5245. Riv-2803 and Riv-2804 were discovered upon reexamination of an area during February, 1984, that had a surface visibility of virtually zero the previous summer.

Other new prehistoric sites in the Prado Basin were recorded as a result of oral and archival research. These consist of Riv-2797, SBr-5241, SBr-5242, and SBr-5244.

Eight isolated prehistoric artifacts were also noted in the course of the field reconnaissance. Testing later indicated that one of the isolates represented a site (SBr-5243).

Previously recorded historic sites examined in the course of the field survey consist of: Riv-653H, Riv-1039, Riv-1044, Riv-2203, Riv-2204, SBr-1571, SBr-2317, SAR-H2B, SAR-H2D, PG-1, PF-3, PF-4, PF-5, CSULB1, and CSULB2.

Historic sites discovered during the field reconnaissance consist of: Riv-2778, PB-9, 19, 20, 26, 35, 40, 41, 47, 48, 57, 58, 59, 61, 62, 63, 70, 72, 81, 83, 84, 85, 86, 99, 106, and 147.

Numerous other historic site localities were discovered through archival research. These are discussed in Chapter 8. They are Riv-2802 and the remainder of all PB numbered sites not listed above.

Santa Ana Canyon

The area of Santa Ana Canyon that was examined during this study is indicated in Figures 6-7 through 6-9. One previously recorded prehistoric site was located in the portion of Santa Ana Canyon that comprises the study area. This is Ora-817, a site that has already been extensively researched by Scientific Resource Surveys, Inc. (1980). Our intensive walkover survey failed to locate any new prehistoric sites. Other sites present within Santa Ana Canyon, but outside of the study area, consist of Riv-1801, Ora-614, Ora-818, Ora-819, and Ora-820 (compare U.S. Army Corps of Engineers 1980: Figure 17 with Scientific Resource Surveys, Inc. 1980:Figure 4).

Santa Ana River Channel

No previously recorded prehistoric archaeological sites were present within the portion of the Santa Ana River Channel that comprises our study area (Figures 6-9 to 6-16). The great majority of this part of the project area is channelized. A vehicular survey failed to locate any new prehistoric sites. One previously recorded historic structure, the Pacific Electric Bridge, was verified in the field (Chapter 8, PB-136).

Santa Ana River Mouth

No known prehistoric or historic archaeological sites were noted during the records search. A spot check and walkover survey of the project areas near the mouth of the Santa Ana River failed to produce any new sites (Figure 6-17).

Santiago Creek

One previously recorded prehistoric site, Ora-89, was located in the area of Santiago Creek which is scheduled to be impacted as a result of the proposed project. A walkover survey was conducted

of the area where channelization is planned, and a vehicular survey with spot checking was conducted over the rest of the length of the creek from its intersection with the Santa Ana River to the spillway of the Villa Park Dam (Figures 6-18 and 6-19). No surface artifacts were located at Ora-89. The results of test excavation of this site are in Chapter 7.

One new historical site was recorded during the survey, PB-147. One area of river-cobble masonry channel sidewalls (at W.O. Hart Memorial Park in Orange), was built by the W.P.A. in 1940 and was thus too recent in origin to be evaluated.

No evidence was found of the site Ora-369, which is approximately three kilometers upstream from Ora-89 and not scheduled to be impacted by the project. Four sites in Santiago Oaks County Park that were recently recorded by the Pacific Coast Archaeological Society were spot checked to insure that they were not eroding into Santiago Creek. These sites are safe and outside of the area to be impacted by the Corps of Engineers.

Oak Street Drain

The area of Oak Street Drain examined during this study is shown in Figure 6-20. No sites have been previously recorded or located during the field reconnaissance.

TEST EXCAVATION: PHASE I

General

The first phase of test excavation began on August 2, 1983 and was completed on September 9, 1983. Mr. Brock and Mr. Langenwalter directed the excavations. Rebecca Langenwalter and William A. Sawyer served as crew chiefs. The regular crew members were: Alan Davis, Ivan Strudwick, Jeffrey Binyon, Nina Harris, Steven Briggs, Mark Roeder, Laurie Santoro, Richard Cerreto, Michael Mitchell, and Michael Foertsch. Work occurred on the following sites on the dates indicated:

Table 6-1

SITES AND DATES OF EXCAVATION
FOR THE FIRST PHASE OF TESTING

Site	Dates
Riv-653	8/02/83 - 8/15/83
Riv-1098	8/02/83 - 8/16/83
Riv-652	8/16/83 - 8/18/83
SBr-2845	8/17/83 - 8/22/83
SBr-1571	8/23/83 - 8/26/83
SBr-1543	8/24/83 - 9/09/83
Ora-89	9/06/83 - 9/07/83

Along with these sites, six 1 x 1 meter units were excavated in four isolate locations.

Conditions

Specific conditions at each site are discussed in Chapter 7. Conditions in general were not conducive to archaeological field work. The weather was very dry and temperatures were consistently in the 90 to 105 degree range. This fact, coupled with the hard, dry clayey soil on most of the sites made excavation very difficult. In addition, the air quality was generally poor for the entire first phase of test excavation. The crew deserves credit and thanks for their perseverance under these extremely harsh conditions.

Logistics

Some logistical problems occurred during the first phase of test excavation--these did not prove to be insurmountable. Excavation went smoothly at Riv-653 and Riv-1098. At Riv-652, there was difficulty caused by the site being under cultivation (Sudan grass) and requiring frequent watering due to the dry weather. Also, permission to excavate on the area of the site owned by Riverside County (Prado County Park) was withdrawn just prior to our initiating testing on the site. No major logistical problems were encountered in digging SBr-2845. Some minor difficulty arose in getting permission to dig at SBr-1543 and SBr-1571; however, these issues were resolved and a good rapport was developed with the tenant. The only logistical problem encountered with working at Ora-89 was that the site is not directly accessible by vehicle. We had intended to excavate at SBr-5245 (the Tell Site) during the first phase of testing; however the field was under cultivation (beans) at the time and the farmers were reluctant to extend permission.

TEST EXCAVATION: PHASE II

The second phase of test excavation began on January 31, 1984 and lasted until February 29, 1984. Again, Mr. Brock and Mr. Langenwalter directed the excavations. Mr. William A. Sawyer acted as Crew Chief. Other crew members consisted of: Steven Briggs, Alan Davis, Mark Roeder, Ivan Strudwick, Laurie Santoro, Richard Cerreto, Mike Mitchell, and John Elliott. We are indebted to Susan Maupin for her help as a volunteer during this phase. The following table shows the sites worked on and the dates of excavation:

Table 6-2

SITES AND DATES OF EXCAVATION
FOR THE SECOND PHASE OF TESTING

Site	Dates
SBr-5245	1/31/84 - 2/06/84
Riv-2754	2/02/84 - 2/10/84
Riv-2755	2/06/84 - 2/14/84
SBr-5243	2/13/84 - 2/17/84
SBr-5241	2/15/84
SBr-5096/SBr-4032	2/15/84 - 2/17/84
Riv-2778	2/16/84 - 2/29/84

In addition to these sites, one 1 x 1 meter unit was dug at Riv-2802 (unnamed adobe dwelling) and at the location of Abelardo Serrano's home (PB-16).

Conditions

The field conditions for the second phase of testing were very good. The weather was mild and sunny, and no rain hampered operations. Conditions at the particular sites tested are discussed in Chapter 7.

Logistics

No major logistical problems occurred in getting permission to excavate on the new sites. Probably the greatest difficulty was related to the fact that three of the new sites were under cultivation with Sudan grass at the time of testing (SBr-5245, Riv-2754, and Riv-2755). We attempted to be as careful as possible when excavating and no complaints were registered, despite the inevitable loss of some of the crops. At the Francisco Serrano adobe site (Riv-2778) logistical problems stemmed from near complete coverage of the site by young willow trees. Some of these were removed to provide access to the site. Also, because the elevation of the site is within the current taking level of the Prado Dam, some concern developed pertaining to possible flooding if rain occurred. This proved not to be a problem.

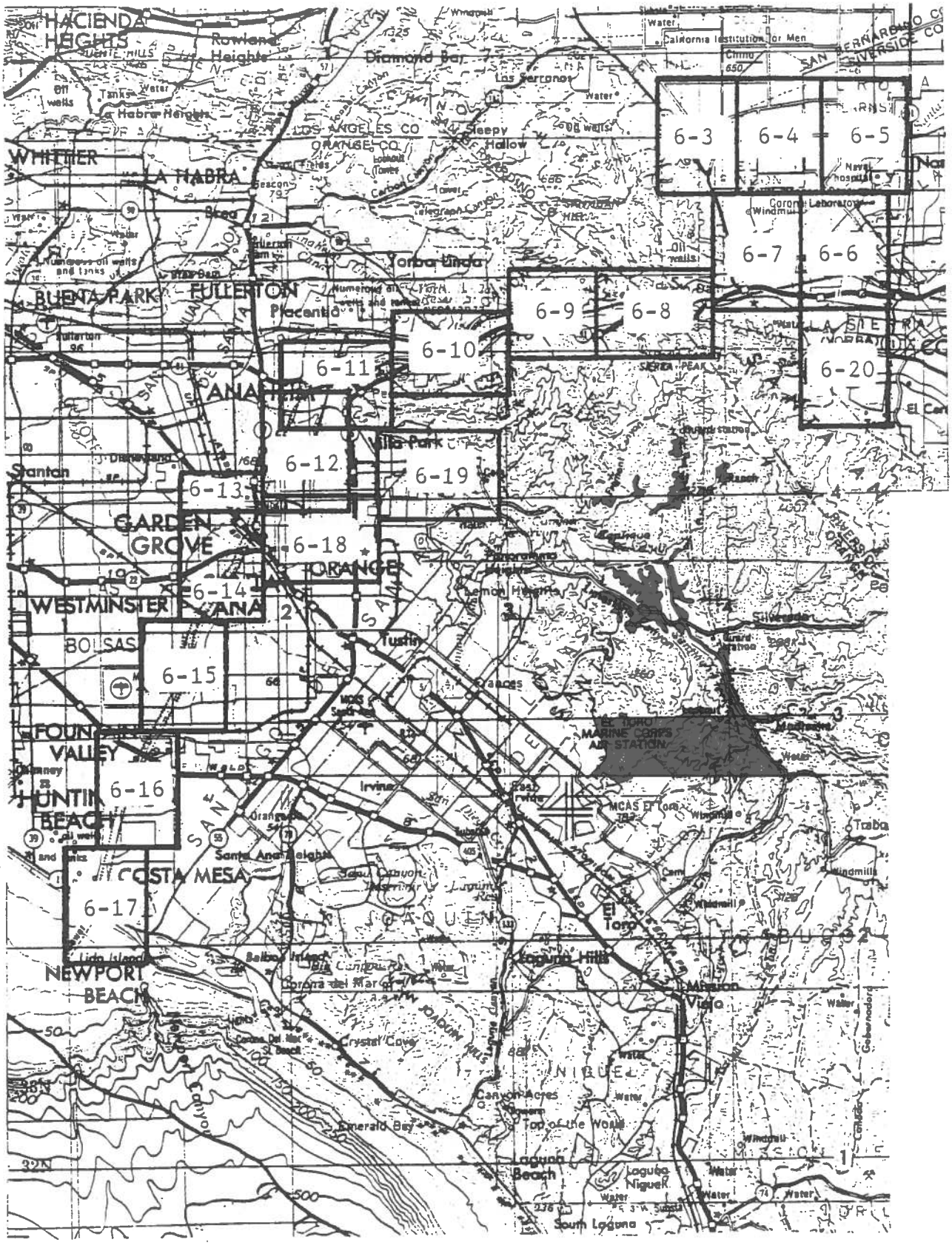

Figure 6-1. Locations of Figures 6-3 to 6-20 plotted on the USGS Western States Series Santa Ana Quadrangle (1979). The scale is 1:250,000.

EXD	EXCLUSIVE DEPLOYED SURVEY TECHNIQUE USED
OMT	AREAS OMITTED FROM THE FIELD RECONNAISSANCE (PERMISSION REFUSED OR INACCESSIBLE)
SLT	SILTED OVER AREAS (SAMPLE TRANSECTS AND LOCALIZED INTENSIVE SURVEY OF SELECTED AREAS)
UND	UNEXCLUSIVE DEPLOYED SURVEY TECHNIQUE USED
VSC	VEHICULAR SPOT CHECK (LOCALIZED INTENSIVE SURVEY OF SELECTED AREAS)
WSC	WALKOVER SPOT CHECK (LOCALIZED INTENSIVE SURVEY OF SELECTED AREAS)
(00)	SURFACE VISIBILITY GIVEN AS A PERCENT FIGURE

Figure 6-2. Key to symbols used in Figures 6-3 to 6-20.

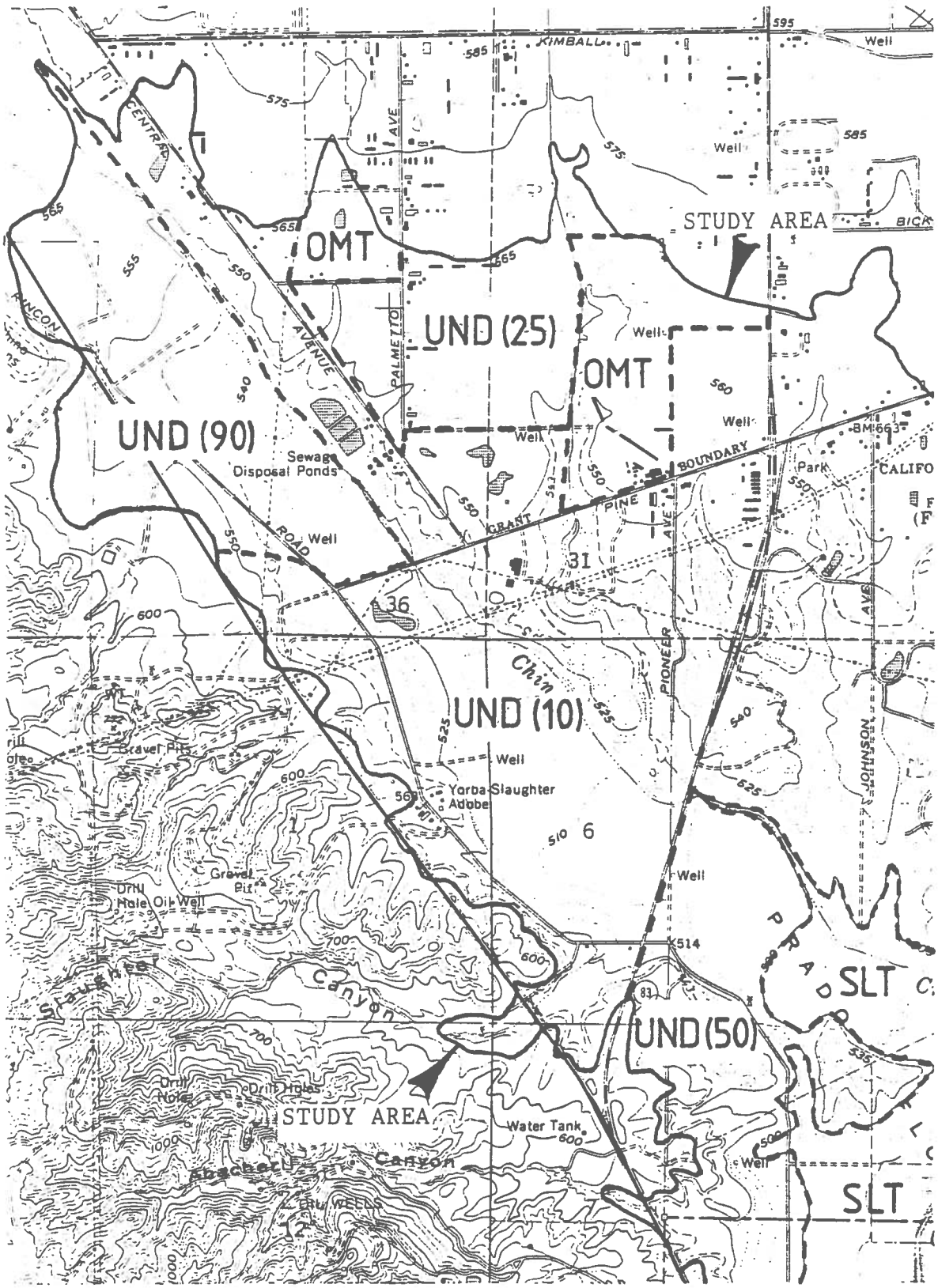

Figure 6-3. Northwest Prado Basin study area (USGS 7.5′ Prado Dam Topographic Quadrangle).

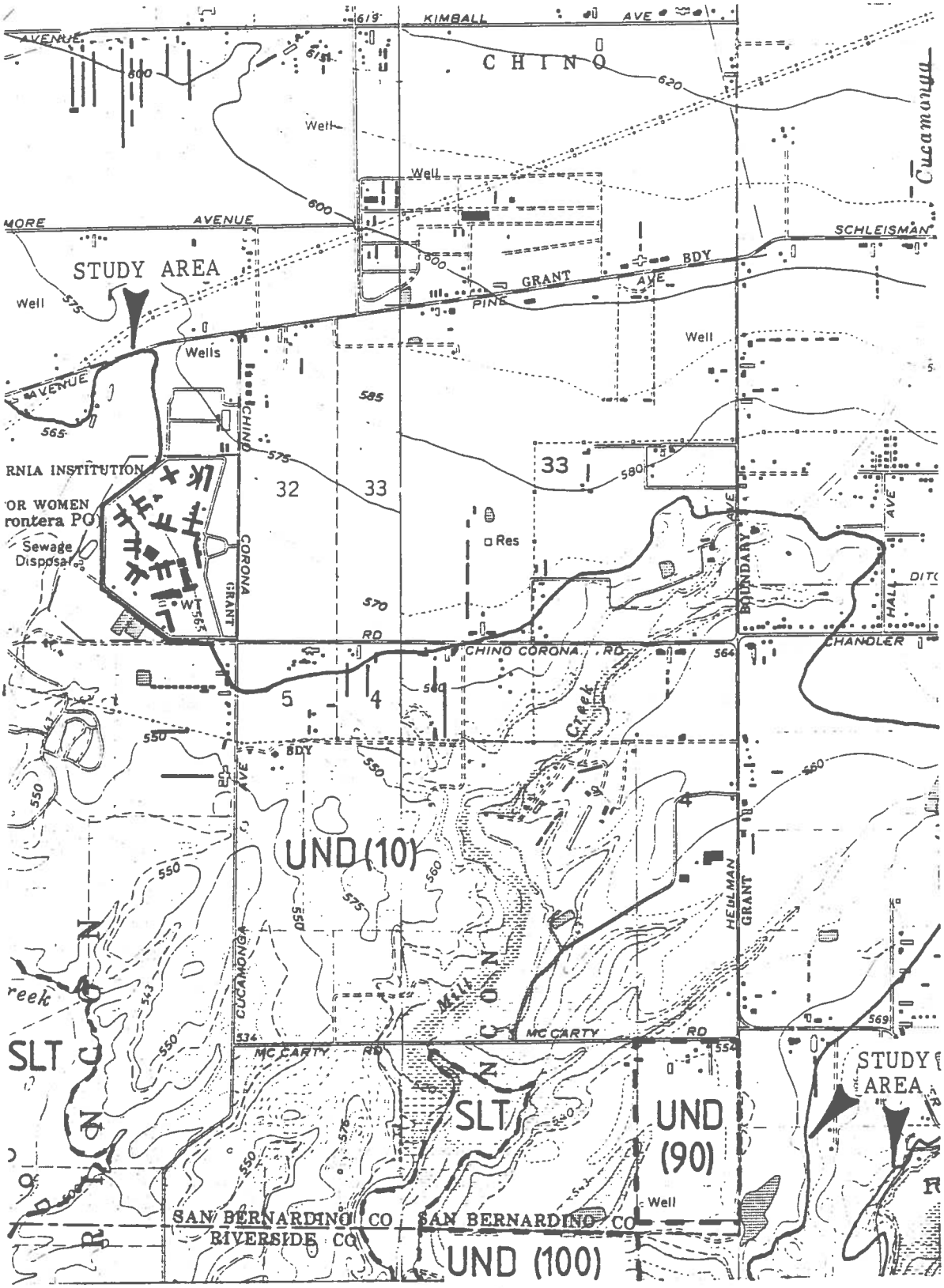

Figure 6-4. Central Prado Basin study area (USGS 7.5′ Prado Dam and Corona North Topographic Quadrangles).

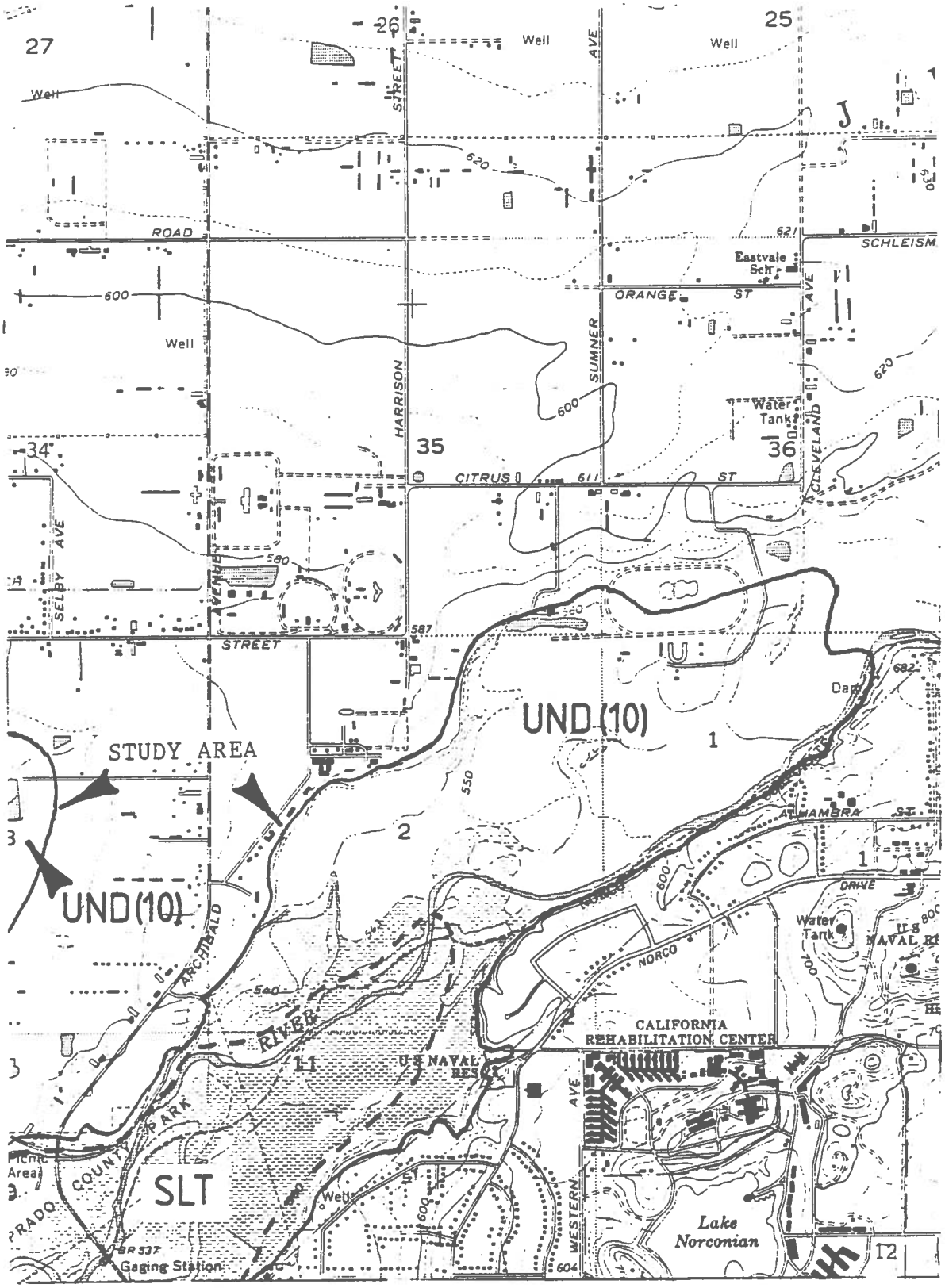

Figure 6-5. Northeast Prado Basin study area (USGS 7.5´ Corona North Topographic Quadrangle).

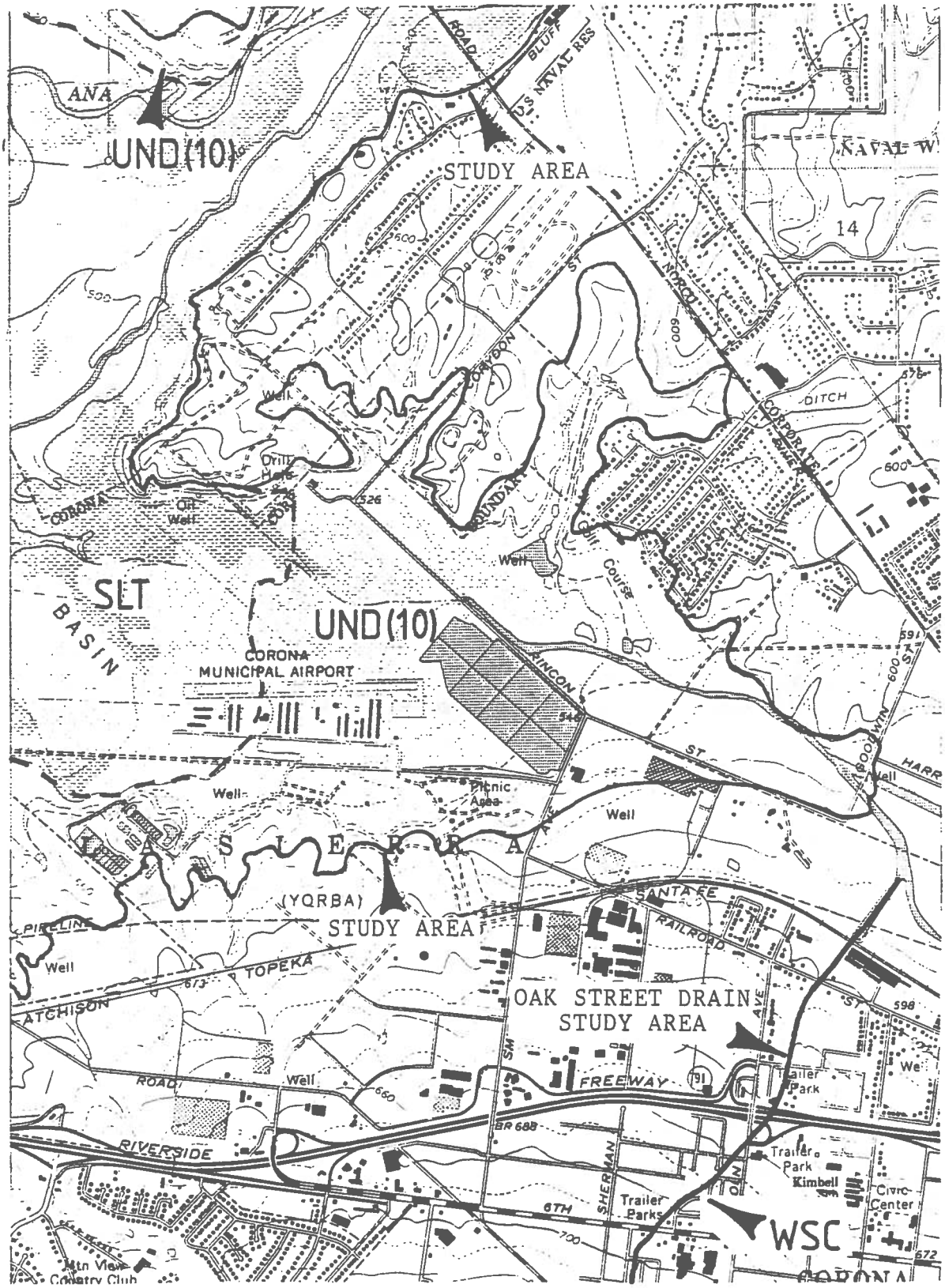

Figure 6-6. Southeast Prado Basin study area (USGS 7.5´ Corona North Topographic Quadrangle).

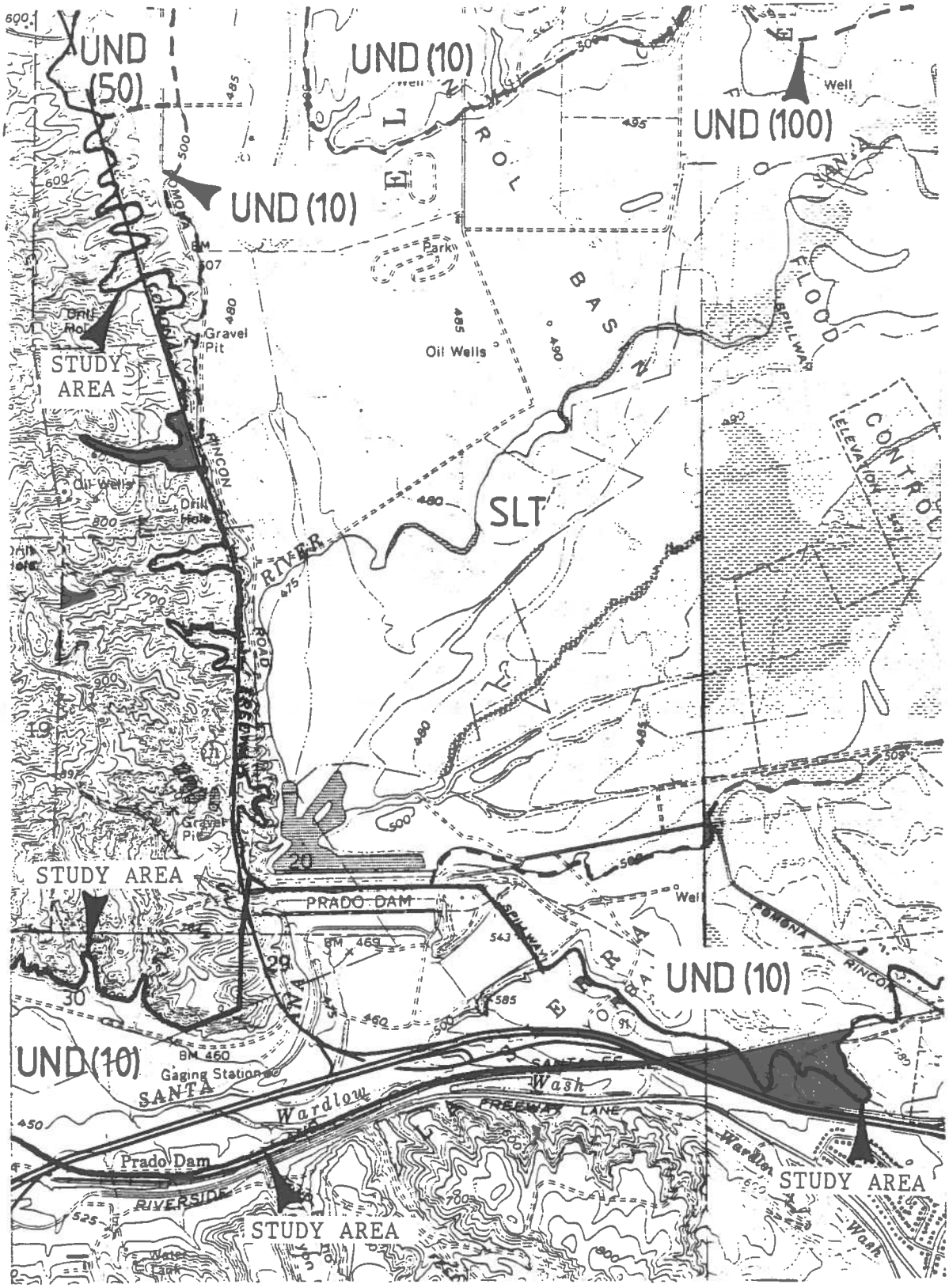

Figure 6-7. Southwest Prado Basin study area (USGS 7.5′ Prado Dam and Corona North Topographic Quadrangles).

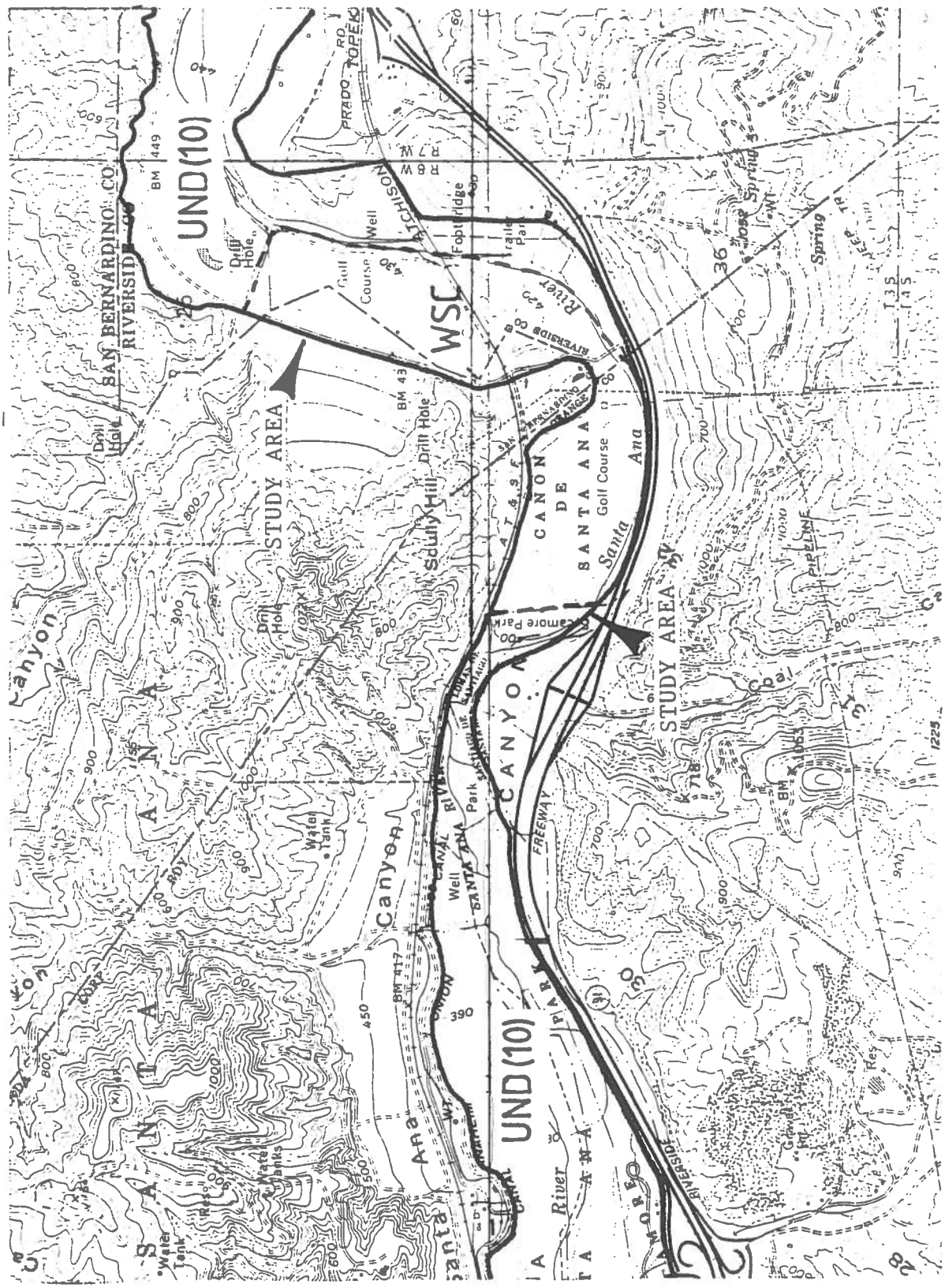

Figure 6-8. Eastern Santa Ana Canyon study area (USGS 7.5' Prado Dam and Black Star Canyon Topographic Quadrangles).

und - complete
epd - partial
all others partial

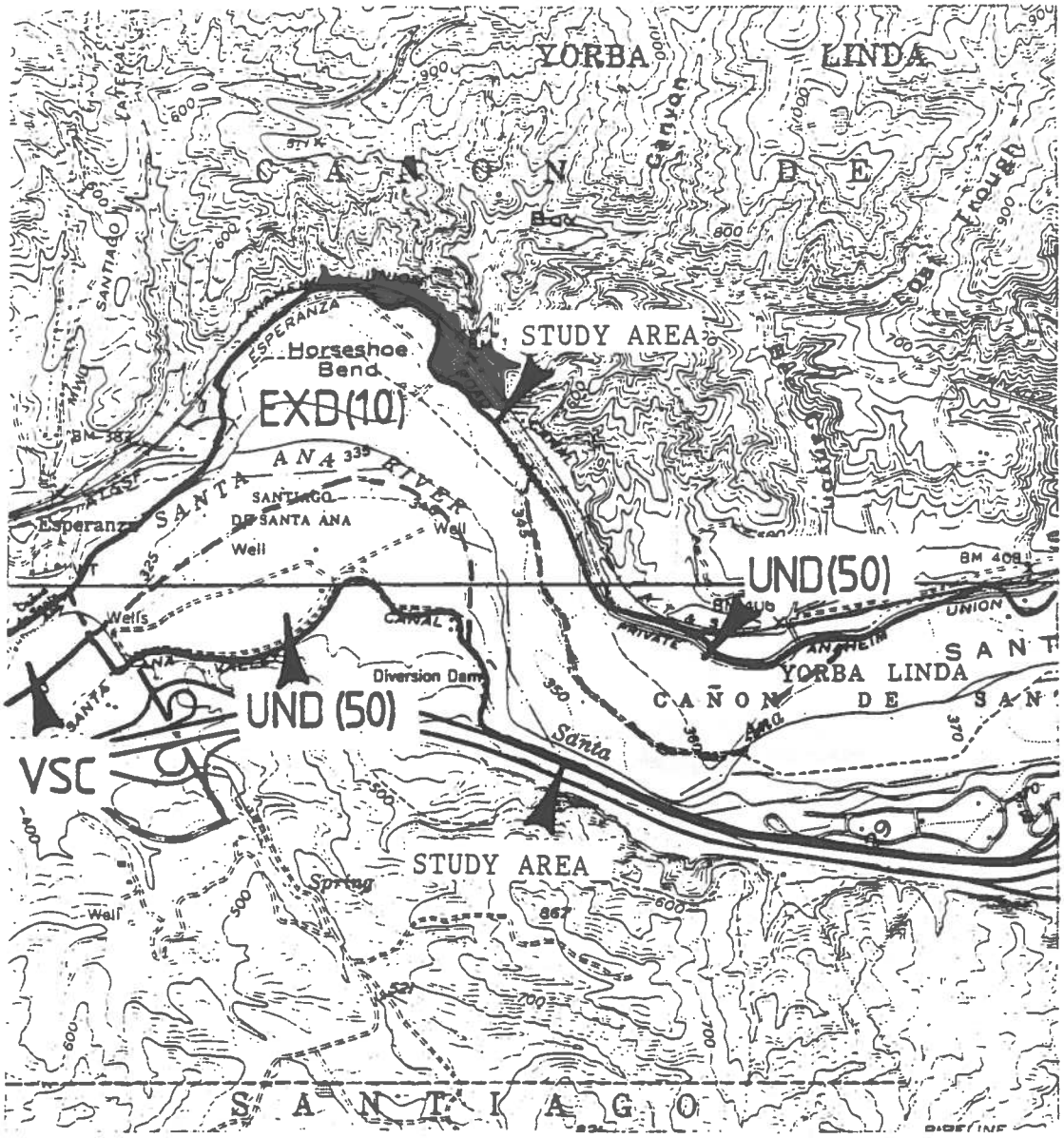

Figure 6-9. Central Santa Ana Canyon study area (Horseshoe Bend) plotted on the USGS 7.5´ Prado Dam and Black Star Canyon Topographic Quadrangles.

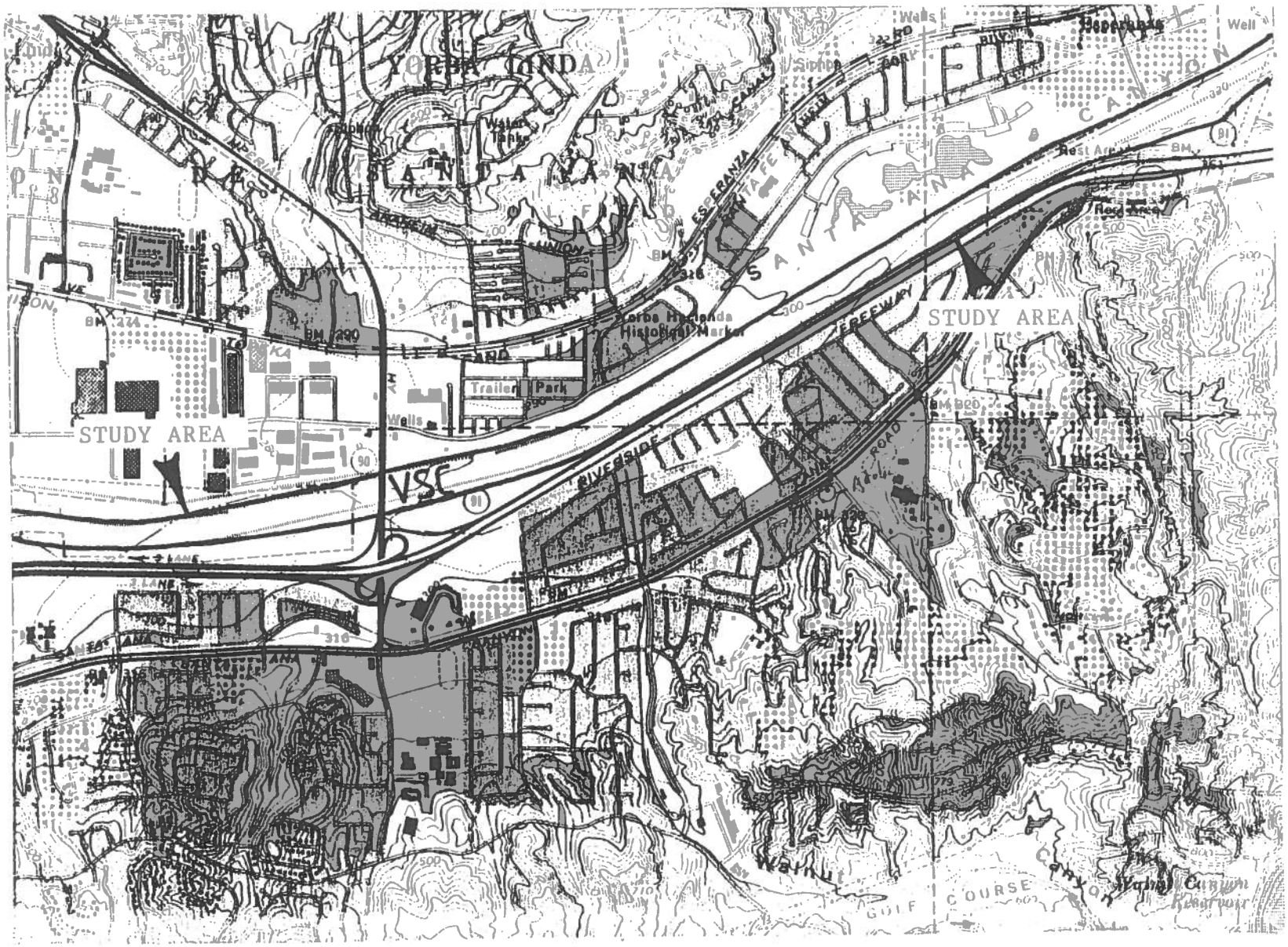

Figure 6-10. Western Santa Ana Canyon study area (USGS 7.5´ Orange Topographic Quadrangle).

Figure 6-11. Northeastern portion of the Santa Ana River Channel study area (USGS 7.5′ Orange Topographic Quadrangle).

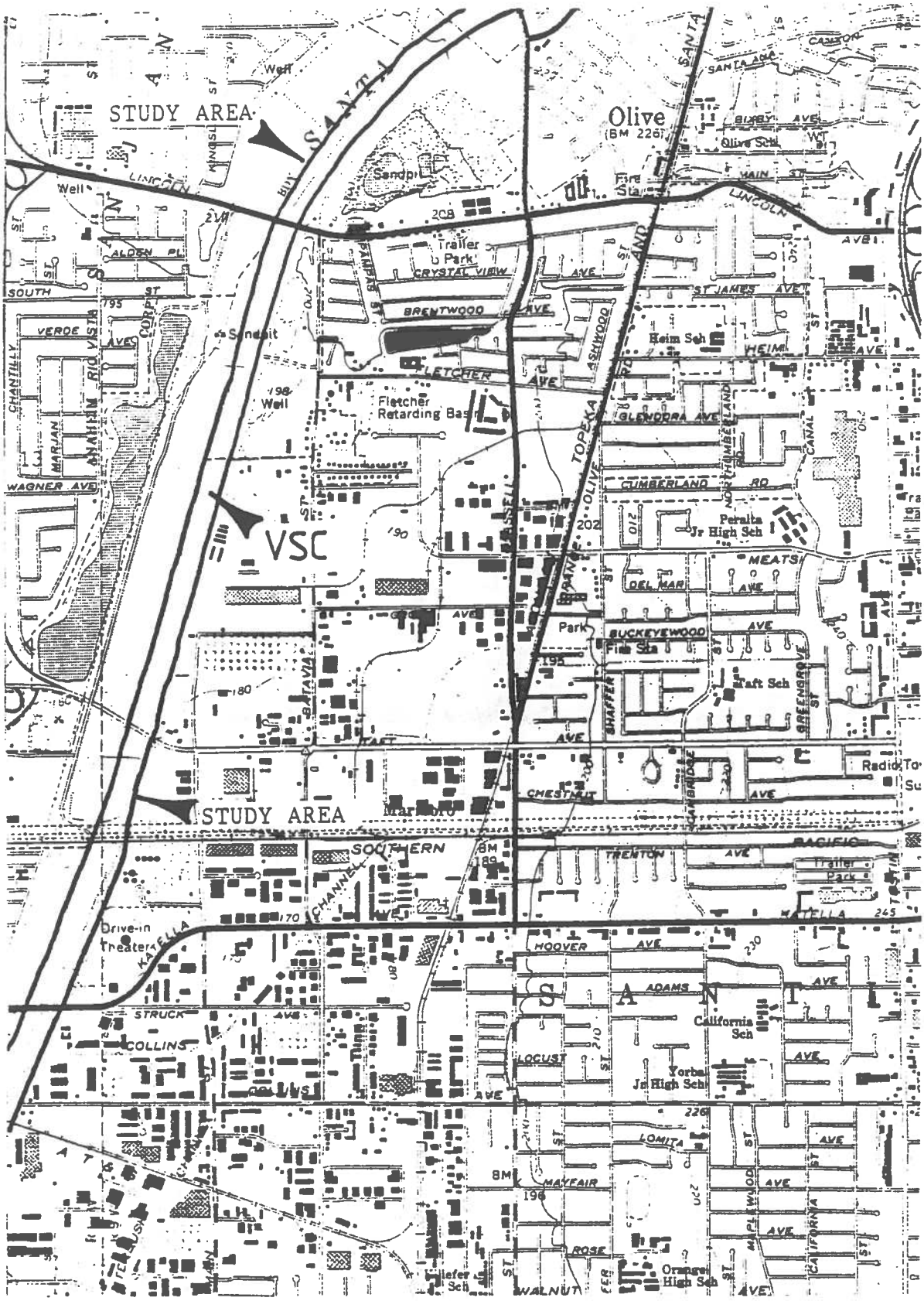

Figure 6-12. Northeastern portion of the Santa Ana River Channel study area (USGS 7.5′ Orange Topographic Quadrangle).

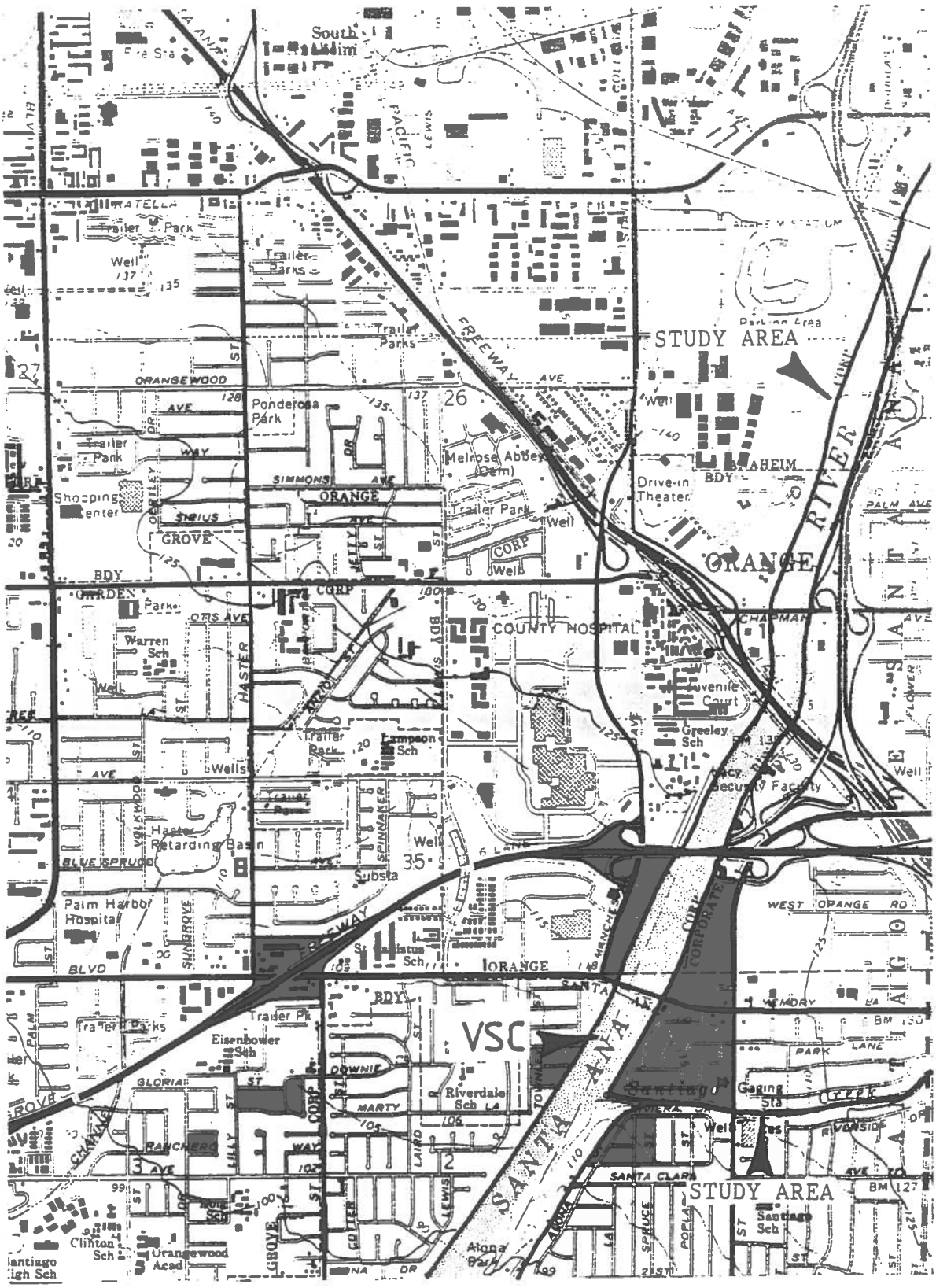

Figure 6-13. Central portion of the Santa Ana River Channel study area and mouth of Santiago Creek study area (USGS 7.5′ Anaheim Topographic Quadrangle).

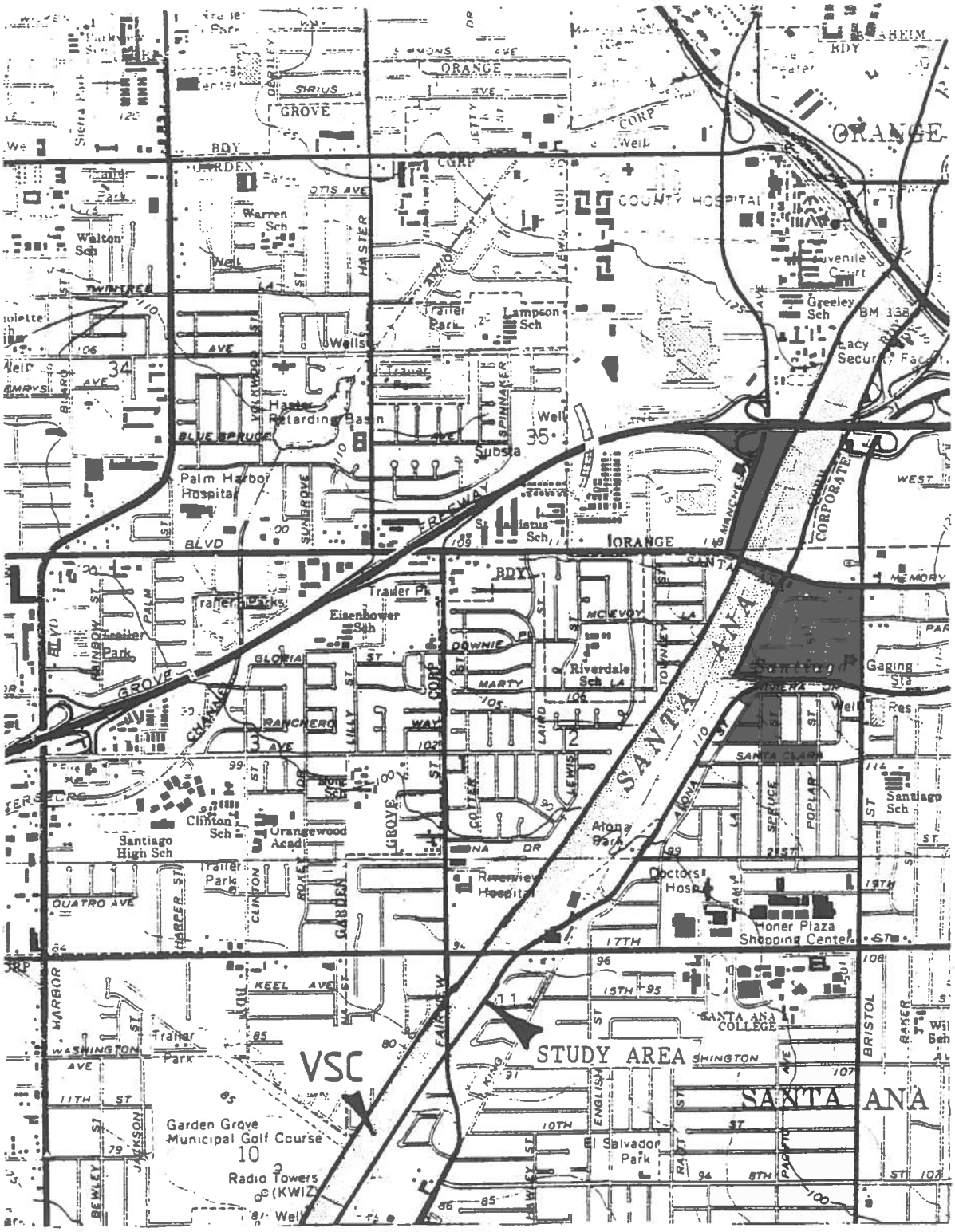

Figure 6-14. Central portion of the Santa Ana River Channel study area and the mouth of the Santaigo Creek study area (USGS 7.5′ Anaheim Topographic Quadrangle).

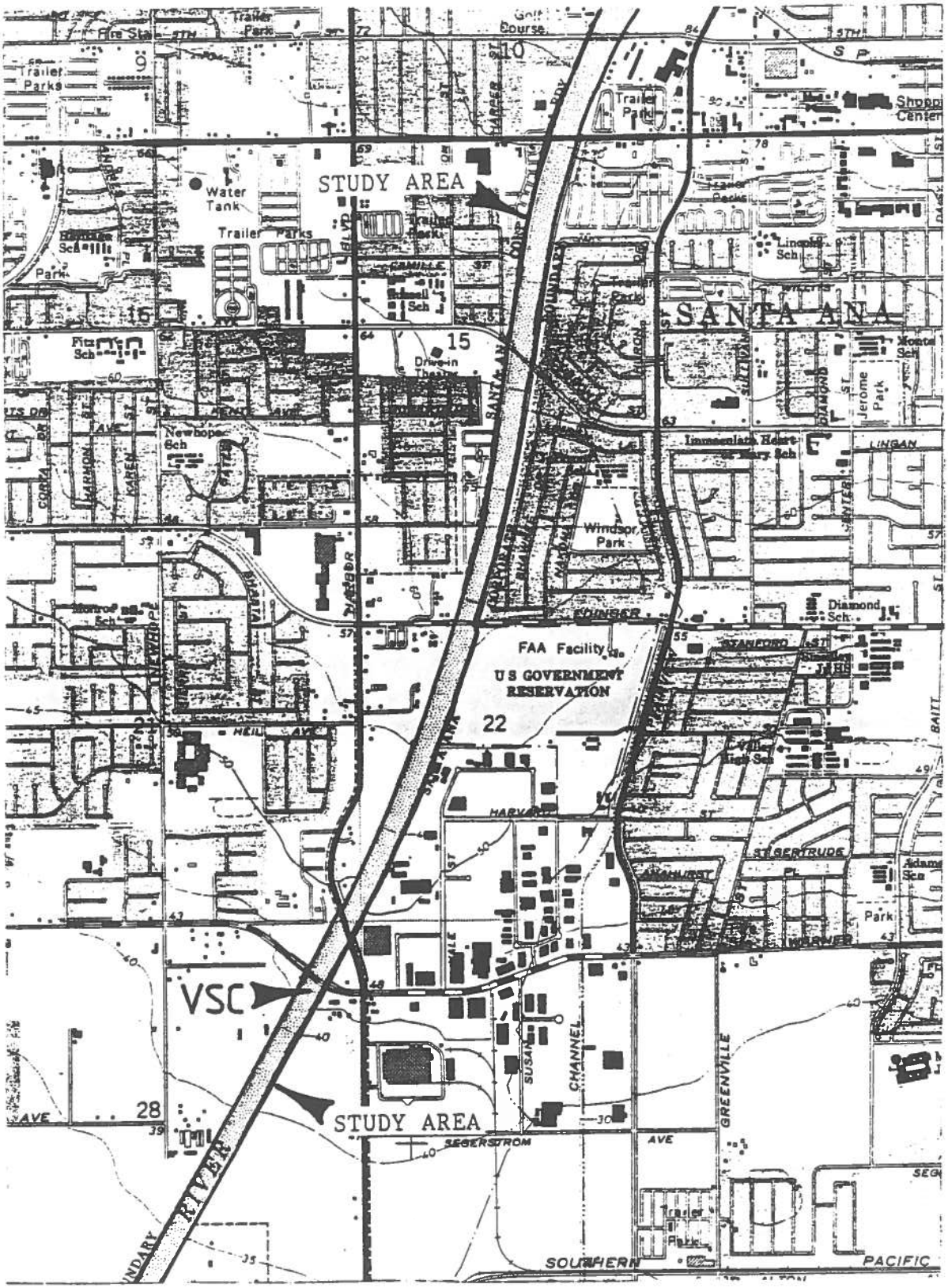

Figure 6-15. South central portion of the Santa Ana River Channel study area (USGS 7.5′ Newport Beach Topographic Quadrangle).

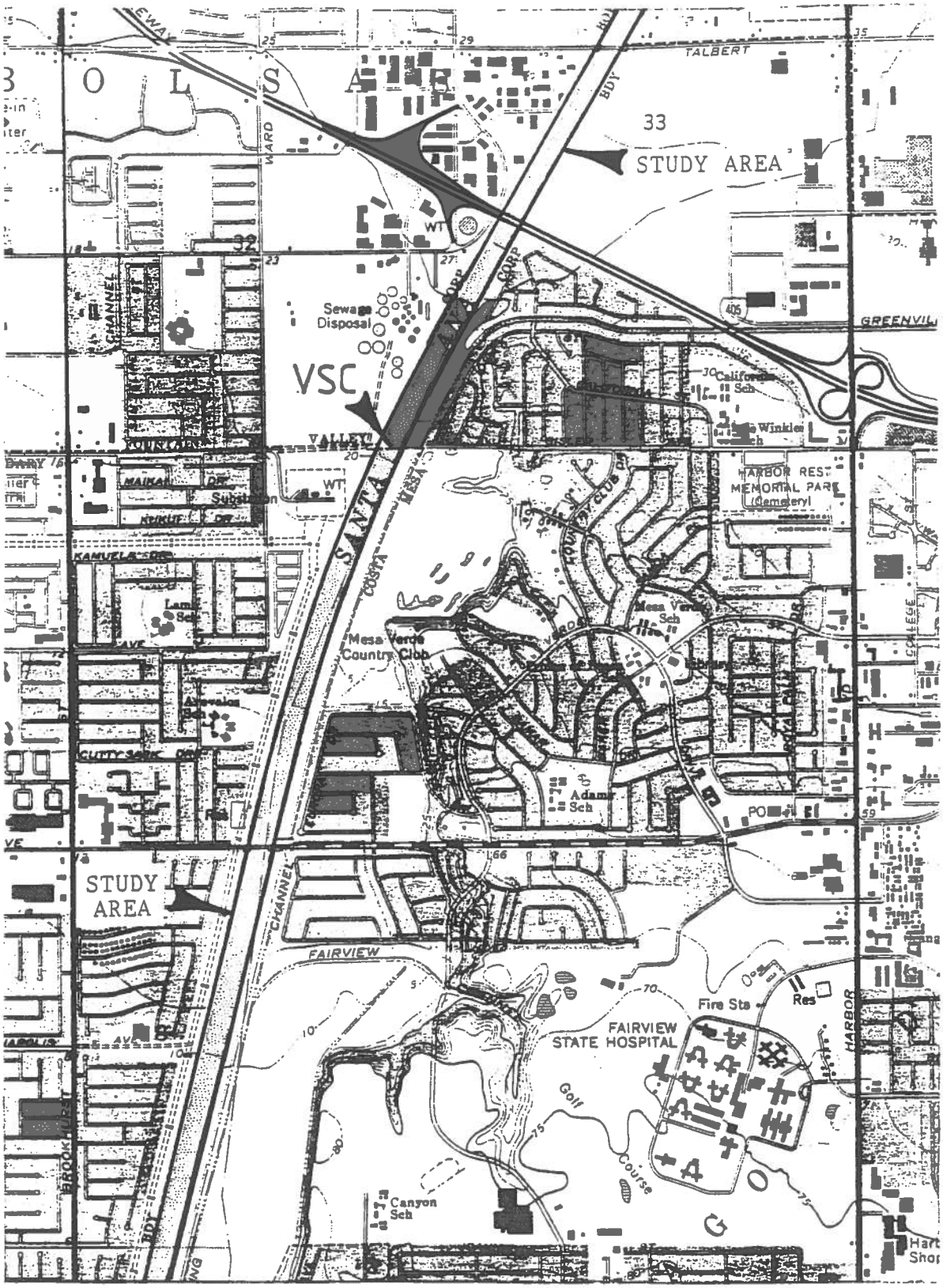

Figure 6-16. Southern portion of the Santa Ana River Channel study area (USGS 7.5´ Newport Beach Topographic Quadrangle).

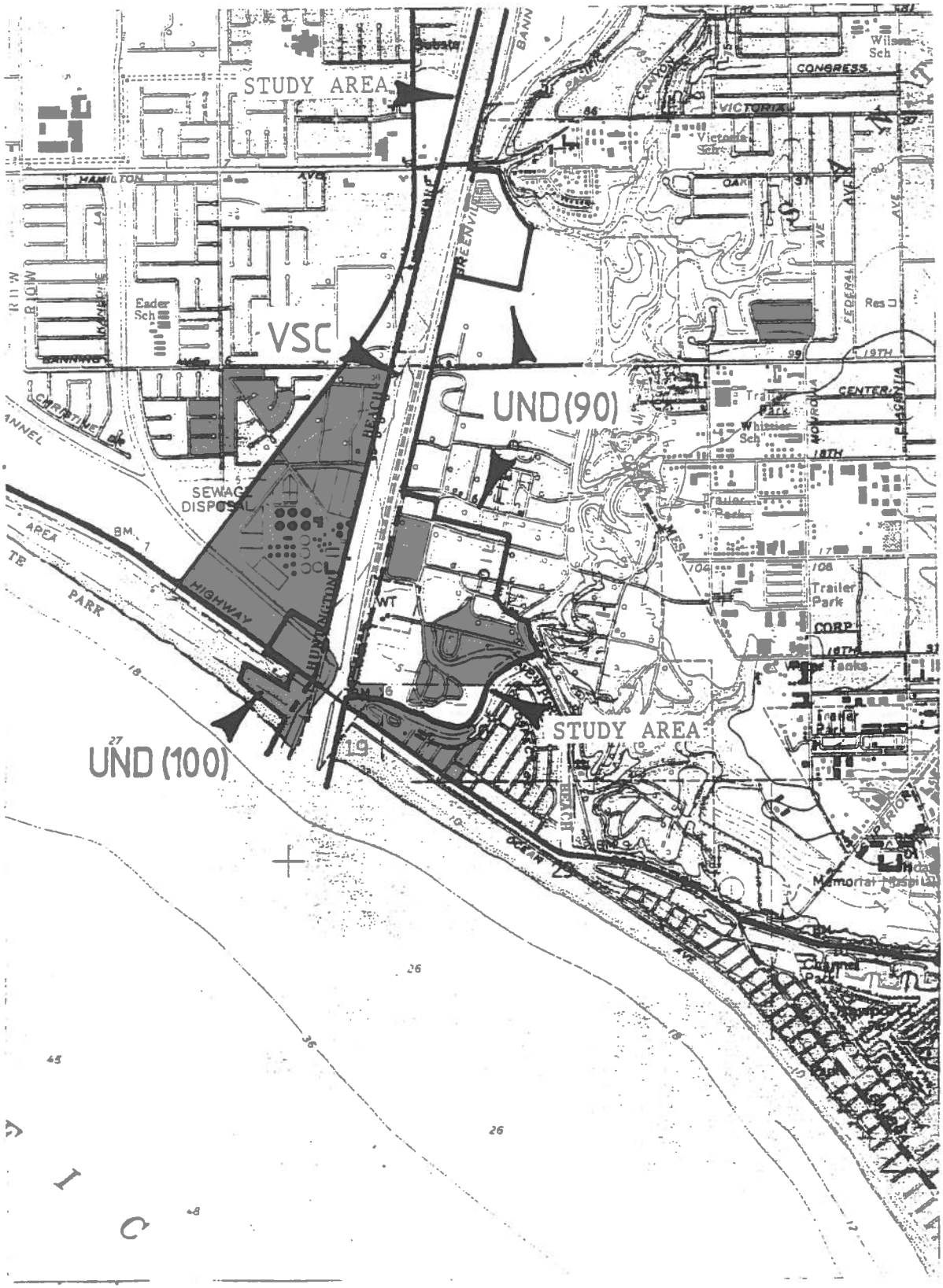

Figure 6-17. Santa Ana River Mouth study area (USGS 7.5´ Newport Beach Topographic Quadrangle).

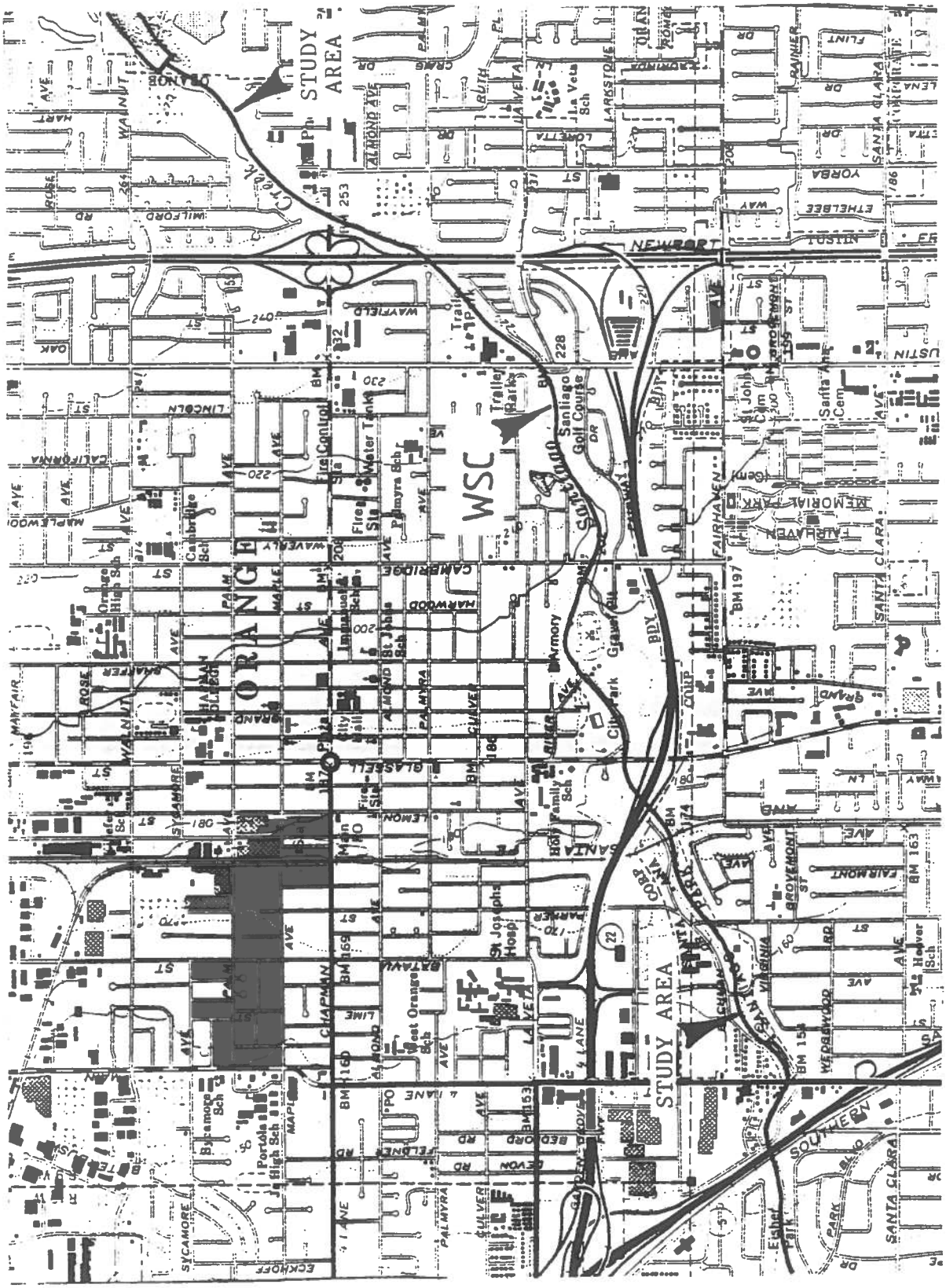

Figure 6-18. Western Santiago Creek study area (USGS 7.5′ Orange Topographic Quadrangle).

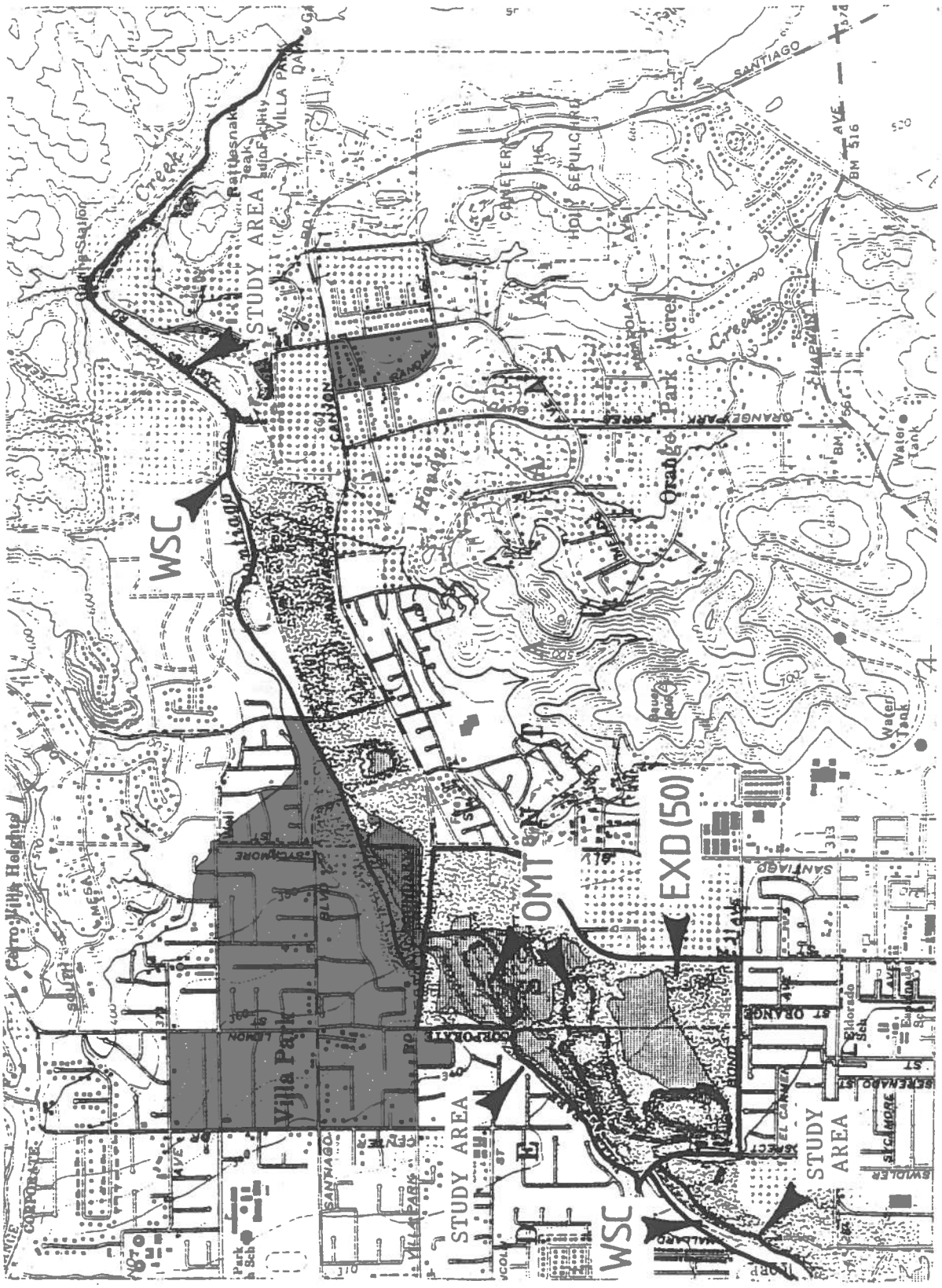

Figure 6-19. Eastern Santiago Creek study area (USGS 7.5′ Orange Topographic Quadrangle).

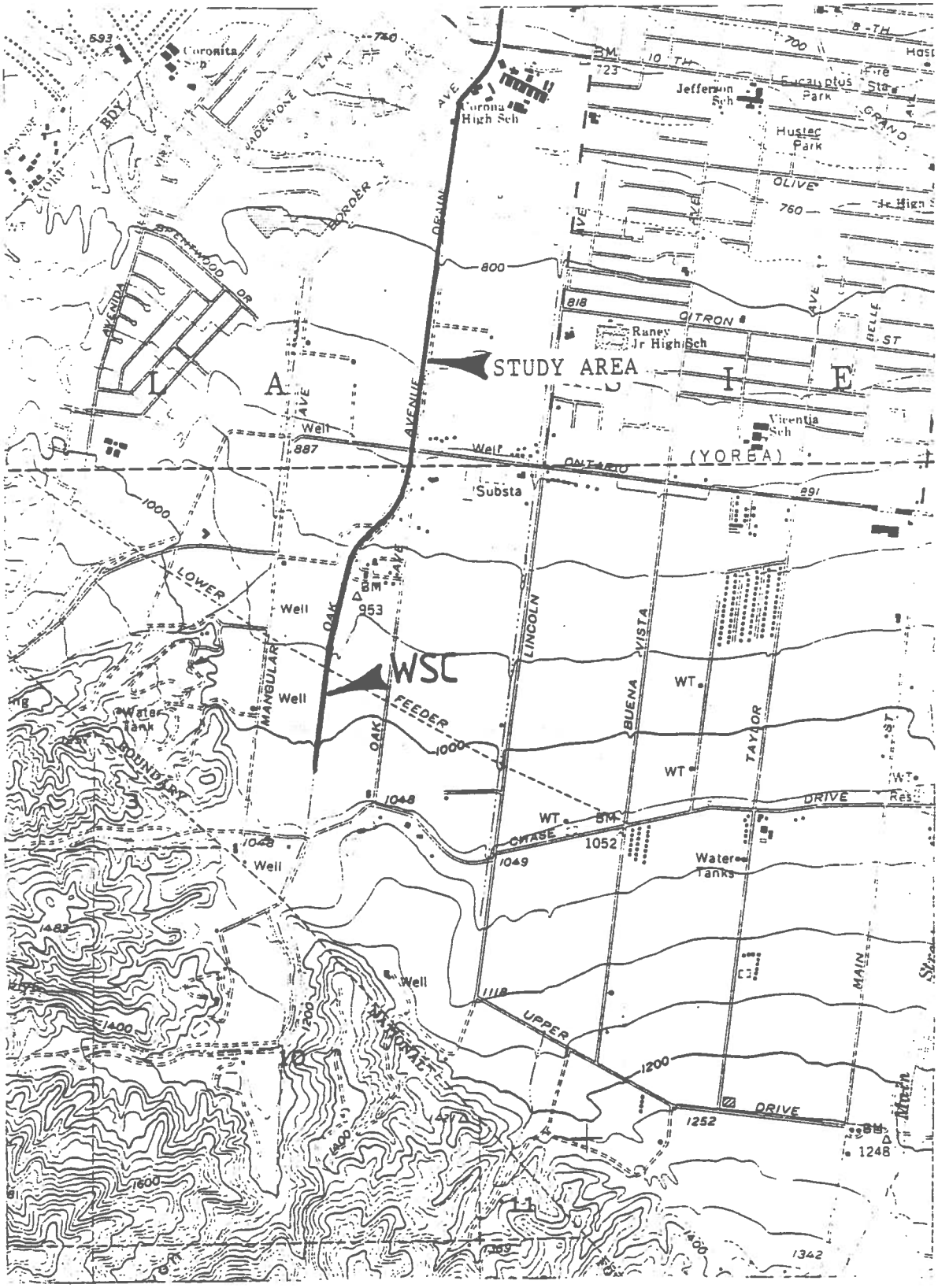

Figure 6-20. Oak Street Drain study area (USGS 7.5′ Corona South Topographic Quadrangle).

CHAPTER 7

PREHISTORIC SITES

This chapter includes the descriptions of the prehistoric sites found in the project area. The data presented here results from survey, test excavations, archival and oral historical research. Prior to the initiation of this study, 13 prehistoric sites were known in the study area; of these, three (Riv-652, SBr-5096, and Ora-817) had been test excavated. Upon completion of the field work for this study, 23 prehistoric sites were recorded and 14 tested. A summary of the prehistoric artifacts recovered from recent test excavations is shown in Table 7-1.

A number of the sites located were not available for test level excavation. Two sites (Riv-100 and Riv-2797) are located in the lower flood control basin. These are presently capped by 3 to 4 meters of silt and are beneath the water table. Three sites were destroyed by construction or farming activity (SBr-2259, SBr-2260, and SBr-5244). One site, recorded on the basis of an isolate, was determined not to be a site based on the surface geology at the site (SBr-1570). Access to the property where another site had been reported was denied by the property owner (SBr-5242). Two sites were located during a check of a newly disced field in an area previously surveyed. These were found too late to be tested and evaluated during this study (Riv-2803 and Riv-2804).

Also included in this chapter are discussion of isolates discovered during the survey portion of the study and mention of several sites located outside the project boundary which were located as a result of this study.

RIV-100 -- MORENO RANCH SITE

Riv-100 was the first prehistoric site recorded in the Prado Basin. It was originally recorded in 1941 as AASC RV-34 by S. L. Peck. It is located on the lower basin flood plain north of the Santa Ana River and east of Mill Creek (Map P5). Peck's description provides distance estimates from a number of physical and cultural features which do not triangulate properly. The consequence is that the site can be approximately located in an area of perhaps 50 acres, but not precisely. The elevation given is not accurate either. At present, Riv-100 is located under 3 to 4 meters of silt and is not accessible. The location is based on the general location indicated in Peck's description and the

location of an irrigation trench in that area, shown in the 1936 aerial photographs of the basin (an irrigation trench crossed the site).

The position shown crosses the approximate location along the trench line. It is the best estimate of location which could be determined. The current elevation of the land surface above the site is approximately 486 feet MSL. The actual site is probably at about 470 to 475 feet MSL.

Table 7-1

SUMMARY OF ARTIFACTS RECOVERED FROM TEST

EXCAVATION OF PREHISTORIC SITES AND OR COMPONENTS

(note: Ora-89 and SBr-5241 did not produce prehistoric artifacts)

	Riv-652	Riv-653	Riv-1098	Riv-2754	Riv-2755	SBr-1543	SBr-1571	SBr-2845	SBr-5096/4032	SBr-5243	SBr-5245
Projectile Points				1	2	2			1	1	
Bifaces	1				1						
Scrapers											
Retouched Flake		1									
Flake	3	3		3	2	3			1	2	2
Plano-Convex				2	3						
Plane		1				4					
Notched			1		3						
Utilized Flakes	1	2		2	5	5					
Gravers					1	1					
Choppers				2	3						
Cores	1	4	2	2	3	5					1
Hammerstones	1	3			5	3					
Manos (frags)	3	9	12	16	14	19	4	2	1	11	10
Mullers (frags)	2	3	1			1					
Pestles						1				1	
Stone Bowl Frag					1						
Cogged Stones		2									
Charm Stone						1					
Bone tools (frags)		1		5	1						
Stone Bead						1					
Shell Beads						2					
Ocher		1			5	1					

Riv-100 was described to have contained a house, workshop and cemetery within an area of 30.5 meters square. Burials were reported to have been found. This has not been verified. The age and cultural context of this site are unknown. This site was not tested in the course of this study.

RIV-556

The original site survey records for the Riv-556 trinomial have been misplaced or lost. A handwritten remark on the Riv-653 site survey record filed by Lesley McCoy in 1972 indicates that the prehistoric portion of the site was previously recorded as Riv-556. Lacking other information it is presumed that they are the same site. It should be noted that some map plats show Riv-556 north of the Riv-653 site. However, careful examination of the area did not reveal any site to the north. Since Riv-653 has received wider usage and has been published, it is recommended that it be used in preference to Riv-556, see Riv-653 below.

RIV-652

This site was originally recorded by Alex Kirkish (1972). It comprises a sparse yet extensive scatter of ground stone and chipped stone artifacts. The site is located in Prado County Park, on a bluff overlooking the Santa Ana River drainage (Map P4). It is 800 meters southwest of the intersection of Archibald and River Roads.

The records search conducted in conjunction with this project indicates that the site was "salvage" excavated (four 1 x 2 meters units) and subsequently destroyed (ironically, during the construction of a cultural center; see Kirkish 1972). Our field reconnaissance located an extensive artifact scatter in the fields immediately west of the previously recorded site location. This scatter apparently represents a previously unrecognized portion of Riv-652, and necessitates a considerable revision of the areal extent of the site. The site area, which was originally recorded as less than one acre, is actually in the range of 18 acres (Figure 7-1).

In order to assess the horizontal and vertical extent of the site, as well as to gain a better understanding of its composition, a posthole series and three 1 x 2 meters test excavation units were dug. A surface collection was also conducted.

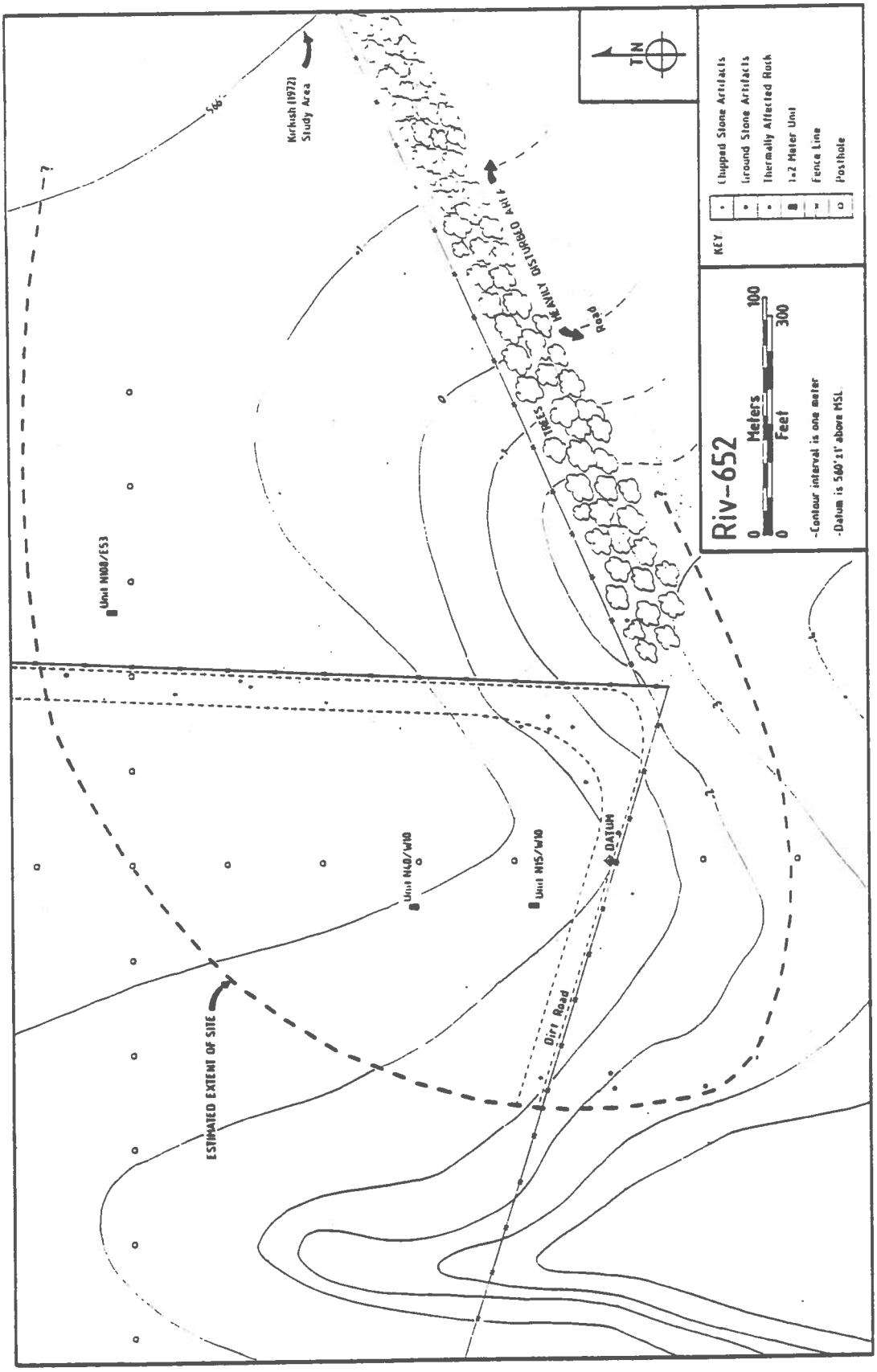

Figure 7-1. Site map of Riv-652.

Sampling Strategy

A total of 29 postholes were dug across the site for the purpose of obtaining soil samples. Three lines of postholes were dug one ran north-to-south across the site and two ran east-to-west (one line was south of the site and therefore isn't shown on Figure 7-1. The soil tests were largely unsuccessful due to intensive cultivation and fertilization over most of the northern part of the site. As with other sites in the Prado Basin, the surface artifact scatter was primarily relied upon for establishing the sampling frame.

Within the sampling frame it was planned to select three units using the standard stratified random sampling procedure. Due to a delay in gaining permission to dig on the Prado County Park portion of the site (where two units were to be placed), all three units were placed on the privately owned portion of the site. One unit was placed using the sampling strategy and two units were systematically placed.

Observations

The site proved to be fairly sparse, with an average of only 11.25 prehistoric artifacts per cubic meter. The maximum depth of the cultural deposit is 50 cm. The average depth of the site is 43.33 centimeters. The estimated volume of the site is 31,561 cubic meters. The volume excavated was 2.6 cubic meters, giving a sample size of approximately 0.01 percent. The soil consists of a dark brown clayey loam (Munsell=10YR 2/2) overlying a hard red-brown clay (Munsell=10YR 3/4). The artifacts were all found in the upper layer. The site is severely impacted by agricultural activities. The upper layer clearly represents a mixture of natural soil and dumped manure. Mottling of this dark soil with the underlying clay base suggests that discing or plowing has completely turned over the top layer.

Artifact Descriptions

Chipped Stone

Thirty-three chipped stone artifacts were collected at Riv-652. The bulk of these are debitage (81.8 percent). The remainder includes a biface, scraper, a utilized flake and a core.

Biface

A biface (Cat. No. 31) roughly made from metashale was collected. The specimen is a chunk which has been modified along one elongate edge by the removal of several flakes on either side by percussion. The resulting irregular edge is not clearly utilized.

Scraper

Three scrapers occur in the sample. One scraper (Cat. No. 21) is a steep-edged flake scraper. It is a large basalt tertiary flake which has had the distal end removed and formed into a convex edge by percussion flaking, and then utilized. Both lateral sides have been modified, including a notch which may be utilized also. A small metashale core (Cat. No. 16) has been similarly modified along one narrow end. A third specimen is a metashale flake (Cat. No. 15) with an irregular utilized edge.

Utilized Flake

One metashale tertiary flake (Cat. No. 17) bears wear crushing and microflaking along one lateral edge.

Debitage

Unmodified and non-utilized flakes are placed in this category. The debitage samples from Riv-652 consist of 27 specimens.

The sample consists predominantly of metasedimentary shale (77.7 percent). In order of decreasing abundance, the remainder of the sample is chert (7.4 percent), quartzite (3.7 percent), dacite (3.7 percent), chalcedony (3.7 percent) and basalt (3.7 percent).

The types of flakes in the sample are cortical, tertiary, flake fragments and chunks. These represent secondary reduction activities and possibly some initial decortication of raw materials.

Core

One metashale core (Cat. No. 29) occurs in the sample.

Hammerstone

One large hammerstone was recovered from Riv-652 (Cat. No. 24). This is a very large specimen (1226.8 grams) and is made of a metavolcanic rock. Its dimensions are 10.8 x 9.5 x 9.0 cm and it is angular in nature--the striking surfaces have been artificially produced.

Ground Stone

The ground stone assemblage recovered by the ECOS team from Riv_652 is comprised of manos, mullers, metate fragments, and unidentifiable ground stone fragments. A total of 13 ground stone specimens were found. Of these, only one example is complete and nine pieces (69.2 percent) show indications of thermal alteration. The following table summarizes the ground stone:

Table 7-2

SUMMARY OF GROUND STONE FROM RIV-652

Item	Quant.	Weight	% of Ground stone Assemblage by Quant.	Weight	% Complete	% Thermally Affected
Mano Fragments	3	839.6	23.1	12.0	0.0	66.7
Metate Fragments	6	5556.9	46.2	79.7	0.0	66.7
Mullers	2	550.2	15.4	7.9	50.0	50.0
Ground stone Fragments	2	24.4	15.4	0.4	0.0	50.0
Total	13	6971.4	100.0	100.0	7.7	61.5

Manos

Of the three mano fragments recovered from Riv-652, two were sufficiently intact to allow classification. One example (Cat. No. 25), made of granite, is a bifacial shaped mano with flat grinding surfaces. The other specimen (Cat. No. 32) is a shaped unifacial mano with a hand groove on the back. This is made of a metamorphic rock and has a flat grinding surface (Type 6B).

Metates

Of the six metate fragments excavated or surface collected at Riv-652, none are adequately complete to allow for absolute typing. However, two fragments (Cat. Nos. 33 and 34) appear to be deep basin examples.

Mullers

The only complete ground stone item from the site was a muller (Cat. No. 37). This specimen is of granite and is a shaped biface with flat grinding surfaces (Type 5B). One of the grinding surfaces has been pitted in its central area. The other muller (Cat. No. 19A) is an untypeable unifacial example.

Ground Stone Fragments

Little can be said of the two very small unidentifiable fragments. Both show indications of being thermally altered.

Discussion

Riv-652, like so many other sites in the Prado Basin, appears to be of a relatively early age (late Milling Stone or early Intermediate) and represents a fairly common economic pursuit plant seed processing. This interpretation differs somewhat from that given by Kirkish (1972:4). While he agreed that the site was undoubtedly associated with plant food processing: "...flake

tools, reflect plant processing" (Kirkish 1972:4), he differed in the dating of the site. Kirkish states that he believes the Gabrielino were responsible for the site (1972:4).

The evidence, based on our work on this site and on sites in the Prado Basin, strongly implies a pre-Late Horizon occupation at Riv-652. For instance, the location and artifacts from the site are very similar to Milling Stone and Intermediate Horizon sites within the basin. We believe that two of the artifact types found at Riv-652 are characteristic of late Milling Stone and/or Intermediate assemblages. These are deep basin metates and unifacial shaped manos with hand grooves. The general character of the site situated on a bluff with fragmentary, thermally affected rocks and artifacts seems to imply an early date for the site.

RIV-653

Riv-653 is located on the river terrace overlooking the intersection of the Santa Ana River flood plain and Chino Creek (Map P5; Figure 7-2). This site has also been referred to as Riv-556. It is bounded by steep slopes on the south and west. The north edge slopes into a west trending wash which crosses the terrace. The eastern boundary is not clearly established. We believe that Riv-1098 (see that description) is the easternmost part of Riv-653. This cannot be demonstrated because of extensive land alteration on the west side of Cucamonga Avenue which separates the sites. Both sites are stratigraphically, chemically and artifactually similar. As it exists at present, Riv-653 has maximum dimensions of 200 meters north to south and 500 meters east to west. The site comprises about 5.5 acres.

The terrace where Riv-653 is located is almost flat with a gentle slope to the southwest. The elevation of the site is 525 feet (160 meters). Wild oat and mustard cover the site, which is presently used as cattle pasture. The Bandini-Cota Adobe (Riv-653H) is located along the southern edge and Prado Oil Company facilities are at the eastern edge.

The aboriginal assemblage at Riv-653 was first recognized by Bert Newman, who collected at the site in the 1930s (Appendix C). Based on his notes for 1937 and 1938, he collected three cogged stones and a hammerstone at the site. The notes mention a metate collected "below" the adobe but this may have come from either talus at the foot of the terrace or from a site on the flood plain.

The site was apparently first recorded as Riv-556 (see above), also as ARU21 (Archaeological Research Unit 21). However, the trinomial Riv-653 is currently used. The original site record form indicates the site was first described by Lesley McCoy in 1972 It was described as a light to medium lithic scatter of chipping debris with ground stone (mostly manos) and pottery.

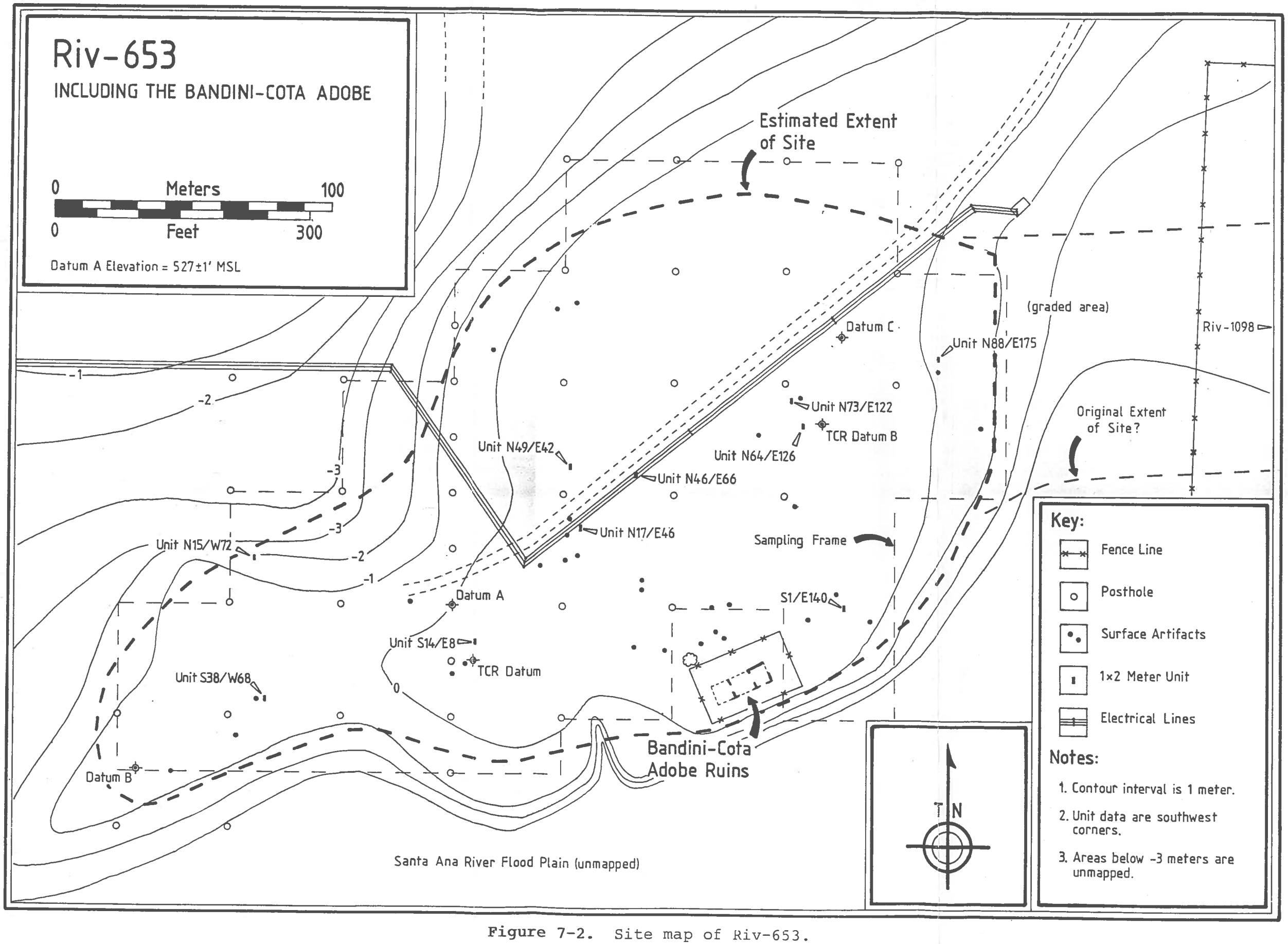

Figure 7-2. Site map of Riv-653.

The occurrence of pottery led to the interpretation of the site as late prehistoric. A site record supplement by Hall (1975) indicated a more sophisticated lithic assemblage with several loci. Studies at the Bandini-Cota Adobe mention the aboriginal remains in passing (Theodoratus Cultural Research Inc. 1983; Greenwood, Frierman and Foster 1983).

Riv-653 has received a variety of impacts in the past. The surface has been plowed for agricultural purposes, but is otherwise little disturbed. The extreme western edge was bladed for an unknown purpose. Construction and activities of the Bandini-Cota Adobe which lies along the south central border, disrupted that portion of the site. Vandals excavating for historical artifacts at the adobe further damaged the area. A hog farm (PB-28), located west of Cucamonga Road, caused surface damage in that vicinity. Other construction on the west side of Cucamonga Road damaged or destroyed the eastern edge of the site, except for Riv-1098.

Sampling Strategy

A stratified random sampling strategy was employed in the testing of Riv-653. The sampling frame was determined through the use of the surface scatter plot, the topography of the site, and testing of soil samples gathered through a posthole series over the site. A total of 38 auger holes were dug to a depth of 50 cm. These auger holes were at intervals of either 20 or 40 meters and formed a grid over the entire site. The pH, phosphate, and Munsell color evaluations proved to be of little assistance in determining site boundaries. One area of high phosphate and pH was noted north of the central area of the site and appears to be related to fairly recent historic activity. The surface artifact scatter and the contours of the bluff provided the delineation of the site. This frame consisted of twenty-eight 40 meters square stratification quadrants which were each further subdivided into four hundred 1 x 2 meters potential sample units. From this sampling frame, ten 1 x 2 meter test excavation units were selected. These units allowed for a comprehensive testing of the site, despite the small size of the sample (0.04 percent based on the surface area of the sampling frame).

Observations

Test excavations conducted during August, 1983, indicate that Riv-653 is a well-preserved site. The depth of the prehistoric cultural deposit ranges from 30 cm to 100 cm (Unit N73/E122). The average unit depth of deposit was 51 cm and the total volume of soil excavated (excluding postholes) was 9.8 cubic meters, This puts the total volume of the site at approximately 11,424 cubic meters, and gives an actual sample size of 0.09 percent. The stratigraphy of the site is basically comprised of a thin surface layer of medium brown compacted humic material (mostly

cow manure) overlying a hard medium grey-brown clayey loam (Munsell=10YR 4/3). This layer overlies a hard red-brown clay layer (Munsell=10YR 3/3), the top of which represents the terminus of the cultural deposit. As with Riv-1098, apparently in situ artifacts and features rest on top of this level. It is unclear whether this occurrence is the result of deflation of the site, with artifacts sinking through the soil down onto the hard clay surface, or if the top of the clay level represents an ancient living surface. In any event, the process resulted in excellent preservation for a site of this antiquity.

Artifact Description

Chipped Stone

Chipped stone specimens recovered from Riv-653 include several types of scrapers, utilized flakes and debitage. A total of 160 specimens were recovered. Of these, 144 (90 percent) are debitage, 5 (4 percent) are scrapers; 4 (3 percent) are cores; and 2 (2 percent) are utilized flakes (Table 7-1).

Retouched Flake Scrapers

One scraper with a retouched surface was recovered (Table 7-3). This specimen appears to be a flake from a retouched chert tool which was broken. The flake was removed by hard hammer percussion and the dorsal surface retouched. Microflaking and wear crushing occur around nearly the entire perimeter of this specimen.

Flake Scraper

Three specimens are flake scrapers (Table 7-3). Two are prepared or tertiary flakes made of jasper and metashale. Both bear wear microflaking and crushing along otherwise unmodified edges. The third specimen is prepared on a a chert cortical flake fragment. This specimen bears the same type of wear along one side near the broken edge. Wear on one part is notched, but not to the extent of a spokeshave type scraper.

Plane Scraper

One scraper is a plane type with a plano-convex section (Table 7-3). The specimen is a utilized plano-convex core which is now broken. There is no clean evidence of use after breakage. Wear microflaking and crushing are present on one side between the break and the end.

Utilized Flakes

Two specimens are clearly utilized flakes (Table 7-3). One is a chert flake fragment with use wear on one edge. The other is a large basalt cortical flake with wear microflaking along the

distal edge. Other flakes which are not clearly utilized are included in the debitage.

Table 7-3

SUMMARY OF CHIPPED STONE TOOLS FROM RIV-653

No.	Unit	Depth (cm)	Type	Material
56	N88/E175	10-20	Ret. Flake Scraper	Chert
217	N73/E122	60-70	Flake Scraper	Chert
209	N46/E66	10-20	Flake Scraper	Jasper
210	N73/E122	10-20	Flake Scraper	Chert
211	N46/E66	0-10	Flake Scraper	Metashale
149	N73/E122	50-60	Utilized Flake	Chert
215	N73/E122	20-30	Utilized Flake	Basalt

Debitage

Non-utilized and unmodified flakes were placed in this category. The debitage sample from Riv-653 consists of 149 specimens.

Chert is the raw material that was used most often and comprises 36.2 percent of the total sample. Chalcedony and metasedimentary shale were used in second and third largest frequency and comprise 31.5 percent and 28.8 percent of the sample, respectively. The remaining 3.5 percent, in order of decreasing abundance, are quartzite, obsidian and andesite.

The frequency of debitage decreases with depth. This indicates the amount of occupation increased in a linear manner over time. There were no apparent breaks in occupation.

In an attempt to identify the reduction processes occurring at the site (i.e., core preparation and reduction, secondary shaping and trimming, manufacture and/or maintenance of scrapers and/or bifaces), a model developed by Collins (1975) was followed.

The debitage were placed into six categories: cortical, tertiary, flake fragments, chunks, bifacial thinning flakes (BTF) and scraper retouch flakes (SRF) (see Methodologies section). The criteria for definition of each category are attributes, such as presence or absence of cortex, striking platform, bulbar scar, convexity, and/or a faceted dorsal surface. Size of each specimen was also tallied by flake type. Since the sample is numerically small, this data is used to suggest minimal lithic manufacture and modification activities.

The three largest categories are chunks (30.8 percent), tertiary flakes (23.4 percent) and flake fragments (21.2 percent). The predominant size of all is 1 to 2 cm. These waste flakes result from secondary reduction activities, after the cortex has been

removed. Chunks result from the shatter of larger flakes and may suggest hard hammer percussion (Lenoir 1975). Hard hammer percussion flaking was probably necessary on the hard metashale material.

Only 14 percent of the flakes showed cortex on the dorsal surface. These cortical flakes were predominantly 1 to 2 cm in size. This suggests that raw materials were initially reduced elsewhere or the cortical flakes at the site would be larger and greater in number.

The BTFs are those derived from the maintenance of bifaces and points. Only 13 specimens, 8.6 percent, were identified. Most of the BTFs are chert or chalcedony. These suggest that little biface and/or point maintenance took place at the site, and no manufacture.

Cores

Four specimens are cores. Two are thumb-sized pieces of chert (Cat. Nos. 207 and 212). A third is a piece of chalcedony of similar size. The fourth is a large core fragment prepared on a basalt porphyry boulder. The chert and chalcedony cores were clearly transported from a much greater distance than the regionally available basalt and are significantly smaller.

Hammerstones

Three specimens are hammerstones. One (Cat. No. 65) is a basalt porphyry cobble, battered on all of its edges. Another is a quartzite boulder (Cat. No. 116) battered only on opposing ends. The third (Cat. No. 144) is a basalt boulder fragment showing battering on the cortical surface adjacent to one fracture.

Ground Stone

The ground stone assemblage from Riv-653 is comprised of manos, metates, mullers, cogged stones, and miscellaneous unidentifiable fragments. Twenty-nine specimens were recovered. Of these, only six (20.7 percent) were complete and 16 (55.2 percent) show indications of being thermally affected. Table 7-4 gives a general breakdown of the different ground stone types from the site.

Table 7-4

SUMMARY OF GROUND STONE FROM RIV-653

Item	Quant.	Weight grams	% of Ground Stone Assemblage by Quant.	Weight	% Complete	% Therm. Affected
Manos	9	3856.4	31.0	17.8	33.0	55.5
Metates	13	16438.6	44.8	76.1	0.0	61.5
Mullers	3	695.1	10.3	3.2	100.0	0.0
Cogged Stones	2	79.9	6.9	0.4	0.0	100.0
Misc. Fragments	2	519.7	6.9	2.4	0.0	50.0
Totals	29	21589.7	100.0	100.0	20.7	55.2

Manos

Of the nine manos/mano fragments recovered from Riv-653, only four specimens were sufficiently complete to be typed (Table-7-5). Two examples (Cat. Nos. 5 and 6) are unshaped, unifacial cobbles, lacking shoulders, and having domed grinding surfaces (Type 1B). These are the simplest form of mano and require little effort to produce (Figure 7-3). Another example (Cat. No. 171) is similar to these natural, unifacial cobbles with the exception of being bifacial (Type 3A).

Table 7-5

Manos from Riv-653

No.	Unit	Level	Material	Dimensions cm	Weight grams	(C*) (F*)	Type	Modification*
002	Surface		Granitic		145.5	F		TA, PK
004	Surface		Schist	11.8x7.6x4.1	609.0	C	5B	PK
005	Surface		Granitic		856.8	F	1B	TA
006	Surface		Granitic	11.9x7.9x6.9	765.0	C		TA, EX
011	Surface		Granitic		96.3	F		
019	Surface		Granitic		208.4	F		B, PK
024	Surface		Granitic	10.7x7.9x4.7	574.1	C		TA, PK
101	S38/W68	0-10	Granitic		357.7	F		
171	S1/E140	10-20	Granitic	10.7x7.9x4.7	574.1	C	3A	TA, PK

*Abbreviations: C (complete); F (fragment); TA (thermally affected); PK (pecking); B (battering); EX (exfoliating)

Finally, in contrast, one mano (Cat. No. 4) is a finely-shaped specimen with flat grinding surfaces (Type 5B; see Figure 7-3). Interestingly, this single shaped example is the only mano specimen from Riv-653 that is made of a non-granitic material

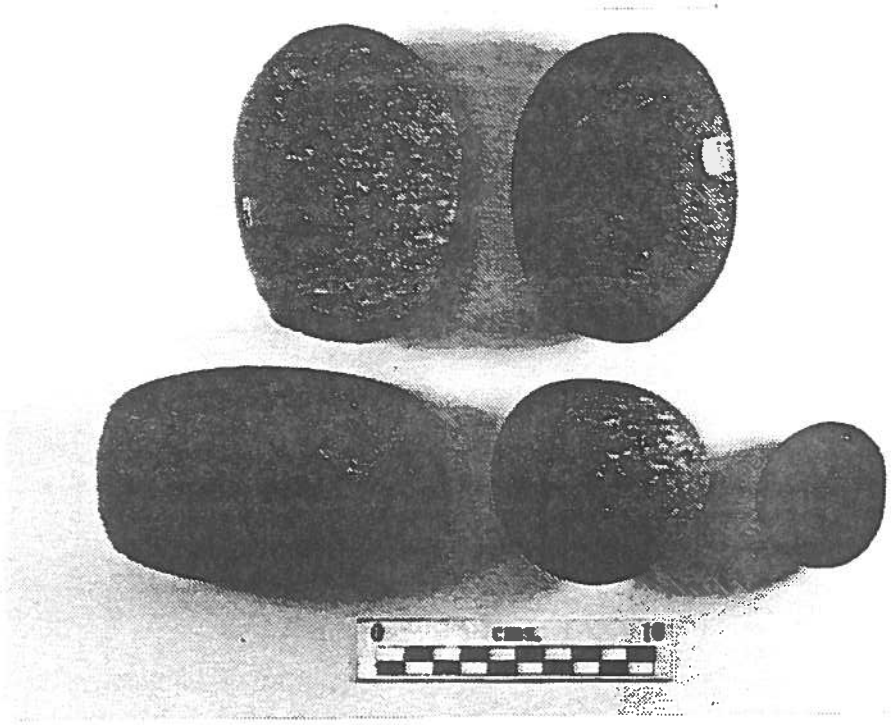

Figure 7-3. Selected manos and mullers from Riv-653. Clockwise from top right: Cat. Nos. 6, 171, 4, 141, 140.

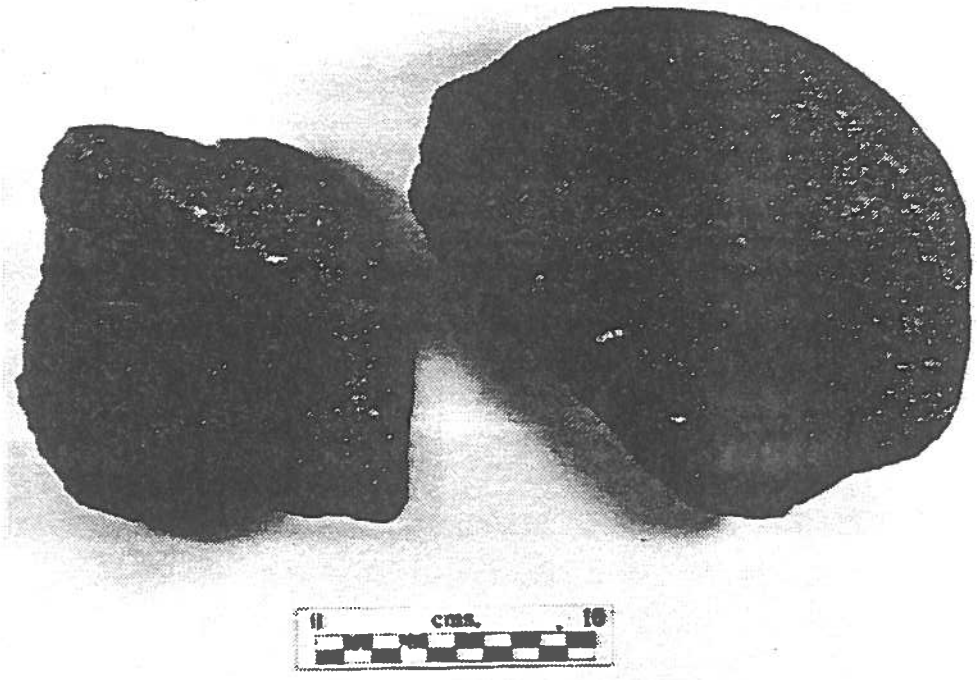

Figure 7-4. Selected metate fragments from Riv-653 (from left: Cat. Nos. 8 and 178).

(schist), perhaps indicating a preference for softer materials when shaped implements were required.

The mano types present at Riv-653 are known to occur at Milling Stone, Intermediate and Late Horizon sites throughout southern California. Explanations for the occurrence of different forms have been discussed by Greenwood (1969:18). Raw material, style and condition of the user's milling stone (metate), and personal preference probably represent the main variables determining mano form, rather than any recognizable "culture" trend (Greenwood, 1969: 18).

Metates

No complete metates were recovered from Riv-653; however six of the fragments (46.2 percent) were sufficiently intact to enable them to be typed (Table 7-6). Four of these six (66.6 percent) are deep basin examples, while the remaining two have shallow basins. The metates range in shape from ovoid to sub-rectangular. Two examples of metates from the site are shown in Figure 7-4.

While deep basin metates tend to occur on older sites (e.g., Bettinger 1974:160; Drover, Koerper and Langenwalter 1983:9), some Milling Stone sites lack good examples (e.g., Sayles site; Kowta 1969), and other sites, like Riv-653, have a mixture of shallow basin and deep basin forms.

Table 7-6

Metate Fragments from Riv-653

No.	Unit	Level	Material	Weight grams	Type*	Modification*
8	Surface		Granitic	2180.3	DB	TA, PK
12	Surface		Granitic	867.2	DB	PK
13	Surface		Granitic	2143.1		PK
15	Surface		Schist	1073.0	SB	PK
20	Surface		Granitic	113.7		TA, PK
23	Surface		Granitic	227.3		TA, PK
26	Surface		Granitic	1028.7		PK
49	N46/E66	20-30	Granitic	4876.2	DB	TA, PK
79	N49/E42	20-30	Schist	227.9		PK
168	S1/E140	10-20	Igneous	164.8		TA, PK
169	S1/E140	10-20	Sandstone	157.3		TA
170	S1/E140	10-20	Granitic	430.8	SB	TA, PK
178	S1/E140	10-30	Granitic	2948.4	DB	TA, PK

* Abbreviations: DB (deep basin); SB (shallow basin); TA (thermally affected); PK (pecking)

Mullers

Of the three mullers recovered from Riv-653, two are unshaped, unifacial examples, while one is unshaped, bifacial specimen. One example (Cat. No. 140) is stained black and appears to have been used, at least in part, as a tarring pebble for applying asphalt (Figure 7-3).

Table 7-7

Miscellaneous Ground Stone from Riv-653

No.	Unit	Level	Item	Material	Modification*
1	Surface		Ground Stone Fragment	Granitic	TA, PK
122	N73/E122	0-10	Ground Stone Fragment	Granitic	
106	S38/W68	20-30	Muller	Igneous	B
140	N73/E122	30-40	Muller	Granitic	TP
141	N74/E122	30-40	Muller	Granitic	
143	N73/E122	40-50	Cogged Stone Fragment	Rhyolite	TA
207	Unprovenienced		Cogged Stone Fragment	Rhyolite	TA

*Abbreviations: TA (thermally affected);PK (pecking); TP (possible tarring pebble); B (battering)

Cogged Stone Fragments

Two cogged stone fragments have been recovered from Riv-653 (Table 7-7; Figures 7-5 and 7-6). One example (Cat. No. 207) was collected by Rosenthal near the Bandini-Cota Adobe. The other specimen (Cat. No. 143) was recovered in the course of the ECOS test excavations from Unit N73/E122 from the 40 to 50 cm depth. Both cogged stone fragments are of Eberhart's (1961:362) fish vertebra type, having hemispherical indentations on the edge of the stone that do not break onto the two faces. This generally results in the grooves not being visible when the stone is viewed from the top or bottom (Eberhart 1961:362).

Both of these cogged stone fragments have estimated diameters of 10 cm. Number 143 is estimated to have had about 12 grooves/cogs, while Number 207 is projected to have had about 18 grooves/cogs. Of the fish vertebra type cogged stones examined by Eberhart, the largest number of grooves noted was 15 (1961:-362). Number 207 is then perhaps unusual with its estimated 18 grooves/cogs. (The Newman Collection has five fish vertebra type cogged stones with the largest number of grooves being 14; see Appendix C).

The fact that cogged stone 143 came from a subsurface context is worth noting--the overwhelming majority of cogged stones found to date have been surface collected. These two cogged stone

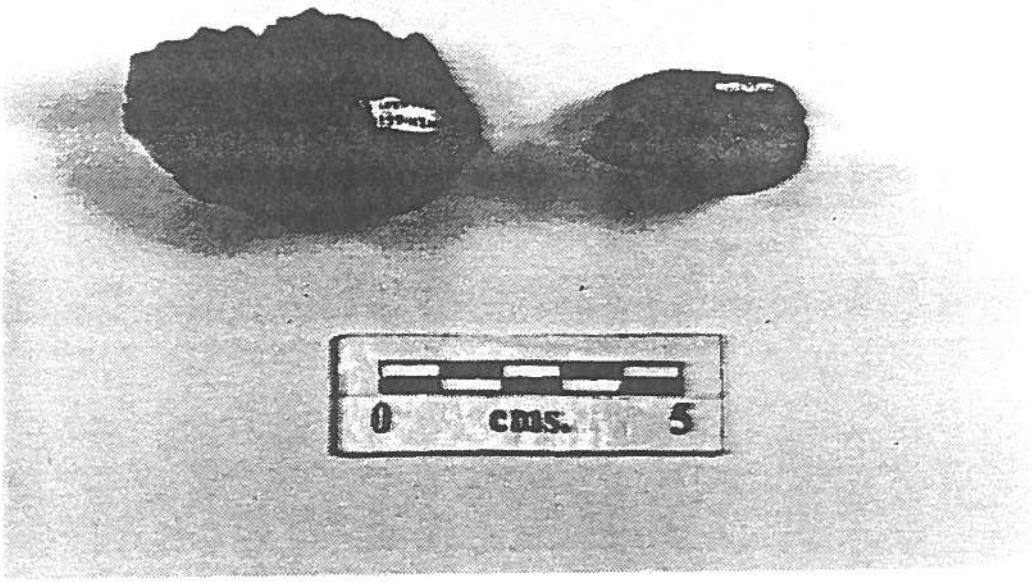

Figure 7-5. Cogged stone fragments from Riv-653 (top view, Cat. Nos. 207 on left, 143 on right).

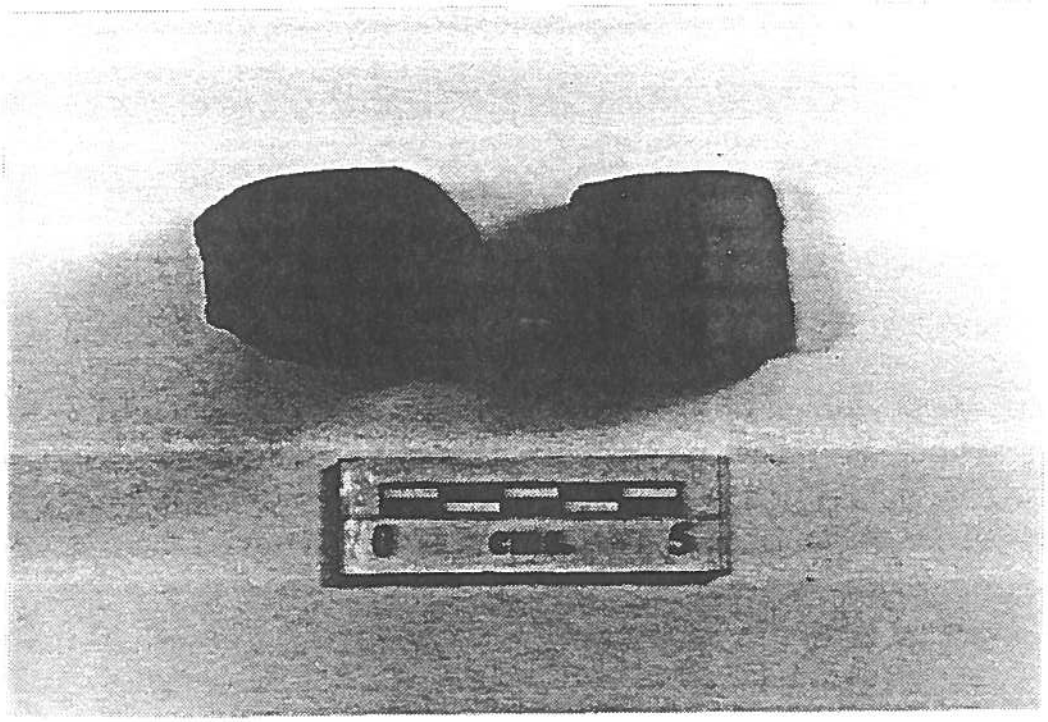

Figure 7-6. Cogged stone fragments from Riv-653 (side view, Cat. Nos. 207 on left, 143 on right).

fragments are the only items in the ground stone category that can truly be considered chronologically diagnostic. These artifacts are generally assigned to the Milling Stone Horizon and thus help to confirm our hypothesis that the prehistoric part of Riv-653 dates to this period.

The uses of cogged stones are unclear. One pioneer researcher, Samuel Evans, claimed that he had 35 suggestions on file for their usage (Langenwalter and Brock 1984b:Figure 1). The two cogged stone fragments from Riv-653 shed little or no light on this matter. However, the Bert Newman cogged stone collection (Appendix C), most of which was recovered from the Prado Basin, presents a large and varied assemblage which could help to explain the function of cogged stones.

Other Cultural Residium

Bone Tool

A fragment of a bone tool (Cat. No. 199) was recovered from the 10 to 20 cm. depth in the eastern portion of the site. The specimen is a polished fragment of a tapered pointed tool shaft, presumably an awl.

Charcoal

Three pieces of charcoal were recovered from various portions of the site. The specimens are not identifiable as to the type of wood used and are not large enough for radiocarbon dating. The cultural context of these specimens is not certain.

Ocher

Occasional flakes of red ocher were observed in most units during the excavation. Only one specimen, weighing less than one gram, was substantial enough to collect. This specimen has a Munsell color reading of 10R 4/8. This reading is the same as those for red ocher found at other sites included in this study.

Bone

Only 34 unmodified vertebrate specimens were recovered from the excavation which could be assigned to the prehistoric occupation at Riv-653. Twenty-two are classifiable to the taxon Mammalia. Included are bones from both large and small mammals. The remaining 12 specimens are assigned to the taxon Vertebrata. Four late intrusive noncultural specimens, three of gopher (Thomomys bottae) and one of ground squirrel (Citellus beecheyi) were recovered with these specimens.

Shell

Ten shell fragments, all weighing less than one gram each, were recovered. All are fragments of bivalves. None can be classified more precisely than pelecypoda.

Thermally Affected Rock

Riv-653 contains a large quantity of thermally affected rock. These rocks variously show discoloration and thermal fracturing. A fairly wide range of rock types fall into the thermally affected category: granitics, schists, quartzitics, andesites, gneisses, gabbroics, and so on. The 344 specimens of thermally affected rock excavated from the site have a total weight of 15621 grams. This yields an average density of 1594 grams per cubic meter. The highest densities of thermally affected rock on the site were from units S1/E140 and N64/E126. These units had densities of 4131.4 and 3912.9 grams per cubic meter, respectively. One unit, N15/W72, had no thermally affected rock. The occurrence of these rocks can probably be best explained as the result of intensive, localized burning that probably happened over the course of hundreds of years. This burning was most likely associated with cooking activities.

Discussion

The Riv-653 assemblage is dominated by manos and metates. The lithic assemblage contains cogged stones and a limited array of tool types. One bone tool fragment was recovered. Assemblages like this are usually considered to be evidence of a Milling Stone Horizon culture occupation. Although the dominance of hard seed processing tools can be the result of specialized site function, as at a gathering campsite, the size and complexity of Riv-653 implies that the site was a major village.

The excavation of the site did not yield sufficient bone, shell, or charcoal for dating. The only independent method available for dating the site other than interpretation of the artifact assemblage is the calculation of a date using an obsidian hydration rim measurement. The specimen (Cat. No. 187) yields a measurement of 7.3 +/- 3 microns (Appendix D) and was sourced to the Coso Range. Application of Ericson's (1978) rate of 344 years per micron for Coso obsidian gives a calculation of circa 2438 B.P., a date which falls within the earlier Intermediate Horizon. While this is instructive as a sample, it does not constitute proof of age.

Activities represented by the artifacts and ecofacts in the Riv-653 collection were varied. The presence of manos and metates indicates hard seed processing. The location of Riv-653 would have allowed the exploitation of grass seed in the immediate area as well as seeds from various plant species found in the Coastal Sage Scrub which covers hillsides within a few

kilometers and which probably extended onto the valley floor. The size of the site and the high recovery rate of manos and metates imply that it was a central location for seed processing. The faunal remains indicate other aspects of the subsistence settlement system. Some hunting was done of both large and small 36me. The adjacent Santa Ana River flood plain and Chino Creeks would have offered rich riparian associations where a large variety of game could be taken. Plant processing, in general, is suggested by the chipped stone assemblage. Analysis of the *debitage indicates that lithic materials were brought to the site and processed into tools there. The lithic materials used were obtained from other regions or areas within the study region. They were mostly partly processed, at least into ready cores, off site, but the final manufacture was largely done on-site.

Other manufacturing processes are suggested by the muller which may have been used as a tarring pebble and by the bone tool. The muller suggests the use of asphaltum for making sealed basketry water containers. The bone tool, lacking more specific identification, indicates another unidentified activity.

The shell from the site is so fragmented that it is not clear if it was brought in as part of live shellfish for food or to be used in manufacturing. It does indicate trade or at least contact with the coast. Similarly, the silicates indicate trade with the desert and obsidian trade with the Coso Hot Springs area (Appendix D). Several manos and metates are made from glaucoplane schist, only available at Dana Point in Orange County.

Most of the granitic rocks used in the manufacture of the ground stone implements at Riv-653 could have been obtained from local outcrops of the Pleistocene terrace deposits in the basin. Other lithics could have come from the Chino Hills and adjacent Santa Ana Mountains.

Nontechnomic activities represented in the Riv-653 assemblage are few. The red ocher suggests the making of red paint for symbolic (decorative or non-decorative) purposes. The cogged stones imply much more. Most cogged stones come from sites which can be classified as villages, although this is not always the case. The context implies that they are associated with group activities, although the precise nature of the activity is disputed. The presence of cogged stones (three found by Newman and by two others) at Riv-653 is interpreted to suggest that a group oriented activity occurred at the site.

RIV-1098

Riv-1098 is located on the southern edge of the terrace over looking the north side of the Santa Ana River flood plain (Map P5; Figure 7-7). Mill Creek flows at the foot of the terrace in a rerouted channel. The site is located on the eastern edge of

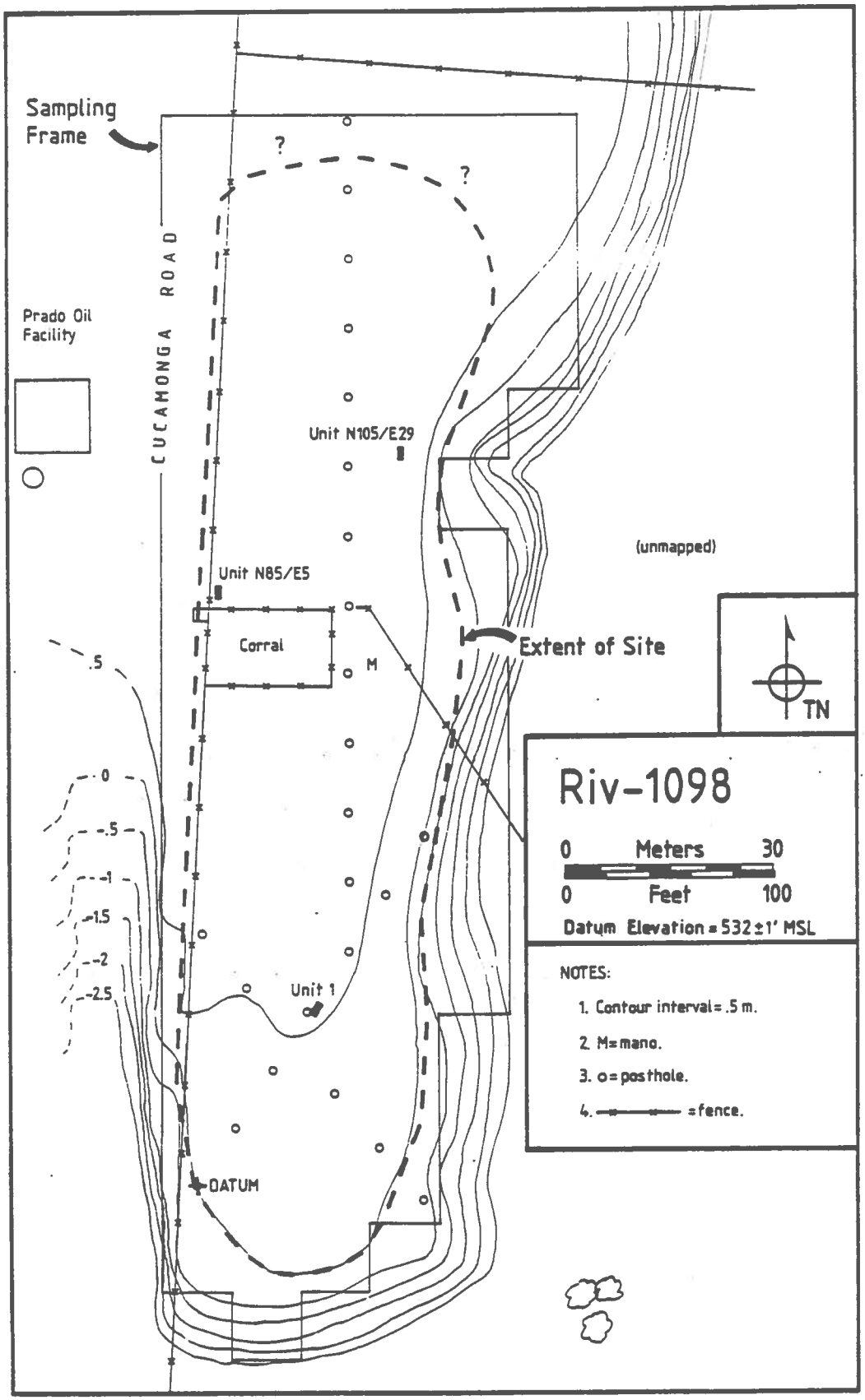

Figure 7-7. Site map of Riv-1098.

Riv-653. Riv-1098 is probably the eastern edge of Riv-653, but construction along the unnamed extension of Cucamonga Avenue has destroyed or obscured the physical continuity between the sites. This dirt road forms the artificial western boundary of the site, which is bounded by natural steep slopes on the east and south. The terrace is gently sloped to the south in the area of the site, with little or no transition to the steep slopes bounding it. The site is presently 150 meters north to south and 35 meters east to west (1.3 acres). The elevation of the site is 530 to 540 feet MSL. Vegetation on the site is comprised of wild oat with several mature eucalyptus trees located outside of the southeastern edge.

The site was located during the Archaeological Research Unit, University of California, Riverside study of the Prado Basin (Hall 1975:1-15-16, Map 5). The site was recorded on the basis of a mano and a mussel shell.

The site is presently used as part of a pasture for stock grazing. Fences, a holding pen, and loading chutes are present on the site. A 1936 aerial photograph of the site shows similar use. There is no evidence of any major structure or alteration of the site.

Sampling Strategy

It was difficult to gauge the areal extent of Riv-1098 due to the virtual absence of surface artifacts. In order to possibly gain a better understanding of the extent of the site, a posthole series was dug and soil tests were made. These tests for pH, phosphate, and relative soil color were markedly unsuccessful. The pH values were all in the neutral range, phosphate readings were almost nonexistent, and the Munsell colors were fairly consistent (10YR 4/3).

An initial unit was excavated at Riv-1098 in an attempt to verify whether or not a site actually existed at this locality. This unit was located intuitively at N25/E16. The unit yielded a number of artifacts and a feature consisting of a thermally affected rock scatter. Two additional units were placed using a stratified random sampling procedure. The sampling frame was devised using the topography of the area to project the possible site extent. This hierarchical frame consisted of seventy-eight 10 x 10 meter stratification quadrants which were each subdivided into fifty 1 x 2 meter potential unit locations. Units N105/E29 and N85/E5 were selected. The total sample size was 0.08 percent of the sampling frame.

Observations

Test excavations occurred on the site between August 2-16, 1983. The stratigraphy of the site consists of a hard-packed dark brown

clayey loam overlying a red clay subsoil. Cultural material was present throughout the top layer and a concentration of items was present on top of the red clay level, as is the case with nearby Riv-653. The maximum depth from which artifacts were recovered was 70-80 cm in Unit N85/E5. The average depth of the site is 53 cm and the estimated volume of the site is 2782.5 cubic meters. The total volume excavated was 3.3 cubic meters, giving an actual sample size of 0.12 percent.

There has been considerable disturbance to the site, particularly along its western edge, where a major road cut has been made to provide access to the flood plain below. It is unclear as to how much soil has been removed between Riv-1098 and Riv-653, but we suspect that the amount has been very substantial. The remaining area of Riv-1098, comprising a relatively deep deposit, is well preserved as attested to by the features encountered in Units N25/E16 and N85/E5. Some rodent disturbance is apparent and a small horse corral rests on top of the site along its western edge.

Artifact Descriptions

Chipped Stone Artifacts

The chipped stone from Riv-1098 consists of 66 specimens which fall into three categories: notched scrapers, cores, and debitage. They are predominantly debitage (96.7 percent), with two cores and one scraper.

Notched Scraper

One specimen (Cat. No. 32) is a tertiary flake fragment composed of chert. It has been modified for use as a scraper by a notch on one end. The notch and adjacent surface show microflaking from wear. The opposite end of the tool bears wear microflaking from use also.

Cores

Two cores were recovered. One specimen is a dacite cobble (Cat. No. 16). Flakes have been struck from this specimen around most of the platform perimeter. The second core is basalt (Cat. Nos. 3 and 4). The remaining portion is a fragment of an angular cobble from which several flakes were removed from a natural, flat surface which acted as the platform.

Debitage

Unmodified and non-utilized flakes are placed in this category. The debitage sample from Riv-1098 consists of 63 specimens. The raw material which constitutes the largest portion of the total sample (60.3 percent) is metasedimentary shale. Chert and chalcedony were used in second and third largest frequency and

comprise 20.6 percent and 11.1 percent. The remaining 7.9 percent waste flakes, in descending order of abundance, are composed of metasand or siltstone and quartzite. The lithic debris is mostly in the form of chunks, flakes with cortex and flake fragments. Approximately 39.7 percent of the debitage is larger than 2 cm.

Ground Stone

The assemblage of ground stone from Riv-1098 consists of manos, metate fragments, a muller, and unidentifiable ground stone fragments. Twenty-one ground stone specimens were recovered. Only four of these items are complete specimens. All 21 specimens show clear signs of thermal alteration (i.e., thermal fracturing and discoloration). The following table summarizes the ground stone objects from the site:

Table 7-8

SUMMARY OF GROUND STONE FROM RIV-1098

Item	Quant.	Weight grams	% of Ground Stone Assemblage by Quant.	Weight	% Complete	% Thermally Affected
Manos	12	7672.2	57.1	75.0	25.0	100.0
Metate Fragments	6	1718.2	28.6	16.8	0.0	100.0
Muller	1	361.5	4.8	3.5	100.0	100.0
Ground Stone Fragments	2	477.0	9.5	4.7	0.0	100.0
Total	21	10228.9	100.0	100.0	19.0	100.0

Manos

Of the 12 manos or mano fragments recovered from Riv-1098, seven were typeable (Table 7-9; Figure 7-8). Two of these (Cat. Nos. 7A and 10C) are bifacial shaped examples with domed grinding surfaces (Type 5A). Of particular interest are four examples of shaped unifacial manos having distinct hand grooves on their dorsal sides (Figure 7-9). Two of these (Cat. Nos. 6S and 6U) have domed grinding surfaces (Type 6A), while two (Nos. 6T and 34A) have flat grinding surfaces (Type 6B). These manos are very unusual and could prove to be chronologically sensitive.

Two other manos (Cat. Nos. 7A and 10C) are shaped bifacial specimens with domed grinding surfaces (Type 5A). One further specimen (No. 35B) is an unusual trifacial mano with a distinct finger groove along one edge that can be utilized no matter which grinding surface is being employed (Figure 7-8).

The unusual characteristic of this mano assemblage is that five of the examples are intentionally shaped to provide for a comfortable grip during use. Comparative examples of this trait are rare, perhaps indicating that these specimens are chronologically and/or regionally sensitive.

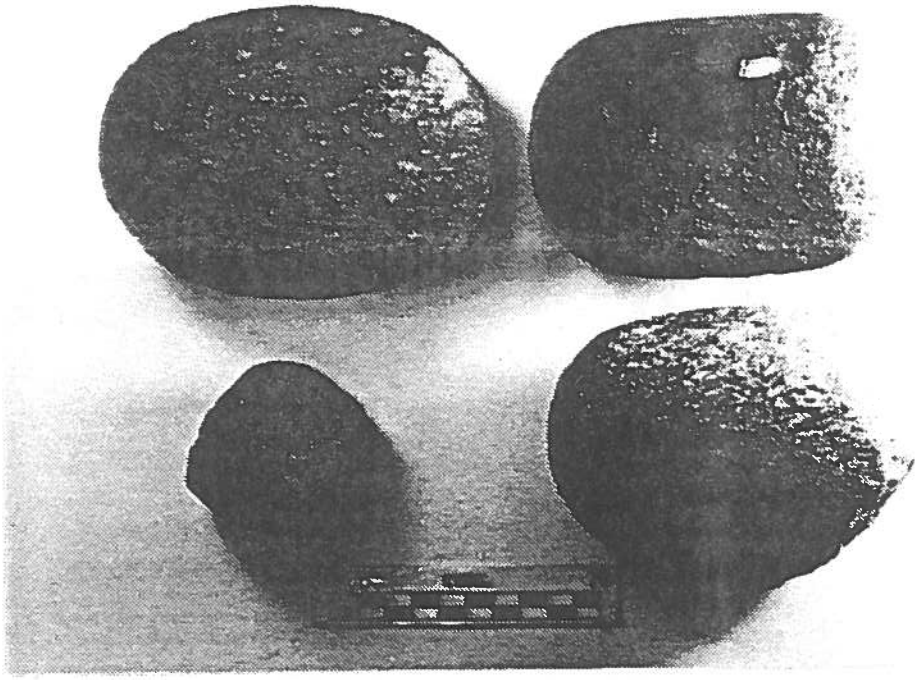

Figure 7-8. Selected manos and mullers from Riv-1098. Clockwise from top left: Cat. Nos. 10C, 6U, 35B, 6V.

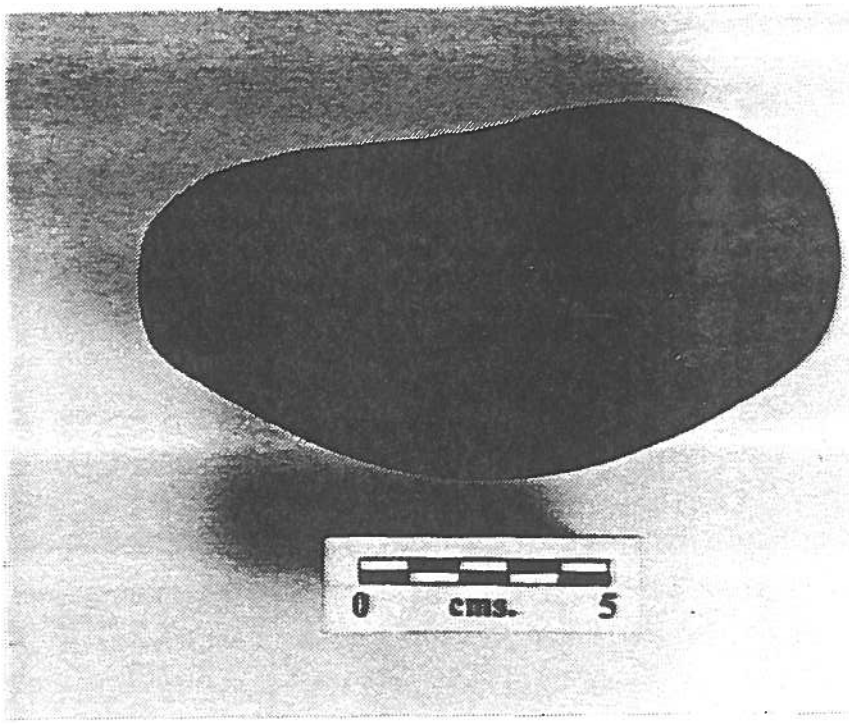

Figure 7-9. Side view of type 6A mano (Cat. No. 6U). Note the pecked-out hand groove.

Table 7-9

Manos from Riv-1098

No.	Unit	Level	Material	Dimensions cm	Weight grams	(C*) (F*)	Type	Modification*
6H	N30/E0		Metamorphic		188.0	F		TA, PK
6II2	N30/E0		Granitic		126.8	F		TA
6NN	N30/E0		Granitic		130.0	F		TA
6Q	N30/E0	10-20	Metamorphic		111.2	F		TA
6S	N30/E0	10-20	Granitic		258.6	F	6A	TA
6T	N30/E0	10-20	Basalt		390.0	F	6B	TA, PK
6U	N30/E0	10-20	Basalt	13.1x9.4x7.0	1227.8	C	6A	TA
7A	N30/E0	20-30	Granitic		70.4	F	5A	TA
10B	N30/E0	20-30	Granitic		842.5	F		TA
10C	N30/E0	20-30	Granitic	13.9x10.3x7.9	1612.6	C	5A	TA, PK
34A	N85/E5	70-80	Granitic		1251.4	F	6B	TA, PK
35B	N85/E5	70-80	Granitic	13.1x10.2x7.8	1462.9	C	Misc	TA, PK

*Abbreviations: TA (thermally affected); C (complete); F (fragment); PK (pecking)

Mullers

One muller was recovered from Riv-1098 (Cat. No. 6V). As with some of the mano specimens, this muller is unifacial and shaped with finger grooves on its dorsal side (Figure 7-8).

Metates

Six metate fragments were recovered from Riv-1098. These examples are so small they cannot be typed. Four of the specimens are granitic, while two are made of schist. The largest fragment weighs only 680.0 grams.

Ground Stone Fragments

Two untypeable ground stone fragments were found at the site. Both are of metamorphic rock. One specimen (Cat. No. 6BB) has been reused as an angular hammerstone.

Thermally Affected Rocks

Thermally affected rock from Riv-1098 concentrated almost exclusively in the two features (see below). A total of 9716.3 grams of thermally affected rock came from the feature in Unit N30/E0, while 800.8 grams came from the feature in Unit N85/E5. These features would seem to attest to some sort of heat intensive activity, probably cooking.

Features

A dense rock scatter was encountered between 10 and 30 cm depth in test Unit 1. The scatter was comprised of undisturbed rocks, most of which were thermally altered. Fifty-one specimens were taken from the feature which was comprised of thermally altered rock, manos, metates, hammerstones, and several flakes. Many of the items appear to have been used as cooking stones. A posthole was placed in the bottom of the unit and excavated to a depth of one meter to determine if the feature was a burial cairn. The posthole revealed undisturbed substrate and no evidence of bone.

A number of historic remains were recovered from near the corral and loading chute on the site. These include two iron fence staples, one piece each of clear and amber bottle glass, an "American Eagle" brand 12 gauge shotshell head, and a fragment of red plastic reflector. A piece of sawn mammal (cf. Artiodactyla--small species) bone comprises the faunal sample.

Discussion

It is stated in the introductory paragraphs of this site description that Riv-1098 is the easternmost edge of Riv-653. This opinion is based on the similarity of the assemblages, both in types of tools and the materials used, the similarity of stratigraphy, and the similarity in the condition of the specimens.

Like Riv-653, the site is dominated by hard seed milling tools, which suggest a Milling Stone Horizon cultural association. None of the material remains recovered from the site can be used to date the site.

The predominant activity at Riv-1098 seems to have been hard seed processing. The feature found in Test Unit 1 at 10 to 30 cm in depth was composed of thermally altered rocks, implying cooking or another activity employing heat. Like Riv-653, the lithic materials indicate the use of silicates from the desert and other rocks available in the adjacent Chino Hills and Santa Ana Mountains. A metate fragment is made of glaucoplane schist from Dana Point on the coast.

RIV-2754 -- OCWD 1

Riv-2754 is located on the river terrace overlooking the north side of the Santa Ana River flood plain about one-half km east of Mill Creek (Map P5; Figure 7-10). In this area, the terrace protrudes southward into the flood plain and was once bounded by a marsh on the east. The site lies on the southern portion of the projection, extending slightly down the eastern and southern edges. The primary portion of the site lies behind a low double

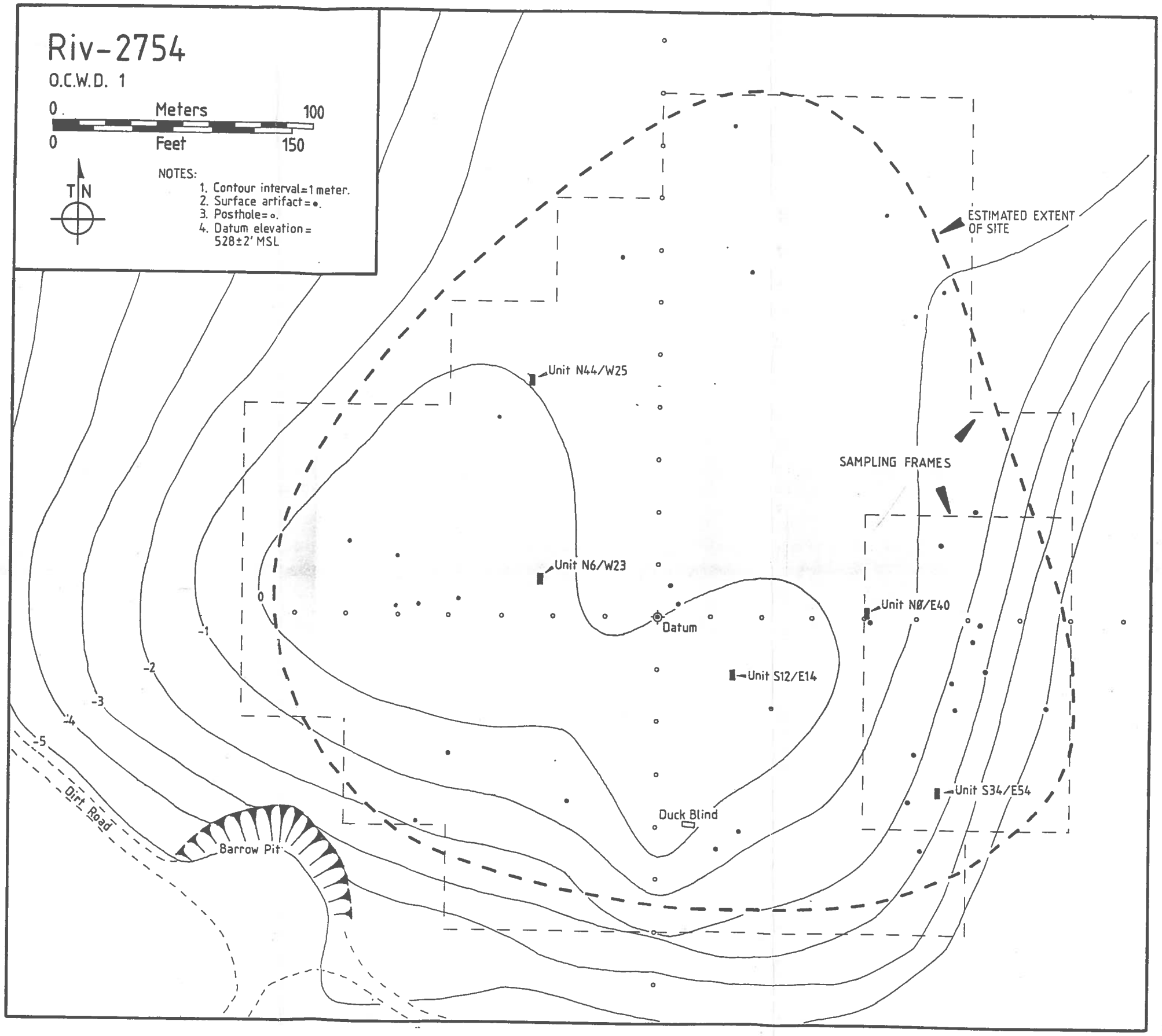

Figure 7-10. Site plan of Riv-2754.

topped knoll at the southern edge. It extends about 300 meters to the north and has a maximum width of 300 meters. The site comprises approximately 17.5 acres. The elevation of the site ranges from 515 to 530 feet above MSL. The terrace is composed of Pleistocene nonmarine sands. It has been farmed as part of the McCarty holdings for over half a century. At present, it is under Sudan grass cultivation.

The site was discovered during the present study in July of 1983. It was not known to local residents, although it is possible that some of the artifacts held by Margo (McCarty) Payne, a third generation resident of the basin (Appendix B), were collected from this site by her father. The upper 30-40 cm have been repeatedly disced and rocks probably removed. Considerable manure has been added on the surface. Otherwise, the subsurface portions of the site are intact. A rectangular pit used as a duck hunting blind by the Raahauge Pheasant Club is located within the southern edge of the site.

Sampling Strategy

Two lines of postholes were dug across the site. These intersected at datum and ran along the cardinal axes. Thirty-five postholes were dug. Soil samples were taken from these at 25 and 50 cm levels. As the site has been cultivated and fertilized, soil tests proved to be relatively ineffective. Phosphate levels were high across the entire site and showed no change at the presumed boundaries of the site. The pH values were neutral over the site (centering around 7.0); they did increase as they went closer toward the flood plain, indicating that occasional water retention has made these low-lying areas alkaline. Soil color over the site is quite dark, having an average Munsell range of 10YR 3/2 to 10YR 3/3.

The sampling frame devised was hierarchical and weighted. It basically consisted of forty-two 20 meter square quadrants. Six of these quadrants, falling along the eastern edge of the site, were more intensively sampled than the remainder of the site because of an apparent higher concentration of surface artifacts. Five 1 x 2 meter units were dug. Two of these were placed in the weighted area and three were placed on the remainder of the site. With the exception of the weighted area, our standard stratified random sampling procedure was utilized. The sample comprised 0.06 percent of the target population.

Observations

Riv-2754 has an average depth of 66 cm, which puts the estimated volume of the site at 46,652 cubic meters. A total of 6.4 cubic meters were excavated, giving an actual sample size of 0.01 percent. The stratigraphy of the site is characterized by a thin dark brown humus layer overlying a grey-brown clayey loam. This

layer goes to a depth of 50 to 70 cm and overlies a sandy yellow-brown silty loam. The maximum depth of the cultural deposit was 90 to 100 cm in Unit N44/W25, although fairly intensive rodent disturbance on the site perhaps veils the true depth of the deposit (shallower). Preservation on the site seems to be good, with a fair quantity of animal bone being preserved. Plowing on the site has disturbed approximately the top 30 cm.

Artifact Descriptions

Chipped Stone

The Riv-2754 chipped stone sample is comprised of a projectile point, several types of scrapers, choppers, utilized flakes, debitage and cores. The primary tools comprise only 6.5 percent of the sample.

Projectile Point

The projectile point (Figure 7-11b) recovered from Riv-2754 is a leaf-shaped form made from quartzite (Cat. No. 161). It was roughly made by percussion flaking and has a thickness/length ratio of 1:3. Its greatest width is about one-third of the length above the base. Below the greatest width, it tapers slightly, rounding toward the base. On one side this tapering is augmented by a natural cleavage plain in the quartzite. The tapered portion below the greatest width and the base are ground. This point does not fit well into Koerper and Drover's (1983:3-19) projectile point typology. Allowing a modicum of latitude for the material being worked, it could be fit into Types A, C or F. The roughness of working and the thickness-length ratio most closely approximate Koerper and Drover's (1983:14) Types D (Pinto Points) and F. The Riv-2754 specimen seems to be a leaf-shaped type which was produced in the same manufacturing tradition.

Plano-Convex Scrapers

Two plano-scrapers were collected at Riv-2754. One is a "domed" type scraper plane made from a boulder core (Cat. No. 165). The outline of the plane (striking platform) is triangular, with the sides being slightly convex. One, possibly two, of the sides are utilized. The second specimen is part of an elongate dome made from a metasedimentary boulder (Cat. No. 166). The core was divided in half and the elongate edge of the striking platform utilized. Edge wear occurs along a slightly concave surface for about 40 percent of the length of the edge and in a large notch adjacent to it.

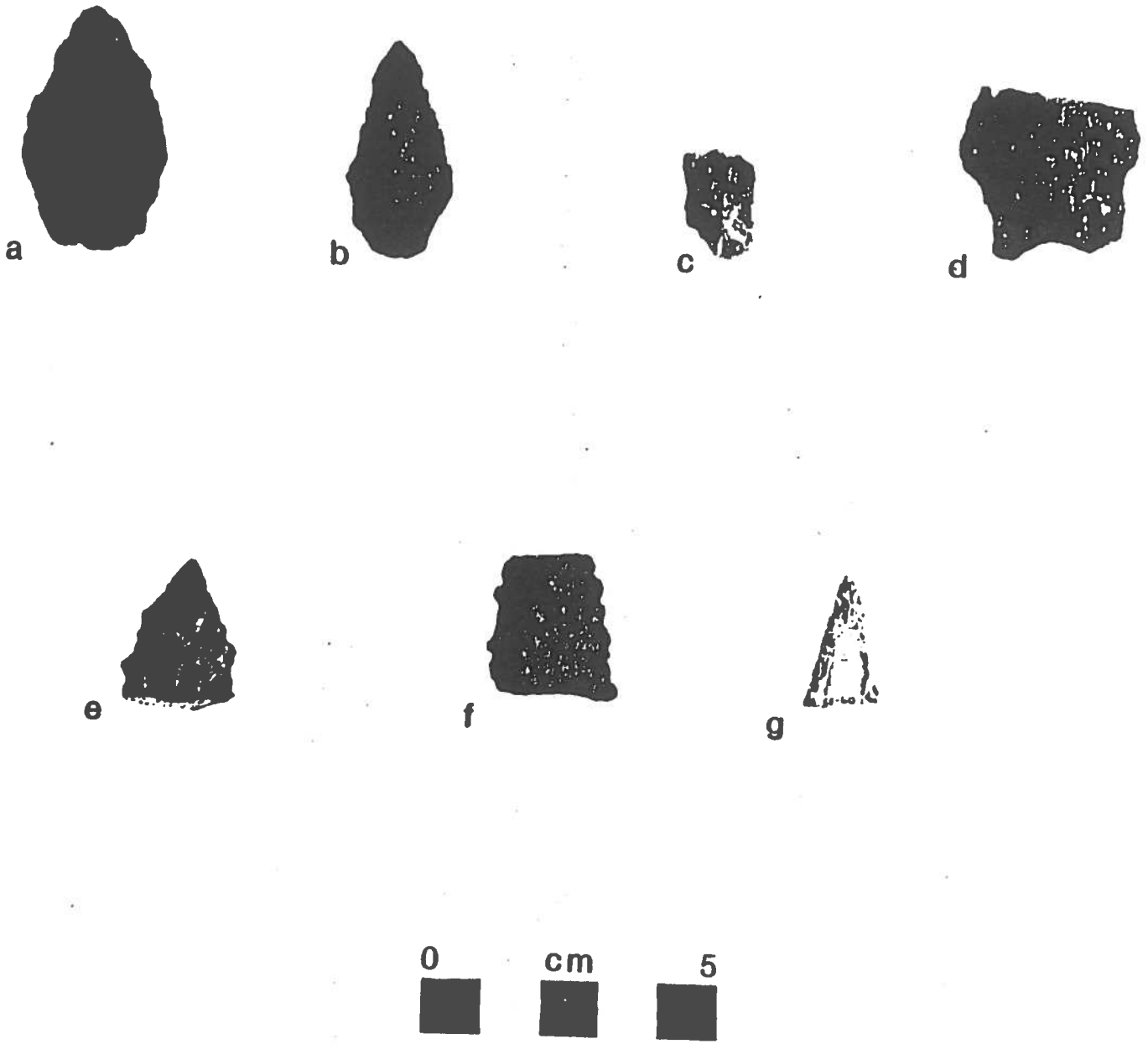

Figure 7-11a-g. Projectile points recovered from prehistoric sites during test excavations.

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Other Scrapers

Three predominantly straight-edged type scrapers occur in the sample. One specimen is a large dacite porphyry cortex flake (Cat. No. 25) with a utilized irregular lateral edge. The second specimen is a thick metasedimentary cortex flake fragment showing wear and use flaking along a semi-straight edge. The most spectacular specimen is a thick chert tertiary flake (Cat. No. 41) which shows use along several edges. One edge is slightly concave, steep-sided and has been retouched. Immediately adjacent is a small notch, formed by two worn denticulate projections. On the other side is a use-worn notch.

Choppers

Two choppers occur in the sample. One is a fist-sized dacite porphyry boulder (Cat. No. 20). This specimen is only slightly modified. The second specimen is a dacite core fragment. Both specimens show battering along elongate edges formed by the low angle intersection of surface planes.

Utilized Flakes

The two utilized flakes in the collection include an irregular jasper (chalcedony) tertiary flake (Cat. No. 134). Both show wear along elongate low angle surfaces.

Cores

One core and one core fragment were collected. The core is part of a metashale boulder (Cat. No. 1), which has had flakes struck from a natural cleavage plane. The core fragment is of dacite porphyry (Cat. No. 199).

Debitage

The unmodified and non-utilized flakes are placed in this category. The debitage sample from Riv-2754 consists of 142 specimens.

The predominant raw material represented is meta-sedimentary shale which constitutes 71.1 percent of the total sample. Other materials which were used are, in decreasing order of abundance, chert (9.1 percent), andesite and/or dacite (5.5 percent), chalcedony (4.8 percent), quartzite (4.8 percent), obsidian (2.8 percent), meta-sand or siltstone (0.7 percent) and granite (0.7 percent).

The frequency of waste flakes steadily increases over time. Waste flake distribution suggests that the site was most intensely occupied during the deposition of top 10 cm of midden. There are seemingly no periods during which the site was not occupied.

Although the sample is very small, the type of lithic waste recovered indicates that some initial raw material reduction, a moderate amount of secondary percussion reduction (as evidenced by numerous flake fragments and chunks), and some bifacial thinning activities were practiced at the site. The small size of the sample makes it difficult to determine relative importance of these activities.

Ground Stone

The ground stone collection from Riv-2754 contains manos and mano fragments, metate fragments, and miscellaneous ground stone fragments. Thirty-four specimens were recovered. Of these, only one item was complete. A large percentage of the ground stone specimens show evidence of thermal alteration (82.4 percent). The following table gives a general breakdown of the ground stone from the site:

Table 7-10

SUMMARY OF GROUND STONE FROM RIV-2754

Item	Quant.	Weight grams	% of Ground Stone Assemblage by Quant.	Weight	% Complete	% Thermally Affected
Mano Fragments	16	5450.8	47.1	71.5	6.25	75.0
Metate Fragments	8	1239.9	23.5	16.3	0.00	100.0
Ground Stone Fragments	10	930.2	29.4	12.2	0.00	80.0
Total	34	7620.9	100.0	100.0	2.90	82.4

Manos

Of the 16 manos or mano fragments recovered from Riv-2754, only four were sufficiently intact to be typed (Figure 7-12; Table 7-11). Of these, two are bifacial shaped examples. Catalog No. 6 has one domed and one flat grinding surface (Type 5C), along with finger grooves on one edge. Catalog No. 16 has two domed grinding surfaces (Type 5A) and is soap bar shaped. A further specimen is an unshaped bifacial mano (Type 3C; Cat. No. 139). This is the only complete ground stone item from Riv-2754. The last typeable example is Catalog No. 141. This is a shaped unifacial mano with a flat grinding surface and a hand groove on its dorsal side.

The manos from this site are quite similar to the manos recovered from the other late Milling Stone/early Intermediate sites in the region. Chronologically diagnostic traits might be hand and finger grooves, shaped unifacial examples, and perhaps soap bar shaped specimens.

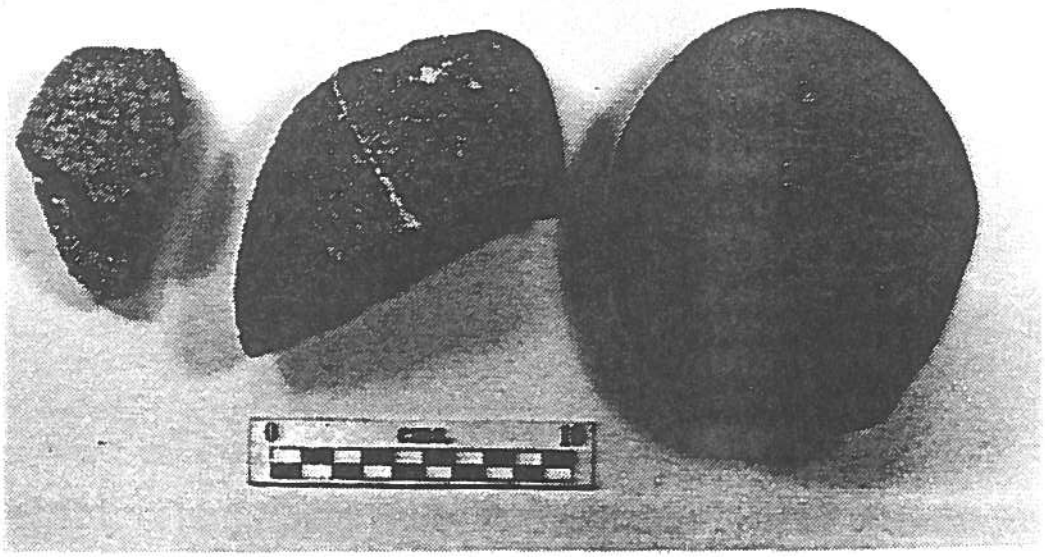

Figure 7-12. Selected manos from Riv-2754 (from left: Cat. Nos. 16, 6, 139).

Metate Fragments

The metate fragments from Riv-2754 are all small and undiagnostic. The largest fragment weighs only 299.5 grams (No. 11). One example, Cat. No. 100, has a curvature that appears to represent a deep basin form. As such, this is the only diagnostic fragment from the collection, and an indication of the early date of the site. Six of the metate fragments are of granite and two are of basalt.

Table 7-11

MANOS FROM RIV-2754

No.	Unit	Level	Material	Dimensions cm	Weight grams	Type	Modification*
6	Surface		Granitic	Incomplete	766.1	5C	TA, PK, FG
7	Surface		Granitic	Incomplete	188.5		PK, S
15	Surface		Granitic	Incomplete	707.2		TA, PK, FG, S
16	Surface		Granitic	Incomplete	187.7	5A	PK, SB
19	Surface		Granitic	Incomplete	70.7		TA, PK
33	Surface		Granitic	Incomplete	903.4		TA, PK, PT, S
34	Surface		Granitic	Incomplete	86.3		TA, PK
36	Surface		Granitic	Incomplete	285.7		TA
38	Surface		Granitic	Incomplete	211.3		TA, PK
39	Surface		Granitic	Incomplete	42.1		PK
105	N6/W23	20-30	Granitic	Incomplete	128.1		TA
106	N6/W23	20-30	Granitic	Incomplete	141.3		TA, PK
107	N6/W23	20-30	Granitic	Incomplete	45.2		PK
137	N44/W25	30-40	Granitic	Incomplete	175.0		TA, PK
139	N44/W25	30-40	Basalt	13.5x11.7x5.5	1256.0	3C	TA
141	N44/W25	30-40	Granite	Incomplete	256.2	6B	TA, FG

* Abbreviations: TA (thermally affected); PK (pecking); FG (finger groove); S (shaped); SB (soap bar shaped); PT (pitted)

Miscellaneous Ground Stone

Little can be said of the unidentifiable ground stone fragments. All exhibit evidence of grinding or rubbing and four exhibit evidence of pecking. Three examples are of basalt and seven are of granite. Catalog Number 40 shows evidence of finger grooves, while Catalog Number 59 is possibly a dorsal fragment of a Type 6 mano.

Bone Artifacts

Five fragmentary bone artifacts were recovered from the site. These include an asphaltum covered pond turtle shell fragment (Cat. No. 141), a serrated tool fragment (Cat. No. 150), an awl point (Cat. No. 160), an awl shaft (Cat. No. 150) and a polished

possible tool fragment (Cat. No. 81). All of the specimens bear a surface polish. This polish varies from slight to extensive and appears to be the result of abrasion by wind-borne sediments. The same phenomenon occurs in some of the unmodified faunal specimens. This modification appears to be the result of exposure to the winds on the edge of the river terrace. Similar abrasion has been observed on specimens found in desert sand dunes which have been subjected to periodic depletion and reinterment.

The most significant of the bone artifacts is the pond turtle shell fragment. This is an incomplete peripheral plate which was located at the edge of the anterior oriface in the shell, through which the head and forelimbs protruded. The exterior surface of this specimen is partly asphaltum stained. The interior is calcified. Similar specimens are reported from the Mojave Desert and coastal San Diego County where they are recognized as parts of a variant form of turtle shell rattle (Langenwalter 1983:92-94). At these sites, the specimens were associated with a flexed burial and a cremation, respectively (Langenwalter 1983:97). The temporal context of both is late.

The serrated tool fragment is made from the wall of a large mammal bone. The specimen appears to be the tip end of a flat, blunt, pointed tool. One side has been denticulated by the cutting of four or more flat-bottomed notches into one side. The extent of the denticulation is unclear since the specimen has been heavily altered by breakage, burning and wind abrasion. The form conforms to Gifford's (1940:172) Type H "serrate bone". He suggests, using various sources, that these may be fleshers, bark shredders, scrapers for specialized purposes, or musical rasps. Serrate edges are seen on some grass cutting tools, also. There is no evidence to support a specific identification of the Riv-2754 specimen.

Two of the remaining specimens are bone awl fragments. One specimen (Cat. No. 160) is the tip of a blunt pointed awl which is ovoid in section. This specimen is burned. The second specimen (Cat. No. 150) is a shaft section from a pointed awl which is round in cross-section. The point has been splintered. The remaining specimen (Cat. No. 81) is a polished bone fragment of indeterminate form which may not be a tool fragment.

Bone

A total of 143 vertebrate specimens (not including five bone artifacts) representing a minimum of six species (Table 7-12) are represented in the collection. This sample is comprised of specimens attributable to the aboriginal occupation, natural residium, and recent farming of the site. The bulk of the specifiable specimens (88.8 percent) are from ground squirrel, gopher or cattle not associated with the aboriginal occupation. Only pond turtle, rabbit, and jack rabbit are considered to be part of the cultural residium at Riv-2754.

The presence of these species indicates the use of small animals, reptiles, and mammals. Some of the unidentifiable mammal specimens are from large deer-sized mammals. This suggests that mixed selection of vertebrates of various kinds was followed at the site. However, the sample is so small that only those species (rabbits, deer) which are among the most commonly taken by hunter-gatherers in the California area are represented.

The use of the species taken was variable. The turtle and large mammals were sometimes used as a source of tool material. Presumably, most or all of the vertebrates were used for food.

The species represented indicate that two, perhaps three, habitats (fresh water, open grassland, possibly brush) were utilized. Also, the behavior and habitat associations of these species would have required a variety of techniques be used to capture them.

Some of the specimens (15.5 percent) were burned. Among those burned, 8.7 percent were exposed to heat without being carbonized, 47.7 percent were charred (carbonized) and 43.5 percent were calcified. There is no patterned burning evident. Aside from the fact that bone was exposed to fire at the site, the sample cannot reliably be interpreted. Another kind of modification seen on some specimens in the sample is a surface polish, which has been discussed above in the section on bone tools.

Table 7-12

VERTEBRATE REMAINS FROM RIV-2754, GIVEN BY TOTAL SPECIMENS AND MINIMUM NUMBER OF INDIVIDUALS (MNI)

Common Name	Scientific Name	Total Specimens	MNI
Pond Turtle	*Clemmys marmorata*	1	1
Rabbit	*Sylvilagus*	1	1
Jack rabbit	*Lepus californicus*	1	1
Ground squirrel	*Citellus beecheyi*	11	1
Gopher	*Thomomys bottae*	20	3
Rodent	Rodentia	2	
Cattle	*Bos taurus* (?)	1	1
Unidentifiable	Mammalia	21	
Unidentifiable	Vertebrata	80	

Historic Remains

A total of 11 historic artifacts and 8 botanical remains were collected. Included are iron wire, barbed wire, a round wire nail, unidentifiable iron fragments, amber glass, plastic and fiber shotshell wads. These reflect the use of the site for farming over the past century and as a duck blind during the past

decade. The botanical remains include seven prune pits and one possible peach pit. The origin of these could be as food waste associated with hunting, trash dumped on site by past farmers, or as part of the fertilizer dropped on site.

Discussion

The prehistoric artifact assemblage at Riv-2754, while being diverse in some respects, reflects a limited set of activities. The assemblage contains only hard seed processing equipment (mano and metate) which is often interpreted as evidence of a Milling Stone Horizon occupation. The limited number of tool types represented in the chipped stone sample, which is dominated by scrapers, is consistent with this assignment as is the form of the projectile point which was recovered.

There is some question as to such an assignment. First, Koerper and Drover (1983:14) suggest that projectile points of similar form and workmanship may persist into the Milling Stone-Intermediate Horizon interface. Second, pond turtle has not previously been reported from a Milling Stone Horizon site, but is known from Intermediate and Late Horizon assemblages. Third, the limited artifact assemblage may be more a reflection of site function than cultural association. The obsidian hydration rim measurements which vary between 4.0 and 5.7 microns (Appendix D) suggest site use within the last 1500 to 2000 years (R. Jack son, personal communication). These data together suggest that Riv-2754 is an Intermediate Horizon occupation site.

The artifactual assemblage at Riv-2754 indicates hard seed processing and the processing of other plant materials. The vertebrate remains indicate the use of reptiles, and small and large mammals for food and tools. These animals could have been procured within a short distance of the site from aquatic and grassland habitats or riparian associations. The limited assemblage of cultural debris suggests a transient seasonal occupation and use as a camp rather than a village.

Stone tool use at the site included some initial reduction of raw materials in tool manufacture. However, the bulk of the debitage indicates the final production and maintenance of chipped stone tools. The faunal remains indicate the processing and cooking of food on-site. The bone tools indicate that other activities occurred at the site, but what these were is not clear.

The presence of a turtle shell rattle fragment implies ceremonial activity. Given the spatial contexts of other turtle shell rattles of the type found at Riv-2754, it is suggested that a mourning ceremony may have occurred at the site and that a human interment may be present (cf. Langenwalter 1983:93).

The obsidian debitage from the site is from the Coso Hot Springs area (Appendix D), indicating trade with that region. The cherts

in the sample were probably procured from the Mojave Desert. The remaining materials are all of local origin.

RIV-2755 -- OCWD 2

Riv-2755 is located on the river terrace on the east side of Mill Creek as it enters the Santa Ana River flood plain (Map P2; Figure 7-13). The site covers an area extending from the edge of the terrace several hundred meters east. It runs from the terrace edge on the south to a small wash about 700 meters north. The area of the site adjacent to the edge of the terrace covers two low knolls which sit slightly back from the edge. The terrace slopes gently east and south from these, rising again to the east just before the site boundary is reached. The terrace is composed of Pleistocene sediments, primarily sands. The elevation of the site ranges from approximately 520 to 545 feet above MSL. The area of the site is about 25,000 square meters (6.06 acres). In the past, the portion of Mill Creek adjacent to the site consisted of a marsh. This habitat persisted well into the 20th century. The Fugua Ditch passed adjacent to the western edge of the site. A water gate from that ditch, tanks, and a well and shed which were once part of the McCarty holdings, are located on the southern edge of the site. At present, the entire area of Riv-2755 is under Sudan grass cultivation.

The site was discovered in the summer of 1983 during the survey portion of this study. Local residents were apparently unaware of the site. At the time the site record form was filed, the site was believed to be much smaller and to occur exclusively in Riverside County. During mapping, the site was found to extend well into San Bernardino County.

The area of the site was disced to a depth of 30 to 40 cm by prior farming. This caused an indeterminate amount of disruption of <u>in situ</u> specimens and caused very recent historic debris to be mixed into the site. Manure has been worked into the top soil. Some larger rocks, including a metate and a broken mortar, were removed from the site and placed at the edge. The area of PB-23, a historic farm at the southern edge of Riv-2755, damaged only a small area of the site.

Sampling Strategy

The surface reconnaissance of Riv-2755 revealed a sparse but extensive surface artifact scatter (Figure 7-15). Three lines of postholes were dug across the site in order to attempt to chemically determine the boundaries of the site and to elicit the presence of any definable loci. One posthole line was dug north to south across the main concentration of the surface scatter. This consisted of 34 holes at 10 meter intervals. Samples were taken from 25 and 50 cm depths. Two additional posthole lines were dug east to west across the site near the northern and

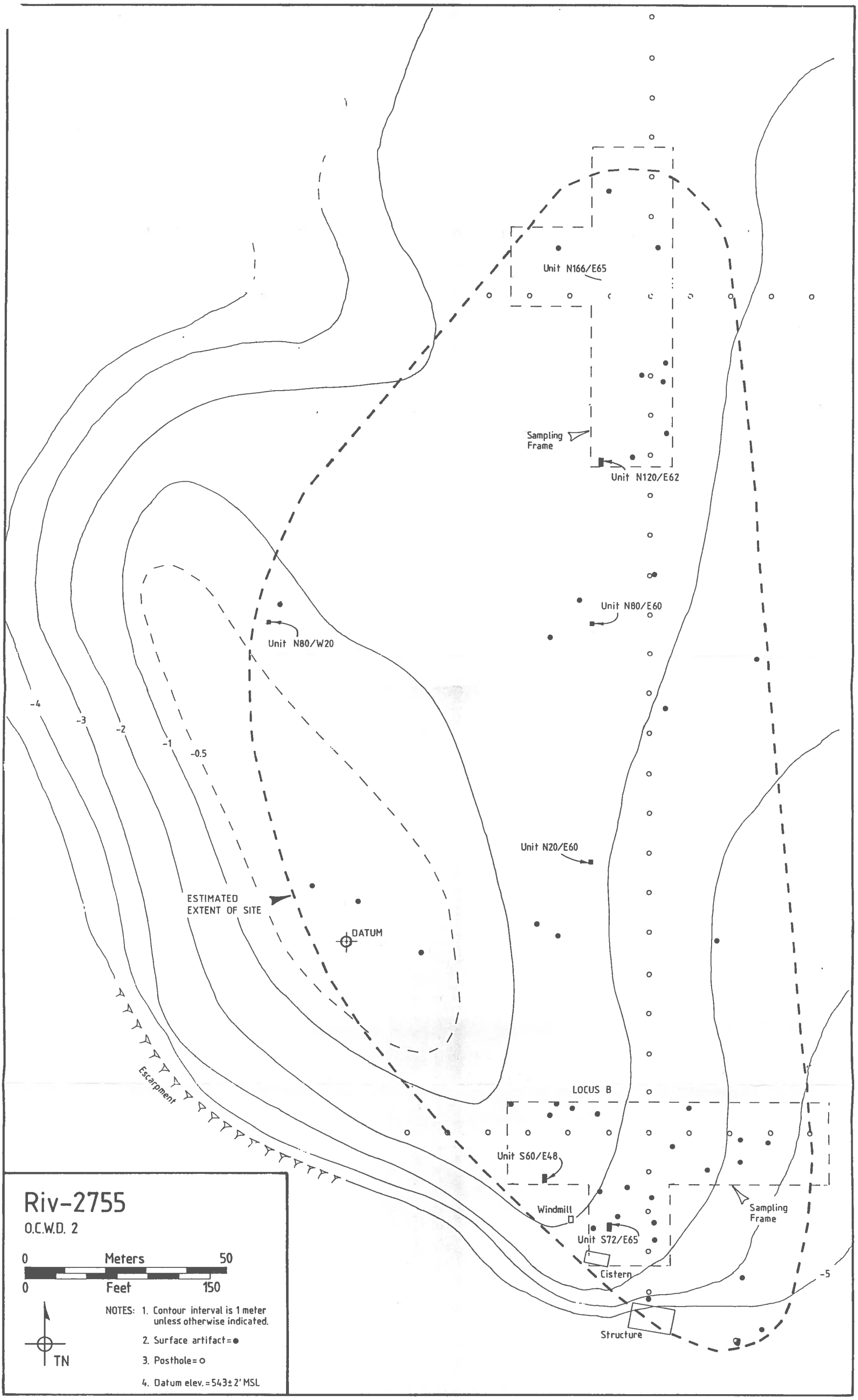

Figure 7-13. Site map of Riv-2755.

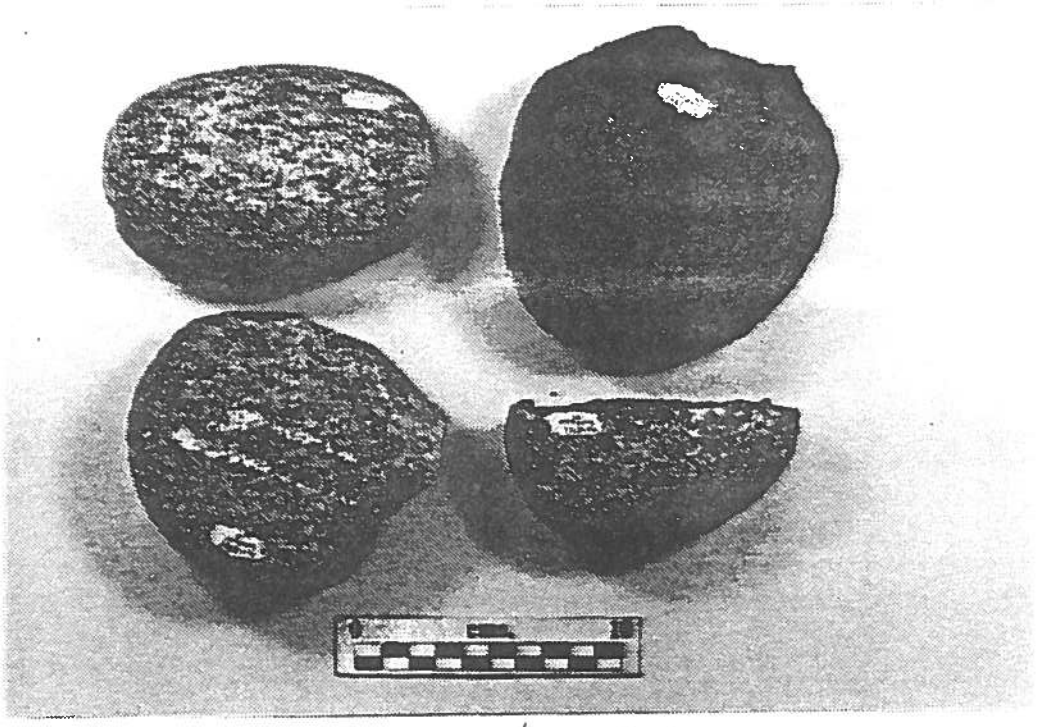

Figure 7-14. Selected manos from Riv-2755 (clockwise from top right: Cat. Nos. 40, 5, 11, 10).

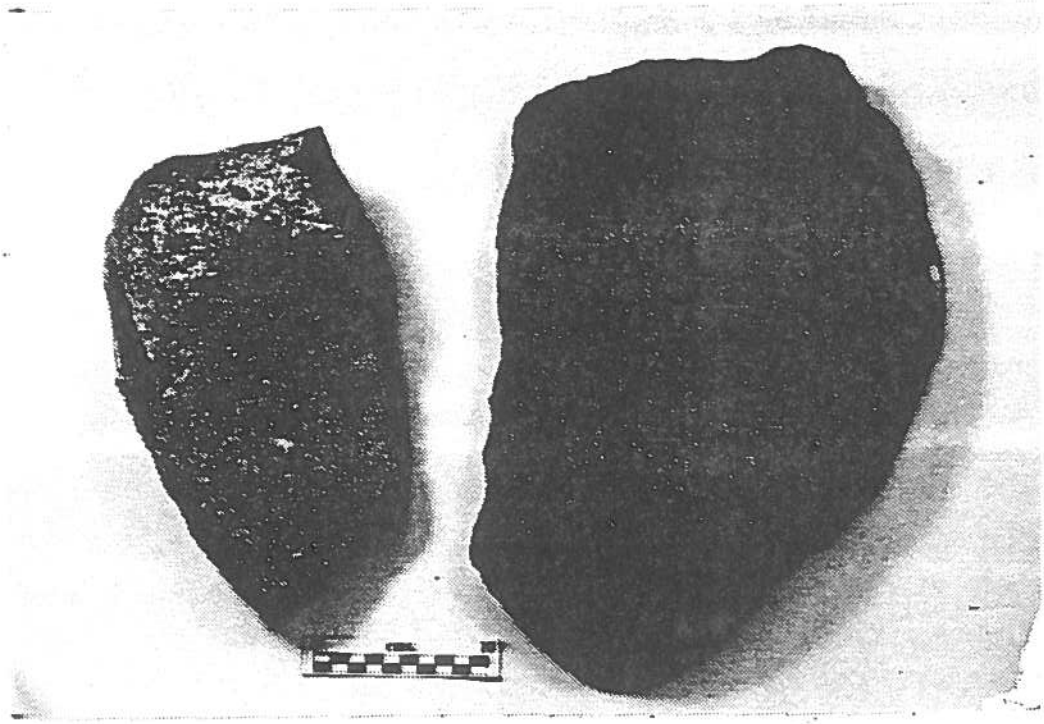

Figure 7-15. Bowl fragment and slab metate from Riv-2755 (from left: Cat. Nos. 241 and 239).

southern ends of the site. These consisted of 9 and 11 holes, respectively.

The pH tests were mostly neutral to slightly basic. Two areas showed a slight tendency toward acidity: (1) the central northern part of the site (pH factor 6.9) and (2) an area of historic activity at the very southern end of the site (pH factor 6.1).

Munsell colors ranged from red browns to browns (hues 5YR-10YR). The value/chroma readings were generally in the 3/4 range.

A stratified random sampling procedure, in conjunction with some systematic sampling, was used to test the site. Three sampling frames were developed. This was done to insure that the two obvious concentrations of surface artifacts (loci) were adequately sampled. Sampling Frame A centered over the northern locus and consisted of five 20 x 20 meter stratification quadrants, from which two 1 x 2 meter units were selected for excavation. Sampling Frame B focused on the southern locus and consisted of another five 20 x 20 meter stratification quadrants, from which two 1 x 2 meter units were selected. The remainder of the site was initially divided into a further 47 stratification quadrants (Frame C). It was decided to abandon random sampling of Frame C in favor of a systematic sample of that frame using three 1 x 1 meter test units. This insured an examination of the area between the two loci, and allowed for testing of a further suspected locus at the western periphery of the site. Approximately 0.03 percent of the surface area of the site was sampled.

Observations

Riv-2755 has an average depth of 54 cm which makes the estimated volume of the site 13,571 cubic meters. A total of six cubic meters were excavated, giving an actual sample size of approximately 0.04 percent. The stratigraphy of the site consists basically of a thin humus layer (0 to 20 cm) overlying a light brown silty, sandy clay loam (to 40 to 80 cm). The cultural deposit terminates on top of a hard red-brown silty clay which contains caliche speckling. The maximum depth of the cultural deposit at Riv-2755 is 80 to 90 cm at Locus A (Unit N120/E62). Disturbance to the site is the result of agricultural activity. As with Riv-2754, approximately the top 30 cm of the site is heavily impacted by this activity. Rodent activity was apparent throughout all units excavated. In summary, the site is still fairly well preserved.

Artifact Descriptions

Chipped Stone

The chipped stone at Riv-2755 is composed primarily of debitage. The tool forms represented include projectile points, a biface,

several types of scrapers, a possible graver, choppers, utilized flakes and hammerstones (Table 7-1). Primary tools comprise 16.2 percent of the assemblage, secondary tools (hammerstones) comprise 4.5 percent and the remainder (not including cores) is production waste or items which did not show evidence of use.

Projectile Points

Two incomplete projectile points, both spear or dart points, were recovered (Figure 7-11f). One specimen is a mid-body fragment, lacking point and base (Cat. No. 26). The specimen is pressure flaked from basalt and has a high estimated thickness/length ratio. The workmanship and thickness/length ratio are not comparable to Pinto or other points associated with Milling Stone Horizon occupations in the study region (cf. Koerper and Drover 1983:14). It does compare with the larger point types used during the Intermediate Horizon and later. The specimen cannot be assigned to any specific type because of the missing base. The same can be said of the second point (Cat. No. 52) which is also missing the base (Figure 7-11e). It is percussion flaked and composed of metashale. This specimen is roughly worked. It is slightly asymmetrical. The thickness/length ratio would have been moderate, exceeding 1:6 or 1:7 if the specimen were complete. Again, this implies that the specimen is probably not a type associated with Milling Stone assemblages.

Biface

One specimen (Cat. No. 79) is a piece of metashale which is plano-convex to lenticular in section. It is broken in half, but was oval in profile when complete. It is crudely flaked on both sides. The planar side is only slightly flaked. The form and workmanship approximates Kowta's (1969:19) Type 17 blade.

Plano-convex Scrapers

Three plane scrapers were collected. Two specimens (Cat. No. 9 and Cat. No. 86) are metashale cores which have been utilized around approximately 40 percent of the striking platform edge. The utilized areas are on convex surfaces. The third specimen (Cat. No. 165) is a dacite porphyry chunk with a convex edge which appears utilized.

Other scrapers

A total of five other scrapers of three general types occur in the sample. Three specimens are notch type scrapers. One is made from a quartzite flake (Cat. No. 41). Another is a slightly modified irregular cobble of metashale (Cat. No. 151). The third notched scraper (Cat. No. 69) is a chert tertiary flake with a retouched dorsal surface which used the striking platform as the scraping plane. The fourth specimen (Cat. No. 165) is a curved edge type. The The fifth specimen (Cat. No. 130) is a low-angle jasper (chalcedony) flake with a utilized edge along

one lateral edge. The wear in this portion of the flake has caused the surface to become slightly concave. There is also wear crushing along the opposite lateral edge on this specimen.

Possible Graver

This specimen (Cat. No. 93) is a metashale flake fragment with an elongate end triangular in section. The point appears to have been utilized, but subsequent abrasion of the specimen precludes stating this with certainty.

Choppers

Three choppers occur in the sample. One specimen (Cat. No. 14) is a large dacite tertiary flake battered along one lateral edge. The second specimen (Cat. No. 22) is a large elongate basalt porphyry cortex flake slightly battered along one straight edge. The remaining specimen (Cat. No. 108) is an irregular metasedimentary cobble battered along one edge formed by the intersection of the two surfaces at a moderately high angle.

Utilized Flakes

A total of five flakes were identified as utilized. One is a chert tertiary flake (Cat. No. 135). Two are metashale cortex flakes (Cat. Nos. 13 and 115). One is a metasedimentary tertiary flake (Cat. No. 105). One is a basalt porphyry (Cat. No. 53). All bear slight evidence of edge wear.

Debitage

The unmodified and non-utilized flakes are placed in this category. The debitage samples from Riv-2755 consist of 92 specimens.

The predominant raw material represented in the sample is metasedimentary shale which constitutes 50.8 percent of the total sample. Andesite and/or dacite and chert constitute 19.6 percent and 10.9 percent, respectively. Other materials represented in lesser amounts are quartzite (5.4 percent), granite (2.2 percent), quartz (1.1 percent), chalcedony (1.1 percent) and basalt (1.1 percent).

The distribution of waste flakes is continuous throughout the deposit, with the greatest density coming from 20 to 40 cm in depth.

Cores

Three cores and a core fragment were collected. The cores are cobbles of metashale (Cat. No. 18) and basalt (Cat. Nos. 8 and 169). The core fragment is metashale (Cat. No. 208).

Hammerstones

Five hammerstones were recovered; two are metashale. One of these clearly bears the battering of use (Cat. No. 3) while the other (Cat. No. 30) may have only natural battering along one edge. Two specimens (Cat. Nos. 4 and 109) are basalt. The remaining specimen (Cat. No. 87) is a large basalt cobble.

Ground Stone

The ground stone from Riv-2755 consists of manos, metates, a stone bowl, and various miscellaneous and unidentifiable ground stone fragments. Only one mano and one metate are complete. A total of 31 specimens were recovered. The following table gives a general breakdown of the ground stone from this site:

Table 7-13

SUMMARY OF GROUND STONE FROM RIV-2755

Item	Quant.	Weight grams	% of Ground Stone Assemblage by Quant.	Weight	% Complete	% Therm. Affected
Mano Fragments	14	5371.5	45.2	16.4	7.1	64.3
Metate Fragments	5	14861.6	16.1	45.3	20.0	60.0
Ground Stone Fragments	11	5318.0	35.5	16.2	0.0	90.9
Bowl Fragment	1	7257.4	3.2	22.1	0.0	0.0
Total	31	32808.5	100.0	100.0	6.0	71.0

Manos

Of the 14 manos/mano fragments recovered from Riv-2755, half were adequately complete to allow them to be typed (Table 7-14; Figure 7-14). One of these specimens (Cat. No. 6) was unifacial, having a flat grinding surface with a distinct "shoulder" encompassing it (Type 2A). One of the bifacial specimens (Cat. No. 21) is unshaped, lacks shoulders, and has one domed and one flat grinding surface (Type 3C). Three other bifacial manos exhibit one flat and one domed grinding surface. Two of these are shaped specimens (Cat. Nos. 5 and 11) of Type 5C, while the other (Cat. No. 32) is unshaped but has distinct shoulders (Type 4C). A final bifacial example is Cat. No. 10 which is soap bar shaped and has two flat grinding surfaces (Type 5B). This specimen represents the only complete mano from the site.

Table 7-14

MANOS FROM RIV-2755

No.	Unit	Level	Material	Dimensions cm	Weight grams	Type	Modification*
5	Surface		Granitic	Incomplete	362.5	5C	PK
6	Surface		Granitic	Incomplete	569.8	2A	TA, PK
7	Surface		Granitic	Incomplete	101.0		TA, PK
10	Surface		Granitic	12.1x5.8x4.0	762.5	5B	PK, SB
15	Surface		Granitic	Incomplete	727.5	5C	PK
21	Surface		Granitic	Incomplete	223.0	3C	TA
32	Surface		Granitic	Incomplete	159.3	4C	TA, PK
40	Surface		Granitic	12.5x11.0x6.2	1277.0		TA, PK, EX
44	Posthole W20B		Granitic	Incomplete	82.2		PK
101	N120/E62	10-20	Schist	Incomplete	230.5		
120	N120/E62	10-20	Granitic	Incomplete	89.0		TA, PK
161	N166/E65	20-30	Granitic	Incomplete	485.0	5B	TA, PK
172	N166/E65	30-40	Granitic	Incomplete	75.0		TA

* Abbreviations: PK (pecking); TA (thermally affected); SB (soap bar shaped); EX (exfoliated)

Metates

Of the five metate specimens, one is a complete example (Cat. No. 239; Figure 7-15). This is a shallow basin example, perhaps better termed a slab metate, which exhibits an almost undetectable grinding modification. This specimen is made of granite and measures 35x26x9 cm.

The remainder of the metates are undiagnostic fragments. Two are of granite, one is of schist, and one is an unusual porphyritic rhyolite.

Stone Bowl Fragment

One probable stone bowl fragment was collected from the surface of the site at its southern extremity (Cat. No. 241; Figure 7-15). This fairly massive example is made of granite and weighs 7257.4 grams. It is possible that this is actually a deep basin metate fragment. Exfoliation of the item has resulted in the disappearance of the grinding surface so the wear pattern is not decipherable. If this is a stone bowl fragment, as its morphology suggests, it should be post-Milling Stone in age.

Miscellaneous Ground Stone

One large flat granite rock (Cat. No. 2) was recovered from the surface of the site. This specimen exhibits slight evidence of grinding and pecking and was probably used as some form of

stationary abrader. Another unusual specimen is a pecked rock (Cat. No. 17) that has no apparent ground surfaces on it. The rest of the miscellaneous ground stone comprises undiagnostic broken fragments exhibiting ground surfaces.

Bone Tool

One fragment of a bone tool (Cat. No. 112) was collected. The specimen is a small fragment of a tool with an oval or flattened shaft.

Shell

A fragment of a Giant Egg Cockle (cf. Laevicardium elatum; Cat. No. 240) was collected in the northern locus. The specimen bears no evidence of modification. It was sacrificed for radiocarbon dating.

Faunal Remains

A total of 34 vertebrate specimens (exclusive of bone tools) were recovered (Table 7-15). At least 41 percent of the sample is noncultural, including all of the gopher and unidentifiable rodent remains. The single rabbit specimen is probably a natural residue, also. Perhaps 14 of the specimens identified as Mammalian or Vertebrata are cultural debris. Of these, two are calcined and one is charred. These specimens are so fragmentary that it is not possible to make inferences about the nature of animal selection or use at the site, except that some bone was made into a tool used at the site.

Table 7-15

VERTEBRATE REMAINS FROM RIV-2755, GIVEN BY TOTAL SPECIMENS AND MINIMUM NUMBER OF INDIVIDUALS (MNI) PER TAXON

Common Name	Scientific Name	Total Specimens	MNI
Rabbit	Sylvilagus	1	1
Gopher	Thomomys bottae	9	2
Rodent	Rodentia	6	
Unidentifiable	Mammalia	6	
Unidentifiable	Vertebrata	12	

Ocher

Four pieces of possible pigments were collected. One specimen is a chunk of red (Munsell=10R 4/6) ocher, 26 x 12 mm. One side of this specimen is flat and may have been ground. The surface is too eroded to be certain that it is ground. The other two specimens are reddish-yellow (Munsell=5YR 6/8) nodules, smaller in size. These show no indication of utilization.

Historic Artifacts

A total of 144 historic specimens, not including several thousand clay pigeon shards, were recovered from Riv-2755. The historic artifacts occurred in two loci. A northern locus (including and much larger than the prehistoric northern locus) is comprised mostly of clay pigeon shards and shotgun shell wads. These are the result of activity by the Raahauge Pheasant Club which maintains a duck blind adjacent to the site. The second locus overlaps the southern prehistoric locus. This includes farm-related items associated with historic site PB-26, which consists of a pump, barn and other features.

The most significant artifact recovered is a clay ball from the southern locus. The ball is finger moulded, fired clay, 13 mm in diameter. The significance of this specimen lies in its similarity to clay balls occasionally found in California prehistoric sites. The inclusion of the clay ball in the prehistoric assemblage would imply the use of earlier prehistoric ceramics. However, several other balls of the same type were found imbedded in a stand of prickly pear a short distance away, indicating that they are sling shot pellets of recent manufacture. Fired clay sling shot pellets can be purchased in some sporting goods shops and are home made by some enthusiasts.

The other historic artifacts include a wide variety of items predominantly from the last half century. Clay pigeon shards and plastic shotgun shell wads of several types dominate the assemblage. Several .22 short cartridge cases and a bullet fragment were recovered. Iron items included wire, "tin can" fragments, a broken hack saw blade, round nails, a square nail, nuts and bolts of several sizes, a circular faucet handle, iron slug and miscellaneous iron fragments. A small amount of glass (clear, amber) and glass slag was collected, along with two pieces of white ironstone. One piece of unidentifiable yellow plastic was collected. Non-artifactual historical remains included several prune, peach and olive pits.

Discussion

The artifact assemblage at Riv-2755 is limited. It contains a light lithic scatter with two loci, one at the north edge and one at the southern edge. Artifacts which imply the temporal placement of the site occur in the southern locus only. These include a mortar and two projectile points. The presence of both mortar and metates at the site suggest an Intermediate Horizon occupation. The workmanship on the broken and unclassifiable projectile points is consistent with that interpretation. However, this data is marginal at best and our interpretation is not necessarily accurate. A radiocarbon assay of a shell fragment from the northern locus yielded a date of 6200 +/- 250 B.P., uncorrected Libby half-life. Given the

seeming difference, we suggest that Riv-2755 contains two loci of different ages and that the artifact scatter between them is the result of overlapping peripheral scatter or a spreading of artifacts from plowing of the site.

The activities implied by the sample are hard and soft seed processing (soft seed in the south locus), other soft material processing, some tool making or maintenance, and limited hunting and cooking. The presence of shell at the site probably represents some other type of activity. The presence of ocher implies the use of color for decoration or symbolic activity. The location of Riv-2755 would have allowed immediate access to hard seeds from a grassland habitat. Seeds from other habitats and acorns would have been available much further away.

Given the artifact assemblage which is exclusively technomic and the lack of other evidences of diversified activity, Riv-2755 is considered to be a seasonal campsite or even a processing station for plant materials.

RIV-2797 -- THE BRADFORD SITE

Riv-2797 is located on the Santa Ana River flood plain about 300 meters east of Chino Creek (Map P5). Various editions of U.S.G.S. topographic maps show that the site was located on and around a low rise or knoll. The site was discovered by Charles Bradford of Pomona in 1931 during a field trip to the area. At that time, Bradford located the site on the plain below the "Cota Fort" in a recently plowed field, fenced on the north side, and on the south side of a tree-lined dirt road. While the ground surface elevation over the site is now approximately 484 feet MSL, it is suspected that the actual site is at about 470 feet MSL. A total of 17 notched and concave base Cottonwood Triangular projectile points were collected by Bradford (Appendix C), along with a mortar and polished stone pestle.

During the present study, the site was relocated and plotted during a field trip to the area with Mr. Bradford. Topographic maps and the 1936 aerial photographs of the basin allowed the site to be accurately relocated. The projectile points he collected were loaned to us for study and have been photographed and measured (Appendix C). One point is obsidian. It was subjected to X-ray fluorescence analysis and was found to originate from Obsidian Butte near the Salton Sea. Further study of the site was precluded because it is located in the lower basin and is presently covered by four or more meters of silt and is below the water table. We presume that it remains otherwise intact.

Riv-2797 is important in several respects. It is the only verified late prehistoric (proto Gabrielino; Horizon IV) site in the Prado Basin. Considering the period of occupation of the other sites test excavated or otherwise documented, a shift in

settlement pattern in the Chino-Corona region after the Intermediate Horizon is implied. Both female- and male-oriented activity are indicated by the artifacts found at Riv-2797. Site type and period of occupation remain unknown. This site was not tested or mapped by transit during this study.

RIV-2803 -- OCWD 3

Riv-2803 is located at the edge of a bluff on the north side of the Santa Ana River flood plain (Map P5). It is situated on the highest portion of the bluff between Mill Creek and Cucamonga Avenue. The site consists of a small, light lithic scatter which is approximately 20 (north-south) by 15 (east-west) meters. Although it is located within the flood control basin, it is situated at an elevation of 565 feet (172.2 meters) which is at the maximum taking line because it is located at the edge of a ridge which locally exceeds 580 feet elevation (176.8 meters). The site is used as pasture and is presently being used for Sudan grass agriculture.

The site was discovered by Steven Briggs and Paul Langenwalter in February, 1984. It was previously missed because of the dense growth of wild oat covering the pasture. It was discovered during a routine re-examination of recently disced pasture in the project area. The site was previously unknown. This site was not tested or mapped by transit in the course of this study.

The materials found at the site include two broken metates, a mano and several flakes. The site appears to be a shallow deposit or surficial scatter, which marks the location of a plant processing station.

RIV-2804 -- OCWD 4

Riv-2804 is located on a terrace overlooking the west side of Mill Creek as it opens onto the flood plain of the Santa Ana River (Map P5). Site Riv-2755 is located immediately across the creek. The site consists of a lithic scatter approximately 80 meters (north-south) x 60 meters (east-west), which is situated on a southwest trending slope. It is situated at an average elevation of 515 feet (160 meters). The entire site has been disced and is used for pasture and presently Sudan grass farming.

The site was discovered in February, 1984, by Steven Briggs and Paul Langenwalter during a resurvey of property originally surveyed in July, 1983. Prior to the 1983 survey, the authors predicted a site at the location, based on the land form of the area. The site was not seen during the first survey because of a dense growth of wild oat, despite the fact that the crew anticipated locating a site in the vicinity. The property was reexamined at the time it was disced for cultivation. The site was not previously known to the residents in the area, nor was it

found during prior surveys of the area. Riv-2804 was not included in the program of test excavations for this project. This site was not mapped by transit.

The surface scatter on the site is comparatively rich. Among the tools observed were numerous manos, metate fragments (flat and basin), a scraper, flake tools, debitage, and a core. The tool types and materials used to produce them are like those described for Riv-2754 and Riv-2755, which are adjacent across Mill Creek. Identification of site functions, site classification and evaluation of significance must await test level excavation and study.

SBR-1543 -- PATE MESA SITE

SBr-1543 is located on a flat-topped hill immediately west of Chino Creek, four km north of the Santa Ana River (Map P1; Figure 7-16). Pate Mesa, as the hill was once known to local residents, was formed by stream channel erosion of the Pleistocene terrace deposits which cover much of the study area. It is roughly triangular in shape, with a low sloping top which drains southward into several washes which form the southern edge of the hill. The hill rises about 13 meters above Chino Creek, affording a broad view of the area, except where truncated by the Chino Hills on the west and low hills on the east side of the creek. The area of the site is approximately 15 acres (60,700 square meters). The elevation of the site ranges from about 525 to 540 feet MSL.

The site was first collected by Bert Newman in the 1930s. Notes made on calendars by Newman dating between 1937 and 1949 indicate that he removed cogged stones, discoidals and a stone ball from the site. Zan Zack, a recent tenant farmer on the site, removed a mortar and pestle, along with several stones he thought were crude arrowheads (Zack, personal communications).

The site was initially recorded by Hall (1975:1-14, Map 5), who described it as a large and varied surface scatter of aboriginal tools, concentrated along the southern edge of the mesa. The tools encountered included manos and metates, mortars and pestles, hammerstones, cores, flakes, and fire-cracked rocks. In 1979, Rosenthal and Schwartz (1979:13) rechecked the site, finding much the same assemblage along with bone and shell. It was their opinion that the site was the most important intact prehistoric site in the northern part of the basin and that it was eligible for the National Register of Historic Sites. The current study supports their assessment.

The hill top is farmed for Sudan grass and is alternately in crop or dry stubble. Wild oat covers the steeper slopes. In the past, most of the hill was farmed as part of the Homer Pate Ranch. Today, it is part of the Prado Recreation Center and is used for trap shooting and dog training. The recreational use of

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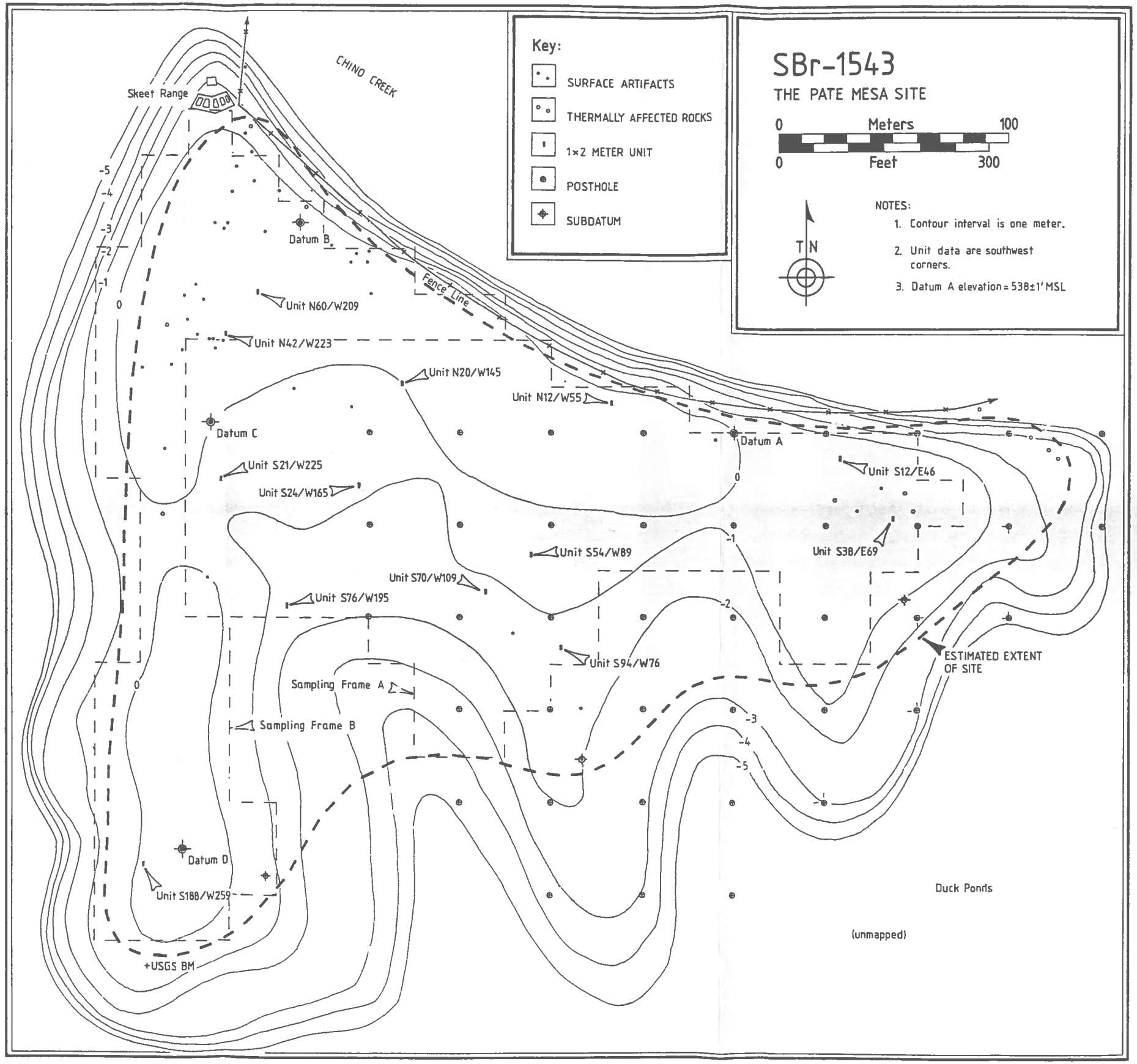

Figure 7-16. Site plan of SBr-1543.

the site has little or no impact on it, although a couple of years ago, a trap range was built on the northeastern edge of the hill, which damaged a small area. The remaining area of the site which covers the entire hill top and upper slopes is in good condition, except for the upper 20 to 30 cm, which have been repeatedly plowed and surface collected.

Sampling Strategy

SBr-1543 was previously recorded as comprising the eastern end of Pate Mesa (Springer Hill). The initial sampling of the site, herein referred to as Frame A, examined this part of the mesa. Frame A consisted of a posthole series to evaluate whether or not definable limits of the cultural deposit could be found. Thirty-seven postholes were dug in a grid at 40 meter intervals. Samples were taken at depths of 25 and 50 cm. The pH factors on the site tended toward acidity, but fluctuated toward basic as well. The lowest pH reading was 5.7 while the highest pH reading was 8.0. One posthole dug downslope from the site had pH readings of 5.8 and 6.2, indicating no difference between on and off-site values.

Phosphate readings were more varied than the pH readings. These ranged from zero to four on the relative scale. The highest readings, which were in the area of S80/W80 and S40/W120, corresponded with the most alkaline readings from the pH tests (i.e., 7.9 and 8.0). This is the reverse of what one might expect. The unit dug closest to this concentration proved to be the most productive (S94/W76).

The surface artifact scatter and the natural contour of the mesa was the most effective evidence for delineating the extent of the site. The artifact scatter covers the entire top of the mesa. It was decided to use two sampling frames. Sampling Frame A covered the main concentration of the site and Frame B covered the remaining areas on top of the mesa.

Frame A consisted of ninety-one 20 x 20 meter stratification quadrants. These quadrants were each further subdivided into 200 potential 1 x 2 meter test units. Ten units were dug in Frame A. Frame B consisted of a further fifty-five 20 x 20 meter stratification quadrants. Three 1 x 2 meter units were selected for excavation. Quadrant and unit selection for both frames was done using computer-generated random numbers. The sample of the site was approximately 0.04 percent of the surface sampling frame.

Observations

The average depth of the cultural deposit is 77 cm, giving the site a volume of approximately 46,678 cubic meters. The total volume excavated was 18.8 cubic meters, which gives a total

actual sample size of 0.04 percent. The most striking characteristic of the site is the hardness of the soil. The top layer of the site is a hard-packed medium gray-brown clayey loam. This is not only difficult to screen--it is difficult to dig as well. This layer is generally about 30 to 40 cm deep and overlies a hard reddish-brown clayey loam or a yellow-brown clayey loam. The cultural deposit either terminates in these layers at 50 to 100 cm or continues on into a yellow-grey silty loam. The deepest unit (S94/W76) went to 220 cm, in which much mottling of the deposit occurred. This suggests rodent disturbance.

There is a good deal of disturbance to the top of the site. The top 30 cm have been plowed for many years. The name "Pate Mesa" resulted from the Pate's use of the site for agricultural purposes. The site is also well-known to local artifact hunters and its surface has been picked over many times. However, because the site is so deep, the middle and lower portions of the cultural deposit are well preserved and *in situ* features were present (e.g., Unit S188/W259).

Artifact Descriptions

Chipped Stone

The SBr-1543 chipped stone assemblage includes projectile points, scrapers of several types, a graver, utilized flakes, debitage and hammerstones (Table 7-11). Primary tools comprise 5.8 percent of the assemblage; secondary tools (hammerstones) comprise 0.1 percent; the remainder is production waste or items which do not show evidence of use. Many of the specimens are made from metasediments which have weathered since use and no longer clearly show whether or not wear has taken place.

Projectile Points

One complete projectile point and one fragmentary projectile point were recovered. The complete specimen (Cat. No. 144) is a large, leaf-shaped point, percussion flaked from jasper (chalcedony) (Figure 7-11a). Flaking was irregular, with the body poorly thinned. A number of smaller flakes were taken from the base, which gave it a low, rounded appearance. The base was not ground for hafting. The tip bears one possible impact scar. Most of one edge bears wear crushing and micro flaking consistent with use as a scraper. This projectile point type conforms to Koerper and Drover's (1983:14-15) Type 1, which is known from Milling Stone Horizon and early-Intermediate Horizon sites. The second specimen is a fragment of a basal notched point made of chert (Figure 7-11c). The specimen shows finely controlled diagonal ripple flaking along the outer edges. The basal edges have been ground. The specimen appears to be the fragment of a Humboldt Basal-notched point (Figure 7-11).

Plane Scrapers

The four plane scrapers in the collection include three made from cores and one from a large cortex flake. Two of the specimens show wear crushing and microflaking along concave edges (not notches). There is one andesite core (Cat. No. 340) and one metashale core (Cat. No. 221). A third specimen is a quartzite core showing use along a convex edge covering about one-third of the perimeter of the plane (Cat. No. 78). The cortex flake, which is metavolcanic, has several edges which appear to be worked. One is convex, one is concave, and two are notched.

Other Scrapers

Three scrapers were collected. Two specimens, a chert core (Cat. No. 370) and a metashale cortex flake (Cat. No. 202), are side scrapers. Both show use along irregular edges. The cortex flake may have been used along a convex edge opposite the straight edge. The third specimen is a flake scraper (Cat. No. 369). It was made from a tertiary flake of dacite porphyry. The lateral edges show edge wear and the removal of small flakes.

Graver

One chert core fragment (Cat. No. 369) bears wear crushing and attendant flaking on the pointed end of a narrow edge.

Utilized Flakes

Five utilized flakes are recognized in the sample. Many of the specimens classified as debitage may have been utilized, but do not show wear. Five of the specimens included here show marginal edge wear, which could have been caused by other agencies. These specimens include one chert (Cat. No. 146), one metashale (Cat. No. 365), one dacite (Cat. No. 371) and two basalt tertiary flakes (Cat. Nos. 372 and 373).

Debitage

Unmodified and non-utilized flakes are placed into this category. The debitage sample from SBr-1543 consists of 272 specimens. It is the largest debitage sample recovered during the study.

At this site, the predominant raw material is metasedimentary shale which constitutes 41.1 percent of the waste flakes. The second and third most frequently used materials are chert and chalcedony, which respectively constitute 27.5 percent and 14.2 percent of the total sample. Other materials which were used at the site are obsidian (5.5 percent), dacite and or andesite (2.9 percent), quartzite (2.5 percent), quartz (2.5 percent), and other materials (0.7 percent).

The use of metashale, chert and chalcedony as the primary flaking materials is expected and also seen at other sites in the

locality. The use of obsidian is more frequent at SBr-1543 than any other site tested and the percentage (5.5 percent) is at least to two times greater than samples from any other site studied. The density of obsidian flakes is greatest in the upper 50 cm. However, flakes were found at 170-180 cm in the deepest area of the site.

Flaking activities represented at the site, in order of decreasing abundance, included secondary reduction of raw material from cores with prepared and unprepared striking platforms, initial reduction of raw material (as evidenced by flakes with cortex on the dorsal surface) and, in lesser frequency, removal of flakes to thin bifaces and/or projectile points in the manufacture of these tools. One of these bifacial thinning flakes (Cat. No. 239) composed of obsidian was found at 40-50 cm in depth. Four flakes were found that were probably removed to retouch plane scrapers. It is surprising that more scraper retouch flakes (SRFs) were not recovered since plane scrapers constitute 26.6 percent of the chipped stone tool assemblage.

Cores

Five cores were recovered. Three are cobbles of metashale (Cat. Nos. 29 and 30) and dacite porphyry (Cat. No. 360). Two are core fragments. One is rhyolite (Cat. No. 210) and the other is chert (Cat. No. 367).

Hammerstones

Three hammerstones, all large cobbles, were collected. One is andesite porphyry and two are metavolcanic. Both of the metavolcanic specimens are broken and one has been thermally altered.

Ground Stone

The ground stone assemblage from SBr-1543 consists of manos, metates, a muller fragment, a pestle fragment, a charmstone, and some unidentifiable ground stone fragments, one of which may be part of a discoidal. Fifty-three specimens were recovered. Of these, only 3 items (5.7 percent) were complete. A large percentage of the ground stone (83 percent) showed indications of thermal alterations. This clearly attests to intensive burning having occurred on the site. Table 7-16 gives a general breakdown of the different ground stone categories from the site.

Table 7-16

SUMMARY OF GROUND STONE FROM SBR-1543

Item	Quant.	Weight grams	% of Ground Stone Assemblage by Quant.	% of Ground Stone Assemblage by Weight	% Complete	% Therm. Affected
Mano Fragments	19	5116.0	35.8	20.7	10.5	89.5
Metates	25	18677.2	47.2	75.4	0.0	76.0
Muller Fragment	1	141.8	1.9	0.6	0.0	76.0
Pestle Fragment	1	185.2	1.9	0.7	0.0	100.0
Charmstone	1	119.6	1.9	0.5	100.0	0.0
Ground Stone Fragments	6	521.9	11.3	2.1	0.0	100.0
Total	53	24761.7	100.0	100.0	5.7	83.0

Manos

Of the 19 manos and mano fragments recovered from SBr-1543, seven were sufficiently intact to allow for identification as to type (Table 7-17; Figure 7-17). Three types are represented at the site. Two specimens (Cat. Nos. 95 and 286) are unshaped, lightly abraded unifacial manos with flat grinding surfaces (Type 1A).

Three manos (Cat. Nos. 21, 214, 332) are lightly abraded, unshaped bifacial cobbles with domed grinding surfaces (Type 3A). The final two identifiable examples (Cat. Nos. 68 and 348) are intentionally shaped, bifacial specimens with relatively flat grinding surfaces (Type 5B).

These mano forms are temporally undiagnostic. Such factors as raw material, food resource being ground, metate form being used, and personal preference would probably account for the different forms. Certainly more research is needed in this area.

Figure 7-17. Selected manos and one muller fragment from SBr-1543 shown with grinding surfaces facing up. Clockwise from top right: Cat. Nos. 286, 145, 95, 332.

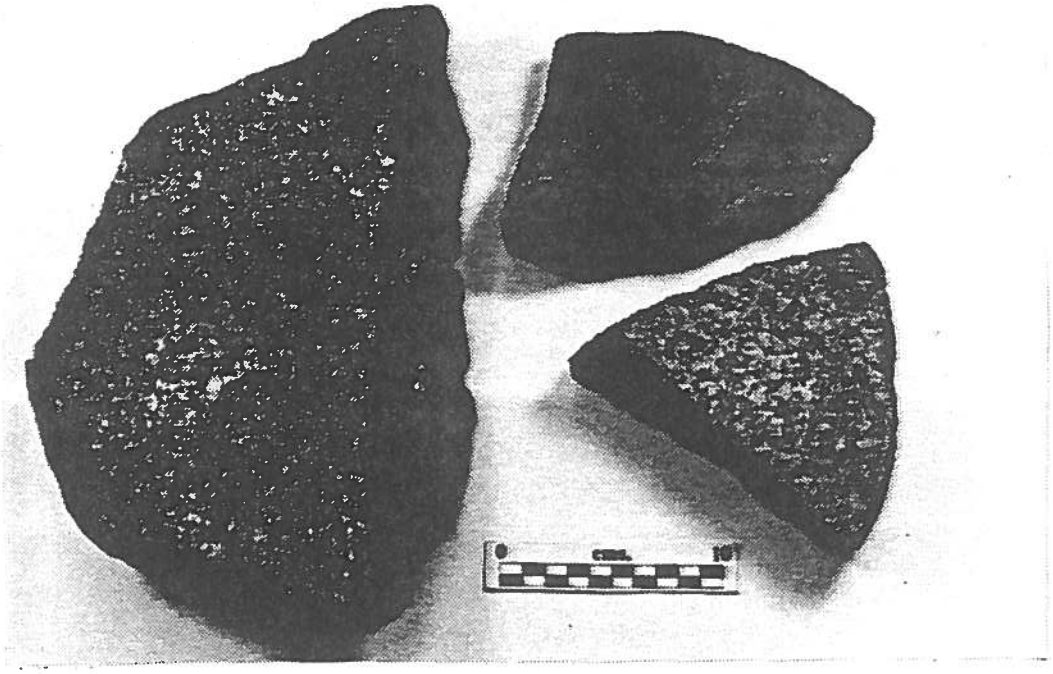

Figure 7-18. Selected metate fragments from SBr-1543. From the left: Cat. Nos. 364, 357, 339.

Table 7-17

MANOS FROM SBR-1543

No.	Unit	Level	Material	Dimensions cm	Weight grams	(C*) (F*)	Type	Modification*
009	S38/E69	10-20	Granitic		209.5	F		TA
021	S54/W89	10-20	Granitic		222.0	F	3A	TA, B
027	S54/W89	20-30	Granitic		219.3	F		TA, PK
068	N20/W145	20-30	Granitic		140.1	F	5B	TA, PK
083	S21/W225	40-50	Granitic		561.6	F		TA
095	N42/W223	30-40	Granitic	11.5x8.8x6.5	901.1	C	1A	TA
097	N42/W223	30-40	Granitic		51.4	F		TA, PK
106	N12/W55	10-20	Granitic		120.8	F		TA
160	S70/W109	20-30	Granitic		47.3	F		TA, PK
176	S70/W109	40-50	Granitic		173.8	F		TA, PK
214	S188/W259	50-60	Metavolcanic		268.8	F	3A	TA, PK
255	S94/W76	60-70	Granitic		16.8	F		TA
281	S94/W76	120-130	Granitic		44.5	F		TA
286	S94/W76	140-150	Granitic	11.8x7.7x6.0	872.2	C	1A	PK, PT
299	S94/W76	140-150	Granitic		13.2	F		TA
332	Surface		Granitic		753.3	F	3A	PK
334	Surface		Granitic		199.8	F		TA
345	Surface		Metavolcanic		127.2	F		TA, PK
348	Surface		Granitic		173.3	F	5B	TA

* Abbreviations: F (fragmented); C (complete)
TA (thermally affected); B (battering);
PK (pecking); PT (pitting)

Metates

Twenty-five metate fragments were recovered from SBr-1543 (Table 7-18). No complete metates were found (Figure 7-18). Five specimens (20 percent) were sufficiently intact to allow type determinations to be made. Nineteen of the 25 fragments (76 percent) showed evidence of being thermally altered. The metates range in plan view from ovoid to sub-rectangular.

Of the typed specimens, four have shallow basins (Cat. Nos. 51, 84, 272, 364) and one has a deep basin (Cat. No. 173). The percentage of deep basin metates from SBr-1543 is 20 percent; therefore it contrasts significantly with the percentage from Riv-653 (66.6 percent). If the hypothesis that deep basin forms tend to pre-date shallow basin forms (cf. Bettinger 1974:160) is correct, then perhaps we have some evidence, albeit marginal, that Riv-653 is earlier in date than SBr-1543.

One metate specimen (Cat. No. 84) has lipid stains on it--providing evidence of past utilization. The specimen has not been submitted for chemical analysis.

Table 7-18

METATE FRAGMENTS FROM SBR-1543

No.	Unit	Level	Material	Weight grams	Type	Modification*
20	S54/W89	10-20	Granitic	262.5		TA, PK
25	S54/W89	20-30	Schist	259.5		TA
26	S54/W89	20-30	Granitic	238.3		TA, PK
39	N60/W209	10-20	Granitic	11.4		TA, PK
51	N60/W209	40-50	Schist	63.5	Shallow Basin	
79	S21/W225	30-40	Granitic	77.8		TA
82	S21/W225	40-50	Granitic	404.1		TA, PK
84	S21/W225	40-50	Granitic	3063.0	Shallow Basin	TA
94	N42/W223	30-40	Granitic	706.5		TA, PK
159	S70/W109	20-30	Granitic	70.5		TA, PK
172	S70/W109	40-50	Igneous	195.1		TA, PK
173	S70/W109	40-50	Igneous	70.9	Deep Basin	PK
174	S70/W109	40-50	Granitic	167.7		TA
175	S70/W109	40-50	Igneous	89.4		TA
189	S70/W109	70-80	Granitic	151.8		TA, PK
149	S94/W76	50-60	Granitic	22.5		TA
254	S94/W76	60-70	Granitic	154.3		PK
272	S94/W76	100-110	Granitic	189.4	Shallow Basin	
329	Surface		Schist	112.0		TA, PK
339	Surface		Granitic	1402.6		
350	Surface		Granitic	1172.5		TA
352	Surface		Granitic	150.6		TA, PK
353	Surface		Granitic	1800.5		TA, PK
357	Surface		Schist	1150.2		TA, PK
364	Surface		Granitic	6690.6	Shallow Basin	PK

* Abbreviations: TA (thermally affected); PK (pecking)

Muller Fragments

The one almost complete muller specimen exhibits an interesting modification (Cat. No. 145; Figure 7-17). In addition to having one major grinding face that is heavily pitted, four other distinct grinding surfaces can be detected. It is possibly a multi-purpose tool used as an abrader as well as a seed grinding implement. The deep pitting might be for holding nuts in place while they are being cracked.

Pestle Fragment

Item number 96 is probably a pestle fragment that was later reused as a mano (Figure 11-19). Wallace noted that pestles occur rarely on Milling Stone Horizon sites and come into common use with the onset of the Intermediate Period (1955:220-221). This pestle fragment might suggest an Intermediate Horizon occupation at SBr-1543.

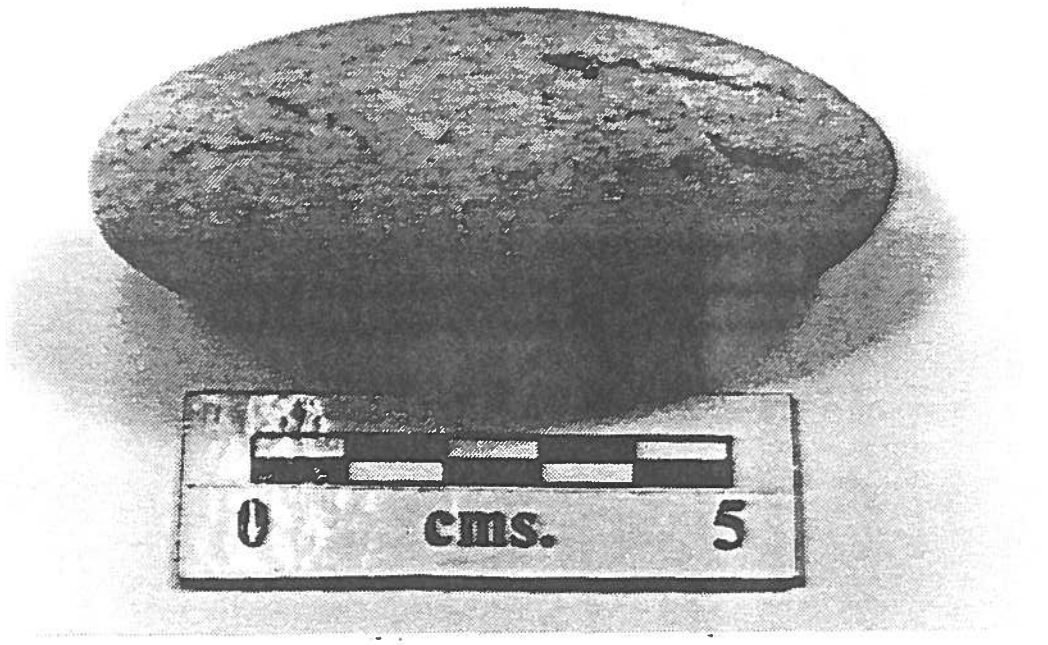

Figure 7-19. Charmstone from SBr-1543.

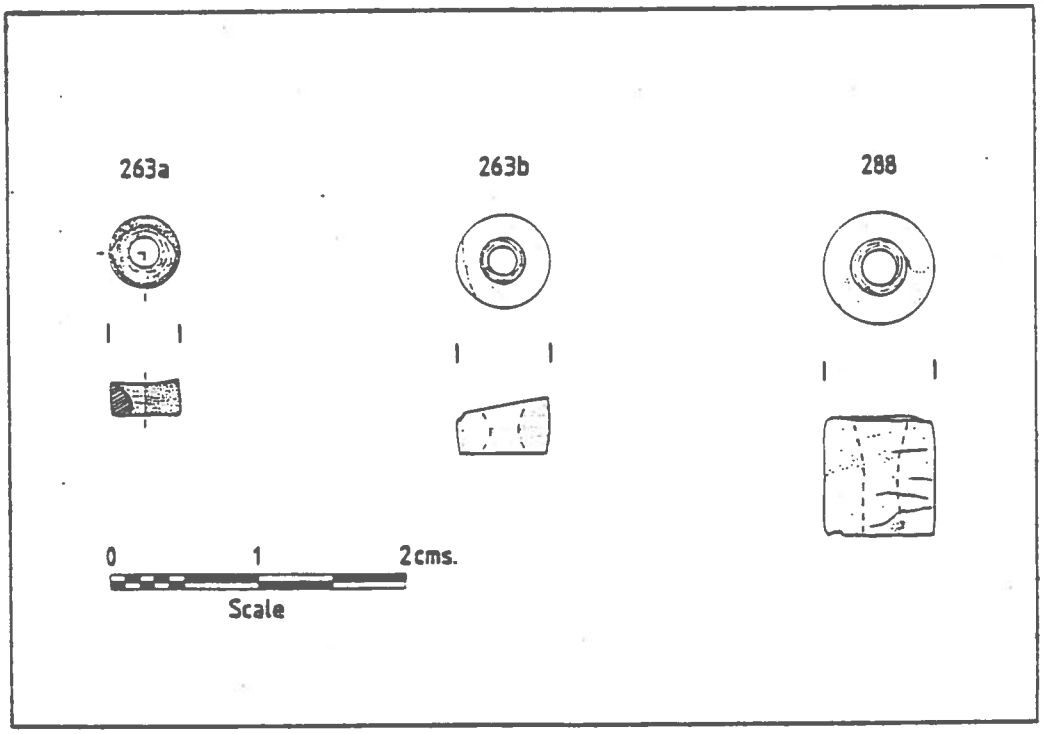

Figure 7-20. Beads from SBr-1543 (catalog numbers as indicated).

Table 7-19

MISCELLANEOUS GROUND STONE FROM SBR-1543

No.	Unit	Level	Item	Material	Modifications*
28	S54/W89	20-30	Ground Stone Fragment	Granitic	TA, PK
277	S94/W76	110-120	Ground Stone Fragment	Basalt	TA, PK
287	S94/W76	130-140	Ground Stone Fragment	Metavolcanic	TA
289	S94/W76	140-150	Ground Stone Fragment	Granitic	TA
338	Surface		Ground Stone Fragment	Granitic	TA
342	Surface		Ground Stone Fragment	Granitic	TA
096	N42/W223	30-40	Pestle Fragment (?)	Granitic	TA, PK
145	S24/W165	80-90	Muller Fragment	Granitic	TA, PT
367	Surface		Charmstone	Quartzite	

* Abbreviations: TA (thermally affected); PK (pecked); PT (pitted)

Charmstone

One finely-made quartzite charmstone, or "plummet," was recovered from the surface near Unit S94/W76. The item was collected by Mr. Don Richardson, the present leasee of the property. The specimen is 8.1 cm in length and has a maximum diameter of 3.42 cm (Figure 7-19; Table 7-19). It has no hole. Meighan noted that charmstones occur only within the Milling Stone Horizon (1959:297). They are believed to have magico-religious functions and are possibly derived from shaman's bundles. Other charmstones have been collected in the Prado Basin by Mr. Bert Newman (see Appendix C).

Shell and Bone Artifacts

Three beads were recovered from SBr-1543 (Figure 7-20). All of these came out of the same unit: S94/W76. Catalog Numbers 263a and 263b were found at the 80 to 90 cm depth and Catalog Number 288 was found at the 130 to 140 cm depth. Table 7-20 displays the attributes of these specimens.

Table 7-20

DATA FOR BEADS FROM SBR-1543

Number	Material	Form	Diameter mm	Thickness mm	Hole Dia. mm	Weight grams
263a	Schist	Cylinder	4.84	2.76	2.0	0.1
263b	*Tivela stultorum*	Cylinder	6.2	3.8	1.9	0.25
288	*Tivela stultorum*	Cylinder	7.6	8.1	2.4	0.7

Using criteria developed by R. O. Gibson (1973) and J. Brock (1982) for defining bead types, these examples are all classified as cylinders. A cylinder has a thickness that is greater than one-half of its diameter, but less than twice its diameter.

Clam (Tivela stultorum) cylinder beads occur in the Santa Barbara region in contexts equivalent to the Milling Stone, early Intermediate, and Late Horizon periods in our region (King n.d.: Figure 6). While clam cylinders are rare in the Southern Coastal region (Mitchell 1983:4), the context of our specimens indicates that they are Milling Stone to early Intermediate in age. This provides some evidence that clam cylinder use in the Southern Coastal area corresponded with usage in the Central Coastal area.

Schist cylinders tend to be rare and temporally undiagnostic. Examples occur in Milling Stone through Late Horizon contexts in Southern California (e.g., King n.d.).

Bone Tools

Parts of seven bone tools recovered from the site are all from awls or awl-like tools. Three specimens are pointed awl tips (Cat. Nos. 108, 166, 311). Three others are tool shafts (Cat. Nos. 216, 291, 304). The seventh specimen is a possible tool fragment (Cat. No. 252). The awl tips are sharply pointed and bear polished surfaces. The form and wear on these specimens is consistent with protohistorical and historic basketry awls. The tool shafts vary from circular or oval to semi-flat in section. One tool may have been entirely flat-bladed and had a different function. Each of the shaft sections is polished and the striations from grinding during manufacture are polished. One specimen bears a natural groove consistent with that found on a deer metatarsal. The possible tool fragment is classified as such only because the outline of the specimen in section is not a natural form.

Shell

Thirty-seven fragments of mollusc shell were recovered (Table 7-21). The identifiable species recovered include abalone, scallops, an egg cockle, another cockle and a Monterey worm shell. The presence of these species, excluding the worm shell, indicates the exploitation of sand, mud and rocky shallow water habitats to supply food or raw materials to the inhabitants of SBr-1543. Given potential habitats along the adjacent southern California coast and the distribution of these species, it is not clear if these species were procured from open coast or bay habitats. Specific uses of each species is not determinable from the sample. The worm shell is a small species which was almost certainly brought to the site attached to a more economically valuable species. The presence of these molluscs indicates contact and possible trade with the coast.

Table 7-21

SHELLFISH IDENTIFIED FROM SBR-1543

Common Name	Scientific Name	Total Specimens
Abalone	Haliotis sp.	15
Scallops	Pectinidae	6
Egg Cockle	Laevicardium sp.	1
Cockle	Cardiidae	1
Monterey Worm Shell	Petaloconchus montereyensis	1
Clam	Pelecypoda	2
Molluscs	Mollusca	10

Bone

The diversity of the vertebrate remains from this site is impressive, given the sample size. SBr-1543 yielded the most complex vertebrate sample from any site sampled thus far in the region.

A minimum of 19 species were found in the sample (Table 7-22). Not all of the animals represented are associated with human activity at the site. All of the pocket mouse (Perognathus sp.) sample, and parts of the ground squirrel (Citellus beecheyi) and gopher (Thomomys bottae) samples are clearly natural residium. The frog (Rana sp.), lizard (Lassertilia), snake (Serpentes), and Mole (Scapanus latimanus) remains may be natural also. The other remains are broken or burned in a manner comparable to animal remains from other archaeological sites.

Those specimens which are associated with the human activity at SBr-1543 provide information on animal use, procurement means, procurement technology, and local environment. The animals captured included small mammals, carnivores, large mammals, water fowl, a bird of prey, a terrestrial bird, and land and water reptiles. This array of animal types indicates that a broad based selection pattern was practiced by the inhabitants of SBr_1543 in their animal procurement. Broad-based animal selection is known to begin during the Milling Stone Horizon (Drover, Koerper and Langenwalter 1983) and continue into the protohistoric period. Pond turtles and owls are known from Intermediate Horizon and later assemblages only.

Due to the various habitats occupied by the species represented in the sample, a variety of habitats were exploited. Water fowl and pond turtle were captured in local stream channels or marshes. The owl was most likely taken from the canopy of riparian woodland or groves of trees. The brush rabbit indicates hunting in or at the edges of brushy areas, while it is more likely that the jack rabbit was hunted in more open areas. Population distributions of other species in the sample are less

restricted in their habitats. Because of this, they are not suitable indicators of habitat usage in the study area.

The species represented are diverse enough in habitat and behavior to have required a wide variety of capture techniques. Such techniques as might have been used are discussed in other studies (Langenwalter 1978, 1981). The implied diversity of capture techniques required for the SBr-1543 fauna is far greater than the procurement tools collected at the site. This implies that much of the equipment was either removed from the site or, more likely, was perishable.

Table 7-22

VERTEBRATE REMAINS FROM SBR-1543, GIVEN BY TOTAL SPECIMENS AND MINIMUM NUMBER OF INDIVIDUALS (MNI) PER TAXON

Common Name	Scientific Name	Total Specimens	MNI
Frog	Rana sp.	1	1
Pond Turtle	Clemmys marmorata	11	1
Lizard	Lassertilia	2	1
Rattle Snake	Crotelus sp.	1	1
Snakes	Serpentes (2 species)	33	
Owls	Strigidae	1	1
Ducks	Anatidae	1	1
Perching Birds	Passeriformes	1	1
Birds	Aves	5	
Broad Handed Mole	Scapanus latimanus	2	1
Brush Rabbit	Sylvilanus bachmanii	1	
Rabbits	Leporidae	13	1
Jack Rabbits	Lepus californicus	16	
Ground Squirrel	Citellus beecheyi	14	3
Pocket Gopher	Thomomys bottae	193	18
Pocket Mouse	Perognathus sp.	10	3
Meadow Mouse	Microtus californicus	3	1
Rodents	Rodentia	115	
Bobcat	Lynx rufus	1	1
Deer	Odocoileus hemioneus	1	1
Unidentifiable	Mammalia	174	
Unidentifiable	Vertebrata	1363	

Ocher

Nine pieces of ocher or ocher-like material were recovered. Seven specimens are small pieces of red (Munsell=10R 4/8) ocher. One is a yellow (Munsell=10YR 8/7 +/-) sediment and one is an orangish buff (Munsell=10YR 6/4) color. None is ground or otherwise modified to show use. Red ocher was ground for use on the surface of at least one metate.

Charcoal

Small amounts of carbonized plant remains, all probably charcoal, were recovered from depths below 40 cm. All of the five samples collected are too small for conventional radiocarbon dating or identification of plant type.

Historic Debris

A layer of recent historical debris covers the surface of the site. Most of this is spent ordnance associated with the Prado Recreation Center which presently leases the site for recreational shooting and dog training. A few items, including fence wire, may be associated with the farming of the site by the Pate family and later tenants. Forty historic items were recovered from above 20 cm in depth; most from 0 to 10 cm in depth; and some from the surface of the test units. Included are: paint chips, clay pigeon shards, shotgun shell parts, .32 S and W cartridge cases, three .22 short cartridge cases, fence wire, fence staples, clear and amber glass (some bottle glass), an iron hinge, a leather strap fragment and yarn.

Discussion

The SBr-1543 assemblage is the most complex representation of material culture from a site in the study area. Much of the site area is relatively shallow, with a depth of less than one meter. However, erosion and aeolan deposition have resulted in aggradation of the upper portion of washes in the central and southern portions of the site, resulting in cultural deposits of much greater depth. It is possible that horizontal stratigraphy occurs at this site. The surface was found to bear a scatter of late historic artifacts.

The bulk of the data suggests that SBr-1543 was occupied during the Intermediate Horizon. The presence of mortar and pestle on the surface (primarily recorded during earlier surveys; see introduction to site) conforms most closely with this interpretation. The projectile points are ambiguous. The Type I point is known to belong to both Milling Stone and early Intermediate Horizon assemblages. The Humboldt Basal-notched point is generally considered to span the period between 5950 and 2900 B.P., although at least one author considers them much later (Bettinger 1978) and they occur elsewhere in younger contexts (Thomas 1981:17). Cogged stones, discoidals and charmstones are generally considered to be associated with Milling Stone Horizon assemblages. However, there is evidence that discoidals and perhaps cogged stones occur during the Intermediate Horizon on the coast (Koerper and Drover 1983:20, 23). The occurrence of cogged stones, discoidals and charmstones at SBr-5096 support the association of these artifacts with the Intermediate Horizon (this study). The occurrence of pond turtle and owl imply an

Intermediate Horizon or later context since neither is known from earlier assemblages.

No absolute dates could be obtained for SBr-1543. Obsidian rim measurements are available, but the sample is small and absolute dates can not be ascribed to them (R. Jackson, personal communication). Despite this, if Ericson's (1978) standard of 344 years per micron is applied to the sample of eight specimens which yielded readings, all of the dates fall well within the Intermediate Horizon (Appendix D). Given the data as a whole, we consider SBr-1543 to be an Intermediate Horizon assemblage.

The technomic artifacts in the assemblage indicate that both hard seed and soft seed (acorn) processing occurred at the site. The amount of amateur collecting at the site in the past precludes estimating the relative amount of each, based on artifact ratios. Still, hard seed processing tools do outnumber soft seed tools on the site. The animal remains recovered indicate a broad-based vertebrate resource selection pattern. The use of marine shellfish as a food source cannot be established. The lithic and bone artifacts from the site indicate the use of botanical and animal materials in the manufacture of various items.

The location of SBr-1543 is such that a wide variety of plant and animal resources could be procured from local habitats. Aquatic, glassland and coastal sage scrub habitats were easily available within a kilometer or two of the site, as well as riparian and oak grove associations. The location of the site would have allowed long term or permanent occupation of the site during the annual cycle. However, the density of artifacts on the site does not seem to indicate that a permanent settlement activity is indicated.

Manufacturing of lithic tools occurred at the site. Secondary reduction of raw materials from cores occurred along with initial reduction of raw material. Bifaces were worked at the site infrequently. In general, the evidence indicates that the raw materials used in chipped stone manufacture were brought to the site and that all types of chipped stone tool production apparently occurred there. The presence of lightly abraded unshaped manos probably indicates the initial production of some ground stone at the site. While shell and bone items occur at the site, there is no substantive evidence to demonstrate that manufacture of items in these materials occurred on site.

Most of the materials used at this site were procured locally. Shell was procured from the coast, indicating one direction of trade into the Chino-Corona area. Chert from the site probably originated on the Mojave Desert, while the obsidian came in from the Coso Hot Springs area (Appendix D).

Ritual activity is implied by the presence of charmstones, which are generally believed to be indicative of ceremonial activity. Similarly, some authors believe that cogged stones and discoidals

were associated with ceremonial activity. Whatever the function of these items, they do indicate the occurrence of some type(s) of specialized activity. A more substantial indication of ritual activity is the presence of red ocher, which was ground at the site. This pigment was used for a paint in a variety of symbolic and ritual contexts.

SBR-1570

SBr-1570 is located at the western edge of the terrace overlooking Chino Creek, across from SBr-1543 (Map P2). An isolated granite metate fragment located on the western slope of the eroding Pleistocene nonmarine terrace along the creek was described by Hall (1975:1-16). It was located at an elevation of 495 feet (150.8 meters). Later, Hall recorded the isolate as a site. Examination of the locality during the present study confirmed that the specimen is not associated with other prehistoric or historic remains. No further study was conducted.

SBR-1571 -- PATE RANCH SITE

During excavation of the predominantly historic assemblage of this site, a small feature comprised of prehistoric artifacts was encountered in Unit 2, which is discussed below. (See SBr-1571H in Chapter 8 for the general description of the site and the testing strategy used during the excavation.) The elevation of this site is about 510 to 520 feet above MSL.

Ground Stone from Feature 1

Feature 1 was encountered at 20 to 30 cm in depth in Unit 2 (Figure 7-21). This feature consists of metate fragments, mano fragments, and thermally affected rocks. At first, it was believed that this feature represented an <u>in situ</u> prehistoric deposit. Closer examination revealed the presence of concrete residue on some of the rocks. We now believe that this feature is actually a foundation remnant of the historic Pate Ranch. The prehistoric artifacts in the feature were collected from the nearby site SBr-1543 and used as foundation material.

The material in the feature consists of the following:

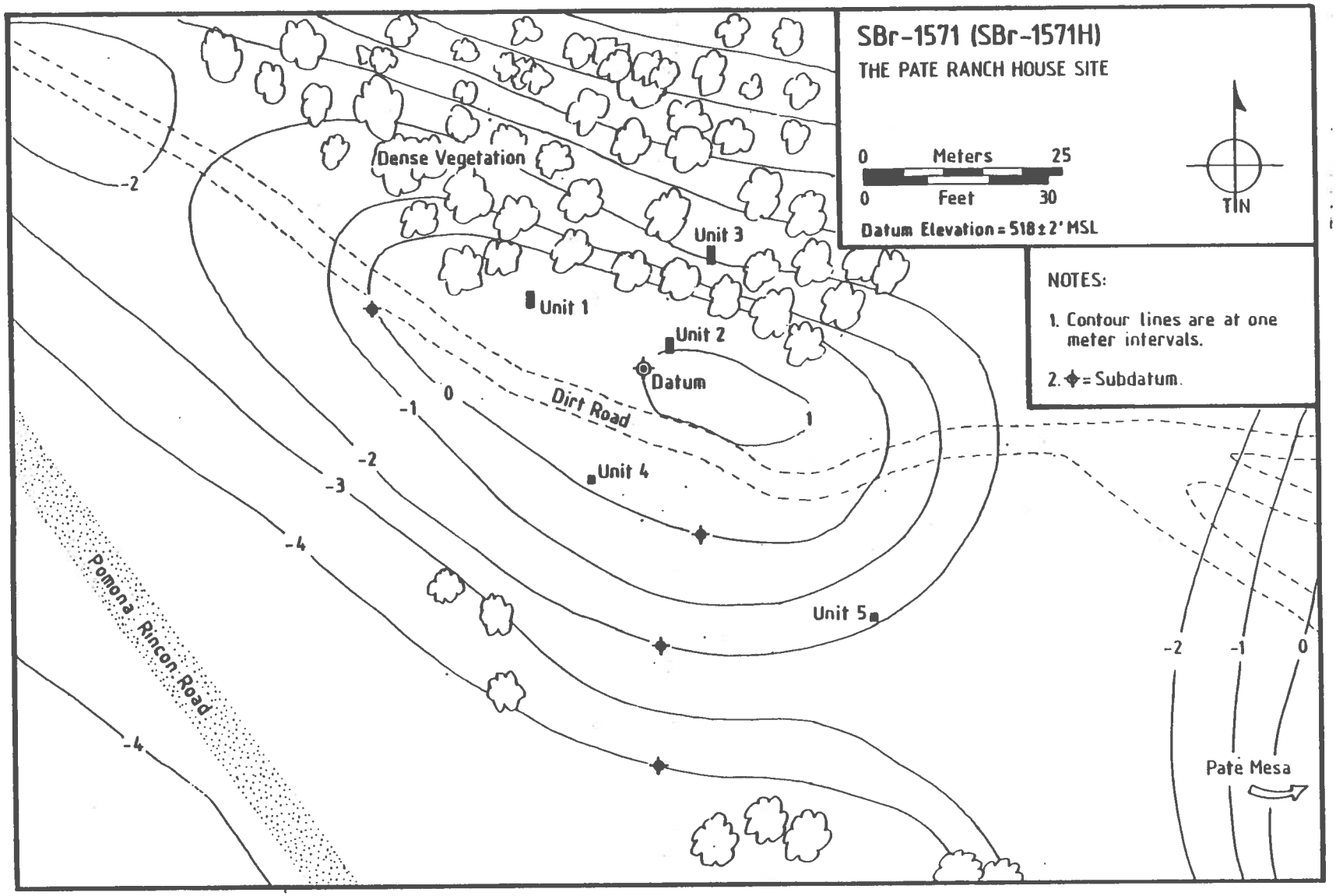

Figure 7-21. Site map of SBr-1571 (SBr-1571H).

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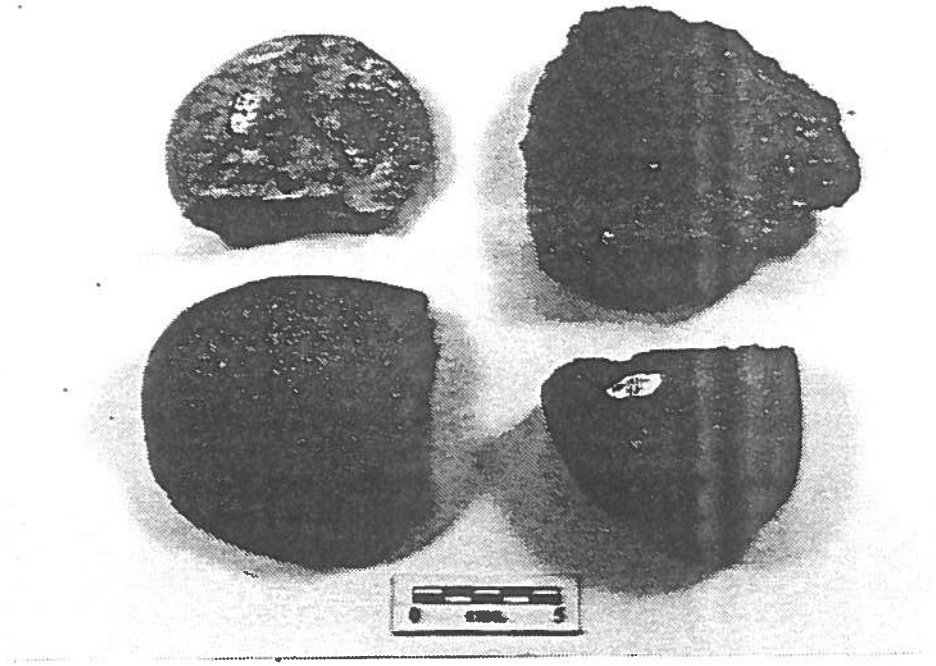


Figure 7-22. Mano fragments from SBr-1571. Clockwise from top right: Cat. Nos. 42, 43, 41, 39.

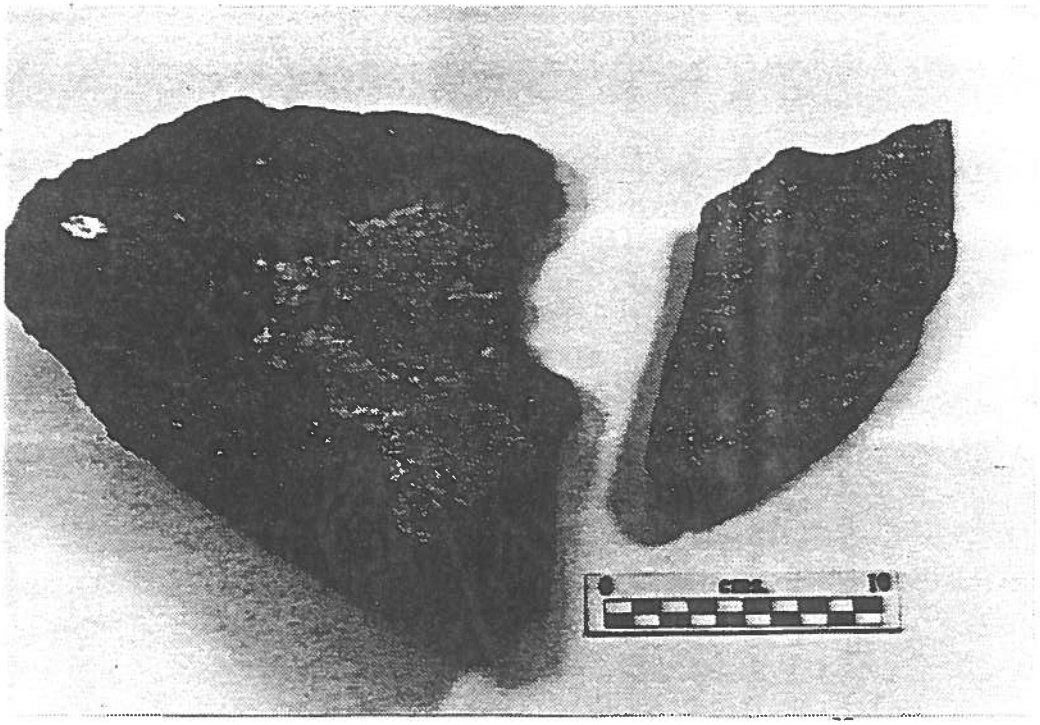


Figure 7-23. Metate fragments from SBr-1571. Cat. No. 36 is on the left, 40 on the right. Note the concrete adhering to the grinding surfaces.

Table 7-23

GROUND STONE FROM SBR-1571

Item	Number	Weight grams	% of Feature by Quantity	Weight
Mano Fragments	4	2368.0	25.0	20.6
Metate Fragments	2	3114.4	12.5	27.1
Thermally Affected Rock	10	5997.8	62.5	52.3
TOTALS	16	11480.2	100.0	100.0

Mano Fragments

Of the four mano fragments recovered from the feature, all were identifiable as to type (Figure 7-22). This is the only mano collection from this project where all specimens were identifiable. We believe this supports the posit that these rocks were collected for foundation materials--larger rocks were needed and, as a consequence, complete specimens were collected.

One of the manos is a shaped unifacial specimen with a pecked hand groove on its dorsal side (Cat. No. 41, Type 6B). These rare forms have been found on other sites in the Prado Basin. The other three mano fragments are bifacial examples. Two are unshaped (Cat. Nos. 39 and 43; Type 3A and 3C, respectively), while one is a large, shaped specimen (Cat. No. 42, Type 5B).

Metate Fragments

Two metate fragments made of schist were recovered from the feature. These are possibly from the same artifact. Both pieces have concrete adhering to them (Figure 7-23). One of these fragments is a deep basin metate fragment (Cat. No. 36), while the other fragment is unidentifiable.

Discussion

These ground stone specimens were apparently removed from the adjacent prehistoric site, SBr-1543. The types represented are consistent with the types found on that site and support the proposed dating of the site to the Intermediate Horizon. The completeness of the examples would argue for a dense and extensive surface artifact scatter having been on the site up until the fairly recent past.

SBR-2259

SBr-2259, originally recorded as SBCM-3002, was located immediately west of Johnson Avenue in the area now covered by the

Prado Regional Park headquarters (Map P2). The site was discovered during a San Bernardino County Museum survey of the Regional Park prior to construction (Simpson and Suss 1975a). It was recorded based on the presence of a mano and a small bowl fragment. The elevation of this site was about 560 feet MSL. The report made no specific recommendations concerning mitigation of the site, if impacted. During the present project, the area of the site was found to be covered by the paved area of the park headquarters. It could not be determined if any part of the site remained intact. No test excavations were ever executed at the site to evaluate its significance.

SBR-2260

SBr-2260, originally SBCM-3003, was found during a survey of the San Bernardino County Prado Regional Park by the San Bernardino County Museum (Simpson and Suss 1975a). The site was described as milling slicks on a boulder. No specific recommendations concerning mitigation of the site were made.

According to the description, the site was located near a fence on a small hill which is now immediately east of the regional park lake (Map P2). This hill has undergone some grading and excavation which have altered it in the recent past. The elevation of this site was at approximately 550 feet MSL. During survey of the site area, a large boulder bearing two milling slicks and asphaltum was located on the south side of the hill. The boulder was in a bladed area along with other smaller rocks which had been removed from their original locations. No other boulders with milling slicks were located and it is presumed that the disturbed specimen is the feature which constituted SBr-2260. No excavation was conducted at the site.

SBR-2845 -- BANDINI MOUNTAIN

SBr-2845 is located on the upper portion of the western bank of Mill Creek. It extends along the creek about 300 meters from a point just south of the Chino-Corona Road and has a width of approximately 125 meters (Map P2; Figure 7-24). It covers the area of slope which is bounded by alluvial plain at the western side and the creek bed on the east. The site lies at an elevation of 550-565 feet. In the recent past the site was left fallow and was weed-covered (primarily wild oat) or used for crops. Prior to that, it may have been covered with riparian plant life or grassland.

The site was discovered by S. Hammond during a Caltrans survey in 1978 (Hammond 1978). At that time, Hammond reported a light scatter of lithics, including a mano, metate fragments and some chipped stone. The site is not known to local residents, although it may have been in the past.

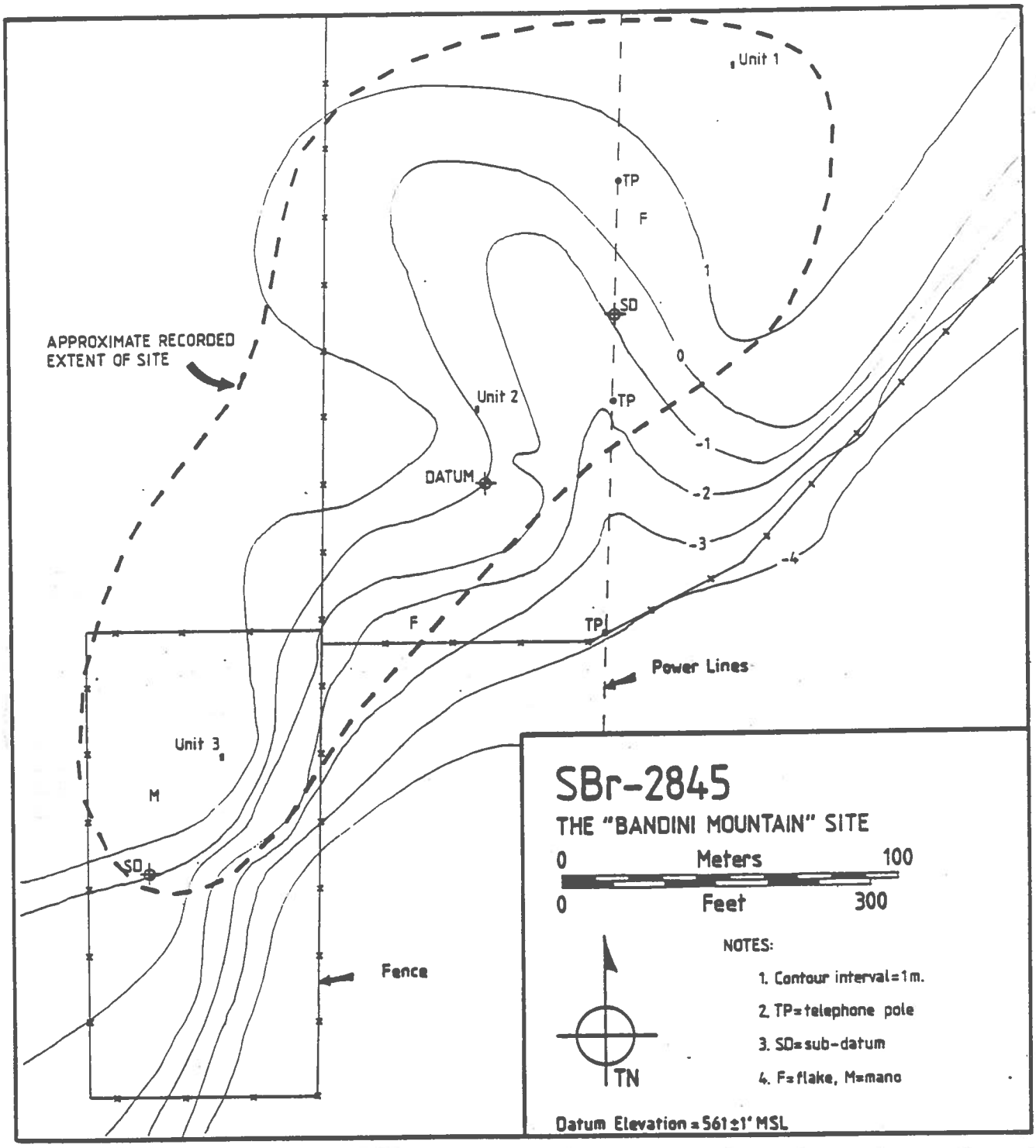


Figure 7-24. Site plan of SBr-2845.

The site is heavily impacted. The western edge was obscured or destroyed by ranch and residential construction. The entire area of the site has been heavily tilled to work large amounts of manure into the soil to improve it for cultivation. At the time that the site was test excavated, several tons of manure were spread over the site for that purpose.

Sampling Strategy

No posthole series was dug at this site because soil testing seemed patently useless in a field of freshly dumped manure. The sampling frame had to be based on the previously recorded extent of the site. As the site is fairly linear in recorded extent, it was decided to dig a line of three meter units along its longest axis (north-northeast to south-southwest). These three units were spaced 127.5 meters apart on a line that was 216°45'20" east of True North (Figure 7-24). The unit locations corresponded with the most likely locations for prehistoric remains. The sample comprised approximately 0.02 percent of the 25,000 square meter (6.2 acre) site.

Observations

The average depth excavated to was 37 cm, giving an estimated volume of the disturbed deposit of 9,165 cubic meters. The total volume of soil excavated was 1.6 cubic meters (0.02 percent of the site). The stratigraphy of the site consisted of a top artificial layer of manure extending into a light brown silty sand with flecks of Manure. The manure layer is generally about 20 cm deep with much mottling and lensing occurring. This overlies a hard, light brown, silty sand.

Artifact Descriptions

Chipped Stone

The chipped stone sample from SBr-2845 consists of three pieces of debitage. One is dacite and two are unidentifiable rock types. The dacite specimen, which is a cortex flake, was retouched. The other two specimens are chunks.

Ground Stone

One mano and one possible mano fragment are present on site. The mano was a type 5B. The specimen was observed during the survey, but it was buried or removed by the time the site was test excavated. It was located on the southern portion of the site. A possible mano is represented by a quartzite fragment with a surface which appears to be ground.

Bone

Seven specimens, all recent additions to the site, were collected. Six are unidentified Mammalia fragments and one is an auxiliary proximal phalanx from a sheep or goat.

Historic Artifacts

Historic specimens recovered in the excavation units include two pieces of iron wire and four pieces of clear bottle glass. A prune seed was recovered also.

Discussion

SBr-2845 has been thoroughly disrupted by long term plowing of the field. The surface has repeatedly been covered with manure, which was worked deeply into the soil. At present, the site consists of a light scatter of lithic artifacts mixed with recent refuse. The cultural and temporal placement of the site could not be determined. The condition of the site precludes determining if it was ever more than a transiently used processing station. We believe that it was associated with what may have been a more substantial site (SBr-5244) immediately across Mill Creek. The principle value of SBr-2845 is the small amount of evidence it provides about aboriginal settlement along Mill Creek.

SBR-5096 AND SBR-4032 -- COGSTONE POINT

One of the test excavations conducted during the project was designed to determine if two sites immediately outside of the project boundary extended into the project area (Map P1). It was discovered that they were loci of one contiguous site. This task was undertaken based on historical data which indicated that one site was once larger and more complex than previously thought and that some lithic scatter extended into the project area toward the second site. The area between the two sites was extensively modified by past and recent construction so that the separation between them, while probable, was not clearly established.

SBr-4032 is located on the top, and upper slopes of the ridge projection immediately south of SBr-5096 (Figure 7-25). The approximately 20 meters by 40 meters area is bounded by Highway 71 on the west and steep slopes on the remaining sides. The site has an elevation of 575 feet (175.26 meters) with a maximum relief of about 10 feet (3.048 meters). The site is presently covered with wild oats and mustard. The Southern California Edison Mira Loma-Serrano transmission line corridor passes through the site and includes the entire site area.

The site was discovered by Mike Macko in 1982 during a study of the archaeology of the transmission line corridor by Applied

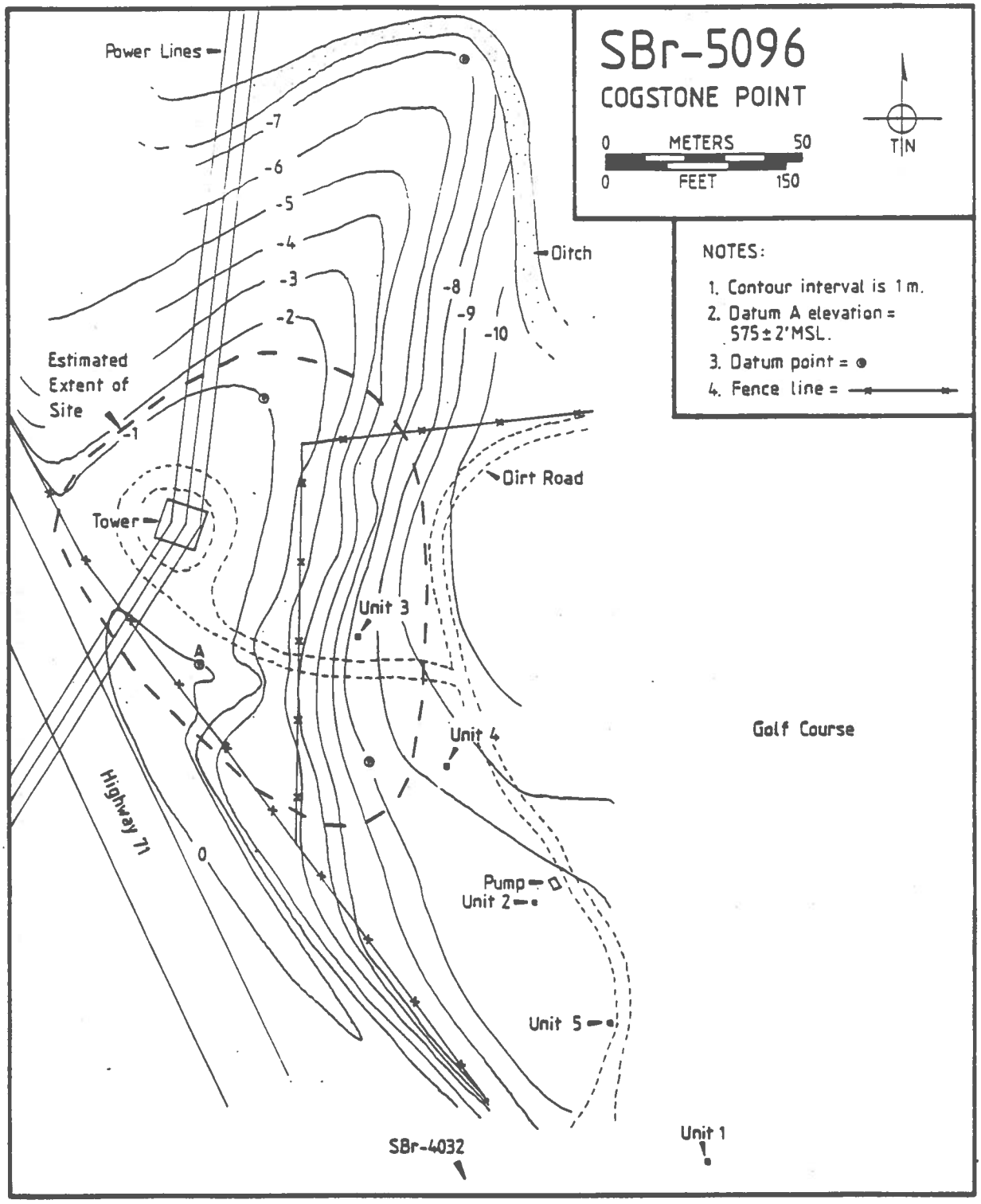


Figure 7-25. Site map of Cogstone Point (showing SBr-5096, SBr-4032 is to the south).

Conservation Technology, Inc.(Macko, et al. 1983). Initially it was confused with SBr-5096 which was originally assigned the trinomial (SBr-4032) and mapped at the present SBr-4032 location. Macko recognized the error and the original SBr-4032 site description was reassigned to SBr-5096 and plotted in the correct location. SBr-4032 was tested in 1982 by Applied Conservation Technology (Macko, et al. 1983:88-96). That excavation yielded what was described as an extremely "...low density and small areal distribution of artifacts...". The assemblage contained primarily chipped stone (mostly tertiary flakes), manos, hammerstone, bone, hematite, limonite, ocher, charcoal and miscellaneous recent historic items. Obsidian from the site was found to have come from the Coso region. Hydration rim measurements of some specimens suggested assignment to the "Encinitas Tradition, spanning a period from approximately 1500 to 4000 years ago with one aberrant date of approximately 5000 years ago" (Macko, et al. 1983:90). The site is postulated to have been a forager procurement/processing site (Macko, et al. 1983:96).

SBr-4032 was previously known to the local farming community. Bert Newman collected at the site as he did on the adjacent "Cogstone Point" (SBr-5096). It is not known what he found at SBr-4032. His daughter, Genevieve Karlson, reports that the area was farmed and that plowing in the 1930s produced a human burial at the site. The location of the specimen is unknown. During a visit to the site as part of the present study, ground stone, several scrapers, and numerous flakes were observed in recently scraped access road cuts.

The site was extensively damaged in the past. The western edge was destroyed by the construction of Highway 71 and several transmission line towers have been built into the site. Access road maintenance continues to expose artifacts. The impact of discovery and collection of the site by amateurs during the earlier part of the century cannot be established.

SBr-4032 lies several meters above the maximum taking line for the proposed expansion of the flood control basin and will not be impacted by the project. Archaeological test units were placed between the ridges where SBr-4032 and SBr-5096 are located. The decision to do this was based on the discovery of lithics indicating that SBr-5096 extended down onto the alluvial plain and the oral historical data which suggested that the sites had more complex functions than previously believed. Taken together the data suggested that the two sites were contemporary and were perhaps loci of the same site. The test excavation was conducted to determine if the sites were physically connected.

SBr-5096 is located on the lower portion of an east-trending ridge projecting from the Chino Hills which extends into the alluvial plain of the "Chino Valley" (Figure 7-25). As defined here, the site consists of a locus located on the slope east of Highway 71 and a locus on an adjacent knoll located a short

distance to the northeast. The first locus extends from the highway east to the base of the slope along the axis of the ridge. The site extends down the northerly and southerly slopes of this ridge onto the adjacent flat areas. The second locus, now destroyed, was known as Cogstone Knoll. It could not be determined if the two loci were once connected. Both loci are bounded by the Pomona Rincon road on the east and Highway 71 on the west.

The western boundary of the site was destroyed by Highway 71. An examination of the ridge on the west side of the highway proved negative. The ridge has considerable vertical elevation extending from approximately 540 feet (164 meters) to 575 feet (175 meters). The knoll locus had an elevation of perhaps 545 feet (166 meters). Extensive land alterations at the foot of the ridge precluded precise definitions of the eastern and southern boundaries of the site. The boundaries are considered minimal (Figure 7-25). (It is probable that the site extended into the area of the Prado Golf Course and is now covered by the green.) The ridge is presently covered with wild oat while the lower elevations are covered by wild oat or under alfalfa cultivation.

The site was initially discovered by Bert Newman in the 1930s. He gave the ridge locus the name Cogstone Point after finding numerous cogged stones at the site. Notes entered on calendars from 1937 to 1947 indicate that he found discoidals and a stone ball on the ridge. The same records indicate that he found a cogged stone, discoidal, stone ball and a "plumb" type charmstone at the Cogstone (Standpipe) Knoll locus. During an interview, Alex Bordisso states that Newman took five cogged stones from the knoll locus the day it was flattened. Thereafter, no further artifacts could be located at that locus. Also, Newman removed one valve from a Giant Pacific Cockle (Trachycardium quadragenarium) from Cogstone Point which was located in an exhibit at the Old School House Museum in Chino. Figure 7-26 is a photograph by S.C. Evans of one of the cogged stones removed from Cogstone Point by Newman.

SBr-5096 was first recorded as SBr-4029 by R. Douglas (Mabry and Douglas 1980) during a study of the cultural resources in the Chino Hills. The site was recorded as a light density ground stone tool scatter. At the time he noted that Alex Bordisso had mentioned that "Indian stones" had been found at the site. Due to an error in plotting, the site was renumbered SBr-5096 by Mike Macko in 1982 (Macko, et al. 1983). The trinomial SBr-4032 was reserved for a site on the ridge immediately south of SBr-5096. The Douglas site record states the elevation of the site at 575 feet (175 meters) while the Macko record shows it at 565 feet (172 meters). During the present study lithic scatter was found extending well into the project area to elevations as low as 540 feet (164 meters).

The site has been substantially altered. As mentioned, the western edge of the ridge locus was apparently destroyed by

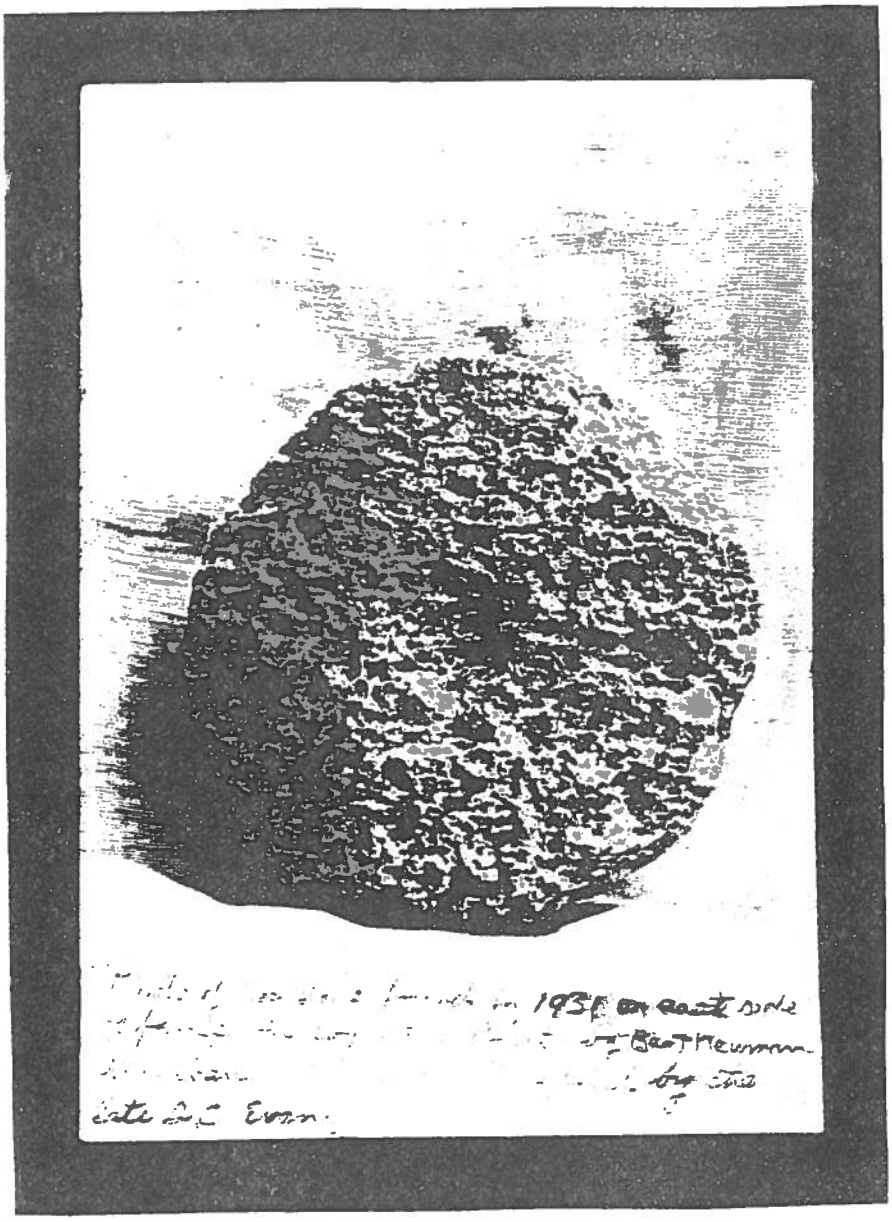


Figure 7-26. Photo of cogged stone found by Bert Newman at Cogstone Point in 1931. This photo was taken by the late S.C. Evans.

construction of Highway 71. The knoll locus and probably the lower part of the ridge locus have been destroyed by grading associated with farming on the property. A drainage ditch at the foot of the ridge truncates that locus while fill and some land alteration have obscured the southern edge of the ridge locus. It is probable that golf course construction has destroyed or obscured the southeastern edge of the site. A Southern California Edison transmission line tower is situated on the site at the top of the ridge. The tower construction pad and the access road to it have damaged the surface of the site. Recent maintenance grading of the road have resulted in considerable damage to the pad area.

Sampling Strategy

In order to assess the relationship between SBr-4032 and SBr-5096, a systematic linear series of five 1 x 1 meter units was excavated in the low elevation area between the two sites (and within the study area). The units were spaced at 40 meter intervals and were on an axis of 327 degrees from True North.

Observations

The test units confirmed that the area between these sites and within the proposed new maximum taking line was disturbed by ranching activities, utility line placement, and the construction of the adjacent golf course. As a consequence, the artifact assemblage recovered is small and no prehistoric features were encountered. The soil is a consistent dark brown humic loam which is very moist in the lower levels.

Artifact Descriptions

Chipped Stone

The chipped stone sample from SBr-5096 includes one projectile point, a scraper and seven pieces of debitage (Table 7-1).

Projectile Point

The specimen (Cat. No. 29) is the base of a Pinto point made from basalt porphyry (Figure 7-11d). The stem is wide and the base is concave. Koerper and Drover (1983:14) categorize Pinto style points as Type D, which they ascribe to Milling Stone Horizon contexts with the suggestion that they may persist into the Milling Stone-Intermediate Horizon interface.

Scraper

The scraper (Cat. No. 28) is a metashale cortex flake with a steep retouched convex distal edge which has been utilized.

Debitage

The debitage sample consists of seven specimens. These include specimens of metashale (71.4 percent), chert (4.2 percent), and quartzite (14.2 percent).

Ground Stone

One mano fragment (Cat. No. 24) was collected. It is made of granite and is a Type 5A or 5B. A second mano fragment observed during the survey could not be relocated.

Shell

One specimen, the valve of a Giant Pacific Cockle (Trachycardium quadragenarium) from SBr-5096, was found in the Newman Collection. The specimen was labeled "Cogstone Point" in Newman's handwriting, but lacks other provenience.

Faunal

A total of 40 vertebrate specimens were collected. Thirty-four of these are the remains of a ground squirrel (Citellus beecheyi) which died in a burrow. The remainder include a fragmentary rabbit dentary (Leporidae) and four unidentifiable Vertebrata specimens. All are noncultural.

Historic Artifacts

The specimens included in this section were recovered from the vicinity of SBr-5096 and SBr-4032. Considerable recent cultural debris was recovered from 10 to 60 cm in depth. This debris probably occurs on the site as a result of dumping and recent construction. The residium includes small pieces of building materials such as tar, asphalt, concrete, tar paper, linoleum, wire, nine wire nails, a red marble tile fragment and two pieces of slag. In the past, the site was used for recreational shooting, as demonstrated by three .22 caliber shell cases, eight plastic shotgun shell wads, and clay pigeon fragments. One complete smoothshod horseshoe was found. Other modern debris includes 48 pieces of bottle glass, several plastic fragments and paper trash.

Discussion

The test excavation between SBr-5096 and SBr-4032 shows that SBr-5096 extends down slope well into the project area despite the damage which has been done to the eastern edge. SBr-4032 was found not to join SBr-5096 or to extend into the project area. The principle concentration of the lithic scatter is located on top of the hill above the maximum taking line for the project. The material recovered indicates that there is an area of lighter

occupation on the lower slopes of the ridge east of the golf course. Also, slope wash has caused the movement of artifacts down the steeper slopes.

The cultural context of SBr-5096 is clear from the composition of the assemblage. The pinto type point, cogged stones, discoidal, stone ball and charmstone all indicate a Milling Stone Horizon assemblage. The assemblage suggests use of the site as a central village.

A radiocarbon assay of a Giant Pacific Cockle (Trachycardium quadragenarium) valve produced a date of 890 +/- 60 B.P. (BA 9239), uncorrected using the Libby half-life. This date is several thousand years too young to match the expected temporal assignments of Milling Stone Horizon assemblages as they have been defined on the coast. A possible explanation, is thatthe Milling Stone Horizon adaptation persisted much later in the inland areas. Kowta (1969) argues for the persistence of the Milling Stone Horizon to 950 B.P. at the entrance to the northeastern edge of the Santa Ana River catchment area. The evidence is supportive of Kowta's hypothesis. However, it would be much easier to dismiss the date by rationalizing that somehow the shell sample was inappropriate or that there was a later occupation of the site. While there is no evidence of a later occupation, the specimen did come from the Newman Collection and was not observed in situ. Conceivably the specimen could have become contaminated or may have come from another site (see shell above).

The assemblage attributed to SBr-5096 indicates a number of activities at the site. There is some evidence of hard seed processing. The only evidence of hunting at the site is the projectile point, but this is probably the result of sample size and the availability of only that portion of the site inside of the project area for sampling. The cockle shell may or may not indicate the consumption of shell fish at the site. The location of SBr-5096 is such that hunting and gathering could have been done in any of the local habitats without moving further than a kilometer or so.

The debitage collected and observed on other portions of the site indicate the manufacture or maintenance of chipped stone tools at the site.

The principle significance of the site is associated with the cogged stones, discoidals, stone ball and charmstone which were found at the site by Bert Newman. If these belong to what is believed to be a cult tradition which focused around the Santa Ana River drainage in the later Milling Stone Horizon, then the site is one of three larger sites (including Riv-653 and SBr-1543) which could be interpreted to be ceremonial centers within the Prado Basin region. Even if this interpretation of the cogged stones and discoidals is not acceptable, they still

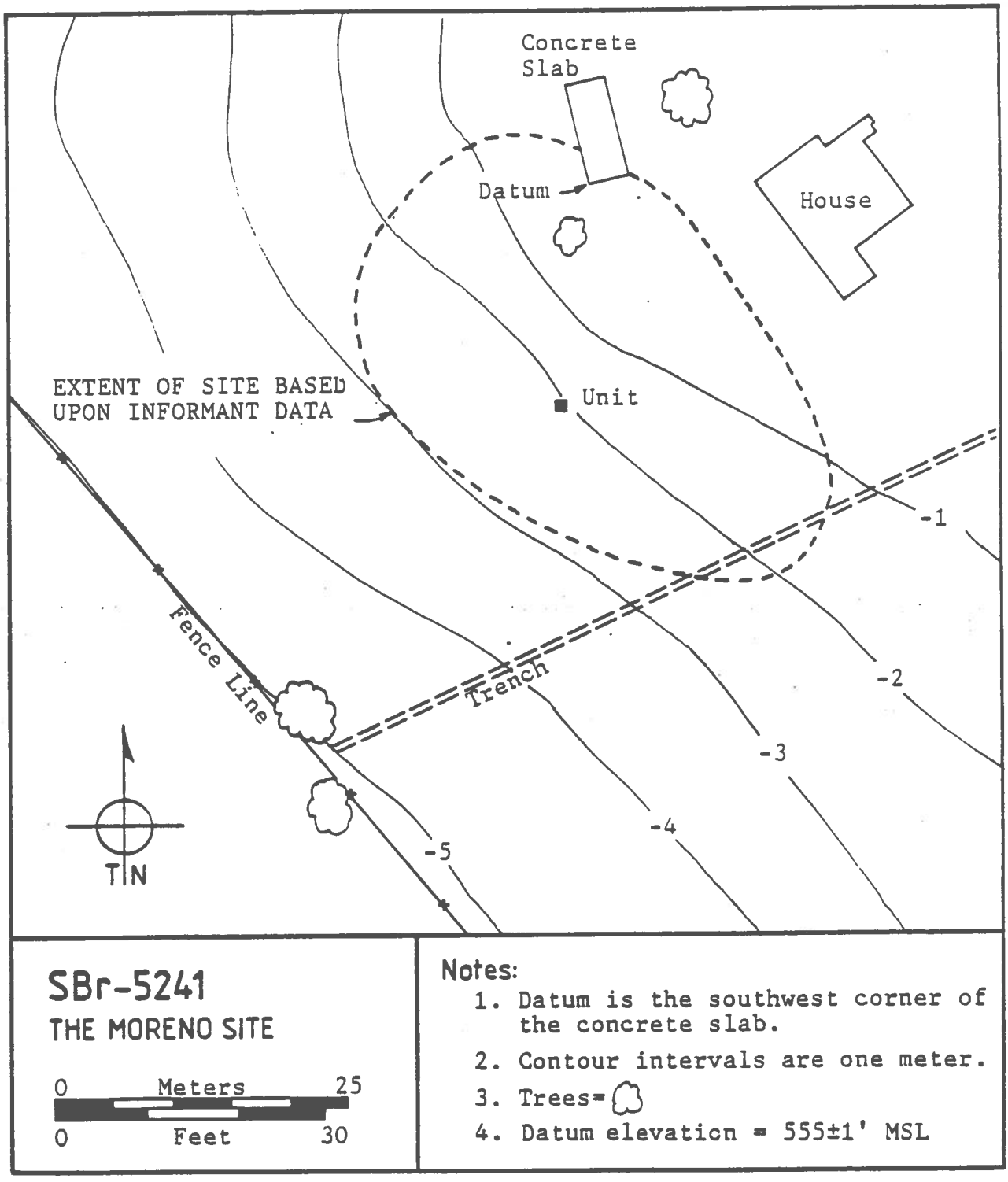


Figure 7-27. Site map of SBr-5241.

serve as indicators of some type of group activity which was carried on at central sites.

SBR-5241 -- THE MORENO SITE

SBr-5241 is, or was, located on a small bluff approximately 250 meters east of the intersection of Pine Avenue and Euclid Avenue within the Rancho Moreno (Map P1; Figure 7-27). The elevation of the locality is 545 to 555 above MSL. Information pertaining to the site was provided by a long-time resident of the area, Manuel Moreno. He stated to us that he collected projectile points as a child in the presumed location of the site. He does not know where the collected artifacts are at present. In order to assess the possibility of a prehistoric site being present at this locality, one 1 x 1 meter unit was excavated. Also, at the time of testing a deep pipeline trench had just been excavated across the base of the presumed site. This trench was carefully examined for prehistoric materials. None were observed.

The test unit also had negative results; no prehistoric materials were recovered. The unit was placed in an area that was used for trash dumping in the recent past. As none of these artifacts can be placed at more than 50 years of age, they are not discussed in detail. Examples of materials recovered include a plastic screw-top, an aluminum and plastic "Super Stainless Steel/Schick/Krona" razor blade dispenser, machine made bottle glass and modern sewer pipe.

It would appear that the prehistoric deposit described by Mr. Moreno has either been totally destroyed or removed, or buried under a hard-packed driveway area at the top of the small bluff. We believe the former interpretation to be correct.

SBR-5242 -- THE STAHL SITE

SBr-5242 is, or was, located on a knoll north of Pine Avenue and west of Euclid Avenue (Map P1). The elevation is approximately 560 feet above MSL. Information about the site was obtained from Chris Pederson (son of previous owner) during an interview. Based on his information, two large metates were found on the top and east side of the knoll during the 1940s when he was subsoiling the property for agricultural purposes. Several manos have apparently been found at the site also. At that time the knoll was adjacent to a small creek on the east which had a permanent water flow. Mr. Pederson gave the metates to Bert Newman for his collection. The present owner of the property denied knowledge of the site and declined permission to conduct a survey of those portions of the property within the project area.

SBR-5243 -- THE CORRAL SITE

SBr-5243 is located at the edge of the Pleistocene nonmarine terrace bounding the eastern edge of Chino Creek (Map P2; Figure 7-28). The portion of the terrace where the site is located consists of several slight southward projections of a large area isolated by tributary washes of Chino Creek. The site is located at the edge of the terrace and extends down the southern slope toward the creek. The northwestern edge of the site extends from the top of one projection across a southwesterly trending wash and onto the second projection. It then extends across this projection and partly down the eastern slope into another larger wash. The entire site covers an area of approximately 7000 square meters. The elevation of the site ranges from 525 to 535 feet above MSL. The site is covered by wild oat and mustard growing in pasture used to graze horses.

SBr-5243 was located during the present study. Initially the site was described as one of several isolates located in the vicinity. Since the ground cover in the survey area was exceptionally dense, these isolates were tested with a 1 meter square excavation unit. The test at this site and concurrent intensive survey established the existence of the site.

The only visible modification of the site is a dirt road which follows the perimeter of the terrace within the pasture, and probable plowing. Flood debris extends onto the lower portions of the site. Otherwise, there is no indication of any past impacts to the site.

Sampling Strategy

This site was originally tested in September, 1983, as an isolate location with one 1 x 1 meter unit which yielded positive results. During February, 1984 a surface collection was made, a posthole series was dug, three new 1 x 2 meter units were excavated, and the initial test unit (N0/E0) was expanded into a 1 x 2 meter unit.

Twenty-three postholes placed at 20-meter intervals were dug in the site for the purpose of obtaining soil samples for chemical evaluation. This series was dug in a loose grid with two north-south lines and two east-west lines. Samples were taken at 25 and 50 cm in depth. Relative phosphate readings were fairly consistent over the site, averaging 2.0. The highest readings were near N60/W60. This corresponds with the greatest surface artifact concentration. The pH factors across the site were distinctly neutral. The most acidic reading was 6.6 at E40/N0 and the most basic (alkaline) reading was 7.5 at N60/W60 and N0/E20. The most alkaline reading corresponds with the highest phosphate reading, as is the case at SBr-1543. Munsell colors ranged from 10yr 2/1 (black) to 10YR 5/3 (brown).

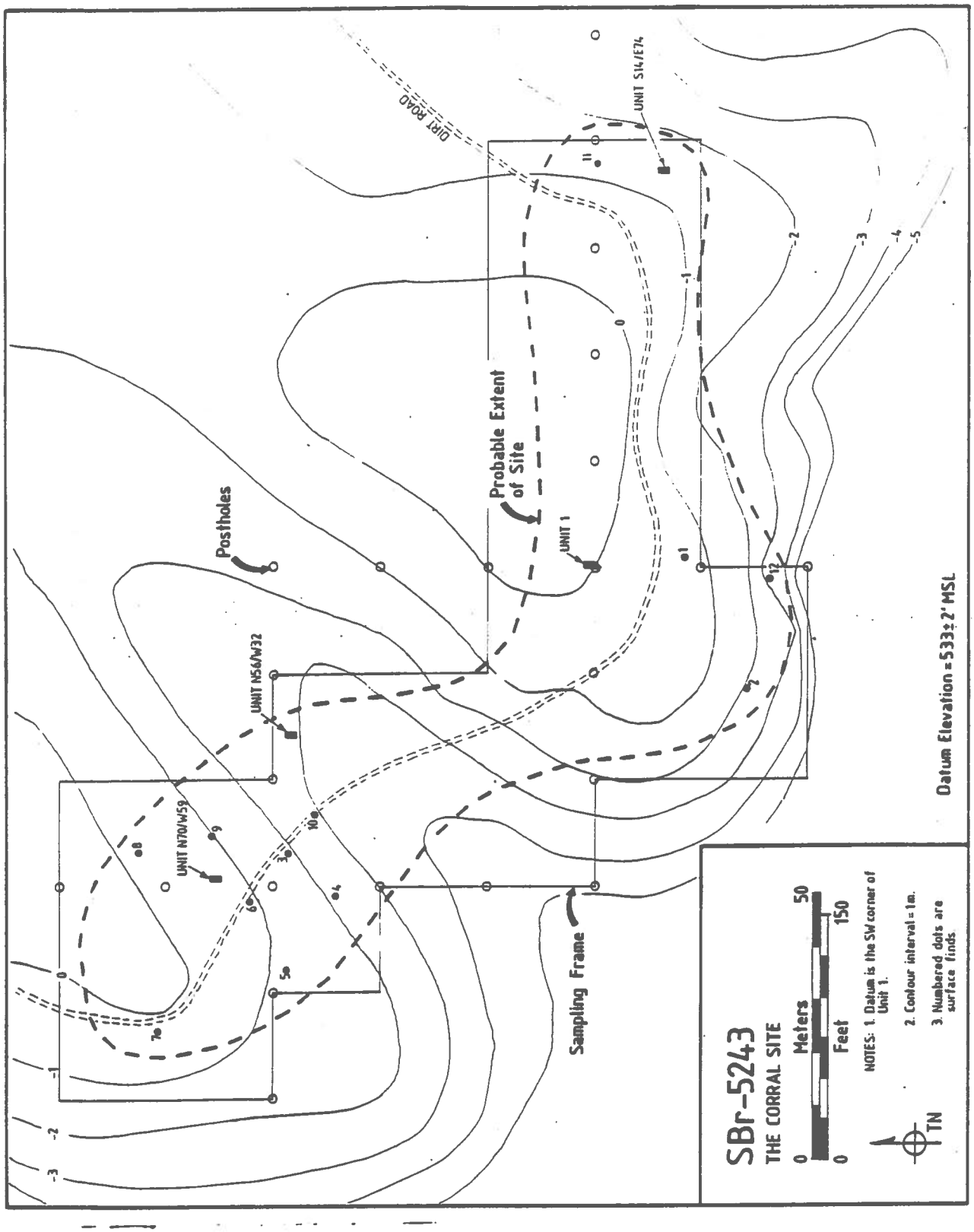


Figure 7-28. Site map of SBr-5243.

As with most of the other Prado Basin sites, the sampling frame for SBr-5243 was based primarily on the extent of the surface scatter. The chemical tests were only slightly useful. The sampling frame consisted of twenty-six 20 x 20 meter stratification quadrants which were in turn subdivided into 200 potential test unit locations. This gives a target population of 5200 1 x 2 meter units. Four 1 x 2 meter units were dug, giving a sample of 0.08 percent of the surface target population.

Observations

The average depth of the site was 67 cm, giving 4725 cubic meters as the volume of the site. The 5.1 cubic meters excavated comprises a 0.11 percent sample of the actual site volume. The stratigraphy consists of a hard-packed medium grey-brown clayey loam extending from the surface to approximately 30 cm in depth. This overlies a looser grey-brown silty loam. The cultural deposit generally terminates in the top layer, although one unit (N70/W59) went well into the lower layer, terminating at 130 cm in depth.

Disturbances to the site are both natural and cultural. A good deal of rodent disturbance is present. This probably accounts for the depth of Unit N70/W59. Other disturbances include a small road cut through the site, horses compacting the soil on the site, and the deposition of flood water debris on the site. It is probable that the surface of the site has been disced in the past.

Artifact Descriptions

Chipped Stone

The chipped stone sample from SBr-5243 is small (Table 7-11). It includes only three recognizable tools, a projectile point and two scrapers, and 12 pieces of debitage.

Projectile Point

The tip of one chert projectile point (Cat. No. 45) was recovered. The specimen comes from a lanceolate point which is pressure flaked (Figure 7-11q). It has even, well-made edges. The thickness - length ratio of the specimen is high. One edge bears some wear crushing. The specimen is not identifiable to type. It may belong to any of several types of large points.

Scrapers

Both scrapers recovered from the site are ovate side scrapers with convex working edges. One specimen (Cat. No. 29) is a metashale cortex flake. The second specimen (Cat. No. 64) is a chert tertiary flake. These specimens are plano-convex in cross-

section. The cortex flake bears crushing and micro flaking on one elongate side only, while the chert specimen is worn on both sides.

Debitage

This category contains unmodified and non-utilized flakes. The total sample is 12 specimens.

The sample is composed of metashale (50.0 percent), dacite (33.3 percent), chalcedony (8.3 percent) and other rock types (8.3 percent). The types of flakes represented in the sample are cortical, tertiary, and flake fragments. Three of the cortical flakes are larger than 3 cm, suggesting that initial raw material reduction occurred at the site. The remainder of the sample is too small to provide reliable information.

Ground Stone

The ground stone assemblage from SBr-5243 is comprised of manos and mano fragments, metate fragments, a pestle fragment, and unidentifiable ground stone fragments (Table 7-24). Sixteen ground stone specimens were recovered. Two manos comprise the only complete specimens. Three-quarters of the ground stone specimens show indications of thermal alteration. The following table gives a breakdown of the ground stone from the site:

Table 7-24
GROUND STONE FROM SBR-5243

Item	Quant.	Weight grams	% of Ground Stone Assemblage by Quant.	% of Ground Stone Assemblage by Weight	% Complete	% Therm. Affected
Manos	11	3929.0	68.7	71.8	18.2	72.7
Metate Fragment	1	1326.0	6.3	24.2	0.0	100.0
Pestle Fragment	1	145.0	6.3	2.6	0.0	0.0
Ground Stone Fragments	3	75.4	18.7	1.4	0.0	100.0
Totals	16	5475.4	100.0	100.0	12.5	75.0

Manos

Only three of the 11 mano specimens from SBr-5243 were sufficiently complete to allow for typing (Table 7-25; Figure 7-29). Two examples (Cat. Nos. 2 and 6) are shaped bifacial specimens with flat grinding surfaces (Type 5B). The other identifiable mano is a shaped uniface with a hand groove on its dorsal side and a flat grinding surface (Cat. No. 12; Type 6B). This mano assemblage is fairly typical of the late Milling Stone mano collections from the Prado Basin.

Figure 7-29. Selected manos and one metate fragment from SBr-5243. Clockwise from top right: Cat. Nos. 12, 8, 2, 6.

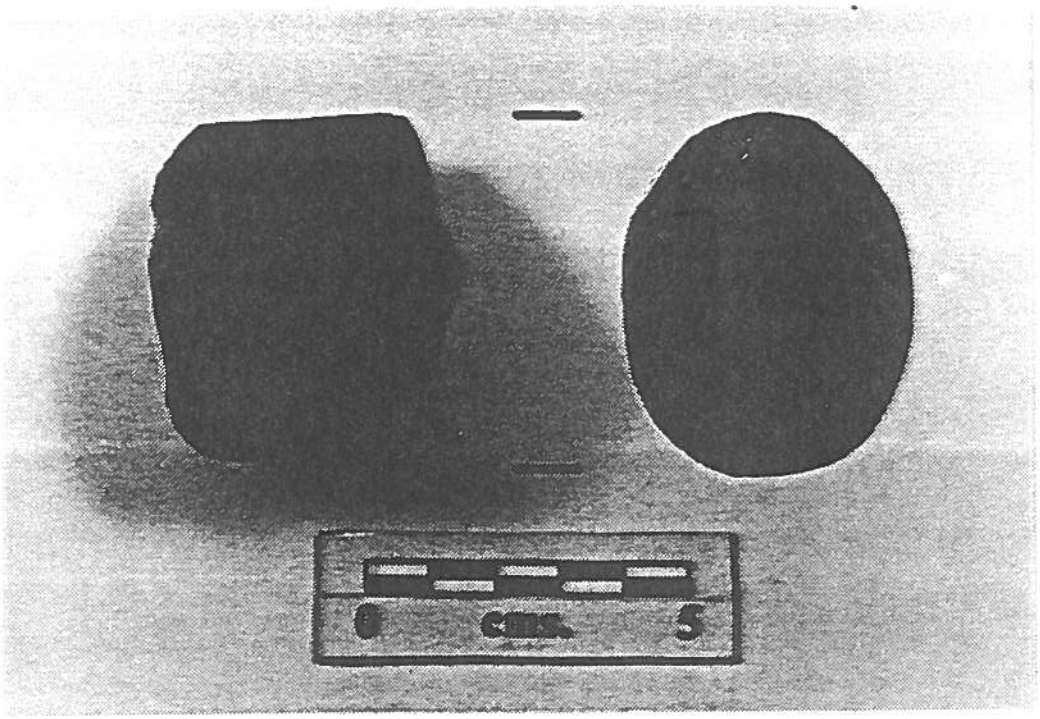


Figure 7-30. Pestle fragment from SBr-5243 (Cat. No. 1).

Metate Fragment

The one metate specimen (Cat. No. 8) recovered from the site is incomplete but appears to be a deep basin specimen. It is made of granite and weighs 1326.0 grams.

Pestle Fragment

The single pestle fragment (Cat. No. 1) is made of metavolcanic rock and weighs 145.0 grams (Figure 7-30). This was found on the surface of the site and probably represents a limited Intermediate or Late Horizon use of the site.

Table 7-25

MANOS FROM SBR-5243

No.	Unit	Level	Material	Dimensions cm	Weight grams	Type	Modification*
002	Surface		Granitic	Incomplete	521.0	5B	TA, PK
003	Surface		Granitic	Incomplete	57.7		TA
006	Surface		Granitic	14.3x9.2x4.8	1075.0	5B	PK
011	Surface		Sandstone	Incomplete	296.3		TA
012	Surface		Granitic	11.0x10.1x5.5	969.1	6B	PK
016	N0/E0	30	Granitic	Incomplete	155.6		PK
017	N0/E0	30	Granitic	Incomplete	159.8		TA
057	N70/W59	90-100	Granitic	Incomplete	187.3		TA
063	S14/E74	0-10	Sandstone	2 Incomp. pcs	42.7		TA
067	N56/W32	0-10	Metavolcan.	Incomplete	464.5		TA

* Abbreviations: TA (thermally affected); PK (pecking)

Shell

Three pieces of shell were collected at SBr-5243. One is a fragment of abalone shell (Haliotis sp.) and the other is a pelecypod shell fragment. Both specimens are small and do not appear to be modified. The third specimen was an unmodified larger fragment of Nuttall's Cockle (Clinocesdium nuttallii) which was submitted for a radiocarbon date.

Bone

A total of 165 vertebrate specimens were recovered from the site (Table 7-26). At least 60.6 percent of the sample, including snake, ground squirrel, gopher, and carnivore remains, are of noncultural origin. The remains of at least one of the snakes, which accounts for nearly all of the vertebrae in the sample, is an animal that died in a burrow. The only specimens which are attributable to human activity at the site are the rabbit,

artiodactyl and large mammal specimens. Some of the unidentifiable mammal and several of the unidentifiable vertebrate specimens are considered to be associated also. Two vertebrate specimens are burned and one rabbit rib is calcified. Fourteen of the large mammal and unidentifiable mammal specimens have been chemically altered. This is evidenced by erosion on the exposed surfaces of the specimens. On one specimen the cause appears to be the result of contact with the rootlets of some plant. This is the only site sampled in the project area where chemical alteration was found. One specimen was weathered prior to interment.

The sample suggests that there was minimal animal use at the site which included rabbit and a large mammal (presumably deer). The burning of some specimens indicates the use of fire at the site and possibly cooking.

Table 7-26

VERTEBRATE REMAINS FROM SBR-5243, GIVEN BY TOTAL SPECIMENS AND MINIMUM NUMBER OF INDIVIDUALS (MNI) PER TAXON

Common Name	Scientific Name	Total Specimens	MNI
Snake	Colubridae	43	2
Snake	Serpentes	3	
Rabbit	Leporidae	2	1
Ground Squirrel	Citellus beechevi	4	1
Gopher	Thomomys bottae	37	6
Small Carnivore	Carnivora	1	1
Unidentif. Rodent	Rodentia	20	
Artiodactyl	Artiodactyla	1	1
Large Mammal	Mammalia	4	
Unidentifiable	Mammalia	13	
Unidentifiable	Vertebrata	37	

Historic Artifacts

Although no historic structures or features are known to have been located in the vicinity of the site, some older historic artifacts occurred on site. Some recent historic specimens are present on lower portions of the site as the result of flooding and some result from recent use as a horse pasture. Older artifacts include a square iron nail and 11 amber glass bottle fragments. Artifacts of more recent deposition include several iron fragments (a can?), a horseshoe, and green and clear bottle glass fragments. A walnut shell was recovered also. Most of the specimens were recovered from levels above 30 cm in depth, but one small amber glass fragment penetrated to 100 to 110 cm in depth.

Discussion

SBr-5243 appears to be a large light artifact scatter with few other constituents. Two loci separated by a small wash comprise the site. Only the presence of mortar and pestle along with mano and metate suggest an Intermediate Horizon occupation of the site. The workmanship and size of the projectile point is congruent with this temporal assignment. However, a radiocarbon assay of a shell fragment (BA 9238), which yielded a date of 5230 +/- 110 B.P. (uncorrected Libby half-life), indicates a Milling Stone horizon occupation.

The cultural debris from the site indicates hard and soft seed processing in addition to some other types of plant processing. There was minimal use of small and large vertebrates presumably for food at the site. The shell specimens are too fragmentary to determine what they were used for. Given the array of artifacts, both loci appear to have been small camps or processing stations of the site.

SBR-5244 -- THE VANDER LAAN SITE

SBr-5244 was located on a knoll adjacent to the east side of Mill Creek south of the Chino-Corona Road and west of Hellman Avenue (Map P2). The elevation of the site was at approximately 550 to 560 feet above MSL. The site was destroyed by grading during the construction of the Vander Laan Dairy. Margo (McCarty) Payne (Appendix B) provided information about the site during an interview. Her father had owned the land and found the site. Three deep basin metates and several manos which came from SBr-5244, among others from other sites, are presently in her possession. The site comprises about 1500 square meters (0.37 acre).

SBR-5245 -- THE LUSK or "TELL" SITE

SBr-5245 is located on a low ovate knoll on the Chino Creek flood plain (Map P1; Figure 7-31). It lies between Chino Creek, on the east, and the Pomona-Rincon Road. The knoll is composed of Pleistocene nonmarine sediments protruding through more recent alluvium. SBr-5245 covers the top and eastern side of the knoll. The knoll has an elevation of 560 feet (169 meters). The entire site is farmed and has been most recently covered with grain or beans. When fallow, it is covered by wild oat. The site comprises about 1500 square meters (0.37 acre).

According to the Dotta brothers who presently farm the site, Bert Newman visited it in the late 1940s or early 1950s. The Dottas' brother-in-law, who once owned the property, removed metates and other items from the site, as did others. The site was initially recorded as part of the present study. Reference to the probable existence of it was made by Chris Pederson, a long time local resident, during an interview. He and others in the area

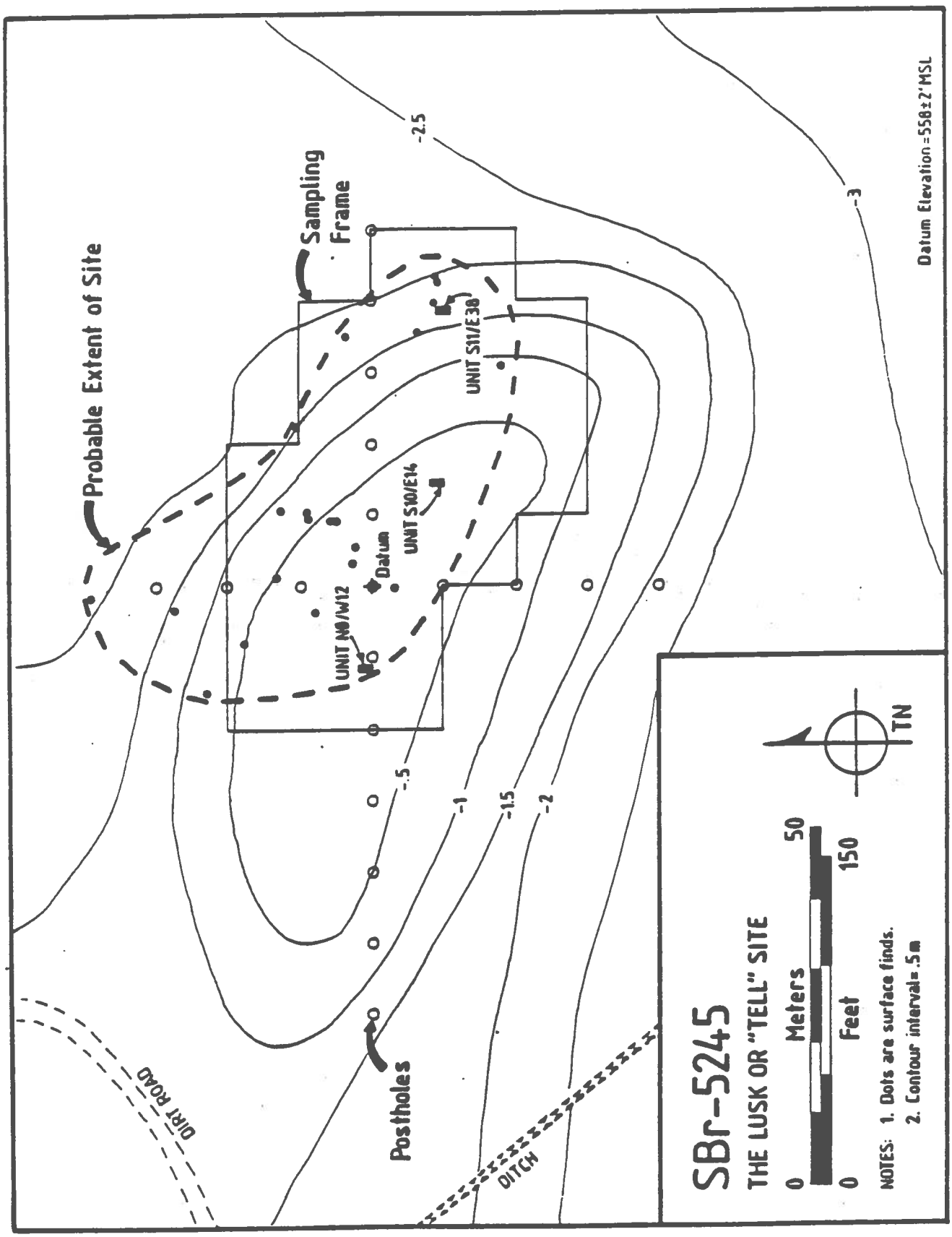


Figure 7-31. Site map of SBr-5245.

considered the knoll an artificial feature and suggested that we look at it for evidence of Indian occupation. Several days later the site was located during survey of the western side of Chino Creek.

SBr-5245 has received a number of adverse impacts in the past. It has been surface collected by an undetermined number of amateurs. The surface has been plowed to depths of 30 to 40 cm. Pieces of metal and other farm related debris were found to depths of 50 cm in the down slope portion of the site. The field was repeatedly cleared of rocks by previous owners who stacked them at the edge of the field. Visitors culled the pile, removing an unknown number of ground stone artifacts. Since the aboriginal assemblage is not much deeper than the plow zone over most of the site area, the composition of the assemblage has been significantly altered.

Sampling Strategy

The initial testing of the Lusk site was by posthole series. This consisted of two lines of postholes aligned on the cardinal axes with the center point at datum (Figure 7-31). The datum was placed at the approximate center of the site, as indicated by the surface scatter. The posthole lines were run past the presumed extent of the site in attempt to delineate the site boundaries. Soil samples were taken at 20, 40, and 60 cm depths. It was believed that this would probably be unsuccessful due to the intense agricultural use of the site; it was. The pH factor readings were neutral with a low value of 6.6 at N20 and a high value of 7.8 at W60. Phosphate readings were similarly undiagnostic with values of 2 to 3 across the area. Munsell colors were dark, with typical readings in the 10YR 3/2 area.

The sampling frame devised for test excavation consisted of twenty-five 10 x 10 meter stratification quadrants which were further subdivided into fifty 1 x 2 meter potential unit locations. The stratification quadrants and the test unit locations were determined through computer generation of random numbers. A total of 1250 potential units were in the target population. Three units were excavated, giving a sample of 0.24 percent of the target population.

Observations

The site had an average depth of 0.40 meter, giving an estimated total volume of 600 cm. The 2.3 cubic meters excavated comprised an actual site sample of 0.38 percent. The stratigraphy of the site consists of a medium grey-brown sandy clay going to approximately 30 cm in depth. This layer is heavily impacted by agricultural activities. This level terminates onto a reddish-brown clay layer. The cultural deposit is restricted to the top layer.

Artifact Descriptions

Chipped Stone

The chipped stone sample consists of three flake tools, 16 pieces of debitage and a core.

Scrapers

Two low angle chert tertiary flakes were used as scrapers. A large broken flake (Cat. No. 20) bears wear crushing and micro flaking along one irregular edge. The second flake (Cat. No. 31) shows evidence of wear along a concave edge produced from the intersection of the dorsal surface and the plane of the striking platform.

Debitage

The debitage in this sample consists of 16 specimens comprised of unmodified and non-utilized flakes. The sample is composed of metashale (47.0 percent), chert (35.2 percent), dacite (5.8 percent), chalcedony (5.8 percent) and obsidian (5.8 percent). The types of flakes recovered represent secondary reduction of raw materials, and one chalcedony bifacial thinning flake suggests biface maintenance or manufacture.

Core

One core was recovered. This is a large metashale cobble with one naturally flat side which was used as the striking platform for the removal of several flakes from one side. It is possible that the specimen received some use as a scraper and as a hammerstone.

Ground Stone

Nineteen ground stone items were recovered from SBr-5245. The following table gives a basic summary of this assemblage:

Table 7-27

GROUND STONE FROM SBR-5245

Item	Quant.	Weight grams	% of Ground Stone Assemblage by Quant.	% of Ground Stone Assemblage by Weight	% Complete	% Thermally Affected
Mano Fragments	10	4723.0	52.6	55.7	40.0	60.0
Metate Fragments	7	3483.2	36.9	41.1	0.0	100.0
Ground Stone Fragments	2	270.0	10.5	3.2	0.0	100.0
Total	19	8476.2	100.0	100.0	21.1	79.0

Manos

Seven of the ten manos/mano fragments recovered from the Lusk site were identifiable as to type (Table 7-28). Figure 7-32 shows selected samples. Two examples are natural cobbles with bifacial grinding surfaces. One of these (Cat. No. 28) has domed grinding surfaces (Type 3A), while the other one (Cat. No. 4) has flat grinding surfaces (Type 3B). Two other bifacial manos were identified (Cat. No. 1 and 2). These are both shaped specimens with flat grinding surfaces (Type 5B).

The last three identifiable manos are shaped unifacial examples that have hand grooves on their dorsal sides to facilitate ease in grinding. Two of these specimens (Cat. Nos. 16 and 42) have domed grinding surfaces (Type 6A) and the final example (Cat. No. 8) has a flat grinding surface (Type 6B). These shaped unifacial manos are apparently rare in southern California but common in the Prado Basin. We believe they could be chronologically indicative of late Milling Stone or early Intermediate societies.

Metates

Of the seven metate fragments recovered from SBr-5245 none were adequately intact to allow for a determination of type (shallow versus deep basin). All of the specimens are thermally altered. Two of the fragments have red staining on their grinding surfaces (Cat. Nos. 17 and 40).

Table 7-28

MANOS FROM SBR-5245

No.	Unit	Level	Material	Dimensions cm	Weight grams	Type	Modification*
1	Surface		Granitic	10.2x8.6x5.1	657.7	5B	PK
2	Surface		Granitic	12.4x7.6x3.9	651.0	5B	PK, SB
3	Surface		Metamorphic	Incomplete	145.2		TA, PK
4	Surface		Granitic	8.86x7.6x5.7	555.0	3B	PK, PT
8	Surface		Granitic	Incomplete	455.2	6B	TA, RS
13	Surface		Quartzite	Incomplete	220.8	6B	TA
16	Surface		Granitic	Incomplete	521.4	6A	TA
18	Surface		Granitic	Incomplete	417.2	6A	TA
28	N0/W12	30-40	Granitic	Incomplete	207.0	3A	TA, PK
42	S11/E38	30-40	Granitic	8.9x8.9x7.72	892.5	6A	

* Abbreviations: TA (thermally affected); PK (pecked); PT (pitted); RS (round shaped); SB (soap bar shaped)

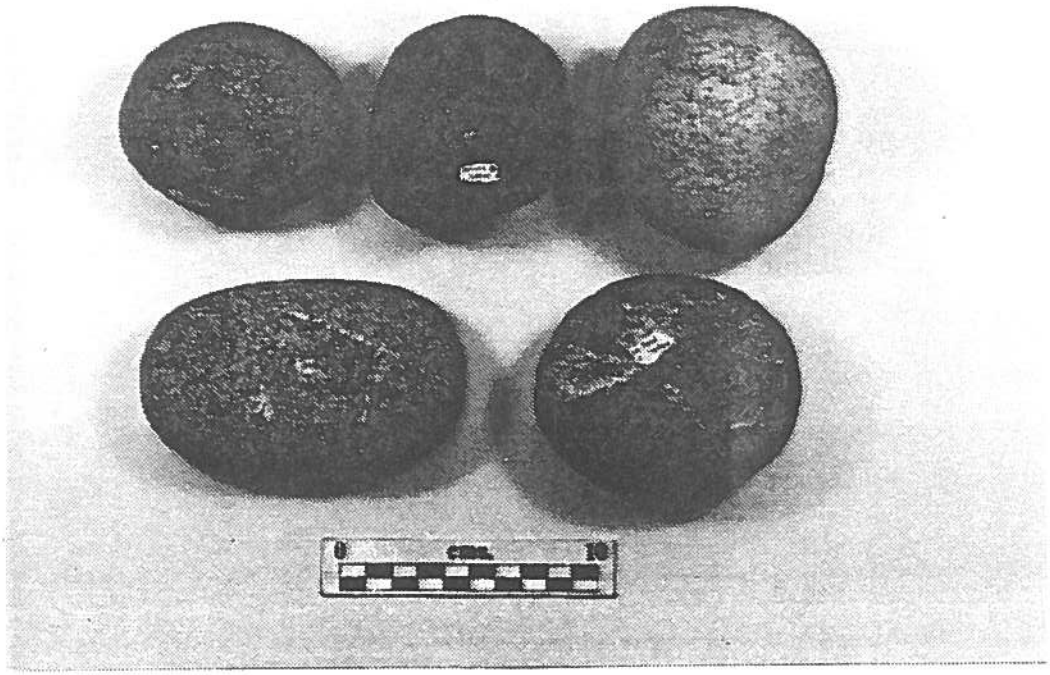


Figure 7-32. Selected manos from SBr-5245. Clockwise from top right: Cat. Nos. 42, 1, 2, 4, 16.

Bone

Seven pieces of bone were collected. These include one squirrel (Citellus beecheyi) incisor, two gopher (Thomomys bottae) molars, two fragments identifiable to Mammalia and two fragments identifiable to Vertebrata. The squirrel and gopher specimens are noncultural as is one of the Vertebrata specimens. It is possible that the remainder are not associated with the aboriginal occupation either.

Historic Artifacts

Two recent specimens were collected from one of the excavation units. One is a plastic cigar holder and the other is a metal bracket made of chrome steel of unknown function. Both came from 20 to 30 cm in depth of Unit S11/E38 which was located on the lower edge of the east side of the knoll. The area shows recent aggradation probably resulting from repeated plowing.

Discussion

The data from SBr-5245 is so limited and the evidence of past disruption so great that inferences about the site are uncertain. Most of the evidence suggests that hard seed processing and little else occurred at the site. The site appears to have been a small seasonal camp or a processing station. Some chipped stone tool manufacture or maintenance occurred on site and some animal use may have occurred. The occurrence of mano and metates only in the sample is taken to imply a Milling Stone Horizon occupation, although it could be a result of specialized site function. The single piece of obsidian debitage (Cat. No. 19) collected at this site yielded a rim measurement of 8.1 microns. If Ericson's (1978) standard of 344 years is applied to this, it yields a date of 2786 years B.P. This is suggestive of a possible approximate age for the site, but cannot be considered statistically accurate. This obsidian was obtained from Coso Hot Springs (Appendix D), as was most other obsidian known from the Chino-Corona area.

ORA-89

Ora-89 was originally recorded in 1963 by E. McKinney (D'Altroy and Stickel 1980). It was characterized by manos, "milling stones", and hammerstones that were discovered in the course of plowing.

The recorded location of the site is the south end of Mallard Street on the northwest bank of Santiago Creek (Map P7). The location falls within Township 4S, Range 9W of the USGS Orange topographic quadrangle. It is located within the northwest

quarter of the northwest quarter of Section 27 (note: the current quad sheet is unsectioned).

The site was originally recorded as covering approximately one acre. The construction of apartment buildings at the south end of Mallard in the early 1960s apparently severely impacted or totally destroyed the site. T. D'Altroy and E. G. Stickel field checked the site in 1980 and noted that while the site appeared to be severely disturbed, a subsurface component may still exist (D'altroy and Stickel 1980).

In the course of the present study, the site was once again subjected to a surface reconnaissance. It was concluded that a subsurface deposit might be present and consequently two 1 x 1 meter test excavation units were dug.

Sampling Strategy

The sampling strategy employed at Ora-89 was intuitive due to the disturbed nature of the site. The two 1 x 1 meter test units were placed in locations where the ground surface appeared to be natural and the units were capable of fitting (Figure 7-33).

Observations

The test unit excavation has demonstrated that Ora-89 has been totally impacted by recent historic activities. The soil is a disturbed brown loam. Large rocks are present in this matrix, making excavation difficult.

Materials Recovered

No prehistoric artifacts were recovered from the site. The only material recovered is modern refuse. Here is a brief summary of this material:

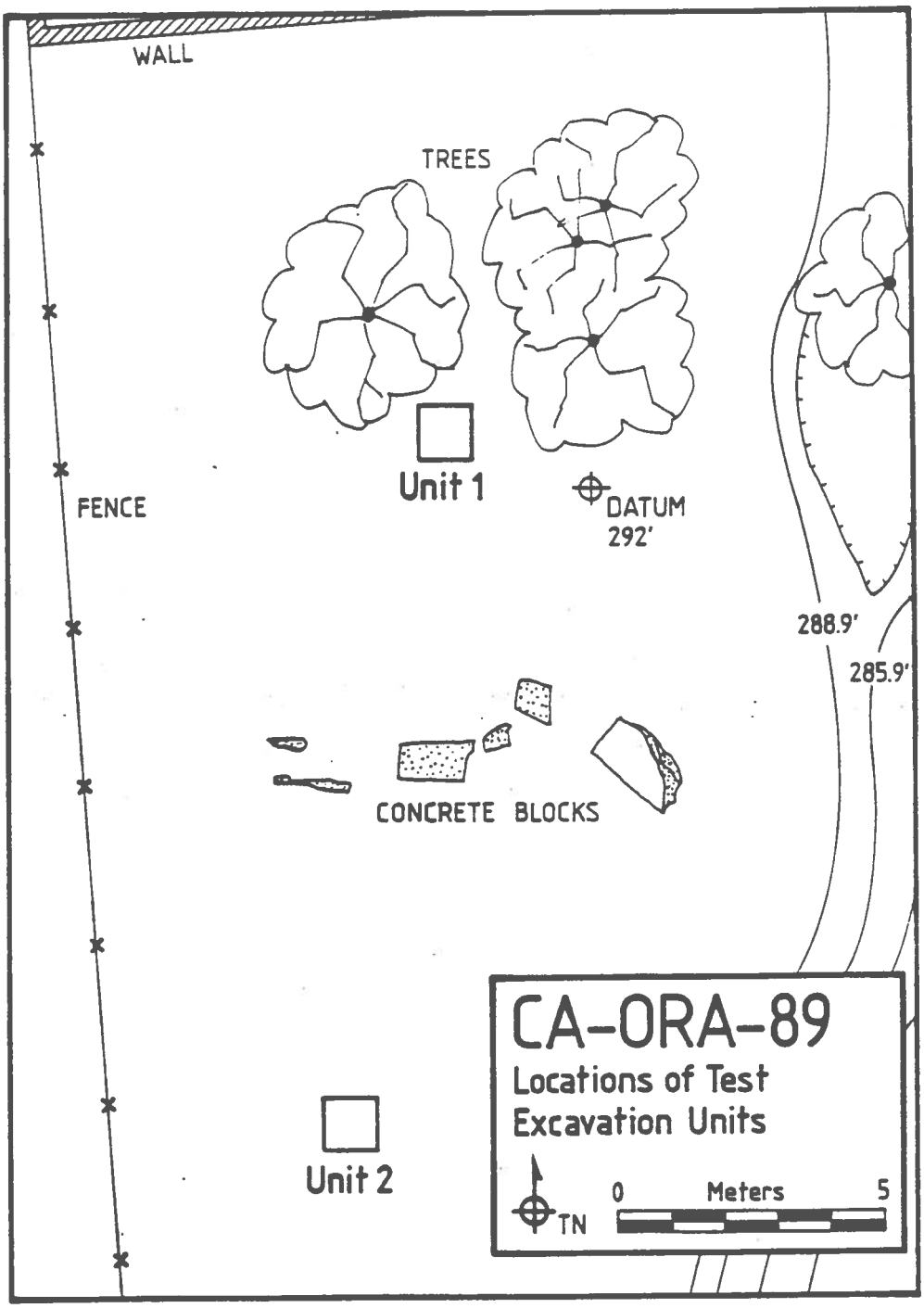


Figure 7-33. Plan showing the locations of the test units at Ora-89.

Table 7-29

HISTORIC DEBRIS FROM ORA-89

Unit	Level (cm)	Items
1	0-10	2 fresh water clams (Anodontia sp.), 2 pcs sheet plastic, 2 concrete frags, 1 glass shard (green), 1 wood frag (orange/beige paint).
1	0-20	4 concrete frags, 2 glass shards (green)
1	20-30	1 concrete frag, 1 wood frag
1	50-60	1 sm metal spike (square)
2	0-10	2 glass shards, 1 metal nail, 1 plastic frag, 1 concrete frag
2	10-20	8 metal (cans, pulley, rod...) 2 plastic frags, 1 brick frag, 1 rubber mat

Discussion

Ora-89 has probably been impacted by a number of different agents. Ned Tailor, the foreman of the Conrock operation on Santiago Creek, mentioned that a few years ago (?) the area of the site which is at a bend in the creek was radically affected by a major flooding (personal communication). He noted that a good deal of land was washed away. Also, apartment buildings were built on or immediately adjacent to the site in the late 1960s. Other recent earth moving activity on the site is certainly indicated by our findings, but the nature of this activity is unclear.

In any event, the site (if there was one at this location) has been totally destroyed and does not warrant any further investigation.

ORA-817

This is the only prehistoric site located down river from the Prado Dam that falls within the present study area (Map P6). This site is located in the Horseshoe Bend area of Santa Ana Canyon and it corresponds with the location of an historical site, the Feliz Adobe locality (PB-143). Archaeological Planning Collaborative originally recorded this site in 1979 and noted at

that time that such artifacts as manos, metates, mortars, pestles, two cogged stones, a discoidal, and chipped stone tools were present. It is suspected that these artifacts were actually in the Cecil Davenport collection and could not be verified as actually having come off of the site.

Scientific Resource Surveys did extensive backhoe testing (24 test trench units) of the site in 1980 (Scientific Resource Surveys 1980). They concluded that the site is a surface manifestation only and that it lacked the "exotic" artifacts described by Douglas and Nelson of APC. Furthermore, they noted that the site area has been highly disturbed by the installation of a citrus orchard with its attendant terrace grading and irrigation system (Scientific Resource Surveys 1980:13). SRS concluded that Ora-817 was a seasonal campsite associated with plant food processing and stone tool manufacturing. It is also noted that the site was not occupied for a very long period of time (Scientific Resource Surveys 1980:13).

On the basis of the SRS findings the authors felt it was unnecessary to conduct further fieldwork at Ora-817.

ISOLATES

A total of eight isolates were located during the course of the field work. In four instances, one meter square test units were excavated in the vicinity of the specimens to determine if there were subsurface deposits. One test unit confirmed the presence of a site (SBr-5243), and in three instances (SBCM-5477, SBCM-5479, and PB 1-1(1-2)), no subsurface deposit was found. Most of the isolates were ground stone, predominately manos (Table 7-30).

Table 7-30

SUMMARY OF ISOLATES FOUND IN THE PRADO BASIN

Isolates	Disposition	Specimen(s)
Riverside County		
PB 1-1	Tested	Metate Fragment
PB 1-2	Tested	Mano
San Bernardino County		
SBCM-5475	Left in situ	Mano
SBCM-5476	Left in situ	Mano
SBCM-5477	Tested	Flake Tool
SBCM-5478	Tested	Mano
SBCM-5479	Left in situ	Mano/Debitage
SBr-5243	Tested	Found to be a Site

NEW SITES OUTSIDE OF PROJECT AREA

Three prehistoric sites adjacent to, but outside the project area were located through interviews and archival research. The existence of these sites is relevant to future studies which deal with the archaeology of the region. Discovery and documentation of these comprise a minor benefit related to the study, and is in excess of requirements.

Alta Dena Dairy Site

The Alta Dena Dairy site is located south of Pine Avenue a short distance east of the project area. The site may have been located around a spring. It was found by employees of the Alta Dena Dairy during construction of a pumping station. Artifacts from the site are in possession of one of the owners of the dairy. A mortar and pestle are reported, implying that it is an Intermediate Horizon or later assemblage.

Mark Pine Ranch Site

Desborough (n.d.) reports that Mark Pine located two archaeological sites along Pine Avenue. One was located on his property north of Pine Avenue. The exact location of the site was not determined, but Macko, et al. (1983) reported an isolated mano on this property. Mr. Pine's wife indicates that the collection from this site was loaned and never returned. The content and location of the collection could not be determined.

Samuel Pine II Site

During excavation of a reservoir, Mark Pine located another archaeological site on his father's property.

The site is apparently located south of Pine Avenue and east of Cucamonga Avenue. This collection too was loaned and, like the one found on Mark Pine's property, never returned.

CHAPTER 8

HISTORIC SITES

Subsequent to the Hispanic colonization of Alta California late in the 18th century, the Santa Ana River became a focus for settlement. Beginning with very little use, the predominately agrarian settlement within the project area became increasingly dense and diversified. By 1936, which is the cutoff date for most sites included in this study, nearly 100 farms and ranches existed or had existed within the Prado Flood Control Basin. The Oak Street Drain was constructed to control flooding within the City of Corona by this time. Beginning ca. 1810 the lower reach of the Santa Ana River, and later, the Santiago Creek, played a major role in the development of irrigation agriculture and water system development in Los Angeles and Orange Counties.

This chapter provides an inventory of historic sites and features located within the project area which could be identified using a number of archival sources, maps, and aerial photographs. Structures and structure clusters, such as farms, businesses, and town sites, are included along with bridges, cemeteries, canals and several significant transportation corridors. In most cases, wells and associated covering structures are excluded along with reservoirs, isolated corrals, and similar features. The list is not exhaustive. Although the bulk of the sites is surely included, not all earlier sites can be assumed to be identified. In part this is the result of the exclusion of most structures not adjacent to boundaries during early surveys. Another problem is that many records for the project area prior to 1895, particularly assessor's records held by San Bernardino County, have been lost or destroyed. Thus, it is probable that as further development of the study area continues, some new sites may be encountered.

The data provided for the sites included in this inventory is based on archaeological study, information from published sources, unpublished archival documents, maps and aerial photographs, and oral history. Whenever possible, the period of occupation, individuals using the site, their activities and associations are identified along with the sequence of occupation, type of site and nature of structures located on them. The coverage is by no means uniform. Even the most basic information for some sites is no longer available. Not all archival sources such as deeds and assessor's records could be consulted in each

case within the scope of this study, and further information can be obtained from them when desirable.

Archaeological test excavations were carried out at several sites. These excavations were carried out to aid in determining significance of threatened sites and to determine the presence or absence of archaeological remains at several sites. The documentation of several other sites was augmented by mapping or photography.

Maps were utilized extensively to locate sites, determine periods of occupation, and occasionally to determine ownership. The maps used included land grant surveys, land grant partition or subdivision maps, other land surveys and U.S. Geologic Survey topographic sheets. These included maps held by the surveyor's offices of Los Angeles, San Bernardino and Riverside Counties, map collections at the University of California, Los Angeles and Riverside campuses, Bureau of Land Management map files (a set is located at the University of California, Riverside), and the U.S. Geological Survey, Menlo Park.

A major source of information was available from the aerial photographs taken of the Prado Flood Control Basin by the Army in 1936. These show the distribution of structures and features as they existed in the area immediately prior to the building of Prado Dam. The photographs can be used to locate features as small as a few meters in area, such as covered well heads. The photographs can be often used to determine the type of land use associated with individual sites. Inter-site relationships and cultural geography may be studied using the photos. They have been of particular use in this study for the determination of the number and types of structures located at some sites.

Literature and archival sources (Appendix A) were used to identify periods of ownership, occupants, changes in occupants, the structures at the site and activities at sites. Published studies of regional history were of minimal use, since these focus on events or persons of particular historical significance, of which there were relatively few from the project area. Archival sources have provided considerable data. This is particularly true because of the holdings of the Heritage Room at the Corona Public Library, which has collected a considerable body of manuscript, oral history and photo documentation for the region. Among these manuscripts is Christena Desborough's (n.d.) unpublished history of the Rincon district, which provides variable data on 72 sites in and adjacent to the study area. Newspapers including the South Riverside Bee, Corona Courier, Corona-Norco Independent, and Chino Valley Champion were used to obtain data for selected sites.

Assessor's office records and deeds were examined for selected sites. This was done if physical evidence of the site still remained and the site could not be adequately documented by another source. The loss of most of the San Bernardino County

assessor's records prior to 1895 has precluded establishing precise dates of initial occupation on some sites, as well as the type of structures and land use data sometimes included in these records.

A considerable amount of data was forthcoming from interviews of selected residents (Appendix B). The interviews provided data not available from other sources and acted as a basis for cross checking other accounts. The interview was particularly useful if the informant had lived at the site being discussed. Most of the data gained from the interviews pertains to the period between 1920 and 1940.

The following accounts are presented in numerical order, based on site numbers and randomly assigned Prado Basin (PB) numbers. Specialized sections on irrigation canals, selected transportation corridors, and cemeteries are included at the end.

RIV-653H -- BANDINI-COTA ADOBE

The great two story house that Juan Bandini built in 1840 on the southern edge of the Jurupa bluffs has been the subject of two recent studies. Theodoratus Cultural Research, Inc. (1983) has conducted an extensive historical study of the site and Rancho El Rincon. Following its completion, a test level archaeological study was conducted at the site (Greenwood, Frierman and Foster 1983). These sources should be consulted for information regarding the history, archaeology and management of the site. Earlier studies designate this site as ACE-SAR-H3 (Hall 1975; Leonard 1975; Tobey, Suss and Burgess 1977).

Several details about the site encountered during the present study are worth mentioning. Although the site is entitled the Bandini-Cota Adobe by researchers, it is known by several names among the local populace who have lived in the area from the turn of the century. The most common identification is the Cota Fort, given because of the thick wall construction and legends of Indian attacks. It is known as the Cota Adobe, Cota Home and Cota House also. Several pieces of information refer to the tearing out of the interior rooms by treasure hunters who dug holes as much as three meters deep in the interior looking for treasure buried by Bandini or Cota. Examination of the site during the test excavation of the prehistoric portion of the site indicated that the house is built on top of a portion of the prehistoric site rather than at the edge as previously believed. This should be taken into consideration when excavations at the house are conducted to minimize impacts to the prehistoric assemblage. The site is at an elevation of approximately 527 feet MSL.

RIV-1039 -- THEODORE ASHCROFT'S SECOND RANCH

This site consisted of structural remains belonging to Theodore Ashcroft's second ranch. It was initially identified by Hall (1975, Appendix 3:1-2) and further discussed by Tobey, Suss and Burgess (1977:58-68). These authors designated the site as ACE-SAR-H2A. The site is located on the terrace east of the town of Prado at an elevation of 540 feet MSL. Most of the structures were located east of the Pomona-Rincon Road just south of the point where it descended into Prado. Several outbuildings were located on the west side of the road (data based on 1936 aerial photo F66 and Corps of Engineers appraisal reports). At present the main site area is being used to grow Sudan grass. That portion on the west side of the road is a wild oat covered pasture.

Originally the area of this site was part of the La Sierra Rancho given to Concepcion Serrano de Yorba after Bernardo Yorba's death. Later the area formed part of the Rincon (or Prado) town site. The town site did not prosper and was ultimately developed primarily as farm land.

Theodore Ashcroft originally lived on the north side of the river on a farm settled by his parents in 1898. After his father's death, this ranch was divided among the survivors and Ashcroft settled on the portion on the east side of Chino Creek where he lived with his wife, Emma E. Wilson Ashcroft, and their daughter (Desborough n.d., Appendix:85-86). In 1916 they settled the property presently under discussion after being frightened off their original farm by flooding. The new farm was dry farmed for various crops, including grain, alfalfa, tomatoes and beans. Some cattle were pastured.

The principal structures on the property were a house, barn, a bunk house and garage, another garage, several sheds and a water tank (Corps of Engineers appraisal report, June 29, 1940). Water was taken from a well on the property. The house was wood frame with a shingle roof and concrete foundation. Most of the remaining structures were board and batten with shingled roofs. The area around the house had side walks and was planted with ornamental trees.

Three additional structures, belonging to other persons, occurred on the property. The house of Mike Vega was built with drop siding on a wood sill foundation and a tar paper roof. Mary Aguilar's house was built of wood and tin siding on a wood sill foundation with a tar paper roof. The house belonging to M. Oresco was built of board and batten on a wood sill foundation and shingle roof.

The structures at this site were demolished during the construction of Prado Dam. The foundations remained intact on the east side of the Pomona-Rincon Road until ca. 1981. At that time the present tenant farmer removed the foundations and prepared the

land for Sudan grass production. At present, remains of the foundations and walks are in two rubble piles along the western edge of the Pomona-Rincon Road adjacent to the site. Inspection of the area revealed only a sparse scatter of glass and ceramic shards on the surface. Any other surface features would have been destroyed due to subsoiling preparatory for Sudan grass agriculture. Given the extensive land alteration in the vicinity of this site it is highly unlikely that any subsurface deposits could have survived.

RIV-1044 -- HOMER PATE RANCH

Structural and artifactual remains belonging to Homer Pate's ranch were originally identified as ACE-SAR-H2B by Hall (1975) during the survey by the University of California, Riverside, Archaeological Research Unit. Subsequently the site was studied by Tobey, Suss and Burgess (1977:69-72, photos 27-29) who call it H2D. The ranch consisted of the building clusters located adjacent to each other east of Yorba Street on the bluff (540 feet MSL) bounding the south side of the Santa Ana River. The site appears on the 1933 survey of the area shown on the 1942 edition of the Corona and Vicinity Quadrangle and on the 1936 aerial photographs of the basin (F84).

Homer Pate along with his wife, Freda Carrillo Pate, established the ranch ca. 1910. The Pates farmed and operated a dairy on site. According to Desborough (n.d., Appendix:99), the Pates remained at the ranch until 1939 when it was condemned as part of the flood control basin. The site consisted of two loci. One (H2D (Tobey)) is the location of the house which was a single story wood frame structure. Adjacent to the house on the west side was a concrete red stone cooler room topped by a water tank. Two other small outbuildings occurred at this locus. The second locus (H2B (Hall)) is the location of the barn and corrals.

The study of the house site by Tobey, Suss and Burgess (1977:69-72) includes a description of the stone cooler room and a number of artifacts. Their study concluded that the site was occupied in the 1930s or perhaps earlier, but did not identify occupants or use.

A reexamination of the site during the present study indicates that the cooler room is still intact and that it is surrounded by a glass and ceramic artifact scatter, primarily to the northeast, which contains items of American, English, and Chinese origin dating to the earlier part of the 20th century. The barn locus was covered by Sudan grass at the time of observation and no remains were observed. This site was not test excavated during this study.

The cooler room is architecturally common for southern California during the earlier part of this century. It is constructed of concrete with rounded river cobbles molded into the outer face.

The inner face is flat and was shaped by wooden forms. The building is square, with a base measurement of approximately 4.57 meters per side. It is 3.96 meters high. It tapers slightly toward the top. A 2.13-by-0.91 meters doorway is located in the north wall. The southern and western walls have 81 cm square windows. The roof was flat, with joists to support the circular water tank above. The floor is of concrete. Another feature of the structure is the internal reinforcement of the lower wall. This consists of a 35.6 cm wide, 120 cm tall concrete belt around the floor. This was apparently done to stabilize the structure which contains a number of cracks in the walls. The reinforcement was done at a later time and is composed of different concrete from that seen in the walls.

At present the cooler room is being used for the storage of irrigation equipment by the tenant. The remaining structures have been removed and the surface of the site has been disced to a depth of 30 to 40 cm.

RIV-2203 -- FEAR RANCH

The Fear Ranch was located along the Pomona-Rincon Road west of the Bandini-Cota Adobe (Riv-653H) at an elevation of approximately 520 feet MSL. The ranch structures appear on early topographic maps using survey data gathered in 1899, but are not included on the 1941 edition of the Prado Quadrangle surveyed in 1933. The 1936 aerial photographs of the basin show trees at the site (F111). This site has also been known as ACE-PG-2.

According to Christina Fear Desborough (n.d., Appendix:78-80), who was born on the ranch, the property was obtained by Jose Juan and Soledad de Alvarado through litigation with Ynez Yorba de Cota. Fear believes that the wood frame house at the ranch was built by the Alvarados. During the late 1890s the Cotas were forced to leave the Bandini-Cota Adobe as the result of litigation and resided at the Fear ranch until 1899, when they were able to return to their home (Desborough n.d., Appendix:79; Theodoratus Cultural Research Inc. 1983:150-151).

James and Christina Stewart Fear moved to Rincon from Canada in 1895. They purchased the ranch in 1899. The ranch was irrigation farmed, apparently with water from the Taylor Ditch which was built in the 1880s (Hall 1888:298; Scott 1977:93). Fear raised a variety of crops including hay, grain, and grapes and other fruit. When he first moved to the site he operated a dairy. Later, he raised work horses (Desborough n.d., Appendix:79). In the early 1920s, Fear's health failed and he traded the ranch for a "bungalow court" in Anaheim. Another family (name not remembered) took over the ranch. Apparently their efforts were unsuccessful. After they took control, the outbuildings burned. Shortly thereafter, the house burned. Desborough (n.d., Appendix:80) implies arson.

The house was located on the east side of the road with some outbuildings on the west side. At present most of the evidence of the occupation has been destroyed. There is a cement foundation, approximately 2 meters square, in the hillside west of the road and some fences which may or may not date to the ranch occupation. There is a scatter of glass and porcelain artifacts on the site. It is probable that subsurface deposits, including the well, privy and trash pits, remain intact.

RIV-2204 -- LA PUERTA ABIERTA

The name La Puerta Abierta, meaning "the open gate", was given to this site by a late owner named Brent. The core area of this farm, consisting of several generations of structures, covered several acres at an elevation of approximately 540 feet MSL. The house on the property is shown on topographic maps from 1902 (based on 1899 survey data) onward up to the 1941 edition of the Prado Quadrangle. The 1936 aerial photographs of the flood control basin (F129) show the site as it was when the Abacherli's dairy was present at the site.

Desborough's (n.d., Appendix:63-67) account of the site comprised the best source of data available for the site. According to her account the first known occupation of the site was by John Taylor. Her information from the August 30, 1888 issue of the South Riverside Bee indicates that Taylor, then 22, owned 70 acres on which he built a two story house and a barn. He had planted 6 acres of fruit trees and 4 acres of vineyard. He ran 120 head of cattle on an adjacent 1200 acres and rented other pasture for sheep. The Taylors' house was located immediately west of the Pomona-Rincon Road just north of the still-standing masonry entryway from which the site is named.

The Taylors were on the ranch until at least 1895. Sometime thereafter they vacated the property and the house was rented by Charlie Downs and his family. Downs lived on site but was not a farmer. The Downs family lived at the site until sometime between 1907 and 1909, when the property was apparently acquired by a man named Brent.

Brent is described as a furniture tycoon from Los Angeles (Desborough n.d., Appendix:65). He substantially altered the site, turning it into a country estate for entertaining clients. The entry way was constructed by Brent. This consists of 1.8 m carved rock walls flanking the access road. Intricately detailed iron gates were hung from these walls, and a cylindrical stone post with niches stood at the center, in front of the gates dividing the entry where it met the Pomona-Rincon Road.

Brent added a number of buildings, palm trees and circular planters. The principal building was a large clubhouse located at the back of the property about 100 meters west of the gates. This was furnished in "modern" style and was the focal point of

Brent's activity. A short distance to the north, Brent had several ponds stocked with waterfowl. These are still present and are used as part of the Prado Recreation Center, which now occupies the site.

Brent's clubhouse burned in 1912 and he abandoned his project. Between 1912 and the mid-1920s a number of individuals rented or purchased the ranch. A family named Dobson lived on the ranch in 1913 and 1914. Other occupants up to around 1920 are not remembered. O. K. Clammer is believed to have bought the ranch just prior to 1920 and resided there until 1923 or later.

Clammer was succeeded by Louis Abacherli, who established a dairy at the site with his three sons (Arnold, Louis Jr., and John). This dairy enterprise continued until the area was cleared for the flood control basin.

The dairy and structures were cleared from the site in 1939 or 1940. The original house and barn were demolished in the 1920s. The circular planters which once held flowers have been broken up and removed. According to Louis Abacherli, Jr., these contained 35 to 45 metates taken from Pate Mesa (SBr-1571). These may have gone into private collections.

At present the remains of the occupation at La Puerta Abierta consist of the stone entry way, now damaged, a dirt-filled well, a triangular concrete foundation, and a number of mature palm and eucalyptus trees. The area of the site is covered with a light scatter of glass and ceramic artifacts.

RIV-2778 -- SERRANO ADOBE

The structure investigated as part of this study was the residence of the Serrano family at Rincon between 1879 and 1939. It is possible but not established that the core of the structure is the house originally belonging to Antonio Aros. This house is called the Rincon House and the Serrano House on the back of a photograph taken at the turn of the century (Figure 8-2). For the purpose of clarity, the name "Francisco Serrano's Rincon House" is used to avoid confusion with his first house and other Serrano dwellings.

Francisco Serrano's Rincon House was located in the lower flood basin at the foot of the Chino Hills at an elevation 495 to 500 feet MSL. It faced east, overlooking the Santa Ana River flood plain. The house was situated on a small alluvial fan, rising above the flood pain west of Chino Creek and the Pomona-Rincon Road. This location allowed the residents an open view of their farmland, which lay between the road and the creek. By the 1930s, an orchard bordered the northern edge of the farm site. The house retained a view of the outbuildings on the south.

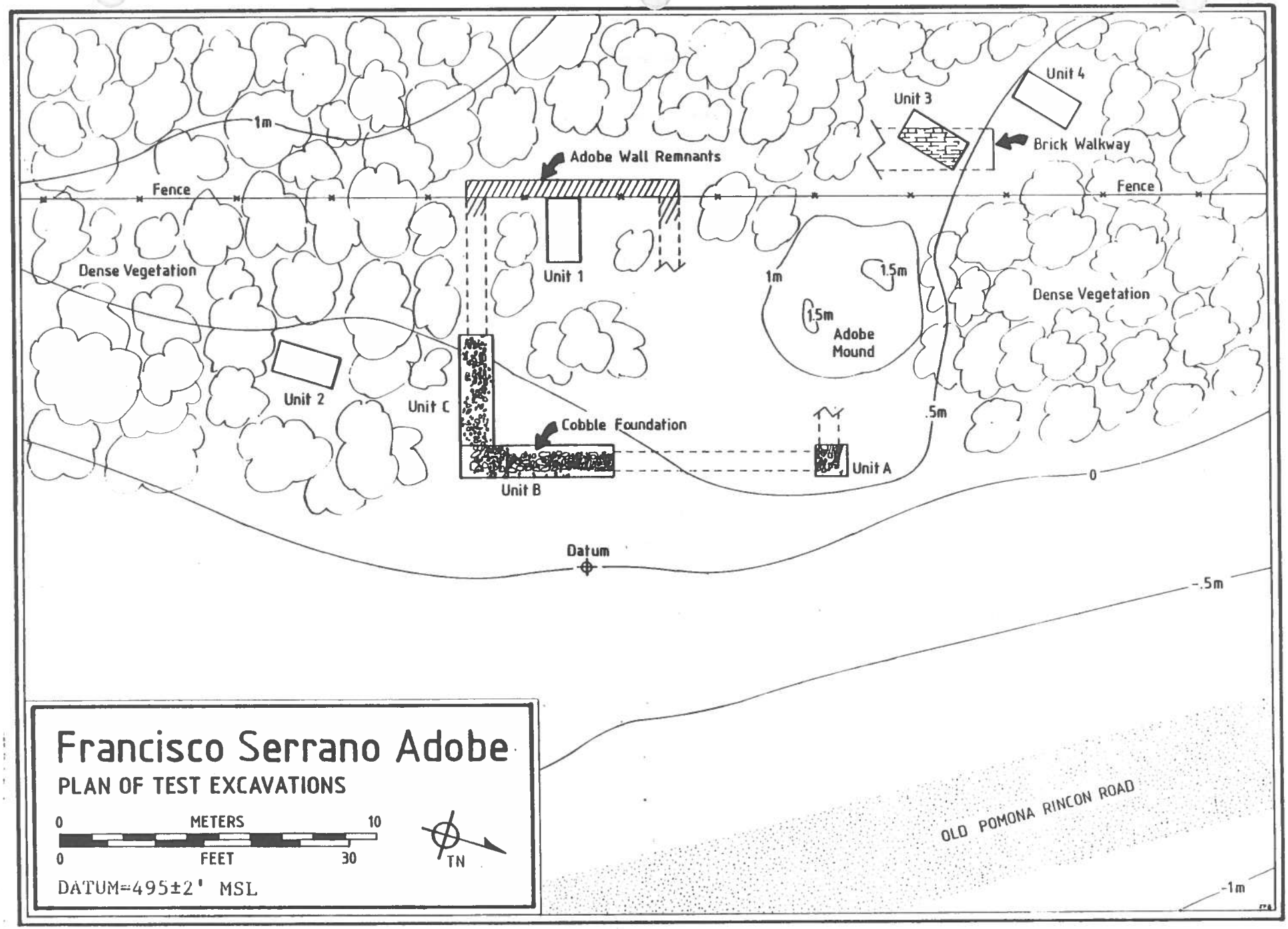
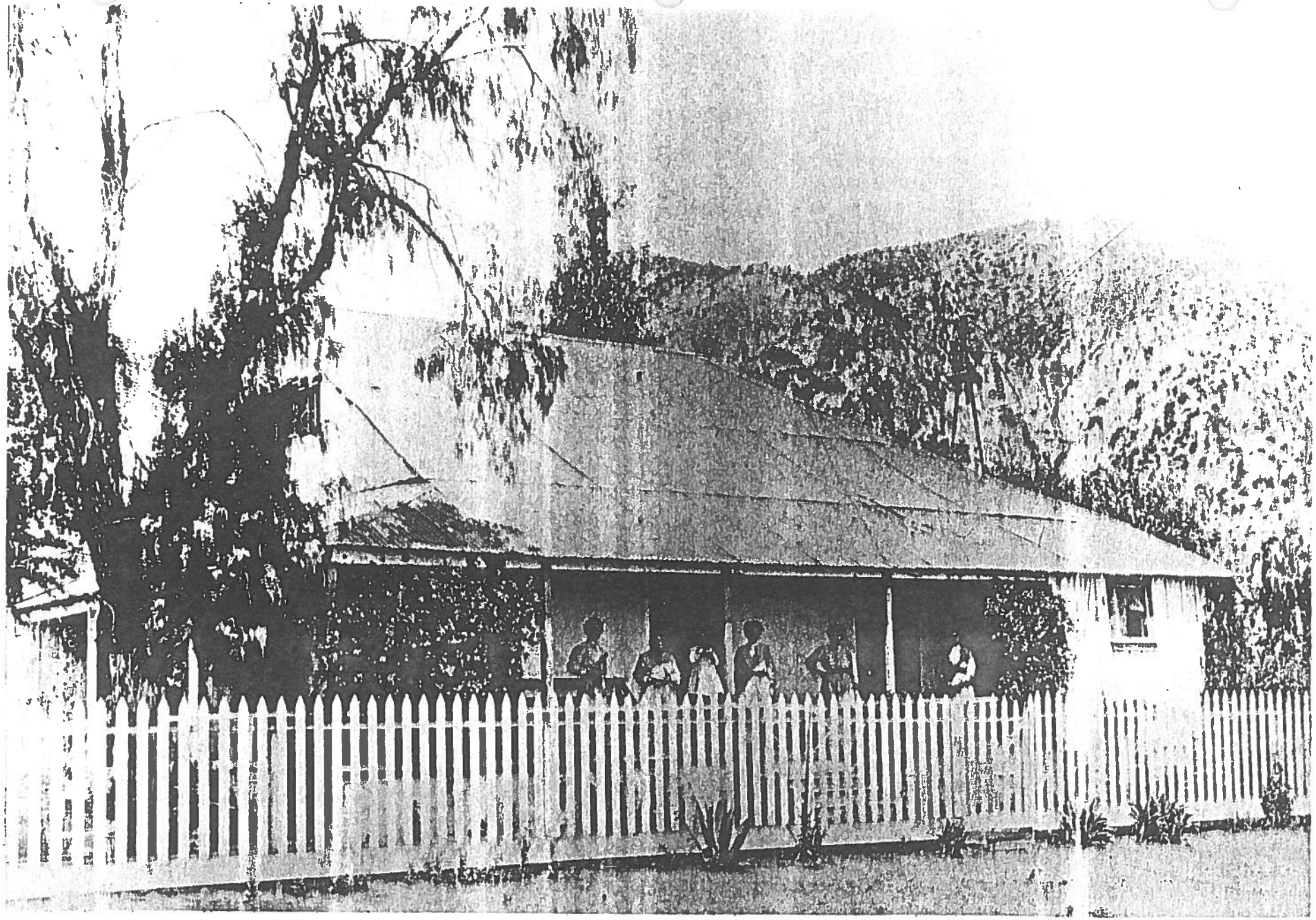


Figure 8-1. Site plan of the Francisco Serrano house in Rincon-Prado.

OR-801



OR-801

Figure 8-2. Photo of the Francisco Serrano Rincon adobe, taken May 7, 1911 (courtesy of the Heritage Room, Corona Public Library).

The house site was missed during two prior surveys although the remains exist as a mound set slightly back from the road. It was located using documents and photographs housed at the Corona Public Library Heritage Room and the Army's 1936 aerial photographs of the flood control basin. At the time it was found, it was covered by a dense growth of cockle burr, castor bean and young trees.

The structural remains of the house consist of a mound with a maximum height of about 60 cm. Standing adobe walls, faced on both sides with plaster, penetrate the mound in several places. The remainder of the site is covered by a layer of silt obscuring surface scatter and features. The remains of the outbuildings, including a barn, dairy, and store south of the house, could not be located because of the siltation and ground cover. The associated structures shown on the 1936 aerial photographs were destroyed during construction of Highway 71.

The initial period of occupation at the site has not been established. Given the destruction or loss of many of the San Bernardino County records prior to 1895, it is probable that the initial settlement cannot be established. The first record of a structure in the vicinity is recorded in the San Bernardino County assessor's book for 1871. At that time a structure belonging to Antonio Aros was located there. The approximate location of the structure is shown on a map of Township 3 South, Range 7 West, San Bernardino Meridian by John Goldsworthy which was filed with the Surveyor General's Office in San Francisco on September 14, 1876. Aros owned a second structure at the Fernandez farm site simultaneously. Aros had a residence and goods for sale on what was to become the Serrano Rincon House site, according to the assessor's records. When and how Aros obtained the property or the circumstances of his vacation of it are unknown.

Francisco Serrano's grandfather, Francisco, who was born in Aragon, Spain, came to California in 1769 as part of the Portola Expedition. He settled in San Diego and married. His eldest son, Leandro, moved to Temescal Canyon and established the first non-Indian residence in Riverside County (Gould 1936). The younger brother, Jose Antonio de Jesus, worked for Juan Bandini for sometime. In 1842, he was granted the two-and-one-half square-league Rancho Cañada de los Alisos in Orange County (Smith 1976; Sleeper 1970), where he settled with his wife, Maria Petra Avila, and their oldest children. Francisco was born on the rancho in 1844.

The young Francisco lived and worked on his father's property into adulthood. He established his first house on the ranch near Los Alisos Creek (Roberts 1936). Francisco resided there with his wife Concepcion and their older children until they moved to Rincon in 1879 (Anonymous 1961:2-13). It is possible that Francisco resided at Cook's Corner for a time prior to moving to Rincon.

Francisco and Concepcion resided at the Rincon House with their 11 children. In 1908 they were joined by Aqueda Serrano, a niece whose mother died from complications in giving birth to her. Aqueda's older brother, Henry, also resided with Francisco's family in Rincon for a few years as a result of his mother's death (Henry Serrano, personal communication). Henry resided at another Serrano adobe location at Cook's Corner, near El Toro, until he recently passed away (in August, 1985).

During the Serranos' residence, they raised livestock and farmed various crops including grain. At one point, Serrano and his wife opened a small store at their house and provided mail service. Francisco and his sons owned and operated a combined general and hardware store in central Corona (Reincke 1972).

The family was active in the community. They were devout Catholics. An altar was maintained in the home and was periodically used for masses. Francisco's son, Frank (Francisco, 1878-1957), was a trustee of the Rincon School District. Many of the family members played musical instruments. Joined by one or more other musicians, they would play at parties and dances in their home and at other ranches (Reincke 1972). Their home has been described as a meeting place for local Mexicans.

Francisco died in 1922. The family ranch continued to be occupied by his wife and children. In 1938, Concepcion passed away. The following year the ranch was taken by the government as part of the Prado Flood Control Basin. The surviving children moved mostly to adjacent local areas. Aqueda Serrano has very recently passed away (Henry Serrano, personal communication); however, several kin still reside in the communities of Norco, Corona, El Toro, and Chino.

Sampling Strategy

The sampling strategy utilized at Riv-2778 can be termed "purposive" after Haggett (1965:191), or "judgment sampling" after (Redman 1974:5). This strategy entails the investigator using his/her judgement in selecting sampling locations. In the case of the Serrano Adobe, Unit 1 was placed inside of the structure and against a wall. Unit 2 was placed outside of the structure in order to examine the integrity of the exterior areas. Unit 3 was dug in a location where the 1936 aerial photograph indicated a small structure; this was presumed to be a privy. After Unit 3 revealed a brick walkway, it was decided to dig Unit 4 further to the northwest in order to locate the privy. Units A, B and C were dug in their respective locations and dimensions to delineate the nature, course and extent of the adobe's foundation.

While the quantitative integrity of the sample recovered is not as valid as that obtained using probability sampling, the purposive sampling was actually very successful in answering questions most relevant to this initial discovery stage of excavation. Furthermore, random sampling would be very difficult at this site due to the extremely dense vegetation covering it.

Observations

The test excavation conducted in February and March, 1984, indicated that Riv-2778 is a complex and well-preserved site. The depth of the cultural deposit ranges from approximately 30 cm to over 240 cm in depth in at least one feature (well or privy in Unit 2). The average unit depth was 90 cm and the total volume of soil excavated was approximately 13.7 cubic meters. The stratigraphy varies throughout the site. On the south side, it is composed of a stratum of light brown flood-deposited silt. This overlays a stratum of silty sand with a high organic content. This is interpreted as the terminal deposit of soil on the site. It is underlaid by a stratum of burned sand which overlies a light brown sandy loam which is the substratum of the site.

On the northern side of the structure, the flood silt with a depth of less than 50 cm covers a stratum of sandy loam which varies from light brown to light brown with a gray cast, to tan in color. The stratigraphy of the house is dominated by the wall melt down which fills the interior and extends a short distance away from the exterior. This is capped by the flood silt but penetrates it in several places. The northern edge of the house had poorly sorted sand dumped on top of it.

Although the structure has been largely knocked down, the foundation and subsurface deposits appear to be intact. Since demolition, the site has remained in an excellent state of presentation with few exceptions. The only significant disruption observed is a damaged foundation at the northwest corner of the structure. This was caused when a large tree which had roots growing around the foundation fell, causing some local displacement. The cultural residium at the site is well preserved except for older iron objects, which are considerably rusted.

Feature Descriptions

House

The general appearance of the Serrano house can be seen in Figure 8-2. Photographs of the structure show it as a rectangular adobe with woodframe additions on the north and west sides. Wooden porches ran the length of the south and east sides. The roof was wood shingle and later covered with corrugated iron. It extended over the eastern porch and was supported by porch posts as was the south porch roof. It appears that the wood frame

additions consist of enclosed porches. The windows in the woodframe portions of the building are much smaller than in the adobe part.

Excavation exposed parts of the foundation of the house along the southern and eastern walls and at the north-eastern corner. The foundation is composed of small boulders and cobbles set in a light brown clayey silt. The rocks used in the foundation are available from several outcrops within a short distance of the house. The foundation is approximately 76 cm wide, varying as much as 5 cm wider or narrower. Probing indicates that it is approximately 1 meter from top to bottom. The external dimensions of the foundation are approximately 11.6 meters north-south and 8.8 meters east-west. The interior of the foundation seems to have been covered with a larger size of cobbles set in mud. There seems to have been at least one internal foundation running east-west at the middle of the house found during probing, but we are not certain of this.

Remnants of adobe brick still sit on the west and southern walls. The bricks used in these walls were 40.6 cm long, 20.3 cm wide and 10.2 cm thick. They are composed of a brown clayey silt with a straw binder. These were set in a lighter brown mud mortar. The walls were approximately 70 cm thick.

Both the interior and exterior walls were covered with plaster. The plaster still adheres to the remaining portions of the adobe wall. The plaster appears to be made of lime and has a high sand content. The sand utilized is a coarse, poorly sorted mixture of angular and rounded quartz, feldspar and other particles. Some granules and small pebbles occur. The composition of the sand is similar to that seen in sedimentary outcrops at the edge of the Chino Hills adjacent to the house. It is possible that the same outcrop(s) were used to quarry both foundation stone and sand.

The plaster was applied directly to the wall without a mud undercoat. The general thickness of the coat is approximately 5 mm, but some portions exceed 1 cm in thickness. Both the interior and exterior walls were covered with white paint. A blue (?) paint may have been used on parts of the interior.

The structure seems to have undergone remodeling, during which an earlier coat of plaster was stripped from the walls and replaced by the plaster described above. The earlier plaster is grayish white and appears to have a lower sand content. It is found backing some of the newer pieces of plaster found on the inside of the structure. A trash pit in Unit 4 is filled with wood, nails, and a large quantity of this plaster, which seems to be the debris from a remodeling of the house.

Excavation of a unit in the interior of the structure revealed remnants of a wooden floor. This consists of bits of plank adhering to the wall about 30 cm above the top of the foundation. The wood taken from the interior (Unit 1) was too decayed to

determine dimensions. Some specimens seem to be planks and some from supporting joists.

No attempt was made to examine the woodframe additions or porch areas of the structure. The wooden additions were built prior to 1900 (based on photograph dates) and may be associated with the remodeling of the adobe part of the house. A brick fireplace was present at the southern end of the western porch enclosure. Probing of the vicinity suggests that the fireplace foundation is still intact. Brick, apparently from this fireplace, is scattered around the south side of the structure and was found in Units 2 and C.

Well or Privy

A deep pit with what may be an associated cobble footing for a wooden superstructure was found in Unit 2. The excavation unit intruded into the northern portion of the feature but not sufficiently to determine exact form or function. The feature is a deep pit filled with a mixture of sand and trash. The top of the feature was encountered at 40 to 60 cm in depth, beneath a layer of burned soil which covered the area capping the feature. The feature was excavated to a depth of 240 cm without encountering the bottom, giving the pit a depth of over 1.8 meter. A cluster of cobbles was found on the northern side of the feature. The cluster seems to arc around the north and east edge of the pit. It is as much as 10 cm thick, 40 cm wide and varies in density. The juxtaposition between this pit and the rock cluster may be incidental.

The sand fill in the pit is homogeneous. Artifactual and ecofactual residium occur throughout the fill. The artifacts included building hardware, construction materials, and household and personal items. There is some evidence of stratification within the deposit. Round wire nails, which generally became available in the 1890s, occur exclusively in the upper 30 cm of the feature, while square cut nails occur throughout. This implies that the feature was being filled in prior to the turn of the century and that it was completely filled only after wire nails had become available and begun to be discarded at the site. The artifacts in the feature are not sufficiently time-sensitive to be of further use in determining the period of filling. The only exception is the presence of a "Mission Ware" shard (see artifact descriptions), usually associated with occupations prior to circa 1870 (cf. Greenwood, Frierman and Foster 1983:63), which was recovered from the 80 to 90 cm depth.

Walks

One exterior walk and remnants of a second were located. Excavation in Unit 3 encountered a brick walk set in cement on the northwest corner of the house. The walk is oriented north-south and led from the house to the edge of the orchard to the north. The brick used in the walk is fired construction brick,

orangish-red in color and having dimensions of 20.3 cm long, 8.9 cm wide, and 6.4 cm thick. The brick is laid in rows with the long axis parallel to the length of the walk.

A second walk was located on the south side of the house and can be seen in one photograph. It was located at the edge of the south porch and ran east-west. Parts of the walk were found in Unit C and along the edge of the south wall. This walk was composed of smooth rounded cobbles set in mortar. It was broken up when the house was demolished or at some earlier time.

Rubble Pit

Excavation Unit 4 penetrated a pit filled primarily with construction refuse. The pit was encountered at the 30 to 40 cm depth and was overlain by a decayed, 20-cm-diameter riveted iron pipe. The pit extended to 150 to 160 cm in depth, giving the Unit a total depth of about 1.2 meter.

The principal constituents of the pit were wall plaster, cement and brick. Nails, glass, ceramics and bone occurred in small amounts. Round nails were found in the upper 50 cm of the pit, while square cut nails occurred throughout. Much of the wall plaster is different than the plaster observed adhering to the remaining walls of the structure (see House section, above). The plaster was found in small amounts in the structure where it was often covered by a later coat of plaster. This implies that the refuse pit is the result of the remodeling of the house. The origin and form of the pit was not determined.

Artifact Descriptions

Metal

A total of 1761 metal artifacts and unidentifiable fragments were recovered. These specimens include building materials, household items and items used for farm work. Most of these artifacts represent items used in construction of the house. To a lesser extent they are broken or expended items used at the house and farm. Some specimens, including most of the arms and ammunition, are recent debris not associated with the Serrano occupation.

Nails

A total of 489 nails and one tack were collected. The bulk of these are square and round common nails (Table 8-1). In addition to these, six roofing nails, one 4d galvanized nail, one "Seal-tite" roofing nail for corrugated iron roof, and one tack were recovered. Square nails were recovered primarily from Units 1 and 2, a few from Unit 4, and more from Unit 3. Those occurring in Unit 1 are presumably the remainder of nails from the wooden parts of the building remaining after demolition. Nearly half of the square nails come from the deeper levels (100-160 cm) of

Unit 2. These may be the remains of a wooden structure over the feature found in that unit or debris from remodeling the house at some point. The distribution of round nails contrasts sharply. Most were recovered from Units 3 and 4. A few came from the upper 30 cm of Unit 1. They occur to 60 to 70 cm in depth in Unit 2.

Table 8-1

SUMMARY OF COMMON NAILS RECOVERED FROM RIV-2778 BY SIZE AND FORM

SIZE	SQUARE	ROUND
3d	3	5
4d	3	5
5d	1	
6d	22	4
8d	10	22
10d	11	1
12d	26	
30d		1
Fragments	352	15
TOTAL	428	53

Spike

A spike (Cat. No. 22) was recovered from the edge of the house. The specimen is square in section, tapers toward one end and is 25.6 cm long.

Fence Staples

Two fence staples were collected. One fence staple (Cat. No. 266) is 4.0 cm long. The second specimen (Cat. No. 365) is incomplete.

Netting Staple

A small heavy gauge wire netting staple (Cat. No. 394) was recovered from the 90 to 100 cm in depth in Unit 4. The specimen is 1.9 cm long.

Hoop Staple

One 2.0 x 1.4 cm hoop staple (Cat. No. 379) was collected from the bottom of Unit 2 (160+ cm). The spine of this staple is diamond shaped.

Eyelet Hook

This specimen (Cat. No. 265) is one of the only hand wrought specimens in the collection. It consists of a squared length of iron mostly bent back on itself to form a loop. The end would

have been thinned or sharpened to facilitate driving into wood or similar material. Hooks of this kind were used to anchor wire or chain in structures or on equipment (wagons, etc.).

Can Opener

This specimen (Cat. No. 347) is the key type opener which attached to a can and was broken away for use. A wound iron strip resulting from use is attached. The form is identical to the type of opener attached to coffee and corned beef tins.

Metal Containers

In excess of 30 metal container fragments were collected. Among these are the remains of a minimum of five beer can type containers, one coffee can type container, three No. 303 size cans and one container of uncertain form with a diameter the same size as a beer can. All of the cans collected are of the type constructed ca. World War I and later with rolled crimp end seams. The "beer" cans are the original style iron can with iron top and bottom. The coffee can, if it is one, is the old style--short, round, 1-pound container. The No. 303 cans are the conventional form still in use, with molded ends. The fourth container type had a rubber o-ring at the seam and one end. These containers were all recovered from the original ground surface or just beneath it and date to the later occupation of the site. A coffee can type opener is described below. One No. 303 can end has a cut edge, with a slight downward crimp, which is located at the edge of the wall-end crimp. This type of cut is made by two common can opener forms, but not by a knife or any of the bayonet style openers. The can was opened either with an opener fitted with a disc type blade which opposed a notched gear or a knit type blade opposing a notched gear (eg. the Miracle Can Opener). Both forms came into use in the 1930s and remain in use today.

Bottle Caps

Five iron, cork-lined, bottle caps were collected from levels above 50 cm. Three specimens (Cat. Nos. 2, 323, 333 [part]) are complete. Two more specimens (Cat. Nos. 140, 333 [part]) are incomplete. One of these (Cat. No. 140) is foil lined.

Rivets and Burrs

One specimen is a 12.5 mm long copper rivet with a 1.03 cm diameter burr fitted to it (Cat. No. 289). Two other burrs (Cat. Nos. 223, 272) with diameters of 12.5 mm and 1.35 cm, made for a No. 12 rivet, were recovered. These items were commonly used in repairing or building harnesses and other tackle, but had wide usage as fasteners of many materials. The use of the Serrano House specimens cannot be inferred from their condition.

Bracket

This specimen consists of a piece of cycle iron (Cat. No. 251) drilled on one side. Bolts were inserted through the holes and nuts attached. The nuts remain rusted in place. The use of this item is not known.

Pipe

A seam fragment from an iron pipe (Cat. No. 21) of considerable diameter was recovered. The specimen consists of a lapped seam joined with two rows of rivets. The rows are staggered.

Iron Drain Pipe

Excavation in Unit 4 revealed an iron drain pipe made, of thin-walled iron with a riveted seam (Cat. No. 361), at the 40-50 cm depth. The pipe angled away from the house toward an area used as an orchard. The specimen crumbled and was collected as 963 fragments which are treated as one specimen in this report.

Pipe Fitting

A circular iron pipe case fastener (Cat. No. 215) was collected. The specimen has a diameter of 16.5 cm.

Barbed Wire

Seven pieces of barbed wire (Cat. Nos. 103, 131 [part], 376) were collected. This wire is two strand with a single-wrapped double barb spaced every 7.7 cm.

Unclassifiable Wire

Most of the wire from the site is heavily rusted, prohibiting precise classification. Specimens (Cat. Nos. 402, 131 [part], 151, 173, 240, 260, 270, 352, 375, 376, 378, 384, 391) include 21 fragments of wire ranging from bailing or store wire diameter to heavy pieces of No. 6 or 7 size. Some of this wire is probably fence wire. The use of the remainder is not implied by the pieces in the collection. Several pieces show standard lapped splices.

Arms and Ammunition

The only gun part collected is a revolving clip (Cat. No. 81) made for a Ruger .22 caliber rifle. The clip contains 22 long cartridges. It was recovered from the surface where it has been lost within the last several years.

Ammunition includes caps, cartridge cases and bullets. Muzzle loading ordnance includes two musket caps (Cat. Nos. 92, 126), a pistol cap (Cat. No. 93) and a .470 caliber ball (Cat. No. 89). These indicate that both cap and ball pistol and rifle were used

at the house. The ball is of a caliber which falls into a size range made for loading into a .45 caliber firearm with an oversize bore. This particular specimen was not used but bears teeth marks in the soft lead.

Cartridge cases and bullets in the collection indicate the use of three gun and two shotgun calibers at the site at various times.

The most common cartridge is the .22 caliber long. Ten specimens are of this type. Four specimens (Cat. Nos. 79, 90, 127, 320) bear a recessed "U" headstamp. This type of headstamp has been used for over 100 years and is found on standard and experimental cartridges of several makers. A variation of this headstamp bears the word "HI" above the "U" and "SPEED" below. This late headstamp is found on one specimen (Cat. No. 157); two specimens (Cat. Nos. 31, 31) are Western Super-X cartridges. These bear the word SUPER inside of a diamond-ended box overlying an X on the head. Two cases (Cat. No. 319) bear an "F", indicating the Federal Cartridge Company is the maker. Two other headstamps found on .22 long cartridge cases are a "^" and "HP" (Cat. Nos. 27, 310). All of these specimens were found in near-surface contexts, mostly in silt or wall meltdown and are of recent origin.

Another form of the .22 caliber cartridge found is a .22 shot shell. These cartridges were made from an extra long case (2.5 cm), filled with dust (very fine shot) and crimped closed. The cartridge was designed for killing birds and rodents in populated areas. Production of this cartridge began during the second quarter of this century and ceased during the 1960s. The specimen collected at Riv-2778 bears the Western Super-X headstamp.

One damaged and unclassifiable cartridge is a .22 with an "A" headstamp. A crushed .50 Remington Pistol cartridge (Cat. No. 229) was recovered from 120 to 130 cm in depth of Unit 2. Identification is based on a rim diameter of 1.63 cm and an impressed "H" headstamp. This cartridge was made for use in the Navy Model 1865 Remington Rolling Blocks Pistol made between 1865 and 1870 (Flayderman 1977:150). The arm and cartridge became obsolete in the 1870s. The cartridge is listed as late as 1904 in the Winchester catalogue (Suydam 1977:110).

A single bullet from a centerfire or rimfire arm was collected. This specimen (Cat. No. 88) was deformed on impact. The present diameter and weight of the specimen suggest that it was .45 caliber. The specimen is from a near-surface context and may or may not be associated with the occupation.

One of the shotgun shells recovered is a 10 gauge paper shell (Cat. No. 224). The specimen bears a "U.M.C. CO./CLUB" and two concentric rings headstamp. The Union Metallic Cartridge Company introduced the Club line of shells in 1895 (Emmet 1969:474; Israel 1968:583). The shell was sold for handloading with black

powder and nitro powder. Around 1900 newer versions of the Club line were designed for smokeless powder (Schroeder 1969:383). The 10 gauge shotgun shell continued to be manufactured up to World War II. The specimen (Cat. No. 224) recovered from the site bears a head stamp of uncertain date of manufacture.

The second shotgun shell (Cat. No. 111) is a 12 gauge shell bearing a "FEDERAL/HI-POWER" headstamp. This is a relatively late shell manufactured by the Federal Cartridge Company. It was recovered from the upper portion of the midden.

Toy

A small cast iron wheel (Cat. No. 204) is from a wheeled toy of the type common around the turn of the century (e.g., Emmet 1969:226). The wheel has six spokes and is 5 cm in diameter.

Funnel

One small nickel-or chrome-plated brass funnel (Cat. No. 20) was recovered. The specimen is circular and 1.1 cm in diameter.

Foil

One piece of aluminium foil (Cat. No. 143) was collected from the upper portion of the midden.

Lead Sheet

A wad of lead sheet (Cat. No. 287) was recovered from 70 to 80 cm in depth of Unit 2. Lead sheet served a variety of purposes on farms, but was primarily used in roof repair.

Brass Loop

A flattened oval of brass (Cat. No. 409) was collected from 120 to 130 cm depth of Unit 4. The specimen may have served as a tie-down on a belt buckle.

Miscellaneous Specimens

These specimens include primarily items which are probably identifiable, but are obscure parts of larger objects and are not readily identifiable. One specimen (Cat. No. 271) is a circular brass band with rolled edges. A small ring is attached to one end with a larger ring inserted through it. Another specimen (Cat. No. 339) is a grooved brass plate with a hole punched off center. A third specimen (Cat. No. 312) is a thick ring made of an unidentified metal. The fourth specimen (Cat. No. 125) is a small brass strip (4 by 39 cm) which appears to be a piece of waste from the making of some object.

Unidentifiable Metal

A total of 1168 unidentifiable metal fragments, almost exclusively iron, were collected from the site.

Glass

A total of 292 glass shards and whole specimens were collected. Of these, 58.4 percent are too fragmented for identification as to artifact form. The glass seems to be predominantly from bottles. Much of the remainder is window glass.

Bead

This specimen (Cat. No. 83) is a light blue tubular bead molded to sextagonal shape on the exterior surface.

Buttons

The five glass buttons collected are of two forms. Three specimens (Cat. Nos. 12, 82, 198) are "dishes" with a knobless center. The face of these buttons has a concave center, flat back, beveled sides and rounded edges. One is 16 line size, the second is 18 line and the third is 22 line. All are white with four holes. One button (Cat. No. 80) is a two hole form, beige in color. The center is a rectangular depression. The face has a crease midway between edge and center. It is convex inside the crease and slopes upward to the edge which is rounded. The fifth specimen (Cat. No. 85) is a 32 line black glass button. The back is flat and was fitted with a metal shank. The face is convex with an intricate pattern of lines and boxes. It was painted silver.

Bottle Stopper

This specimen (Cat. No. 51) is a pressed flint stopper. The top is square (3.2 cm square) with rounded edges and bears an ellipsoid design. The stem was made with threads to allow the attachment of a cork.

Glass Containers

Parts of an indeterminate number of bottles were collected. A minimum of nine forms are present in the collection. These include a conventional mustard jar with metal lid attached. (Cat. No. 112) of the type which contains "French's Mustard". The jar form is one of a number of stylistic variations. The dates of manufacture of this variation were not determined. The specimen came from the old ground surface beneath the silt in Unit 2 (30 to 40 cm).

Two other forms are represented by screw cap finishes of varying sizes (Cat. Nos. 138, 144). A fourth form had a wide mouth with what appears to be a snap cap finish (Cat. No. 116). A fifth

specimen (Cat. No. 257) is a wide mouth bottle with a horizontally ribbed circular upper body, slightly tapering neck, and milk bottle style finish. The sixth form is represented by a finish fragment (Cat. No. 209) which is apparently of the medicine style. Another bottle form, represented by 20 shards (Cat. No. 209), is apparently of the medicine style. Another bottle form is represented by 20 shards (Cat. Nos. 113 and 142) from a bottle with inflated horizontal rings. The eighth form is represented by a base shard (Cat. No. 115) from a rectangular bottle. This specimen was made on an Owens-Illinois type glass blowing machine. This base bears the Anchor-Hocking logo and the legends "JERGE/" and "D. PAT. APP/". Each of these eight forms is made of clear flint glass. The ninth form is a late squat form beer bottle with a clinch cap finish (Cat. No. 306). This specimen is made of amber glass.

Window Glass

A total of 74 pieces of window glass were collected. All but one are clear flint glass and range in thickness from 1.3 to 2.4 mm. The remaining specimen is aqua color and 1.9 mm thick.

Unidentifiable Glass

A total of 170 glass shards were collected which are not clearly identifiable. Nearly all appear to be bottle glass. These represent a wide range of colors. Clear flint glass dominates the sample with 125 shards. There are 14 green (10YR 7/8, 5YR 6/4, 10Y 5/4) shards, seven blue (7.5D6 8/4, 10D6 9/1, 10D6 9/2) shards and 19 brown (2.5 VR 3/6, 7.5 VR 5/8, 10 VR 6/10) shards. One shard is white milk glass. Four shards bear yellow (10 VR 7/12) paint which has been silk screened onto them. The distribution of the various colors within the deposit is random except for one instance. The brown (amber) bottle glass occurs exclusively in the upper portions of the midden and appears to be from recent beer bottles.

Ceramics

Thirty-nine ceramic objects and shards were recovered. These specimens include a table wine container, building hardware, personal items, and toys. Nearly all of the items were broken when discarded into refuse disposal areas. In addition, 232 pieces of tile and brick were collected.

Mission Ware

This ceramic is the terminal acculturated form of the aboriginal Tizon Brown Ware. It was made and utilized at the California Missions and ranchos. Frierman (1982:21-34) provides an extensive discussion of this ware. The production of this ware continued into the 1840s and 1850s and may have ceased manufacture by 1860 although this is not established with certainty.

One rim shard (Cat. No. 188) was collected from the 80 to 90 cm depth in Unit 2. The shard is a typical specimen. The paste was fired brown and is unevenly fired so that the interior remains black. The paste has quartz sand inclusions. The interior wall was fired reddish brown and the exterior wall is brown with a slight reddish cast. The shard is a rim fragment which is battered and worn from use. The rim is rounded and tops an outcurving wall. Wall thickness is 1.04 cm. The shard form is consistent with that seen on large ollas, but is too small for certain identification. The specimen is the oldest artifact found at the site and constitutes the only evidence for occupation of the site prior to 1870.

White Ironstone

The white ironstone shards represent a minimum of three forms. One form is a 20 cm dinner plate with a flat upsweeping outer edge and a smooth rim (Cat. No. 118). The second form is a pitcher or jug with a bulbous body and constricted straight-sided neck (Cat. No. 199). The third form is represented by a rim shard from a cup or other small vessel (Cat. No. 206). The remaining white ironstone shards (Cat. Nos. 185, 206 [part], 256, 285, 303, 315, 329, 348, 368) are too fragmentary to determine artifact form.

Yellow Ware

Yellow ware is an earthenware with a fine paste which fires to a creamy yellow brown color. When a clear glass is applied, the ware takes on a shiny yellow brown hue. Ceramics of this type were available in California from the mid-19th century onward. The seven specimens (Cat. Nos. 230 and 231) recovered from 120-130 cm depth of Unit 2 come from one mixing bowl. One specimen (Cat. No. 230) is a base shard. It has a conventional foot ring with rounded exterior surface and a tapered interior surface which slopes to the bottom. The diameter of the foot ring is 12.7 cm, which is the same diameter of No. 6 or six quart bowls manufactured by Bauer and other California potteries. This particular form was available at least as early as the last quarter of the 19th century and probably earlier, and was manufactured in California into the mid-20th century.

Brown Transfer Printed

The single specimen (Cat. No. 232) representing transfer printed earthenware at the site is a saucer shard made of a white firing paste with a clear glaze. The interior surface is printed with an oakleaf and acorn design around the perimeter. The center depicts a scene, of which an element appears to be a colonial mansion. The specimen is probably from the late 19th century. The specimen has a circular foot ring, an upcurved edge and a rounded rim.

Porcelain, Polychrome Printed

One porcelain bowl fragment (Cat. No. 138) is decorated with a multicolor pattern around the rim. The bowl has a flat outcurving edge and was 12 to 15 cm in diameter. The central motif of the decoration is a display of yellow, pink, blue, and red roses; rose buds; and green rose leaves. This is set in a small bay bounded by elaborate scroll work. The remainder of the decoration consists of several devices in blue, green, brown, and gold. The design is bounded at the rim by the application of a gold leaf line.

Flow Blue

The only flow blue specimen (Cat. No. 311) collected is a cup handle shard embossed with scroll work and a hub.

Other Ceramics

Door Knobs

One door knob (Cat. No. 187) is a "brown mineral" type knob. Knobs of this kind are identified by this and various other trade names in the literature. They are made of layered clays of different colors. The Serrano house specimen was produced from a paste of black and white swirled into a pinkish clay. It is covered by a transparent reddish brown glaze, giving the effect of polished brown marble. The shank is missing, but the lead used to set it in place remains. The specimen is 5.6 cm in diameter and 2.8 cm in thickness. Brown mineral type door knobs date from the mid-19th century (F. Fenenga, personal communication) and were made at least into the 1890s (Emmet 1969:375).

Marble

A white undercoated fired clay marble (Cat. No. 60) was collected. The specimen was hand molded and is 1.05 cm in diameter.

Porcelain Dolls

Parts of three dolls were collected. One specimen (Cat. Nos. 76 and 77), made of unglazed porcelain, was made to fit into a cloth body. The second specimen (Cat. No. 170) is a clear glazed porcelain arm from a small solid baby doll. The third specimen (Cat. No. 283) is a cheek shard from the head of a larger soft body doll. The cheek is tinted pink. This specimen was taken from the deepest portion of Unit 2 (160+cm).

Clay Pipe

One clay pipe shard (Cat. No. 274) was collected from the deepest portion of Unit 2 (160+cm). It is from a straight stemmed pipe which was well trimmed and polished. The bowl and interior stem were stained red, leaving the portion of the stem toward the

mouth piece white. The specimen bears two impressions. On what was the left side, it reads, "...UGALL", and on the right side is, "GLA...". These marks identify its maker as McDougall, a Scottish manufacturer located in Glasgow. The McDougall firm was founded in 1846, or perhaps earlier (Humphrey 1969:17), and was a prolific manufacturer of clay pipes. The firm closed in 1967.

Insulator

A broken power pole insulator (Cat. No. 108) was found in the silt covering the site. It is porcelain with a dark brown glaze.

Tile

Clay tile shards totaling six pieces were recovered from the refuse pit in Unit 4. Three of these are made of fine clay which fires to a pinkish tan. These tiles have a flat face with seven parallel lines roughly scoring the long axis of the surface. The back has a shallow trough following the long axis. These tiles are 7.3 cm wide and 2.5 cm thick.

The other three specimens are made of the type of red brick used in general construction. These are flat faced with a square or rectangular central depression in the back. They are square or rectangular in shape, larger than the specimens described above and 4.4 cm thick.

Brick

A total of 224 pieces of brick were recovered, mostly from Unit 4. One specimen is poorly fired and reddish orange in color. It is of indeterminate size. The other brick shards range from light red to orangish red in color. At least three sizes occur. One is a small rectangular form 7.3 cm wide and 5.1 cm thick. Another is 9.2 by 10.2 by 5.1 cm. A third is 10.5 by 6.2 by 4.8 cm. None of these are standard brick sizes although they are made of pastes like those used in conventional red brick. Many specimens have a cement mortar high in sand content and leaning to thin.

Shell Artifacts

The shell artifacts are comprised of four buttons of four types. One (Cat. No. 13) is a 28 line, two hole form. The face is inflated midway between the rim and the center depression. It tapers from the inflated cover to a rounded rim and to the center depression. The center depression is straight-sided and flat-bottomed. Another large button (Cat. No. 84) is a 30 line 2 hole form. The edge of the face near the rim is flat and inscribed with a line running parallel to the rim. The face slopes inward from a point just inside the line to the center. The center is a raised straight-sided circle. Both of these buttons are kinds normally used on dresses or overclothes.

The two remaining buttons are smaller. One specimen (Cat. No. 53) is a 16 line two hole form. The face is flat with a straight-sided circular center depression. The rim is flat. This form is generally considered a shirt button. The fourth specimen (Cat. No. 129) is a 14 line four hole button. It is flat-faced with a straight-sided circular center depression and rounded edge. Such buttons are found on shirt collars and cuffs. All four buttons have drilled holes.

Rubber

Five rubber artifacts were collected. Three specimens (Cat. Nos. 189 [two pieces] , and 373) are fragments of hard rubber combs. One fragment is a back section with five teeth. Two teeth are from a coarse toothed comb. Another specimen (Cat. No. 356) is from a woven fabric-covered rubber hose. A round rubber bumper (Cat. No. 171) with an iron nail for attachment was collected in Unit 2.

Plastic

Five pieces of plastic occur in the collection. One specimen (Cat. No. 145) is a red plastic screw lid with external ribs. Another specimen (Cat. No. 313), made of white plastic, is a circular fitting, with a concave end and central perforation. The object has not been identified. A third specimen (Cat. No. 332) is a red rubber sole fragment from a boot or wader. This specimen was recovered from the silt. One piece of black plastic (Cat. No. 87) and one piece of white plastic (Cat. No. 128) are unidentifiable.

Stone

Two pieces of a slate chalk board (Cat. Nos. 205 and 219) were collected from a depth of 100 to 110 cm in Unit 2.

Two aboriginal artifacts were collected. One is a chert notched scrapper (Cat. No. 237) or spokeshave. The second (Cat. No. 99) is a piece of basalt debitage.

Leather

Several leather shoe fragments occur in the collection. Two specimens (Cat. No. 239) are fragments of uppers. Both have brass lacing eyelets set in them. Two other specimens (Cat. No. 273) include an upper fragment with eyelets and a sole fragment. The sole fragment is joined with threaded brass screws; a method of construction which became common after 1880 and remained popular into the first quarter of the 20th century (Herskovitz 1978:123-124). This specimen was collected from the lowermost portion of Unit 2 (160+cm). It implies a pre-1890 date for that portion of the deposit.

Wood

A total of 166 pieces of wood were collected. Most of the wood is in small fragments, although parts of two timbers and several boards or shingles are recognizable. The identifiable wood is almost exclusively redwood. Some oak may be present.

Wood was used in the construction of the roof, floor, porches, door and window frames, as well as the walls of the later board and batten porch enclosures. Board fragments adhering to the inside of the west wall of the structure which were found in Unit 1 are from 1.5 cm thick floor planks. Pieces of floor joists of undetermined size were also found. Other measurable board thicknesses are 3/8 and 3/4 inches. The 3/8 inch pieces may be from shingles.

Charcoal

Eighty-seven pieces of charcoal were recovered. Most specimens came from the southern side of the structure, but were not associated with any feature. In addition, one timber and several board fragments recovered are partially charred.

Asphalt

A total of six pieces of asphalt were collected. These consist of a mixture of crushed rock and tar. They are apparently from the adjacent Pomona-Rincon Road and are intrusive to the upper portion of the site.

Cement

Cement from the walk on the south side of the house was collected in Unit C. A total of two pieces was recovered. One is an amorphous fragment and the other is relatively flat with several cobbles imbedded in the surface. The cement was mixed with sand to form a mortar.

Plaster

Plaster recovered from all excavation units totaled 20,003 kg. This plaster is of two forms and appears to have been used exclusively for covering the interior and exterior walls of the adobe part of the structure. See the description of the house construction above for further discussion.

Seeds

Nine seed fragments were collected. Eight specimens are peach seed fragments. One specimen is a charred and crushed small hard coat seed, possibly a pike nut.

Shell

Thirteen pieces of shell were recovered. Ten specimens are unidentifiable pelecypod shell fragments. One specimen is an abalone (Haliotis sp.) shell fragment and another is a barnacle (Balanus sp.). The third specimen is a Money Cowry (Cypraea moneta) shell. This is the famed money shell used in the South Pacific. It has a range which extends over much of the Pacific and Indian Oceans. The specimen is unmodified and is presumed to be a curio or keepsake.

Bone

The vertebrate faunal sample is composed of 363 specimens. At least ten specimens (0.3 percent) are noncultural, including snake, California ground squirrel and western pocket gopher remains. The remaining sample is ascribed to the historic occupation. Among these remains are a large number of specimens which cannot be specifically identified because of the morphologic similarities between sheep and goats. These specimens are treated as sheep remains in part as a matter of convenience and because all of the specifically identifiable remains are sheep.

The sample is in good condition. There is no evidence of major chemical or physical alteration, except for burning which is found on 11.3 percent of the sample. Vertebrate remains occur throughout the sample from the uppermost to lowest levels. The distribution of species and body parts appears to be random. Some specimens are almost entirely confined to the upper 50 centimeters.

Animal Use

Animal use at the site reflects a vertebrate selection pattern which is common in southern California during the 19th and earlier 20th centuries. The principal food species are domestic farm-raised stock. Cattle and sheep predominate, with some pork and chicken also being utilized. A few indigenous game species were added to the diet with the effect of diversifying the diet without contributing much to the total amount of protein or calories consumed. To greater or lesser extents, this pattern of animal use is common to Californio and American inhabitants living both in rural and urban contexts.

The most significant aspect of animal use at the site is that sheep remains outnumbered cattle remains six to one, indicating that mutton was the dominant food source at the site and that it was substantially more important than beef. The importance of this evidence is that it documents a shift in the Californio subsistence pattern and economic adaptation. Previously, during the Mission Period, the economic adaptation of the missions in colonial Spanish California was focused on the hide and tallow industry with beef as the principal staple meat. During this period, beef was depended upon, with lesser amounts of mutton and

pork being utilized. The subsistence pattern associated with the mission adaptation persisted into the Mexican and American periods among the Californio (eg., Gust 1982).

After 1860, the cattle orientation of the Californio farming economy began to change. Sheep, being primarily utilized for marketable wool, replaced cattle and became an important element of the Californio economy (Cleland 1951:186-192). This is particularly true of the Californians living in the Rincon district (Theodoratus Cultural Research Inc. 1983).

The vertebrate sample from the Serrano house shows that the shift in the economy, from cattle to sheep, was accompanied by a dietary shift to a predominance of mutton in the diets of second and third generation Californios. Test excavation and historical research at Antonio Lugo's two story house in Bell Gardens also indicates a shift in adaptation toward smaller artiodactyls, such as sheep. It persisted well into the 20th century, although in that case, goats were the major later focus (P. E. Langenwalter unpublished notes).

Procurement

Two procurement strategies already mentioned were utilized. The raising of domestic stock represents the origin of all but a small percentage of the food supply. The only evidence of the decisions made during the selection of farm stock is the age of slaughter. The only pork remains in the sample indicate the use of a "suckling" pig.

Sheep of several ages were used. One animal was killed at an age of approximately 18 months, while another was slaughtered at an age of about 48 months (based on dental eruption and epiphysical fusion dates). The dynamic aspects of the slaughter age selection process in this instance are unknown. The second procurement strategy was the hunting of indigenous game, both waterfowl and rabbits, which could have been captured within a kilometer or so of the site.

Processing

Evidence of processing is restricted to butchering. Although 40 specimens (11.2 percent) of the sample are burned, this does not provide data about cooking, only that considerable animal bone was discarded into the hearth or that trash was burned. The sample is not large enough to determine the meat cutting patterns for each species. There is enough data to infer the general attributes of the butchering technology and some of the cuts of meat utilized. The absence of butchering waste indicates that most or all butchery was done away from the structure.

Three traditions of butchering technology are seen in 19th century historic sites in California (Langenwalter 1980:108). The two represented here are an ax-cleaver tradition and a

saw-knife tradition. The ax-cleaver tradition has been most commonly called Spanish or Spanish/Mexican. It has been misnomered Californio. This tradition originated in pre-industrial Europe and was carried to the Americas by the Spanish. The basic features of the tradition are the stripping of meat from the carcass with a knife and the dismemberment or cutting of bone using European style ax-bladed cleavers or axes. The saw-knife tradition, usually called Anglo or American, originated with the production of fine-toothed saws during the industrialization of Europe. It was introduced into California during the mid-19th century by American and presumably northern European settlers. The main feature of this tradition is the cutting of meat containing portions of bone like those seen in modern stores. In this case a knife is used to cut a portion of meat to the bone and a saw used to crosscut the bone (eg., T-bone, O-bone steak).

The Serrano house sample contains attributes of both. Among the specimens bearing butcher marks (excluding knife and scrape marks), 63.7 percent are cleaver and ax marks and 3.3 percent are saw marks. Three specimens are sawn on one end and cleaver cut on the other. The frequent mixed use of cleaver and saw to make the same type of cuts apparently reflects transitional acculturation of Californios from the traditional ax-cleaver tradition introduced by their forebearers toward the saw-knife tradition introduced during the American period. This mix of cutting has been observed at some other mid and late 19th century California sites but is not seen at mission, early Californio or American sites.

Similarly, the cuts of meat derived from the butchering process have become acculturated. Whereas the traditional pattern might be expected to contain soup bones, rib cuts, the remains of "joints of meat", amorphous cuts and the like, the Serrano assemblage contains "American" cuts including beef round steaks and mutton sirloin roast.

Table 8-2

SUMMARY OF VERTEBRATE ANIMAL REMAINS FROM RIV-2778 GIVEN BY TOTAL SPECIMENS AND MINIMUM NUMBER OF INDIVIDUALS (MNI)

Common Name	Scientific Name	Total Specimens	MNI
	Colubridae	1	1
Unidentifiable Snake	Serpentes	1	
Teal-Sized Duck	Anas (sm. sp.)	1	1
Teal-Sized Duck	Anatidae (sm. sp.)	1	
Duck	Anatidae	1	
Chicken	Gallus gallus	8	1
Unidentifiable Bird	Aves	7	
Rabbit	Sylvilagus sp.	4	1
Jackrabbit	Lepus californicus	3	1
Unidentifiable Rabbit	Leporidae	2	
Ground Squirrel	Citellus beecheyi	6	
Pocket Gopher	Thomomys bottae	5	
Meadow Mouse	Microtus californicus	2	1
Pig	Sus scrofa	2	1
Sheep	Ovis aries	9	1
Sheep or Goat	Ovis or Capra	45	
Cow	Bos taurus	9	1
Unidentifiable Artiodactyl	Artiodactyla	12	
Large Mammal	Mammalia (lg. sp.)	1	
Unidentifiable Mammal	Mammalia	225	
Unidentifiable Vertebrate	Vertebrata	31	

Faunal samples have occasionally been used in California to aid in ethnic identification or to define ethnic components in cultures under change (Langenwalter 1980). The principal topics studied are the array of species utilized and the butchering techniques used to process animals. In this study, since the ethnicity of the occupation was already known to be Californio, the faunal sample provided more data on change and acculturation within the Californio community. The sample shows an overwhelming use of sheep over beef, six to one. This is a dramatic shift from the predominantly beef samples from other historic sites of the Mission and Early Rancho Period. This may be a regional phenomena, since around 1865 several years of drought in Southern California decimated cattle herds and the Californio beef industry was largely replaced by a sheep-oriented economy, specifically focusing on the wool market. Subsequent to a broad economic shift, the sample reveals an internal, adaptive shift in the dietary pattern. The shift in butchering is the result of intercultural contact and reflects the process of acculturation as it acts upon one aspect of Californio culture.

Discussion

The Serrano house site is known to represent a second and third generation Californio occupation. There is enough historical data available about the residents and the region to view the occupation as representing a transitional step in Hispanic adaptation to American culture in an agrarian context. The historical data available for the occupants provides identification and genealogical connections. Occupations and many activities of the residents are documented in archival sources and may be further enhanced by interviews with some relatives. The data available provides a schematic of the residents. It is deficient in providing information about socioeconomic conditions, household activities, farm operation and the nature of change in the residents activity and adaptation over the half century the site was occupied.

The test excavation of Riv-2778 has shown that the Serrano house site contains a complex assemblage of features and artifacts. The portions of the features sampled at or below ground surface are undisturbed and contain a variety of artifacts. The features result from different activities at the site, providing the potential for studying a diversity of behavior patterns. If the sampling around the exterior of the feature is representative of the midden at the site, a number of other features can be expected to exist within the vicinity.

Stratification at the site occurs in two forms. There is sedimentary stratification resulting from the deposition of different kinds of materials during and after the occupation. Stratification also exists in the distribution of some artifacts within several features. These contextual data provide the opportunity to date and organize cultural residium and features into units which will allow more critical synchronic and diachronic analyses.

Determining the span of occupation at the Serrano house presents some problems. Basic changes in the household and the date of abandonment, 1938, are documented in written sources. This information can be enhanced by interviews with Serrano relatives. The problems are associated with the earlier occupation of the site. The presence of Mission Ware implies site use as early as the 1860s and Antonio Aros is known to have had a house in the vicinity by 1871. Although Aros's house was almost certainly another structure located a short distance to the southeast, the possibility that the Serrano house is the same structure or was built and occupied prior to the Serrano residence cannot be ruled out. If the Serranos did build the residence in 1879, then there may be a necessity to further study the origin and dating of the Mission Ware from the site.

The data from the features and artifacts provide information about a number of aspects of the lifeway at the site. Most of

the cultural residium is from the structure, providing information about the architectural detail and construction. The photographs of the house show much of the architecture, revealing it to have been a conventional adobe house with wood frame additions. The preliminary excavation of the house indicated that the methods of construction and materials used in construction are common to adobe architecture in southern California.

Some information was available on basic construction materials including the adobe, plaster, mortar, wood and metal used. Wooden portions of the house were fastened with a variety of nail sizes. The house was repainted or altered using round wire nails. The plaster and other residium from the rubble pit indicates that the house probably underwent substantial refurbishing at some time. The photographs indicate that a wood shingle roof was later replaced by one of corrugated iron. Some artifacts, including a door knob and window glass, provide evidence of the types of fittings used in the house. Further excavation will allow more detailed study of the construction attributes and specific organization of the house.

A large number of artifacts are household items. These range from containers and tableware to personal items. The containers indicate that canned and bottled foods and bottled liquids were used during the occupation. Most of the food cans come from later contexts and are absent from earlier strata. The tablewares include glass, porcelain, ironstone, and earthenware items. These include objects for making, serving and consuming food and liquids. All of these items were mass produced and sold at low to moderate cost. None are social luxury items.

The personal items in the sample include parts of clothing, firearms, toys, and various small objects. Most of the clothing items are buttons. These are mostly common forms used on men's and women's clothing. Some shoe leather, eyelets and screws are present, showing the construction of some of the footware used at the site.

The ammunition found at the site indicates the use of a number of types of firearms--caps and ball, rimfire and centerfire weapons were used. Rifle, pistol, and shotgun were apparently utilized. Most of the artifactual remains are from firearms which could have been used for a wide variety of purposes: sports, hunting, self-defense. The 0.50 caliber Remington pistol cartridge was manufactured as a weapon designed primarily for combat or self-defense.

A number of children's toys are present. These include doll parts, a marble, a wheel from an iron toy, and a slate. Minimally, these represent the presence and pursuits of a female child at the house (there were both male and female children present).

The floral and faunal remains represent some of the variety of foods used at the site. The composition of the vertebrate remains are of particular interest. The species represented and the numerical representation of specimens per species implies that mutton was the dominant food source, with pork and beef being of lesser importance. This varies from the expected pattern of a beef dominated meat diet. The change seems to be related to a mid to late 19th century shift in the regional livestock industry from cattle to sheep (see Bone Section, above). If the interpretation is correct, then the Serrano house sample can be used to demonstrate changing patterns of diet among the California population and as an example of dietary priorities being controlled by broad economic changes external to the site and locality.

Another aspect of the animal use at the site is the butchering of meat. A combination of knife, cleaver or ax, and saws was used. The introduction of the saw reflects a technological change indicating acculturation of the traditional butchering patterns seen at earlier Hispanic sites (see Bone Section, above).

A few items reflect explicitly farm-oriented activity. Some of the pipe and pipe fittings are of the type used in irrigation, implying that the Serranos shifted to pumped water to irrigate. Barbed wire was used in fences.

A number of artifacts, including cartridge cases and beer bottle fragments, post date the occupation of the site. Most are on the surface or in near surface contexts. The forms of these artifacts are frequently different and separable from items dating to the occupation.

The cultural residium at Riv-2778 is sufficiently diverse, abundant and intact to be used to profitably address a number of research problems concerning Californio culture and cultural adaptations (see Recommendations for Future Research).

RIV-2802 -- ADOBE DWELLING

Riv-2802 was located during archival research at the San Bernardino County Surveyor's Office. It appeared as a small box marked "Adobe Dwel" on an early railroad survey map of the area which became the Rincon town site. The map, which is undated and bears only the legend "Exhibit A", shows the California Central Railroad right of way through the Rincon and Newberry Acres townsite which then belonged to Newberry and Kleinschmidt. The map was apparently drafted in the early 1880s in preparation for acquiring the right of way property.

The structure was located on the portion of Rancho La Sierra allotted to Concepcion Serrano de Yorba based on Bernardino Yorba's will. The structure does not appear on the "Plat of the Rancho La Sierra Finally Confirmed to Bernardino Yorba" by G. H.

Thompson, October, 1866 or a later version dated October, 1868. Nor does it appear on the map of "Rancho La Sierra in the County of San Bernardino, Cal., Parts Allotted to Tomas Yorba, Concepcion Serrano de Yorba, Maria Jesus Shorb" filed with the San Bernardino County Recorder in November, 1882, but based on a survey made prior to July, 1878. This may be the result of the surveyor's procedure, which usually deleted landmarks not on or immediately adjacent to the boundary line.

Examination of later maps shows no evidence of the structure. The 1890 edition of the Corona Quadrangle does not show the structure. The evidence from the maps is incomplete. No approximate initial date for the structure can be firmly established, but it appears that the structure was removed or in ruins by 1890. No other information about the structure was located during this study.

Subsequent to the founding of the Rincon townsite, the vicinity of Riv-2802 has apparently been either fallow or under cultivation. The Yorba Ditch (Hall 1888:297-298) was located a short distance north of the structure and is shown on the railroad map. It is possible that the structure was associated with the use of the ditch in the area. At present, the site is buried beneath approximately 0.4 meter of silt and is covered by a dense growth of cockleburr, brush, and young trees.

The site was located by triangulation from known survey points shown on the railroad map. The elevation is approximately 505 feet MSL. A series of post holes was utilized to determine if evidence of the site could be located. Intuitively selected post holes placed in a grid pattern were excavated until cultural debris were located. Then, one 1-meter square excavation unit was excavated to obtain a sample from the site.

Features Description

One feature was encountered. This is a shallow trash lens penetrated by Unit 1. The feature occurred from original ground surface (beneath the silt) and has a depth of approximately 40 cm.

Artifact Description

Ceramics

Fifteen pieces of ceramics were collected. Two specimens (Cat. No. 45) are "Mission Ware" shards. The paste is brown (Munsell=2.5YR 4/6) with quartz sand inclusions. The vessel interior slip is reddish brown (Munsell=5YR 5/4) and the exterior slip is slightly dark with clouding. One specimen is a rim shard from a round vessel with a rounded rim.

White ironstone is represented by nine specimens (Cat. Nos. 14, 21, 28). Two hues of white, one grayer than the other, are represented. Two of the specimens are rim shards with slightly flattened rounded rims. A third specimen bears a foot ring. These shards are probably from a saucer or plate.

Three specimens are porcelain. One (Cat. No. 31) is a rim shard of an irregularly shaped object with a vitreous glaze. A small perforation is located adjacent to the rim. A second specimen (Cat. No. 32) is a rim shard from a small circular object with a matte glaze. The third specimen (Cat. No. 6) is a shard from a large object with a vitreous glaze.

Two pieces of drain tile (Cat. Nos. 4 and 38) were collected. Both have red pastes and brown glazes.

Glass

The excavation yielded 18 shards of glass. There are five clear window glass shards (Cat. Nos. 15 and 22). One clear glass specimen (Cat. No. 1) is a fragment of a stemmed goblet with a fluted body and faceted stem. Another clear glass specimen (Cat. No. 24) is the base of a drinking glass with a ring base and globular body.

Two specimens (Cat. No. 27) are white or milk glass shards from a small container. The remaining nine specimens (Cat. Nos. 8, 16, 23, 41) include shards from containers or other objects. Six are clear glass, two are dark green (Munsell=10YR 5/4) and one shard is aqua (Munsell=10G 8/4).

Metal

The bulk of the sample consists of iron. A total of 1030 iron specimens were collected, of which 1018 specimens are small unidentifiable fragments. Ten specimens (Cat. Nos. 2 and 10) are large square nail fragments. One specimen (Cat. No. 10) is a broken plow share fragment. Another specimen (Cat. No. 12) is a large wrought iron eye hook.

Slag

Unit 1 yielded 30 pieces of slag (Cat. Nos. 7, 18, 20, 29) and post hole W-1 yielded two pieces (Cat. No. 39). These occur in three types. Six specimens are metallic slag, 13 are glassy and 13 specimens are tuffaceous.

Coal

Two pieces of hard coal or anthracite were collected in Unit 1. One piece has been partly burned.

Bone

A total of 21 vertebrate specimens were recovered from the test unit and one post hole. All of the specimens appear to be cultural residium. Most of the specimens can be identified only to more general taxonomic levels (Table 8-3). The sample suggests that sheep (or goat) were the major food source and that some beef and rabbit were used. This is congruent with the data from Riv-2778 as far as the Californio subsistence adaptation in the region is concerned. The presumed sheep remains are exclusively from the rib cage and pelvis. Some specimens bear tool marks. Two specimens bear blade marks, indicating the use of a knife to remove flesh from the bone. Four specimens have been cleaver cut and one sawn. Two sheep (?) ribs have been snapped rather than cut (a practice observed among some Mexican butchers).

Table 8-3

SUMMARY OF VERTEBRATE REMAINS FROM RIV-2802 GIVEN BY TOTAL SPECIMENS AND MINIMUM NUMBER OF INDIVIDUALS (MNI)

		Total Specimens	MNI
Jack Rabbit	Lepus Californicus	1	1
Cattle	Bos Taurus	1	1
Sheep or Goat	Artiodactyla sm. sp.	7	1
Unidentifiable Mammals	Mammalia	6	
Unidentifiable Vertebra	Vertebrata	6	

Discussion

The object of the excavation at Riv-2802 was to determine if evidence of the site still existed. This was confirmed by the location of the cultural residium described above. While the structure was not located, evidence in the form of building materials, work and subsistence refuse indicates that it was located in the immediate vicinity. An intact trash pit was found and it is probable that the foundation still exists, although the upper portion was probably removed during later farming of the site.

Very little is present to establish the cultural association or period of residence of the site. The food remains are consistent with those seen at the Serrano House (Riv-2778), suggesting a Californio occupant. The presence of Mission Ware suggests occupation as early as the 1860s, while evidence from the maps suggests abandonment prior to 1890.

The artifacts from the site fall into several categories: building materials, household items and farm equipment. Other remains include food refuse and blacksmith activity. The window

glass is the only material plausibly associated with the construction of the structure. Table items, glasses, buttons, and plates or saucers along with the food refuse imply the use of the structure as a residence. The slag and large amount of iron refuse imply the use of a forge. Whether this was as part of the farm activities or a specialized occupation is not determinable. A plow share fragment could be evidence of farming at the site or a blacksmith's repair activity.

Further sampling at the site will be necessary to provide adequate documentation.

SBR-1571H -- PATE RANCH SITE

SBr-1571H is located on a knoll attached to the northwestern corner of Pate Mesa. The Pomona-Rincon Road passes along the western edge of the knoll. The knoll trends northwest with the greatest elevation at the southeast end which drops into a saddle between the knoll and Pate Mesa (SBr-1543). It is composed of Pleistocene non-marine sediments capped with topsoil. The site is located on the highest portions of the knoll with a maximum elevation of approximately 517 feet (157.5 meters). The knoll is presently being farmed for Sudan grass and is alternately in crop or dry stubble. The main portion of the site is partly surrounded by mature pepper trees remaining from the Pate occupation. The main part of the site is covered by wild oat and cockle burrs.

The site was discovered by Hall (1975:III-3-4) during the prior study of the Prado Basin by the Archaeological Research Unit at the University of California, Riverside. The site was described as containing a "large chunk of unfired adobe", 19th century china and an amber bottle with a "BEN-HUR" label. Hall suggested that the site may have once been occupied by some sort of structure.

The surface of this site has been considerably disturbed. The impact of the original demolition of the structures on the site is unknown. The recent Sudan grass farming has disrupted the southern edge of the site, dragging some specimens out of place. Several years ago a stone-lined depression on the knoll top was filled by the Prado Recreation Center using a skip loader.

The site is the location of the house of a Pate residence. James W. Pate settled at the ranch in 1889 according to an article in the September 27 issue of the South Riverside Bee (Desborough n.d., Appendix:62). Pate engaged in farming a wedge-shaped parcel which extended from Chino Creek west across the Pomona-Rincon Road.

The 1936 aerial photographs of the basin (F148) show the Pate house and a barn and corral located about 50 meters south of the house. The house was a clapboard cottage. Given the debris

Table 8-4

NAILS, TACKS AND SCREWS
FROM SBR-1571H

	Square Cut Nails					Round Wire Nails										Misc Nail	Tacks			Wood Screws	Totals of Units
	4d	6d	8d	10d	20d	2d	3d	4d	5d	6d	8d	10d	12d	16d	20d	30d		1/2"	3/4"	misc		
Unit 1																						
0-10			1				2										6					9
10-20				1																		
																						1
Unit 2																						
0-10													1				2					3
10-20					1												9					10
20-30																	1					1
Unit 3																						
0-10						6	14		4	15	35	31			7	4	7			2	2	128
10-20						15			13	3	11	1		1		2	13	3		1		63
20-30		4				9			6	2	1		1				5					26
30-40												1										1
Unit 4																						1
0-10			2					1			6									2		11
10-20	1		1				4	9			2		3				17			2		37
20-30										1							6		1			8
TOTALS	1	4	4	1	1	30	20	11	23	21	55	33	5	1	7	6	60	3	1	7	2	252

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observed at the site it was apparently set on a stone foundation. Both the house and barn were demolished in 1939.

The sampling strategy employed at the Pate Ranch site was largely intuitive. Units were initially placed to identify foundations and refuse deposits based on historic aerial photographs and the surface artifact scatter. Three 1-by-2 meter units were excavated. One unit, Unit 2, produced prehistoric ground stone artifacts that were believed to represent an in situ deposit. Subsequently two 1-by-1 meter units were excavated further south on the site to evaluate the possibility of a prehistoric component (see discussion in Prehistoric Sites section).

Observations

The stratigraphy of the site is very irregular. This suggests that the site was bulldozed when demolition occurred. Disturbed foundation debris and very fragmentary artifacts support this notion. The depth of the cultural deposit is approximately 50 cm. Soils range from light brown friable loam to hard red-brown clay. Rodent disturbance was apparent in every unit.

Artifact Descriptions

Metal

The widest range of different artifact types is to be found in the metal category. Table 8-4 summarizes the nails, tacks and screws from the site, while Table 8-5 lists the other various types of metal items.

Some metal items are worth particular mention. One small silver ring (Cat. No. 336) was recovered; no writing can be deciphered on the inside. The most chronologically sensitive metal items are shotshells and bullet cartridges. Of the eight shells recovered, four have legible bases. The illegible examples are all .22 caliber rimfires. The following examples with basal writing are present:

Cat. No. 227	"REM-UMC/No. 12/NITRO CLUB" This is a shotshell, Remington Union Metallic Cartridge Co. It was produced from 1910 into the 1950s (Roeder 1980: 1-9).
Cat. No. 227	"W.R.A. Co./38 S&W" Manufactured by Smith and Wesson, dating uncertain.

Cat. No. 227 "W.R.A. Co./32 S&W"
Manufactured by Smith and Wesson, used for handguns. Roeder notes the range of manufacture as 1878 to the present (1980:1-14).

Cat. No. 23 "No. 12/US/CLIMAX"

Table 8-5

MISCELLANEOUS METALS

UNIT	LEVEL	CAT. NO.	QUANTITY	ITEM
2	0-10	16	1	IRON SHEET FRAG
2	10-20	25	1	SHEET METAL FRAG
2	10-20	26	2	BOTTLE CAP FRAGS
2	10-20	29	1	COTTER PIN
3	0-10	216	1	FOIL WRAPPER W/WRITING
3	0-10	219	35	FENCE WIRE
3	0-10	221	1	2 WIRE STRANDS TWISTED (BRASS)
3	0-10	225	5	BRASS EYELETS + HOOK
3	0-10	226	1	BRASS BRAD (THIN WIRE NAIL)
3	0-10	227	5	BRASS SHELL CASES
3	0-10	229	6	IRON STAPLES (FENCE)
3	0-10	230	2	IRON + BRASS SAFETY PIN PIECES
3	0-10	231	1	CHROME PLATED FERULE
3	0-10	232	1	BRASS BUCKLE SLIDE
3	0-10	233	1	CLASP (PART) BRASS
3	0-10	234	5	BOTTLE CAP PCS
3	0-10	235	1	STRIP OF TIN PLATED SHEET METAL
3	0-10	236	1	THREADED IRON BOLT
3	0-10	237	1	THREADED SPIKE
3	0-10	238	1	TIN CAN LID
3	0-10	239	1	IRON WASHER
3	0-10	240	1	LID COVER (ALUMINUM)
3	0-10	241	1	SINK WASHER/THREADED (CHROME PLATED STEEL)
3	0-10	242	1	BRASS STOVE FIXTURE
3	0-10	243	1	COPPER WIRE
3	0-10	244	1	SLAG
3	0-10	246	2	CAN OPENER KEYS (IRON)
3	0-10	248	300	UNCLASSIFIED METAL FRAGS
3	10-20	267	1	BUTTON "OVER-EM-ALL" (BRASS PLATED FE)
3	10-20	268	1	BUTTON, 2 HOLED (BRASS PLATED FE)
3	10-20	269	?	RIVETS, EYES BRASS (BRASS PLATED FE)
3	10-20	270	?	WINE TAG (TIN)

Table 8-5 (continued)

MISCELLANEOUS METALS

UNIT	LEVEL	CAT. NO.	QUANTITY	ITEM
3	10-20	277	?	DECORATIVE BRASS ITEM
3	10-20	287	1	SOLID NICKEL TEASPOON
3	10-20	288	1	TIN TOBACCO LID
3	10-20	289	6	BOTTLE CAPS (FE)
3	10-20	290	1	LID TO QUART SIZE CANNING JAR
3	10-20	291	1	CRINKLED ALUMINUM FOIL
3	10-20	292	1	.22 SHELL CASE (BRASS)
3	10-20	294	1	CLOTHESPIN SPRING (FE)
3	10-20	295	3	BRASS + SILVER PLATE SAFETY PIN FRAGS
3	10-20	296	3	TWISTED WIRE (IRON)
3	10-20	297	2	KEY FOR OPENING CAN (FE)
3	10-20	299	2	GROMETS (CHROME PLATED)
3	10-20	300	2	UNIDENTIFIED TIN FRAGS W/LETTERS
3	10-20	301	2	BUTTONS (LEVITYPE)
3	10-20	302	1	IRON NUT & BOLT (SEXTAG HEAD)
3	10-20	303	1	BRASS TUBE W/HEAD(WIRE HOLDER)
3	10-20	304	1	"SPAM" STYLE CAN (FE)
3	10-20	305	3	IRON STRIP METAL SHEET
3	10-20	306	1	SPACER OR WASHER (FE)
3	10-20	307	1	STRAP CLASP (FE)
3	10-20	308	1	SPIKE
3	10-20	309	1	BAR W/PT. END
3	10-20	310	25	WIRE FRAGS
3	10-20	314	1	HOOK (FE)
3	20-30	336	1	SILVER? ADJUSTABLE RING
3	20-30	337	1	BOTTLE CAP (FE)
3	20-30	338	1	22 SHOT CASE (BRASS)
3	20-30	339	1	GROMET (BRASS)
3	20-30	340	?	TIN CAN FRAGS
3	20-30	341	1	BRACKET? FE STRAP W/BOLTS

Glass (by William A. Sawyer)

The glass recovered from SBr-1571H is highly fragmented and thermally affected, making the distinction between bottles, jars, and glassware difficult. However, the following paragraphs summarize the type and quantities (by use of a minimum number) of bottles or glass that could be identified from SBr-1571H.

A minimum 19 bottles were identified from fragments. These include: 7 clear bottles; 4 amber bottles; 4 light aqua bottles; 2 cobalt blue bottles; 1 opaque green bottle; and 1 dark green bottle. The bottles all seem to be machine-made, except for the opaque green bottle, which was blown in a paste/turn mold. The bottles are round, oval, rectangular and faceted. Only one clear

bottle finish was present and consisted of a cobalt blue, machine made, prescription type finish. One clear bottle has embossed increments and may represent a nursing bottle. One aqua bottle side panel fragment is embossed "--OGA ME--", and probably belonged to a paneled patent medicine bottle. One aqua base fragment and one clear base fragment embossed with the Owens-Illinois Glass Company maker's mark represent the only bottom base present in this assemblage.

Jars

A minimum of six jars have been identified from base and rim fragments. Four of these appear to be fruit jars. The remaining two items consist of one milk glass cream or ointment and one clear condiment jar. The fruit jars are made of both aqua and clear glass. Five of the fruit jars are machine made and one may have been blown in a flow over mold, as it exhibits a ground lip. All jars have continuous thread closure. Their captures are unknown. One fruit jar base is embossed with the trademark of the "HAZEL-ATLAS" Glass Company.

Glassware

Six objects are included in this category. Two clear glass bowls are represented by two rim fragments. One has an embossed pattern on the exterior, a scalloped rim, and an interior bench below the rim for seating a lid. The second bowl has vertical ribbing on the exterior.

The remaining glassware items include: fragments of one light green rectangular vessel, one rim fragment to a light green tumbler with raised interior fluting, fragments of a light green bowl with an embossed flower pattern on the exterior, and one milk glass plate fragment with an enameled and textured surface. All appear to be "depression glass".

Miscellaneous Glass

This category is represented by six items. Fragments of two light bulbs are present, including the bottom rod and associated glass components below the filament. The rim fragment from a pearl top kerosene lamp chimney has been identified. The fragments of a frosted glass object are present; its use or original shape is unknown. One fragment of purple flat glass exhibits ribbing or corrugation on one surface, and finally, one dark blue glass tube bead is present.

Window/Plate Glass

Over 700 fragments of clear and aqua window glass are present. Several fragments of larger plate glass are also included under this category. Much of the glass is moderately patented.

The lack of datable glass objects from SBr-1571H hinders the determination of a specific deposition period. However, the presence of the Owens-Illinois trademark, the Hazel-Atlas trademark, paste mold bottle, sun colored fragment, and a machine made prescription type finish suggest a rough deposition period or periods from the mid-1910s to the mid-1930s.

Ceramics

The ceramics from the Pate Ranch site are very fragmentary and mostly undiagnostic. A total of 269 shards were recovered. Of these, 184 are ironstone/china, 31 are porcelain, and 54 are earthenware. Using a minimum count criteria of needing more than half of a vessel's base, the minimum count is zero. Three makers marks are present--one is complete (Cat. No. 259) and two are incomplete (Cat. Nos. 190 and 191). The later two read "__ivory" and "U.S.A.", respectively, while the former reads:

K. T. & K.
S-----V
IVORY
38A

This mark can be identified as a product of Knowles, Taylor and Knowles of East Liverpool, Ohio. This was the largest pottery in the United States during the late 1800s and early 1900s (Gates and Ormerod 1982:116). As such, this pottery is common at historical sites in the area. A number of pieces of K. T. & K. pottery were recovered from the O.C.T.D. terminal site in Santa Ana (Brock 1985) and some was also recently found at the Peralta Adobe in Anaheim, although this common marker's make was listed as unidentified (Van Horn n.d.:Figure 3). The example under consideration here is semi-vitreous dinnerware dating to about 1925 (Gates and Ormerod 1982:126).

Some of these very fragmentary shards are decorated. Catalog number 180 has a floral/geometric hand-painted polychrome decoration. Other common floral patterns are present. A few fragments of turquoise all-over glaze vessel (Cat. No. 175) are probably from a California pottery (Padre or Bauer).

Other ceramic items include a porcelain bisque doll arm fragment (Cat. No. 181), and four knobs and one tube from an early porcelain knob and tube electrical system. Two of the knobs (Cat. Nos. 66 and 146) carry the trademark "Bulldog" and one says "Alligator" (Cat. No. 192).

In summary, the very fragmentary nature of the ceramics assemblage makes it quite undiagnostic. The most chronologically sensitive item is the maker's mark--dated to about 1925. The rest of the ceramics are broadly characteristic of the period from 1900 to 1920.

Plaster/Brick

This category consists of undiagnostic building rubble. It contains primary plaster with some brick and concrete present. There are no painted surfaces or adobe fragments.

Miscellaneous

Plastic: This includes a number of small fragments of phonograph records (Cat. Nos. 211, 265, 311), as well as two bottle caps (one embossed with "Bohemian Distribution Co. Ltd." (Cat. No. 209).

Rubber: This includes a rubber boot sole (Cat. No. 249), a rubber furniture caster (Cat. No. 203), and a rubber bottle stopper (Cat. No. 271).

Graphite: Five fragments of pencil leads were recovered (Cat. Nos. 273 and 332).

Buttons: Five metal buttons along with one milk glass button were recovered. With the exception of one metal example that says, "OVER-EM-ALL", these are largely undiagnostic.

Marbles: Two glass marbles were excavated from SBr-1571H (Cat. Nos 159 and 204). These are machine made opaque examples which date from about 1905-1926 (Weitzman 1976:143).

Leather: Seven small undiagnostic fragments of leather were recovered.

Floral (Wood and Seeds)

Thirty-five small fragments of wood were recovered from SBr-1571H. These all appear to be redwood and some exhibit milled surfaces. Forty-eight peach pits were recovered along with six small fragments of unidentifiable seeds.

Shell

A total of 13 pieces of shell representing a minimum of four species were recovered. The identifiable specimens include five fragments of a small scallop (Pectinidae), one fragment of the California venus (*Chione undatella*), two specimens of garishell (*Sanguinolaria bertini*) and one fragment from a California mussel (*Mytilus californianus*). An additional four specimens are too fragmentary to be classified. These are identified as mollusca.

Bone

Two hundred and eleven vertebrate animal remains were collected (Table 8-6.) These include a minimum of eight species. Among these, a portion of the rabbit remains, and all of the squirrel, gopher and rodent remains, are recent additions to the assemblage and are not associated with the Pate occupation. One of the avian species associated with the occupation was not identified to genus or species and is listed only as unidentified bird (Table 8-7). Among the animal species used at the site are chicken, duck, rabbit, pig, and cattle. An egg shell fragment, presumably chicken, but not identifiable as such, was collected.

Table 8-6

LIST OF VERTEBRATE REMAINS FROM SBR-1571H.

		Total Specimens	MNI
Chicken	Gallus gallus	6	2
Ducks	Anatidae	1	1
Unidentified bird	Aves	6	1
Unidentified bird	Aves	4	
Rabbit	Sylviagus sp.	7/2*	1/1*
Ground Squirrel	Citellus beecheyi	1*	1
Gopher	Thomomus bottae	3*	1
Unidentifiable rodent		1*	
Pig	Sus scrofa	9	1
Cattle	Bos taurus	11	1
Unident. Artiodactyl	Artiodactyla	4	
Unident. Mammal	Mammalia	141	
Unident. Vertebrate	Vertebrata	15	

Specimens followed by asterisk (*) are noncultural.

Discussion

This site was initially believed to possibly contain remnants of an adobe structure (Hall 1975:111, 113, 114). Test excavation and archival research have presented a strong case against the presence of an adobe structure. We can conclude that this was the location of the James Pate Ranch house with its attendant outbuildings. The ranch was occupied in 1889 and abandoned in 1939. The wood framed structures that had been present were demolished by bulldozer. This activity has substantially impacted the site and caused the displacement of any in situ refuse deposits that had been present.

SBR-2317 -- YORBA-SLAUGHTER ADOBE

The Yorba-Slaughter home is California Historical Landmark No. 191 and is listed on the National Register of Historic Places. It is located on the Pomona-Rincon Road between Pine and Euclid Avenues. The elevation of the base of the structure is 563 feet MSL. The house is the second known residence built on Rancho El Rincon, having been preceded by the Bandini-Cota Adobe. Raymundo Yorba built the house between 1850 and 1853 on 1000 acres, then believed to be the northern portion of Rancho El Rincon. The property was a gift to Raymundo from his father, Bernardino Yorba, at the time of his second marriage.

Yorba raised crops and livestock on the property. Between 1859 and 1863, the Butterfield Stage passed the house at the foot of the hill. Yorba is said to have provided teams of horses for the stage, although his ranch was not a regular stop (Historical Society of Pomona Valley 1972). Yorba occupied the property for 18 years. In 1868, he sold the ranch to Fenton Slaughter (Ingersoll 1904:663) and moved to a house south of the Santa Ana River at the place which was to become the Rincon (Prado) town site (cf. Stephenson 1941:38).

Fenton M. Slaughter, his wife, Dolores Alvarado, and their family occupied the Yorba house. Slaughter transferred his sheep herds from Pomona to Yorba's Buena Vista ranch and continued sheep raising until 1882, when he sold his flocks. In 1885, he consolidated his holdings, retaining his homestead and the 1000 acres of the Buena Vista Ranch (Brown and Boyd 1922:1124).

According to several biographies of Fenton Slaughter (Lewis Publishing Company 1890:625-627; Brown and Boyd 1922:1123-1126; Pomona Valley Historical Society 1972) the ranch was run as a model operation and became one of the most prosperous in the region. Slaughter engaged in diversified agriculture, raising a variety of crops and some livestock. He devoted 40 acres to grapes, which were processed into wine at his Vineslope Winery, which had a capacity of 20,000 gallons. Other grapes were processed into raisins and sold under the "London Layer" label.

His other activities on the ranch included the construction of a concrete reservoir (see PB-54) which is reputed to have been the first reservoir in Chino. In 1869, he built a store west of the house, which was used as a post office (see PB-60).

Slaughter was active in regional and state politics. "He was a delegate to the county and state conventions of the Democratic party, and in 1870 was elected a member of the Assembly from San Bernardino County, serving in the session of 1871-72" (Brown and Boyd 1922:125). He was appointed and then elected supervisor of District No. 2 in San Bernardino County in 1885 and 1886, respectively. He was a school trustee and was once appointed postmaster of Rincon, but refused the office (Brown and Boyd 1922:125).

Fenton Slaughter died on May 29, 1897. After his death, the ranch was run as a corporation by his heirs for several years. The arrangement was found to be unsatisfactory and the ranch was divided (Desborough n.d., Appendix:47).

The Slaughter's third child, Julia, lived across the street at the store site. The house site was no longer occupied by the Slaughters. It was used as an outbuilding and at one point as part of a hog farm. By 1900, the structure had substantially deteriorated. In 1928, Julia Slaughter Fugue obtained the property and began a long term restoration. She refurbished the structure as a museum. It continues to be operated as a satellite of the San Bernardino County Museum.

The Yorba-Slaughter house was originally a rectangular structure built of adobe brick. It was divided into two room-blocks with a central wall. Each block was divided into several additional rooms. A wood frame addition has been built on the south side of the house and a brick addition has been added to the western end, giving the structure a T-shape. At different times, the roof has been refurbished, a concrete floor placed inside, and the walls replastered. Although the core structure remains intact, these additions have substantially altered the exterior appearance of the structure.

The Vineslope Winery, which is located approximately 300 meters to the south, has undergone even more extensive alterations. The original structure was built of adobe with a corrugated iron roof. High winds blew the adobe walls down in the 1930s, leaving the roof standing on its wooden supports. The structure was rebuilt using rectangular blocks of concrete. The interior is now used to display farm equipment. Other outbuildings at the site, some of which appear in the 1936 aerial photographs of the basin (F211), have been demolished. A small board and batten store has been moved to the site and houses an additional exhibit.

Intact subsurface deposits in the form of a well, privies, and trash pits may still exist on the grounds.

ACE-SAR-H2B -- O. G. MERIDITH RANCH

Site ACE-SAR-H2B is the remains of the house and outbuilding cluster at the Meridith Ranch. Hall (1975, Appendix III:1-2) initially identified the site and Tobey, Suss and Burgess (1977:68-69) described the site as consisting of a rubble mound with associated artifact scatter. The site is located at the edge of a north-trending wash at the north edge of the river terrace on the south edge of the Santa Ana River Flood Plain. The farm was fronted on the south side of Pate Road, a dirt road traveling east-west along the terrace connecting Yorba Street and the Pomona-Rincon Road. The location is shown in 1936 aerial

photographs of the Prado Basin (F40). The elevation is approximately 520 feet MSL. At present the parcel is being used to grow Sudan grass.

The parcel is part of the land granted to Conception Serrano de Yorba in 1878 during the partition of Rancho La Sierra. It was located immediately east of the boundary of the Rincon town site as subdivided in 1888. It has not been established when O.G. Meridith and his wife, Minnie L. Meridith, settled the land and built the home and outbuildings. They lived at the ranch with a son and a daughter, Floraney (Desborough n.d.:98-99). Their activity at the ranch is not well documented. The 1902 edition of the Corona Quadrangle shows a structure in the vicinity, but this could be associated with the adjacent Carrillo Ranch (PB-11).

Analysis of aerial photographs shows that the cluster of structures at the northwest corner of the ranch included a house, stables, and three or more other outbuildings. These were partly surrounded by trees. A double earth-banked reservoir was located on the southern edge of the property.

The Meridiths raised horses and feed crops. The 1936 aerial photograph shows the parcel as uncultivated pasture. The Meridith family lived on the ranch until the construction of Prado Dam, when they moved to Home Gardens. They sold the property to the Orange County Flood Control District in January, 1939.

The structures on the site were demolished during the building of Prado Dam and the rubble pile reported by Tobey, Suss and Burgess (1977:68-69) was intact until ca. 1981 when the present tenant farmer prepared the land for Sudan grass agriculture. Some debris is present in a road cut at the site. The subsoiling associated with Sudan grass farming has altered the site, causing removal and dispersion of cultural remains. During a discussion with the farmer he stated that some masonry work, perhaps a cistern, still existed on the site beneath the present ground surface.

ACE-SAR-H2C -- NAME UNKNOWN

Tobey, Suss, and Burgess (1977:68) described this site as consisting of downed and standing corral fences and a toppled windmill. These features are largely or completely located within parcel 287 of the Corps of Engineers appraisal records. They are located on the south side of Main Street (old Highway 18) within the boundaries of the town of Prado, at an elevation of 500 feet MSL.

This area was originally part of Block 18 in the Rincon town site. Ernest Goubert owned this property beginning in 1926 and maintained ownership until construction of the dam.

Examination of the 1936 aerial photographs of the Prado Flood Control Basin do not show the presence of the corral fences of a cattle loading chute. This feature was built using railroad ties which had been removed from service. Many of these ties bear dating nails indicating production between 1925 and 1930. They were put in service sometime after the dates of manufacture, used and removed from service (some ties on the Santa Fe Rail Road line within Santa Ana Canyon have been in service since 1943) before being used in the corral. It is probable that the corral is several decades younger than the initial dates of production of the ties. The corral was abandoned by the time the Camp Prado Boy Scout Camp was being used during the mid 1960s. Examination of the aerial photographs did not indicate whether or not the windmill was present in 1936.

PG-1 -- BRITSKI RESIDENCE

PG-1 (a number assigned by the Corps of Engineers) was located on the west side of Cucamonga Avenue where it is intersected by McCarty Road. The elevation is 530 feet MSL.

This site consisted of two clusters of structures located within a short distance of each other which were established between 1933 and 1936. The structures appear on the 1936 aerial photographs of the flood control basin (F147) but not on the 1941 edition of the Prado Quadrangle surveyed in 1933. The site was established by a family named Britski and apparently sold prior to construction of the Prado Dam. The southern cluster consisted of a house and well, while the northern cluster apparently consisted of various outbuildings. The structures are said to have been demolished during clearing of the flood control basin. One concrete lined well head remains at the site. It is possible that some disrupted or intact subsurface deposits still remain buried at this site. Such deposits could include a well, privy or trash pits.

ACE-PF-3 -- LT. COOK MEMORIAL

This site is the Lt. Cook Memorial. The site was first recognized as a potential resource by Schwartz (1980, 1981) during a survey of the area in conjunction with planned construction at the Prado Dam site. It is located immediately south of the Prado town site on the east side of a wash which trends north onto the flood plain of the Santa Ana River. The elevation is 510 feet MSL. At present it is in a stand of young and mature eucalyptus trees which obscure its location. The land surrounding it is presently being used to graze cattle.

The memorial is in good condition, consisting of a concrete platform and fieldstone wall with a flag pole. Several plaques are imbedded in the platform and wall. The principal plaque reads:

In Memorium
Lt. Dennis P. Cook USN
Nov. 1, 1936 Apr. 6, 1966
By Your Life Only Can You Prove
Your Principles To The World
And Show To All
There Is A Life Worth Living
He Gave His Life For The Love Of God And All Of Us
CAMP PRADO Nov. 1967

The smaller plaques on the platform read:

Troop II Santa Barbara 1948-1952	and	Order of the Arrow Canalino Lodge #90 1951

This site was identified using data from the Corona-Norco Daily Independent. Articles discussing the memorial were published on October 26, November 9, and November 13, 1967. Other information was forthcoming from Mr. Roger Verity of Corona during a telephone interview. Mr. Verity was a main figure in the construction of the memorial at Camp Prado Boy Scout Camp.

The memorial was designed to be a central patriotic feature of the scout camp. Camp Prado Boy Scout Camp was a short lived attempt to develop an area for scout activities by Temescal Boy Scout Troop 34. The site was leased from the Corps of Engineers and the memorial was installed. The camp was used for no more than several outings before financial and technical problems forced abandonment.

The Lt. Cook Memorial was constructed at Camp Prado through the efforts of the now defunct Active 20-30 Club of Corona. Members raised funds for materials and donated time for construction. The memorial was dedicated to local resident and club member Dennis Cook. Lt. Cook perished while serving aboard the USS Hancock as the result of a catapult malfunction which failed to launch his aircraft. This occurred in the South China Sea off the Vietnam coast.

The memorial was dedicated during a Veterans Day ceremony attended by then Congressman John Tunney, Cook's widow, Temescal Boy Scout Troop 34, Santa Barbara Boy Scout Troop 11 (Cook's home troop), members of the Active 20-30 Club, and various local dignitaries.

ACE-PF-4 -- NAME UNKNOWN

This site was first recognized by Schwartz (1980) using the 1936 aerial photographs of the Prado Basin. Efforts to identify the nature and associations of PF-4 have not been successful. The

structure was located in part of the area cleared during the construction of Prado Dam. It was apparently demolished in 1939 along with other structures near Prado. All surface remains of this structure seem to have been removed at that time. No evidence of remains of the structure could be located during a field check by members of the ECOS field crew. It is possible that some disrupted or intact subsurface deposits still remain buried at this site. Such deposits could include a well, privy or trash pits. The elevation is 560 feet MSL.

ACE-PF-5 -- SANTA ANA SCHOOL

This site is the location of the Santa Ana School. Schwartz (1981) encountered it during a survey of the Prado Fix project area. The site is located a short distance east of the Prado Dam spillway in fields presently being used for cattle grazing. The elevation is 543 feet MSL. It is visible in photo F66 of the 1936 aerial photograph series taken of the Prado Basin.

The property originally consisted of the east half of Block 39 in the Rincon townsite. The parcel was donated by the Rincon Land and Town Company for use as a school site in 1888. The school building was erected shortly thereafter and called the Santa Ana School (Desborough n.d.:39). This school was used for about three years before it was replaced by the Rincon School (PB-14) located on the north side of the Santa Ana River.

The later history of the use of the property is not clearly known. It continued to be used as a school, at least, intermittently. According to an appraisal report by A. L. Johnson (November 30, 1940), the site had a school house and shop on it which had been built in 1938. Both structures were made of reinforced concrete, with tile roofs and concrete foundations. The school house was a one story, four room structure while the shop was one story with three rooms. There was a well on site.

The parcel was expanded to include the western half of Block 40 at the turn of the century. In 1939 it was sold to the Orange County Water District and used as a contractor's office at the time of the building of Prado Dam.

Examination of the property indicates that the site is relatively undisturbed except for the demolition of the buildings. There is a light scatter of 20th century non-structural debris on the site. It is possible that some disrupted or intact subsurface deposits still remain buried at this site. Such deposits could include a well, privy or trash pits.

CSULB1 -- SMITH PROPERTY

CSULB1 is located adjacent to the old scully stop on the Atchison, Topeka and Santa Fe Railway route through Santa Ana

Canyon. The site was recognized during a California State University, Long Beach survey of a proposed hiking/biking trail in the Prado region (Rosenthal and Schwartz 1979:12). The site is described as consisting of two farm buildings probably built in the 1920s or 1930s. "One was a farm house-garage which has three rooms, with one possibly used as a garage, since an old tractor is parked in it. The walls are plastered, but in poor condition; the floor is littered with debris. General construction is of wood with a metal roof" (Rosenthal and Schwartz 1979:12). The second structure is described as "probably used for storage, a one room structure of wood with a metal roof" (Rosenthal and Schwartz 1979:12).

These structures do not appear on the 1936 aerial photographs of the Prado Flood Control Basin or on the 1941 edition of the Prado Quadrangle which used 1933 survey data. Thus, the structures were built in the late 1930s or later. The site appears to have been a small farm established on what was part of the Scully ranch. No data was collected during the study and further research was not pursued because the site is too young to be eligible for consideration for nomination to the National Register of Historic Places. The structures are still present and in approximately the same condition as described. It is possible that some disrupted or intact subsurface deposits still remain buried at this site. Such deposits could include a well, privy or trash pits.

CSULB2 --STRONG RANCH AND RINCON UNION CONGREGATIONAL CHURCH

This site is located on the west side of the Pomona-Rincon Road roughly west of the Bandini-Cota Adobe. Structures are shown at the site on the 1902 (1899 survey data) and later topographic sheets up to the 1942 edition of the Corona and Vicinity Quadrangle. The site is shown on the 1936 aerial photographs (F129) as it existed when owned by the Richmuth family. The elevation is about 505-550 feet MSL.

The earliest known structure on the site was a small adobe house of unknown origin, "built in earlier days by some unknown Spaniard" (Desborough n.d., Appendix:73). John Strong, a native of Nova Scotia, moved to the property with his wife Dolores Slaughter in the late 19th century. Strong erected a wood house and outbuildings at the site. He planted a vineyard and eucalyptus grove. Most of his land was dry farmed. About 1914 Strong and his second wife, Margaret Novel Fields, sold part of the ranch and moved to a new home several hundred meters to the north (PB-31).

The farm was purchased by Harlowe and Amy Bent Billingsley. They worked the property until after World War I and then rented it. Among the three or more renters was a Japanese family named Osaki. In 1929, Otto and Ernest Remhke purchased the ranch and resided there for several years. During the 1930s (prior to

1936) the Richmuth family of German-Swiss origin purchased the property. They built a dairy and raised rabbits. They were succeeded by a family named Moorens who left the site when it was condemned for the flood control basin.

The Rincon Union Congregational Church was built in 1911 on land donated by John Strong between Strong's residence and the Pomona-Rincon Road. The church was constructed under the leadership of Fenwick Homes who had been holding services at the Pioneer School (PB-54) for sometime. A church and parsonage were built on the site and it is believed that several people are buried there. The church is present on the 1943 edition of the Prado quadrangle surveyed in 1933 and is visible in the 1936 aerial photographs of the basin (F129). The Rev. Holmes resided at the site until 1912. The Rev. J. G. H. Carson succeeded Holmes and stayed for a period of one year. In turn, he was succeeded by the Rev. Thomas A. Hill in December 1912 who resided at the church until 1916. The Rev. August Drahms replaced Hill and apparently resided at the church until it closed. The site was abandoned by the mid 1920s.

The site has largely been cleared. Numerous trees stand in the vicinity of the church and parsonage. The ground is covered with a thick layer of leaves. No remains of the church or parsonage were found. The concrete foundation of the milk barn, parts of other structures, a fence and artifact scatter are present in the dairy area. It is possible that some disrupted or intact subsurface deposits still remain buried at this site. Such deposits could include a well, privy or trash pits.

PB-1,2,4,5 -- LILLABRIDGE RANCH

The Lillabridge Ranch, which ultimately included the Coplen Ranch (PB-2), was established shortly after the turn of the century. The location of the inhabited structures can be seen on the 1941 Corona and Vicinity Quadrangle surveyed in 1933. These and the surrounding walnut groves which formed the main part of the Lillabridge Ranch are pictured in the 1936 aerial photographs of the basin (F81).

The Lillabridge family farmed land belonging to their ranch, supplemented by leased property. The farm reached peak production under the management of the brothers Jess and Lynn. Jess played an active role in the community and region. He was a Corona City councilman and a member of the Riverside County Planning Commission. Lynn focused his activity on the ranch. They remained at the ranch until it was condemned as part of the flood control basin. The brothers moved to Corona. They rented the ranch from the government into the 1940s.

Site PB-1 is the Lillabridge walnut processing shed. This elongate barn-like structure contained the equipment for hulling and packing the walnuts. It was used for storage and as the shipping point also.

Site PB-2 is the Coplen Ranch. The date when it was established is unknown. The ranch included at least two wood frame houses and barn. During part of the 1920s and perhaps early 1930s the ranch was occupied by Oliver Green and family. At this time it was used for farming various crops. A railroad spur was established adjacent to the ranch and the shipping stop became known as Coplen. In the early 1930s the ranch became part of the Lillabridge holdings. At that time, the barn was used for equipment storage. Hogs and pheasants were raised on site.

Site PB-4 was a pump house and storage sheds in the Lillabridge walnut grove. Site PB-5 was the Lillabridge home site. It consisted of two single story homes located in a grove of shade trees. The houses were of wood frame construction.

Most of the structures were demolished ca. 1940 when acquired by the Corps of Engineers. The walnut shed (PB-1) continued to be rented and used for various purposes. At present, sites PB-1 and 2 are located at the Corona City Airport. They have been entirely demolished and no evidence of them remains. Sites PB-4 and 5 were located in the vicinity of the settling ponds adjacent to the airport. No evidence of that site remains. Given the extensive land modification which has taken place, it is highly unlikely that any subsurface portions of these sites still exist. These sites are at approximately the 540 feet MSL contour.

PB-3 -- NAME UNKNOWN

This ranch located west of Temescal Creek was present by 1933. It is shown on the 1941 edition of the Corona and Vicinity Quadrangle and in the 1936 aerial photographs of the basin (F82). It was established sometime after the turn of the century. In the 1920s and 1930s the resident produced alfalfa. Given the extensive land alteration in the vicinity of this site it is highly unlikely that any subsurface deposits could have survived. The elevation is approximately 535 feet MSL.

PB-6 -- NAME UNKNOWN

This site was located on the flood plain of Temescal Creek between the creek and bluffs on the north side (544 feet MSL elevation). The site appears on the 1941 edition of the Corona and Vicinity Quadrangle surveyed in 1933 and the 1936 aerial photographs (F96). The site consists of a house, barn with adjacent corral and several outbuildings. The site was an operating farm in the mid 1930s. No other data was collected. The site is presently within the boundary of the defunct Corona National Golf Course. No remains of the site were seen during the field survey. Given the extensive land alteration in the vicinity of this site it is unlikely that any subsurface deposits could have survived.

PB-7 -- JOHNSON RANCH

The Johnson Ranch was located on the north side of Temescal Creek at an elevation of 545 feet MSL. It appears on the 1941 edition of the Corona and Vicinity quadrangle surveyed in 1933 and on the 1936 aerial photographs of the basin (F96). The ranch consisted of two clusters of structures. The northerly most cluster contained a house and second structure. The second cluster to the south contained two large barns, a corral, and what is believed to be a pump house. The ranch was established after 1900 and is described as looking very old in the 1930s. It is not known how the name Johnson became attached to the ranch. During the 1930s the ranch was intermittently occupied. The house was a wood frame, wood shingled structure. At present the site is within the boundary of the now defunct Corona National Golf Course. No evidence of the site was located during the survey of the project area. Given the extensive land alteration in the vicinity of this site it is unlikely that any subsurface deposits could have survived.

PB-8 -- NAME UNKNOWN

This small farm site appears on the 1936 aerial photographs (F78) but not on the 1942 Corona quadrangle based on a 1933 survey. The elevation of the site is 555 feet MSL. A barn and associated features occur on site. Use of the site prior to 1935 is not established. In the 1940s a wood frame house was present on the site and used by the Lemon Exchange foreman. Later the house was the residence of a man described as a Mexican. Given the extensive land alteration in the vicinity of this site it is unlikely that any subsurface deposits could have survived.

PB-9 -- BARN

This structure cluster was located on the 1936 aerial photographs (F78). It consisted of a large barn and other structures--possibly a house surrounded by a grove of trees. The elevation is 557 feet MSL. At least one structure was located on site by 1933 (map data). Later the property was farmed by the Lemon Exchange (later Sunkist) who used the barn for tool storage. At that time no other structures were present on site. At present a well head and pump occur at the site, along with many of the eucalyptus trees which formed the original wind break. Given the extensive land alteration in the vicinity of this site it is unlikely that any subsurface deposits could have survived.

PB-10 -- BARN

This structure cluster was located in Temescal Creekbed straddling Goodale Avenue (now Lincoln Avenue) at an elevation of 561 feet MSL. It appears on the 1936 aerial photographs (F78) and was present by 1933 (map data), but not seen on earlier maps. The structure on the west side of Goodale Avenue was a large barn. A home and associated activity area occurred on the east side of the street. Nothing is known about the occupants. The site has been completely destroyed and the area channelized. Given the extensive land alteration in the vicinity of this site it is unlikely that any subsurface deposits could have survived.

PB-11 -- CARRILLO RANCH

The Carrillo Ranch was located at the foot of the bluffs flanking the south side of the Santa Ana River flood plain. It fronted a dirt road running from the Pate Ranch to Prado. The site is shown on the 1933 survey of the area seen in the 1941 Corona and Vicinity quadrangle and on the 1936 aerial photographs (F40). The elevation 530 feet MSL.

The ranch was established by Ramon Carrillo and his wife, Adeline Yorba de Carrillo. The date at which the ranch was established is uncertain. It was present by ca. 1910 when Homer Pate married Freda Carrillo and settled on an adjacent ranch but does not appear on the 1902 Corona quadrangle surveyed in 1899. The site consisted of a wood frame house, a small barn and at least two other outbuildings in 1936, as seen in the aerial photograph. Carrillo engaged in farming and some stock raising. The site was abandoned when condemned as part of the flood control basin. The structures were removed or demolished at that time.

No evidence of this site was located during this or prior studies. Although artifactual remains and subsurface features could be present they are now covered by perhaps 40 to 50 cm of silt presently covered by brush and some young trees. Subsurface deposits could include a well, privy, and trash pits.

PB-12 -- NAME UNKNOWN

This small ranch was established at an unknown date between 1899 and the 1920s. The name of the owners is not remembered. It was rented by the Moreno family from the 1920s until condemned as part of the flood control basin. During this period several members of the family lived at the ranch and operated it as part of their overall holdings.

The 1936 aerial photographs of the basin (F86) show this small farm located on the east side of Yorba Street a short distance south of the Santa Ana River. The site included a house, barn and at least two smaller structures. These were removed in 1939 or

1940 when the basin was cleared. Today the site is covered by heavy brush and recent silts of an unknown depth. It is probable that subsurface features such as wells and privies may be preserved intact. The same may be said of some surface features. The present elevation is 505 feet MSL.

PB-13 -- NAME UNKNOWN

This site was located on the east side of Yorba Street midway between the Santa Ana River and the bluffs on the south side of the river flood plain. The 1936 aerial photographs of the basin (F86) show a house, barn and two outbuildings at the site. No data was collected on the history of this site. The structures at the site were built after 1899 and do not appear on U.S. Geologic Survey maps using that data, but the house does appear on maps using 1933 survey data. The structures were removed in 1939 or 1940 when the flood control basin was cleared. At present the area of the site is covered by heavy brush and silt of unknown depth. The present surface elevation is 498 feet MSL. It is possible that some surface features and subsurface features such as a well or privy remain intact and buried.

PB-14 -- RINCON SCHOOL

The Rincon School house was the second school to serve the Rincon district. The site was located north of the Santa Ana River and east of Chino Creek at the southwestern edge of the Durkee Rancho. The location is visible in the 1936 aerial photographs of the basin as an exposed foundation (F90). At present the site is covered by as much as 3.3 meters of silt. The present surface elevation is 480 feet MSL.

Several years after the Rincon townsite was established, plans were made to establish a second school. It is at this time that the Rincon School District was established to sell bonds to finance the construction (South Riverside Bee, November 1, 1889). The structure was designed by a Leo Kroonen (South Riverside Bee November 29, 1889) as a "restrained piece of Victorian architecture" (Desborough n.d.:46). A photograph of this structure is located in the Heritage Room at the Corona Public Library. Daniel Durkee provided a plot on the southwestern corner of his ranch for the school site.

Initially the school was known as the Durkee School and later called the Rincon School. Initially Christina Stuart Fear served as school mistress. The school was used for 30 years and was closed in 1920.

The school site could not be evaluated for scientific or cultural value because it is covered with silt and is beneath the local ground water table. We believe that the foundation and associated features, such as a privy and trash pits, remain intact.

PB-15 -- T. ASHCROFT'S FIRST RANCH

The first Theodore Ashcroft Ranch is described by Desborough (n.d., Appendix:45-87) and appears in the 1936 aerial photos of the basin. The ranch was located on parcel 48, originally part of the Fernandez Place which became the property of Theodore's father, William. The cluster of structures on the ranch was located on the east side of Chino Creek, south of the Rincon School (PB-14).

The ranch was established in 1902 when Theodore and his brother, Ira, were given title to their father's lands (PB-103). Theodore and his wife, Emma Wilson Ashcroft, established a residence on site where they resided until 1916, when they moved to a new ranch (Riv-7039), fearing being flooded out. During the period of their residence they farmed an unknown variety of crops. Relatives by the name of Sutton lived with them in a separate house between 1906 and 1912. Subsequent to vacation by the Ashcrofts, the ranch was used by several tenants until purchased by the Orange County Water District prior to the building of the dam.

Today, the site is located in the lower part of the flood control basin and is covered by several meters of silt. The present surface elevation is 480 feet MSL. Presumably the foundations of the structures are intact, along with subsurface features. This could not be verified.

PB-16 -- ABELARDO SERRANO HOME

The location of Abelardo Serrano's home is shown on Desborough's (n.d., Appendix:Map) map of residences and schools in the Rincon district. It was located on the west side of the Pomona-Rincon Road about 0.3km north of Francisco Serrano's house. Today the location is heavily altered by the construction of Highway 71 which has altered the site area. The filled road bed of the highway now protrudes well into the area where the house is believed to have been located. Other alteration includes some earth moving associated with the planting of a belt of eucalyptus trees intended to retard erosion. The site is heavily overgrown by brush. The elevation is about 520 feet MSL.

According to Desborough (n.d., Appendix:82), Francisco's son, Abelardo, settled on the northwest corner of his fathers property. He resided there with his wife, Margarita Mosago Serrano and his children, Abelardo, Jr., Jose, Ysabel, Martina, Ben, Santos, Ivan, Marian and Bernardino. In 1913, Abelardo died and the family moved to Corona. The house was demolished shortly thereafter.

Examination of the 1936 aerial photographs (see F92) shows a rectangular cluster of trees at the house site. One live pepper

tree and a dead pepper tree are all that remain of this cluster on the site. The area of the western half or two-thirds of the area is now beneath Highway 71. Given the extensive land alteration in the vicinity of this site it is highly unlikely that any subsurface deposits could have survived.

The remaining area of the grove and vicinity were intensively surveyed and tested to determine if any remains of the house or associated features could be located. Six post holes and a one meter square excavation unit were intuitively placed on site in the vicinity of the pepper tree. These yielded only items associated with the last few decades of activity in the Prado Basin (spent cartridge cases, broken beverage containers). A partly buried piece of concrete was unearthed on the adjacent hillside. This was found to be a piece of rubble pushed down the hillside from the highway. The excavation unit was excavated to a depth of 1 meter through heavily disturbed earth. Material remains at this site have either been destroyed or obscured by construction of the highway.

PB-17 -- EXCELSIOR RANCH

The Excelsior Farms established their operation at Prado in 1926. Appraiser's records initially list the property as belonging to the Excelsior Creamery, then to the Excelsior Ranch. The ranch was located between Prado and the Santa Ana River (see 1936 aerial photograph F88). The ranch was one of the largest dairies in the project area. It included several barns, hay barns, five silos, a hog house, six houses for employees and a variety of smaller outbuildings. These are inventoried and illustrated in an appraiser's report on file at the Real Estate Branch of the Corps of Engineers. Other photographs and a letter about the dairy written by Walter Ranney who, managed the dairy in the 1930s, are on file in the Heritage Room at the Corona Public Library.

The dairy operated until 1942 when the property was acquired by the U.S. Army and the site cleared. The dairy farmed adjacent fields as a source of feed for the cattle herd. A subsidiary hog farming operation was a part of the ranch. There is no record of earlier habitations at the site, although the hog barn was previously used as an old blacksmith's shop. This building may have been moved to the site from Prado which had several blacksmiths in earlier years (Desborough n.d.:50). However, the presence of the blacksmith shop has led to speculation that it serviced the stage and that the early stage crossing was in the vicinity. The dairy property was part of Newberry Acres north of the Rincon town site in the late 1880s.

At present, the site area is covered with flood debris and silt from periodic inundation. The present ground elevation is about 540 feet MSL. No surface evidence of the occupation was observed. It is possible that some disrupted or intact subsurface

deposits still remain buried at this site. Such deposits could include a well, privy, or trash pits.

PB-18 -- GOUBERT RANCH

The Gouberts moved to this ranch ca. 1925. They established a small farm with a house and barn on the south side of the Santa Ana River flood plain at an elevation of 525 feet MSL. They raised beets and some alfalfa. Some family members worked as labor on other local ranches. The family resided at the farm up to or just before 1939. The ranch is shown in the 1936 aerial photographs (F82) of the flood control basin. The site has undergone extensive alteration and is now part of a sewage treatment facility. Given the extensive land alteration in the vicinity of this site it is highly unlikely that any subsurface deposits could have survived.

PB-19, 20 -- GREEN BROTHERS RANCH

The Green brothers, Ectar and Oliver, established a ranching operation at the northern edge of Corona in the late 1920s. Their interests were diversified and included the Coplen Ranch (PB-2), a farm in Costa Mesa and other farms. Site PB-20 was established when the brothers moved a single story wood frame house to the site between 1933 and 1938 (based on map and aerial photographic data). Ectar and his wife, Gertrude Roberts, lived in this house about the same time they constructed a garage, shop and barn at the ranch. The ranch produced alfalfa and sugar beets under irrigation, while the brothers continued their other farming operations. The Greens moved off the ranch when the Prado Dam was built. The house was subsequently occupied at least once and finally demolished in the 1950s.

Today, the concrete foundations of the house, garage and shop comprise the features at site PB-20. There is some surface scatter of metal, glass, and ceramic. The barn, PB-19, has left no discernible debris. These sites are located at about 560 feet MSL.

PB-21 -- NAME UNKNOWN

This site was located in a south-trending draw which opened onto the Temescal Creek flood plain. It appears on the 1941 edition of the Corona and Vicinity Quadrangle (surveyed in 1933) and in the 1936 aerial photographs of the basin (F98). The site consisted of a house, barn and corral, and several outbuildings, some located several hundred meters to the north. No information was located on this site. Today it is part of a wild oat covered field. No remains of the site were located during the survey of the project area. It is possible that some disrupted or intact subsurface deposits still remain buried at this site. Such

deposits could include a well, privy, or trash pits. The site is at an elevation of 543 feet MSL.

PB-22 -- BERNOR RESIDENCE

This is the site of the Lon Bernor house which was located on the north side of Temescal Creek at the foot of the bluffs. The site is shown on the 1942 edition of the Corona and Vicinity Quadrangle, surveyed in 1933, and on the 1936 aerial photographs of the basin (F98). It is believed that the house was built in the early 1930s. If so, it was probably built at the site of an earlier residence, since it is surrounded by mature trees. Several other structures are shown on aerial photos of the site. Bernor was a contractor and built his own house. It was a two story stucco structure with a tile roof. He removed the structure and relocated it in Corona when the property was condemned as part of the flood control basin. No remains of the site were located during the survey of the project area. It is possible that some disrupted or intact subsurface deposits still remain buried at this site. Such deposits could include a well, privy, or trash pits. The elevation is 540 feet MSL.

PB-23 -- COVINGTON RANCH

Structures were present at this site by 1899 as shown on the 1902 edition of the Corona Quadrangle surveyed for cultural features in that year. The site appears in the 1933 survey of the area and on the 1936 aerial photographs of the basin (F98). The ranch was owned by Covington in the 1920s and 1930s. He operated a dairy and lived on site. He had a a hog ranch on the bluffs to the northwest. The original structures at the site were removed and it is now the Corona City Police target range. No evidence of the earlier occupation was seen during the survey of the area. The site has undergone substantial alteration. Given the extensive land alteration in the vicinity of this site it is highly unlikely that any subsurface deposits could have survived. The elevation is 526 feet MSL.

PB-24 -- HARTSHORN SECOND HOME SITE

This is the home site of Earl D. Hartshorn, Ruby Lawford Hartshorn and their family. The Hartshorn family moved to Corona in the fall of 1932 from the Coachella Valley. Their initial residence was a camp on the south side of the Santa Ana River immediately west of the Auburndale Bridge. In the spring of 1933, they moved onto the Lillabridge Ranch several kilometers downstream. On that site, they built a log cabin of willow logs chinked with mud. The cabin was a single room with a mud fireplace poured in a mold, one door, and windows. The roof was "tin" (corrugated iron sheet). During this period, Hartshorn worked on the Lillabridge Ranch.

Several years later, probably in 1935, the Hartshorns moved to the north side of the river to the Moreno Ranch. This is the site of the house shown on the 1936 aerial photographs (F24). The log cabin was disassembled and moved to this site. The fireplace was again made of mud. Hartshorn operated the Moreno hog farm at this site for several years. It is possible that some disrupted or intact subsurface deposits still remain buried at this site. Such deposits could include a well, privy or trash pits.

After several years, the Hartshorns moved to site PB-30. The log cabin was apparently inhabited after the Hartshorns abandoned it and it was believed to be destroyed in the 1938 flood. The elevation of the site is about 510 feet MSL.

PB-25 -- DURKEE RANCHO, MORENO RANCH, SANTA ANA WATER COMPANY RANCH

The Durkee Rancho, as it is called on one early map, was primarily located in the lower basin north of the Santa Ana River and south of the bluffs. The primary complex of structures was located south of the Bandini-Cota Adobe at the edge of the road which passed both. In addition, Durkee at various times owned tracts of land in other parts of the flood control basin, primarily in the vicinity of the intersection of Euclid Avenue and the Pomona Rincon Road. Structures are shown at the ranch in the 1890 and later topographic maps of the area. The ranch as it existed while occupied by the Moreno family appears in the 1936 aerial photographs of the basin (F106).

Daniel Durkee purchased the core property of the ranch in 1883. The purchase was made from Leonardo Cota and Ynez Yorba de Cota for 8853 dollars. The transaction gave Durkee title to the extreme southern portion of the now divided Rancho El Rincon. Partial water rights remained in the Cota's control, including an interest in the Fernandez or Cota Ditch (later known as the Durkee Ditch) originally excavated in 1870 (Hall 1888:298). Other agreements included the setting aside of a acre for a school site which was apparently used for the Rincon School (PB-14).

Durkee is believed to have been the first settler to build on the site or in the vicinity (Desborough n.d., Appendix:1). Durkee farmed the ranch using water to irrigate pasture and crop land. The co-owners of the ditch irrigated "deciduous fruits, grapes, alfalfa and garden crops". In 1889 the ditch was altered to increase the flow from 300 to 800 miner's inches of water (Scott 1977:92). According to the October 11, 1889 issue of the South Riverside Bee, Durkee established a dairy and creamery. The creamery served local dairy men who sold their cream for butter and used the skim milk as hog food (Desborough n.d., Appendix:2).

In January 1900, the Anaheim Union Water Company and the Santa Ana Valley Irrigation Company bought Durkee's ranch to gain control of the water rights vested in the Fernandez Ditch (Scott 1977:92). Subsequent transfers of ownership ultimately vested the water rights to the County of Orange.

After the purchase of the ranch, the water companies rented to a succession of farmers. The ranch eventually came to be known as the "Santa Ana Water Company Ranch" to local residents. The renters between 1900 and 1908 are not clearly known. Desborough (n.d., Appendix:3) names Ramona Corona, a Mr. Hopkins, and a Mr. King as either renters or foremen during the period. It is possible that Corona had the property for several years, beginning in 1900. Hopkins may have had the property from 1906 to 1908. In 1908, George Bent leased the property and held the lease until 1920. Bent was succeeded by the Moreno family in 1920 and they held the lease until 1942.

Desborough (n.d., Appendix:5-10) provides a lengthy discussion of the Moreno occupation. The salient features are synopsized here. During the period that the Morenos leased the ranch, they increased the number of structures from five, including a house and barns, to 13 structures including at least six houses (based on 1933 U.S.G.S. survey data). These structures were located within a 10 acre area at the site of the Durkee ranch. As many as 70 persons lived on site at one time. The Moreno holdings were expanded to 3300 acres through leases.

The Morenos raised livestock including cattle, dairy cows, hogs, and horses. Crops grown included tomatoes, corn, alfalfa, and sugar beets. The Morenos established a cheese factory at the ranch which utilized the milk from their dairy herd. The horses raised included American saddle-bred and quarter horses used for show.

In later years a track was established at the northern edge of the property due south of the Bandini-Cota Adobe. This was used for training show and race horses. The Chino Gun Club (PB-27) was established on the northeastern part of the ranch. The western portion was used as a set for filming a number of movies including "High, Wide and Handsome" and parts of "State Fair".

After the ranch was vacated by the Morenos in 1942, the structures were cleared. In subsequent years the area was largely used as wild life habitat, rented to hunting clubs and for oil exploration. At present the vicinity of the core ranch area is the site of the Prado Oil Company's pumping operation.

The site has undergone extension alternation. Although the ranch buildings were inundated in the 1938 flood, they were not substantially altered. The silting of the flood control basin has deposited as much as 10 to 15 meters of earth over the site which is also beneath the water table. The present surface elevation is 480 feet MSL. It was not possible to evaluate the

condition of the site or any remaining features because of this. However, it is probable that foundations, wells, privies, and trash pits remain intact.

PB-26,27 -- REYNOLDS RANCH AND CHINO GUN CLUB

According to Desborough (n.d., Appendix:10-12), this property was purchased from the Cotas (Riv-653H) by F. S. Robles or his parents. Her account suggests that Robles moved from the site in 1908. If this is true, the first house at the site was established between 1899 and 1908, since no house is shown on the 1902 edition of the Corona Quadrangle surveyed in 1899. In 1908, Robles married Concia Botillier and moved to site PB-85.

The successive occupation is uncertain. Apparently the Reynolds family purchased the ranch and lived there by 1914. Charles F. and Margaret V. Cave were apparently living at the ranch by 1912 with their niece, Leatis Cave. The families lived on site simultaneously, in separate houses. It is not clear how long either family occupied the site. Reynolds is said to have been an undertaker. Presumably Cave farmed the property. The Caves were active in the Rincon Union Congregational Church (site CSULB2).

The property was leased for an undetermined amount of time by George Bert. In 1916, Charles Morton subleased the farm from Bert. The lease was dissolved by 1918, when Morton was drafted for service during World War I.

The use of the property between 1918 and 1930 is unknown. The Orange County Water District acquired the property sometime during this period. The Chino Gun Club was established ca. 1930 on the ranch by the Kimberlys (names not remembered). They operated the gun club for three to five years before leaving. Thereafter, the property became part of the Moreno Ranch (PB-25) until the Prado Basin was established.

The farm (PB-26) was established a short distance east of Mill Creek at the foot of the bluffs overlooking the river flood plain. A small house, a barn, two silos, and a pump appear in the 1936 aerial photographs of the flood control basin (F125). Later a small barn of corrugated iron on a wood frame without a foundation was built on site.

The gun club (PB-27) was located near Mill Creek adjacent to a manmade lake at the point where the creek opened onto the Santa Ana River flood plain. The aerial photographs show two structures, the Kimberlys' house and the club house, at the site. Duck ponds were located downstream to the south and to the east adjacent to the ranch buildings. The Morenos continued to operate the gun club and farmed the ranch after they received the lease from the water district.

The corrugated iron barn, well head with windmill, associated concrete reservoir, corral, and silo foundations are still present at site PB-26. These were documented with photographs. No remains of site PB-27 were located. It is possible that some subsurface remains in the form of a well, privy, or trash pits still exist. The sites are at an elevation of 525 feet MSL.

PB-28 -- McCARTY HOG FARM

During the mid 1940s, Vera Hall McCarty, while residing at the McCarty Ranch, established a hog farm near the present location of the Prado Oil storage facility. The farm consisted of concrete slab feeding floors, pens, a well, and associated features. The farm was rented to Dick Gregorian and operated for a period of perhaps eight to ten years. The hogs were fed garbage trucked to the site. This resulted in the introduction of considerable 20th century trash to the northeastern portion of Riv-653. Most of the features at the hog farm were bulldozed to the west, further impacting the prehistoric site. At present, the concrete footings for a tank, part of a feeding floor, and considerable bone and artifactual debris remain from the occupation. Given the nature of the site it is doubtful that any subsurface deposits were developed. The elevation is 510 feet MSL.

PB-29 -- THE SECOND STRONG PROPERTY

John Strong (see CSULB2) acquired this property ca. 1914. He built a house and several outbuildings fronting the Pomona-Rincon Road immediately south of his property line and the West Ranch house. The site appears on the 1941 edition of the Prado Quadrangle surveyed in 1933 and on the 1936 aerial photographs (F129). Strong apparently continued to farm the remaining portions of his property until it was condemned as part of the flood control basin (Desborough n.d., Appendix:75). The structures were demolished or removed. Today the site is heavily covered with trees and a thick layer of leaves. Some brick and metal was found in the vicinity but no major features or artifactual scatter were visible. It is possible that some disrupted or intact subsurface deposits still remain buried at this site. Such deposits could include a well, privy, or trash pits. The elevation is 530 feet MSL.

PB-30 -- HARTSHORN FARM

The structure at this site shown on the 1936 aerial photographs (F127) is a barn and adjacent corrals. The site was located on the south side of the western extension of McCarty Road at an elevation of about 535 feet MSL. The site was in use prior to 1933, and based on the 1941 Corona Quadrangle, a second structure occurred at the site. According to Desborough (n.d., Appendix:15-16), the property was purchased by Stanford Ballou from M.J. Shorb, along with the remainder of her holdings of Rancho El

Rincon, in 1899. Ballou rented the land to Rolland D. West to farm. West or perhaps a later occupant built on the site.

The Hartshorn family (see PB-24) moved to the site in 1937, where they continued pig farming and some sorghum production. At the time they moved to the site only the barn and pens were present. They moved two "shacks" (outbuildings) from the West ranch to the site for residences. The structures were ultimately demolished by the Army. At present there is a small amount of surface scatter in the area and some trash in the draw immediately to the north which may be associated with the occupation (most of this may be flood debris and later trash). It is possible that some disrupted or intact subsurface deposits still remain buried at this site. Such deposits could include a well, privy, or trash pits.

PB-31 -- WEST RANCH

The West Ranch was located adjacent to the Pomona-Rincon Road between La Puerta Abierta (Riv-2204) and the Strong Ranch (PB-29). At least one structure was present at the ranch by 1899 and appears on the 1902 Corona Quadrangle. Structures appear on later quadrangles using cultural data obtained in 1899. The 1941 Prado Quadrangle using data from 1933 shows two houses on site. The 1936 aerial photographs show the ranch structures inside a rectangle of trees.

The origin of the earliest structure is unknown. Roland West moved to Southern California from Nova Scotia in 1885 but did not purchase the ranch until 1891 (Desborough n.d., Appendix:67). This would not preclude his having occupied the site earlier. According to Desborough (n.d., Appendix:69) he built a house and barn on site. Presumably this is the house shown on the 1890 Corona quadrangle. West raised livestock and dry-farmed. He added land to his original 50 acres in 1899 and rented additional land on the Shorb Ranch to the east. Like a number of ranchers in the Rincon District, he farmed out of the area.

In 1895 West married Adaline Cavanagh. The Wests were active in the Pioneer School District and as members of the Rincon Union Congregational Church. They had three children (William, Winifred, Corinne). A second house was built at the site in 1910. It apparently served as a center for local social activity on Sundays (Desborough n.d., Appendix:69).

William assumed management of the ranch upon his father's death in 1918. While he continued to dry farm much of the ranch, he brought areas adjacent to Chino Creek under irrigation and raised alfalfa and vegetables. He and at least one sister lived on site into the late 1930s. The land was ultimately condemned for the flood control basin.

The 1910 house was purchased and moved a short distance south and west of Highway 71. It is now the residence of Louis Abacherli, Jr. The structure is presently highly modified from its original appearance. It was two story with lapped redwood siding. The kitchen was in a lean-to add-on which was removed when the house was moved. It had a roofed porch around three sides which was removed also. Two of the outbuildings from the West Ranch were removed to the Hartshorn hog farm (PB-30). These were used by the Hartshorns as living quarters and subsequently demolished. The remaining structures at the ranch were apparently demolished.

Today remains of the eucalyptus tree windbreak remain. The central area remains largely clear. The area has been disrupted and some trash scattered on site. There appears to be some earlier artifact scatter present. It is possible that some disrupted or intact subsurface deposits still remain buried at this site. Such deposits could include a well, privy, or trash pits. The elevation is 530 feet MSL.

PB-32 -- WARNER'S STORE

Calvin Warner established his small store and a farm known as the Warner Ranch in the 1920s. It was located south of the Santa Ana River, west of River Road near the Auburndale Bridge. The ranching operation consisted of hog farming and raising feed for the hogs. The store began as a small single-story wood frame structure and was enlarged over the years. It was set on pilings made from telephone poles to compensate for the slope of the flood plain. Later two single-room cabins were added. One was occupied by Warner's mother-in-law.

The store provided a variety of staple goods, beer, and soda pop. Part of it was set up as a grill with a counter and tables where sandwiches could be purchased. Slot machines were kept in the back room. Living quarters consisting of a living room and a bedroom were located in the back portion of the store. Warner sold gasoline (Gilmore, then Shell brands) and repaired cars at the store. His clients included local ranchers, ranch hands, and tourists.

The store was purchased from Warner by Earnest and Catherine Dilly in the late 1930s or 1940s. They resided at the store and operated it until it closed (1950s). A son named Earnest lived with them at least in the beginning.

The store was demolished sometime in the past. At present the site is covered by bamboo thicket. There is no remaining evidence of the store visible today. During the past several decades a meter or more of silt has been deposited in the area. It is possible that some disrupted or intact subsurface deposits still remain buried at this site. Such deposits could include a well, privy, or trash pits. The elevation is 535 feet MSL.

PB-33,34,35 -- FULLER RANCH

The Fuller Ranch was established near the end of World War I, ca. 1918, by Charles H. Fuller (Thompson 1982). The ranch was one of Fuller's later activities. After moving to California in the late 19th century, he established the Pioneer Transfer Company and played a major role in establishing the town of Fullerton, which is named after him. During the seven to eight years Fuller owned the ranch it was used primarily for crop production. In 1925 or 1926 Fuller's health was failing and the ranch passed into the hands of his sons.

Oliver Fuller expanded the ranch to approximately 3000 acres, some of it in the river bottom within the boundary of the study area. Later he leased an additional 2000 acres, also in the river bottom. This expanded the ranch to the largest in the region since the partition and parceling of the Mexican land grant ranchos.

O. R. Fuller referred to his ranch as the Fuller Ranch. Initially he lived in Hollywood, focusing his business interests in a number of automobile dealerships and the Motor Transit Bus Company, later purchased by Greyhound Bus Company. In 1932 the Depression caused serious reversals of Fuller's business interests. At that time he moved to the ranch. Earlier Fuller and his wife Ione had built a large lavishly furnished home on the property which they used on weekends and vacations. After moving to the ranch, the operation was expanded and diversified. The dairy operation became the largest in the county, with 625 cows. A turkey ranch, producing about 14,000 at its peak in 1935, was established along with chicken and hog production. The ranch continued to produce crops.

In 1937, the Fuller Rancho Guest Ranch opened its door. This became a popular resort during World War II. In 1938, lots were sold to wealthy buyers who built homes on the bluffs above the lake.

About 1940, the dairy operation was sold to Knudsen. Fuller died in 1946. Upon the death of his widow (1951) the ranch was sold to a local dairy man. In 1959 the ranch house was sold to the Good Samaritan Center, a Lutheran retirement home. It was converted into a boys' home in 1967 and continues to be used as such.

The portion of the Fuller Ranch concerned in this study is the part located in the Santa Ana River bottom and some edges of adjacent bluffs upstream of the Auburndale Bridge. The most significant feature of the Fuller Ranch located in the study area is the lake (PB-35) built by O. R. Fuller probably built between 1926 and 1932. The lake was built to hold irrigation water but was lined with willows and other trees, giving it a serene and beautiful ambiance which can be seen in an appraiser's photograph

held by the Real Estate Branch of the Corps of Engineers. The lake was fitted with boats and dock. The lake was located at the foot of the bluffs on the north side of the river in what appears to have been an old meander dammed on the down-stream end and with farms built up around the other sides. In recent decades the lake became overgrown and turned into a marsh. Several years ago it was filled and is now used as pasture.

The turkey and chicken operation (PB-34) was located between the lake and the river. A short distance upstream was a single-story wood frame house with a hip roof (PB-33). This was apparently inhabited by a foremen or caretaker. The lake, turkey farm and house all appear on the 1936 aerial photographs of the basin (F180). No remains of these sites occur on the surface. It is possible that subsurface remains, such as wells, privies, and trash pits, are present. These sites are at an elevation of about 545 feet MSL.

PB-36 -- GREGORY RESIDENCES

This site was occupied as early as 1899 according to the survey 1902 Corona Quadrangle. Subsequent sheets show one house with a second on site by 1933. It is not clear what other structures were there. At least four other structures appear with the houses on the 1936 aerial photographs of the basin (F158). The earliest known residents at the site were John Gregory and his wife Mary Dunkerly Gregory both of whom immigrated from England. They were Vera Hall McCarty's (PB-41) grandparents. Later the site was occupied by John Hamner and his wife Mattie. Hamner attained local prominence and was honored by the naming of Hamner Avenue in Norco. Jessie Mayhew, foreman at the McCarty Ranch in the 1920s, lived at the site for a period of time. The property eventually became part of the Fuller Ranch operation (PB-33) and was used as residence for individuals living at the ranch. The structures have been removed and no evidence was found of the occupation during the survey. The vicinity of the site appears to have undergone some siltation. It is possible that some disrupted or intact subsurface deposits still remain buried at this site. Such deposits could include a well, privy, or trash pits. The present surface elevation is approximately 543 feet MSL.

PB-37 -- BARN

This barn appears in the 1936 aerial photographs of the flood control basin (F166). It was located on the west side of Archibald Avenue and was part of the Fuller Ranch operation (see PB-33). The elevation is 585 feet MSL. The barn has since been removed and a dairy occupies the site. Given the extensive land alteration in the vicinity of this site it is highly unlikely that any subsurface deposits could have survived.

PB-38 -- WILDWOOD PARK

The store which, with associated features, ultimately became known as Wildwood Park was established in the early 1920s, perhaps earlier. The earliest known operators were Italians who ran the small store and maintained a green for lawn bowling. In 1935 or 1936, Herman and Marie Hollingsworth took over the operation. They established several cabins adjacent to the store where they resided with their family. A picnic area and concrete slab for dancing were installed. During this period Wildwood Park, as the Hollingsworths named it, became a popular center of local activity centering around weekend dances. The clientele consisted of local ranchers and ranch hands along with tourists. The store sold gas, staple foods, beer, soda pop, and other small items. It had a grill providing sandwiches and drinks. Slot machines were kept at the store for a period of time. A beer bar was operated in conjunction with the dances. The site was located immediately north of the Santa Ana River and east of River Road near the Auburndale Bridge. It was flooded and partially destroyed by the 1938 flood. Afterward the operation was abandoned and structures removed. The site appears on the 1936 aerial photographs (F160) of the region but was gone by 1939. At present the area is heavily overgrown by brush and bamboo. No remnants of the occupation were encountered during the survey portion of this project. It is possible that some disrupted or intact subsurface deposits still remain buried at this site. Such deposits could include a well, privy, or trash pits. The elevation is 535 feet MSL.

PB-39 -- AMSBURY DAIRY

Robert and Ruth Amsbury established a home and dairy in the 1920s. It was located on the north side of the Santa Ana River and west of River Road. The site appears on U.S. Geologic Survey maps using survey data from 1933 and on the 1936 aerial photographs of the basin (F160). The house is described as a large, lavishly-fitted, wood frame house. The Amsburys resided at the site until 1939, when it was condemned as part of the flood control basin. The family moved to Corona and the structures were removed. Prado Park, a Riverside County facility, now occupies most of the site. It is possible that some disrupted or intact subsurface deposits still remain buried at this site. Such deposits could include a well, privy, or trash pits. The elevation is 540 feet MSL.

PB-40 -- WILL McCARTY RESIDENCE

Will McCarty and his wife Margarite moved to the northeastern corner at the intersection of Hellman Avenue and River Road adjacent to the McCarty Ranch. They built a stucco wood frame house at the site ca. 1930, which is still present. The William

McCartys and their children entered the chicken farming business, which was established in the area a short time earlier by Vera Hall McCarty at the McCarty Ranch. The house and outbuildings appear on the 1936 aerial photographs of the flood control basin (F162). In the early 1940s the house from the Cavanagh Ranch (PB-54) was moved to the site and later demolished. The McCartys owned the property for several years after Williams death in 1956. Subsequently, several owners have added other structures. The site is presently occupied. It is possible that some disrupted or intact subsurface deposits still remain buried at this site. Such deposits could include a well, privy, or trash pits. The elevation is 560 feet MSL.

PB-41, 99 -- McCARTY RANCH

The McCarty Ranch is a long established working ranch in the eastern part of the project area. The main part of the ranch and the principal cluster of ranch buildings is located southeast of the intersection of Hellman Avenue and McCarty Road at an elevation of about 555 feet MSL. Other structures and features, now removed or in ruin, occur on various parts of the ranch. In addition, at various times the McCarty family owned or rented land throughout much of the upper part of the basin. These are discussed separately.

Topographic maps using data surveyed in 1899 and later show many of the ranch structures. The 1936 aerial photographs of the basin show the ranch at the apex of its development (F162). A detailed map and inventory of the ranch buildings are contained in the appraisers records (Schmutz 1939) made at the time that the property was purchased by the Corps of Engineers in 1939.

The ranch was initially purchased by Cornelius McCarty and Annie Sulman McCarty in 1878, two years after they moved to California with their family. It was the third and last ranch they purchased. The ranch was worked by two sons, Alva and Isaac, who produced hogs and grain for market. Over a period of several years ownership of the ranch apparently changed hands within the family. Ultimately Alva R. McCarty obtained title. He homesteaded the tract which consisted of 73 acres. The patent for this land, which is signed by Grover Cleveland, is still among the family possessions (Desborough n.d., Appendix:20). McCarty and his wife, Margaret Walkinshaw McCarty, built a small board and batten house on the property and continued their farming operation.

During the following decades the farm prospered with the help of the McCartys' three sons (Clarence, Will, Jesse). At one point the principal ranch holdings increased to 1000 arable acres. By 1906 the McCartys had built a two-story wood frame house and turned the original homestead into a bunk house. They added a dairy and later chickens to the operation.

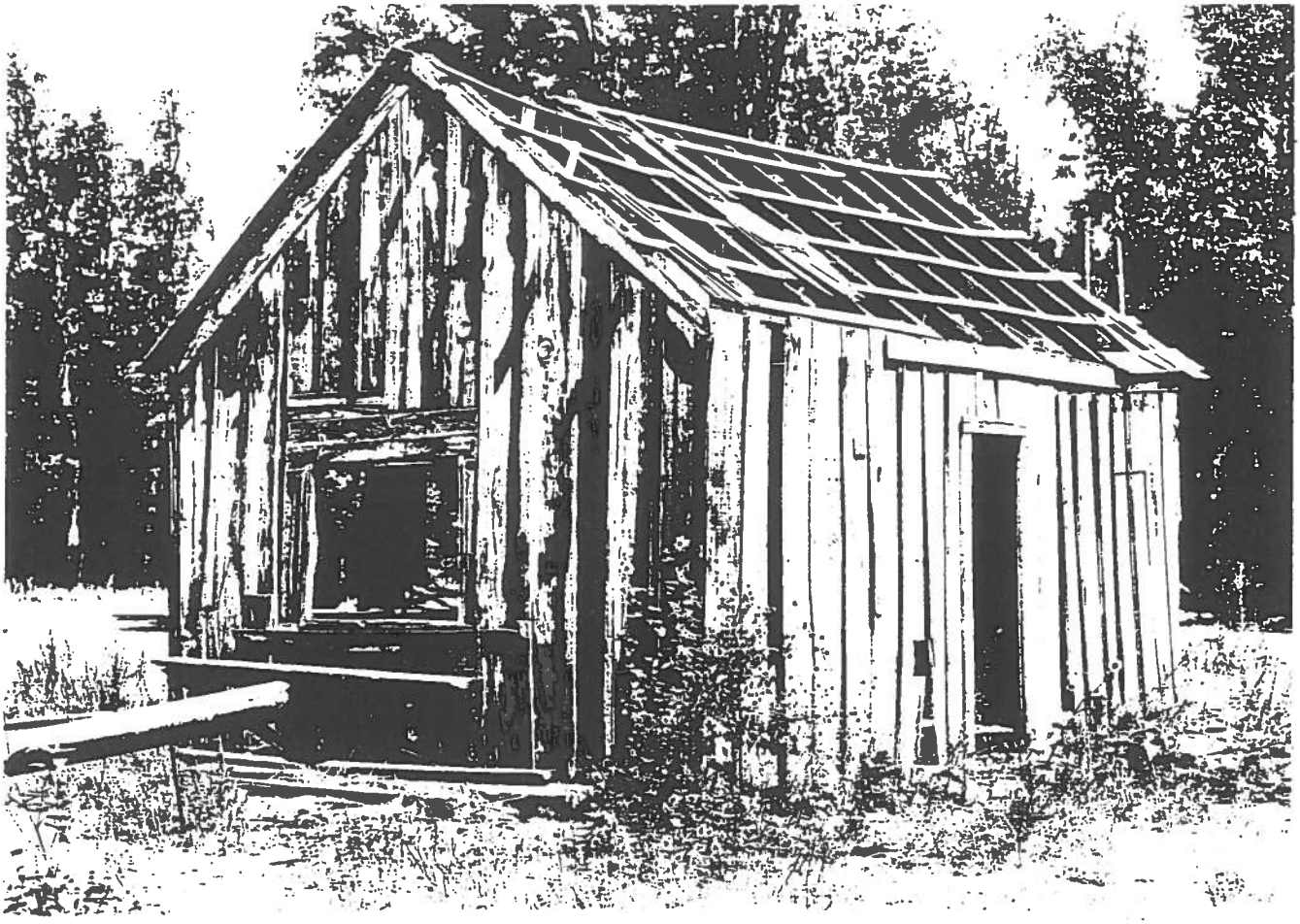


Figure 8-3. Original McCarty homestead house built in 1880, as it looks today.

Figure 8-4. 1906 McCarty ranch house.

The ranch has remained a family enterprise, jointly owned by Alva McCarty's descendants. The residence has been occupied in succession by Alva McCarty and family, Clarence McCarty and family, and Margo McCarty Payne and her husband. Mrs. Payne remains in residence. The ranch was considerably impacted by the foundation of the flood control basin. The western half, which included the dairy, a boarding house for employees, the original house, and other structures, was condemned. The original house, along with some other structures, was moved a short distance to the east. The 1906 house was moved and placed on a new formation east of the original construction site. Another small house, chicken house (coop), and several small outbuildings remain as part of the ranch cluster. The other structures were demolished with the exception of a hog barn (a tin-roofed structure open on the sides) which is now used by another farmer.

Although the ranch is much reduced in size, it continues to be farmed and some stock raised. It has served as a base of operation for working a number of smaller farms both inside and outside of the project area. The main ranch cluster is identified as site PB-41 in this study. It consists of the homestead house, the 1906 house, the Payne residence built in the 1950s, several chicken laying houses, and smaller features. The hay barn is located about 100 meters to the west. Well and privy apparently still exist near the original house sites 20 to 50 meters to the west of the ranch cluster. Site PB-99 consists of a borrow pit surrounded by a eucalyptus windbreak. This was the site of a hog farm operated by Clyde and Margo Payne between the mid 1940s and mid 1960s. It consisted of pens and feeding floors which are now demolished. The rubble remains on site.

PB-42 -- FARM (VARIOUS OWNERS)

This site was located directly north of the McCarty Ranch and west of Hellman Avenue at an elevation of about 540 feet MSL. The property was occupied by 1899 when the cultural geographic data was collected for the 1902 edition of the Corona Quadrangle. The house appears on the 1942 edition of the Corona and Vicinity Quadrangle and in the 1936 aerial photographs of the basin (F162). This ranch was owned or rented by a succession of families. A family named Dunn lived on the property during the 1910s. The Dunns were succeeded by the Baldwins, who farmed the property until the mid 1920s. Thereafter, Bob Ross and his family occupied the site. Ross worked as a farm hand, probably for the McCartys. Later Ross moved to the Chino Gun Club property (PB-26,27). He farmed melons and operated a store in Norco.

The entire farm site, which included a single-story wood frame house, several outbuildings, and trees for windbreaks, has been removed. The field where the structures were located has been subsoiled for Sudan grass production. A trash scatter was found during the survey. This consisted of building debris (brick,

tile, door knobs) and household debris (broken glass containers, lids, etc.). These remains are highly disturbed. It is possible that some disrupted or intact subsurface deposits still remain buried at this site. Such deposits could include a well, privy, or trash pits.

PB-43 -- KIRBY FARM

This site consisted of a house and barn fronting Hellman Avenue south of the Chino-Corona Road. The elevation of the site is 565 feet MSL. The house was present by 1899 and shows on the 1902 edition of the Corona Quadrangle. It appears on later maps and both the house and barn appear in the 1936 aerial photographs (F162).

The house was established on a 40 acre parcel. It was a single-story wood frame building possibly built by Lou Kirby, who is the earliest remembered resident at the house. The property became part of the McCarty Ranch (PB-41) in the 1920s or early 1930s. During that period, it was occupied by families associated with the McCarty occupation, including Les and Fanny Hemstreet. Will McCarty lived at the house for several years prior to moving to his home (PB-40) adjacent to the ranch. The house remained in use until the property was purchased by Case VanderEck after World War II. Ultimately the structures were torn down and the site is now occupied by pasture. No evidence of the occupation was observed during the survey of the property. Given the extensive land alteration in the vicinity of this site it is highly unlikely that any subsurface deposits could have survived.

PB-44 -- MARTIN RANCH

This site was the Martin Ranch. Data for this site is minimal and imprecise. It was established prior to 1933 on lands belonging to the Fuller Ranch. The site shows two residences present on the 1942 edition of the Corona and Vicinity Quadrangle and appears in the 1936 aerial photographs (F162) which show structures at the site. The ranch was established by three brothers (sur)named Martin, who lived on the site with their families. They were apparently engaged in dry farming. Today the site is dairy pasture and a recent water pump is present at the site. No remnants of the occupation were seen, but visibility was minimal due to dense grass. It is possible that some disrupted or intact subsurface deposits still remain buried at this site. Such deposits could include a well, privy, or trash pits. The elevation is 550 feet MSL.

PB-45 -- THE SONGER PLACE

The house and barn known as the Songer Place were located off of Hellman Avenue between the Chino-Corona Road and McCarty Road at

an elevation of about 555 feet MSL. The house was present by 1899 and appears on the 1902 edition of the Corona Quadrangle. It appears on later editions of quadrangle maps using survey data taken as late as 1933, and on the 1936 aerial photographs (F162).

The house was a single-story wood frame building with a hip roof. The earliest remembered resident is Oace Songer during the 1910s. The Luna family occupied the house during the 1920s and 1930s when the house and associated farm became part of the McCarty Ranch (PB-28,29). Luna farmed part of the McCarty Ranch on shares. The house and barn were demolished in the late 1930s or 1940s and a reservoir was built at the site. At present, it is part of the VanderEck Diary equipment yard. No evidence of the site was seen during the survey of the property. Given the extensive land alteration in the vicinity of this site it is highly unlikely that any subsurface deposits could have survived.

PB-46 -- BEN FUQUA RANCH

This ranch was probably established in the 1880s. A house appears at the site on the 1902 edition of the Corona Quadrangle surveyed in 1899. The house was present until demolished in 1939 and appears in the 1936 aerial photographs (F163) of the area.

Ben Fuqua originally settled the site (Desborough n.d., Appendix:19-20). He married Julia Slaughter in 1899 and continued to live on site with his family into the 20th century. Fuqua built a ditch, the Fuqua Ditch, on the east side of Mill Creek. This ditch originated near the Mayhew Mill (PB-52) about 1 km upstream. Hall (1888:299) describes it as a little primitive ditch, on the east side of Mill Creek with a capacity of about 100 miners inches of water. It was used to irrigate about 60 acres immediately south of the house site.

The ranch was purchased by Alva McCarty (PB-33) after the turn of the century. Clarence McCarty and his wife, Vera Hall McCarty, occupied the house for three years after their marriage. Afterward, it was occupied by Joe Ortiz, irrigator at the McCarty Ranch, and his family. The house and associated features were demolished in 1939. The house is described as a small wood shingle-roofed board and batten house. During the past several years, the house site has been used as a sand quarry and is now destroyed. Given the extensive land alteration in the vicinity of this site it is highly unlikely that any subsurface deposits could have survived. The elevation is 535 feet MSL.

PB-47 -- ROSS RANCH

This site which became known as the Ross Ranch was located on a low hill on the north side of McCarty Road west of Mill Creek. A house is shown at the site on the 1902 edition of the Corona Quadrangle surveyed in 1899. A house appears on later editions

of the quadrangle. The 1936 aerial photographs (F163) show a house, barn and several outbuildings at the site situated in a grove of trees.

Desborough (n.d., Appendix:17-19) gives a relatively complete account of the sequence of occupants. The following discussion is synopsized from her account with minor additions from interview data. The site was originally known as the Bush Place when the property was rented by William Roberds. No information is known about the Bush family. John M. Fuqua and his wife, Sarah Nabors Fuqua purchased the farm in 1880 or 1881. He is the first person known to have built on the site. Fuqua farmed and established 10 acres of olives on his property.

Thomas B. Ross and Sally Ross purchased the ranch in 1908. Ross farmed the property until incapacitated by a stroke in 1929. For several years, his son-in-law, Harold Race, ran the ranch for him and lived on site. Will McCarty purchased the ranch in the early 1930s. Thereafter, the property was used as pasture and farmed. It was rented at sometime.

The structures were demolished when the property was condemned as part of the flood control basin. At present a concrete foundation which footed the house is on site. A variety of other debris including some stone work (probably a rock garden), pipes, and some disrupted structural remains are present. The area is covered with a light scatter of metal, glass, ceramic, and bone. A trash scatter is located on the hill slope at the northeastern edge of the site. Given the extensive land alteration in the vicinity of this site it is highly unlikely that any subsurface deposits could have survived. The site's elevation is 520 feet MSL.

PB-48 -- REMINGTON RANCH

The Remington Ranch was located east of Mill Creek about midway between McCarty Road and the Chino-Corona Road. The house is located on the east side of the creek where the Red Star Hog Farm is presently located, at an elevation of 545 feet MSL. The structure was not present in 1899 when the cultural geography was surveyed for the 1902 and later editions of the Corona Quadrangle. It does appear on the 1941 edition surveyed in 1933 and on the 1936 aerial photographs (F186).

The Remingtons are reputed to be related to the Remington Fire Arms Company family. They lived at the ranch for several years and then moved to Los Angeles. After moving, they rented the farm and house to a succession of tenants. It had been rented several times by 1914. In the early 1920s, it was purchased by Clarence and Will McCarty (Desborough n.d., Appendix:24). The McCartys farmed or leased the land and house. Jack Zillman, who operated a nursery to the north of the house, used it as his residence in the 1930s.

The house is still present. It is a two-story building with a hip roof. The lower story, built into the hillside, is constructed of masonry tile as are wall and foundation, with some parts being wood frame. The upper story is wood frame. The tile used in the lower story construction is the same as that used in the foundation of the 1906 McCarty House (PB-41). The house was probably built within the first decade of the 20th century. The structure was renovated between August, 1983 and April, 1984. During the renovation, it was substantially altered. The ceiling was replaced, windows were enlarged, interior walls were removed, added, or refurbished. A large number of other changes were made. The house is presently occupied.

It is likely that subsurface remains from the early occupation of this site still exist (e.g., refuse deposits and associated foundation remains).

PB-49 -- TWO HOUSES

These structures appear in the 1936 aerial photographs of the basin (F186). They appear on Garrety's 1926 map of the area and on the 1942 edition of the Corona and Vicinity Quadrangle surveyed in 1933. These residences were apparently small single-story wood frame dwellings used by ranch hands working in the area. At one point they were apparently occupied by workers at a nursery on the other side of Mill Creek. They have been demolished and the area altered by later ranch and dairy activity. No evidence of either structure was found. It is possible that some disrupted or intact subsurface deposits still remain buried at this site. Such deposits could include a well, privy, or trash pits. The elevation is 543 feet MSL.

PB-50 -- BARN

A barn at this location appears on the 1936 aerial photographs of the basin (F186). It is shown and identified as such on Garrety's (1926) map of the area. The barn was used by the nursery operation during the 1930s and 1940s. The barn site is now part of the Red Star Hog Farm. The structure has been removed and no remains were observed during the survey of the area. The elevation is 545 feet MSL.

PB-51 -- HALSTEAD DAIRY

This site was located along the Pomona-Rincon Road at an elevation of 500 feet MSL. It appears on the 1941 edition of the Corona Quadrangle surveyed in 1933 and on the 1936 aerial photographs of the basin (F111). According to Desborough (n.d., Appendix:81) Albert Halstead with two sisters, Sara and Ruby, established a small hay farm and dairy ca. 1904 to 1909.

Halstead rented the property for an undetermined length of time. After he left the property, probably during the 1920s, it continued as a rental. The renters that succeeded Halstead were a Japanese couple. At present the area is heavily disturbed by recent grading of an access road and sewer construction. One tree stands on the east side of the old Pomona-Rincon Road right-of-way. The tree bears nails and wire. Several glass shards occur in the road bed and a low mound is located approximately 10 meters northeast of the tree. The entire area is heavy brushed, primarily with cockle burr, and there has been some silt deposition by transient inundation. A 1 meter square test unit was excavated into the north side of the mound to determine if it contained structural remains or other cultural residium. The test revealed a recent sand pile containing pieces of asphalt from the adjacent road. The recent construction has destroyed most of the site area. It is possible that some disrupted or intact subsurface deposits still remain buried at this site. Such deposits could include a well, privy, or trash pits.

PB-52 -- CHINO VALLEY GRIST MILL

Jersey Mayhew moved to the west side of Mill Creek in 1866 when it was still known as Spring Creek. He purchased 2200 acres of the then divided Rancho El Rincon from Francisco A. T. Carlisle (Desborough n.d., Appendix:23). Mayhew engaged in varied farming. Minto's survey notes identify a wheat field and orchard. Brown and Boyd (1922:1126) indicate that Mayhew raised stock and "...dealt in horses and mules..." in a biographical sketch.

A water powered mill was built in 1875 (Brown and Boyd 1922:1126). Hammond (1978:37) described the mill complex as consisting of the mill, a flume and a ditch. Minto's notes (Weitze 1980:8) identify a mill dam, pond, and the mill. Mayhew sold the mill to Charles Hidden in 1883. Hidden named it the Chino Valley Grist Mill. It is not known when the grist mill ceased operation.

The location given here is based on William Minto's 1878 survey notes (see Weitze 1980:8). It conforms to the location given by Desborough (n.d., Appendix:Map). Weitze (1980:5-6) provides a discussion of the location of the mill using early surveyor's data. She places the site west of PB-48 which is slightly southwest of where where we believe it was. The site was located on the west side of Mill Creek approximately 1 km south of the Chino-Corona Road.

The location of the mill pond and dam on the creek was approximately midway between sites PB-50 and PB-66, based on Minto's field notes (Weitze 1980:8).

Hall (1888:299) describes the Mayhew or Spring Valley Ditch as "...taking its supply near the head." The water was used to irrigate 47 acres and returned to the creek about a mile below

the taking point. Presumably the ditch was headed at the mill pond. Hall makes no mention of the mill in association with the ditch. This suggests that the mill ceased operation by the mid 1880s.

A 1922 map of the vicinity by Garrety (1926) shows the location of the mill pond. By this time the Mayhew Ditch was no longer in use and is not shown on the map. The Fuqua or McCarty Ditch is shown as extended up to the east side of the mill pond at that time. A later study by Scott (1977:92, Figure 36) incorrectly shows the Mayhew Ditch as headed at the Three Cienegas between the Chico-Corona Road and Hellman Avenue.

Mill Creek, which is the lower reach of Cucamonga Creek, is so named because of Mayhew's Mill. The mill apparently operated only for about one decade. During this time, it is not clear what impact it had upon the local farm community. The mill pond had a longer term effect. It headed first Mayhew's irrigation ditch and then the McCarty's extension of the Fuqua Ditch which operated into the late 1930s. No traces of the mill, mill pond, or ditches were located in the mill pond area during the survey portion of this study. Given the extensive land alteration in the vicinity of this site it is highly unlikely that any subsurface deposits could have survived. The elevation is 545 feet MSL.

PB-53 -- PIONEER SCHOOL

The Pioneer School District was formed in 1887, the same year that the Rincon and Valley Districts were formed. The school building was located in the southeast corner of the intersection of the Pomona-Rincon Road and Johnson Avenue (now nonexistent). The school district served the northwestern portion of the flood control basin. The structure was a large wood frame building. The basic structure was T-shaped with a rectangular main part fronted by a small north-facing wing flanked on both sides by a porch. The rectangular bell tower was attached to the front between the porches. An illustration of the school appears in Chino Valley Where Everything Grows (Anonymous 1962) at the Heritage Room at the Corona Public Library. A commemorative edition of the school year book with a history of the school exists (this was not seen). The school was accompanied by two outhouses on the east side. A cemetery is supposed to have been located at the school (see section on cemeteries, which follows).

The school was demolished when condemned as part of the flood control basin. The location is shown on early U.S. Geological Survey topographical maps surveyed prior to 1940. It appears in the 1936 aerial photos (F149). Several pieces of rubble (brick) were observed at the site. The property is presently cultivated. It is possible that some disrupted or intact subsurface deposits still remain buried at this site. Such deposits could include a well, privy, or trash pits. The elevation is about 505 feet MSL.

PB-54 -- CAVANAGH RANCH

This ranch was apparently established in the 1890s. The house was located in the northwest corner of the intersection of the Pomona-Rincon Road and Johnson Avenue. It appears on U.S. Geologic Survey maps using data from the 1899 survey. The structure was present until demolished in 1939 when the flood control basin was cleared. The 1936 aerial photographs of the basin (F149) show the house.

The ranch was established by Albert W. and Alice Falconer Cavanagh on Albert's share of the J. H. Stewart Ranch, which had been purchased by his father. The family left the ranch ca. 1899 (Desborough n.d., Appendix:59-60). One or more residents occupied the ranch between the time the Cavanagh left and ca. 1908, when the Downs family occupied the property. Charlie and Hattie Sawyer Downs occupied the ranch with their children until 1912, when they moved to Corona. A family named Marsh apparently lived in the house for about one year. In 1913, the house was rented by Abraham and Nettie Thorp Fear. The length of their residence is unknown. This data is synopsized from Desborough (n.d., Appendix:59-62). The later history of the property is presently unknown.

The house site included two out buildings and was fronted by trees. The site is now part of the Prado Recreation Center. Nothing except several glass and ceramic shards were observed during several visits to the site. It is possible that some disrupted or intact subsurface deposits still remain buried at this site. Such deposits could include a well, privy, or trash pits. The elevation is about 505 feet MSL.

PB-55 -- RICHENBERGER RANCH

The Richenberger ranch consisted of 12.5 acres in the northwest corner of the Euclid Avenue and Pomona-Rincon Road intersection. The structure cluster which was next to the intersection appears in the 1936 aerial photographs of the basin (F172). The site included a cheese factory (creamery) with an upstairs apartment where the family lived, a barn, and dairy.

Louis and Katherine Kuntz Richenberger entered the region in 1898 (Brown and Boyd 1922:1291). They were not yet living at the site during the 1899 survey of the area by the U.S. Geologic Survey which is shown on the 1902 edition of the Corona Quadrangle. Desborough (n.d., Appendix:57) disputes an unnamed source which states that Richenberger was the first to establish a cheese factory in the region. Richenberger operated his cheese factory for a period of 10 years, producing "Rincon Cheese" which had considerable popularity. After he discontinued cheese making, he focused on the operation of his dairy and farming (Brown and Boyd 1922:1291-92.) The property remained in operation by the

Richenberger family until condemned as part of the flood control basin. The site was cleared ca. 1939. No evidence of the occupation was observed during the field survey of the present study. The area has been altered by road alignment and subsequent farming. It is possible that some disrupted or intact subsurface deposits still remain buried at this site. Such deposits could include a well, privy, or trash pits. The elevation is approximately 515 feet MSL.

PB-56 -- VARIOUS RESIDENTS

This is the site of a house that was present by not later than 1899. The structure was located fronting the south side of the Pomona-Rincon Road and immediately west of the end of Euclid Avenue. The extension and realignment of Euclid Avenue apparently destroyed the site. The first evidence of a structure in the immediate vicinity is on the "Map of Township No. 3 South, Range No.7 West, San Bernardino Meridian", which was filed with the Surveyor General's Office on September 14, 1876. The structure is labeled "C. Yount's House". According to San Bernardino County Assessor's records for 1871, 1872, and 1874-75, Caleb Yount had a possessor's claim to 160 acres of land in the vicinity, on which he raised some horses, cattle, pigs, and poultry. His furniture was assessed at $100.00.

A lone structure appears at the location described above on the 1902 edition of the Corona Quadrangle surveyed in 1899. By 1933, there were at least three structures on site. According to Desborough (n.d., Appendix:55-56) the site was occupied after ca. 1907-1908 by the Rev. Thomas Hanna and his wife. Rev. Hanna held services at the Pioneer School. The property was subsequently occupied by Norman and Mary E. Cavanagh Burbank. Mr. Burbank's sister's children, Clayton and Myrle Brothwick, resided with them. After they moved out, the structure was demolished. No evidence of the site was located during the survey. Given the extensive land alteration in the vicinity of this site it is highly unlikely that any subsurface deposits could have survived. The elevation is 520 feet MSL.

PB-57, 104 -- GREENFIELD RANCH AND RINCON CHEESE FACTORY

The Greenfield Ranch was located on the Pomona Rincon Road at the present site of the 1984 Olympic Shooting Venue and the property immediately south of the range. The structures at the site were located on both sides of the Pomona Rincon Road at the southwestern edge of the range. [See 1936 aerial photos of the basin (F172).]

The occupation at the Greenfield Ranch was established in the early or middle 1880s by John Noble. Noble moved to the Rincon district ca. 1882 (Brown and Boyd 1922:1284), establishing his family at the ranch then or shortly afterwards (Desborough n.d.,

Appendix:50). He operated a general store and post office at the ranch site (PB-104) for a period of ten years (Brown and Boyd 1922:1284). In addition to his store at Greenfield Ranch, Noble established a store in Rincon (PB-102) and was appointed Postmaster in 1888 (South Riverside Bee, January 12, 1888; August 30, 1888). Desborough (n.d., Appendix:52) questions the existence of a store at the ranch.

J. Lansing and Mary Thompson Lane purchased Noble's property ca. 1892 (Desborough n.d., Appendix:52). The Lanes built a large house, made other improvements, and raised alfalfa and Jersey cattle.

The Lanes were succeeded by E.R. Alter and his wife, Mabel Meachan Alter, about 1904. The Alters lived at the ranch until 1908 and sold it in 1911. During their residence, Mr. Alter farmed the property and established the Rincon Cheese Factory (PB-57). Alter's principal interest was the factory (Desborough n.d., Appendix:53, 55).

After the Alters moved from the ranch, Will Hatfield and his family and the Morton family lived at the ranch in separate houses until the ranch was sold in 1911. Alter sold the ranch property to two families, the Clarks and the Hedges, as a partnership. Howard Hedges and his family left after about one year. Louis A. and Edna Clark remained at the ranch. Clark farmed the acreage and engaged in construction. He left the ranch in 1919 or 1920. They were succeeded by Flo Nichols, who continued to farm the property (Desborough n.d., Appendix:54-55). Alter continued to operate the cheese factory.

The home site (PB-104) consisted of a house and two outbuildings in 1936, as shown in the aerial photographs (F172). The remaining buildings were located across the street (PB-57). These included a large T-shaped cheese factory and two barns. The ranch and apparently the cheese factory continued in operation until condemned as part of the flood control basin. The structures were removed in 1939.

During the field survey for this study, no remains of the house site were located. Subsequently, the area has been graded and the ground level lowered as part of the Olympic shooting venue. No subsurface remanents of the site are still in existence. The damaged foundation of the cheese factory remains <u>in situ</u> at the edge of the Pomona-Rincon Road. This foundation is a concrete slab and is now incomplete. No remains of the barns were observed. The elevation of these sites is 525 feet MSL.

PB-58 -- NAME UNKNOWN

This is the site of a dairy located on the Julia Fuqua property south of the Yorba-Slaughter Adobe. The site consisted of a house and dairy which appear in the 1936 aerial photographs of

the basin (F172). The house was present by 1933 and is shown on the 1941 edition of the Prado Quadrangle which was surveyed in that year. The structures are believed to have been removed in 1938. At present, the concrete foundation of the dairy is still present, along with some other building rubble. Subsurface deposits in the form of a well, privy, or trash pits may be present. The elevation is 525 feet MSL.

PB-59 -- JOSEPH SLAUGHTER RESIDENCE

This site consists of a small board and batten wood shingled structure which appears to have been a carriage house. It is located on the east side of the Pomona-Rincon Road, south of the Yorba-Slaughter Adobe. The structure appears in the 1936 aerial photographs of the basin (F172). It is believed to be an outbuilding of the Slaughter Ranch. One informant remembered that it was at one time (ca. late 1920s or 1930s) used as a temporary residence by Joseph J. Slaughter. The 1941 Prado Quadrangle surveyed in 1933 shows the structure as being used as a residence in 1933.

The structure had several casement style windows as doors and large double doors which fronted the road on the west side of the structure. It had a wooden floor. Round nails were used in construction, indicating that it was built during the middle 1890s or later. The structure was burned in early 1984 by San Bernardino County as an "eye sore". At present, a charred rubble pile containing wood, iron, glass, and ceramic artifacts is present at the site. It is possible that some disrupted or intact subsurface deposits still remain buried at this site. Such deposits could include a well, privy, or trash pits. The elevation of this site is 515 feet MSL.

PB-60 -- SLAUGHTER STORE AND JULIA SLAUGHTER FUQUA RESIDENCE

This structure cluster was originally part of the Fenton Slaughter Buena Vista Ranch, belonging to the outbuilding cluster at the Yorba-Slaughter Adobe (SBr-2317). The earliest known structure on the site was a store built by Fenton Slaughter in 1869. The store was used as a post office and trading post. It was initially operated by Jim Johnson. Later it was operated by Goldsmith and Coleman, then John Stansfield (Historical Society of Pomona Valley 1972).

Later, the store may have been used as a residence. A residence is shown at the site based on the 1899 survey of the area by the U.S. Geologic Survey and a small wood frame structure was being used as a house in 1937. The locations described imply that it was the original store structure. The store building survived into the 1950s, when it was demolished by the owner of the dairy now located on site.

Julia Slaughter Fuqua and her husband Benjamin Fuqua resided in a small house at the site. Mrs. Fuqua continued to live in the house after she was widowed and during the period when she restored the Yorba-Slaughter Adobe. Her home was demolished and replaced by another building in the 1960s. The site also included a dairy with a milk house, several barns, and corrals. The dairy continues to be operated. Today, only a milking barn and silo remain of the structures present at the site prior to 1936. The remainder of the site is considerably altered. It is possible that some disrupted or intact subsurface deposits still remain buried at this site. Such deposits could include a well, privy, or trash pits. The elevation is 560 feet MSL.

PB-61 -- HODE SLAUGHTER RANCH

The Florin Hode P. Slaughter ranch was located on the east side of the Pomona-Rincon Road at the foot of the hill where the Yorba-Slaughter Adobe is located. The parcel of land comprising the ranch was originally part of his father's estate (see SBr-2317). It appears on U.S. Geologic Survey maps using the 1933 survey data and on the 1936 aerial photographs of the basin (F211).

The site was probably established in the 1920s. It consisted of a house and several outbuildings next to the road at an elevation of 530 feet MSL. Slaughter resided at the site with his wife, Linda Ashcroft, and daughter. He engaged in farming. The Slaughters resided at the site until 1939, when it was condemned and removed during the formation of the flood control basin.

Today, the foundation of the house and one other building remain on site. The house foundation is a concrete slab which is damaged along the northern edge. The second foundation consists of a concrete-lined basement with stairs of the east side. Both have been documented with photographs and plan and profile drawings.

PB-62 -- WELLS RANCH

Louis Wells and his wife Linda Slaughter established their home at this site in the early 1930s. The house appears in the 1933 survey data used on the 1941 edition of the Prado Quadrangle. The 1936 aerial photographs of the basin (F211) show the house, barn, Fenton Slaughter's reservoir and several outbuildings at the site. The elevation of the site is 530 feet MSL.

Linda Slaughter Wells designed the house, which was two stories with a split-level lower story. The house is described as being of an unusual and very modern design. The reservoir was built by Fenton Slaughter in 1894. It is a rectangular concrete box with external buttresses. The Wells used it as a swimming pool. Fenton Slaughter inscribed his name and the date on the south

side of the structure. The reservoir is reputed to be the first reservoir in Chino, and, some say, in San Bernardino County.

The site was demolished in 1939 when taken over as part of the flood control basin. Today, the site is marked by a stand of trees and the reservoir. Most of the site has been disrupted by farming activity. It is used as a dump site. The southern end of the reservoir has been removed by a tenant farmer who used it for silage storage. A portion of the end which bears Fenton Slaughter's hand written name is now on display at the Yorba-Slaughter Adobe. A plan and profile were made of this feature. A displaced cement and boulder driveway entry marker is located at the north edge of the site, along with a portion of another structure of the same type of construction. Part of the house foundation is located northeast of the reservoir. A photographic record was made of this site.

PB-63 -- MERIDITH RANCH

Lewis A. Meridith and his wife, Señora Slaughter, settled this property, which was over part of Fenton Slaughter's ranch. It appears on the 1941 edition of the Prado Quadrangle and in the 1936 aerial photographs of the flood control basin.

The farm consisted of a large house with an arbor, a barn, and a number of outbuildings, including small houses for employees. Another structure was located to the south of the main farm building cluster. Meridith dry farmed the surrounding acreage. The family continued in residence until the property was condemned as part of the flood control basin and removed in 1939. At present, the ranch area is covered by the greens of the El Prado Golf Course. Several palm trees on the west side of the Pomona-Rincon Road mark the site. It is possible that some disrupted or intact subsurface deposits still remain buried at this site. Such deposits could include a well, privy, or trash pits. The elevation is 545 feet MSL.

PB-64 -- MCALISTER RANCH

The earliest known occupation of this site was by Fowler and Gates, who had a ranch here by 1871, according to the San Bernardino County Assessor's records. A house belonging to them is shown at the site on Grantham's (1876) map of the region. This map was made in 1875 using a composite of survey data from eight surveys starting in 1853. The date when the house was recorded is unknown. The activity of Fowler and Gates is unknown. At some point, Fowler left the ranch, which was known as the Gates Ranch when Albert E. Payne purchased it in 1886 (Lewis Publishing Company 1890:623).

Albert Payne's biographical sketch (Lewis Publishing Company 1890:623-624) indicates that he was active in the establishment

of the Ontario Colony and involved in other southern California real estate. He was involved in early oil exploration in the eastern states between 1868 and 1883. Mr. Payne was a native of Kent County, England. Upon obtaining the Gates Ranch, he established prune and apple orchards and raised nursery stock. He produced grain, hay, and stock as well.

Prior to late 1890, a Charles E. Harwood purchased the property as an investment. In November, 1890, he sold the property to Daniel Durkee (PB-25). Durkee sold the ranch, then reduced in size to 15.36 acres, to D. R. Brown in 1893. The ranch was owned by the Collar family when it was sold to James McAlister, ca. 1909. McAlister and his sons operated the ranch into the 1920s, when it was sold to Louis Abacherli, Sr. This information is synopsized from Desborough (n.d., Appendix:38-41).

Abacherli was a native of Switzerland who moved to the region in 1882. After he obtained the property, he expanded the dairy into one of the larger operations in the region at that time. The houses were located a short distance north of the dairy. At one time, there were three occupied houses at the house cluster which included several outbuildings, an orchard, and a number of mature shade trees. The dairy included seven barns and milking barns, corrals, several small structures, and two silos. These can be seen in the 1936 aerial photographs of the basin (F210).

The dairy was closed when the area was condemned as part of the flood control basin. The entire area has been cleared. It is now in part occupied by the El Prado Golf Course. No cultural residue was observed at the site. Given the extensive land alteration in the vicinity of this site it is highly unlikely that any subsurface deposits could have survived. The elevation was at approximately 525 feet MSL.

PB-65 -- CAVANAGH RANCH

William Cavanagh purchased 350 acres from J. H. Stewart between 1888 and 1891 for use by his sons (Desborough n.d., Appendix:35). During the 1890s, the eldest brother Alba and his wife Mary Ullyot Cavanagh built a brick house on their section of the ranch. This structure and another house appear on maps using the 1899 survey data collected by the U.S. Geologic survey. They farmed the ranch until it was sold to a Mrs. Whelan in 1909. Her use of the property is unknown. She sold it to James Melvin and Ora Kuns Johnson in 1913. They lived at the ranch until 1916, then rented it. They reoccupied the ranch in 1927 and continued to reside there until it was condemned in 1939 as part of flood control basin. The Johnsons grew crops at the ranch and kept some livestock.

The 1936 aerial photographs of the basin (F191) show a house surrounded by mature trees, an orchard, barn, and corrals at the site. The site was demolished and is now part of the Prado

Regional Park. No evidence of the site was located. The vicinity has been extensively graded. Given the extensive land alteration in the vicinity of this site it is highly unlikely that any subsurface deposits could have survived. The site is at an elevation of 535 feet MSL.

PB-66 -- THE BROWN PLACE

A structure is shown in this vicinity by 1899 and continues to appear on editions of the Corona Quadrangle until 1939 when the latest survey was done for the 1942 edition of the map. The structure appears on the 1936 aerial photographs (F182) along with two outbuildings. The site was located on the eastern edge of Mill Creek several hundred meters south of the Chino-Corona Road.

The early history of the site is unknown and shrouded in mystique. Legend has it that the site was a stage coach stop and that a treasure was buried there. Some say that it is a strong box with gold, others know only that a treasure is rumored to be buried there. The consequence of this legend is that the site has been repeatedly gone over and dug into by treasure hunters, some with metal detectors. This activity has continued for some decades and apparently still occurs occasionally.

The Orbon family occupied the site during the 1910s. One of the daughters was a founder of the Mava Ice Cream Company in Corona. Clarence McCarty purchased the property in the 1920s. Thereafter, it was occupied by a succession of tenants until it was abandoned and demolished.

The site has been largely destroyed by construction of the Vanderhaven Dairy. Some of the trees still remain to mark the site, along with several disrupted foundation piers. A scatter of trash including ceramics and glass is present at the site. The trash includes items produced after the 1920s. A filled well apparently still exists near the stream bank. The elevation is 550 feet MSL.

PB-67 -- ARBORN RANCH AND RAAB FARM

Robert and Hanna Suchberry Arborn settled in Rincon in 1857. They settled on a 120 acre parcel at Spring Creek (later Mill Creek). Arborn farmed and had an orchard. He constructed "Arborn's Dam" on the creek (Desborough n.d., Appendix:26). This is probably the dam associated with Mayhew's grist mill (PB-52). If so, Arborn may have been responsible for the initial construction of what was to become known as the Mayhew or Spring Valley Ditch (at least that portion which occurred on his property). This aspect of the occupation is not clear.

Arborn sold his property to a Mr. Sego in 1911 or 1912. After residing there for a short period, Sego rented it to R. B. and Alice Morgan Morton. After the Mortons moved, Sego sold the property to P. J. Brennan (Desborough n.d., Appendix:26-27). By the 1920s, William Raab and his family occupied the house site. Raab grew walnuts on the property and was the principal thresher in the area.

The house, barn, outbuildings, and walnut grove appear in the 1936 aerial photographs of the basin (F168). The Raab house is a small clapboard structure with a fireplace. This house was probably built later than the initial Arborn occupation, probably after 1890. The house, barn, and another building are now incorporated into the Dominguez calf farm. They are presently in good condition and are being used. Subsurface deposits, such as a well, privy, or trash pits, which date to the earlier occupation of the site may be present. The elevation is 560 feet MSL.

PB-68 -- WILLOW SPRINGS RANCH

This site is located immediately west of Hellman Avenue and north of Mill Creek. The site was occupied by the late 1860s or 1870s. "A plat of the Jurupa-Rancho finally confirmed to Abel Stearns" made by William Minto (1878) based on data from 1869 and 1878 surveys shows "Sparks House" on site. The subsequent sequence of occupation at the site is not documented. During the 1920s and 1930s, a Swiss family operated a dairy at the site. This appears in the 1936 aerial photographs (F168). The site is located adjacent to the springs which fed the Mayhew Ditch (Hall 1888:299). The name Willow Springs Ranch was given the site sometime prior to 1930, apparently from the adjacent springs. Today the site is covered by a modern dairy which was built after World War II. No evidence of the earlier occupation was visible, but could exist in the form of subsurface deposits, such as a well, privy, or trash pit. The elevation is 550 feet MSL.

PB-69 -- LESTER RANCH

The Lester Ranch was located in the northern part of the project area. The ranch buildings were located on a knob-shaped hill immediately southwest of the California Institution for Women (Frontera PO). Edward and Ellen Clegg Lester purchased the ranch in 1875 (Desborough n.d., Appendix:27). Desborough (n.d., Appendix:27-29) provides a summary of various residences on parts of the ranch. According to her identification, the Lesters lived in an adobe before building their home. The location of this adobe is not known. Lester engaged in farming. He and members of his family owned the ranch into the middle 1930s. They did not always reside on site.

By 1903, the Brown family had rented the property. They farmed it until 1911 or 1912. Thereafter, Desborough believes that the

ranch was rented since Lester was living in the Imperial Valley. After Lester's death in 1934, his second wife sold it to Ernest Phillips. Phillips eventually demolished the original house and built a new structure. Phillips sold a portion of the ranch to the state for the construction of the women's prison. The remainder was sold to the Van Vliets, who operate a dairy. Their home presently occupies the site.

The 1936 aerial photographs of the basin (F191) show the original house and site under Phillips' ownership. Two outbuildings, one a rectangular clapboard garage, were present on the hill with the house. A large barn was located a short distance to the northeast at the base of the hill. The Van Vliet residence, the garage and a small dilapidated barn-like structure are present on the site today. The hill top has been considerably modified by bulldozing. The barn has been demolished and no evidence of it was found during the field survey. It is possible that some disrupted or intact subsurface deposits still remain buried at this site. Such deposits could include a well, privy, or trash pits. The elevation is 565 feet MSL.

PB-70 -- MORENO RANCH

The house at this site was built during the 1890s and appears on U.S. Geologic Survey maps using survey data from 1899. The house was occupied by the original residents until the property was purchased in the early 1940s by the Moreno family. Many of the Morenos moved to this property from their ranch (PB-25) in the lower basin. Subsequently, the house was occupied by various family members and rented to a number of occupants. A number of newer structures have been built at the site after 1940.

The 1936 aerial photographs of the basin (F222) show the house, a barn, and a shed on the site. The house and outbuildings remain on the site. The house was originally a small clapboard structure. Rooms were added to the east and west sides of the house. The north facing porch is enclosed to make additional interior space. A small basement is located under the northwest corner of the house. The wood shingle roof has been replaced by asphalt shingles.

The house had become dilapidated and by early 1984 was undergoing renovation. It is expected to be rented after renovation. This was photo documented. The outbuildings continue to be utilized. Subsurface trash pits are known (1940s) to occur adjacent to the house. The elevation is about 555 feet MSL.

PB-71 -- ARAMOUSBY FARM

Louie Aramousby occupied this farm sometime after 1900. The house shows on topographic maps using 1933 survey data and on the 1936 aerial photographs of the basin (F222). The site consisted

of a small wood frame house, a barn, and several outbuildings. Aramousby raised sheep. He occupied the property at least into the 1940s. The site is now occupied by a feed seller. The Aramousby buildings have been removed. It is possible that some disrupted or intact subsurface deposits still remain buried at this site. Such deposits could include a well, privy, or trash pits. The elevation is approximately 560 feet MSL.

PB-72 -- CHRIS PEDERSON PROPERTY

This is the site of two houses built on a corner lot at the intersection of Pine and Euclid Avenues. The houses were apparently built in the 1920s. The structures appear on the 1941 Prado Quadrangle, which used survey data from 1933, and the 1936 aerial photographs of the flood control basin (F109). The Pederson family acquired the property in the 1940s. Chris Pederson inherited the property and still occupies it. One house has been removed and the other moved to a different position on the lot. A corrugated iron barn with a clapboard front has been added. The site is presently used as an equipment yard for Pederson's oil exploration activity in the Chino Hills. It is possible that some subsurface deposits exist at this site (trash pits or privies). The elevation is 560 feet MSL.

PB-73 -- STOCKWELL SERVICE STATION AND STORE

This is the site of Roy Stockwell's service station. The site appears on U.S. Geologic Survey maps using data from the 1933 survey of the area. It can be seen in the 1936 aerial photographs of the basin (F222). Stockwell established his business in the 1920s. It consisted of a small store with gasoline pumps fronting Pine Avenue. The store sold staples and drinks. Various local residents met at the store for social activities including card playing. The business closed and the site was demolished when Euclid Avenue was extended. It is now under the intersection of Euclid and Pine Avenues. Given the extensive land alteration in the vicinity of this site it is unlikely that any subsurface deposits could have survived. The elevation of the site location is 560 feet MSL.

PB-74 -- JOHN TAYLOR'S SECOND RANCH

The initial date of occupation for this site is not known. John Taylor moved to the site sometime after 1895 from La Puerta Abierta (Riv-2204). It is believed that he established the ranch. Houses were present at the site by 1899 as shown on the 1902 edition of the Corona Quadrangle. The ranch structures appear in the 1936 aerial photographs of the basin (F210). The photographs show a house surrounded by trees.

The length of Taylor's occupation is unknown. Apparently the ranch was inhabited by a number of persons, possibly being vacant at various times. Informants could not provide data on the site and Desborough (n.d., Appendix:37) could not get details of the occupation. The site has been demolished and is now occupied by a dairy. It is possible that some disrupted or intact subsurface deposits still remain buried at this site. Such deposits could include a well, privy, or trash pits. The elevation is 555 feet MSL.

PB-75 -- EDWARD PINE RANCH

Edward Pine, son of Samuel Pine, Sr., established this ranch in 1915 (Desborough n.d., Appendix:42). The building site was located in the southwest corner of the intersection of Pine and Pioneer Avenues. The site appears on U.S. Geologic Survey maps using data from the 1933 survey of the area. The 1936 aerial photographs of the flood control basin (F210) show it containing a barn and four other buildings in addition to the two houses and store.

Pine, his wife Ella C. Walkinshaw, and their children resided at the ranch. A brief biography of Edward Pine has been published (Brown and Boyd 1922:1142-1143). Pine operated a dairy and farmed in the area. Edward Pine moved from the site in 1931 after suffering a stroke. He was succeeded at the site, possibly after a hiatus, by his son, Roy, and his wife, Ruth McGuire. The Roy Pines farmed and operated a small store (Desborough n.d., Appendix:43). The store was operated by Ruth Pine and her daughter.

The Pines lived on site at least through World War II. The structures have been removed and the site is now occupied by a house and dairy. It is possible that some disrupted or intact subsurface deposits still remain buried at this site. Such deposits could include a well, privy, or trash pits. The elevation is about 555 feet MSL.

PB-76 -- SAMUEL PINE, SR., RANCH

Samuel Pine was an early settler in the northwestern edge of the Prado Basin. Brown and Boyd (1922:1073-74) have compiled a biographical sketch of Pine. According to this, he settled on the Pine Avenue Ranch in 1867 on a 148 acre squatter's claim. According to Desborough (n.d., Appendix:43), he settled a 160 acre squatter's claim. The claim did not have clear title and required some effort to gain a patent. Pine died in 1897. His widow, June Morrison Pine, lived at the ranch until her death in 1913.

After 1913 the ranch was rented to a succession of families (Desborough n.d., Appendix:43). Robert English and his wife

occupied the ranch from 1914 until ca. 1921. They were succeeded by Pine's grandson, Samuel Pine III, and his wife, Georgia English. The Pines lived at the ranch for several years before moving. Thereafter, several other families lived on site until it was demolished in 1939 as part of the flood control basin. The 1936 aerial photographs of the basin (F210) show a house and barn at the site. The site is now part of a dairy. It is possible that some disrupted or intact subsurface deposits still remain buried at this site. Such deposits could include a well, privy, or trash pits. The elevation is 545 feet MSL.

PB-77 -- PEDERSON RANCH

This is the site of a ranch established by the Pederson family in the 1920s. The site is located on a low hill northwest of the intersection of Pine and Pioneer Avenues. It appears on Prado Quadrangle, which used survey data from 1933, and on the 1936 aerial photographs of the basin (F209). It consisted of a house, barn, and several outbuildings. The Pedersons farmed a large tract of land north of Pine Avenue and west of Euclid Avenue. The site remained in use into the 1950s. The structures have since been demolished and the site is now occupied by a dairy. Given the extensive land alteration in the vicinity of this site it is highly unlikely that any subsurface deposits could have survived. The elevation is 560 feet MSL.

PB-78 -- EDWIN PINE RANCH

This site included a group of farm buildings located on the south side of Pine Avenue immediately east of Chino Creek. Edwin Pine and Annie Gilbert Pine established their ranch at this site in the 1880s. Pine farmed fields on both sides of the creek. After his death, family members continued to farm the property until it was condemned in 1939 as part of the flood control basin (Desborough n.d., Appendix:45). The site appears on U.S. Geologic Survey maps through 1941. The 1936 aerial photographs of the basin (F210) show a house, barn, a number of outbuildings, and some farm equipment. The house area is surrounded by mature trees. An orchard was located immediately east of the house and yard. The site was removed during the construction of Prado Dam. It is presently occupied by the club house and parking lot of El Prado Golf Course. Given the extensive land alteration in the vicinity of this site it is highly unlikely that any subsurface deposits could have survived. The elevation is 545 feet MSL.

PB-79 -- GARETTO FARM

The Garettos occupied this site sometime after 1897. They were at the site prior to 1933, when the area was surveyed by the U.S. Geologic Survey. The site appears on the 1936 aerial photographs (F210) which show it to include a house, barn, and several

outbuildings in a grove of trees. The Garettos farmed a variety of crops, including alfalfa and grain. They resided at the site until it was condemned as part of the flood control basin in 1939. The area of the site is now covered by the greens of the El Prado Golf Course. Given the extensive land alteration in the vicinity of this site it is highly unlikely that any subsurface deposits could have survived. The elevation is 555 feet MSL.

PB-80 -- MUSHAGAN DAIRY

This site was established prior to 1899 and appears on the 1902 edition of the Corona Quadrangle surveyed in that year. The site appears on U.S. Geologic Survey maps using survey data from 1933 and it is shown in the 1936 aerial photographs of the basin (F 212). By the 1930s, the Mushagan brothers operated a large dairy at the site. The dairy continued in operation until sometime after World War II. The dairy has been demolished and replaced by a sewage treatment plant. Given the extensive land alteration in the vicinity of this site it is highly unlikely that any subsurface deposits could have survived. The site's elevation is approximately 550 feet MSL.

PB-81 -- SHIELDS RANCH

The Shields Ranch house site is located southwest of the intersection of Pine Avenue and the Pomona-Rincon Road. It was established by William Meridith and Marie Howard Meridith in 1875 (Desborough n.d., Appendix:46). The house site can be seen in the 1936 aerial photographs of the flood control basin (F212). The house was a two story clapboard structure with an adjacent well.

The Meridiths occupied the site for an undetermined period. They were succeeded by William and Bess Shields. Mr. Shields farmed the fields around the site. He apparently ceased farming in the 1920s but continued to live at the site. Shields became reclusive and the structures were dilapidated by the 1930s. It is not known when Shields left the site. The house apparently remained vacant until demolished in 1939 when the property was condemned as part of the flood control basin.

Today, the trees which acted as a wind break around the house are incorporated into the El Prado Golf Course. There is no surface evidence of foundations or artifacts but it is possible that subsurface remains are present.

Supposedly there was a small store and post office, a saloon, and other buildings on the Pomona-Rincon Road immediately east of the house site during the late 19th century. These buildings were removed at least by the 1920s. No evidence of these structures was observed. The location is substantially altered by road and golf course construction. It is possible that some disrupted or intact subsurface deposits still remain buried at this site.

Such deposits could include a well, privy, or trash pits. The elevation is 532 feet MSL.

PB-82 -- MAYHEW RANCH

The Mayhew Ranch was established on the west side of Central Avenue prior to the turn of the century. It appears on the 1902 edition of the Corona Quadrangle and later maps. The ranch structures can be seen in the 1936 aerial photographs of the basin (F227). James and Eliza Gregory Mayhew (Desborough n.d., Appendix:45) established the ranch. Their daughter Alice married Elbert Flowers (PB-84). A son, Clay, resided at the ranch also. The Mayhews vacated the property by the 1930s.

A French couple named DuHolde occupied the site in the 1930s and 1940s. They operated a dairy and lived in a single-story wood frame house. Mr. DuHolde returned to France after his wife's death in the 1940s. The structures at this site were removed and it is presently used for growing Sudan grass. No remains of the occupation were observed during the survey of this property. It is possible that some disrupted or intact subsurface deposits still remain buried at this site. Such deposits could include a well, privy, or trash pits. The elevation is 550 feet MSL.

PB-83 -- ROBLES FLOWERS' HOUSE

This is the site of an old ranch established in the late 19th century. The house appears on the 1902 edition of the Corona Quadrangle surveyed in 1899 and in the 1936 aerial photographs of the basin (F227). The house is a small, single-story clapboard structure accompanied by a pump house and relatively new barn located in a grove of mature trees. The structure does not appear much altered but is currently in disrepair. The early history of the site is not documented. Robles Flowers resided at the residence for an undetermined period of time. The house is still occupied. A photographic record was made of the site. It is possible that some disrupted or intact subsurface deposits still remain buried at this site. Such deposits could include a well, privy, or trash pits. The elevation is about 555 feet MSL.

PB-84 -- ELBERT FLOWERS' RANCH

The Flowers' Ranch was located on the east side of Central Avenue. It appears on the 1941 edition of the Prado Quadrangle surveyed in 1933, and in the 1936 aerial photographs of the flood control basin (F227). Elbert L. and Alice Mayhew Flowers established the ranch, which was dry farmed in the 1920s or slightly earlier. The Flowers occupied the site into the 1950s or early 1960s, after which several people resided at the property. Most of the original ranch buildings have been replaced by a modern dairy. There is one small stucco house, a barn, and an

outbuilding at the site. The house and outbuilding have been renovated. A photographic record was made of this site. It is possible that some disrupted or intact subsurface deposits still remain buried at this site. Such deposits could include a well, privy, or trash pits. The elevation is 560 feet MSL.

PB-85 -- THE SECOND ROBLES RANCH

F. S. and Concia Botillier Robles moved to this site in 1908 from site PB-26 (Desborough n.d., Appendix:45-46). The family was still resident there in the 1930s. The site contained at least a house, well, barn, and several outbuildings which appear on in the 1936 aerial photographs of the basin (F227). The house was built after 1899 since it does not appear on U.S. Geologic Survey maps using data collected in that year. It is not known if Robles built the house.

The house is still present and is occupied at this time. It is a small, single-story, clapboard structure with a porch facing Central Avenue. A small fireplace is present. A brick addition has been added to the south side of the house. The original wood shingle roof remains on the house and is covered by a more recent asphalt roof. Several old barracks are being converted to stables. The ranch is now being used to raise and train horses. A photographic record was made of the house. It is possible that some disrupted or intact subsurface deposits still remain buried at this site. Such deposits could include a well, privy, or trash pits. The elevation is 565 feet MSL.

PB-86 -- KRAEMER RANCH

The principal portion of the Kraemer Ranch is located southwest of the intersection of Highway 71 and the Pomona-Rincon Road. The ranch site and associated activity areas are located a short distance from the intersection. The buildings are shown on the 1941 edition of the Prado Quadrangle surveyed in 1933, and in the 1936 aerial photographs of the basin (F227).

The earliest known activity area on the property was a corral east of the ranch structures at the edge of Highway 71. Numerous trees covered the area during the 19th century. During plowing, a stirrup and spur of California design were found (Newman collection). Prior to the turn of the century, the ranch was farmed by Bert Newman's brother. Sam Kraemer purchased the property sometime around World War I. Between 1920 and 1922, John and Antoinette Bordessio moved to the property, along with Antoinette's sister and her husband, Caroline and Ben Ferrero. At the time that they moved to the ranch, the principal buildings consisted of a large house and two smaller houses. In the early 1930s, Kraemer built a new and larger house for use by the two couples. The house is still on site with a barn and another building.

The Bordessios and Ferreros irrigated and farmed the property growing alfalfa, hay, and other crops. Today, the Bordessios' son, Aleck, continues to farm the ranch. The ranch remains intact and is an example of a small, single family farm which was common in the project area prior to World War II. The elevation is 540 feet MSL.

PB-87 -- INDIAN CEMETERY

(See section on Cemeteries which follows.)

PB-88 -- LE GAYE RANCH

The principal feature of the Le Gaye Ranch is a 100 acre grove of olive trees. These are located immediately southeast of the intersection of Cucamonga Avenue and McCarty Road. The grove extends to Mill Creek on the east (see 1936 aerial photograph F145). The earliest record of the use of this area is as cattle and sheep pasture by John Ralphs, who sold the property to his brother-in-law, William B. Roberds, in 1883. Roberds and his wife, Jeannette Henderson (Walkinshaw) Roberds settled on the property. They built a house and farmed the property (Desborough n.d., Appendix:16-17).

The Roberds' house was located at the southern edge of McCarty Road, south of the Ross Ranch (PB-47). This house is of unknown design. It was still present in 1899 when the U.S. Geologic Survey surveyed the area and appears on the 1902 edition of the Corona Quadrangle.

In 1887, the Roberds sold their property to the Le Gayes. The following year, they planted the olive orchard (Desborough n.d., Appendix:17). The orchard remained in production for an unknown period. By the 1920s, it was rented by the McCartys (PB-41) and used as pasture for their dairy cattle. By that time, the orchard was owned by a man named Ford. The orchard has continued to be used as cattle pasture. During the depression, the Fords cut trees and sold the wood for extra income. One crop of olives was harvested by the McCartys and sold for oil during World War II. The property was purchased by the Corps of Engineers in 1939 and has been rented as pasture since then.

The orchard remains and is in good condition. The date when the Roberds home was demolished is unknown. No remains of the structure or other residium of the Roberds' occupation was located. It is possible that some disrupted or intact subsurface deposits still remain buried at this site. Such deposits could include a well, privy, or trash pits. The elevation is approximately 545 feet MSL.

PB-89 -- RINCON RESIDENCES

This site consists of a cluster of associated structures seen on plate F66 of the 1936 aerial photographs of the Prado Basin. The site of the cluster is located several hundred meters south of the Pomona-Rincon Road (old Highway 18, Main Street in Prado) and approximately 200 meters east of the Prado Dam spillway. At present, the area is covered by a dense stand of eucalyptus trees. The area covers approximately ten acres and is at an elevation of about 520 feet MSL.

The site covers portions of Blocks 28, 41 and 42 of the Rincon town-site. All lay adjacent to Center Street which ran north-south through the townsite. In later years, there was an "alley" in Prado. According to one informant, Mr. Bridges, the site consisted of a cluster of residences inhabited by Mexicans. A survey of Riverside County assessors records substantiates this information. The principal owners of lots in Blocks 41 and 42 from the turn of the century until abandonment were individuals with Spanish surnames (Corona, Pantoja, Aguilar, Bega, Grajalva, Reyes, Estudillo). The structures seen on Block 28 in the aerial photograph were the property of A. Magna and Acinn Magna.

The individual lots within the site area periodically changed ownership from the early 1800s onward with the exception of Guadalupe Grajalva's property in Block 42. Initial sales were apparently by J. R. Newberry. Some owners had Anglo surnames (Fry, Wells) but the area was established as a Mexican enclave by the late 1890s and remained so until the properties were purchased by the Orange County Water District in 1938.

Examination of the site by members of the ECOS field crew revealed considerable disturbance. Piers for the foundation of a structure were found in Block 28. These were not in situ. Few artifactual remains were seen in the area. Aerial photograph NGA-PD-813s7-11/13/40/U.S. Army Corps of Engineers, Los Angeles District, Real Estate Division, shows that the site was heavily disturbed by activity associated with construction of the dam. It is possible that some disrupted or intact subsurface deposits still remain buried at this site. Such deposits could include a well, privy, or trash pits.

PB-90 -- RINCON CEMETERY

(See the section on Cemeteries which follows.)

PB-91 -- MAYHEW HOUSE

This house was built by Jessie Mayhew (See PB-52) in 1866 or shortly afterward. The house is mentioned in William Minto's 1878 survey notes for Rancho Jurupa (Weitze 1980:10) and appears on U.S. Geologic Survey maps using survey data from 1899. No

information about the house or other aspects of the occupation were documented. The house was removed prior to 1933 when the U.S. Geologic Survey surveyed the area. The site is now part of a Sudan grass field used by the Alta Dena Dairy. No evidence of the occupation was found. It is possible that some disrupted or intact subsurface deposits still remain buried at this site. Such deposits could include a well, privy, or trash pits. The elevation is approximately 545 feet MSL.

PB-92 -- TULE HOUSE

The location of "Tule House" is known from one map. The site is identified on a map labeled "Exhibit A", which shows the planned route of the California Central Railroad through the Rincon townsite. The map apparently dates to the early or middle 1880s at the time that the town-site was planned, since the map shows a right-of-way which was designed to include the Rincon siding and station.

The site is located at the north edge of the railroad right-of-way, just east of Yorba Street. The map shows two structures at the site. The way that the words "Tule" and "House" are juxtaposed with these structures, there are three possible interpretations of the label: 1) a tule structure and a house; 2) Tule's house; and 3) a house made of tules. Since there are two structures shown, the first interpretation seems most likely. No further information about the site was documented.

The southern edge of the site is within the railroad right-of-way and may be destroyed. The site was abandoned by the 1890s, when the surveys (1890, 1899) for the first topographic maps of the area were made. In 1936, when aerial photographs were taken of the area, the site was a plowed field. The site is presently under 30 to 50 cm of silt deposited by flood waters behind Prado Dam. It is possible that some disrupted or intact subsurface deposits still remain buried at this site. Such deposits could include a well, privy, or trash pits. The elevation is approximately 500 feet MSL.

PB-93 -- SPILLWAY CEMETERY

(See the section on Cemeteries which follows.)

PB-94 -- RAFAEL SERRANO HOUSE

This is the site of Rafael Serrano's house. The general location is described by Desborough (n.d., Appendix:82) as being in Francisco Serrano's hay field west of Chino Creek and is shown as being near Abelardo Serrano's house (PB-16) but east of the Pomona-Rincon Road. The entire area of Serrano's hay field is now heavily brushed and silted over as a result of repeated

inundation in the lower part of the flood control basin. The present surface elevation is approximately 500 feet MSL.

Rafael Serrano resided at the house with his wife, Beatrice Ayos de Serrano, and eight children. Presumably, Rafael was involved in work at the family ranch, but information on his occupation are unknown. Several years after his brother, Abelardo, died, he abandoned the home site and moved to Lake Matthews. Afterward, the house was demolished and the plot returned to farming.

It was not possible to locate the house site during survey of the area. Examination of county surveyor's and assessor's records did not provide information as to location.

PB-95 -- SERRANO BRIDGE

The Serrano Bridge was built after 1900. Like the Chino Creek Bridge, it was a Pratt Riveted Span with wooden floor planking. It connected the lower stretch of Cucamonga Avenue with the Pomona Rincon Road. The bridge remains in place and is partly exposed in the bank of Chino Creek, which now flows at a level approximating the road bed of the bridge, in a channel aligned several meters west of the original bed. The remainder of the bridge is buried under silt which rises above its top. The relationship between the bridge and silt suggests that 7 to 10 meters of silt deposition have occurred in the area since the dam was built. The present ground surface elevation is approximately 480 feet MSL.

PB-96 -- RINCON BRIDGE

The original Rincon Bridge was built prior to 1890 in the vicinity where the Los Angeles-Fort Yuma Road used by the Butterfield Stage crossed the Santa Ana River (see San Bernardino County Surveyor Office records MB 7/11 and MB 7/4). The bridge was destroyed by flooding on several occasions and the bridge site was changed at least once. The materials used in the bridge, which was destroyed in 1916, are listed from the record books of the Russ Lumber and Mill Company Desborough (n.d., Appendix:56). A plan (San Bernardino County Surveyor's Office, Record 2825) presumed to be this particular bridge, shows it to have a 40 foot span, 18 feet above the river bed. Later bridges continued to be wooden and apparently of similar design. No surface evidence of the bridge exists at present. Its location is in a heavily silted area with a current ground surface elevation of approximately 475 feet MSL.

PB-97 -- TRAIN BRIDGE

Three concrete supports of the Atchison, Topeka, and Santa Fe Railroad bridge which crossed the Santa Ana River remain in place

immediately south of Prado Dam. The bridge was built in the late 1920s. A plan of it is on file at the Riverside County Surveyor's Office. The bridge appears in the 1936 aerial photographs of the flood control basin (F38). It was a three or four span riveted steel bridge. The bridge was removed when the route was realigned to the south when Prado Dam was built. The remaining supports are partly buried but remain in good condition. The elevation is approximately 470 feet MSL.

PB-98 -- NAME UNKNOWN

A wood frame house was located on the west side of the Pomona-Rincon Road across from the Pate home site (SBr-1571). The location was reported by Genevieve Newman Karlson, who is the sole source of information for the site. The structure does not appear on topographic charts or in assessor's documents.

The house was located on a flat area in a small draw backed by a stream terrace. The house was occupied by an elderly woman and was demolished after her death in the 1920s or early 1930s. It is believed that the woman was a squatter, perhaps a tenant. The house was located on Block I of parcel 136 which consisted of the 237 acre Pate Ranch. No evidence of the structure or associated artifacts were located during the field reconnaissance. The area is now planted in Sudan grass. It is possible that some disrupted or intact subsurface deposits still remain buried at this site. Such deposits could include a well, privy, or trash pits. The elevation of the site is about 520 feet MSL.

PB-99 -- PAYNE HOG FARM

See PB-41.

PB-100 -- PRADO DAM

Prado Dam is included here because it is presently the most important architectural feature located in the flood control basin. The dam was built in 1939 and 1940 to Corps of Engineering design specifications. Prado Dam is a graded earth fill dam with attendant concrete lined spillways. The core was built around steel sheet covered by a select core. The upstream side of the dam was built of impervious material extending to a rock toe. The downstream side was built of random material covered by a layer of impervious material ending in a rock toe. The general specifications of the dam are:

Overall length:	835 feet
Crest Height:	2,280 feet
Crest Width:	30 feet
Maximum Height:	105 feet
Rolled Fill:	3,130,000 cubic yards
Concrete:	167,700 cubic yards
Reinforcing Steel:	10,700,000 pounds
Contract Price:	$3,639,795

(Corona Daily Independent, July 23, 1940)

The dam is of greater public significance than any other man made feature within the project area because of the purposes which it serves. It is a focal point of regional, public, and political interest, also. Between 1939 and 1941, the Corona Daily Independent ran periodic features about the dam. These in particular, and other newspaper accounts provide a great deal of information about the history of the development and construction of the dam.

PB-101 -- CAMPIO RANCH

The Campio Ranch was established on a small parcel in the northwestern corner of the Rincon townsite. The history of the ownership after subdivision is as follows: J. R. Newberry (prior to 1898); R. H. Rees (1898-1899); W. H. Messer; S. W. Holsinger (1899-1913); Ramon M. Corona (1913-1916); Jonas W. Brighton (1916-1918); Abram Campio (1918-1926); Leonarda Campio (1926-1939), then to the Orange County Water District. The site included a small house and outbuilding (barn?) with a number of trees (see aerial photograph F37). The residents were not remembered by the informants interviewed. The structures were demolished in 1939 and the area graded. The spillway of Prado Dam is located immediately to the south. Given the extensive land alteration in the vicinity of this site it is highly unlikely that any subsurface deposits could have survived. The present surface elevation is 500 feet MSL.

PB-102 -- RINCON TOWNSITE AND PRADO

This property consists of the Rincon townsite. The townsite was located on the south side of the Santa Ana River on part of Rancho La Sierra alloted to Concepcion Serrano de Yorba. Much of the townsite was located on the flood plain at the edge of the terraces which border the southern edge of the river. The southwestern and most of the eastern portion of the townsite extended out to the terraces and their slopes. At present, much of the townsite is silted over and covered by a dense stand of eucalyptus trees. Other portions of it are being used as pasture or for Sudan grass production. The Prado Dam spillway is now located in the southwestern portion of the townsite. The area comprises approximately 180 acres and ranges in elevation from about 480 to 550 feet MSL.

Initial use of the area is not clearly documented. A map of the portion of Rancho La Sierra allotted to Tomas Yorba, Concepcion Serrano de Yorba, and Maria Jesus Shorb, based on a survey by George Hansen and Alfred Solano, was filed November 17, 1882. It shows a "House of Raymundo Yorba" on the townsite. Yorba moved to the house in 1868 (Stephenson 1941:68). By the time the survey for the California Central Railroad was made in the 1880s, structures belonging to J. R. Newberry and a person named Kleinschmidt were present in the townsite (see map titled "Exhibit A," San Bernardino Surveyor's Office). Also present was at least one other structure and the Yorba (Rincon) irrigation ditch, built in 1876, with subsidiary ditches.

The Rincon townsite was formally established in 1888 by the Rincon Land and Town Company. The use of the area is better documented after this time. Rincon is a major focus of Desborough's (n.d.) unpublished history of the area. This manuscript is the principal source of data for the Rincon district subsequent to 1880. Other authors discuss varying aspects of Rincon and the people who lived there (e.g., considerable data about activity at the townsite is contained in the South Riverside Bee, Corona Courier, the Corona Daily Independent, and presumably in the Rincon Tribune, if copies exist).

Survey plats, title data, and assessor's records for the Rincon townsite, which includes the later town of Prado are included in the San Bernardino and Riverside County surveyor's and assessor's offices. Late data is contained in the files of the Planning and Control Branch of the U.S. Army Corps of Engineers, Los Angeles District, Real Estate Division.

Rincon, which subsequently became Prado, was an important focus of activity on the farm community which centered around the lower portion of the Prado Flood Control Basin. The townsite contained numerous lots of varying size in 45 subdivided blocks covering 600 acres. Five blocks in the northwestern corner were included in "Newberry Acres" and subdivided into smaller plots. The northern boundary of the townsite as bordered by the California Central Railroad (the Atchison, Topeka, and Santa Fe Railway after 1904). Each block was bordered by a street. The developers donated one lot in Block 39 to the local school district. This lot became the site of the Santa Ana School. (This property is treated separately as PF-5.) A larger subdivision called Newberry acres, consisting of some parcels satisfactory for farming, was located immediately north of the townsite between the railway and the Santa Ana River.

Some of the land in the townsite was sold as early as May, 1887 (Desborough n.d., Appendix:36). According to Dumke (1944), $80,000 worth was sold within two months of filing in 1888. The railroad became operational in Rincon in 1887. As with many of

the developments in the boom of the 1880s, a great future was forecast for Rincon. It became a hub of regional commerce and society.

Unfortunately for those settling in the vicinity, another development, South Riverside (which became Corona), was established at about the same time. For a variety of reasons, Corona eclipsed Rincon to become the center of regional activity. By the mid 1890s, the Rincon boom had petered out. Most of the development focused on Main Street, which had a number of stores, a post office, and saloon. Agricultural products produced in the Rincon district were shipped from the railway depot.

By the 1930s, Prado (the name was changed in 1906-1907) consisted largely of the businesses on Main Street and a few isolated residences (e.g., PB-89). Other parts of the townsite were divided and given to agricultural uses, including the Ashcroft Ranch (Riv-1039) and the Excelsior Farms.

Field examination of the Rincon townsite proved difficult. The area along Main Street where the businesses were located is now silted over and it was impossible to determine what, if any, further research potential exists on site which could be examined archaeologically. Much of the townsite was graded or otherwise altered during construction of the dam (based on aerial photo NGA-PD-81327-11/13/40 in the files of the Corps of Engineers, Real Estate Division). Various features do still exist which were associated with the townsite: PF-5, a residential cluster (PB-89), and portions of the Center Street flood control channel (see Tobey, Suss and Burgess 1977:photos 32 and 33). Excavation several years ago of a drainage channel along the bed of the abandoned railroad right-of-way encountered buried track, ties and trash in the vicinity of the railroad depot.

PB-103 -- ASHCROFT RANCH

This site is generally known to local residents of the Rincon district as the Ashcroft Ranch, and in county records as the Fernandez Place. It is located on the western edge of the Prado Basin immediately west of the Santa Ana River and east of Highway 71. Prado Dam is now located several hundred meters to the south. The site is approximately comprised of parcels 47, 48, 49, 167 and portion of 166 and 168 as shown on the Corps of Engineers' appraisal records. The late configuration of the site is visible in photo F92 of the 1936 aerial photographs of the basin. Today the site is heavily silted and Chino Creek flows over the approximate location of the structure cluster which once sat between the creek and the Pomona Rincon Road. The present surface elevation is 475 feet MSL.

The evidence of period of occupation of this site is a record of a house belonging to Antonio Aros as recorded on a surveyor's plat of Township 3 North, Range 7 West filed at the Surveyor

General's Office in San Francisco on September 14, 1876. The information for the part of the map involved was from an 1865 survey. Aros had a second house to the north, at the site of Francisco Serrano's house.

The next evidence of occupation is by Vincente Fernandez, a native of Santiago Chile. Fernandez came to California during the Gold Rush and in 1869 purchased "The Fernandez Place" from the heirs of Bernardino Yorba (Desborough n.d., Appendix:87). The ranch is described as containing 130 acres besides a stock range of 87 acres in the Chino Hills. He had a large and comfortable residence, considerable fruit, and about 80 acres of alfalfa, as well as some fine stock. He also kept a store and a saloon (South Riverside Bee, August 30, 1888).

Fernandez's "Cave Saloon" was located on the west side of the Pomona-Rincon Road. It was excavated into a sandstone cliff at the edge of the Chino Hills. The saloon was entered through his store. The walls were painted and bore pictures. The saloon was patronized by local "Spanish and Mexican men" who played cards there. It is rumored that the stage (not the Butterfield line) stopped there (Desborough n.d., Appendix:91-92). The dates of operation of the store and saloon are not known.

Fernandez lived on the site with his wife Maria Antonia. He is credited with fathering 26 children. In 1892, Fernandez moved to south Riverside where he died two years later (Desborough n.d., Appendix:87-88).

The following information is synopsized from Desborough (n.d., Appendix:88-90). Between 1892 and 1898 the site was occupied by a dairyman named Charlie Main. In 1898, William Henry Ashcroft purchased the property when he and his family were forced off of Guapa when it was found to be part of Rancho Jurupa. He lived on the site with his wife, Louise Roberds Ashcroft, and children, Ira, Theodore, Viola, Lilly and Zina. William died shortly after the move and the ranch was quit-claimed by his wife and daughters to the brothers Ira and Theodore.

Theodore's tenure at the ranch is discussed as part of site PB-15. In 1916, Ira purchased the Theodore's portion. Ira lived at the main house in the cluster where Fernandez had lived. By this time the store and saloon were in ruins. His wife, Hortense Wilson Ashcroft, and children Rachel and Ray resided with him. Ira married a second time to Louise West. They had one child, Patricia.

Under the ownership of Ira Ashcroft the ranch was crop farmed and cattle grazed in the hillside range to the west. He operated a dairy on site (presumably the one established by Main) and had citrus property near Corona. Prior to World War I, movie members began using the ranch as a filming location. The most notable movie filmed there was "State Fair" (Data from J. Bridges). Mr. Ashcroft left the ranch when Prado Dam was built. He moved to

Alvord where he died in 1970. The condition of this property is not determinable. The structures were demolished in 1940. If foundations and subsurface features, such as the saloon, remain intact, they are obscured by heavy silting and are all, or part, beneath the water table.

PB-104 -- ALTER CHEESE FACTORY

See PB-57.

PB-105 -- VALLEY SCHOOL

The Valley School District was established in 1887 at the same time adjacent districts were formed. A small one-room school house was located on the north side of the Chino-Corona Road west of Mill Creek. A succession of teachers taught at the school, including Vern McCarty (PB-41). The school structure was a rectangular clapboard building with a bell tower centered on the peak of the roof near the trough of the building. The structure can be seen in the 1936 aerial photographs (F186). One teacher taught all grades. The structure has been demolished and a single family residence is located in front of the property. No evidence of the structure or other residium was seen. It is possible that some disrupted or intact subsurface deposits still remain buried at this site. Such deposits could include a well, privy, or trash pits. The elevation is 565 feet MSL.

PB-106 -- McGUIRE RANCH

The McGuire Ranch was originally established by Frank E. Slaughter. It consisted of 15 acres, with a house, barns, and well. The structures were located on a bluff west of the Pomona-Rincon Road southeast of where it presently crosses Euclid Avenue. Desborough (n.d., Appendix:58) states that Slaughter and his wife, Maggie Meredith Slaughter, purchased the land for their home in 1892. However, the house is not shown on the 1902 edition of the Corona quadrangle which uses 1899 survey data.

The Slaughters used their acreage to produce feed for their horses and cattle, which were used by the family. He earned his living as a mechanic and in building (Ingersoll 1904). The Slaughters sold the ranch to William C. McGuire and his wife, Nancy Wear McGuire, in 1911. They expanded the ranch by leasing property in the Chino Hills which they used in horse and cattle production (Desborough n.d., Appendix:59). The McGuire family remained at the ranch until it was condemned as part of the flood control basin and the structures demolished.

The structures at the site appear in the 1936 aerial photographs of the Basin (F172). The remains of this site include some debris and several features. Most of the debris consists of

displaced stones and a pier from the house. Two broken metates were found in the rubble pile. These must have been curios at the house since no prehistoric site occurs in the vicinity. These were not collected. The features include a large stand of prickly pear cactus south of the house site and a road which climbs the face of the bluff from the Pomona-Rincon Road. The interior edge of the road is bounded by a dry-laid, course-stone retaining wall and eucalyptus trees. It is possible that some disrupted or intact subsurface deposits still remain buried at this site. Such deposits could include a well, privy or trash pits. The elevation is 543 feet MSL.

PB-107 --CHINO CREEK BRIDGE

The Chino Creek Bridge was built ca. 1904 over the Creek about half a mile above the point where it joined the Santa Ana River. The bridge was a Fine Panel Pratt Riveted Span built of steel with 3-inch floor planking. According to a plan of the bridge (San Bernardino County Surveyor's Office Record CS 2742), it was 80 feet long and rose 18 feet above the creek bed. This bridge remained in service until the construction of Prado Dam. It was probably preceded by one or more wooden bridges. The vicinity of the bridge is one of the most likely points of crossing of the Los Angeles-Fort Yuma Road used by the Butterfield Stage. The elevation is about 475 feet MSL.

PB-108 -- RUBIO HOUSE

A "House of C. Rubio" is shown in the vicinity by Grantham (1876), based on survey data by H. Hancock from 1865, but is not shown in an 1858 survey (Hancock 1858) of the area. No information was found on this occupation, and the structure is not shown on Data Maps. The area of the structure was subject to the major floods after 1865 and has been fully altered by the construction of Prado Dam. Given the extensive land alteration in the vicinity of this site it is highly unlikely that any subsurface deposits could have survived. The elevation is about 475 feet MSL.

PB-109 -- CAVANAGH RESIDENCE

This structure appears as a residence on the 1941 edition of the Prado quadrangle which is based on 1933 survey data. The site consisted of a single house in 1936 when the aerial photographs of the flood control basin (F191) were taken. This is supposed to be the residence of one of Alba Cavanagh's (See PB-65) younger brothers. The structure was built after 1899. No other data was collected. The site was demolished at the time that the flood control basin was established. It is now within the boundary of Prado Regional Park. No remains of this site were observed. Given the extensive land alteration in the vicinity of this site

it is highly unlikely that any subsurface deposits could have survived. The elevation is approximately 535 feet MSL.

PB-110 -- CAVANAGH HOUSE

This was a house which appears on the 1941 Prado quadrangle based on 1933 survey data. The structure was gone by 1936 when the aerial photographs of the flood control basin were taken. This may have been the residence of one of the younger Cavanagh brothers (see PB-65). The site is now occupied by the lake at Prado Regional Park. Given the extensive land alteration in the vicinity of this site it is highly unlikely that any subsurface deposits could have survived. The elevation is approximately 550 feet MSL.

PB-111 -- THE AUBURNDALE TOWNSITE

During the "boom of the 80s" the Auburndale Colony was planned as a real estate development venture. The townsite was located in the eastern part of the project area. The subdivision of the townsite can be seen in the Auburndale map published in February 1887 (copy at the Heritage Room, Corona Public Library) and in the records of the Riverside County Surveyor's Office. The townsite was bounded on the northwest by the Santa Ana River. It extended about 1 km northeast of River Road on the bluffs above the river. The southwestern edge extended onto the Temescal Creek flood plain to a point just east of the Corona Airport. Part of the southeastern boundary extended to the vicinity of what is how Lincoln Avenue. Brown and Boyd (1922:577) describe the townsite as containing 2000 acres. An article in the South Riverside Bee (September 15, 1887) describes it as containing 2300 acres. Elevations within the area range from about 520 to 630 feet MSL.

The development was the effort of R. B. Taylor, George L. Joy, A. S. Garretson, Mr. Merrill, and Adolph Rimpan. In 1886, they purchased land from the South Riverside Land and Water Company, and designed the townsite. The map of the Auburndale subdivision appeared in February 1887 and lots were sold. By September, 1887, the developers had commenced building a hotel and grading the streets; 121 lots had been sold. The construction of the two story hotel was contracted to A. W. Boss of Riverside for 6000 dollars. A railroad from Pomona to Elsinore was planned and the roadbed graded through the townsite, but rail was never laid.

The townsite was touted in regional newspaper articles. In 1889, a school house (Auburndale School District) was built. It was used until after the turn of the century. By this time a number of homes had been built at the townsite. However, sales slowed after the initial promotion, and by 1889 the developers abandoned their venture. They purchased an interest in the South Riverside Land and Water Company and merged their land back into it.

Within several years some families moved their houses to Corona. The school house was moved to Corona, but the hotel was demolished. The townsite was taken over by small farms.

Thus, the town where the beauty of location, quality of soil, extent and rarity of scenery, and abundance of water could not be exceeded, quietly failed. Most of the townsite is outside of the project area except for the northeastern and southwestern boundaries. Sites PB-4, 5, 6, 7, 9, 10, 21, 22, 23, and 32 lie within the area of the Auburndale townsite. Aside from street and lot locations, there are no physical remains of the townsite. The data for the foregoing discussion comes from the Auburndale file in the Heritage Room at the Corona Public Library.

PB-112 -- GRAJALVA HOUSE

A "House of Luis Grajalva" is shown at this site based on H. Hancock's survey of the area in 1865 (Grantham 1876). It is not shown in the 1858 survey of the area (Hancock 1858) or on later maps. A structure which appears to be located a short distance to the northwest is shown on the 1890 Corona quadrangle. Remains of a "very old" wood structure grown over with brush were reported in the area during the 1930s (J. Hartshorn Preschool, personal communication). No information was found concerning the occupation. A local train stop known as Greda was located in the vicinity during the early 1930s. The area has undergone alteration by flooding and land uses which have destroyed or obscured the site. Floods after 1865 would have impacted the site of the original structure. It is possible that some disrupted or intact subsurface deposits still remain buried at this site. Such deposits could include a well, privy, or trash pits. The present elevation of the area is about 455 feet MSL.

PB-113 -- OLD RANCH HOUSE

The "Old Ranch House of La Sierra" is shown on several maps. It first appears on Thompson's (1866) map of the Rancho La Sierra confirmed to Bernardino Yorba. Subsequently it is shown on Thompson's (1868) second version of this map and again on Hansen and Solano's (1882) map of the allotments made to several of Yorba's heirs from the La Sierra lands. The structure was located on the south side of the Santa Ana River immediately north of the Los Angeles - Fort Yuma Road crossing. The use of the site could not be determined. Given the identification of the structure by Thompson on his maps, it is possible that the structure is one of the original ones built on the La Sierra grant. The location of the site was washed away in the 1916 flood as the result of a change in the river channel, and is now under as much as five meters of silt. Given the extensive land alteration in the vicinity of this site it is highly unlikely that any subsurface deposits could have survived. The present surface elevation is about 480 feet MSL.

PB-114 -- J. R. RANCH AND DESI ARNEZ RANCH HOUSE

The J. R. Ranch was located in the lower Temescal Wash. Jack Robinson established a wood frame house and horse barn at the site and engaged in horse ranching. These structures were present on the property by 1933 (map data, see also 1936 aerial photo F78).

Several unidentified structures previously located in the vicinity appear on the 1902 Corona Quadrangle. These may or may not be part of the Robinson operations.

Desi Arnez and his wife, Lucille Ball, built a large modern ranch home with a tile roof and stucco walls, where they resided for short periods. The older ranch house was occupied by Arnez's foreman and then his mother-in-law. During the 1970s the property was occupied by new residents. Much of the ranch site was cleared early in 1984 for the construction of a cheese factory. The Arnez house was relocated out of project area. The Robinson house, barn, outbuilding, and corral on the northwestern part of the property are still occupied. Given the extensive land alteration in the vicinity of this site it is unlikely that any subsurface deposits could have survived. The present surface elevation is about 575 feet MSL.

PB-115 -- RYCRAFT HOME

The Rycraft home site is located on the bluffs overlooking the south side of the Santa Ana River east of River Road. Dale and Ruth Rycraft and their children moved to the site in 1920. Both had nonagricultural jobs in the local area. They moved into a single-story, board and batten home previously owned by another party. The structure was built after 1902 based on map data. In 1927, the Rycrafts built a new house immediately to the west. This is the single-story structure presently located on the property. At that time the old house was dismantled and a barn built adjacent to the house site using the lumber from the old house. This structure is still present. In 1946 or 1947 Kenneth M. Rycraft took over the house and property and resides there with his wife. The elevation is 576 feet MSL.

PB-116 -- CEDAR RAPIDS COLONY TRACT

The Cedar Rapids Colony Tract was one of the unsuccessful attempts at local land development at the end of the 19th century. Maps in the offices of the Riverside County Assessor and County Surveyor show the tract was a large ranch east of Hellman Avenue and north of River Road. Much of the tract lies outside of the project area. The property ultimately became divided into farms. Part of it was owned by the Fuller Ranch (PB-33). Sites PB-40, 44, 123 and 124 are or were located within

the tract boundary. No tangible remains of the tract remain except some property boundaries and access road alignments. This tract is not shown on the site location map. The elevation would have been about 550 feet MSL.

PB-117 to 134 -- VARIOUS SITES

These are residences which appear on U.S. Geologic Survey maps which were made with cultural geographic data collected in 1899. No data was collected for these sites. They are not mentioned in the literature or by informants. A number of the sites occur near home sites shown in different locations on the same property with the same ownership. Some of these almost certainly represent original home sites which were relocated. Others may represent the homes of employees or squatters. Site PB-131 may be the location of an adobe school house mentioned in a deed of transfer from Leonardo and Inez Cota to Daniel Durkee which required that Durkee set aside one acre of what was to become the Durkee Ranch (PB-25) at the adobe school site to be used to build a new school. The Rincon School site (PB-14) fulfilled this commitment.

No evidence of these sites was located during the field survey or during as many as two previous surveys. Most of the sites have been extensively altered. Sites PB-131 and 121 have been silted over and were not available for inspection. It is possible that some disrupted or intact subsurface deposits still remain buried at these sites. Such deposits could include wells, privies, or trash pits.

The elevations (MSL) for these sites are as follows:

PB-117:	530'	PB-123:	550'	PB-129:	540'
PB-118:	525'	PB-124:	550'	PB-130:	495'
PB-119:	515'	PB-125:	545'	PB-131:	483'
PB-120:	515'	PB-126:	545'	PB-132:	460'
PB-121:	500'	PB-127:	560	PB-133:	500'
PB-122:	560'	PB-128:	545'	PB-134:	400'

PB-135 -- NAME UNKNOWN

This is the location of a residence on the south side of Rincon Road which only appears on U.S. Geologic Survey maps using cultural geographic data collected in 1933 (1942 edition of the Corona and Vicinity Quadrangle). No data was collected on this site. The vicinity of the site has been extensively altered and is now part of a group of settling ponds. Given the extensive land alteration in the vicinity of this site it is highly unlikely that any subsurface deposits could have survived. The elevation is 545 feet MSl.

PB-136 -- PACIFIC ELECTRIC BRIDGE

The Pacific Electric Bridge spans the Santa Ana River Channel between the Fairview Street and 5th Street Bridges in Santa Ana. This bridge has been recently evaluated for its historical significance by Scientific Resource Surveys, Inc. (1982:70-74), as part of a study for the Orange County Transit District. The following information is derived primarily from their study.

The Pacific Electric Bridge was built in October, 1905, with rail service initiated on November 6, 1905. Pacific Electric leased the line in 1908 and subsequently the crossing became known as the Pacific Electric Bridge. Service on this line was discontinued in 1950 and the disassembling of the line occurred in about 1960, at which time the rails were removed from the structure, with the ties being left in place. The removal of the rails and modifications to the channel below are the only major impacts that have affected the original integrity of the bridge. All things considered, the Pacific Electric Bridge is in very good, fairly original condition.

The structure is a twin-arch steel truss bridge approximately 175 meters in length and 3 meters in width. This accommodated a single track (one of few single track portions of the line).

This bridge is typical of bridges used in railroad construction during the early 20th century (ca. 1900-1920). At this time the use of electricity to power rails and automatic signals was revolutionizing American transportation, with one significant result of making suburban and rural areas readily accessible from urban centers and vice versa. It was within this scenario that the Los Angeles Interurban Railway linked Santa Ana, Garden Grove, and Stanton with Los Angeles.

The Pacific Electric Bridge is significant in that it is one of few remaining structures associated with the history of the Pacific Electric in Orange County. The bridge is currently owned by the Orange County Transit District and a recent study commissioned by them listed the bridge as having potential for placement on the National Register of Historic Places (PCR Engineering, Inc. 1984:IV-324). We concur with these findings. As of the time of this writing, the National Register nomination has yet to be made (Lois Webb, personal communication).

PB-137 -- BRYANT RANCH

The Bryant Ranch was once part of Bernardo Yorba's Rancho Cañon de Santa Ana. John W. Bixby (Smith 1974) purchased the ranch in 1875. A cultural resources study of the Bryant Ranch by Scientific Resource Surveys, Inc. provides a history of the ranch (Mason 1983). The ranch is associated with the once-prominent Bixby family who established considerable farming interests in the greater Los Angeles region during the mid-19th century. The

ranch became known after John Bixby's daughter, Susanna, married Ernest A. Bryant in 1904. The ranch is the original site of the world-famous Rancho Santa Ana Botanical Garden, now located in Claremont, California. The garden was established in 1927 in an area a short distance north of the northern boundary of the project right-of-way.

The extent of agricultural activity at the ranch during the early years of the occupation are not presently documented. At least 50 acres of cropland was being irrigated by the middle 1890s (Scott 1977:207). Susanna Bixby-Bryant planted the first orchards at the ranch in 1912. Expansion of the citrus orchards continued for several decades until over 500 acres of orchards were present. Cattle production, a major activity of the ranch from the outset, continued into recent years. The ranch became the property of C. W. Associates in 1978, when it passed out of the control of the Bixby and Bryant families.

Most of the portion of the Bryant Ranch within the project right-of-way is composed of orchards and unoccupied bottomland. The ranch headquarters is mostly located on a hill immediately north of the right-of-way. Several buildings associated with the headquarters did exist within the right-of-way. These were located to the southwest of the main ranch building cluster. Four houses were located on lower ground by 1899 as shown in the 1902 edition of the Corona Quadrangle. These and other structures were present until the middle of this century. Other structures have been present on lower ground, including a tractor shed and well shed, both built in the late 1920s and now demolished (Mason 1983:1). The early structures have been demolished, although one ruin, dating to the early part of the century, is still present with some standing wall. This was a wood frame house on a concrete foundation. No evidence of the early occupation was located. Recently built houses now occupy part of this area. It is possible that some disrupted or intact subsurface deposits still remain buried at this site. Such deposits could include a well, privy, or trash pits.

PB-138 -- SCULLY RANCH

The Scullys were descendants of Bernardo Yorba. After Yorba's death, the westernmost portion of Rancho La Sierra was alloted to Maria de Jesus Scully. During the earlier part of the 20th century, the Scully ranch included an orange grove located in a small cul-de-sac bounded by the Chino Hills on the north side of the Santa Ana River north of the Green River Golf Course buildings. The house, which is described by Desborough (n.d., Appendix:107-108), was apparently located on a knoll adjacent to the south side of the railway right-of-way. This house site is shown on the 1902 edition of the Corona Quadrangle. It was abandoned by 1933 when the area was surveyed for the information used on the 1941 edition of the Prado Quadrangle.

Desborough (n.d., Appendix:101-102) provides a brief history of the Scully-Yorba connection. Thomas G. Scully, a native of Ireland, was engaged by Bernardo Yorba to teach school on his ranch. Ultimately Scully married Maria de Jesus Yorba Botillier, then the widow of Anastacio Botillier. The Scullys had six children: Thomas, Kate, John, Emma, Joseph, and Mary.

The children lived on the ranch. John lived in a separate small house (location unknown). It is not known if the parents ever resided at the house. The main house was a two-story structure accessible from the highway by fording the river or crossing a foot bridge.

At present, the presumed site of the Scully house is barren. No evidence of an early occupation was observed, but the hill is littered by recent trash. It is possible that some disrupted or intact subsurface deposits still remain buried at this site. Such deposits could include a well, privy, or trash pits.

PB-139 -- NAME UNKNOWN

This is a ranch site that was located in Santa Ana Canyon immediately east of the clubhouse parking lot area of the Green River Gulf Course. The site was present by 1933 when the survey for the 1941 edition of the Prado Quadrangle was done. The 1936 aerial photographs of the Prado Basin (F3) show a house surrounded by trees, two barns, corrals, and several outbuildings. The site area has been altered by golf course construction. No remains of the site were located during the survey portion of this project. Given the extensive land alteration in the vicinity of this site it is highly unlikely that any subsurface deposits could have survived.

PB-140 -- KEN YORBA HOUSE

A house belonging to Ken Yorba is located on the north side of the river in Santa Ana Canyon. The structure is a rectangular board and batten house with a gabled roof. The foundation is concrete. According to Mr. Yorba, the house was present at the site by the late 1920s when he moved into it. At that time, he was an employee of the Anaheim Union Water Company, assigned to maintain their canal.

There is some uncertainty as to the origin of this structure and the history of occupation at the site. A house is shown at the site on the 1902 edition of the Corona Quadrangle which used cultural survey data from 1899. According to a recent study of the Bryant Ranch (Mason 1983:13), the structure currently located on the site was built in 1925. This same report suggests that an earlier structure at the site may have been associated with the Bryant Ranch occupation. John Elliott (personal communication) suggested that the structures at the site have always been canal

keepers' homes. If this is true, a house may have been present at the site shortly after the headgate of the Cajon Canal (predecessor of the Anaheim Union Water Company Canal) was constructed in 1877. The earlier structure may have been located at the same position as the 1925 house or slightly east of it, where some stone and mortar are eroding out of an animal pen. The present house is in good condition. It is surrounded by a light scatter of glass and ceramics. It is possible that some disrupted or intact subsurface deposits still remain buried at this site. Such deposits could include a well, privy, or trash pits.

PB-141 -- CAJON CANAL

Construction of the Cajon Canal was initiated by the Cajon Irrigation Company in 1875. It was completed in 1877. The history of the canal is summarized by Hall (1888:606-609, 619-621) and Scott (1977:205-206).

The complete canal was approximately 16 miles long. The first 10 miles were built with an 8 foot bottom and the remaining 6 miles had a 6 foot bottom. The canal was designed to carry about 3 feet of water with a maximum capacity of 3000 miners inches. The canal included a headgate, 2 sand gates, 15 storm gates, 3 large culverts, 16 flumes, 2 delivery gates, a relief gate, 2 drops, and 7 overchutes. A receiving reservoir at the lower end of the canal had a capacity of 300,000 cubic feet of water. The associated distribution works included about 50 miles of ditches and 133 delivery and measuring gates. This canal was capable of irrigating over 3000 acres.

The canal was beset by financial problems which began during construction. Ownership and control changed hands several times. Rights to use of the water were periodically the subject of legal action. Ultimately the canal became the property of the Anaheim Union Water Company which operated it until 1968.

Portions of the canal still exist. Several thousand meters of the canal still exist at the northern edge of the project right-of-way, in the middle portion of Santa Ana Canyon. This part of the canal consists of a concrete-lined open ditch. One gate is located along this section of canal. Some of the canal is partly filled with dirt. One section has collapsed.

PB-142 -- SAVI DITCH

This ditch defines the southern boundary of the study area in the Horseshoe Bend area of Santa Ana Canyon. This ditch has evolved through time from a ditch originally constructed by the Felizes in the late 1860s. This ditch was purchased in 1879 by the SAVI for $250.00 in gold coin and has been modified many times over the years (Scientific Resource Surveys 1980). This site has been destroyed by recent construction.

PB-143 -- MANUEL FELIZ ADOBE AND DAVENPORT HOUSE CLUSTER

This site is located on the south bank of the Santa Ana River in the Horseshoe Bend area of Santa Ana Canyon (Map H7). Manuel Feliz was married to Josefa Peralta (a daughter of Juan Pablo Peralta I, an original grantee of Rancho Santiago de Santa Ana). They had initially lived three miles downstream in the village of Peralta (also known as Olive), where he maintained one of the older and larger adobes (see Roberts 1936:51-52). At some time just before 1868 he moved to the Horseshoe Bend area and built the subject adobe. This adobe was apparently in ruins by the 1890s and no surface evidence of the structure exists today (Scientific Resource Surveys 1980:27).

In 1980 Scientific Resource Surveys did an archaeological investigation of this southern bank of the Santa Ana River at Horseshoe Bend. A number of backhoe trenches were excavated in an attempt to locate the remains of this adobe. The results were negative. The Davenport site consists of currently utilized farm buildings. The main house was built about 1910. Scientific Resource Surveys located circa-1930s trash near the house (1980:31). This site has been destroyed by recent construction.

PB-144 -- POSSIBLE PERALTA ADOBE SITE

During their 1980 investigations at Horseshoe Bend in Santa Ana Canyon, Scientific Resource Surveys gathered information that indicated that another adobe may have existed near the Feliz Adobe (Map H7). Cecil Davenport claims that Ralph Peralta had lived in an adobe here and had watched its destruction occur during ground preparation for citrus planting (Scientific Resource Surveys 1980:23). Scientific Resource Surveys found no evidence of the site and it appears that this site, if it was not actually the Feliz Adobe, was destroyed by agricultural activities. The site area has recently been graded so that any remnant subsurface evidence of this site is now destroyed.

PB-145 -- ALTA VISTA

The small community of Alta Vista was located in Santa Ana Canyon near the present-day Green River Golf Course. The community was apparently associated with roadside business, then located along Imperial Highway, Highway 17 (replaced by the 91 Freeway). The community was present by 1933 when the survey used in the 1941 edition of the Prado Quadrangle was done. This map shows 22 residences located on the south side of the Santa Ana River away from the highway, 14 near the road, and 2 on the north side of the river. This is interesting since the 1936 aerial photographs of the Prado Basin (F3) show structures only in the vicinity of the roadside.

Some of the structures in this community survived into the 1960s but were removed during construction for the Riverside Freeway. Some concrete and stone work still exists at the southern edge of the freeway. No remains are known to occur within the project right-of-way.

PB-146 -- BIXBY PUMP STATION

This structure is located in the Horseshoe Bend area of Santa Ana Canyon (Map H7). This pumping station is believed to have been built about 1890 and is a typical example of redwood board and batten construction common during that period. It is unusual in that it has a steel rail driven into the ground to hold it in place (Scientific Resource Surveys 1980:33). This structure has recently been destroyed by grading.

PB-147 -- FLOWER STREET BRIDGE

This bridge crosses Santiago Creek approximately one-half mile east of the confluence of Santiago Creek with the Santa Ana River (Map H9). The bridge is directly adjacent to Jack Fisher Park and is abutted by a "rustic" cobble channel embankment on its northeast side.

The Flower Street Bridge was built by Oberg Brothers of Los Angeles in 1930 (according to imprinting on the structure). The bridge is made of steel-reinforced concrete, and is approximately 150 feet in length, and rises about 20 feet over the creek channel. It has four concrete deck arch spans supported by three cutwaters. This bridge is still in use and is in good condition. It is of a common design and architectural style and does not appear to have any uniqueness or notable significance.

The cobble channeling that abuts the bridge is later in date, probably dating to the founding of Jack Fisher Park in 1934 (see plaque in park). This cobbling extends about 50 meters to the east from the bridge along the north bank of Santiago Creek. It is in a deteriorated condition and is overshadowed by a much finer example of this channelization technique located at W. C. Hart Park about one and one-half miles upstream from Fisher Park. The W. C. Hart Park channelization was done in 1940 by the W.P.A., according to a plaque in the park. Because of this recentness, it is not evaluated as a part of this study.

CEMETERIES

During the course of this study, written and oral accounts of five or possibly six cemeteries located in the Prado Basin were encountered. The cemeteries are dispersed throughout the project area and are apparently associated with different ethnic groups and time periods. Documentation of these cemeteries remains

incomplete and it is probable that certain classes of information needed to facilitate management of them cannot be acquired from archival or oral surveys. At least four of the cemeteries were apparently unofficial grave sites which were never documented by governmental agencies or endowed as formal corporate entities. None are registered with the Cemeteries Board (Department of Consumer Affairs), show on tax rolls, or death certificates. Part of the difficulty is that many of the Vital Statistics for the Corona area were apparently lost during transfer from the jurisdiction of the City of Corona to the County of Riverside. Similarly, the loss of many records prior to 1895 by the County of San Bernardino has limited the scope of search for documentation.

These are the five cemeteries that have been documented sufficiently to be certain that they exist: Cemetery PB-87 is documented by both written and map data. Cemetery PB-90 is documented by newspaper and oral accounts, while Cemetery PB-93 was actually impacted during construction of the dam. Record of two other cemeteries (CSULB2, PB-53) is based on second-hand accounts from several sources. The existence of these grave sites could not be verified through second accounts either verbal or archival. Although several people know of them, they base their information on single original sources. At least in the case of the Rincon Union Congregational Church burials, the original source is presumed to be a sound primary source. A sixth cemetery putatively located at the site of the Rincon (Prado) railway station may or may not have existed. It was supposed to have been relocated during railroad construction. The informant giving this information later denied it and no second source was encountered. The following accounts summarize the data available for each of the five reported cemeteries.

PB-87 -- INDIAN CEMETERY

"Southeast of Chino (below the Women's Prison) on a hill west of the big olive grove, lies an acre set aside by the government as a burial ground for what few Indians remained here. I have been told there are only four or six burials there" (Newman 1962). This reference is the only substantive information which could be located on the nature of this cemetery. The date when the cemetery was in use and the government agency which established it are unknown. The location of the cemetery is shown on a 1902 map showing roads inside Rancho El Rincon. The cemetery is known to several local residents who had heard of it from C. A. Newman and Julia S. Fuqua. They did not know if it ever had fences or if it was maintained.

The site was subjected to a limited Proton Magnetometer survey in an attempt to determine if any burials could be located. A 10 meters square area was surveyed at half meter intervals along one meter wide transects. Another 60 readings were taken at random over the area of the cemetery as shown on the 1902 map. The

readings were measured against readings from known graves at the Yorba Cemetery in Yorba Linda. Three possible anomalies were observed. The readings cannot be shown to represent a burial until excavation at the point of the readings is used to verify it. Mr. H. Hettinga, who currently rents the property, states that a previous tenant subsoiled the cemetery area to a depth of one meter.

At present this cemetery is in pasture. Assuming that the subsoiling did not reach the graves they should still be intact. Since the variation in density of the grave and adjacent undisturbed soil is a factor which influences the magnetometer readings, it may be difficult to locate the burials using this method.

PB-90 -- RINCON CEMETERY

The "Rincon" cemetery is located on the west side of the Pomona-Rincon Road (Old Highway 18) a short distance before the road descends from the river terrace down to the Prado townsite on the floodplain of the Santa Ana River. The elevation is 540 feet MSL. The cemetery is located between the road and the edge of the terrace which drops off into a north-trending wash, tributary to the Santa Ana River. The site is presently covered by wild oat and is part of a pasture used for cattle grazing. In the past the area was dry farmed for various spring crops.

The presence of the cemetery was recognized from Desborough's (n.d.:104-105) account of it in her history of the Rincon District. She describes it as containing "...a goodly number of family plots: white picket fences enclosing crosses. Some crosses stood alone." The surface evidence of the cemetery was apparently removed by 1912, perhaps deliberately by the farmer using the field to increase his crop size, according to Desborough. The existence of the cemetery has been confirmed by an article in the August 30, 1889 issue of the South Riverside Bee in which the author mentions passing it on a drive to Rincon. During a visit to the area, Mrs. D. Rawson of Corona pointed out the approximate location of the cemetery as she remembered it.

The cemetery is referred to as "old" in the newspaper article and the origin of it is uncertain. Desborough believed that it was in use in 1889 and that a man by the name of John Hasen was buried there according to an article in the December 30, 1889 issue of the South Riverside Bee. If this is true, it reflects a continuing use of the cemetery, since the Rincon (Prado) townsite was only two years old at the time.

One informant living in Corona suggests that the cemetery was used by the Californios, which is consistent with its location on the property of Rancho La Sierra. However, during an initial telephone conversation, he suggested that it was occupied by individuals of the Yorba and Bega families. During a later

interview, he suggested that it was used by Mexican families living at Prado, including the Begas. This data is not confirmed by other documentation. During a visit to the area, Mrs. D. Rawson of Corona pointed out the approximate location of the cemetery as she remembered it as a child.

Further information on this site is to be found in a supplemental report prepared as part of this project (Brock 1985b).

PB-93 -- SPILLWAY CEMETERY

This site is being called the "Spillway Cemetery" since it lacks any other identification, formal or casual. The location of the site is unknown except in very general terms. Desborough (n.d. (2):98) indicates the location in these terms: "Preliminary excavation for the Prado Dam extended into the mesa: to cut down that rise of approximately 60 feet between it and the town." At the time she equated this cemetery with PB-90, but the location of the major dam construction was 0.5km west of that site. Mr. Bridges of Corona provided information indicating that two cemeteries did exist. To his recollection he said that only three or four bodies were taken from the spillway cemetery and that he thought that it was a family plot. This detail is unverified. Stephenson (1941:62) mentions the finding of this cemetery during construction.

At the time of construction, the cemetery was apparently unmarked, otherwise it would have been removed prior to construction. There is no information on who was buried there and it is possible that it was an aboriginal cemetery, which would account for the lack of markers. Thus far, it is not clear how the cemetery was handled after discovery. It is possible that it was removed entirely at that time, but only the disturbed burials may have been removed. The current status of this site and the location of the burials is unknown. Field reconnaissance in the area indicates that there are relatively undisturbed areas immediately adjacent to the spillway where remnants of the cemetery could exist, but no surface indication of such were observed.

CSULB 2 -- RINCON UNION CONGREGATIONAL CHURCH CEMETERY

During a telephone interview Louis Abacherli, a past resident of La Puerta Abierta (Riv-2204), stated that his uncle Ernest F. Remhke had told him of a cemetery located at the Rincon Union Congregational Church. Mr. Remhke was contacted by telephone and queried on the subject. He stated that John Strong and Bill West had told him that one or two burials occurred at the church. This conversation took place sometime between 1929 and 1950, probably during the 1930s. His information was strictly "hearsay" and he never saw a burial or grave marking; he did not look for them. Strong and West were long-time residents of the immediate

area. Strong had donated the property for the construction of the church in 1911 (Desborough n.d., Appendix:78).

Mr. Remhke's source of information can be considered creditable, given Strong and West's knowledge with the area. He was not able to say how many persons were buried at the church, who they were, where the burials were located at the church, or when they were buried. If interments did occur at the church, they would have taken place between 1911 and 1929, the dates of establishment of the church and Mr. Remhke's entry into the area.

PB-53 -- PIONEER SCHOOL CEMETERY

Louis Abacherli mentioned the existence of a cemetery near the Pioneer School, during a telephone interview. He stated that his information came from Roy Griffith of the Griffith Mortuary in Chino. Mr. Griffith was contacted by telephone and stated that Julia Fuqua had shown him and a representative from the California State Board of Cemeteries the location of a cemetery in the 1950s or early 1960s. Mrs. Fuqua, the granddaughter of John Slaughter (Yorba-Slaughter Adobe) was a life long resident of the area. According to Mr. Griffith, she said the cemetery was located immediately southeast of the school and was used by Mexicans and possibly Indians living in the area. He could not recall if any other information was given. Mr. Griffith stated he could point out the cemetery shown him by Fuqua. The Board of Cemeteries was contacted but no record of the information given to their representative could be found. Mrs. Fuqua's information is possibly accurate. Most individuals who know her considered her an authority on local history. However, several individuals indicated doubt about some of her stories. One possibly supporting point is that the Rev. Thomas Hanna held church services at the school for a period during the first quarter of this century. Burials at the school in relation to his activity are plausible.

DITCHES AND CANALS

The channelization of water through ditches for irrigation was first introduced into California by the Franciscans to water mission fields. The earliest known use of this method on the Santa Ana River and its tributaries was by Jose Antonio Yorba and his relatives, who built several ditches on Rancho Santiago de Santa Ana in 1810 or 1811. Between the inception of ditch building and ca. 1930, over 30 ditches and canals were built in the project area. These were used primarily for irrigation, but several operated mills or were used as domestic water supplies. The history of these features is documented by Scott (1977) and Hall (1888). Not all of the ditches can be adequately documented or located. Other sources of documentation include the surveyors plats held by the counties, state, and Desborough (n.d.).

The ditches in the project area were usually simple excavations into the soil, which were unlined. Some of the later ditches built during the American Period by various irrigation companies were relatively elaborate. Some were concrete- or masonry-lined. Ditch attendant houses were constructed. In one case a flume was built, and in another, a tunnel. These ditches all connected at the source of supply using some form of head-gate at the point of diversion. These were of wood, masonry or concrete and were sometimes associated with a small dam.

Table 8-7 lists most of the channelization systems located in the project area. Many of the ditches listed incorporated part or all of an earlier ditch. Some were later replaced by pipe. The locations of most are shown in Figures 36 and 63 of Scott (1977). Only the Fuller and Dan Durkee Ditches had diversion points outside of the project area. During the survey at the beginning of this study, the only identifiable remains of ditches were the concrete-lined Cajon Ditch at the northern edge of the project boundary in Santa Ana Canyon, and a section of the Santa Ana Valley Irrigation Company ditch (SRS 1980) also in the canyon. It is possible that the Yorba (Rincon) ditch was encountered in one of the exploratory excavation units at Riv-2802. The remaining ditches have been destroyed by channelization, flooding, siltation or construction.

Table 8-7

DITCHES AND CANALS LOCATED IN THE PROJECT AREA

NAME	CONSTRUCTION DATE	ORIGIN	USE
Fuller Ditch	?	Norco	I
Yorba (Rincon) Ditch	1876	Rincon	I
Mayhew (Spring Valley) Ditch	1875	Mill Ck	I/M
Fuqua (McCarty) Ditch	?	Mill Ck	I
Cota Ditch	1870	Mill Ck	I
Durkee (Fernandez) Ditch	1870	Rincon	I
Ben Durkee Ditch	?	Chino Ck	I
Taylor Ditch	pre-1888	Chino Ck	I
Upper Scully Ditch	post-1888	SAC	I
Lower Scully Ditch	post-1888	SAC	I
Bernardino Yorba Ditch	1835	SAC	I
B. Yorba High Ditch	1835	SAC	I/M
Cajon Canal	1875	SAC	I
Anaheim Union Canal	1884	SAC	I
New Anaheim Canal	1882	SAC	I
Ontveros Ditch	1837?	Olive	I
Ontveros-Langenbeiger Ditch	ca.1837	Yorba Linda	I
Fragmen Ditch	1885	Yorba Linda	I
Old Anaheim Ditch	1857	Yorba Linda	I
Peralta Ditch	1810-1811?	SAC	I
Semi-Tropre Ditch	1873	SAC	I
Bush and Watson Ditch	1869	Yorba Linda	I
Chapman Ditch	1871	SAC	I
Thomas Yorba Ditch	1810-1811	SAC	I
Teodocio Yorba Ditch	1840	Olive	I
Jose Antonio Yorba Ditch	1810-1811	Olive	I
Santa Ana Valley Ditch	1877	SAC	I
Santa Ana Valley Ditch A (Hughes)	?	Olive	I
Santa Ana Valley Ditch B	1871	Olive	I/M
Santa Ana Valley Ditch D (Travis)	1871	Olive	I
Bixby Ditch	1895?	SAC	I
North Anaheim Canal	1872	Yorba Linda	I
Farmers Ditch	1881	Yorba Linda	I
Tustin Ditch	1873	Olive	I
Tustin 2nd Ditch	1876	?	I
Bush and Watson	1872	Santiago Ck	I
Glassell Ditch	ca. 1872	Santiago CK	D
Unnamed (Orchards) Ditch	1870s	Santiago Ck	I
Carpenter Ditches	Various	Santiago Ck	I/D
Serrano Ditch	1876	Santiago Ck	I
Serrano/Carpenter Project*	1879	Santiago Ck	I

Key: SAC-Santa Ana Canyon; I-Irrigation; M-Mill operation; D-Domestic water. *-this was a diversion constructed of pipe rather than a ditch.

ROADS AND OTHER CORRIDORS

The topographic maps, surveyor's plats and 1936 aerial photographs of the project area revealed a diversity of highways, roads, and paths. Through time, some were realigned while others disappeared or were abandoned. Two roads of historical significance cross the project area. One is the El Camino Road connecting Missions San Juan Capistrano and San Gabriel. It crossed the Santa Ana River in the vicinity of Orange.

The second major route was the Butterfield Line route or the Los Angeles-Fort Yuma Road. Accounts of the route (Ormsby 1942) or histories of the line (e.g., Conkling and Conkling 1947) do not give precise accounts of the route as it passes from Corona to Chino through the project area. Tobey, Suss, and Burgess (1977: 50-57) addressed this problem and give a reconstruction of the route. Their interpretation is based on prior studies by Fryer (1935), Gould (1936), Ernsberger and Ritter (1972), and Conkling and Conkling (1947), as well as G. H. Thompson's 1868 survey map of Rancho La Sierra. Their account has the route leaving the Temescal Canyon area and entering the project area along the route of the Pomona-Rincon Road. The road entered Rincon and crossed the Santa Ana River at a ford near the old La Sierra Ranch House. It then crossed Chino Creek a mile further on, two miles south of the Riverside-San Bernardino County line. From that point the route proceeded along the Pomona-Rincon Road past the Yorba-Slaughter Adobe and out of the project area to the station at Chino Rancho.

This analysis appears to be correct in all basic features. A number of points need clarification. The route as it entered Rincon would not have followed the later alignments of the Pomona-Rincon Road which passed the Ashcroft Ranch (Riv-1039). It is likely to have followed one of the tracks which connected homes in the region, such as those shown on map "Exhibit A" from an 1880s railroad survey. If the same track was followed then, the stage would have passed just south of Rincon.

The ford near the La Sierra Ranch House was located in the vicinity of the Rincon Bridge (PB-96), which crossed the Santa Ana River approximately 0.3 km behind Prado Dam. If Conkling's (1947) estimate is correct, the route paralleled the east side of Chino Creek and crossed to the west side somewhere near the later location of the Serrano Adobe (Riv-2778), or above it and below the Fear Ranch (Riv-2203). The major problem is that the distances given by the Conkling's (1 mile between the Santa Ana and Chino Creek fords; 2 miles between the Chino Creek ford and the county line) are too great. The site of the ford might have occurred in a number of places, since this section of the creek was apparently forded in several places during the 19th century. The route, as it continued north of the Chino Creek ford, was the same as the Pomona-Rincon Road which still exists nearly intact until it leaves the northwest boundary of the project area.

The locations of the points of crossing of the Santa Ana River by the El Camino Real and the Butterfield route are obscured by more recent building, channelization, and siltation. The Butterfield route north of the Serrano Adobe is largely intact, although it has undergone grading, paving, and undoubtedly some straightening. South of the Serrano Adobe, it is all but obliterated in the project area.

Another major transportation corridor was the California Central Railway line. Railroad construction in Southern California is considered a major factor in the "Boom of the Eighties" (Dumke 1944). The California Central built the section of line running through the project area in 1887. First, a section from Arlington to Rincon was constructed. The next section ran from Rincon through Santa Ana Canyon to Orange. The route is shown on the 1902 edition of the Corona Quadrangle. Some later bridge, grade, and culvert specifications are held by the Riverside County Surveyor's Office. A map titled "Exhibit 'A'" held by the Surveyor's Office shows the early survey of the right-of-way at the Rincon townsite. In 1904, the Atchison, Topeka, and Santa Fe Railway Company purchased the line. Since another Rincon station already existed on the Atchison, Topeka, and Santa Fe line, the company moved to rename the town. They were successful--Rincon was renamed Prado on April 11, 1907 (Desborough n.d.:75). In 1939, the roadbed east of the Santa Ana Canyon was realigned when Prado Dam was built. The roadbed to the west remains in use.

CHAPTER 9

RESEARCH RESULTS

PREHISTORIC SITES

RIV-100

At present this site is incapable of addressing any research questions because its locality cannot be positively identified. Because this site is buried it has not been assessed for its National Register eligibility.

RIV-652

Due to the disturbed condition of this site, it is unlikely that it can contribute significantly to our understanding of the prehistory of the region. Riv-652 appears capable of addressing questions pertaining to chronology, subsistence, and settlement patterns. If considered in conjunction with the other sites in the area, the site is perhaps capable of contributing to our understanding of variation in the regionally-specific settlement pattern. Thus, it is possible that the site could be included in a National Register District.

RIV-653

Riv-653 is a well-preserved site capable of addressing numerous important research questions. In the domain of chronology, the site is capable of yielding absolute dates (radiocarbon, obsidian hydration, and perhaps thermoluminescent). These dates should tie in with chronologically sensitive artifacts from the site (e.g. cogged stones, projectile points, and perhaps type-6 manos), and thus aid in regional chronology building.

In the domain of subsistence, Riv-653 should certainly be capable of delineating differences between inland and coastal Milling Stone subsistence strategies--this research area presents a major gap in our current knowledge. While the faunal assemblage from the site is not as well preserved as that from SBr-1543, it is possible that the ground stone assemblage can address questions pertaining to exploitation of specific plant food resources (through analysis of ground stone forms and wear patterns).

The domain of settlement patterns is particularly addressable by this site. This site is extremely rare in its potential ability to display the nature of intra-site settlement variability. Testing at Riv-653 has shown that in situ features are present and well preserved. With exposure of large areas of the site, such features as house plans, hearths, and other special activity areas should be definable. It is our belief that through a greater understanding of the horizontal stratigraphy of the site, we can begin to address questions of Milling Stone village layout and evolution. This is one of the only known sites of this date that still maintains the potential for answering these concerns. In terms of inter-site settlement patterning, Riv-653 can address questions pertaining to synchronic and diachronic concerns. It provides an integral link in the understanding of Milling Stone and early Intermediate settlement in the Prado Basin region, and it could provide information pertaining to the change in settlement patterning that resulted in the abandonment of bluff-top Milling Stone/Early Intermediate sites, in favor of lower elevation site localities.

The test excavations conducted at Riv-653 have indicated that the domain of exchange systems is one of the weaker areas for the site to address. Most of the lithics recovered from the site are from local sources, although evidence of coastal trade is apparent in the marine food residium recovered at the site. This lack of evidence of trade could be a result of the small size of the sample, or it could be indicative of chronological differentiation between this site and the neighboring major site of SBr-1543.

Riv-653 is one of very few sites known to have ever produced a cogged stone from an in situ subsurface context. Cogged stones are enigmatic artifacts of great research interest. Riv-653 is one of few sites capable of addressing questions pertaining to the origin, function, and evolution of cogged stones.

Riv-653, as an individual site, appears eligible for nomination to the National Register because it is likely to yield information important to prehistory. It should also be eligible because it embodies, perhaps better than any other site known, the particular characteristics of a type and period of site (late Milling Stone inland village with horizontal stratigraphy intact). The integrity of the site is excellent--it is one of the best preserved Milling Stone Horizon sites known to exist.

Riv-653, as part of a district, appears eligible for nomination to the National Register because it forms a major component of the largest and best-preserved complex of Milling Stone/Early Intermediate sites known. These sites will yield information important to our understanding of the prehistory of Southern California.

RIV-1098

Riv-1098 should be considered as part of Riv-653. As such, it is capable of addressing the same research questions and appears to be eligible for inclusion on the National Register as an individual site (in combination with Riv-653) or as part of a larger district. The integrity of this site matches Riv-653, preservation is good and disturbance has been minimal.

RIV-2754

Riv-2754 is a well-preserved site that appears capable of addressing a number of research questions. In the domain of chronology, this site has yielded temporally-sensitive artifacts (projectile points), indicating that the site may be useful in local chronology building. In the domain of settlement patterns, this site provides an integral link in the Prado Basin Milling Stone/Early Intermediate site complex. This makes the site useful in examining micro-variation in the settlement pattern for the region and also evolution of settlement in the area.

The presence of a fragment of a turtle shell rattle on the site is the strongest indicator of ideotechnic activity found during the investigations in the Prado Basin. If this rattle is representative of mortuary practice, this site perhaps provides the greatest potential of all sites in the Prado Basin for the uncovering of human burials. Locating Milling Stone or Early Intermediate burials in the area should contribute substantially to our understanding of the extinct socio-cultural systems of the region.

Riv-2754 appears to be eligible for inclusion in the National part of a district. Aside from surface discing and rodent intrusion, disturbance to the site has been minimal. Therefore, we regard its integrity as very good.

RIV-2755

Riv-2755 is a well-preserved site capable of addressing various research questions. In the domain of chronology, this is the only site in the study area that appears to have two horizontally distinct occupation areas of different periods. This gives the site good potential for addressing questions pertaining to the evolution of the local cultural systems from the Milling Stone to the Intermediate Horizon. Intra-site evidence from Riv-2755 should aid greatly in the understanding of inter-site evolution in the Prado Basin.

In the domain of subsistence, Riv-2755 is the only major site in the study area that has yielded exclusively technomic artifacts, arguing for a site use relating to food processing. This specialized activity site is important in gaining further

understanding of subsistence procedures and of concepts of maximization. In terms of the research domain of settlement practices, this site can address questions relating to residence at seed processing stations, contrasted with village sites. For instance, if the site can be shown to be a camp, used overnight, there are many implications that follow about the use of the known village sites in the immediate region (i.e. Riv-653 and SBr-1543).

Riv-2755 appears eligible for inclusion in the National Register in that it is likely to yield information important to the understanding of subsistence and settlement questions pertaining to the prehistory of the study area. The integrity of this site is very good with only surface discing and rodent intrusion causing disturbance to the site. This information is particularly relevant to regional research questions, which would make Riv-2755 an important component of a National Register District.

RIV-2797

Because this site is buried under silt, an assessment of its National Register eligibility has not been made at this time.

RIV-2803

This site has only recently been discovered. Testing of this site in the future will allow for its National Register eligibility to be evaluated.

RIV-2804

This site has only recently been recorded. Test excavation of the site in the future will enable a National Register evaluation to be made.

SBR-1543

SBr-1543 is a large, well-preserved village site that is capable of addressing numerous important research questions. In the research domain of chronology, this site can address a number of issues. This site has datable materials in it, offering the potential for some firm dating of radiocarbon, obsidian hydration rim, and perhaps thermoluminescent samples. Absolute dates should help to illuminate the chronological placement of such items as cogged stones, discoidals, and shell beads. (This was the only site tested that yielded beads--which are very rare on Milling Stone and Intermediate sites in this inland region.) This site has given some preliminary evidence that cogged stone usage continues into the Intermediate Horizon from the Milling

Stone Horizon. This is an important research area that could tie into the evolution of cogged stone forms and perhaps even the use of cogged stones and discoidals. In any event, the site will be very useful for studying the changes that occur between Milling Stone and Intermediate sites in the Prado Basin, with SBr-1543 containing the largest potential sample of Intermediate horizon materials.

In the domain of subsistence, this site has invaluable research potential due to the presence of a well-preserved faunal assemblage. This information is capable of helping to explain animal use, procurement means, procurement technology, and local environment. SBr-1543 should contain one of the finest faunal assemblages ever excavated from an early Intermediate site and some of the best evidence available on past environments in the Prado Basin. The diverse ground stone assemblage should help to illuminate questions pertaining to seed food procurement and processing.

In the domain of settlement systems, this site could address questions pertaining to seasonal versus permanent occupation of Intermediate village sites (through the faunal assemblage), the evolution of settlement systems in the Prado Basin, and perhaps horizontal layout of Intermediate village sites (some horizontal stratigraphy apparently is present).

In the domain of exchange systems, SBr-1543 can help to elicit obsidian trade patterns for the Intermediate horizon (and perhaps contrast them with earlier sites from the Prado Basin). It is also possible that shell beads recovered from the site could aid in understanding exchange with coastal peoples.

It is our belief that SBr-1543 is eligible for inclusion in the National Register of Historic Places because it embodies, better than any other examples known, the distinctive characteristics of a type and period of site (inland early Intermediate village). Furthermore, the site has yielded, and will continue to yield, information important to prehistory. This site should be Register-eligible individually or as part of a district. Aside from rodent activity and surface disturbance caused by farming, the integrity of the site is excellent.

SBR-1570

SBr-1570 is an isolate find location. This is of no significance and is clearly ineligible for inclusion in the National Register. This site has no further research potential.

SBR-1571 (prehistoric)

Test excavation has shown that the prehistoric artifacts found at this site were brought there as a result of historic activity.

While these ground stone artifacts are interesting in themselves, their lack of original context eliminates their potential significance and makes the "prehistoric" component of this site ineligible for nomination to the National Register.

SBR-2259

This site has probably been destroyed and its location is currently under a parking lot. Its research potential is unknown at present and it therefore cannot be evaluated for National Register eligibility.

SBR-2260

This site, which consisted of a boulder with two milling slicks, has been displaced from its original location. This boulder has the only bedrock milling surfaces found during the ECOS survey of the Prado Basin. As such, it is rare. However, due to the site's disturbance it cannot be considered as National Register eligible.

SBR-2845

This site is very sparse, highly disturbed, and of very little research value. Consequently, it is ineligible for the National Register.

SBR-5096

Only a portion of this site extends into the project area. No excavations have occurred in the central portion of the site. It is believed that this is a major Milling Stone Horizon settlement. It can possibly address questions pertaining to regional chronology, subsistence, settlement, and exchange. Cogged stones are known to have been recovered from the site. It is therefore possible that cogged stones can be found <u>in situ</u> at the site. The function of these enigmatic artifacts presents one of the most often cited research questions for Southern California.

We believe that further research will prove this site to be eligible for inclusion on the National Register by itself. We furthermore believe that oral history has indicated the site is worthy of inclusion in a National Register district of prehistoric sites in the Prado Basin without further testing. As test excavations did not occur in the central portion of the site because it was outside of the study area, we are unable to adequately evaluate the site's integrity.

SBR-5241

No material evidence was found of this reported site which was recorded through oral history. Therefore, its research significance and National Register eligibility cannot be determined.

SBR-5242

Permission to investigate this site was denied. Therefore, its research significance is unknown and its potential eligibility to the National Register is unknown.

SBR-5243

The Corral site (SBr-5243) is a well-preserved site capable of addressing various research questions. In the domain of chronology, this site is capable of yielding absolute dates (radiocarbon) and chronologically-sensitive artifacts, aiding in local chronology building. In the realm of settlement pattern, this site can address questions regarding the interplay between village sites and small camps (this site representing an excellent example of the later). In the realm of subsistence, this site has produced the most extensive faunal assemblage of the Milling Stone sites in the Prado Basin. This information, used in conjunction with data from SBr-1543, should provide excellent information on changes in animal resource exploitation through time in the region. This site is weak in the realm of exchange systems, with the only evidence represented by marine shell. Presumably, this helps confirm the hypothesis of only limited exchange systems being present during the Milling Stone Horizon.

We believe that SBr-5243 embodies the distinctive characteristics of a type and period of site (inland Milling Stone small camp) that is rare. Furthermore, the site appears capable of yielding information important in prehistory. This site should be eligible for inclusion in the National Register either individually or as a component of a district.

SBR-5244

This site has been destroyed and its research significance is therefore unknown. It is ineligible for inclusion in the National Register of Historic Places.

SBR-5245

This is a fairly disturbed site that is significant in that it represents a satellite gathering camp associated with the larger

sites in the area. It can address questions pertaining to settlement, subsistence, and exchange systems despite having only fair integrity. As such, it has the potential to yield information important to the prehistory of the Prado Basin region. While the disturbed nature of this site probably makes it ineligible for National Register inclusion as a separate entity, we believe that it should be included as part of a National Register district of prehistoric sites in the Prado Basin.

ORA-89

This site has been destroyed and its research significance is therefore unknown. It is ineligible for inclusion in the National Register of Historic Places.

ORA-817

This site consists of a highly disturbed surface scatter that has already been extensively tested (albeit by backhoe). This site could possibly address questions pertaining to the domains of settlement and subsistence. However, we believe that its potential to generate significant results is very limited. Other sites in well-preserved condition exist on the bluffs over the Santa Ana River but out of our present study area. Ora-817 appears ineligible for inclusion in the National Register of Historic Places.

HISTORIC SITES

RIV-653H

The Bandini-Cota Adobe of Rancho El Rincon is an archaeological site of local and regional significance. This site fulfills the criteria for nomination to the National Register of Historic Places (36 CFR 60.4) for several reasons. Substantial physical remains of the site still exist and are available for a multiplicity of historic, educational, and scientific uses. The site was built by Juan Bandini, a major person within the Californio community, and it was occupied by the Cotas, also significant members of the Californio community. A recent study by Theodoratus Cultural Research (1984) has demonstrated the value of the history of Rancho El Rincon and the house as an example of California ranching activity. The history of the site and the residents illustrates one route of decline experienced by the Californio elite during the American Period. The documentary data for the site is sufficient to provide a case study of the changing social and economic aspects of the residents.

The potential of this site to provide historical and anthropological information through archaeological study is considerable. A recent study by Greenwood, Frierman, and Foster (1984) has demonstrated the value of the physical remains at the site for research purposes. In particular, the site was shown to be useful for the study of early Californio architecture, the study of Californio material culture, and subsistence. The use of this site in conjunction with other Californio sites occupied by second and third generation Californios to study intragroup social and economic diversity should be added to this.

RIV-2203

The Fear Ranch appears to be a potentially valuable resource for the study of a late 19th to early 20th century Anglo farming occupation in the region. The site consists of several features and associated limited artifact scatter. The main value of the site is that it was abandoned in the 1920s and not reoccupied or used. The site is intact except for the establishment of a green belt over most of the area, which has caused a small amount of surface disturbance. The site is expected to contain information about the material culture and ways representative of small farm occupations which could be used to study activity patterns, subsistence and economic status. This data would be useful in intra-site studies of similar farm types in the region to determine cultural variations in relation to economic and social factors as well as ethnic affiliation. The site was originally occupied by a "Mexican" family so it may yield information about later 19th century Mexican occupation also.

The site is believed to be potentially eligible for nomination to the National Register of Historic Places because it is substantially intact and appears to contain information valuable to the study of the Anglo farming activity in the project area. Further study of this site should be conducted to verify this opinion.

RIV-2778

The ruins of Francisco Serrano's Rincon house are a valuable resource for the study of late Californio history and anthropology. The site can be placed into a moderately clear historical context using available archival data. More detailed historical data is presently available if interviews of Serrano relatives are conducted within the near future.

The site can be used for a variety of studies. Although there is some evidence implying earlier occupation, most of the material remains from the site belong to the period between 1880 and 1940. Since the site is partly stratified, it should be possible to examine problems relating to the change in Californio life ways during this period.

The animal remains from the site will provide the opportunity to examine a number of aspects of subsistence. The selection of animal food resources and the relationship of this to general economic adaptations is one problem. The site may be very useful in addressing the study of temporal changes in California subsistence systems using intra-site data and comparisons with previously studied sites. The evidence of tools and procedures for butchering vertebrates at the site will provide the opportunity to define late changes in Californio butchering patterns and acculturation of that pattern. The animal remains at the site provide the opportunity to examine the ethnicity of animal resource selection and butchering.

The documentary data available for the site is sufficient to describe in detail the structure of the Serrano settlement and land use. The location and ways in which the Serranos used their farm are substantially different from earlier Californio farms in the region. It should be possible to use the Serrano farm as an example of changing patterns of Californio settlement in the region.

The site contains a wide range of material culture items. A larger sample of these will provide the opportunity to study an example of Californio material culture as it existed in the late 19th and early 20th centuries. In particular, the types and quality of the household and personal items can be used to make inferences about economic and social status.
The remains of the house will provide data about the architectural style of late 19th century Californio residences. Changes in building materials, construction details, and the use of space may be addressed. Comparison with other Californio homes could give further insight into how these have changed through time. The potential uses of the Serrano house for research into Californio history and culture are representative of the research potential of the site. This is a minimal list of research subjects. This site is believed to be eligible for inclusion on the National Register of Historic Places based on the criteria described in 36 CFR 60.4 (1)[d], because of the demonstrated potential for study of late Californio history.

RIV-2802

The study of this site was successful in so far as it was demonstrated that the site still exists and contains artifacts potentially useful for the study of a number of subjects. Since the site is buried, it was not possible to fully assess the value of the assemblage and further research is required. Based on what was found at the site, it may be a resource which can be used to study early (ca. 1850-1860) Californio occupation of the region, Californio subsistence and material culture, and aspects of Californio farming activity as it existed at a small home

during that period. If the house foundation can be located it may be useful for the study of aspects of adobe architecture. The present evidence implies that the site is likely to yield information useful in the study of Californio material culture; thus we believe that it is sufficiently important to be determined eligible for inclusion in the National Register of Historic Places through agreement between the managing agency and the State Historic Preservation Officer (per 36 CFR 63).

SBR-2317

The Yorba-Slaughter house is presently included on the National Register of Historic Places. The site is associated with Raymundo Yorba and Fenton Slaughter, both of local and regional import. The site is of considerable historic and educational value as a restored example of Californio architecture and as a museum. It has potential for architectural and possibly archaeological study.

RIV-1044

The Homer Pate Ranch appears to be a potentially valuable resource for the study of a farming occupation in the region during the early decades of the 20th century. The Pate occupation can be relatively accurately placed within a historic context using archival data, and some additional information is available through interviews with older residents. While most of the surface structures have been demolished and the surface plowed, there is evidence of a trash pit immediately northeast of the house site. The associated artifact scatter on the surface suggests that the site is likely to yield information valuable to the study of American Period farm-oriented material culture in the region dating to the period between 1910 and 1940. This data could be used in comparative studies with sites in the region to determine differences arising from difference in the period of occupation and ethnic affiliation of the occupants. In particular, some shards of Chinese tradeware were found at the site. These were not seen at other American sites in the project area. Their presence implies variation in material culture attributes between similar occupations, which could be studied to find how these vary through time and in relation to other factors.

We believe that this site should be considered eligible for inclusion in the National Register of Historic Places because it is likely to provide important information about earlier 20th century farm-oriented life ways representative of a smaller, but well-established farm in the region.

PF-3

The Lt. Cook Memorial has served as a focus of local group activity by several organizations, including the Boy Scouts and the Corona Active 20-30 Club. Local officials and ex-Senator John Tunney have attended ceremonies at the site. The site is a well preserved memorial to American war dead. With proper maintenance and access, the feature has the potential to be a focus of local patriotic activity. Still, it does not fulfill the criteria for nomination to the National Register of Historic Places as described in 36 CFR 60.4. One major reason is that the feature is less than 50 years old.

CSULB 2

Based on the archival and oral historical research conducted as part of this study, this site has been found to contain a complex variety of cultural resources of varying importance. The components which comprise this site include: 1) a mid-19th century "Mexican" occupation; 2) a late 19th to early 20th century farm; 3) a late dairy; 4) a church; and 5) a possible cemetery. The multiplicity of site uses and specialized structures which occupied the site make it one of the most complex occupation sites in the project area. While the structures have been demolished, the area of the site is largely intact. Foundations and associated features are located on the surface and surrounded by a scatter of artifacts. The site appears to be a resource which can be used to address a number of research questions. If evidence of the "Mexican" occupation can be located, this would allow the study of the early occupation of the region by a small farmer subsequent to the division of the ranchos, which is a poorly understood aspect of the regional settlement system. Specific studies of activity patterns, material culture, subsistence, status and architecture may be possible. The succeeding occupation by the Strong family would allow the study of the small farm adaptation for the closing decades of the 19th and early decades of the 20th century.

Again, study of material culture, subsistence, activities, and status should be possible. So far as can be documented, the late dairy occupation was a relatively average example of dairies in the region.

The church is the only structure especially dedicated to religious activity in the project area, although religious services were commonly held in the local schools and some homes. Excavation of the vicinity of the church and parsonage portion of the site could provide information about the specific activities associated with this type of special use site. More detailed historical research on the site than conducted during this study should provide a relatively detailed history of the site.

A part of the church activity locus apparently contains a number of inhumations. The location and study of these can be expected to provide data on early 20th century burial practices in the region. Such subjects as grave form, burial container types, grave goods, and status are possible subjects of study.

The general site area seems significant in several respects. It provides the opportunity to study a site continuously occupied from the latter mid-19th century to 1940. The site is an example of changing land use patterns within a single occupational locus, which contrasts with the largely single-use sites which predominated in the area. The site is one of the only sites of this type within the project area which is sufficiently intact to be studied through archaeological techniques. Another aspect of the site is that it became an important local focus of group activity, in part because of the church and in part because of the Strongs, during the earlier 20th century.

The site is believed to be eligible for inclusion in the National Register of Historic Places based on the criteria defined in 36 CFR 60.4. This recommendation is based on the likelihood that the site will yield a wide variety of important data about settlement, material culture, and activity patterns for a number of ethnic groups over a long time span. Federal statutes require that further studies be conducted to verify the presence or absence of the reputed cemetery and make provisions for relocation of any burials.

PB-41

The McCarty homestead site is a significant and representative example of a major American Period ranch in the region. The individuals associated with it between 1880 and 1940 had a major impact on local agriculture through the consolidation of small farms. Considerable archival and oral historical data is presently available which can be used to produce a case study of this type of farm development in the region.

The site contains several types of structures of different architectural styles. The most important of these are two of the houses. One is the original homestead house. It is the oldest wood frame building in the project area and the only board and batten structure in the area. The 1906 house is a now regionally rare example of a large farm house. This structure remains intact as built, except for minor internal alterations and relocation a short distance to the east of where it was originally located. Several features, not excavated, including a well, privy, and trash dumps occurring at the site are expected to yield data about material culture, valuable in studying status, economy, and subsistence of an American Period farm occupation.

This site is believed to be eligible for inclusion in the National Register of Historic Places because the associated history, the representative architecture, and potential for study through archaeology fulfill the criteria for inclusion described in 36 CFR 60.4.

PB-53

The Pioneer School site contains two assemblages which must be considered separately. One is the school occupation. Although this was an example of a special use site integrated into the community, the physical evidence of the occupation is now destroyed. There is a possibility that some subsurface evidence in the form of privy pits remains, but the major evidence of the occupation now exists only in archival sources, including a photograph. There is no present evidence to suggest that this site continues to contain information of sufficient value to make it eligible for nomination to the National Register of Historic Places.

The second assemblage is that of a cemetery. The use of the site as a place of burial is not established. Corps regulations (ER1180-1-1) governing cemeteries within water resources projects require that the status of the cemetery be resolved and if it is found to exist, that it be relocated. A determination of eligibility of the site for nomination to the National Register of Historic Places must await further study.

PB-61

The Florin Slaughter ranch site represents an example of a second generation American occupation generated through the division of the parent's holdings which resulted in the establishment of a pod of smaller ranches. This kind of shift in the settlement system is common and several variations of it occur in the project area, including the partition of the La Sierra Rancho (Yorba). Florin Slaughter was the son of Fenton Slaughter, but is not a historically prominent figure himself. The site contains foundations of several buildings which are slightly damaged. The foundations are not unique in construction style or detail. There is no evidence of an associated artifact scatter or subsurface features, although these may be observed upon site clearance. The eastern portion of the site has been removed through grading. The main research potential of this site appears to lie in archival records rather than the physical evidence at the site. This site is not believed to be eligible for inclusion in the National Register of Historic Places, however, because the physical remains at the site have limited research value.

PB-62

The Wells Ranch is an example of a second generation American occupation generated as the result of the division of the parental generation's ranch. This is a common type of shift in settlement which increases population density and smaller individual land holdings. Mrs. Wells was Fenton Slaughter's daughter. She never gained historical prominence during her life time. The ranch is one of several holdings belonging to Fenton Slaughter's children which resulted from the division of the Buena Vista Ranch.

The site contains the foundation of the Wells house, Fenton Slaughter's concrete reservoir, and the remains of several smaller features. All are heavily damaged. There is no evidence of a significant artifact scatter associated with the site. The rear portion of the site has been removed through grading. The features associated with the Wells occupation are not unique in construction style or details. The reservoir is reported to be the earliest in the Chino region and is a very early example of an above-ground concrete reservoir, which are uncommon in the region.

The reservoir is believed to be eligible for inclusion in the National Register of Historic Places because it is representative of an uncommon architectural feature as specified with a regionally-noted historical figure whose ranch building is now on the National Register. The features associated with the Wells occupation are not considered eligible.

PB-67, 70, 83, 84, 85, 86, 114, 140, 141, 143

These sites include intact homes and occasionally outbuildings representative of the small farms which dotted the Chino-Corona landscape during the last decades of the 19th century and the early decades of the 20th century. These sites are not associated with significant historical events or persons. The value of these sites is two-fold: they include representative farm architecture of the region for the period ca. 1890 to the 1930s and, since they are relatively intact, the vicinity of the structures is expected to contain subsurface artifacts and features. One site (PB-141) is unique insofar as it is the only remaining structure known to have been associated with the irrigation ditches in the region and to have operated as part of the ditch maintenance system.

The research potential for the architectural aspects of these sites has been considered and is believed to be valuable. The structures are all wood frame houses, mostly with clapboard siding. Individually, they show the general style of construction used by farming families in the region. Each house has the potential to yield information on construction style and details, the methods of construction, and the organization and use of

space available to the residents. Considered as a group, these houses provide a representative sample of the diversity of smaller farm homes in the local area and in the region. Documentation of this class of houses is virtually non-existent. Prior research and efforts toward preservation have focused on earlier adobe structures and the more elaborate homes of wealthier and notable individuals. This focus has left the homes of the average person largely undocumented, although they are principal structures of the community, thus creating a substantial gap in the architectural history of the region.

The archaeological potential of these sites is not yet determined. Unlike most of the sites in the area which are contemporary to these sites, they have not been subjected to the extensive disturbance caused by demolition, plowing, or construction. Thus we believe that all of these sites may contain subsurface features and artifacts which are likely to yield information valuable to the historical and anthropological study of small farm occupations in the region. This belief is bolstered by the observation of two trash pits impacted at site PB-70 as the result of cesspool construction and reports of trash being encountered at PB-67 during small excavations related to farm activity.

These sites are considered to be eligible for inclusion in the National Register of Historic Places based on the criteria described in 36 CFR 60.4 because of architectural research value and the likelihood that the sites contain intact subsurface deposits valuable to the study of the material culture, subsistence, and economy of small farms in the region.

PB-87

This cemetery is one of two cemeteries set aside for use by Native Americans in the region. The other is, or was, located at the Sherman Institute Farm and used for students at the institute. PB-87 is unique in the region because it is the only example of a cemetery segregated for use by Native Americans. Also, it is the only known example of a historic Native American cemetery known in Southern California which is not associated with a reservation or other institution. This cemetery is an example of a special use site integrated into the local settlement system. It provides the opportunity to study the nature of such a site in terms of location and patterns of use.

Corps Regulations governing cemeteries in water resources project boundaries require that any burials in this cemetery be relocated regardless of historic significance. Based on the data derived from this study, the site is not eligible for inclusion in the National Register of Historic Places because it does not fulfill the basic evaluation criteria as described in 36 CFR 60.4(2)[d]. These criteria require that eligible cemeteries contain the remains of persons of transcendent importance, be significant

because of age, distinctive design features, or associated with specific historical events which PB-87 is not.

PB-90

The Rincon Cemetery has recently been evaluated as part of a supplemental study for the present project (Brock 1985b). The cemetery was demonstrated to date to the late 19th and early 20th centuries. The population of the cemetery is probably in the range of 38 to 91+ individuals.

This site is an example of one type of special use site integrated into the local settlement system. If it proves to be a Californio cemetery, as is believed, it provides the potential for studying Californio burial practices. Potential topics of study include cemetery organization, grave form, the nature of burial containers, the types of grave goods provided the dead, body positioning, social status, and perhaps ethnicity of some of the deceased.

This cemetery is believed to be eligible for inclusion on the National Register of Historic Places because of: 1) its relatively great age within its geographical and cultural context, and 2) the impact of the cultural groups represented in the cemetery on the history of the region (see National Park Service 1982:56).

PB-93

The cemetery has probably been previously moved (see Brock 1985b). At present it is believed that the site will not fulfill the criteria described in 36 CFR 60.4(2)[d] and is not eligible for inclusion in the National Register of Historic Places. Corps regulations require that burials in cemeteries located within water resources projects be relocated, regardless of cultural values.

PB-102

The Rincon townsite is unique to the project area as the only occurrence of a small hamlet there. The townsite is an example of one of the real estate developments of the 1880s which did not fail but never developed into more than a marginal locus of business and residence subsidiary to adjacent developing townsites. The southern half of the townsite, which contained a small Mexican-American enclave (PB-89), has been destroyed by grading associated with the construction of Prado Dam. However, the northern portion which contained the main street of businesses and adjacent residences was not graded. The

structures there were either demolished or removed and the area is now largely covered by silt, which is known to reach a thickness of about one meter at the site of the train station. We believe that the subsurface portion of the northern portion of the townsite is intact. Approximately four years ago, when a drainage channel was excavated through the train station area, trash, a trash pit, and rails were encountered.

The townsite has the potential to address a wide variety of research problems concerned with the early development of the region. One research area predates the town site. This is the house site of Raymundo Yorba, which can be located using an 1880's surveyor's plat. This feature was occupied by Yorba after he sold the Buena Vista Ranch (SBr-2317) to Fenton Slaughter. Study of the site would potentially yield information about Yorba during an obscure period of his life. Such problems as the nature of his life style, economic condition, household composition, and social status could be addressed. Raymundo Yorba was historically important as the son of Bernardo Yorba and achieved significance in his own right as a major figure in the operation of his father's ranchos. Most of the information available for Raymundo Yorba concerns the periods when he lived at Rancho Santa Ana del Cañon and at Rancho El Rincon. Research into the period when he lived at what became the Rincon townsite would add considerably to the history of this second generation Californio.

The townsite has entirely separate research values. There is considerable archival data available for the townsite, which will allow the identification of specific structures, their uses and the individuals associated with them. The structures can be accurately located using surveyor's plats and aerial photographs. This will allow the examination of material remains which can be associated with specific activities and possibly individuals. The potential to do this opens a variety of research avenues. It should be possible to study the organization of the townsite as it existed initially, and also, to study the material remains of specific types of businesses to determine the range of their activity and economic fluency. The community was multi-ethnic, probably from the outset, and thus considerations of ethnicity related to activity types would be possible in some cases.

The variety of businesses include a rail station, stores (Anglo and "Mexican"), a bar, hotel, blacksmiths, and a pottery. Several individual homes were located in the northern part of the townsite also. These can be studied, giving consideration to the townsite as a specialized unit in the regional settlement pattern, or as individual units representing specialized limited occupations. Areas of research including material culture, economic and social status, subsistence, and ethnicity should be possible.

This site is believed to be eligible for inclusion in the National Register of Historic Places because of the extensive potential for research dealing with small town development during the late 19th century and for the study of the later life of Raymundo Yorba.

PB-136

This bridge is a specialized feature associated with regional transportation of the earlier 20th century. It has been previously studied and recommended for inclusion in the National Register of Historic Places (Scientific Resource Surveys 1982). The stated importance of the bridge is that it is one of the few remaining features associated with the "Red Car" rail transportation system in Southern California. The structure is intact except that the rails have been removed. The architecture of the bridge is not unique. We concur with the argument that this structure is significant because of the association with the once popular and important regional transportation system; also, because there are few intact structures which remain as landmarks of the system. The bridge is considered to fulfill the criteria for inclusion in the National Register of Historic Places as described in 36 CFR 60.4. The structure would be preserved or further documented before removal based on criterion "a" of the regulation applied on a regional level.

Historic Sites Not Evaluated

A number of sites within the project area were not available for study (Table 9-1). These sites are located in the lower flood control basin and are presently buried. Most are now located beneath the local water table. Based on historical research, if physical remains occur at some of these sites, they would be eligible for inclusion in the National Register of Historic Places. In the future, these sites may become accessible and the appropriate studies conducted so that a determination of eligibility for inclusion in the National Register of Historic Places will be possible. Recommendations about the significance of these sites were not made at this time.

Table 9-1

HISTORIC SITES NOT EVALUATED FOR ELIGIBILITY

PB-11	PB-17	PB-103
PB-12	PB-25	PB-107
PB-13	PB-92	PB-121
PB-14	PB-94	PB-131
PB-15	PB-96	

Not Eligible: Category A

Sites in this category are comprised of surface features with associated artifact scatters. The structures at these sites have been demolished or removed, leaving intact or damaged foundation remains. The architectural remains of these sites are not unique or otherwise significant. The associated artifact scatters have been disrupted through a variety of activities, primarily agricultural (plowing). These sites are believed to be ineligible for inclusion in the National Register of Historic Places as described in 36 CFR 60.4 since they are no longer substantially intact and the remaining site content is not associated with significant events or persons of the past, does not contain significant architectural remains, and is not likely to yield important historic information.

Table 9-2

INELIGIBLE HISTORIC SITES: CATEGORY A

SAR-H2C	PB-40	PB-99
PG-1	PB-48	PB-100
PF-5	PB-57	PB-106
CSULB1	PB-58	PB-111
PB-19	PB-60	PB-115
PB-20	PB-72	PB-116
PB-26	PB-95	PB-137
PB-29	PB-97	PB-147

Ineligible Historic Sites: Category B

The sites included in this classification have had existing surface features removed through demolition or other process. The surfaces of these sites have been substantially altered by plowing or other activity. Intact subsurface features (wells, privies, trash pits) may be present but could not be located by surface inspection. A minimal amount of disrupted culture residium is present at some of these sites. Archival and/or oral historical data is available for most of them.

These sites are believed to be ineligible for inclusion in the National Register of Historic Places based on the criteria set forth in 36 CFR 60.4, since little or no physical remains still exist.

Table 9-3

INELIGIBLE HISTORIC SITES: CATEGORY B

Riv-2204	PB-50	PB-112
SBr-1571H	PB-51	PB-117
SAR-H2B	PB-52	PB-118
PF-4	PB-54	PB-119
PB-21	PB-55	PB-120
PB-22	PB-59	PB-122
PB-24	PB-63	PB-123
PB-28	PB-66	PB-124
PB-30	PB-69	PB-125
PB-31	PB-71	PB-126
PB-32	PB-74	PB-127
PB-33	PB-75	PB-128
PB-34	PB-76	PB-129
PB-35	PB-81	PB-130
PB-36	PB-82	PB-132
PB-38	PB-88	PB-133
PB-39	PB-89	PB-134
PB-42	PB-91	PB-138
PB-44	PB-98	
PB-49	PB-105	

Ineligible Historic Sites: Category C

The sites included in this classification are known to have been destroyed by extensive land modification associated with construction or agricultural activity. Some disrupted cultural debris is present at many of the sites. Archival and/or oral historical data is available for most of these sites.

These sites are believed to be ineligible for inclusion in the National Register of Historic Places based on the criteria set forth in 36 CFR 60.4, since little or no physical remains still exist.

Table 9-4

INELIGIBLE HISTORIC SITES: CATEGORY C

Riv-1039	PB-27	PB-80
PB-1	PB-37	PB-101
PB-2	PB-43	PB-104
PB-3	PB-45	PB-108
PB-4	PB-46	PB-109
PB-5	PB-47	PB-110
PB-6	PB-52	PB-113
PB-7	PB-56	PB-135
PB-8	PB-64	PB-139
PB-9	PB-65	PB-142
PB-10	PB-73	PB-144
PB-16	PB-77	PB-145
PB-18	PB-78	PB-146
PB-23	PB-79	

ORAL HISTORY AND ARCHIVAL RESEARCH RESULTS

A total of 17 individuals familiar with various parts of the project area were interviewed. These interviews ranged from conversations dealing with a single site lasting less than one-half hour to formal taped interviews lasting as long as 3½ hours dealing with more than 20 sites. The object of the interviews was to obtain historical data about the activities at individual sites not readily available from other sources. Each informant has an intimate knowledge of some part of the project area because of life-long association with it or involvement in some specific activity in it.

The informants varied considerably in their ability to respond to various questions. Most informants were conscientious and able to provide clear responses to questions. The knowledge of all informants was limited to specific portions of the project area rather than all of it. One informant reputed to be knowledgeable about the history of the Corona area was found to possess largely inaccurate information, although it was presented as substantiated fact. Most of the informants were found to have occasionally provided inaccurate information.

The information gained from the interviews varies in the depth of detail. In several cases, informants were able to provide some information about specific sites or persons transmitted to them by their parents or parents' friends. Most informants were able to provide information limited to the period of their life span, primarily for the period after 1920. The specific details which could be provided for a specific site varied from trivial descriptions of persons or structures to detailed information about families, house interiors, farm activities, and periods of occupation. The information was most accurate when the informant was discussing a site where they resided with their family or

where the individual had close personal or business relationships with the occupants. In most cases, the temporal data provided was imprecise; details of structures were usually remembered in the most general terms, as were the activities at the site. The names of individuals associated with specific sites and general aspects of their lives were the subject areas best remembered.

Much of the data presented in Chapter 9 and some of the background data presented in Chapter 8 was recorded during the interviews. The data provided has allowed more precise identification of the individuals associated with various sites and their general activities. In several cases, interview data is the sole source of information about some sites. In fact, a number of sites were identified during interviews. The interviews have provided information about settlement shifts and inter-relationships between various sites. In some cases, such as the Moreno Ranch and the McCarty homestead, oral history is the only source of documentation about how the occupation affected the settlement pattern and general activity in the project area. Interview data also provided information about past impacts to many sites.

Oral history is potentially a powerful tool for future research about the project area. For every person interviewed there are at least two potential informants with useful information known to be living in the study area who were not included in this study. The principal value of their information will be for the period between 1920 and 1940, although some can provide oral history about parents and grandparents reaching back to the mid and latter 19th century. These informants are able to provide data about Anglo, Californio, and Mexican ethnic groups. Potential research subjects which might be addressed using this resource include settlement patterns, family histories and genealogies, inter-site relationships, social organization and economic activities.

It must be noted that most of the informants are over 60 years old and some over 70. Data from most of these sources will be available for a maximum of 10 years.

A number of archival sources were utilized in this study to provide data presented primarily in Chapters 7 and 8. The sources included published references, unpublished data in several archives, newspaper accounts, and county records held by the recorder, assessor, and surveyor.

The published works which provide information about the project area contain general historical information, with few exceptions. Information applicable to specific persons or sites is uncommon. Unpublished data, particularly that held by the Corona Library Heritage Room, is much more extensive as well as site and area specific. Still, only a fraction of the cultural resources are documented, with the exception of Desborough's (n.d.) history of the Rincon District. The data available in local archives

includes photographs, correspondence, reminiscences, taped interviews, and some public documents. Newspaper accounts dealing with the upper project area include information about persons and places in the form of articles, brief comments, obituaries, and advertisements beginning in the mid 1880s.

Public documents held by the counties in the project area contain considerable data. Surveyor's office data is available for the entire area. Some of it documents boundaries and feature locations as existing in the 1850s. Assessor's office records are available for the period of 1893 and later in Riverside County, 1895 and later in San Bernardino County. Except for several years in the 1870s, the records for the period prior to 1895 have been lost by San Bernardino County. The assessor's records are a significant source of data about land ownership and occupation. They provide an excellent source of dates for beginning and ending of occupations and changes in ownership. Lesser amounts of data are available about structures and other holdings of value belonging to the taxpayers. The recorder's offices provide data about the chain of title, property boundaries, improvements, and the nature of ownership.

These sources were used selectively during this study, as it was not possible to review all of the records available for the project area. Nor was it necessary to collect the required data for many sites. In particular, the recorder's and assessor's office records, which are the most customary to use, were least relied upon. Virtually all of the applications named above were utilized in this study.

The available archival data for the project area can be used for a variety of studies outside the scope of this project. Surveyor's and assessor's records could be used along with data from deeds to more fully document the land use associated with specific sites. A comprehensive analysis of changes in holdings would provide a substantial basis for studying the evolution of the settler system. Family histories could be developed using manuscript data along with information about vital statistics held by the recorder's office. Data about economic and social status are available in the records. Court records, not used in this study, are another potentially valuable source of information.

NATIVE AMERICAN CONSIDERATIONS

One aspect of this study was to contact members of the Native American community in regard to present and future participation by Native Americans in the lower Santa Ana River/Prado Basin cultural resources study. Initially, the State of California Native American Heritage Commission was contacted for comment. Thereafter, Cynthia Alvietre and Jim Velasquez, both of Gabrileno descent, were utilized in an advisory capacity.

A response from William J. Pink, then Executive Secretary of the Native American Heritage Commission, identified the project area as of concern to people of Gabrileno descent and recommended direct contact with members of the Gabrileno community. Ms. Alvietre was selected because she has had a long term involvement with Native American political activities and is an experienced advisor of cultural resource studies. Mr. Velasquez of American Religious Freedom, Inc., became involved through contact with Ms. Alvietre.

Several meetings were arranged with Ms. Alvietre and her father, and Mr. Velasquez. The object of these meetings was to determine what aspects of the project were of concern to them and what level of participation they felt the Native American Community should have in the project.

The discussion with Ms. Alvietre and Mr. Velasquez indicated several aspects of the project with which they were concerned. The general concern was that interested Native Americans, including themselves, be provided the opportunity to participate in the decision-making process involving cultural resources of Native American origin; in particular that Native Americans should be involved in the planning of, preserving, protecting, and designing strategies for the disposition of archaeological sites.

They would like to be involved in an exchange of views with project cultural resource managers, with the object of arriving at mutually acceptable alternatives for the disposition of cultural resources of Native American origin. The object of this involvement is the assurance of protection of their religious and cultural rights.

Ms. Alvietre and Mr. Velasquez feel that there is a bond between the past and present which makes the archaeological remains of their people special to them. Thus, they expressed a concern for the treatment and disposition of archaeological sites and the cultural remains in them, especially that the Native American community be able to assure the protection and respectful treatment of these remains.

A major specific area of concern expressed by Ms. Alvietre and Mr. Velasquez is the treatment of Native American burials. Ms. Alvietre feels that previously located human remains and associated artifacts should be reinterred under Native American supervision. In cases where human remains are located during construction activity, these should be relocated to known or new cemeteries with a minimum disturbance and as quickly as possible. Again, a Native American should be involved.

In regard to newly found burials and cemeteries, Ms. Alvietre feels that they should remain in situ along with any grave goods. Exposure of the burial for the purpose of making drawings or taking photographs would be acceptable, prior to grave closure,

if done under Native American supervision. In speaking specifically about site PB-87, a cemetery, she expressed the wish that this and similar sites be left in place, despite the threat of inundation. Also, study of such sites should include only such survey and excavation as is necessary to determine the extent of the cemetery.

Discussions with Mr. Velasquez indicated that he felt that there was a need for Native American input into the planning and execution stages of cultural resource management, similar to that expressed by Ms. Alvietre, especially those aspects of it which involve sites and materials of religious importance to the Gabrileno. Several aspects of Mr. Velasquez' feelings toward the handling of Native American participation in archaeological studies and the handling of burials differs significantly from Ms. Alvietre's position. He does not feel that it is necessary to have a Native American advisor present during all phases of excavation. Still, an advisor should be present immediately upon the location of human remains. He felt that the relocation of interments to a new cemetery was acceptable if done with appropriate respect for the dead. He felt that the study of human remains and grave goods in laboratory contexts, if done speedily between exhumation and reinterment, is acceptable. However, he feels that exhumation and relocation should be an alternative selected only when the original burial site is threatened.

Native American concerns regarding cultural resource development are generally focused on the preservation of their heritage. While the approaches and specific concerns voiced by Native Americans in southern California vary, there is a consensus of opinion that they should have input into the cultural resources management process and that their religious sites and remains should be protected. For a broad view of Gabrileno attitudes toward cultural resource management and the treatment of archaeological sites, a study by Cultural Systems Research Inc. (1979:Chapters 7, 8) should be consulted. This study is based on the interviews of 17 Gabrilenos and provided an indication of their attitudes toward this activity. The study includes information from a number of Luiseño and Juaneno, also. The data presented in this study provides a sound analysis of general Native American attitudes toward cultural resource studies.

CHAPTER 10

POTENTIAL IMPACTS

INTRODUCTION

The prehistoric and historic archaeological sites and historic structures in the study area face threats from a variety of different types of impact. Since the type of impact determines the mitigation recommendation, this section summarizes the nature and effects of different types of impacts and summarizes the anticipated impacts to the various sites studied here.

GENERAL TYPES OF IMPACTS

Construction and/or Development

Construction and/or development causes a direct irreversible impact to cultural resources. The intensity of the impact is directly related to the scope of the project. Construction associated with flood control system development is the primary manifestation of this type of impact that is anticipated as a result of this project. For instance, quarrying of materials for modifications to Prado Dam could impact sites (particularly historic) that are present in the lower areas of the basin. Other anticipated construction activities that could adversely impact cultural resources in the study area include the further development of recreational facilities (e.g. Prado Regional Park), housing (e.g. the Lusk Property), power line construction, road improvement, sewage disposal facilities, and water supply projects.

Inundation

It is expected that inundation of archaeological sites and historic structures in the project area will cause two basic categories of impact: (1) erosion, and (2) siltation (burial). Erosion is expected to occur at sites in the higher elevations, such as those located at the edge of the Chino Plain. Siltation is expected to continue and be exacerbated at sites in the lower elevations (in flood plains).

Erosion is expected to take two fundamental forms. The first is wave action, the second is runoff. Wave action should be a major

agent of impact as the water level will fluctuate through the entire range of elevations of the Prado Basin study area. The slope of the ground surface of the site under impact has been identified as a significant factor in wave-caused erosion (Phillips and Rozen 1982:108). Apparently, slopes greater than three degrees erode quickly (Phillips and Rozen 1982:192). The impact of water runoff on the cultural resources of the study area is not clear-cut. It is expected that the draining of accumulated floodwater in the Prado Basin will be a slow process that will not generate rapid water movement. Consequently, erosion from runoff may not be a major source of impact to prehistoric sites, yet it may bring immediate adverse impacts to standing historic features.

Siltation, or burial, has and will impact sites in the lower elevations of the Prado Basin. The burial of archaeological sites causes crushing and aplastic deformation of subsurface materials. The severity of the impact caused by these processes depends upon the nature of the particular site under consideration.

Other impacts caused by flooding include the rapid deterioration of architectural features (e.g. adobe walls) and the accelerated decomposition of organic remains. It is well known that the best preservation of organic remains occurs in conditions of consistent moisture (e.g. waterlogged sites) or aridity (e.g. desert rockshelters). Sites that fluctuate between wet and dry generally have poor preservation of organic materials. Presumably, this process will be quickened at sites in the study area by occasional flooding.

Agriculture

Agricultural impacts to sites in the project area fall into two basic categories: (1) those caused by farming, and (2) those caused by the pasturing of animals.

Impacts from farming include the leveling of land (to facilitate ease of plowing), the subsoiling of land (to promote drainage), plowing, and discing. All of these activities have direct irreversible adverse impacts to cultural resources. Leveling and subsoiling have the most severe impacts. A site can be totally displaced by leveling, while subsoil ripping can go down over one meter in depth, totally disrupting the context of artifacts and destroying archaeological surfaces that may exist. Plowing and discing generally only impact the top 30 to 40 cm of a site. Therefore the degree of impact depends to a large extent on the depth of the site. Also, fertilizers used in agriculture alter the soil chemistry of sites.

Trampling is the main form of impact associated with pasturing animals on sites. Trampling causes crushing and compaction and can also result in mixing of the soil when conditions are muddy.

The excreta from pasturing animals also impacts the soil chemistry of archaeological sites.

Vandalism

Vandalism to archaeological and historical sites takes three main forms: (1) pothunting, (2) defacement, and (3) arson. All three forms cause significant adverse impacts.

Pothunting, or relic collecting, has occurred and will probably continue to occur, at major sites that the public is aware of (e.g., Riv-653 and SBr-1543). Minimally, pothunting consists of the collection of aesthetically appealing surface artifacts. At worst, pothunting can entail the large-scale unauthorized digging of a site for the purpose of collecting complete specimens. This can even involve bringing heavy equipment onto a site.

Defacement typically entails the intentional disturbance or destruction of historic structures. This consists of such things as graffiti, window breaking, door removal, trash dumping, and so on.

Arson is the intentional burning of a structure. Obviously this presents a very serious and often times total impact to a structure. Arson introduces modern charcoal into prehistoric and historic deposits, thus affecting potential absolute dating techniques.

Vandalism of federally owned archaeological sites is expressly prohibited by the Archaeological Resources Protection Act.

Recreation

Recreational activities that occur within the project area can impact archaeological and historical sites. Such things as increased vandalism, erosion of trails and activity areas, the deposition of new cultural debris, and so on, adversely impact sites. In the Prado Basin a good deal of recreational development has been proposed.

Demolition

Older structures are often regarded as unsightly, unsafe, and/or simply in the way. Demolition is frequently regarded as the easiest way to deal with these problems. It alleviates "eyesores," clears the way for redevelopment, and lowers potential liability risks (e.g., PB-59).

No Use

Natural forces cause impacts to sites in ways that are sometimes as adverse as cultural agents. Rodent disturbance is probably the most critical natural impact facing sites within the project area. All sites excavated during this project exhibited evidence of rodent disturbance. Other natural agents impacting sites include plant rooting, wind erosion, and rainwater erosion.

SPECIFIC IMPACTS: PREHISTORIC SITES

The following table (Table 10-1) summarizes past and anticipated future impacts to the prehistoric archaeological sites located within the project area. Following this table, descriptions are presented for the anticipated impacts to each specific site based upon the current project design. Other impacts may occur that the authors are unaware of at present.

Table 10-1

PREVIOUS AND ANTICIPATED IMPACTS

Site No.	Constr./ Develop.	Inundation Erosion	Inundation Silting	Agriculture Farming	Agriculture Pasture	Vandalism	Recreation
Riv-100		U	P,A	P			
Riv-652	P	P,A	A	P,A	P,A		
Riv-653	P	A		P,U	P,A	P,A	A
Riv-1098	P	A		P,U	P,A		A
Riv-2754		P,A		P,A			P,A
Riv-2755	P	P,A		P,A			P,A
Riv-2797			P,A	P		P	
Riv-2803	A			P,A	P,A		A
Riv-2804	A	A		P,A	P,A		A
SBr-1543	P,A	A		P,A		P,A	P,A
SBr-1570	A	A					
SBr-1571	P	A		P,A		U	P,A
SBr-2259	P,U	A					A
SBr-2260	P	A				A	A
SBr-2845	P	A		P,A			
SBr-5096	P,A	A		P,A		P	
SBr-5241	P,A	A		P,A			A
SBr-5242	P,A	A			P,A	P	
SBr-5243	A	P,A		P	P,A	U	A
SBr-5244	P*						
SBr-5245	A	A		P,A		P	
Ora-89	P*	P*		P			
Ora-817	P	P,A		P,A		P	

Key: P=previous impact; A=anticipated impact; U=unknown;
*=site destroyed by impact-form indicated.

Riv-100: This site has previously been impacted by siltation. It is expected that this process will continue.

Riv-652: It is expected that new impacts to this site, as a result of the planned project, will consist of floodwater related erosion and siltation. This site also is in an area of potential recreational development.

Riv-653: It is anticipated that impacts to Riv-653, as a result of the planned project, will consist of erosion and possibly increased vandalism (as the site becomes better known). This site is in a proposed borrow location for the Upper Santa Ana River project.

Riv-1098: Floodwater related erosion of this site is expected to occur as a result of the planned project. The site is in a proposed borrow location for the Upper Santa Ana River project.

Riv-2754: The proposed project will cause floodwater related erosion of this site. Vandalism may also impact the site as it becomes better known.

Riv-2755: Floodwater related erosion will impact this site as a result of the proposed project. Vandalism may impact the site as well.

Riv-2797: This site has been previously buried by silt. It is expected that the proposed project will exacerbate this impact.

Riv-2803: This site is above the proposed new maximum taking level and will consequently remain unaffected by the increased taking line. However, it is in a proposed borrow location for the Upper Santa Ana River project.

Riv-2804: Floodwater related erosion will impact this site as a result of the proposed project. This site is in a proposed borrow location for the Upper Santa Ana River project.

SBr-1543: Floodwater erosion will impact this site as a result of the project. Vandalism, recreational activities, and farming have impacted this site in the past and will probably continue to do so. Southern California Edison Company is also planning to erect an electrical transmission line tower on the site at some future date.

SBr-1570: It is expected that floodwater erosion will impact this site location as a result of the project. It is also in a proposed borrow location for the Upper Santa Ana River project.

SBr-1571: This site will be impacted by floodwater erosion as a result of the planned project, although the prehistoric component is demonstrably disturbed already.

SBr-2259: Floodwater erosion should impact the locality of this site as a result of raising the taking line. This site is in a potential recreation development area.

SBr-2260: Floodwater erosion will impact this site as a result of the planned project. This site is in a potential recreation development area.

SBr-2845: This site location will be severely impacted by floodwater erosion as a result of the project, due to the slope of the area.

SBr-5096: Floodwater erosion should impact this site as a result of the proposed project.

SBr-5241: This site is in an area of potential recreational development and could be impacted by erosion as well.

SBr-5242: Floodwater erosion will occur in the area of this site. However, it is unclear whether or not the site is still extant.

SBr-5243: Floodwater erosion will impact this site as a result of the proposed project. Also, vandalism could occur at this site as it becomes better known. This site is in an area that is being considered for recreational development and as a borrow location for the Upper Santa Ana River project.

SBr-5244: This site has previously been destroyed and consequently will not be impacted by the proposed project.

SBr-5245: It is anticipated that this site will be impacted by floodwater erosion as a result of the proposed project.

Ora-89: This site has been previously destroyed and will not be impacted by proposed improvement to Santiago Creek.

Ora-817: This site has been previously damaged by agricultural activity. It could be impacted as the result of heavy flooding in Santa Ana Canyon. It will probably be destroyed by private construction within the next several years.

SPECIFIC IMPACTS: HISTORIC SITES

Table 10-2 summarizes known past impacts and anticipated future impacts to historic sites in the project area. Reference to Chapter 8 and 9 will show that most of the historic sites listed in Table 10-2 have been destroyed. Those which have been damaged through removal of surface features and which are known to have undergone grading or extensive subsurface modification are considered completely destroyed and not subject to further impact. Most of the remaining sites have had above-ground features removed and the surface modified to depths of 30 to 40

centimeters. These sites are believed to still contain deeper subsurface features, such as wells or privies, and thus are not listed as completely destroyed. These would be subject to further impact.

In most cases the anticipated impacts to the historic sites will be nominal. Periodic inundation may result in accelerated settling or aplastic deformation of a site. Excepting those sites in the lower elevations of the flood control basin, these impacts will probably occur very infrequently.

Anticipated construction in the basin will result in the destruction of several sites and severe impacts to others. At present there are plans to realign Highway 71 and to increase recreational activity in the northwestern portion of the basin. These plans are in early stages of development and the extent of the impacts generated by them is not known. Partial or complete destruction of some sites is expected to result from both projects.

Only the sites which will receive impacts resulting in the destruction of above ground features and cemeteries are discussed individually below.

Riv-653H: Periodic inundation of the Bandini-Cota adobe will result in acceleration of wall meltdown. Increased recreational use of the area may result in further vandalism. The site is in a proposed borrow site for the Upper Santa Ana River project.

SBr-2317: Any inundation of the Yorba-Slaughter adobe will result in severe weakening or collapse of the building. Displays at the museum will be damaged or destroyed.

SAR-H2C: It is possible that this site will be destroyed by construction.

Riv-1044: The stone and concrete structure at this site is expected to undergo periodic inundation. This is not expected to result in significant damage to the structure because of the mode of construction. Extended inundation could result in saturation of the underlying soil resulting in settling and partial collapse of the building.

PF-3: This feature may be damaged by construction. The stone and concrete construction of the feature should tolerate extended inundation without significant damage. This type of feature (memorial marker) is frequently a target of vandalism. Increased use of the area is expected to increase the chance of vandalism to the memorial. This site will probably be impacted by siltation.

PB-40, 41, 48, 67, 70, 83-86: These sites include one or more wood frame structures. Inundation will result in severe damage to these structures, possibly collapse. If a policy of removal

of structures is pursued in the project area, these structures will be destroyed.

CSULB2, PB-53, 87, 90, 93: U.S. Army Corps of Engineers regulations (ER1180-1-1) require that cemeteries and grave sites located on project lands must be relocated to an area off of project lands. Therefore it is assumed that the CSULB-2, PB-53, 87, and 90 would be relocated as part of construction and thus would not be affected by inundation as a result of this project. Site PB-93 could be located in the Prado Fix construction area and may be severely damaged as a result of planned building activity. Site PB-87 is located in a proposed borrow site for the Upper Santa Ana River project and thus may be relocated as part of that project.

PB-136: The Pacific Electric bridge is scheduled to be removed as a result of the proposed construction.

Table 10-2

SUMMARY OF PREVIOUS AND ANTICIPATED IMPACTS
TO HISTORIC SITES IN PROJECT AREA

Site No.	Constr./ Develop.	Inundation Erosion	Inundation Silting	Agriculture Farming	Agriculture Pasture	Vandalism	Recreation
Riv-653H	A	P,A				P,A	A
Riv-1039	P*			P*			
Riv-1044	P	A		P,A			
Riv-2203		A					A
Riv-2204	P	A		P,A			A
Riv-2778	P	A	P,A			A	A
Riv-2802			P,A	P			
SBr-1571H	P	A		P,A			A
SBr-2317		A		P			
SAR-H2B	P,A			P*			A
SAR-H2C	A	P*,A	P				
PG-1	P,A	A			P,A		A
PF-3	A		A			A	
PF-4	P*,A	A			P,A		
PF-5	P*,A				P,A		
CSULB1		A					
CSULB2	P	A	P,A			A	
PB-1	P*		P,A				
PB-2	P*		P,A				
PB-3	P*		P,A				
PB-4	P*		P,A				
PB-5	P*		P,A				
PB-6	P*		P,A				P
PB-7	P*		P,A				P
PB-8	P*		P,A				
PB-9	P		P,A				
PB-10	P*		P,A				
PB-11	P,A		P,A				
PB-12	P		P,A				
PB-13	P		P,A				
PB-14	P		P,A				
PB-15	P		P,A				
PB-16	P*			P			
PB-17	P		P,A				
PB-18	P*		A				A
PB-19	P	A					A
PB-20	P	A					A
PB-21	P	A					
PB-22	P*	A					
PB-23	P*		A				
PB-24		P*	P,A				
PB-25	P		P,A				

Key: P=previous impact; A=anticipated impact; U=unknown;
*=site destroyed by impact-form indicated.

Site No.	Constr./ Develop.	Inundation Erosion	Inundation Silting	Agriculture Farming	Agriculture Pasture	Vandal-ism	Recrea-tion
PB-26	P,A	P,A		P,A			
PB-27	P,A		P,A				
PB-28	P*,A						
PB-29	P		P,A				
PB-30	P,A	P,A					A
PB-31	P		P,A				
PB-32	P		P,A				
PB-33	P		P,A				A
PB-34	P		P,A				A
PB-35			A		P,A		A
PB-36	P		P,A				A
PB-37	P*						
PB-38		P*	P				P,A
PB-39	P*						P,A
PB-40	A	A					
PB-41	P,A	A					
PB-42	P		A	P,A			
PB-43				P*			
PB-44				P*			
PB-45				P*			
PB-46	P*						
PB-47	P,A				P*		
PB-48		A					
PB-49				P*			
PB-50				P*			
PB-51	P	A	A	P			
PB-52	P*						
PB-53	P		A	P,A			A
PB-54	P		A	P,A			
PB-55	P		A	P,A			A
PB-56	P*						
PB-57	P		A				
PB-58	P	A					
PB-59						P*	A
PB-60				P*			
PB-61	P		A				A
PB-62	P		A				A
PB-63	P		A				P
PB-64	P*						P
PB-65	P*						P,A
PB-66	P*					P	
PB-67		A					
PB-68	P*						
PB-69	P,A		A				A
PB-70		A					
PB-71	P		A				
PB-72			A				

Key: P=previous impact; A=anticipated impact; U=unknown;
*=site destroyed by impact-form indicated.

Site No.	Constr./ Develop.	Inundation Erosion	Inundation Silting	Agriculture Farming	Agriculture Pasture	Vandal-ism	Recrea-tion
PB-73	P*						
PB-74	P*		A				
PB-75	P*		A				
PB-76	P*		A				
PB-77	P*		A				
PB-78	P*						P
PB-79	P*						P
PB-80	P*						
PB-81	P*		A				P
PB-82	P*	A					
PB-83	A	A					
PB-84	A	A					
PB-85	A	A					
PB-86	A	A					
PB-87		A		P			
PB-88	P*			P	A		
PB-89	P*,A	A					
PB-90	P	A		P	P,A		A
PB-91		A		P			
PB-92			P,A	P			
PB-93	P,A*	A			P,A		A
PB-94	P		P,A	P			
PB-95	P		P,A				
PB-96	P		P,A				
PB-97	P,A						
PB-98	P*	A		P			P,A
PB-99			A	P,A			
PB-100	A						
PB-101	P*	P,A					
PB-102	P,A		P,A				
PB-103	P		P,A				
PB-104	P*		A				P,A
PB-105	P*	A					
PB-106	P*	A					A
PB-107	P		P,A				
PB-108	P*						
PB-109	P*						P,A
PB-110	P*						P,A
PB-111	P			P			
PB-112		P,A					
PB-113		P*	P,A				
PB-114	A		A				
PB-115		A	A				A
PB-116	P			P			
PB-117	P		P,A				
PB-118	P,A		P,A				
PB-119			P,A	P			

Key: P=previous impact; A=anticipated impact; U=unknown; *=site destroyed by impact-form indicated.

Site No.	Constr./ Develop.	Inundation Erosion	Inundation Silting	Agriculture Farming	Agriculture Pasture	Vandalism	Recreation
PB-120	P*			P			
PB-121	A		P,A				
PB-122	P*		A				
PB-123			A	P			
PB-124			A	P			
PB-125			A	P			
PB-126	P*		A				
PB-127			A	P			
PB-128			A	P			
PB-129	P*						
PB-130			A	P			P,A
PB-131			P,A	P			
PB-132		A					
PB-133		A					
PB-134			A	P			
PB-135	P*		A				
PB-136	A						
PB-137	P						
PB-138	P*						
PB-139	P*						P
PB-140				U			
PB-141	P						
PB-142	P*						
PB-143	P*			P			
PB-144	P*			P			
PB-145				P			
PB-146	P*	P		P			
PB-147	U					P	

Key: P=previous impact; A=anticipated impact; U=unknown;
*=site destroyed by impact-form indicated.

CHAPTER 11

MITIGATION RECOMMENDATIONS

INTRODUCTION

This chapter recommends procedures for the future management of the cultural resources in the project area. A number of the recommendations are of a general nature and are aimed at making the best use of the cultural resources in the basin at this time or facilitating management. Most of the recommendations are site specific. These are based on the estimated scientific or cultural value of each site and the estimated impacts which are expected to result from implementation of the proposed project. Each procedure is defined and then applied to the cultural resources of the project area. The Advisory Council on Historic Preservation has defined a number of principles which are considered in making the recommendations. These include:

> Principle VI: Eligibility for the National Register suggests, but does not define, how an archaeological property should be treated.
>
> Principle VII: If an archaeological property can be practically preserved in place, it should be.
>
> Principle VIII: If an archaeological property is to be preserved in place, extensive excavation of the property is seldom appropriate.
>
> Principle VX: Both data recovery and destruction without data recovery may be appropriate treatments for archaeological properties.
>
> Principle X: Once a decision has been made to undertake data recovery, the work should be done in the most thorough, efficient manner.
>
> Principle XI: Data recovery should be based on firm background data and planning.
>
> (Advisory Council on Historic Preservation 1980:8-13)

Mitigation Procedures

Protection

The Advisory Council recommendations, particularly Principle VII, indicate that archaeological resources should be preserved in place, if possible. This alternative is desirable for several reasons. The avoidance of impacts is the least costly and most efficient way to satisfy federal and state preservation laws. Preservation is preferred by the Native American community. Also, there is justification for preserving cultural resources for future scientific research, or more general purposes such as education.

Two kinds of protection procedures are possible for the proposed project. These include avoidance of impacts and active protection:

1. Impact Avoidance

   The avoidance of impacts can be achieved several ways. Avoidance through cancellation of the project is one alternative. Given the priorities in the overall management of the Santa Ana River and the Prado Flood Control Basin, this is probably not an alternative which can be selected. The other alternative is to redesign aspects of the project to avoid impacts to significant cultural resources. Avoidance of sites however, does not guarantee preservation beyond the end of the project.

2. Active Protection

   Sites which are being destroyed by human or natural phenomena (subsoiling, erosion) can be stabilized and preserved through the implementation of contractive procedures. Protection requires long-term management.

Impacts Mitigation Alternatives

If the planned project proceeds under the design parameters described in the "Recommended Plan" (U.S. Army Corps of Engineers 1980), impacts to many of the cultural resources described in this volume will occur. Also, land use not associated with the water holding or flood control aspects of the project area are expected to impact cultural resources. The following procedures are recommended for use in mitigating impacts to cultural resources in the project area.

3. Surface Documentation

   This procedure is recommended for sites which consist of surface features, or when exposed surface remains are

threatened but can be, protected in a number of ways. Mapping with surveyors instruments, detailed photography, recordation of the site and associated features, and systematic collection, individually or in combination, should be accomplished.

4. Test Level Excavation

If an archaeological site to be impacted has not been previously tested and/or existing data are not sufficient to determine if a site requires further study, a preliminary excavation of the site is necessary. This could include but not be limited to mapping, controlled surface collection, soils testing, limited sample excavation, analysis, and reporting of data.

5. Excavation

In cases where a site is expected to be severely damaged or destroyed, and significance lies in research potential, mitigation should take the form of thorough documentation which preserves the historical or scientific value of the site. This procedure consists of a large scale excavation of an archaeological site by a qualified archaeologist using a research design which would optimize data recovery. This would be followed by analysis and reporting of the findings.

6. Controlled Destruction

This procedure consists of the documentation of an archaeological site in the process of destruction. Some types of data can be collected at the time a site is being impacted by activity which exposes the subsurface part of the site. The site can also be deliberately opened using heavy equipment (cf. King, et al. 1970).

7. Monitoring

This procedure consists of field inspection by a qualified archaeologist of construction areas before and during construction to minimize or avoid impacts to resources. Significant artifacts or features can be found this way. Previously unrecognized sites are sometimes found which are protected by 36 CFR 800.7. Some of the sites in this category would not be impacted by the proposed project, so monitoring is not needed for the proposed project for all of these sites. However, this mitigation recommendation is offered should an activity disturb the ground surface of these sites.

8. Historical Research

Some historic sites will require specialized research in addition to excavation to provide documentation of the resource. Intensive interviews of individuals familiar with specific sites, the use of records held by state and local governments and public institutions (deeds, assessor's records, etc.) are examples.

9. Impact Without Study

Many of the cultural resources documented in this study do not require mitigation of impacts. Many are not sufficiently important or intact to justifiably be recommended for further research. A number of occupation sites are documented in records but no identifiable physical evidence remains in the project area.

10. Not Evaluated

Sites included in this mitigation class are presently buried and not available for evaluation. Most are located in the lower basin at elevations beneath 512 feet MSL. These sites are known to be damaged but some may contain foundations and subsurface features.

It is recommended that no action be taken toward these sites at this time. They should be assumed to exist and to be possible subjects for future research. The sites have been inundated and buried under silt in the past. They are presently beneath the existing water table. Therefore, it is not expected that further inundation and siltation will cause significant damage as the result of the proposed project or expected land use. Still, these sites may be possible sources of data for future research. Therefore, if exposure of a site area occurs in the future as the result of excavation, erosion, or other phenomenon, the site area should be monitored and if cultural resources are located, they should be evaluated in accordance with 36 CFR 800.7 using criteria for evaluation current at the time of discovery.

GENERAL RECOMMENDATIONS

National Register District for Prehistoric Sites

The confluence of the Chino, Mill, and Temescal Creeks with the Santa Ana River provided a major focus for the prehistoric aboriginal settlement of the Chino-Corona region. These water courses, and the local springs feeding them, supported the most dense prehistoric settlement known in the San Bernardino-Pomona

Valley. While aboriginal sites line the regional water courses, nowhere is there as dense a concentration of large habitation sites. In particular, this interior Santa Ana River Drainage area contains the greatest known concentration of activity associated with the cogged stone, discoidal, and charmstone complex. Given adjacent surveys in the Santa Ana Mountains, Chino Hills, and the Valley area, it appears that the flood control basin and areas immediately adjacent to it served as the core for the regional settlement of the area at least during the Millingstone and Intermediate Horizons.

A number of the prehistoric sites in the project area are individually of sufficient importance to be determined eligible for inclusion in the National Register of Historic Places and nominated to the register. Although this route could be followed, we feel that the entire core of sites together is significant and that it would be more appropriate to include them in a "district" nomination. This would serve several purposes. It would maintain the primary core of sites as a group scientific resource. A number of the sites when considered individually can only be marginally justified as significant. These would be included allowing some diversification of the resource base. At the very least, the variety of site types preserved would be broader. As a group these sites would provide a more sound basis for the study of a number of problem domains. Paleoenviromental study, cultural succession, settlement pattern, paleodemography, and social organization can be studied more effectively with an array of sites.

A History of the Rincon District

The data gathered as part of this study indicates that, starting in the earlier 19th century, the area of the Prado Flood Control Basin started to be used by peoples of European decent. Initially they moved into the area for limited agricultural activity. Within less than a century the area changed substantially. Land use patterns changed, population density increased, the ethnic composition changed, and site functions became more restricted, while the types of sites diversified and the entire district adapted to a specific pattern within the overall regional settlement pattern. These are major aspects of the district and the same may be said of other districts to greater or lesser extents.

A main feature of the flood basin is that it encompasses nearly an entire district or focus of activity. As such, it provides the opportunity to study an agricultural district in historic perspective from the mid-19th to mid-20th century within the context of one project. With additional historical research, much of the data gathered in this report for the purpose of identification can be recast into a general history of the Rincon District. There is the opportunity to examine numerous aspects

of the recent history of the Pomona Valley from a problem-oriented perspective as well as to develop a detailed description within such a project. The assimilation of later generation Californios into contemporary American society is one, and the impact of the "Boom of the 80s" on regional settlement is another.

A synthetic history of the district might be approached from several perspectives. A book or monograph-length study of the district could add considerably to the regional history. Such a study would be a starting point for further research in the area and research in adjacent areas, as well as provide information for broader regional studies. Another approach is the production of a booklet-length general history for consumption by the general public. There is considerable interest in local history in the greater Chino-Corona-Pomona region. A well illustrated short history of the Rincon District would be welcomed by local educators and residents.

Collecting Procedures

A number of recent advances in archaeological analysis now make it desirable to attempt to recover several types of evidence not presently collected as part of normal archaeological research. It is now possible to recover blood, some proteins, and fatty acids which exist as residues attached to tool surfaces. These can be used to secure at least a general level of identification of the plant or animal resources processed through the use of a specific artifact. Analysis of these residues will allow more precise identifications of tool uses, many of which are presently postulated.

During the excavations conducted as part of this study, several artifacts were found which appear to bear lipid residues. One metate bears some red ocher. Paint occurs on metates as a decoration in many parts of Southern California.

Future research on the prehistoric sites in the project area should require that thorough examination of artifacts and appropriate collecting and processing techniques be utilized which will allow the recovery of biological residues and paints.

Periodic Reassessment

The significance of specific cultural resources is not static. Significance can change in response to changes in the social and scientific parameters which framed the basis for defining what is or is not important. These changes in social or scientific parameters may cause some resources to lose significance or to become significant. An example is the historic trend in American archaeology toward studying camp sites and special use sites in addition to villages and towns. This change has been spurred by

the realization that past societies which were not fully sedentary cannot be adequately studied by examining only village sites.

We recommend that the status of all historic and prehistoric archaeological sites on federal lands in the project area which have not been destroyed be periodically re-examined. A periodicity of ten years would allow sufficient time for the necessary social and scientific change to occur. Periodic reassessment would benefit both the managing agency and the public by maintaining a current list of significant resources, allowing the expenditure of time and funds on those cultural resources which are truly valuable.

Periodic Monitoring

The project area is a multiuse area which includes a variety of agricultural and recreational activities in addition to the flood control. These activities are resulting in the continual use of the area of some archaeological sites and periodic use of most others. The frequency of use can increase the risk of vandalism, erosion, and other disturbances. An example, known to occur in the project area over a long period, is the plowing up of artifacts, followed by removal when local collectors or tenants observe them. These inputs could be minimized through regular inspection of sites, accompanied by contact with the tenant if necessary. Identified problems could be remedied through appropriate action. A twice yearly field review involving one or two person days would suffice for this activity.

Guidance to Tenants

Most of the tenants who lease federal lands in the project area were unaware of their obligations to conserve cultural resources within federal guidelines. Some who were aware of this obligation have misunderstood the extent of their obligation or how to fulfill it. This has led to the damage or destruction of some sites without prior assessment of significance and impact in compliance with 36 CFR 800.

This problem could be diminished or avoided in the future by instituting a plan of action aimed at informing tenants about cultural resources and their responsibilities toward them. Such a plan might include the following features: 1) Brief tenants and sub-tenants about significant cultural resources on the property they lease and about their responsibility to conserve them; 2) Include appropriate language in lease and sublease agreements to define the tenants responsibility and to limit specific damaging activities (e.g., grading, foundation building, subsoiling, etc.); 3) Require approval by the Corps of Engineers of all construction in sensitive areas; 4) Make tenants aware that they must report all findings of prehistoric and historic

artifacts to the Corps of Engineers' archaeologists in conformance with 36 CFR 800.7; and 5) Make tenants aware that they can be prosecuted under P.L. 96-95 for knowingly damaging cultural resources on federal lands.

Most of the sites on federal lands have been surface modified by plowing to depths of 40 cm. There is no necessity to limit this kind of agricultural activity at this time. However, not all areas have been subsoiled or ripped, which causes disturbance to 1 meter or deeper. This activity should not be allowed at known sites, because of the stratigraphic disruption which will result.

Site Specific Recommendations

Mitigation recommendations for each prehistoric site are discussed individually. The recommendations for the historic sites are given in Table 11-1. Those historic sites which have been recommended for preservation or further study are discussed individually.

RIV-100

Since Riv-100 may undergo further significant impacts as a result of a proposed project, we recommend that further effort to mitigate impacts to the site be instituted. If and when the area of the site is subjected to excavation or erosion which could expose it, that activity should be monitored and if the site is found, it should be tested and evaluated for significance at that time in accordance with 36 CFR 800.7. Past work strongly implies that the site has scientific and religious significance.

RIV-652

Riv-652 has been previously disturbed in the past by construction and agricultural activities. Despite this evidence, the site still contains information relevant to the understanding of the prehistory of the region. As such, it is recommended that a one percent sample be taken from the area of the site to be impacted by the proposed improvements to the Prado Flood Control Basin.

RIV-653 and RIV-1098

These sites were found to be parts of a single site divided by recent activity. They are considered together for the purpose of mitigation. This site contains artifactual and ecofactual remains which can be used in conducting research on inland Milling Stone Horizon settlements and should receive more complete study prior to being exposed to further impacts from the proposed project or present land use activities in the vicinity of the site. We feel that the most valuable use of these sites

is to preserve them along with the Bandini-Cota Adobe (Riv-653H) as a "cultural heritage preserve". Given the size of Riv-653 additional testing to define its content would be appropriate.

If preservation is not possible, then mitigation for this site should include expanded data recovery through a larger scale excavation of the site. Specialized studies including those recommended in the "general recommendation" section should be conducted. Further study should be planned so that all portions of the site are sampled either by using a weighted random sample or by systematic sampling.

Although the site is large and the artifact content relatively low in density, the artifact diversity is limited. We feel that a sample approximating one percent of the site will be sufficient to reach redundancy in artifact and ecofact representation.

This would result in the excavation of approximately 500 cubic meters of earth at the site. Two types of excavation should be utilized. Individual excavation units would account for the bulk of the excavation. The 1 by 2 meter units used in this study seem more adequate for sampling low yield sites like this than smaller units. Larger exposures, 2 to 5 meters square, or small trenches, should be used to examine the aerial configuration of the weathered ground surface where most of the ground stone tools were found laying on.

Since the site will not be totally destroyed by the proposed project, it should be preserved in place subsequent to future study. A monitor should be required if construction is to occur at the site.

RIV-2754 AND RIV-2755

These sites contain data which will allow the study of aspects of the earlier Milling Stone and Intermediate Horizons. The principal impact anticipated from the proposed project will be periodic inundation. The land is presently used for growing crops and as part of a hunting club. These activities will have nominal impact on the sites unless the fields are ripped, or subsoiled, or duck blinds excavated into one of the loci.

At Riv-2754, the excavation of ten to twelve 1 by 2 meter units should be adequate to establish a representative sample.

At Riv-2755, mitigation of anticipated impacts should focus on the north and south loci. Data recovery by manual excavation at both loci is recommended. Each locus is relatively small and should be sampled independently. Excavation of ten to twelve 1 by 2 meter excavation units, should be adequate to establish a representative sample. The area in between the loci could be sampled with ten random units to better define the composition of the scatter and assure that no buried assemblages are missed.

RIV-2797

Riv-2797 will not undergo further significant impacts as a result of the proposed project. Thus, further efforts toward mitigation should be made. If the area of the site is subjected to excavation or erosion, which could expose it, the process should be monitored. If the site is exposed, it should be test excavated and evaluated for significance in accordance with 36 CFR 800.7. Existing documentation strongly implies that the site is significant to scientific studies in the region.

RIV-2803 and RIV-2804

These sites have not been studied and there is not enough information available to recommend final mitigation procedures within the context of the proposed project. They are within a proposed quarry area for the upper Santa Ana River Project. We recommend that both sites be test excavated and evaluated for significance in accordance with 36 CFR 60.4 prior to proceeding with the proposed projects.

SBR-1543

This is one of the most important prehistoric sites known in the region and is the most stratigraphically complex in the project area. It will be impacted by inundation if the proposed project proceeds. It may be impacted by transmission tower construction and by increased recreational use in the future.

SBr-1543 is among the most significant prehistoric sites known in the region because of its research potential. We strongly recommend that this site be preserved as a cultural heritage preserve in the Prado Basin. Additional testing will allow a more clearly defined research potential. Thereafter, it would serve as a resource for future research.

If preservation is not possible, the mitigation plan for this site should include a number of procedures. Manual excavation of a 1 percent sample of the site should be conducted. Excavation should be focused on the south central part of the site where the deposition of aeolian sands have preserved more fragile artifacts and faunal remains in greater quantities than on other parts of the site. This would result in the excavation of 500 to 550 cubic meters of earth. It is expected that smaller excavation units would be used to allow more comprehensive sampling of the area. The 1 by 2 meter units used during this study seem adequate for this purpose. Shoring will be required for some units.

Mechanical trenching should be used to more clearly define site geomorphology. This would be particularly important in determining the relationship between the relatively shallow deposits which cover the hill adjacent to the aeolian sand filled washes on the south side. Similar trenching needs to occur on the west central portion of the site, across the upper portion of the drainage, for the same purpose.

After excavation, the remaining site should be preserved in situ, although exposed to periodic inundation. Farming of the site should exclude ripping or other major subsoiling procedures. No construction should be allowed on the site.

SBR-1570

This "site" is composed of an isolate which could not be relocated during the present study. The site does not offer a potential for future research and we do not believe that it fulfills the criteria of significance within the context of 36 CFR 60.4. Thus, we recommend that the project proceed without further consideration of this resource (Impact Without Study).

SBR-1571

See the discussion of this site in the historic section (SBr-1571H). The prehistoric remains at this site are minimal and do not meet the criteria of significance under 36 CFR 60.4. Thus, we recommend the alternative of "Impact Without Study" for this assemblage.

SBR-2259

This site was impacted and covered by construction in Prado Regional Park. It was unavailable for assessment during this study. We recommend that no action be taken until construction occurs in the vicinity of the site. All construction that modifies the site vicinity (200 meters) should be monitored and if the site is located, it should be test excavated and evaluated for significance in accordance with 36 CFR 800.7. The tenant(s) at this site should be notified and made responsible for assuring that future construction in the vicinity conforms to federal environmental statutes.

SBR-2260

The bedrock feature at this "site" was located in the vicinity of its reported location. It has been recently moved. Since the original location of the specimen could not be determined, no recommendation is made at this time about the location of origin.

We do recommend that the boulder bearing the feature be moved to the San Bernardino County Museum or other location where it can be adequately protected.

SBR-2845

Test excavation at this site indicated that little or no subsurface cultural residue is present at the site. Nor is there evidence that the site can be adequately dated or placed in a cultural context. Therefore, we recommend that mitigation alternative most appropriate for this site within the context of the proposed project is "Impact Without Study".

SBR-5096

SBr-5096 now exists as a heavily damaged site as the result of highway construction and other activity. The portion within the project area does not represent a main locus of activity compared to the artifact scatter on the ridge crest. In fact, it may be composed of slope wash residium from the hill top.

We recommend that further excavation be conducted on that portion of the site in the project area. Manual excavation of five, 1 by 2 meter excavation units, resulting in the removal of five to eight cubic meters of earth, should be enough to provide a representative sample for study. Additional work should include the cutting of one or two backhoe trenches so that the depositional context of the artifacts can be more precisely determined.

SBR-5241

The test excavation at this site indicated that the site has been destroyed by agricultural and residential activity in the past several decades. Thus, we recommend that no further action be taken to protect or document the site (Impact Without Study).

SBR-5242

The status of this site could not be determined. Access was not permitted and the site is on private property. We cannot make recommendations concerning the site at this time. Study should proceed if possible in the future, assuming the site is present and is significant for planning purposes.

SBR-5243

This site will be periodically inundated and is exposed to increased risk of alteration or vandalism because it is located near a camping site within the Prado Regional Park. Also, it is

located within a proposed quarry area for the upper Santa Ana River project, which may result in total destruction of the site. We recommend further excavation of this site. Manual excavation of a one percent sample of the site area as defined should be conducted and should include work in the wash separating the two loci. This would result in the excavation of 40 to 60 cubic meters of earth. Given the artifact density and diversity at the site, we feel that this would provide a sample of redundant (replicative) data for a thorough study of the site. Sampling should be weighted toward the loci rather than spend excessive time examining the wash, which appears to be a sterile division of the site. A backhoe trench in the wash would be an efficient means of examining the geomorphology of that part of the site.

SBR-5244

This site is destroyed. This is known from a verbal account and several specimens. The site area may be impacted without further study.

SBR-5245

SBr-5245 has been previously disturbed in the past by agricultural activities. Despite this evidence, the site still contains information relevant to the understanding of the prehistory of the region. As such, it is recommended that the sample level of the site be brought up to the one percent level through test excavation. This would entail a further 0.75 percent sample (nine 1 by 2 meter units).

ORA-89

Test excavation at Ora-89 indicated that the prehistoric assemblage no longer exists. Thus, the site area may be impacted without further study.

ORA-817

Test excavation by Scientific Resources Surveys (1980) at this site indicated that it is a highly disturbed surface scatter. It is recommended that a monitor be present if this site is to be impacted by the proposed project.

Table 11-1

PRINCIPAL RECOMMENDED MITIGATION STRATEGIES

FOR HISTORIC SITES IN THE PROJECT AREA

Site	Recommendation	Site	Recommendation
Riv-653H	2,5	PB-26	9
Riv-1039	9	PB-27	9
Riv-1044	4	PB-28	9
Riv-2203	4	PB-29	9
Riv-2204	9	PB-30	9
Riv-2278	5	PB-31	9
Riv-2802	4	PB-32	9
SBr-1571H	7	PB-33	9
SBr-2317	1,2	PB-34	9
SAR-H2B	9	PB-35	9
SAR-H2C	9	PB-36	9
PG-1	9	PB-37	9
PF-3	1	PB-38	9
PF-4	9	PB-39	9
PF-5	7	PB-40	9
CSULB1	9	PB-41	2
CSULB2	4	PB-42	9
PB-1	9	PB-43	9
PB-2	9	PB-44	9
PB-3	9	PB-45	9
PB-4	9	PB-46	9
PB-5	9	PB-47	7
PB-6	9	PB-48	9
PB-7	9	PB-49	9
PB-8	9	PB-50	9
PB-9	9	PB-51	9
PB-10	9	PB-52	9
PB-11	10	PB-53	4
PB-12	10	PB-54	9
PB-13	10	PB-55	9
PB-14	10	PB-56	9
PB-15	10	PB-57	9
PB-16	10	PB-58	9
PB-17	10	PB-59	4
PB-18	9	PB-60	9
PB-19	7	PB-61	4
PB-20	7	PB-62	4
PB-21	9	PB-63	9
PB-22	9	PB-64	9
PB-23	9	PB-65	9
PB-24	9	PB-66	9
PB-25	10	PB-67	3,4

Note: See text for explanation of recommendation numbers.

Site	Recommendation	Site	Recommendation
PB-68	9	PB-108	9
PB-69	9	PB-109	9
PB-70	3,4	PB-110	9
PB-71	9	PB-111	9
PB-72	9	PB-112	9
PB-73	9	PB-113	9
PB-74	9	PB-114	9
PB-75	9	PB-115	3
PB-76	9	PB-116	9
PB-77	9	PB-117	9
PB-78	9	PB-118	9
PB-79	9	PB-119	9
PB-80	9	PB-120	9
PB-81	9	PB-121	10
PB-82	9	PB-122	9
PB-83	3,4	PB-123	9
PB-84	3,4	PB-124	9
PB-85	3,4	PB-125	9
PB-86	3	PB-126	9
PB-87	4	PB-127	9
PB-88	9	PB-128	9
PB-89	9	PB-129	9
PB-90	1,2	PB-130	9
PB-91	9	PB-131	10
PB-92	10	PB-132	9
PB-93	7	PB-133	9
PB-94	10	PB-134	9
PB-95	9	PB-135	9
PB-96	10	PB-136	8,1
PB-97	9	PB-137	9
PB-98	9	PB-138	10
PB-99	9	PB-139	9
PB-100	9	PB-140	3,4
PB-101	9	PB-141	3
PB-102	4	PB-142	9
PB-103	10	PB-143	9
PB-104	9	PB-144	9
PB-105	9	PB-145	9
PB-106	9	PB-146	9
PB-107	10	PB-147	3,8

Note: See text for explanation of recommendation numbers.

RIV-653H

The Bandini-Cota Adobe is one of the two best historic archaeological sites representing Californio occupations known in the project area. The test excavation of this site (Greenwood, Frierman and Foster 1983) has shown that it is a valuable and significant cultural resource.

Based on the test excavation of the site, we believe that it is eligible for inclusion in the National Register of Historic Places.

The recommendations tendered as part of the test level study of the site suggest preservation of the site (Greenwood, Frierman and Foster 1983:98-99). The alternatives offered include the erection of an overhead shelter to reduce wall decay from rain, the construction of a coffer or other barrier on the south side to preclude inundation, and the stabilization of walls with fixtures and capping. None of these alternatives will protect the site against the principal anticipated impact of the proposed project or of the flood control basin as it presently exists. Given the elevation of the site which is at approximately 525 feet, the maximum high stand in the flood control basin as it presently exists will cover the site with nearly 7 meters of water. If the proposed project proceeds, this will be increased to nearly 12.5 meters. The minimum necessary barrier needed under these circumstances, is a ring dike exceeding the maximum high stand of the flood waters. At present there is no known chemical stabilization method which would protect the above ground feature against an extensive inundation such as anticipated, although some processes would probably reduce collapse and erosion.

Other potential alternatives are reducing inundation to below the elevation of the structure. These are not considered to be viable since the basin as it exists will inundate the site. The site will probably not be considered of sufficient importance to outweigh the expected public benefits of the proposed project. Two approaches of preservation are possible. One is to stabilize the walls and bury the site in such a fashion that inundation would have a minimal impact. The other would be to pursue protection strategies (overhead shelter, wall stabilization) to prolong the life of the above ground features without protecting it against inundation.

Further excavation and study are recommended for the site (Greenwood, Frierman and Foster 1983:98-101). We concur with this recommendation and suggest that it is the most effective mitigation strategy to be used on this site. Those subject areas discussed by Greenwood, Frierman and Foster (1983:98-101) should be considered a beginning point. The site is a valuable source of data for the study of the decay of the social status of an elite Californio family.

The site might be best used as part of a cultural heritage preserve which includes Riv-653 and Riv-1098. We suggest that the area be used as an archaeological park which provides facilities for public interpretation. A part of this could include ongoing excavation as a display for the public and a source of further research.

Any research should include a focus on the socio-economic aspects of the residence over and above artifact description. Numerous potential research domains can be developed from the prior historical research on the site (Theodoratus Cultural Research Inc. 1983).

RIV-2203

The Fear Ranch site presently consists of the debris of an occupation which ended in the 1920s. The site contains debris of an earlier Hispanic occupation, three decades of occupation by one Anglo family, and a short term occupation by another Anglo family. The site appears largely intact and, because of the location, it has not been severely damaged by agricultural or other activities. Therefore, we feel that it would be a suitable subject for a study of late 19th century farming in the region. The site is potentially useful for the study of the socio-economic status of the inhabitants and their material possessions.

Test level study of this site including sample excavation to determine specific areas of study which could be approached using this site is recommended.

RIV-2778

The Serrano adobe is an important late Californio occupation site. Test excavations indicate the presence of numerous features and artifacts. This site will probably be permanently inundated if a permanent pool is established in the lower basin area. Impacts to this site should be mitigated by a full scale study of the site.

Such a study should include more extensive archival and oral historic research than conducted as part of this project. Interviews of relatives living in Corona, Chino, and Norco should be conducted. A proton magnetometer survey of the site to locate features other than those immediately around the house would cause less disturbance to the green belt around the site than surface scraping by heavy equipment. The house perimeter should be completely exposed with detailed drawings made of the wall and foundation construction. The floor plan should be documented. Physical and chemical studies of the brick and plaster to determine composition and origin are desirable, along with the study of other architectural components. A 50 percent sample of

the interior of the house should allow full documentation of architecture and the recovery of an adequate sample of artifacts.

The features found outside the structure should be fully exposed and documented through planned profile drawings along with increased sampling of each feature. The same documentation should be accorded to newly found features.

The study should be guided by specific architectural and anthropological problems. Such problems as those described in the interim site report (Langenwalter and Brock 1984a) should be a minimum guideline for preparing a research design for studying this site.

Until such a time as a decision for preservation or mitigation of the site is made, the trees outside and inside the structure should be removed to prevent further damage to walls and subsurface deposits.

RIV-2802

Further test level study of this site is recommended. There is an indication that intact subsurface deposits exist on the site. At this time it seems that the site could yield data useful to the documentation and interpretation of the mid-19th century occupation of the region. This site could be best studied through the use of remote sensing and/or the stripping of surface to locate features. The use of a proton magnetometer or similar device would minimize disturbance. Excavation by hand to obtain a sample of artifacts from features and to document any foundation would be desirable. Excavation of a section of what may be the Rincon Ditch to verify that it is the ditch and to document the form of construction would enhance what is presently known about the ditch (Hall 1888; Scott 1977). Archival research of deeds and possibly tax records could result in the identification of the owner (resident) and aspects of site use.

SBR-2317

The Yorba-Slaughter adobe is one of the few remaining relatively intact Californio homes still standing in Southern California. It is a satellite museum of the San Bernardino County Museum, containing exhibits representing Slaughter family activity and early farming activity in the area. The site is considered to have educational, historic, and scientific significance. It is presently listed in the National Register of Historic Places.

Preservation in place is recommended. Occasional inundation resulting from a 100 year flood is the only impact which threatens to damage the site as a result of the proposed project. The most effective method of preservation would be to restrict the maximum taking line of the reservoir to an elevation below

the level of the site. This would be an elevation of less than 558 feet. Other preservation alternatives include relocation of the structure to a higher elevation, or the construction of a ring dike around the structure. A ring dike would have to be more than 2 meters high to effectively protect the site from floodwaters. This would cause a substantial and negative alteration of the visual aspects of the site.

If preservation is not deemed feasible, then the structure should be submitted to a thorough architectural documentation including a study of the adobe brick and plaster through physical and chemical analysis. A complete historical study of the site should be conducted, along with excavation of the exterior of the structure, to recover a sample of material cultural remains and document exterior features. A plan and mechanism to facilitate evacuation of the museum exhibits and personnel prior to inundation should be developed.

PF-3

Relocation of the Lt. Cook Memorial from the construction area east of the dam site to a location above the maximum highwater stand is recommended. The memorial is small enough to be moved intact to an appropriate site where it can be protected and accessed by the local community allowed. This recommendation is suggested as a public service in recognition of the local community, the Boy Scouts, and the nations's servicemen.

CSULB2

While the later occupation of this site is not judged to meet the criteria of significance, there is an earlier mid-19th century occupation at this site which is presently unstudied. This occupation may prove valuable in studying the early occupation of the region, in particular, occupation while the area was still predominantly Hispanic. Therefore, we recommend that a test level excavation be conducted at this site to locate subsurface remains of the initial Hispanic and early Strong occupations. A particular goal of testing should be the location of the original adobe house at the site. The use of remote sensing, rather than heavy equipment to expose subsurface features, would cause the least disturbance to the area. Hand excavation of sufficient excavation units to sample subsurface features and document house foundations is desirable.

Another consideration for this site is the possible presence of burials at the Rincon Union Congregational Church which was located at this site (see discussion of Cemeteries). Recommendation for the cemetery study at this site are included with the recommendation for PB-53 below.

PB-41

The McCarty homestead is the only example of a major farm site established during the late 19th century which still contains, intact, a large portion of its structural features. This includes the original homestead house, now over a century old. This structure is the oldest wood frame building still standing in the project area and adjacent region. The site contains filled privies, a well, and a trash dump as well.

We recommend that the three houses at this site be preserved as examples of regional farm architecture of various periods. The homestead house is presently in an advanced state of decay and in need of stabilization or restoration. Preservation in situ with the other remaining buildings is preferable. If this is not possible, then the site should be fully documented. This can be done by extensive interviews of members of the McCarty family, the use of archival resources and architectural study of the buildings. The homestead house and the new main house built in 1906 could be moved to a new location, such as a historic park. Location of subsurface features (wells, privies, trash pits), and excavation of these to provide a sample of material cultural to supplement historical data, should be carried out.

PB-53

The existence of this cemetery is based on an unverified account. We recommend archival research and physical testing of the site to determine if a cemetery exists. Because of the specialized requirements of this type of study, it would be most efficient to conduct it independently of the conventional archaeological studies of sites in the basin. It would be most cost effective to conduct this research in conjunction with the putative cemetery of CSULB2.

We recommend that research be conducted which is focused on state and local agencies which carry records of cemeteries and on private businesses involved in the interment process. This research may or may not verify the existence of the cemetery and identify some of those interred there. Physical investigation will be necessary to locate graves, determine the number of graves and the cemetery boundary. A proton magnetometer or similar remote sensing study should be conducted prior to excavation as a means of locating graves. Sample graves should then be opened by hand excavation to verify the existence of the burial. If this procedure is ineffective, then augering or trenching may be necessary to determine if graves are or are not present. If the cemetery is verified to exist, federal and state statutes will govern the relocation process mandated by federal statute prior to inundation.

PB-61

This site is important only from the standpoint that if it is associated with a descendant of Fenton Slaughter, it represents one mode of intergenerational land division in the region. We recommend that if this site is to receive impacts other than inundation that the architectural features at the site be fully exposed and drawn. A more extensive study of the history of the occupants than was conducted as part of this study is recommended.

PB-62

The recommendations for this site are the same as for PB-61.

PB-67, 70, 83, 84, 85, 86, 140, 143

These are presently occupied residences consisting of older structures dating to the turn of the century or slightly later. These houses are the only remaining wood frame structures located in the project area which are representative of the types of homes occupied by most farmers in the region between the 1890s and 1940. While general exterior views were made of most of these houses as part of this study, we recommend that these houses be submitted to more detailed architectural documentation in terms of external appearance, internal construction and construction detail. The object of this study is to provide a record of examples of common farm architecture for the region. Such documentation is presently lacking. Instead, those homes in the region which have been documented or preserved are examples of unusual architecture or fine buildings which were built by the well-to-do which are not representative of the average farm building.

Test level excavations are recommended for these sites since it is likely they contain intact subsurface archaeological deposits. Such deposits at these sites are expected to be relatively undisturbed in comparison to other sites in the project area.

PB-87

This cemetery is believed to contain the remains of two or more Native Americans of unknown tribal or linguistic affiliation. Corps regulations require that the content of the cemetery be verified and the remains relocated if the planned project proceeds. The Native American advisors for this project prefer for the burials to remain undisturbed. This is the general viewpoint of Native Americans in the region toward the remains of Native Americans. Since this is probably not possible under the

specific circumstances of the proposed project, we recommend that further work with this site be closely coordinated with representatives of the Native American community.

The circumstances under which the cemetery was established were not determined during this study. Further archival research is recommended for this purpose. A preliminary proton magnetometer survey was conducted of the one acre parcel. This should be extended to a comprehensive survey of the cemetery. If further readings indicate possible burials during a future survey, including the possible burial located as part of this study, plots should be opened to verify the presence of human remains. If this procedure is not successful, then augering or trenching may be necessary to locate the remains. Surface scraping to expose grave pits used in some studies will not be useful because the upper meter of the cemetery has been ripped and the upper grave pits disrupted.

Upon verification of human remains at the site, federal and state statutes governing human interments should be followed. Native American religious requirements should be fully considered when taking action. However, it should be noted that while the individuals interred at the site are believed to be of Native American ancestry, this cannot be construed as an identification of their religious beliefs.

PB-90

The "Rincon Cemetery" is believed to contain the remains of 38 or more individuals based on anomalies recorded during a proton magnetometer survey of the site.

Corps regulations require that this cemetery be relocated prior to inundation. Federal and state statutes govern the relocation process and must be followed. Further recommendations are tendered as part of a separate report on this cemetery (Brock 1985b).

PB-93

This is the cemetery encountered during the construction of the spillway in 1939. The location of this cemetery is unknown. There is a possibility that it is one and the same as PB-90. It would appear that the cemetery was completely destroyed during construction or relocated when found.

Corps regulations require that this cemetery be relocated if it still exists. Federal and state statutes govern the relocation process. Further recommendations are tendered as part of a separate report on this cemetery (Brock 1985b).

PB-102

The Rincon townsite, later known as Prado, was the most substantial settlement in the project area. Although the buildings were removed in 1939, it is probable that a number of trash pits, privies, wells, and other features on the surface and subsurface exist in part of the townsite. One major feature, dating to the early occupation of the vicinity, is the foundation of the adobe house Raymundo Yorba moved to after selling his Buena Vista ranch to Fenton Slaughter (SBr-2317). The townsite is now partly buried and was not evaluated.

We recommend that a limited portion of the townsite be submitted to test level excavations to determine the content of the site, and whether or not it is significant according to the criteria in 36 CFR 60.4. Although much of the townsite is not destroyed, some parts remain undisturbed except for building clearance. The area which should be tested is that portion of the townsite located 20 meters and less south of "Old Highway", and that portion of the townsite located north of the highway where buildings are known to have been located. This area encompasses approximately 10 acres.

Study of the site should include detailed historical research on the townsite. While Desborough's (n.d.) volume on the Rincon District includes considerable information about the town and shows that there is a rich potential for historical documentation, it is incomplete and amateur in scope. A number of subjects could be effectively studied using Rincon as a subject. These include early settlement, the evolution of the small town settlement, the ethnic integration of the community, Rincon as an example of a regional land development scheme of the 1880s, and other subjects.

Testing of the portion of the site indicated above would be most effectively carried out by the opening of large areas using a bulldozer to strip off the 0.5 to more than 1 meter of silt estimated to cover the area. This stripping would serve to expose features. Some structure sites can be located using maps and aerial photography. These could be tested by less destructive methods.

PB-136

This bridge is considered by some researchers to be of historical value. Given the previous evaluations, we recommend preservation through avoidance of impacts if possible. The structure has been previously studied and adequate historical documentation compiled. If it is not feasible to protect the structure, then a detailed architectural study is recommended.

CHAPTER 12

RECOMMENDATIONS FOR FUTURE RESEARCH

INTRODUCTION

This chapter recommends avenues of research which could be addressed in future studies using the archaeological and archival data available for the project area. The subjects mentioned here are those which seem important at the moment. At best these constitute a minimal list of possible subjects. A point which should be given consideration in planning research for this project is the number and variety of resources available for study. This often provides the basis for opportunities not available when one or a few sites are to be studied. An example of this is the occurrence of three types of townsites remaining within the project area from the real estate boom of the 1880s. These represent the range of possible outcomes for these developments: failure, success, and survival without expansion. The extent of the scope of opportunities gives the future phases of research in the project area the potential for making one of the most significant contributions to regional history and archaeology ever contributed by one project.

PREHISTORIC RESEARCH

Prehistoric Settlement

Most of the opportunity for the study of aboriginal settlement patterns with the project area sites is for the Milling Stone and Intermediate Horizons, since later sites are not available. Thus far, we know that settlement was occurring during the later fifth millennium B.C. After this time the area around the confluence of Chino, Mill, and Temescal Creeks with the Santa Ana River flourished. At first, the major settlement seems to have been on the bluffs overlooking the major water courses and adjacent to water sources behind them. Sometime during the Intermediate Horizon, perhaps 2000 years ago, these areas seem to have been abandoned in favor of new settlements. At least during the later part of the Late Horizon, these settlements were located on the Santa Ana River floodplain and immediately adjacent to the smaller water courses at lower elevations.

We believe that the fifth millennium B.C. is too late to have been the time of initial exploration or settlement of the Prado Basin by prehistoric man. It may be that older occupations will be discovered at the known sites as future excavation allows thorough studies to be conducted. Early settlement needs to be pursued on several scores. The period of earliest land use is the least of these. The Prado Basin is in a position intermediate between the coast and desert. A determination of what was happening in the area between 10,000 to 7000 B.P. would contribute to resolving issues about the influence of regional warming on settlement, cultural distribution, and the direction of cultural movement. For instance, was the area settled by peoples moving in from the east to escape the desertification of their homeland?

The relationship between the coast and the inter-mountain valleys of the interior is not established. Within a few thousand years the Lower and Middle reaches of the Santa Ana River would constitute a center of activity around which a culture that employed cogged stones, discoidals, and associated polished stone artifacts lived. Recent study of Ora-64 has provided insight into earlier Milling Stone life on the coast, but what differences might have occurred in the valleys is still unknown.

The prehistoric sites in the basin provide an opportunity to study inter-site variation within a major settlement cluster. Sites of approximately contemporary age vary in size from a few hundred square meters to those containing tens of thousands of square meters. The functional differences between these sites need to be established and the implications of these differences for the regional settlement system considered. We believe that several of the sites, Riv-653, SBr-1543, and the Cogstone Point area (SBr-5096), were major centers of group activity at various times. The apparent occurrence of cogged stones, discoidals, and associated polished stone artifacts at these sites, to the apparent exclusion of smaller sites, suggests to us that these were activity centers of a slightly different class than smaller "village sites". Whether the stones were used for ceremonies or games, these sites constituted the major foci for the activity.

We are inclined to believe that settlements in the region during the Milling Stone and earlier Intermediate Horizons were hierarchically organized into larger sites acting as centers of group activity or political power, lesser village sites satellite to the central villages, camps, and special use sites (collecting and processing stations, etc.). As a starting point, we hypothesize that the cultures living at these sites followed a restricted wandering adaptation. Obviously, these views are substantially different from previous interpretations of Milling Stone Horizon settlement in some respects. However, we believe that the present data suggests this organization of time and space within territorial use. Further study of site function and seasonality in relationship to size, location and complexity of the Prado Basin sites will aid in validating these hypotheses.

Another concern is the relationship between site location and resources. It seems apparent that most of the sites studied are in approximately the same locations and have nearly the same inventory of major processing tools. There does seem to be some distributional differences in mortars to SBr-1543, Riv-2755, and lower elevations. This may reflect the distribution of past resources over the landscape. Future research might more f lly consider several aspects of the relationship between site location and tool inventory in relationship to resource location. In particular, is there significant variation between sites in approximately the same locational contexts which is the result of minor environmental factors such as the location of a specific resource, such as an oak grove? Also, was the shift from the bluffs a result of the transition toward heavier acorn use and lesser hard seed use during the Intermediate Horizon? These questions need to be considered in relation to adjacent areas, in particular the Santa Ana Mountain-Temescal Canyon area and the Chino Hills. The California Department of Parks and Recreation is presently conducting an overview of the Chino Hills which will facilitate this research.

Several aspects of inter-area or inter-locality relationships have been mentioned. Two others seem specifically ripe for study using the Prado Basin sites. One is the organization of the settlement over a broad area in the Chino-Corona area. It is obvious, not only to ourselves, but to other investigators studying the area, that the Prado Basin is a major focus of village sites which probably utilized surrounding uplands, but never established more than camps and processing stations there. Analysis of the spatial and temporal distributions of site types between the different physiographic and environmental areas would be instructive and would allow a fuller development of settlement models for the Chino-Corona region.

Another consideration is whether there is temporal parity between cultural distributions in the region. One possibility to be considered is whether the cogged stone-discoidal "tradition" persisted in the greater Chino-Corona region longer than it did along the coast. This touches on the issue of the persistence of the Milling Stone Horizon (Encinitas Tradition) in some areas while it was replaced along much of the coast. However, the two topics should be considered separately, since it is entirely possible that the principal use of cogged stones is somewhat later than previously believed.

Dating

Precise dating of the prehistoric sites in the Prado Basin will require further study. The radiocarbon dates are instructive and provide an approximate placement of several sites. The SBr-5096 date is not consonant with the believed temporal placement based

on the artifact types from the site. More extensive radiocarbon dating will allow a better understanding of the duration and age of the occupations.

Obsidian hydration studies will aid in these projects. One aspect of obsidian hydration studies which needs to be checked is the rate of hydration. The preliminary dates calculated for the sites yielding obsidian in the project area appear to be young compared to the assemblages from which they originate. A number of other researchers are dissatisfied with the rates utilized and suggest that further study is needed (H. Koerper, personal communication). We suggest that samples taken from the Prado Basin sites be calibrated with radiocarbon dates from the same context, if possible, to check the accuracy of hydration rates.

Trade

Santa Ana Canyon is considered to have been a major conduit for prehistoric trade moving between the interior and the coast. The artifactual and ecofactual remains from the prehistoric sites in the Prado Basin do show that a number of materials did move into the project area from external sources, all presumably through trade. Shells, and possibly, shell objects originating on the coast were moving into the area by ca. 6200 B.P. during the early Milling Stone Horizon. Thus far only raw shell is known to have moved into the area. Further study is needed to determine if the trade included finished products and if both raw shell and shell products moved into the area simultaneously. Also, the temporal variations in shell trade need to be studied.

Several forms of chert are present in the Prado Basin sites. The jaspers among these are believed to originate on the Mojave Desert. This source of chert occurs through the entire known sequence of prehistoric occupation. In contrast, banded or Monterey chert, which can be obtained as nearby as central Orange County has been limited in distribution to later assemblages. It seems incongruous that chert from a closer source would not be utilized at the same time as that from more distant sources. The period of the initial entry of this form of chert into the area needs to be determined. Variations in inter-group relationships and the direction of trade may be reflected in the presence or absence of the more readily available banded chert.

Trade in obsidian in the project area is well documented. The point in time when it was begun is not established. The sources are at least partly known. Most of the obsidian comes from the Coso area, although the only Late Horizon obsidian is from Obsidian Buttes in southeastern California. This suggests that there may have been a shift in the source of supply as some point. Was this a significant shift and when did it occur?

Another aspect of the trade in stone used in chipped stone tools is whether it was traded as raw material, as finished products,

or both. The form in which these materials were traded may reflect the structure of trade relationships. Trade in materials from closer sources may have been more direct, involving fewer intermediaries. The transportation of larger quantities of material in raw form or as pre-forms would have been more likely to occur locally than from more distant sources which involved a more complex trade network. Finished items, having a higher value, are more likely to have been traded from the more distant sources. These would have had a higher value relative to weight, thus defraying the cost of increased transportation.

Although steatite was not found during the test excavations, a number of steatite artifacts from the area are present in the Newman Collection (Appendix C). The types of steatite observed in that collection originate from Santa Catalina and central San Diego County. The items manufactured from these materials (bowls, sucking tubes) are late forms. It would seem that the trade of steatite and steatite objects into the Prado Basin was a late phenomenon. Further excavation may show earlier use of steatite and the initial source of supply.

Biological Studies

Relatively few faunal remains were recovered from most of the prehistoric sites tested. The potential for the study of floral remains has not been determined. The analysis of flotation samples will be necessary to determine if macrobotanical and pollen analyses are possible and potentially valuable. If they are, they should be used to study prehistoric environmental factors and aboriginal plant use.

The faunal samples can be used for a variety of studies. Potentially addressable research topics are procurement, animal selection, procurement areas, animal uses, animal product types and forms, and processing patterns (butchering, cooking, manufacturing).

At this time, few sophisticated analyses of faunal remains have been carried out on Milling Stone and Intermediate Horizon sites, thus little is known about animal procurement and use patterns for these periods. The faunal remains from some of the sites (eg. Riv-2754 and SBr-1543) indicate that studies of animal use for these periods will be possible. Basic use patterns for the topical areas described above need to be described, then more specific questions addressed. One basic question for the region is whether the same maximization strategies are used in inland inter mountain valley areas as are used in coastal and upland areas (cf. Langenwalter 1978; Drover, Koerper and Langenwalter 1983). Another is how animal use varies between coastal, desert, and intermediate areas. What implications would this have for defining regional synchronic animal user patterns for the periods represented?

Some evidence of ritual animal use was found at Riv-2754. This aspect of animal use should be specifically studied to determine whether inferences about the early occurrence of ritual animal use can be made and what kinds of ceremonial activities were occurring during the Milling Stone and Intermediate Horizons.

Another area of potential research is the analysis of protein, lipid, and blood residues on various tools to determine tool functions. This has been discussed in the Mitigation Recommendations chapter.

Artifact Studies

The investigation of aspects of several artifact forms appears to be applicable to the prehistoric sites in the project area. Brock has hypothesized that the Type 6 mano and deep basin metate may be restricted to the late Milling Stone Horizon and useful as temporal markers. The temporal placement of these artifact forms needs to be examined in more detail to validate the hypothesis.

Similarly, there is a need to determine more precisely the temporal distribution of the early projectile points described in this study. The poorly-made, thick-bodied, leaf-shaped forms are of particular concern. The form is presently seen as transitional Milling Stone Horizon to Intermediate Horizon in placement. The evidence from this study, albeit marginal, implies that it is an Intermediate Horizon form only.

The temporal distribution of the use of schist should be further considered to determine if it is restricted to late Milling Stone Horizon contexts in the project area. Other sites, Riv-653, SBr-1543, and SBr-5096, could provide sufficient radiocarbon and obsidian hydration dates to aid in determining the temporal placement of cogged stones, discoidals, and stone balls in the interior valley area. Based on this study, we are inclined to think that cogged stones may persist later than previously believed. The greatest diversity in cogged stone forms may have occurred during the early Intermediate or at the Milling Stone-Intermediate Horizons boundary. Cogged stones belonging to earlier assemblages may be limited to one or a few forms, such as the "Fish Vertebra" type.

Other potential specialized studies are possible. Defining the bead types associated with Milling Stone and Intermediate Horizon occupations is one study. Another is the association of specific tool types with variations in site types. Edgewear analysis would provide information about lithic tool formation as would the analysis of biological residues discussed in the recommendations chapter.

Stratigraphic Studies

Sites Riv-653 and SBr-1543 are both exceedingly large activity areas of multi-purpose functions which we consider to be villages. Sites of this size frequently contain horizontal stratigraphy which needs careful consideration when research designs are being generated, and in sampling, observation, and analysis. Riv-653 in particular appears to be intact below the plow zone. This may well provide the opportunity to document an example of a Milling Stone Horizon village plan. Earlier sites where this potential exists are uncommon at best. Virtually nothing is known about the inter-site spacial organization of these sites. We suggest that large area exposures and hand excavated trenches would be a necessary part of future excavations at these sites for the purpose of facilitating study of the internal organization of space within the large village sites.

HISTORIC RESEARCH

Settlement Patterns

A wide variety of potential research areas exist for historic settlement studies. Not the least is the initial Californio occupation of the Chino-Corona region. The number of earlier Californio house sites documented in this study suggests that small occupations (farms, etc.) may have been established earlier that previously supposed. Moreover, is it possible that some of these predate the establishment of the ranchos? This question will probably not be easily settled. There is the chance that early Spanish occupations at the Serrano adobe, and Fear and Strong ranches may belong to earlier periods than expected, based on existing documentation.

A major trend in the region clearly interpretable from the sites in the project area is the continual increase in population density with concurrent site specialization and reduction of the size of property holdings. The trend toward population increase began when the area was divided into ranchos during the Mexican Period. This was followed by the reduction of land-holding size as the ranchos were partitioned and divided in the late 19th century. This trend continued in the project area until 1940, when the area was cleared and was accompanied by a continual increase in specialized occupation sites (stores, schools, churches, cheese factories, etc.).

Several aspects of these trends deserve study. The population distribution on the ranchos is not known during the time when they were being divided and sold. This can be studied to some extent through assessors records and deeds. The nature of smaller early Anglo occupation's like those of Caleb, Younts, Sparks, and Goldschmidt, is unknown.

The "Boom of the 80s" facilitated the establishment of several townsites. The histories of these should be more thoroughly studied, perhaps with the object of determining why adjacent townsites prospered, while some became small hamlets or failed. Rincon would be an excellent subject for this kind of study.

The specific uses of land in the Prado Basin through time have been controlled to a considerable extent by physiography. Those areas on flood plains adjacent to water courses have been irrigation farmed, while the lands at higher elevations have been either dry farmed or used for grazing. The way in which this influenced the distribution of early occupations in the area requires further study.

A considerable body of data on the development of irrigation and water use along the lower Santa Ana River exists. This data provides considerable information about the impact of irrigation on the development of the lands adjacent to the river, as well as an outline of the impact of this on regional history. Further study of this subject would aid in determining how local land use was shaped by irrigation in the project area.

Irrigation rights were frequently subject to litigation, since most irrigation ditches were shared by several land-holders. Examination of irrigation records, including court records and titles, could be used to study conflict and cohesion within the local and regional communities.

Architecture

Studies of several architectural types are possible with the historic sites in the project area. One area of study is Californio adobe house architecture. At least three (Yorba-Slaughter Adobe, Bandini-Cota Adobe, Serrano's Rincon House) and perhaps as many as six adobe structures will be available for study. Variation in house styles, construction details, construction materials, size, and use of space could be addressed. These structures were built at different times and by individuals of varying economic and social position. The interrelationship between socio-economic factors, period of construction, and the attributes of style, construction, and use would be valid areas for comparative studies.

There seems to be a trend toward simpler house styles in the area through time, and there is an obvious relationship between wealth and house size. How did this affect the use of space? Another trend is the addition of rooms through later construction to accommodate increased family size, for other reasons. What architectural factors might have influenced the selection of the mode of new construction (new wings, porch enclosure, etc.) utilized? Problems of this type would require comparative studies of the buildings in the project area with buildings in other areas.

Another type of comparative study which is applicable is the possible influence of family tradition on house form. Comparison of floor plans and photographs of several Serrano family houses suggests that there are some similarities in organization and style. This differs from the variability of houses built by Antonio Lugo. Are there traditions of architecture in Californio house construction and if so, how might these have been influenced by various socio-economic factors.

Building materials studies could be used for a variety of purposes. Brick analysis would yield data about the sources and location of the soils used. The types of binders frequently vary and may indicate different resource uses. Several studies have been conducted which used the remains of binders to study local environments and the introduction of domestic plants. Studies of plaster, mortar, wood, and window glass would aid in defining construction details. The source of lime mortar and the method of production may be determined through chemical and physical analysis of plaster.

A number of American Period wood frame structures, representative of late 19th and early 20th century farm architecture, are located in the project area. These range from a small board and batton structure to a relatively complex two story house. These could be used to document the types of farm architecture common in the region during the period between 1880 and 1930. Together they would provide the basis for defining the range of variation in such structures.

The details and materials of construction could be determined. Most of the available structures are simple buildings of a type rarely documented. Within the region, the more elaborate houses of wealthy or prominent persons have been documented or preserved, even though they are less representative of the regional architecture. Study of the wood frame houses in the project area would fill a gap in the regional architectural history.

Material Culture

The tools, personal possessions, and items of everyday use common to Californio and early Anglo farming households in the study region are not well known. Historical studies of the Californios often speak of opulent furnishings and possessions. In contrast, those Californio sites excavated have yielded mostly common items. Moreover, some studies, like that of the Bandini-Cota house, indicate late trends toward the use of less expensive items because of dwindling wealth.

An archaeological study of the array of Californio possessions and the quality of those possessions is needed to establish what is representative of this social group. Appropriate to this

would be the comparative study of possessions of families of different socio-economic status (eg. Cotas and Serranos). If materials from sites located within the project area are used exclusively, then such a study may be limited to the period at the end of the 19th century. Comparisons with material remains from sites over a wider area should allow inferences about a wider time span and changes through time.

Similar studies are needed to determine the nature of Anglo material culture in the pioneering, early, and later phases of farming. This will allow the study of ethnic differences, status, acculturation, and culture change which cannot be done in any detailed way with historical records alone. In some cases this data could be used to examine how different groups within the study region responded to broader patterns of American history, such as general economic changes, and political and social trends.

Biological Studies

A number of related studies can be profitably addressed using the occasional plant remains and frequently-abundant animal remains seen in the sites test excavated. Several aspects of procurement strategies might be examined. While most resources will be farm products, some will be imported and others procured through local hunting. How does this structure the overall procurement system? Do strategies differ between ethnic groups or through time? These questions along with the identification of procurement areas and procurement networks may be possible with the samples at some sites.

The selection pattern is a significant research topic which can be addressed with adequate sampling. The principal questions which need answers for each ethnic group and for various periods are, What array of species are selected for use and why? Based on the Serrano house (Riv-2778) sample, Langenwalter hypothesizes that the selection of food animals was modified among the Californios as the result in a shift from a cattle economy to a sheep economy. Is this correct? If it is, then what are the specific attributes of this change in adaptation?

Another consideration is whether there is inter-group variation resulting in status or economic differences (eg. between the Cotas and Serranos).

Allied to this topical area are the study of animal uses, the types and forms of products used, and the methods used in processing. Some data on manufacturing and cooking processes is normally available from the analysis of historic faunal samples. The analysis of butchering as a process is usually the most profitable subject area and one which can be studied in moderate detail given the evidence seen at the sites test excavated. There is a need for the description of the attributes of

butchering and the tool kits utilized. This is particularly important where variation between ethnic groups and changes through time are concerned. Based on the Serrano house study, there appears to be acculturation of the ax-cleaver butchering tradition which the Californios inherited from their colonial Spanish heritage. This change requires detailed study to determine how it modified the butchering process and the implications for inter-cultural contact through time.

Ethnicity and status studies have become popular in recent years. Areas of study which appear to be possible with the sites in the study area include the ethnicity of subsistence between the social groups present, and inter-group and intra-group status differences. One particular area of study which is needed is to determine the potential for the use of faunal samples in defining ethnicity when the study group is undergoing adaptive changes.

Studies of Specific Individuals

A number of individuals and ranches in the project area are suitable subjects for the study of specific aspects of regional history. Raymundo Yorba and Francisco Serrano, along with their immediate families, would be excellent subjects for case studies similar to the one conducted on the Cotas and Bandini-Cota Adobe. The object of such studies would not be to duplicate the ground previously covered by the Cota study, but to provide information about the diversity of second and third generation Californios in different socio-economic contexts. This would allow a clearer and more detailed understanding of Californio history. Similar types of studies could be done for the Slaughter and the McCarty families as examples of Anglo farmers who had a significant impact on the earlier history of the project area. The data available for the McCarty homestead is particularly suited for such a study.

Aboriginal Studies

One potential area of study is the historic activity of Native Americans in the Chino-Corona region. This area of regional history is not well documented. Greenwood, Frierman and Foster (1983:101-102) recommended such study for the relationship between the Bandini-Cota Adobe occupation and the surrounding aboriginal occupation site of Riv-653. Unfortunately, the Riv-653 occupation appears to be ancient, which would preclude such a study. Still that possibility exists and this subject area might be studied at other sites in the area. Some aboriginal remains were found at the Serrano house and may occur at other earlier Californio occupation sites.

Study of Specific Artifact Types

At least one historic artifact form requires detailed consideration. This is the Mission Ware (Brown Ware) found at the Bandini-Cota Adobe, Serrano house, and Riv-2802. This ware is believed to have been out of production by the 1860s. However, the contextual evidence, particularly from the Serrano house, suggests later use. Future studies of sites where this type of ceramic is found should attempt to determine the terminal date of the use of this ware.

Many other types of artifact-specific problems may be approached using the assemblages from sites within the project area. Some could contribute to information about manufacture, use, function, and temporal placement. Several types of this kind of study are recommended in the study of the Bandini-Cota Adobe (Greenwood, Frierman and Foster 1984:100).

REFERENCES CITED

Advisory Council on Historic Preservation
1980 Treatment of Archeological Properties: A Handbook (draft). Advisory Council on Historic Preservation, Washington.

Anonymous
1961 Serrano Grandchildren Live Quietly in Norco. Corona Daily Independent, May 4, 1961.

Anonymous
1962 Chino Valley Where Everything Grows. East Side Thimble Club, Chino, California.

Antevs, Ernst
1948 The Great Basin, with Emphasis on Glacial and Postglacial Times. University of Utah, Bulletin 38:168-191.

Antevs, Ernst
1953 On Division of the Last 20,000 Years. University of California Archaeological Survey Reports 22:5-8. Berkeley.

Antevs, Ernst
1955 Geologic-Climatic Dating in the West. American Antiquity 20(4):317-335.

Archaeological Research, Inc.
1973 Report of a Scientific Resources Survey and Inventory: Conducted for the City of Huntington Beach, California. Ms. on file, Archaeological Survey, U.C.L.A.

Archaeological Research, Inc.
1977 Report on Archaeological Record Search and Field Survey of the Diemer Pipeline. Ms. on file, Archaeological Survey, U.C.L.A.

Bada, I. L., R. A. Schroeder, and G. F. Carter
1974 New Evidence for the Antiquity of Man in North America Deduced from Aspartic Acid Racemization. Science 184:791-793.

Bailey, Harry P.
1966 Weather of Southern California. University of California Press, Berkeley.

Bean, L. J. and K. S. Saubel
1972 Temalpakh: Cahuilla Indian Knowledge and Usage of Plants. Malki Museum, Banning.

Bean, L. J. and C. R. Smith
1978 Gabrielino. In Handbook of North American Indians: California, Vol.8, edited by R. F. Heizer, pp. 538-549. Smithsonian Institution, Washington.

Beardsley, R. K., P. Holer, A. D. Krieger, B. S. Meggers, J. G. Rinaldo, and P. Kutsche
1956 Functional and Evolutionary Implications of Community Patterning. Memoirs of the Society for American Archaeology 11:129-157.

Beattie, G. W. and H. R. Beattie
1939 Heritage of the Valley, San Bernardino's First Century. San Pasqual Press, Pasadena.

Beattie, G. W. and H. R. Beattie
1951 Heritage of the Valley, San Bernardino's First Century. Brobooks, Oakland, California.

Berger, R., R. Protsch, R. Reynolds, C. Rozaire, and J. Sachey
1971 New Radiocarbon Dates Based on Bone Collagen of California Paleoindians. Contribution of the University of California Archaeological Research Facility, No. 12. Berkeley.

Bettinger, Robert L.
1974 Dating the Perris Reservoir Assemblages. In Perris Reservoir Archaeology: Late Prehistoric Demographic Change in Southeastern California, edited by J. F. O'Connell, P.J. Wilke, T.F. King, and C.L. Mix. pp. 159-162. Department of Parks and Recreation, Archaeological Report 14, Sacramento.

Bettinger, Robert
1978 Humboldt Basal-notched Bifaces as Time Markers in the Western Great Basin. Tebiwa 10:1-7.

Bickel, Polly
1978 Changing Sea Levels Along the California Coast: Anthropological Implications. Journal of California Anthropology 5(1):6-20.

Binford, Lewis R.
1964 A Consideration of Archaeological Research Design. American Antiquity 29:425-441.

Blackburn, Thomas
1963 Ethnohistoric Descriptions of Gabrielino Material Culture. U.C.L.A. Archaeological Survey Annual Report (5):1-50.

Brock, James
1982 Beads, Ornaments, and Shell Artifacts from the Daon Site. Ms. on file, Archaeological Advisory Group, Newport Beach.

Brock, James
1984 Archaeological Assessment Report for Proposed Sanitary Landfill Expansion Adjacent to the Spadra Landfill, Los Angeles County. Ms. on file, Archaeological Advisory Group, Newport Beach.

Brock, James
1985a Ceramics from CA-Ora-1031H. In Excavations in Early Santa Ana: the OCTD Terminal Site, edited by James Brock, pp. 240-293. Ms. on file, Archaeological Advisory Group, Newport Beach.

Brock, James
1985b Preliminary Investigations of the Rincon and Spillway Cemetery Sites in the Prado Basin. Ms. on file, U.S. Army Corps of Engineers, Los Angeles.

Brown, J. and J. Boyd
1922 History of San Bernardino and Riverside Counties, Vol. 1. Lewis Publishing Company, Chicago.

California Department of Parks and Recreation
1981 California Historical Landmarks. California Department of Parks and Recreation, Sacramento.

Chapman, Charles E.
1921 A History of California: The Spanish Period. The MacMillan Company, New York.

Cleland, Robert G.
1951 Cattle on A Thousand Hills: Southern California 1850-1880. Huntington Library, San Marino, California.

Cochran, G. E.
1965 Shoshonean Migrations into Southern California: A Hypothesis and Its Treatment. Unpublished thesis, Department of Anthropology, University of California, Riverside.

Cochran, W., F. Mosteller, and J. Tukey
1954 Principles of Sampling. Journal of the American Statistical Association 49:13-35.

Collins, Michael B.
1975 Lithic Technology as a Means of Processual Inference. In Lithic Technology, edited by E. Swanson, pp. 15-34. Mouton, The Hague.

Conkling, R. P. and M. B. Conkling
1947 The Butterfield Overland Mail 1857-1869, 3 Vols. Arthur H. Clark Company, Glendale, California.

Cottrell, Marie G.
1977 Letter to Phillips, Brandt and Reddick dated August 5, 1977.

Cottrell, Marie G.
1983 Survey Conducted for Santiago Oaks Regional Park, County of Orange, California. Ms. on file, Pacific Coast Archaeological Society, Costa Mesa, California.

Crew, H., J. Brock, and P. E. Langenwalter II
1983 Research Plan for Phase II Archaeological Studies, Prado Basin and the Lower Santa Ana River. Ms. on file, U.S. Army Corps of Engineers, Los Angeles.

Culin, Stewart
1907 Games of the North American Indians. Twenty-Fourth Annual Report of the Bureau of American Ethnology to the Smithsonian Institution 1902-1903 by William H. Holmes, Chief. Government Printing Office, Washington, D.C.

Cultural Systems Research, Inc.
1979 Cultural Resources and the Transmission Line from San Onofre to Santiago Substation and Black Star Canyon. Southern California Edison, Rosemead, California.

D'Altroy, T. and E. G. Stickel
1980 Santa Ana River and Santiago Creek: A Cultural Resources Survey. Ms. on file, U.S. Army Corps of Engineers, Los Angeles District.

Desautels, R. J. and M. A. Roeder
1978 Archaeological Report on the Proposed Orange County Water District "Green Acres" Reclamation Project Located in the Costa Mesa/Huntington Beach Area of the County of Orange California. Ms. on file, County of Orange, Santa Ana, California.

Desborough, Christina F.
n.d. Rincon's One Hundred Years, 1839-1939: From Mexican Grant to Flood Control Area. Ms. on file, Corona Public Library, Heritage Room, Corona, California.

Dillon, Brian D.
1978 Millingstone Sites at Oak Park: Ven-123, Ven-44, and Ven-124. In The Archaeology of Oak Park, Ventura County, California, Vol. I, edited by C.W. Clewlow, H.F. Wells, and A.G. Pastron. Monograph V., Institute of Archaeology, U.C.L.A.

Drover, Christopher E.
1976 Letter report on an archaeological survey of Santiago Creek. Ms. on file, County of Orange, Santa Ana, California.

Drover, C. E. and J. N. Spain
1972 An Early, Articulated Inhumation from 4-ORA-64: A Discussion. Pacific Coast Archaeological Society Quarterly 6(4):61-66.

Drover, C. E., H. C. Koerper and P. E. Langenwalter II
1983 Early Holocene Haman Adaptation on the Southern California Coast: A Summary Report of Investigations at the Irvine Site (Ca-Ora-64), Newport Bay, Orange County, California. Pacific Coast Archaeological Society Quarterly 19(3&4):1-84.

Dumke, Glenn S.
1944 The Boom of the Eighties in Southern California. Huntington Library, San Marino.

Eberhart, Hal
1961 The Cogged Stones of Southern California. American Antiquity 26(3):361-370.

Emery, Karl O.
1969 The Continental Shelves. Scientific American 221(3):106-122.

Emmet, B. (editor)
1969 Montgomery Ward and Co., Catalogue and Buyer's Guide No. 57, Spring and Summer 1895. Dover Publications, Inc., New York.

Engelhardt, Fr. Zephyrin, O.F.M.
1908-1915 The Missions and Missionaries of California, 4 Vols. James H. Barry Co., San Francisco.

Engelhardt, Fr. Zephyrin, O.F.M.
1927a San Gabriel Mission and the Beginning of Los Angeles. Mission San Gabriel, San Gabriel, California.

Engelhardt, Fr. Zephyrin, O.F.M.
1927b Mission San Fernando Rey. Franciscan Herald Press, Chicago.

Environmental Impact Reports, Inc.
1974 Environmental Feasibility Study of a Marina along the East Bank of the Santa Ana River. Ms. of file, Research Library, Pacific Coast Archaeological Society, Costa Mesa.

Ericson, J. E.
1978 Obsidian Hydration Dating in California. Society for California Archaeology Occasional Paper in Method and Theory 2:43-54.

Ernsberger, J. and R. Ritter
1972 The Story of Chino. Chino Unified School District, Chino.

Flayderman, N.
1977 Flayderman's Guide to Antique American Firearms and Their Values. DBI books, Inc., Northfield, Illinois.

Fredrickson, D. A. and J. Grossman
1966 Radiocarbon Dating of an Early Site at Buena Vista Lake, California. Unpublished Manuscript in authors' possession.

Fredrickson, D. A. and J. Grossman
1977 A San Diequito Component at Buena Vista Lake, California. Journal of California Anthropology 4(2):173-190.

Frierman, Jay D.
1982 The Ontiveros Adobe: Early Rancho Life in Alta California. Redevelopment Agency, City of Santa Fe Springs.

Fryer, R. M.
1935 The Butterfield Stage Route and Other Historical Routes Eastward from Los Angeles. Historical Society of Southern California Quarterly 17.

Garner, W. T.
1967 Arcadia and the Forgotten Guapa. Jurupa Mountains Cultural Center, Quarterly 3(1).

Gates, W. C., Jr. and D. E. Ormerod
1982 The East Liverpool, Ohio, Pottery District. Historical Archaeology 16(1-2):1-358.

Gibson, Robert O.
1973 On the nature of beads. Ms. on the file, Pacific Coast Archaeological Society Research Library, Costa Mesa.

Gifford, E. W.
1940 Californian Bone Artifacts. University of California Anthropological Records 3(2):153-237. Berkeley.

Gould, J. W.
1936 The Butterfield Stage Station at "Laguna Grande". Historical Society of Southern California Quarterly 18.

Grantham
1876 A Map of Various Properties Surveyed in Township No. 3 South, Range No. 7 West, San Bernardino Meridian. Map on file, U.S. Bureau of Land Management Map Files (Available at University of California, Riverside).

Greenwood, Roberta S.
1969 The Browne Site: Early Milling Stone Horizon in Southern California. Memoirs of the Society for American Archaeology No. 23.

Greenwood, R. S. and J. M. Foster
1980 Cultural Resource Overview for the Serrano Substitution to Mira Loma Substation Transmission Route Alternatives Corridor Right-of-Way. Ms. on file, Southern California Edison, Rosemead, California.

Greenwood, R. S., J. D. Frierman, and J. M. Foster
1983 The Bandini-Cota Adobe, Prado Dam, Riverside County, California. Ms. on file, U.S. Army Corps of Engineers, Los Angeles.

Gust, Sherri M.
1982 Faunal Analysis and Butchering. In J. D. Frierman, The Ontiveros Adobe: Early Rancho Life in Alta California. Redevelopment Agency, City of Santa Fe Springs.

Haggett, P.
1965 Locational Analysis in Human Geography. Edward Arnold, London.

Hall, Matthew C.
1975 Santa Ana River Project Description and Evaluation of Cultural Resources Appendices: Field Data. Ms. on file, U.S. Army Corps of Engineers, Los Angeles.

Hall, W. H.
1888 Irrigation in California (Southern). The Second Part of Report of the State Engineer of California on Irrigation and the Irrigation Question. State Office, Superintendent State Printing, Sacramento.

Hammond, Stephen R.
1978 Cultural Resources Survey Report for the Proposed Route 15 Transportation Facility Between Magnolia Avenue in the City of Corona and the Route 60 Freeway, Riverside and San Bernardino Counties. For U.S. Dept. of Transportation, Federal Highway Administration and State of California, Dept. of Transportation, District 08.

Hancock, H.
1858 Plat of the Rancho Canon de Santa Ana, finally confirmed to Bernardo Yorba. Map on file, San Bernardino County Surveyor's Office, San Bernardino, California.

Hansen, G. and A. Solano
1882 Rancho La Sierra in the County of San Bernardino, California. Parts allotted to Tomas Yorba, Concepcion Serrano de Yorba, Maria Jesus Shorb. Map on file, San Bernardino County Surveyor's Office, San Bernardino, California.

Harrington, John P.
1934 A New Original Version of Boscana's Historical Account of the San Juan Capistrano Indians of Southern California. Smithsonian Miscellaneous Collections, 92(4). Washington, D.C.

Harrington, John P.
1942 Culture Element Distributions: XIX, Central California Coast. University of California, Anthropological Records, 7(1). Berkeley.

Haynes, C. V., D. C. Grey, D. E. Damon, and R. Bennett
1967 Arizona Radiocarbon Dates VII. Radiocarbon 9. New Haven.

Heizer, Robert F.
1968 The Indians of Los Angeles County: Hugo Reid's Letters of 1852. Southwest Museum Papers 21.

Herskovits, Robert M.
1978 Fort Bowie Material Culture. Anthropological Papers of the University of Arizona 31.

Historical Society of Pomona Valley
1972 Memoirs of Julia Slaughter Fuqua and Biography of Fenton Mercer Slaugher, 1939. San Bernardino County Museum Association. Quarterly 19(3).

Hopkins, Nicholas A.
1965 Great Basin Prehistory and Uto-Aztecan. American Antiquity 31(1):48-60.

Hudson, Dee T.
1969 The Archaeological Investigation during 1935 and 1937 at Ora-237, Ora-238, and Ora-239, Santiago Canyon, Orange County, California. Pacific Coast Archaeological Society Quarterly 5(1):1-68.

Hudson, Dee T.
1971 Proto-Gabrielino Patterns of Territorial Organization in South Coastal California. Pacific Coast Archaeological Society, Quarterly 7(2):49-76.

Humphrey, Richard V.
1969 Clay Pipes from Old Sacramento. Historical Archaeology 3:12-33

Ingersoll, Luther A.
1904 Ingersoll's Century Annals of San Bernardino County, 1769-1904. Los Angeles.

Israel, F. L. (editor)
1968 1897 Sears Roebuck Catalogue. Chelsea House Publishers, New York.

Johnson, Mark
1980 Archaeological Investigations at Ven-271. In Inland Chumash Archaeological Investigations, edited by D. S. Whitley, E. L. McCann, and C. W. Clewlow. Monograph XV, Institute of Archaeology, U.C.L.A.

Johnston, Bernice E.
1962 California's Gabrielino Indians. Southwest Museum, Los Angeles.

King, Chester
n.d. The Evolution of Chumash Society: A Comparative Study of Artifacts Used in Social System Maintenance in the Santa Barbara Channel Region Before A.D. 1804 (draft). Ms. on file, Pacific Coast Archaeological Society Research Library, Costa Mesa. 1967 The Sweetwater Mesa Site (LAn-267) and Its Place in Southern California Prehistory. University of California, Los Angeles, Archaeological Survey Annual Report 9:25-76.

Kirkish, Alex
1972 A Preliminary Site Report on the Salvage Excavations at the Bovine Site, 4 Riv 652. Ms. on file, Archaeological Research Unit, U.C. Riverside.

Koerper, Henry C.
1979 On the Question of the Chronological Placement of Shoshonean Presence in Orange County, California. Pacific Coast Archaeological Society Quarterly 15(3):69-94.

Koerper, Henry C.
1981a Prehistoric Subsistence and Settlement in the Newport Bay Area and Environs, Orange County, California. Unpublished PhD dissertation, Department of Anthropology, University of California, Riverside.

Koerper, Henry C.
1981b Projectile Styles and Cultural Traditions: Some notes from Coastal Orange County. Paper presented at the 1981 Annual Meeting of the Southwestern Anthropological Association, Santa Barbara.

Koerper, H. C. and C. E. Drover
1983 Chronology Building for Coastal Orange County: The Case from Ora-119-A. Pacific Coast Archaeological Society Quarterly 19(2):1-31.

Koerper, H. C. and P. E. Langenwalter II
n.d. Adaptive Strategies in the Prehistoric Newport Bay Area: The Evidence from CA-Ora-119-A. In preparation.

Kowta, Makoto
1969 The Sayles Complex: A Late Milling Stone Assemblage from Cajon Pass and the Ecological Implications of Its Scraper Planes. University of California Publications in Anthropology 6, Berkeley.

Kroeber, Alfred L.
1925 Handbook of the Indians of California. Bureau of American Ethnology, Bulletin 78. Government Printing Office, Washington.

Lando, Richard P.
1978 Ethnographic Summary for the Proposed Route 15 Transportation Facility 08-Riv, SBD-15, Post Mile 40.4/51.5. In Cultural Resources Survey for the Proposed Route 15 Transportation Facility by Stephen R. Hammond, for California, Department of Transportation, San Bernardino.

Langenwalter, Paul E. II
n.d. Aboriginal Dogs on the Fresno River. Unpublished manuscript in the author's possession.

Langenwalter, Paul E. II
1980 The Archaeology of 19th Century Chinese Subsistence at the Lower China Store, Madera County, California in Archaeological Perspectives on Ethnicity in America, edited by R. L. Schuyler, pp. 102-112. Baywood Publishing Company, New York.

Langenwalter, Paul E. II
1983 Bone Artifacts in Archaeological Studies at Oro Grande Mojave Desert, California, edited by C. H. Rector, J. D. Swenson and P. J. Wilke. San Bernardino County Museum Association, Redlands.

Langenwalter, P. E., II and J. P. Brock
1984a Interim Report on the Preliminary Archaeological Study of Francisco Serrano's Rincon House. Ms. on file, U.S. Army Corps of Engineers, Los Angeles.

Langenwalter, P. E., II and J. P. Brock
1984b The Samuel Evans Cogged Stone Research. Pacific Coast Archaeological Society, Quarterly 20(2):77-80.

Langenwalter, P. E., R. E. Langenwalter and J. G. Strand
1983 Analysis of Vertebrate Animal Remains and Implications for Aboriginal Subsistence. In Archaeological Studies at Oro Grande, Mojave Desert, California, edited by C. H. Rector, J. D. Swenson, and P. J. Wilke, pp. 109-138. San Bernardino County Museum Association, Redlands.

Lenoir, M.
1975 Remark on Fragment with Lanquette Fractures. In Lithic Technology: Making and Using Stone Tools, edited by E. Swanson. Mounton, The Hague.

Leonard, N. Nelson, III
1971 Natural and Social Environments of the Santa Monica Mountains (6000 B.C. to A.D. 1800). Archaeological Survey Annual Report 13:93-135. U.C.L.A.

Leonard, N. Nelson, III
1975 Santa Ana River Project Description and Evaluation of Cultural Resources. Ms. on file, U.S. Army Corps of Engineers, Los Angeles.

Lerch, Michael K.
1982 Cultural Resources Assessment of the Santa Ana Regional Interceptor Reaches IV-D and IV-E, San Bernardino and Riverside Counties, California. Ms. on file, San Bernardino County Museum Association, Redlands, California.

Lewis Publishing Company
1890 Illustrated History of Southern California. Lewis Publishing Company, Chicago.

Mabry, Theo N.
1979 Archaeological Records Search and Reconnaissance: Weir Rancho Shopping Center, Orange County, California. Ms. on file, Archaeological Survey, U.C.L.A.

Mabry, T. N. and R. D. Douglas
1980 Paleontological, Archaeological and Historical Resources, Chino Hills, County of San Bernardino, California. Ms. on file, Archaeological Survey, U.C.L.A.

Macko, M. E., E. B. Weil, J. Weisbord, and J. Cooper
1983 Final report Mira Loma-Serrano 500 kV DC and Serrano-Villa Park 220 kV Transmission Line Project: Cultural Resource Survey and Test Excavations at CA-Ora-614, CA-SBr-3690, and CA-SBr-4032. Ms. of file, Applied Conservation Technology, Fullerton, California.

McWilliams, Carey
1973 Southern California: An Island on the Land. Peregrine Smith, Santa Barbara and Salt Lake City.

Martz, Patricia N.
1976 Description and Evaluation of the Cultural Resources Cucamonga, Demons, Deer and Hillside Creek Channels, San Bernardino and Riverside Counties, California. Archaeological Research Unit, University of California, Riverside, Technical Report 0-76-1. Ms. on file, U.S. Army Corps of Engineers, Los Angeles.

Mason, Roger
1983 Historical Report on the Bryant Ranch Headquarters, Located on Lomas de Yorba, Yorba Linda, California. Ms. on file, Scientific Resource Surveys, Inc., Huntington Beach, California.

Meighan, Clement W.
n.d. California. Unpublished paper distributed in Dr. R. E. Taylor's Archaeology 252 Class, Spring 1975. University of California, Riverside. 1959 Californian Cultures and the Concept of an Archaic Stage. American Antiquity 24(3):289-318.

Meighan, Clement W.
1959 The Little Harbor Site, Catalina Island. An Example of Ecological Interpretations in Archaeology: Part I. American Antiquity 24(1):1-23.

Meighan, C. W. and C. V. Haynes
1970 The Borax Lake Site Revisited: Reanalysis of the Geology and Artifacts Gives Evidence of an Early Man Located in California. Science 167(3922):1213-1221.

Minto, W.
1878 Plat of the Jurupa Rancho finally confirmed to Abel Stearns (March, April and November survey). Map on file, San Bernardino County Surveyor's Office, San Bernardino, California.

Mitchell, Laura Lee
1983 Progress Report on the Beads and Ornaments of Some Orange County Sites. Paper presented at the 1983 Society for California Archaeology Data Sharing Meeting, Long Beach.

Moratto, M. J., T. F. King and W. B. Woolfenden
1978 Archaeology and California's Climate. Journal of California Anthropology 5(2):147-162.

Moriarty, James R.
1966 Culture Phase Divisions Suggested by Typological Change Coordinated with Stratigraphically Controlled Radiocarbon Dating at San Diego. Anthropological Journal of Canada 4(4):20-30.

Mueller, James W. (editor)
1975 Sampling in Archaeology. University of Arizona Press, Tucson.

National Park Service
1982 How to Apply the National Register Criteria for Evaluation (draft). National Park Service, Department of the Interior, Washington.

Newman, C. A. "Bert"
1962 Reminiscing. In Chino Valley Where Everything Grows. East Site Thimble Society, Chino, California.

Ormsby, W. L.
1942 The Butterfield Overland Mail. The Huntington Library, San Marino.

Peak, Ann S.
1975 Cultural Resource Assessment of Sewage Treatment Facilities Expansion Project-City of Corona, Riverside County, California. Ms. on file, Peak and Associates, Sacramento.

Peak and Associates
1983 Archaeological Investigations at Ca-Plu-15, Boathouse Point on Bucks Lake, Plumas County, California. Peak and Associates, Inc. Submitted to Pacific Gas and Electric Company, contract no. 82-16. San Francisco.

Peck, Stuart L.
1941 Archaeological Site Survey Record of Riv-100. Record on file, Archaeological Research Unit, University of California, Riverside.

Phillips, D. A., Jr. and K. Rozen
1982 Effects of Inundation on Cultural Resources in Painted Rock Reservoir, Arizona: An Assessment. Ms. on file, U.S. Army Corps of Engineers, Los Angeles.

Pitt, Leonard
1970 The Decline of the Californios. Regents of the University of California, Berkeley and Los Angeles, California.

PRC Engineering, Inc.
1984 Santa Ana Transportation Corridor Transit Element Draft Environmental Impact Report. Ms. on file, Orange County Transit District, Garden Grove.

Quinn, Ann
1980 Memoirs of Julia Slaughter Fugua and Biography of Fenton Mercer Slaughter, 1939. San Bernardino County Museum Association, Quarterly 19(3).

Redman, Charles
1974 Archaeological Sampling Strategies. Addison-Wesley Module in Anthropology 55.

Reincke, Bette
1972 Aqueda Serrano's Story goes back Two Centuries. Corona Daily Independent, September 26, 1972.

Reinman, F. M. and S. Townsend
1960 Six Burial Sites on San Nicolas Island. Archaeological Survey Annual Report 1959-1960. University of California, Los Angeles.

Rhodes, E.
1951 The Break of Day in Chino. P-B Press, Inc., Chino.

Rice, Glen
1976 Test Excavations at Ora-119 Ms. on file, Archaeological Survey, U.C.L.A.

Roberts, C. E.
1936 Adobes of Orange County, California (W.P.A. Research Project No. 3105). Ms. on file, Santa Ana College Library, Santa Ana.

Robinson, William W.
1957 The Story of Riverside County. Riverside Title Company, Riverside.

Roeder, Mark A.
1980 Guns of Rancho El Encino. In Historical Report on the Encino Roadhouse Complex, by Scientific Resource Surveys, pp. 1-1 to 1-26. Ms. on file, Scientific Resource Surveys, Huntington Beach.

Rogers, David B.
1929 Prehistoric Man of the Santa Barbara Coast. Santa Barbara Museum of Natural History, Santa Barbara.

Rogers, T. H.
1965 Santa Ana Sheet and San Bernardino Sheet. Geological Atlas of California. California Department of Mines and Geology.

Rogers, Malcolm J.
1966 Ancient Hunters of the Far West (edited by R.F. Pourade). Tribune Publishing Company, San Diego.

Romani, John F.
1982 Report for the Proposed Route Ora-1 Widening Project (P.M. 19.80 - P.M. 25.89) 07210-499850. Ms. on file, California Department of Transportation, District 07, Los Angeles.

Rosenthal, E. J. and S. J. Schwartz
1979 A Cultural Resources Survey of the Proposed Santa Ana River Hiking/Biking Trail in the Prado Flood Control Basin. Ms. on file, U.S. Army Corps of Engineers, Los Angeles.

Rozaire, Charles E.
1967 Archaeological Considerations Regarding the Southern California Islands. In Proceedings of the Symposium on the Biology of the California Islands. Santa Barbara.

Schroeder, Joseph J. Jr. (ed.)
1969 Sears Roebuck and Company 1908 Catalogue No. 117. The Gun Digest Co., Chicago, Ill.

Schmutz, G. L.
1939 Parcel 136. S.C.C. 43,785. San Bernardino County, California, [A record of property appraisal] U.S. Army Corps of Engineers, Real Estate Branch.

Schultz, Elizabeth (editor)
1984 Visiting Orange County's Past. Orange County Historical Commission, Santa Ana, California.

Schwartz, Steven
1980 Cultural Resources Survey Prado Fix. Ms. on file, U.S. Army Corps of Engineers, Los Angeles (dated 2 September 1980).

Schwartz, Steven
1981 Cultural Resources Survey Prado Fix. Ms. on file, U.S. Army Corps of Engineers, Los Angeles (dated 8 January 1981).

Scientific Resource Surveys, Inc.
1979 Archaeological Report on Final Archaeological Salvage Activities on Site Ora-615, located in the City of Yorba Linda in the Canon de Santa Ana area of the County of Orange, California. Ms. on file, Archaeological Survey, U.C.L.A.

Scientific Resource Surveys, Inc.
1980 Archaeological/Historical Report on Sites Ora-817, Ora-818, Ora-819, Ora-820 and Historical Resources Located on the Santa Ana Valley Irrigation Company (SAV1) Property in the Horseshoe Bend Area of the County of Orange. Ms. on file, Archaeological Survey, U.C.L.A.

Scientific Resource Surveys, Inc.
1981 Cultural Resources Report on the "Butterfield" Property Located in the Chino Hills Area of the County of San Bernardino, California. Ms. on file, Scientific Resource Surveys, Inc., Huntington Beach.

Scientific Resource Surveys, Inc.
1982 Cultural Resource Survey Report on the Proposed Orange County Rapid Transit Concept Design Located in the Central Portion of the County of Orange. Ms. on file, Orange County Transit District, Garden Grove.

Scott, M. B.
1977 Development of Water Facilities in the Santa Ana River Basin, California, 1810-1968. U.S. Geologic Survey, Open File Report 77-398.

Simpson, R. D. and T. D. Suss
1975a Archaeological Survey Prado Regional Park. Ms. on file, San Bernardino County Museum, Redlands.

Simpson, R. D. and T. D. Suss
1975b Prado Regional Park Golf Course Archaeological Impact Report. Ms. on file, San Bernardino County Museum Association, Redlands.

Sleeper, James D.
1970 The History of Orange County, Model of A Modern County. Ms. on file, Orange Coast Community College Library, Costa Mesa, California.

Smith, Helen C.
1976 The Serrano Family (Interview of Nimfa Serrano). Ms. on file, Scientific Resource Surveys, Inc., Huntington Beach, California.

Smith, Sarah Bixby
1974 Adobe Days (4th edition). Valley publishers, Fresno, California.

Stephenson, Terry E.
1941 Don Bernardo Yorba. Fine Arts Press, Santa Ana, California.

Suss, Terry D.
1975 Resources Evaluation of Cucamonga Creek Area, Remington Ave - Chino-Corona Road, U.S.G.S. Corona North, California. Ms. on file, San Bernardino County Museum Association, Redlands, California.

Suydam, C. R.
1977 U.S. Cartridges and Their Handguns. Beinfeld Publishing, North Hollywood, California.

Taylor, R. E., L. A. Payen, C. A. Prior, P. J. Slota, Jr., R. Gillespie, J. A. J. Gowlett, R. E. M. Hedges, A. J. T. Jull, T. H. Zabel, D. J. Donahue, and R. Berger
1985 Major Revisions in the Pleistocene Age Assignments for North American Human Skeletons by C-14 Accelerator Mass Spectrometry: None Older than 11,000 C-14 Years B.P. American Antiquity 50:136-140.

Theodoratus Cultural Research, Inc.
1983 The Century of El Rincon Historical Synthesis of the Bandini-Cota Adobe Prado Flood Control Basin, Riverside County, California. Ms. on file, U.S. Army Corps of Engineers, Los Angeles.

Thomas, David Hurst
1981 How to Classify the Projectile Points from Monitor Valley, Nevada. Journal of California and Great Basin Anthropology 3(1):7-43

Thompson, G. H.
1866 Plat of the Rancho La Sierra Finally Confirmed to Bernard Yorba. Map on file, Riverside County Surveyor's Office, Riverside, California.

1868 Plat of the Rancho La Sierra Finally Confirmed to Bernard Yorba (Second Version). Map on file, Riverside County Surveyor's Office, Riverside, California.

Thompson, M. J.
1982 Personal Correspondence to Mrs. Eldridge. Letter on file, Heritage Room, Corona Public Library, Corona.

Tobey, R. C., T. D. Suss, and L. Burgess
1977 Historical Resource Survey of the Prado Flood Control Basin. Ms. on file, U.S. Army Corps of Engineers, Los Angeles.

Treganza, A. E. and A. Bierman
1958 The Topanga Culture: Final Report on Excavation, 1948. University of California, Anthropological Records 20:45-86.

True, Delbert L.
1966 Archaeological Differentiation of Shoshonean and Yuman Speaking Groups in Southern California. Unpublished PhD. dissertation, Department of Anthropology, University of California, Los Angeles.

U.S. Army Corps of Engineers
1980 Phase I General Design Memorandum on the Santa Ana River Main Stem Including Santiago Creek: Main Report and Supplemental Environmental Impact Statement. Ms. on file, U.S. Army Corps of Engineers, Los Angeles.

U.S. Army Corps of Engineers
1983 Environmental Assessment: Olympic Shooting Facility, Prado Basin, San Bernardino County, California. Ms. on file, U.S. Army Corps of Engineers, Los Angeles.

Van Devender, Thomas R.
1977 Holocene Woodlands in the Southwestern Deserts. Science 198:189-192.

Van Horn, David M. (editor)
n.d. Investigations at the Ramon Peralta Adobe. Ms. on file, Archaeological Associates, Sun City.

Van Horn, D. M. and J. P. Brock
1981 Investigations at LAn-669, Las Virgenes Ranch, Los Angeles County. Ms. on file, Archaeological Survey, U.C.L.A.

Wallace, William J.
1954 The Little Sycamore Site and the Early Milling Stone Cultures of Southern California. American Antiquity 20:112-123.

Wallace, William J.
1955 A Suggested Chronology for Southern California Coastal Archaeology. Southwestern Journal of Anthropology 11:214-230.

Wallace, William J.
1962 Prehistoric Cultural Development in the Southern Californian Deserts. American Antiquity 28(2):172-180.

Wallace, W. J.
1978 Post-Pleistocene Archaeology, 9000 to 2000 B.C. In California, edited by R.F. Heizer, pp. 25-36. Handbook of North American Indians, Vol. 8., Smithsonian Institution, Washington.

Warren, Claude N.
1964 Cultural Change and Continuity on the San Diego Coast. Unpublished PhD dissertation. Department of Anthropology, University of California, Los Angeles.

Warren, Claude N.
1967 The Southern California Milling Stone Horizon: Some Comments. American Antiquity 32(2):233-236.

Warren, Claude N.
1968 Cultural Tradition and Ecological Adaptation on the Southern California Coast. Eastern New Mexico University, Contributions in Anthropology 1(3):1-15.

Warren, C. N. and M. G. Pavesic
1963 Appendix I: Shell Midden Analysis of Site SDi-603 and Ecological Implication for Development on Batiquitos Lagoon, San Diego County, California. In Archaeological Investigations Batiquitos Lagoon, San Diego County, California, edited by H. Crabtree, C. N. Warren and D. L. True. Archaeological Survey Annual Report 1962-1963. University of California, Los Angeles.

Weitze, K. I.
1980 Historical Report for Norco Ranch 08201-186001. Ms. on file, California Department of Transportation, Sacramento.

Weitzman, David
1976 Underfoot: An Everyday Guide to Exploring the American Past. Charles Scribner's Sons, New York.

Willey, G. R. and J. A. Sabloff
1974 A History of American Archaeology. W.H. Freeman and Company, San Francisco.

Willoughby, Nona C.
1963 Division of Labor Among the Indians of California. University of California, Archaeological Survey Report 60:7-79.

Winterholder, B. and E. A. Smith
1981 Hunter-gatherer Foraging Strategies. University of Chicago Press, Chicago.

APPENDICES

APPENDIX A

ARCHIVAL SOURCES CONSULTED

University of California, Riverside, Library
Corona Public Library, Heritage Room
Chino Public Library
Ontario Public Library Heritage Room
Riverside City Museum
University of California, Los Angeles, Map Library
U.S. Geologic Survey, Menlo Park, Map Section
U.S. Army Corps of Engineers
County of Riverside, Surveyors Office
Assessors Office
Recorders Office
County of San Bernardino, Surveyors Office
Assessors Office
Recorders Office
General Services Administration,
Records Storage
Historic Documents Commission
University of California, Riverside, Archaeological Research Unit
University of California, Los Angeles, Institute of Archaeology
San Bernardino County Museum Association
Corona-Norco Daily Independent, Past Issue Files
Chino Historical Society

APPENDIX B

INDIVIDUALS CONSULTED

Individual	Topic
Louis Abacherli	Western Prado Basin
Bert Altfillich	Northeastern Prado Basin
Cynthia Alvietre	Native American Concerns
Alleck Bordisso	Northwestern Prado Basin
Charles Bradford	Riv-2778, 2797
Joe Bridges	Southern Prado Basin
Gertrude Green	Southern Prado Basin
Roy Griffith	Pioneer School Cemetery
Trigger Jim Hartshorn	Eastern and Central Prado Basin
Genevieve Newman Karlson	Northwestern Prado Basin
Rainerd Karlson	Northwestern Prado Basin
Dave Moreno	Moreno Ranch
Margo McCarty Payne	Northeastern Prado Basin
Christopher Pederson	Northern Prado Basin
Julia Rawson	Southern Prado Basin
Charles Reher	Northwestern Prado Basin
Mrs. Charles Reher	Northwestern Prado Basin
Ernest F. Remhke	Rincon Congregational Church Cemetery
Donald Richardson	SBr-1571, SBr-1543
Kenneth M. Rycraft	Eastern Prado Basin
Jim N. Velasquez	Native American Concerns
Roger Verity	Lt. Cook Memorial
Zan Zack	SBr-1543

APPENDIX C

THE NEWMAN COLLECTION

In the course of this project it was discovered that a local man, Mr. Bert Newman, had done extensive artifact collecting on sites in the study area. Mr. Newman used to enjoy walking behind tractors pulling plows and watching artifacts pop up in front of him. He collected from such sites as SBr-1543, Riv-653, as well as "Cogstone Point" and "Cogstone Knoll". Mr. Newman was active during the 1930s, 40s, and 50s. During this time he collected an outstanding assemblage of cogged stones, discoidals and other artifacts. Three of the cogged stones are shown on the cover of this report at one-half actual size.

Mr. Newman left his collection to his daughter (Mrs. Genevieve Karlson) when he passed away a few years ago. This collection is currently stored in two different locations in Chino: (1) at the home of Mr. and Mrs. Karlson, and (2) at the Old Schoolhouse Museum, which is operated by the Chino Historical Society. The Authors are currently in the process of studying this collection. Briefly, the following items have been cataloged to date:

Item	Quantity
Cogged Stones	34
Discoidals	46
Donut Stones	4
Stone Balls	7
Stone Disk	1
Stone Pendant	1
Steatite Pipe	1
Charmstones	2
Perforated Heating Stones (?)	3
Stone Bowls	7
Pestles	15
Hand Stones (manos, mullers)	20
Stone Axes	2
Piercing Stone	1
Total	144

THE CHARLES BRADFORD COLLECTION

The Bradford collection consists of 17 projectile points (Figure C-1). These were collected by Charles Bradford at Riv-2797 in 1931 during a field trip to the area for the purpose of documenting local bird life. The projectile points are now the property of Denny Foreman of Stanton, California. A boulder mortar and polished stone pestle found at the same time were given to a

person who is no longer remembered by Mr. Bradford. The projectile points were photographed, measured, weighed, and classified. Table C-1 lists the points by material, measurements, and weight. All of the points are the smaller type which were hafted to arrow shafts. All are Cottonwood Triangular, except for one leaf-shaped point. They are made of various materials, primarily chalcedony and chert. One specimen is made of obsidian which originated at Obsidian Butte east of the Salton Sea.

Four of the Cottonwood Triangular points are unusual because they are unifacial. They are also more crudely made than the other Cottonwood Triangular points in this and most other collections. They are made from thick flakes retouched on one side only to form the point.

Table C-1 a-q

PROJECTILE POINTS FROM THE BRADFORD COLLECTION, RIV-2797

SPECIMEN NUMBER	MATERIAL	POINT TYPE*	LENGTH (cm)	WIDTH (cm)	THICKNESS (cm)	WEIGHT (grm.)
a	Obsidian	CT-NB	1.62	1.23	0.40	0.5
b	Chert	CT-NB	1.96	1.42	0.38	0.7
c	Chert	CT-NB	2.06	1.35	0.37	0.7
d	Chert	CT-CB	1.73	0.98	0.27	0.5
e	Jasper/Chalcedony	CT-CB	1.31	1.03	0.30	0.3
f	Jasper/Chalcedony	CT-CB	2.03	0.98	0.36	0.7
g	Jasper/Chalcedony	CT-CB	1.53	0.99	0.38	0.4
h	Chert	CT-CB	1.18	1.06	0.51	0.8
i	Chert	CT-CB	1.98	1.23	0.44+	0.8
j	Jasper/Chalcedony	CT-CB	Estimated 1.45	1.07	0.36	incomplete 0.4
k	Chert	CT-CB	2.22	1.36	0.43	1.3
l	Mudstone	CT-CB	2.70	1.45	0.58	2.0
m	Metashale	Unifacial CT-CB	1.75	1.10	0.50	0.9
n	Jasper/Chalcedony	Unifacial CT-CB	1.71	0.92	0.38	0.5
o	Jasper/Chalcedony	Unifacial CT-CB	2.03	1.13	0.48	0.9
p	Jasper/Chalcedony	Unifacial CT-CB	1.72	1.13	0.55	1.1
q	Monterey Chert	Leaf-shaped	2.68	1.50	0.49	1.85

* Abbreviations: Cottonwood Triangular Point (CT); Notched base (NB); Concave base (CB)

THE PAYNE COLLECTION

Mrs. Margo (McCarty) Payne has a number of manos and metates in her possession that were reportedly collected from the study area. Mrs. Payne has stated that some of these artifacts came from the Vander Laan site (SBr-5244), making them the only artifacts known to have come from that site before it was destroyed.

APPENDIX D

OBSIDIAN SOURCING AND HYDRATION DATA

Mr. Paul E. Langenwalter II
4029 First Avenue
San Bernardino, CA 92407

January 28, 1984

Dear Mr. Langenwalter:

Enclosed please find a xerox copy of a data sheet detailing the results of x-ray fluorescence analysis of 10 obsidian artifacts from two archaeological sites (CA-SBr-1543, n=9 and CA-Riv-653, n=1) in the Lower Santa Ana River Archaeological Project, southern California. This analysis was completed pursuant to your letters of authorization of December 7 and 16, 1983 under Sonoma State University Academic Foundation, Inc., Account 6081-A1, Job 123-83.

The analysis was completed at the Department of Geology and Geophysics, University of California, Berkeley, on a Spectrace 440 (United Scientific Corporation) energy dispersive x-ray fluorescence machine equipped with a 572 power supply (50 kV, 1 mA), 534-1 pulsed tube control, 514 pulse processor, 588 bias/protection module, Tracor Northern 1221 100 mHz ADC, Tracor Northern 2000 computer based analyzer, an Rh x-ray tube and a Si(Li) solid state detector with 142 eV resolution (FWHM) at 5.9 keV in a 30 mm2 area. The x-ray tube was operated at 30.0 kV, .40 mA pulsed, with a .04 mm Rh primary beam filter in an air path at 200 seconds livetime. All trace element values on the accompanying data sheet are expressed in parts per million by weight; consequently, they can be compared directly to published values for obsidian sources that appear in Robert N. Jack (1976), "Prehistoric Obsidian in California I: Geochemical Aspects", pp. 202-204 in R.E. Taylor (ed.) Advances in Obsidian Glass Studies: Archaeological and Geochemical Perspectives, Noyes Press, Park Ridge, New Jersey.

Of nine specimens analyzed from SBr-1543, seven (Cat. nos. 13, 219, 239, 244, 290, 296 and 312) were fashioned from Coso Hot Springs obsidian, while the other two (Cat. nos. 50 and 67) could not be matched with any of the source standards presently in my obsidian source inventory. Hence, these two should be considered examples from two different "unknown" sources.

The single specimen (Cat. no. 187) from Riv-653 was manufactured from Coso Hot Springs obsidian.

I hope this information will assist you in your analysis of the SBr-1543 and Riv-653 site material. If I can be of further assistance, please contact me.

Sincerely,

Richard E. Hughes

Richard E. Hughes, Ph.D.
Senior Research Archaeologist
Sonoma State University
Rohnert Park, CA 94928

May 27, 1984

Mr. Paul E. Langenwalter, II
4029 First Avenue
San Bernardino CA 92407

Dear Mr. Langenwalter:

Enclosed please find a xerox copy of a data sheet detailing the results of x-ray fluorescence analysis of seven obsidian artifacts from three archaeological sites (CA-SBr-5245, n=1; CA-Riv-2754, n=5; CA-Riv-2797, n=1) in the Prado Basin, San Bernardino and Riverside Counties, California. This analysis was completed pursuant to your letter of authorization of April 2, 1984 under Sonoma State University Academic Foundation, Inc., Account 6081-A1, Job X84-10.

The analysis was completed at the Department of Geology and Geophysics, University of California, Berkeley, on a Spectrace 440 (United Scientific Corporation) energy dispersive x-ray fluorescence machine equipped with a 572 power supply (50 kV, 1 mA), 534-1 pulsed tube control, 514 pulse processor, 588 bias/protection module, Tracor Northern 1221 100 mHz ADC, Tracor Northern 2000 computer based analyzer, an Rh x-ray tube and a Si(Li) solid state detector with 142 eV resolution (FWHM) at 5.9 keV in a 30 mm2 area. The x-ray tube was operated at 30.0 kV, .40 mA pulsed, with a .04 mm Rh primary beam filter in an air path at 200 seconds livetime. All trace element values on the accompanying data sheets are expressed in parts per million by weight; consequently, they can be compared directly to published values for obsidian sources that appear in Robert N. Jack (1976), "Prehistoric Obsidian in California I: Geochemical Aspects", pp. 202-204 in R.E. Taylor (ed.) Advances in Obsidian Glass Studies: Archaeological and Geochemical Perspectives, Noyes Press, Park Ridge, New Jersey.

The results can be summarized as follows. The single triangular, concave base projectile point from Riv-2797 was fashioned from volcanic glass of the Obsidian Butte geochemical type, while the specimen from SBr-5245 was manufactured from Coso Hot Springs obsidian. The sample submitted from Riv-2754 consisted of four specimens (2754A, 2754C, 2754D and 2754E) attributable to Coso Hot Springs and one specimen (2754B) unassigned to source. Because the extremeley small physical size of some of these objects resulted in high counting error estimates and skewed quantitative data, I conducted an additional analysis on two specimens (2754B and 2754E) to generate iron/manganese ratios (Fe/Mn) to help in assigning them to source. Specimen 2754B yielded a Fe/Mn ratio of 88.9, while the ratio derived for 2754E was 56.7. The Fe/Mn ratio for 2754E is in agreement with Fe/Mn ratios for Coso Hot Springs source standards (see Hughes, 1983, "X-ray Fluorescence Analysis of Obsidian" p. 407 Fig. 208 in David Hurst Thomas, The Archaeology of Monitor Valley: 2. Gatecliff Shelter, Anthropological Papers of the American Museum of Natural History, Vol. 59, No. 1), so this specimen probably can be attributed to this source. I cannot provide an obsidian source attribution for 2754B, and I suspect that this object is just too small to yield reliable quantitative data unless analysis time could be doubled or tripled. If you anticipate submitting correspondingly small obsidian objects for analysis in the future, I recommend that counting times at least be doubled (to 400 seconds livetime). Although this will be more

Prado Basin XRF
5-17-84
R.E. Hughes

Cat. no.	Pb*	Th*	Rb*	Sr*	Y*	Zr*	Nb*
2797	23.9 ±3.1	28.4 ±6.2	130.5 ±4.5	18.3 ±3.2	109.3 ±5.0	307.0 ±5.8	29.8 ±3.3
5245	30.2 ±2.8	31.5 ±5.7	223.0 ±4.8	4.7 ±2.4	51.5 ±3.8	126.8 ±3.7	36.3 ±2.8
2754A	53.0 ±5.9	36.5 ±10.8	255.8 ±8.9	8.1 ±4.7	59.4 ±7.0	132.3 ±6.7	28.7 ±5.1
2754B	51.7 ±9.4	50.1 ±16.4	188.6 ±11.5	0.0 ±0.0	38.0 ±9.6	117.1 ±9.1	29.6 ±7.3
2754C	42.3 ±5.6	28.2 ±10.5	212.9 ±8.2	0.0 ±0.0	50.7 ±6.7	121.1 ±6.4	34.3 ±5.0
2754D	49.9 ±6.4	33.8 ±11.9	235.8 ±9.4	9.0 ±5.1	52.2 ±7.5	130.2 ±7.1	28.5 ±5.5
2754E	59.9 ±8.2	58.8 ±14.9	219.0 ±10.9	0.0 ±0.0	29.6 ±9.0	122.9 ±8.4	27.3 ±6.7

* All values in parts per million (ppm)

OR-801

expensive, it also should result in fewer ambiguities in future obsidian source assignments.

I hope this information will help in your analysis of these site materials. If I can be of further assistance, please contact me.

Sincerely,

Richard Hughes

Richard E. Hughes, Ph.D.
Senior Research Archaeologist
Anthropological Studies Center
Sonoma State University
Rohnert Park, CA 94928

(P/C CONC (PPM))
(PPM ST DEV)

CA-SBr-1543
CA-Riv-653
R.E. Hughes
1-12-84

	CHSQ	PB	TH	RB	SR	Y	ZR	NB
W-1 C	8.7	16.0	0.0	24.6	188.1	22.6	112.3	15.5
		+- 1.8	+- 0.0	+- 2.0	+- 3.7	+- 2.6	+- 3.1	+- 2.2
239 (SBr-1543)	14.5	33.3	33.0	208.7	2.8	58.4	119.5	31.2
		+- 2.6	+- 5.6	+- 4.7	+- 2.4	+- 3.8	+- 3.6	+- 2.8
50 (SBr-1543)	5.3	29.3	14.6	145.1	58.0	38.1	131.9	0.0
		+- 2.7	+- 5.5	+- 4.2	+- 3.4	+- 3.8	+- 4.0	+- 0.0
13 (SBr-1543)	6.9	34.1	28.8	221.5	6.2	47.1	140.3	32.8
		+- 2.8	+- 5.6	+- 4.8	+- 2.5	+- 3.9	+- 3.9	+- 2.9
290 (SBr-1543)	4.6	42.2	31.0	210.8	5.0	44.9	105.4	27.9
		+- 5.3	+- 10.1	+- 8.0	+- 4.5	+- 6.7	+- 6.3	+- 5.0
296 (SBr-1543)	12.3	35.4	35.2	223.5	5.7	52.4	123.3	35.5
		+- 2.4	+- 5.0	+- 4.4	+- 2.2	+- 3.5	+- 3.3	+- 2.6
244 (SBr-1543)	3.1	38.6	20.6	223.4	0.0	42.9	128.3	33.1
		+- 4.1	+- 7.8	+- 6.4	+- 0.0	+- 5.2	+- 5.0	+- 3.9
312 (SBr-1543)	4.4	47.7	47.7	289.3	11.9	50.0	139.6	32.8
		+- 3.9	+- 7.9	+- 6.7	+- 3.4	+- 5.2	+- 5.0	+- 3.8
67 (SBr-1543)	2.1	63.8	45.0	339.8	0.0	70.4	95.9	33.3
		+- 6.8	+- 12.5	+- 10.6	+- 0.0	+- 8.1	+- 6.7	+- 5.6
219 (SBr-1543)	2.6	56.1	36.6	232.6	11.1	44.1	122.3	26.6
		+- 6.4	+- 11.7	+- 9.1	+- 5.2	+- 7.4	+- 7.0	+- 5.4
187 (Riv-653)	3.0	38.4	24.8	215.1	9.2	46.8	134.4	29.0
		+- 4.6	+- 8.9	+- 7.0	+- 4.0	+- 5.8	+- 5.7	+- 4.3

OR-801

OR-801

Dr. Paul E. Langenwalter II.
Ecos Management Corporation
5300 Orange Ave.
Suite 220
Cypress, California 90630

February 27, 1984

Dear Dr. Langenwalter;

Enclosed is the results of the obsidian hydration analysis from CA-SBr-1543 and 653. I am also returning your obsidian specimens along with this report.

The hydration data are very interesting, for they show that there may be a potential to determine the relative intensities of site use through time, and that the site was used for a significantly long period. It is difficult to know how to interpret these data, however, in light of the small sample size. The 6.2-7.5 micron readings are not inordinately large, considering the relatively fast rate at which Coso obsidian accumulates hydration. Absolute dates cannot be ascribed to these artifacts.

Unfortunately, obsidian hydration data are most useful when source is homogenous and large numbers of specimens are analyzed. The analysis of CA-SBr-1543 and 653 specimens does indicate that there is a potential to address questions of site integrity, tool assemblages, and occupational periodicity and duration, however.

I hope you find these data useful and will consider the use of obsidian hydration analysis in future projects. I would be glad to consult with you on sample size, selection, and the potential to address specific research questions in the future.

Sincerely,

Robert J. Jackson

Robert J. Jackson

ANALYSIS OF OBSIDIAN HYDRATION ON ARCHAEOLOGICAL SPECIMENS FROM CA-SBr-1543 and 653

by

R. J. Jackson
Department of Anthropology
University of California, Davis

METHODS

Selected obsidian recovered during archaeological investigations at CA-SBr-1543 and 653 were submitted by Dr. Paul E. Langenwalter II, representing Ecos Environmental Management Corporation, for obsidian hydration analysis during the month of January 1984. The prepared obsidian hydration slides are curated at the University of California, Davis Obsidian Hydration Laboratory under specimen accession numbers UCD 2956-2965.

During the initial phase of preparation, an appropriate section of each artifact is selected for examination. The location of this section is determined by the morphology, purity, and potential of each location for yielding valuable archaeological data. Two parallel cuts are made into the edge of each specimen, using a 0.4 mm-thick, diamond impregnated, lapidary saw blade, powered by a motor turning at approximately 3600 rpm. The cuts isolate a wedge which is approximately one millimeter thick. The wedge is then removed from the artifact and the freshly cut, exposed faces of the wedge are ground in a slurry of 600 grade, optical-quality corundum abrasive on flat plate glass. Initial grinding is designed to remove the saw nicks from the faces of the artifact potentially containing an hydration layer. The obsidian wedge is then affixed to a flat microscope specimen slide with Lakeside cement, and ground to a final thickness of 30-50 microns. The end product is an extremely thin cross-section of the outer faces of the artifact. The slide is mounted on a petrographic microscope fitted with cross-polarizing filter and quartz I-IV/gypsum filter. The filter maximizes the visual contrast between the hydrated and unaltered layers, and provides a valuable confirmation that an optical aberration is not being misconstrued as an hydration layer. The edge of the obsidian thin-section is scanned under a magnification of 500X or 1250X. When a clearly defined and representative hydration band is identified, the section is centered in the optical field to minimize any parallax effect from the filar screw micrometer eyepiece, which is used to measure the thickness of the hydration band to 1/10th of a micron. A minimum of eight readings are taken (four each from two sides of the thin-section), and the resulting values are entered into a computer program designed to calculate the mean and standard deviation for each edge of the specimen, based on four readings each. The program then performs a two-tailed, difference of means t-test on readings from two sides and determines the statistical probability that the two values (sets of micron readings) represent the same or different hydration thicknesses. Significantly different readings on the same specimen may reflect aspects of the artifact's history.

Obsidian hydration data is presented in the appended table.

EXPLANATION OF OBSIDIAN HYDRATION CATALOGUE INFORMATION AND PROCEDURES

CATALOGUE DATA

The OHL # denotes the Obsidian Hydration Laboratory Number, assigned to each specimen. Correspondence or questions concerning specific hydration specimens should refer to the OHL # if possible, as data are stored according to this number.

CATALOG # refers to the designation assigned to each artifact by the archaeologist or agency submitting the artifact(s) for obsidian hydration analysis.

DESCRIPTION

The artifacts submitted for obsidian hydrtaion analysis are briefly described in the DESCRIPTION column. The name of each item is first listed, further described by an adjective. Projectile point types are named only when type designations are unambiguous, but are otherwise described in terms of a major morphological attribute such as "corner-notched" or "side-notched".

HYDRATION DATA

The Edge 1+2 column lists the separate mean values of the two examined edges, four readings being obtained for each edge. The standard deviation of the readings from each edge are also listed, but have been rounded to the nearest tenth micron. While there is a recognized inherent reading error of 0.2 microns, the standard deviation lists the actual deviation of readings.

A difference of means t-test is performed on the data from the two edges of each specimen, to test the hypotheses that the two edges contain significantly different hydration thicknesses ($p>3.707$). It is assumed that readings are taken randomly along each edge, though this is often prevented by physical circumstances. Variance on readings from both faces of each artifact are pooled in the t-test determination, and the hypothesis is confirmed at the .01 level under six degrees of freedom. A critical values table for t-distributions indicates the strength or distance of test results from confirmation of the hypothesis. This distance has been used as a basis for determining the manner of further data manipulation and reporting. For instance, if the 'p' value resulting from the t-test exceeds 0.1, the two edges are regarded as representing the same period of manufacture. These decisions are reported in two locations: 1) directly beneath the results of the t-test, described in terms of whether or not the edges are the same (edges=), different, or undetermined (diff.or=?), and 2) right and adjacent to the t-test results, described in terms of whether the values represent one hydration band or two different bands.

If it is determined that only one hydration thickness is represented, all eight readings are averaged and a standard deviation for the group derived and reported.

COMMENTS

Comments pertain to qualities of the thin section and hydration 'rind' or band. In some instances hydration can be observed on only one face of an artifact, listed as "ONE EDGE ONLY". Hydration data are manipulated and reported accordingly. Other comments list the general quality and clarity of the examined edges (GOOD, FAIR, POOR). The comment "RECUT" indicates that more than one thin section was prepared for some reason. Still other comments refer to specific qualities of the hydration bands, such as "HIGHLY VARIABLE", "IRREGULAR", or "DISCONTINUOUS". In certain instances, it is possible to obtain hydration readings from three different edges of an artifact, and when this possibility is encountered, readings are taken from the two most dissimilar edges, and a comment to the effect that three edges may exhibit hydration is made. Particularly small, difficult to prepare specimens are also noted. The boundary between hydrated and unaltered obsidian layer (diffusion front) is sometimes unclear, and noted as "DIFFUS. FRONT VAGUE".

OBSIDIAN SOURCE

The geographic/geologic origin of the obsidian under study is listed in the last column of the catalogue. Source information is normally listed only if the specimens have been subjected to chemical or trace element analysis. In unusual circumstances, source information may be listed if replicable, tested means of source determination are employed.

U.C. DAVIS OBSIDIAN HYDRATION CATALOGUE

CA-SBR-1543. 653

SUBMITTED BY: P. Langenwalter, ECOS CA-RIV- FEBRUARY 1984

O.H.L. TECHNICIAN: R.J. JACKSON MAGNIFICATION - 500/ RESULTS (microns) ON 8 READINGS, 4 PER EDGE

CATALOGUE DATA		PROVENIENCE	DESCRIPTION	HYDRATION DATA			COMMENTS	OBSIDIAN
ohl#	catalog #	unit, level	name,type	edge 1+2	t-test	MEAN-all	quality, problems	SOURCE
2956	13	S38/E69	FLAKE	5.5 +-.2	p).2	ONE BAND		COSO
		10-20 cm	INTERIOR	5.7 +-.3	edges =	5.6 +-.3	ONE EDGE ONLY	
2957	50	N60/W209	FLAKE	5.4 +-.3	p).2	ONE BAND		COSO
		40-50 cm	INTERIOR	5.6 +-.1	edges =	5.5 +-.3	ONE EDGE ONLY	
2958	67	N20/W145	FLAKE	4.1 +-.2	p).5	ONE BAND		COSO
		20-30 cm	INTERIOR	4.0 +-.2	edges =	4.0 +-.2	ONE EDGE ONLY	
2959	219	S94/W76	FLAKE	7.0 +-.3	p).2	ONE BAND		COSO
		0-10 cm	INTERIOR	7.2 +-.3	edges =	7.1 +-.3		
2960	239	S94/W76	FLAKE	4.5 +-.1	p).2	ONE BAND		COSO
		30-40 cm	INTERIOR	4.4 +-.1	edges =	4.5 +-.1		
2961	244	S94/W76	FLAKE	4.7 +-.3	p).5	ONE BAND		COSO
		40-50 cm	INTERIOR	4.8 +-.2	edges =	4.8 +-.2		
2962	290	S94/W76	FLAKE	4.2 +-.3	p).2	ONE BAND		COSO
		130-140 cm	INTERIOR	4.4 +-.3	edges =	4.3 +-.3	ONE EDGE ONLY	
2963	296	S94/W76	FLAKE	0.0				COSO
		140-150 cm	INTERIOR	0.0			NO HYDRATION SEEN	
2964	312	S94/W76	FLAKE	6.1 +-.1	p).1	ONE BAND		COSO
		170-180 cm	INTERIOR	6.3 +-.2	edges =	6.2 +-.2	ONE EDGE ONLY	
2965	187	N64/E126	FLAKE	7.3 +-.3	p).1	ONE BAND		COSO
Riv-653		20-30 cm	INTERIOR	7.6 +-.3	edges =	7.5 +-.3		

ANALYSIS OF OBSIDIAN HYDRATION ON ARCHAEOLOGICAL SPECIMENS FROM CA-SBR-5245 and CA-RIV-2754

by

R. J. Jackson
Department of Anthropology
University of California, Davis

METHODS

Selected obsidian specimens recovered during archaeological investigations at CA-SBR-5245 and CA-RIV-2754 were submitted by Paul Langenwalter for obsidian hydration analysis during the month of June 1984. The prepared obsidian hydration slides are curated at the University of California, Davis Obsidian Hydration Laboratory under specimen accession numbers UCD 3822-3827.

During the initial phase of preparation, an appropriate section of each artifact is selected for examination. The location of this section is determined by the morphology, purity, and potential of each location for yielding valuable archaeological data. Two parallel cuts are made into the edge of each specimen, using a 0.4 mm-thick, diamond impregnated, lapidary saw blade, powered by a motor turning at approximately 3600 rpm. The cuts isolate a wedge which is approximately one millimeter thick. The wedge is then removed from the artifact and the freshly cut, exposed faces of the wedge are ground in a slurry of 600 grade, optical-quality corundum abrasive on flat plate glass. Initial grinding is designed to remove the saw nicks from the faces of the artifact potentially containing an hydration layer. The obsidian wedge is then affixed to a flat microscope specimen slide with Lakeside cement, and ground to a final thickness of 30-50 microns. The end product is an extremely thin cross-section of the outer faces of the artifact. The slide is mounted on a petrographic microscope fitted with cross-polarizing filter and quartz I-IV/gypsum filter. The filter maximizes the visual contrast between the hydrated and unaltered layers, and provides a valuable confirmation that an optical aberration is not being misconstrued as an hydration layer. The edge of the obsidian thin-section is scanned under a magnification of 500X or 1250X. When a clearly defined and representative hydration band is identified, the section is centered in the optical field to minimize any parallax effect from the filar screw micrometer eyepiece, which is used to measure the thickness of the hydration band to 1/10th of a micron. A minimum of eight readings are taken (four each from two sides of the thin-section), and the resulting values are entered into a computer program designed to calculate the mean and standard deviation for each edge of the specimen, based on four readings each. The program then performs a two-tailed, difference of means t-test on readings from two sides and determines the statistical probability that the two values (sets of micron readings) represent the same or different hydration thicknesses. Significantly different readings on the same specimen may reflect aspects of the artifact's history.

The raw data derived from the obsidian hydration analysis is presented in appended data tables.

U.C. DAVIS OBSIDIAN HYDRATION CATALOGUE

CA-SBR-5245

SUBMITTED BY: PAUL LANGENWALTER

O.H.L. TECHNICIAN: R.J. JACKSON

MAGNIFICATION - 500/1250

JUNE 1984

RESULTS (microns) ON 8 READINGS, 4 PER EDGE

CATALOGUE DATA		PROVENIENCE	DESCRIPTION	HYDRATION DATA			COMMENTS	OBSIDIAN
ohl#	catalog #	unit, level	name,type	edge 1+2	t-test	MEAN-all	quality, problems	SOURCE
3822	5245-19	SURFACE	FLAKE	8.1 +-.1	p).9	ONE BAND		COSO
		0 cm	INTERIOR	8.1 +-.6	edges =	8.1 +-.4		

U.C. DAVIS OBSIDIAN HYDRATION CATALOGUE

CA-RIV-2754

SUBMITTED BY: PAUL LANGENWALTER — JUNE 1984

O.H.L. TECHNICIAN: R.J. JACKSON — MAGNIFICATION - 500/1250 — RESULTS (microns) ON 8 READINGS, 4 PER EDGE

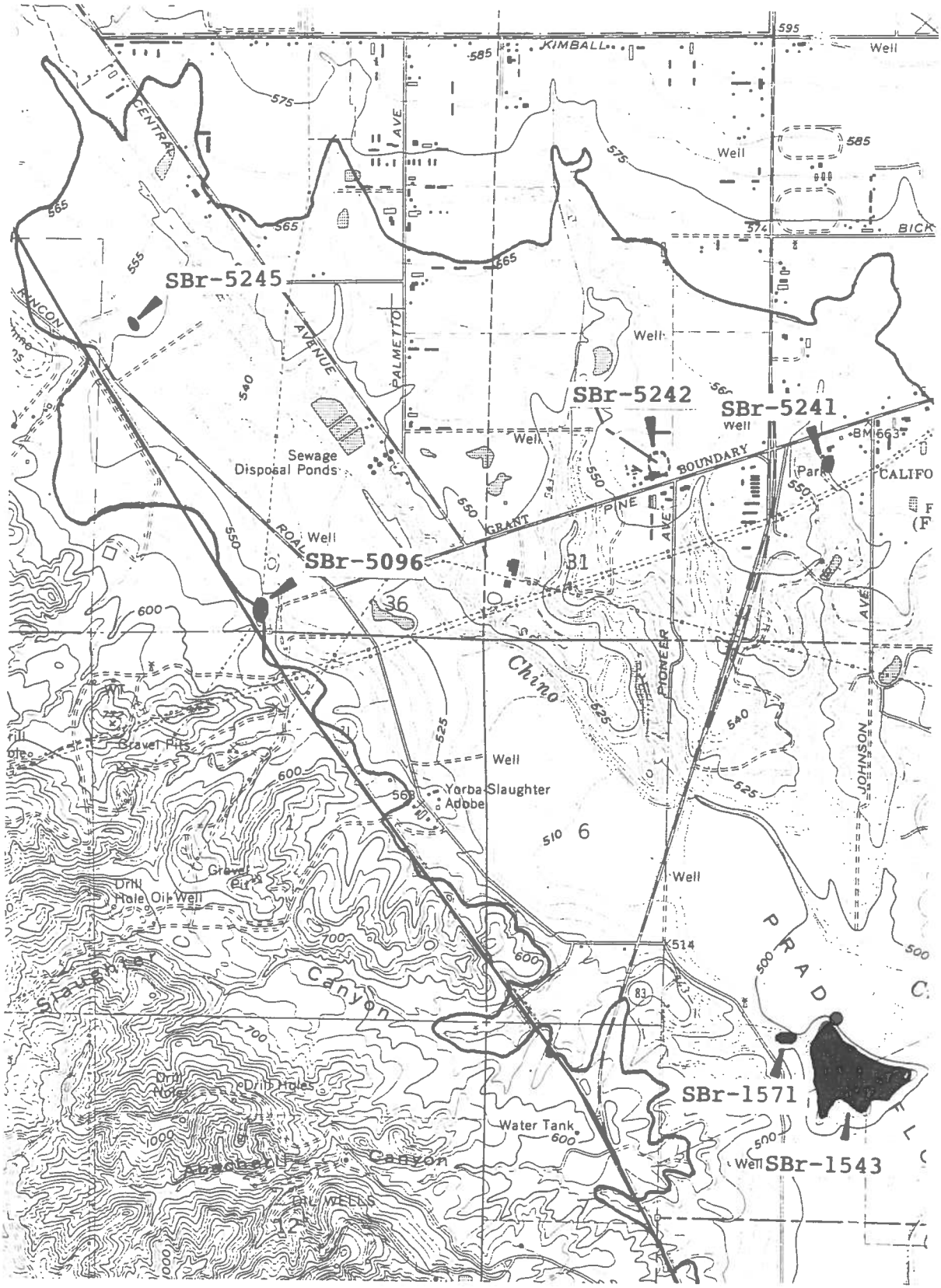
CATALOGUE DATA		PROVENIENCE	DESCRIPTION	HYDRATION DATA			COMMENTS	OBSIDIAN
ohl#	catalog #	unit, level	name,type	edge 1+2	t-test	MEAN-all	quality, problems	SOURCE
3823	2754-A	40E/0N	FLAKE	4.1 +-.1	p).2	ONE BAND		COSO
		20-30 cm	INTERIOR	4.0 +-.1	edges =	4.0 +-.2		
3824	2754-B	44N/25W	FLAKE	4.1 +-.2	p).2	ONE BAND		?
		20-30 cm	INTERIOR	4.0 +-.1	edges =	4.1 +-.1		
3825	2754-C	44N/25W	FLAKE	5.0 +-.4	p).9	ONE BAND		COSO
		cm	INTERIOR	5.0 +-.3	edges =	5.0 +-.3		
3826	2754-D	6N/23W	FLAKE	4.5 +-.3	p).5	ONE BAND		COSO
		10-20 cm	INTERIOR	4.4 +-.1	edges =	4.4 +-.2	ONE EDGE ONLY	
3827	2754-E	6N/23W	FLAKE	5.0 +-.2	p(.01	2 BANDS		COSO
		10-20 cm	INTERIOR	5.7 +-.2	different	(edge 1+2)		

ATTACHMENT 1

SITE DISTRIBUTION MAPS

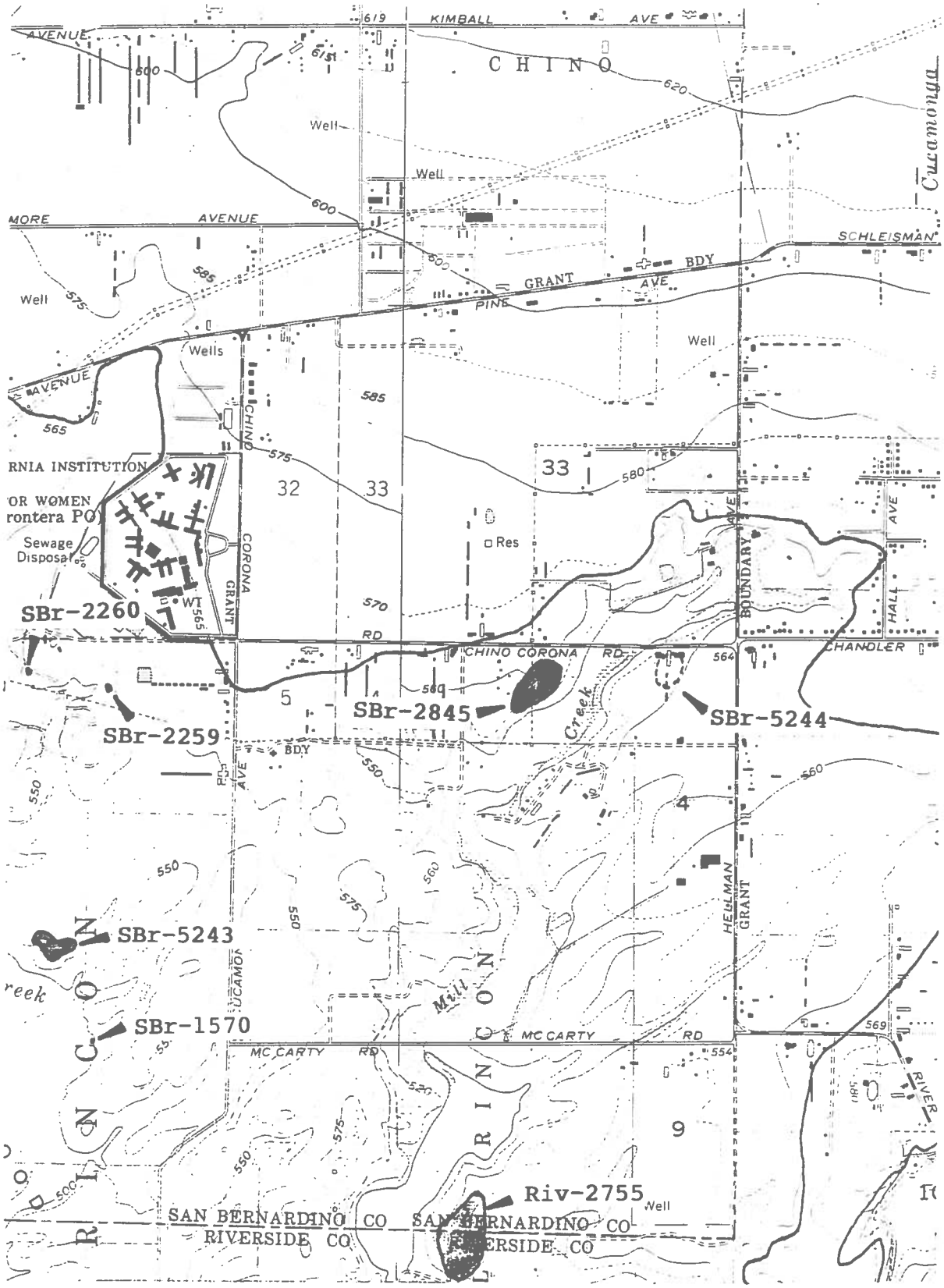
UNDER SEPERATE COVER

MAP P1



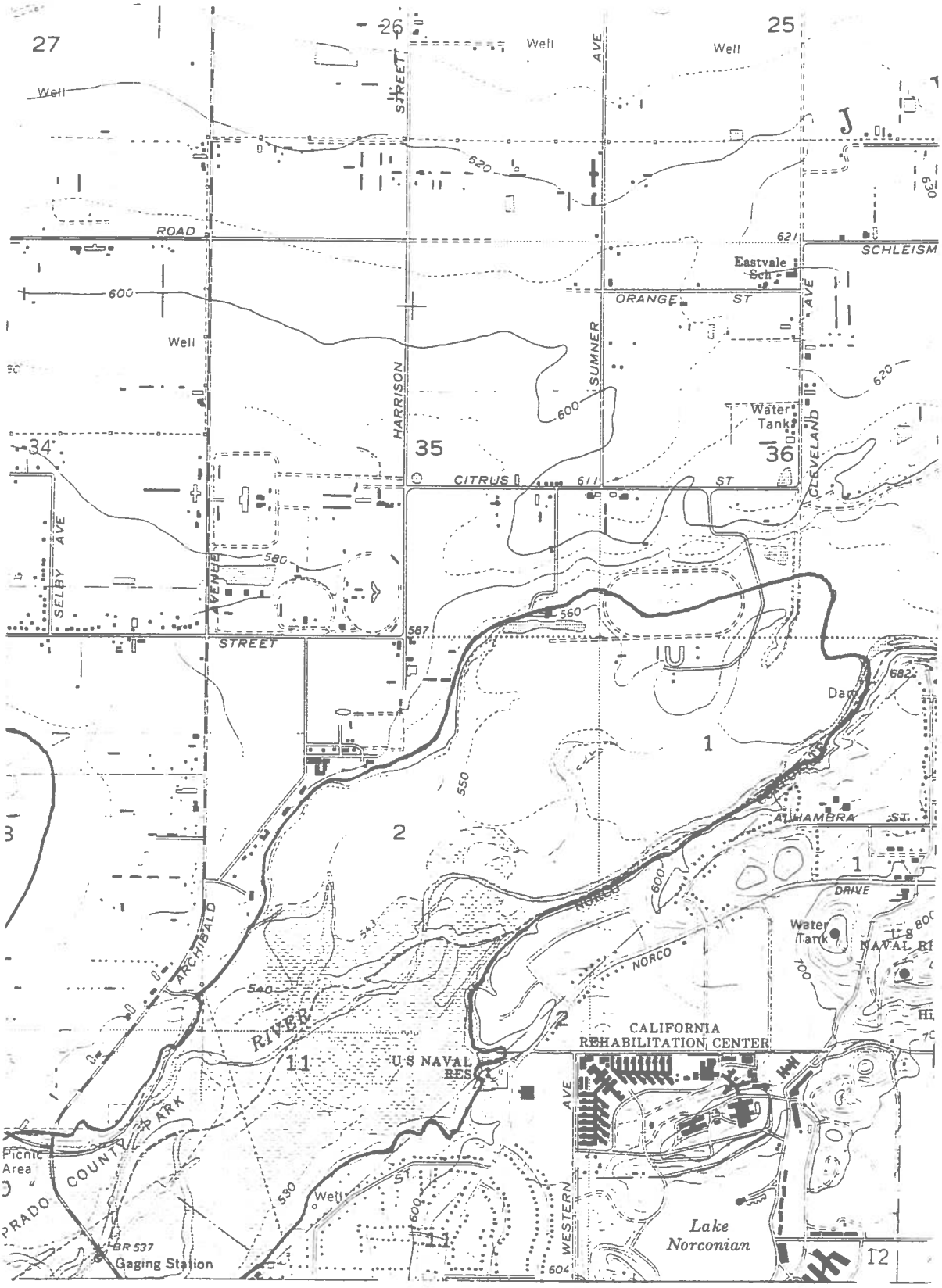
Map P1. Prehistoric Sites: Prado Basin (Prado Dam Quad Sheet).

MAP P2



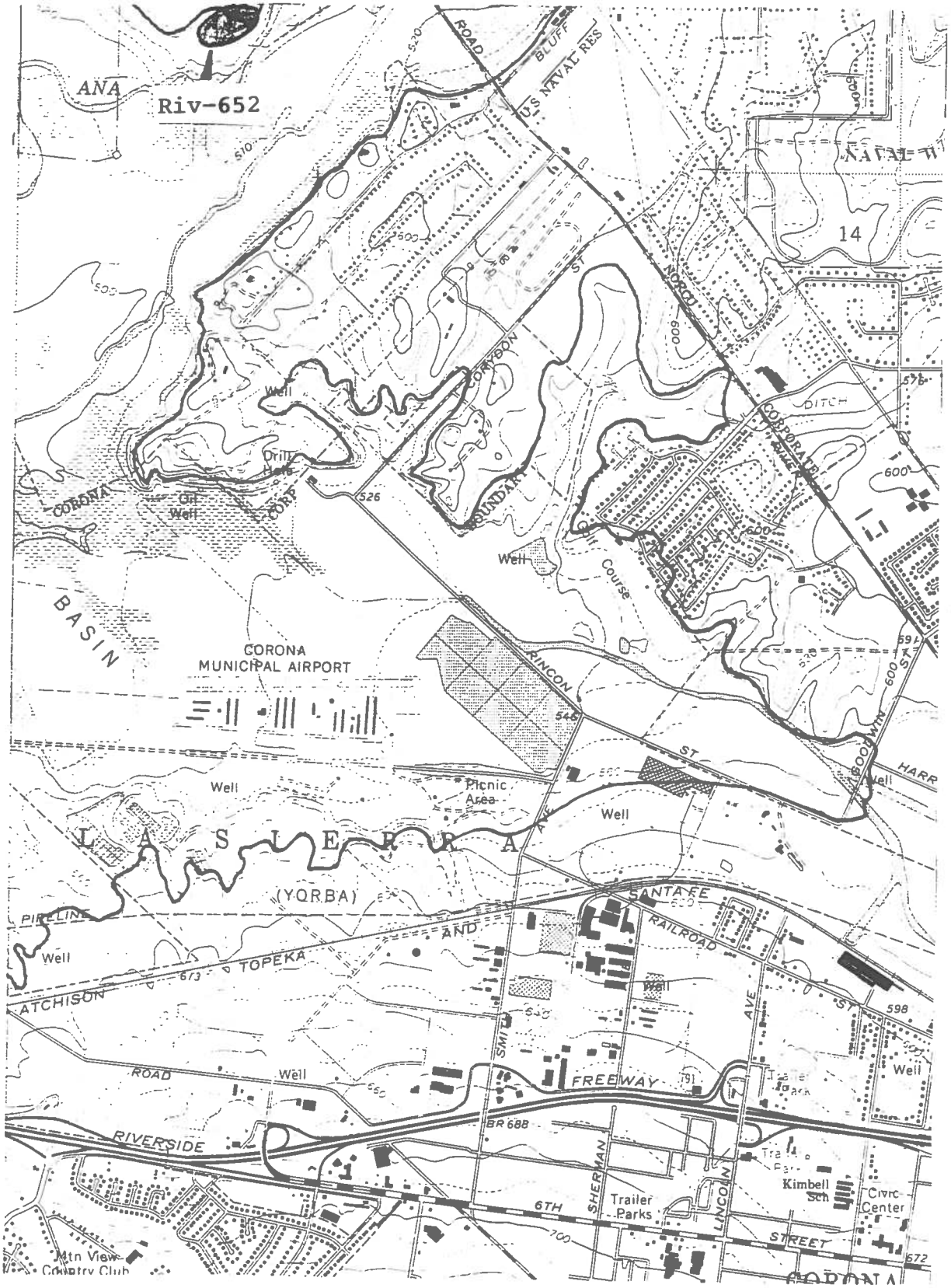
Map P2. Prehistoric Sites: Prado Basin (Prado Dam and Corona North Quad Sheets).

MAP P3



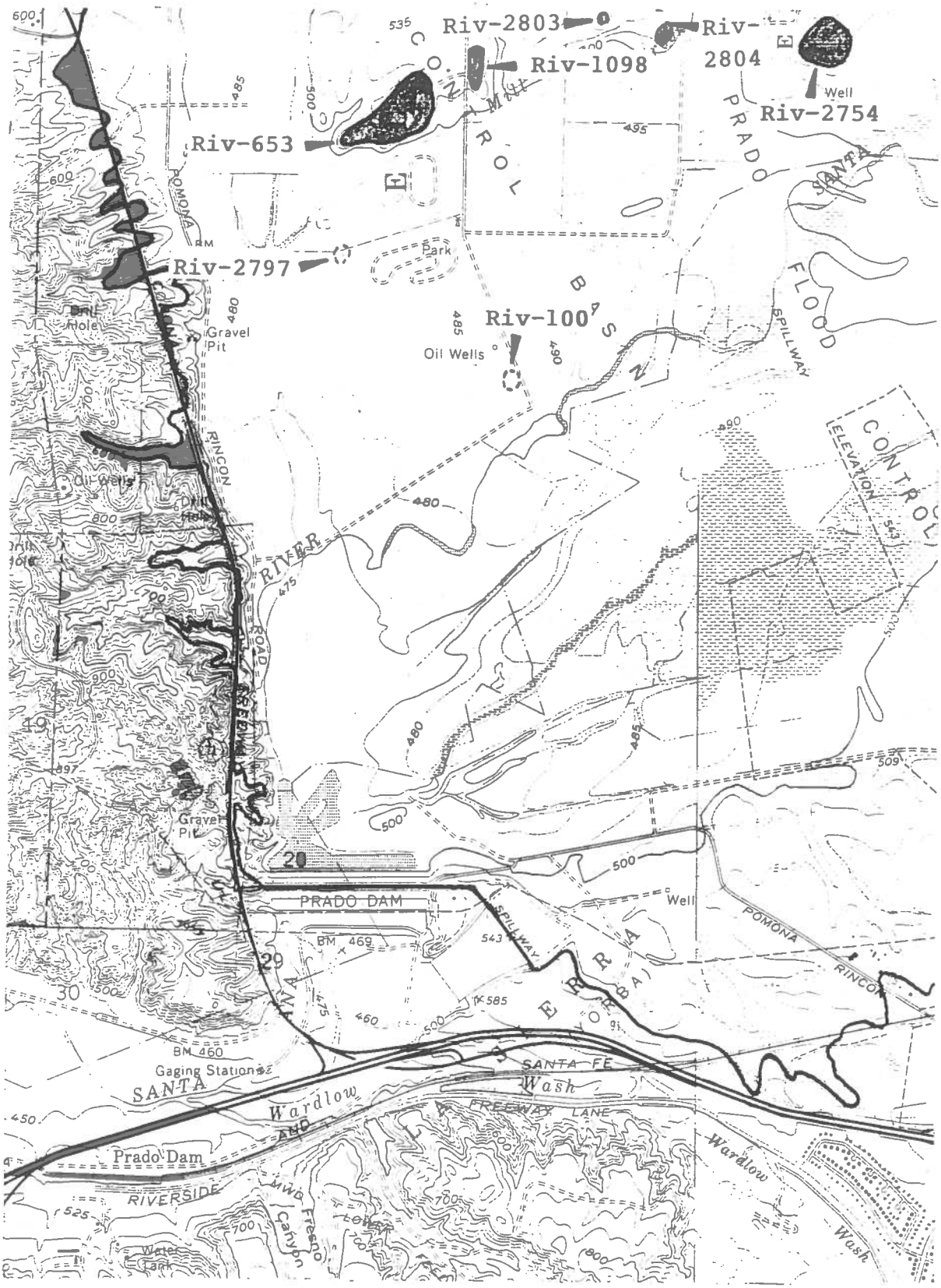
Map P3. Prehistoric Sites: Prado Basin (Corona North Quad Sheet).

MAP P4



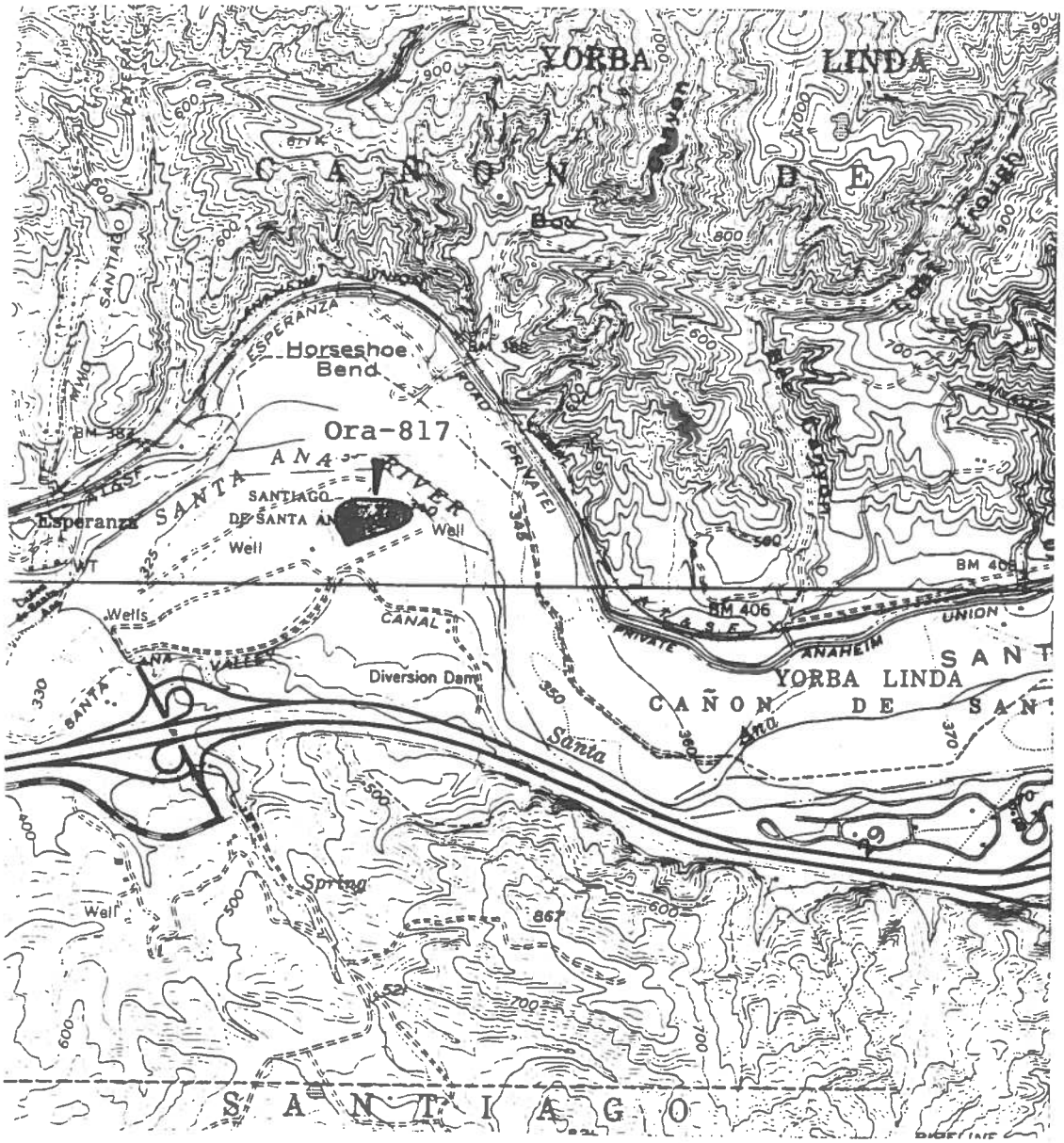
Map P4. Prehistoric Sites: Prado Basin (Corona North Quad Sheet).

MAP P5



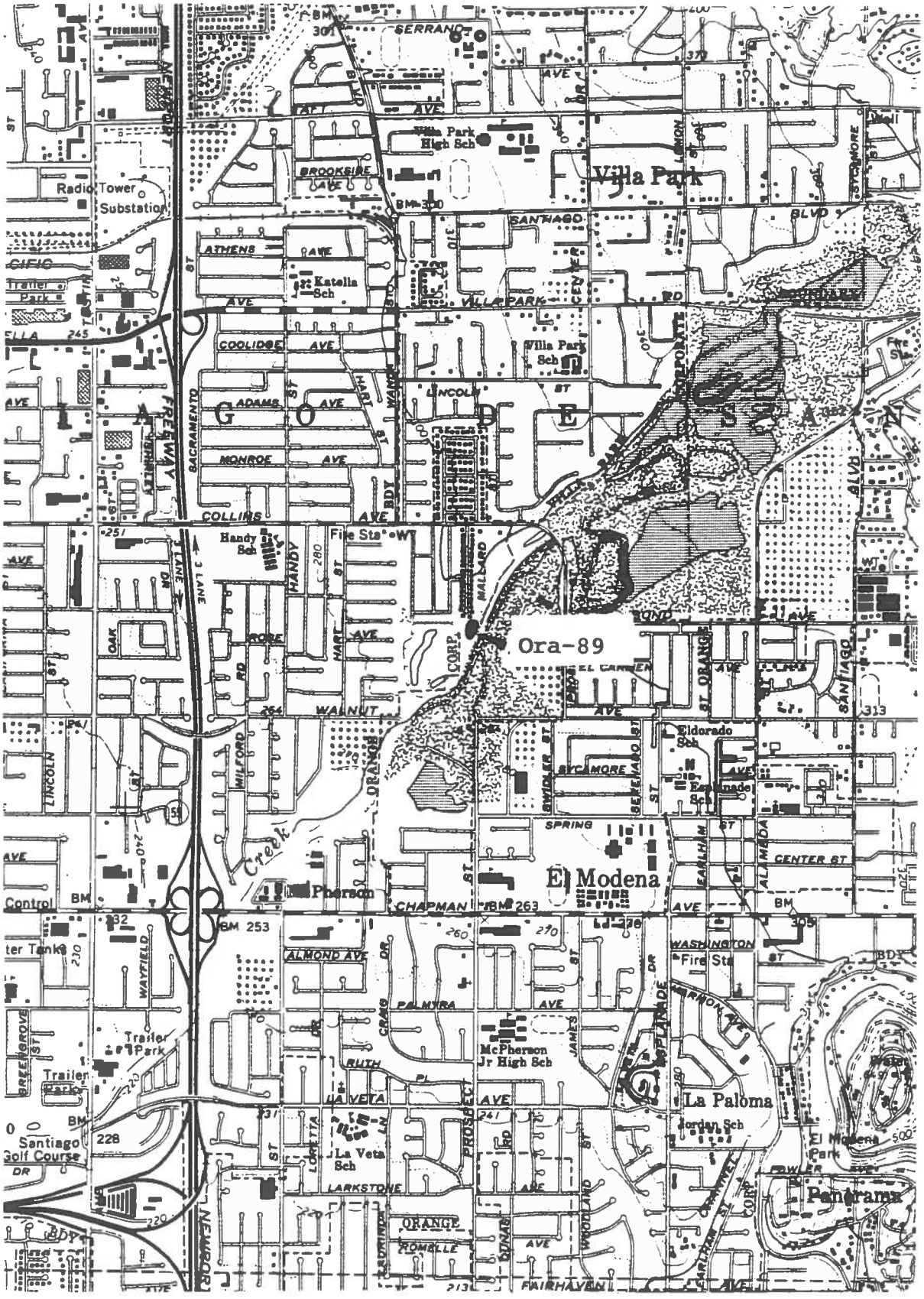
Map P5. Prehistoric Sites: Prado Basin (Prado Dam and Corona North Quad Sheets).

MAP P6



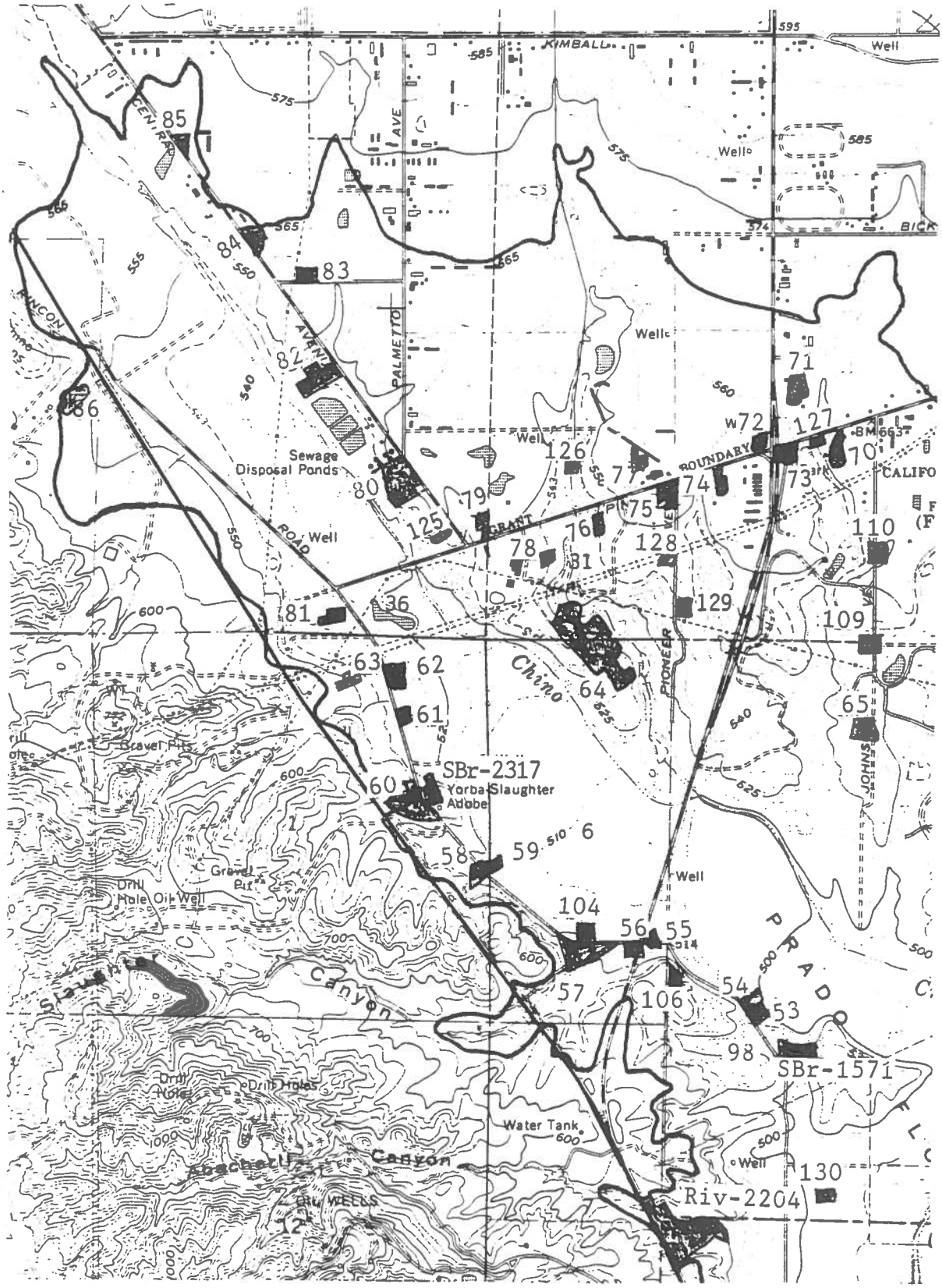
Map P6. Location of Ora-817 (Prado Dam and Black Star Canyon Quad Sheets).

MAP P7



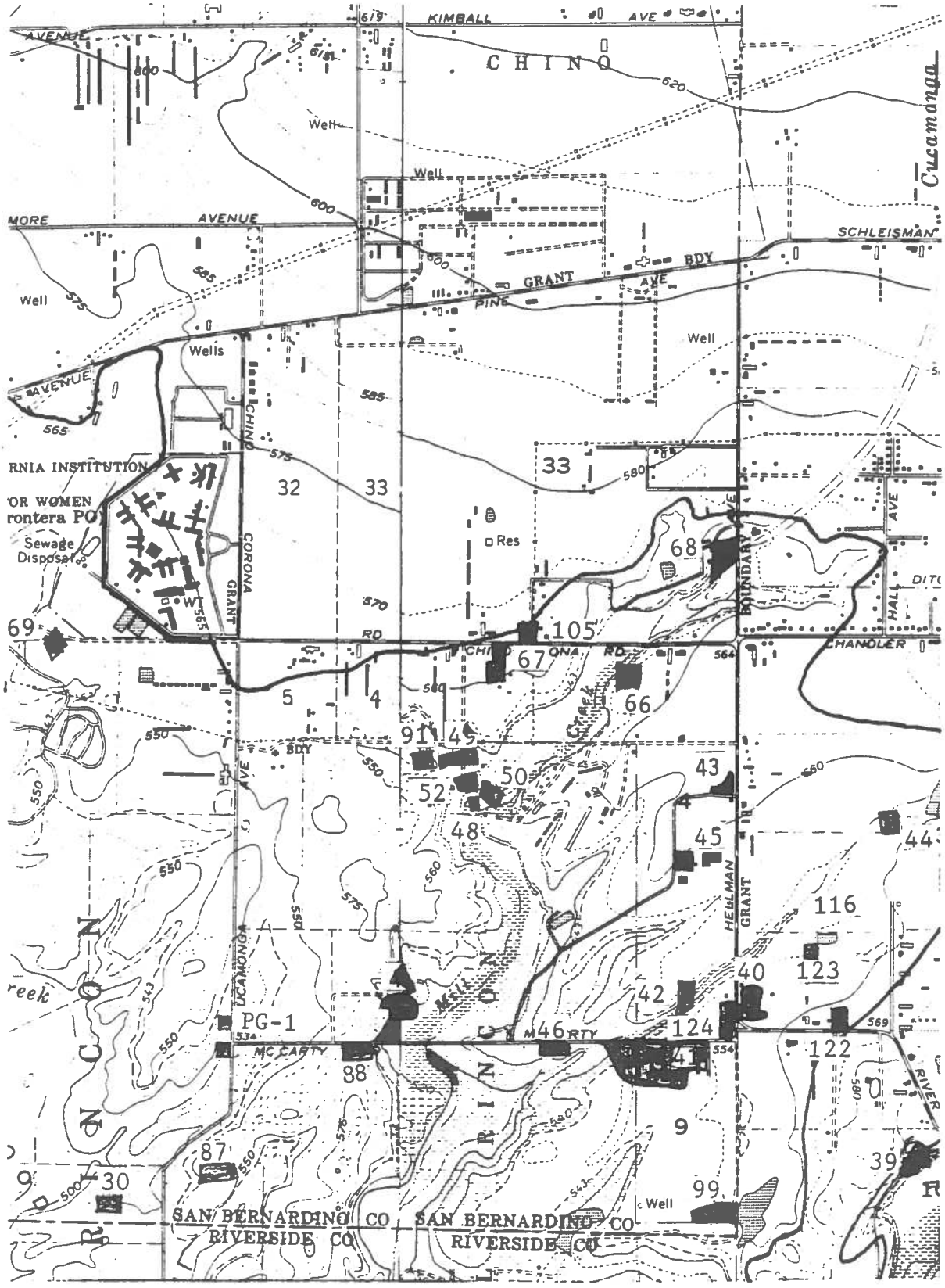
Map P7. Location of Ora-89 (Orange Quad Sheet).

MAP Hl

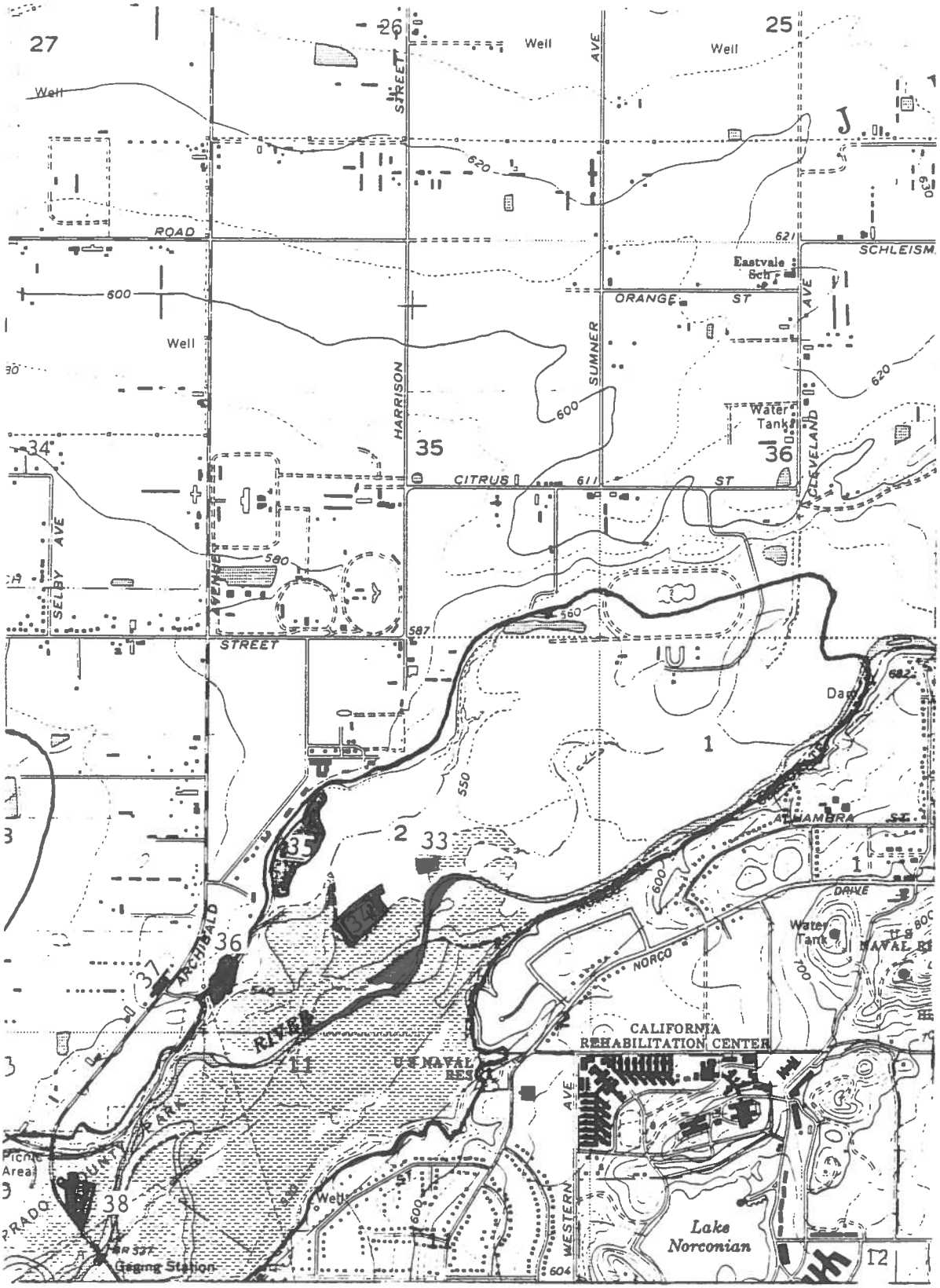


Map Hl. Historical Sites: Prado Basin (Prado Dam Quad Sheet).

MAP H2

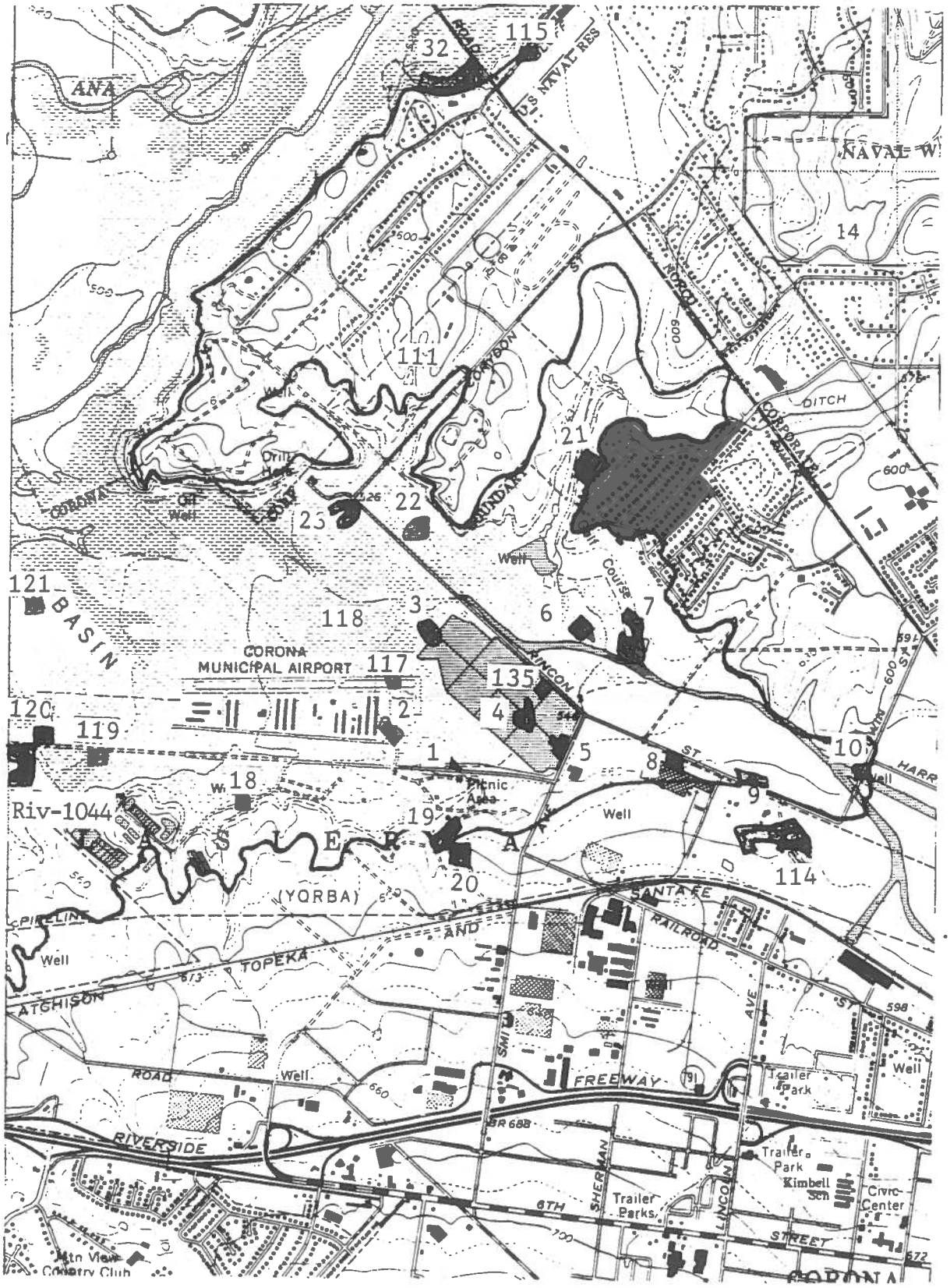


Map H2. Historical Sites: Prado Basin (Prado Dam and Corona North Quad Sheets).

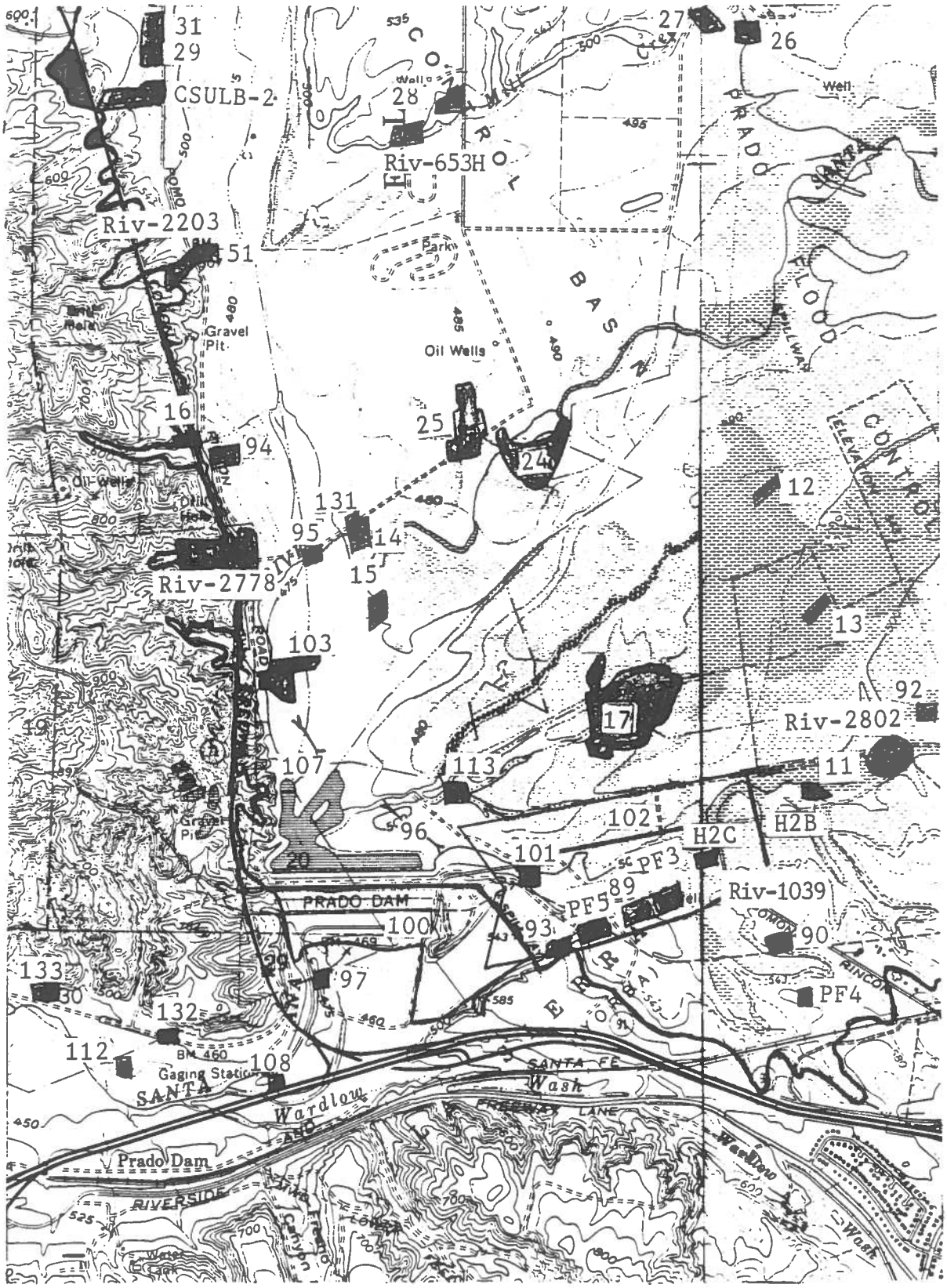


Map H3. Historical Sites: Prado Basin (Corona North Quad Sheet).

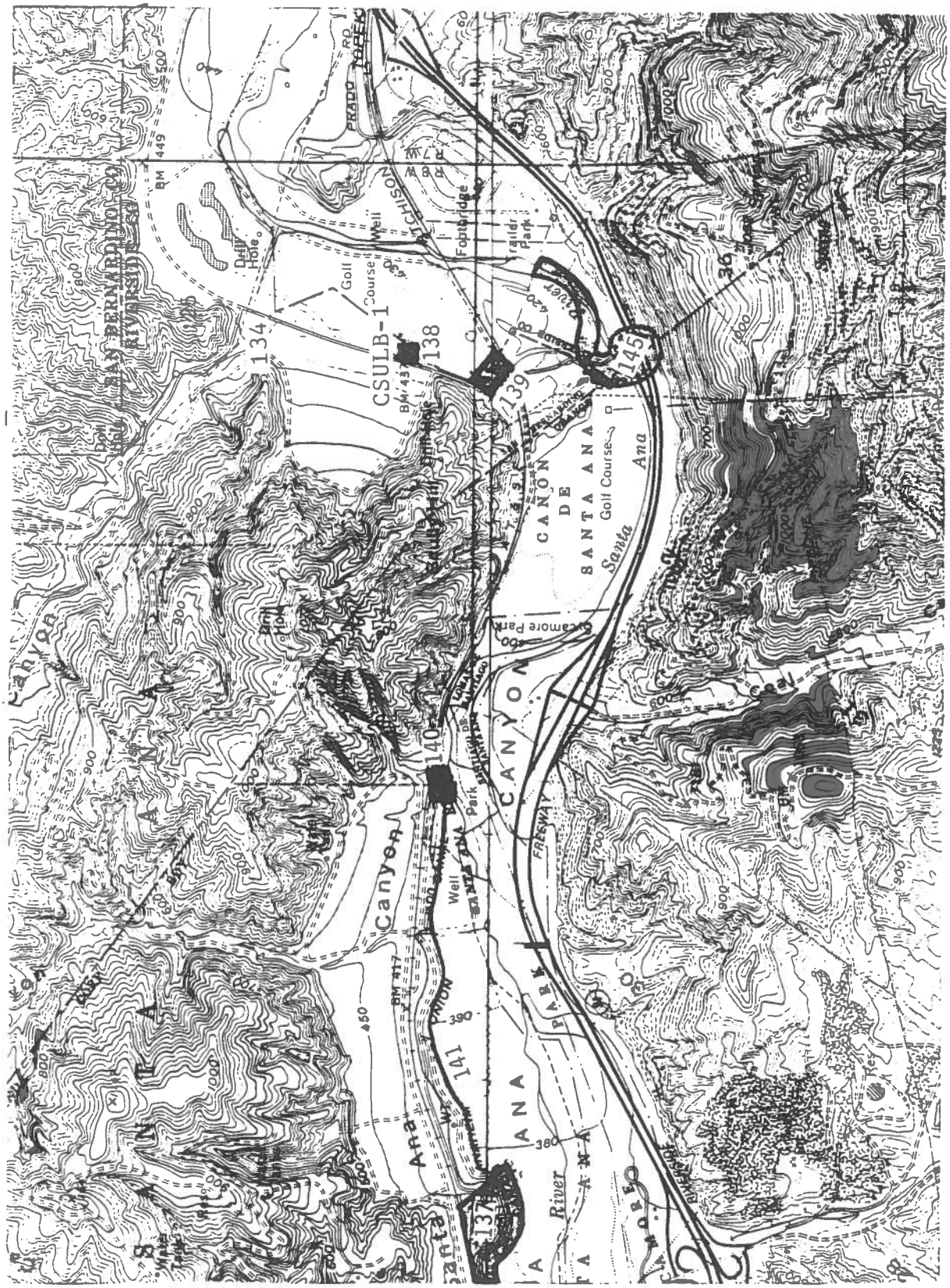
MAP H4



Map H4. Historical Sites: Prado Basin (Corona North Quad Sheet).

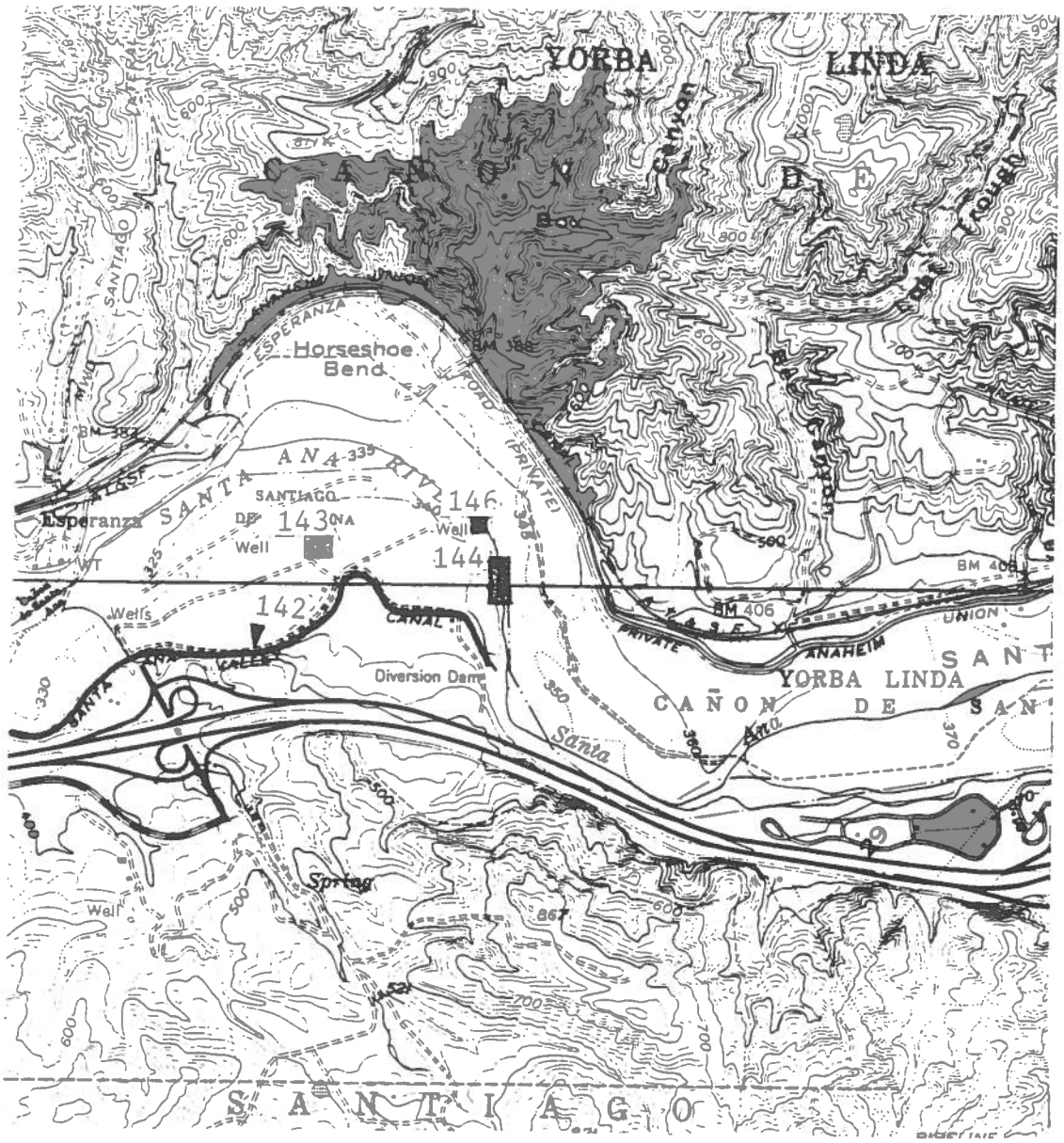


Map H5. Historical Sites: Prado Basin (Prado Dam and Corona North Quad Sheets).

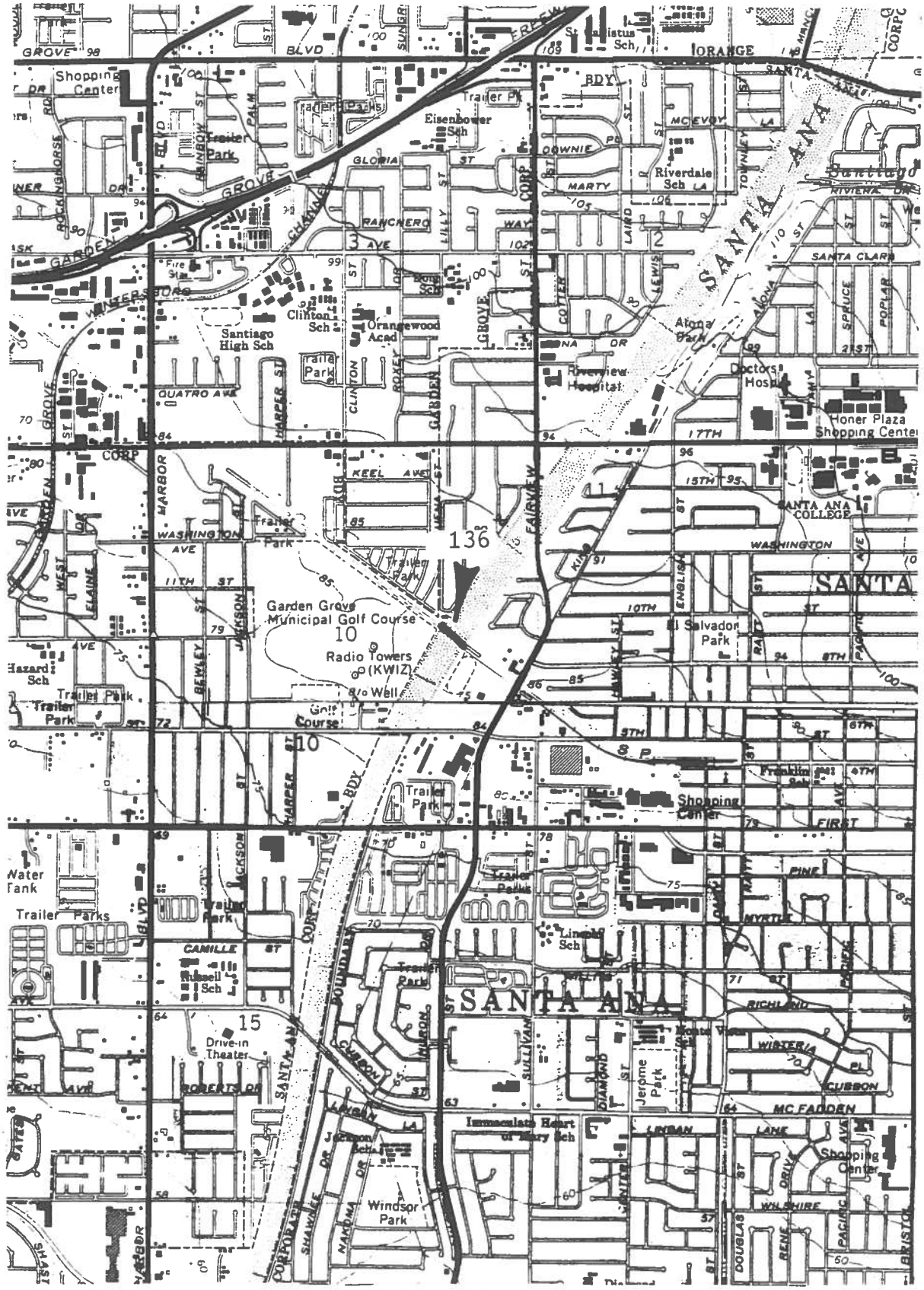


Map H6. Historical Sites: Santa Ana Canyon (Prado Dam and Black Star Canyon Quad Sheets).

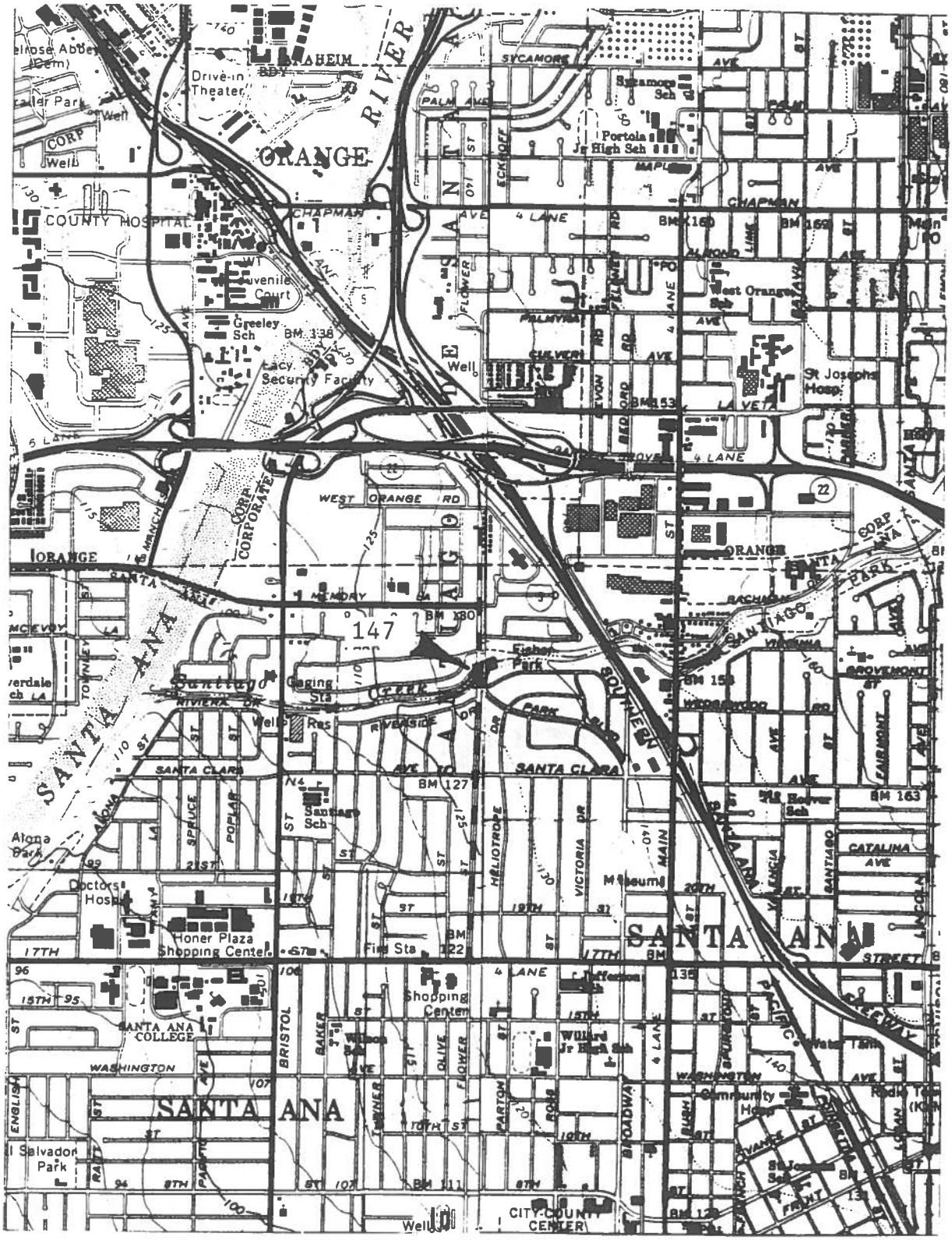
MAP H7



Map H7. Historical Sites: Santa Ana Canyon (Prado Dam and Black Star Canyon Quad Sheets).



Map H8. Location of PB-136: The Pacific Electric Bridge (Anaheim and Newport Beach Quad Sheets).



Map H9. Location of PB-147: The Flower Street Bridge (Anaheim and Orange Quad Sheets).

30-000058

Filed

ARCHEOLOGICAL SURVEY OF SOUTHERN CALIFORNIA

a ORA 58 — BANNING — ORANGE COUNTY

b SITE OR-13 LAT. ____ ALT. ____ LONG. ____ QUAD. CORONA SECTION ____ T ____ R ____ B&M ____

c TYPE: artifact area[1] · house[2] · burial[3] · cremation[4] · shell midden[5] · midden[6] · workshop[7] · fire[8] · mourning cer.[9] · effigy[10] · trail[11] · maze[12] · bedrock mortars[13] · do. metates[14] · pictographs[15] · petroglyphs[16] · village site[17] · quarry[18] · other[19] ____

d Area of site: 100 yds. x 500 yds. N-S. Deep deposit[1] · shallow[2] · surf. only[3] · overburden?[4] 5'

e Water source: spring[1] · stream[2] · lake[3] · tank[4] · lagoon[5] SANTA ANA R. Location: ¼ mi. W

f Location of site: beach[1] · terrace[2] · bluff[3] · shore[4] · mesa[5] · cave[6] · rock shelter[7] · dune[8] · alluv. fan[9] ____[10]

g Access to site: 200 yds. N. of N. end of Pacific Ave., Costa Mesa Dist. from road: PVT. RD. CUTS SITE

h Condition: wind eroded[1] · water eroded[2] · cultivated[3] · overgrown[4] · construction[5] · pitted[6] ERODED ALONG BLUFF

i Owner: gov't.[1] · private[2] GEORGE A. CAPRON, 1500 E. OCEAN FRONT, BALBOA Permission[3] ____

j Artifacts: pottery[1] · bone[2] · shell[3] · asphaltum[4] · pigment[5] · vegetal[6] · European[7] · food remains[8] · other[9] ____

k Chipped Stone: points[1] · knives[2] · scrapers[3] · drills[4] · ornaments[5] · other.[6] ____

l Pecked: metates[1] · manos[2] · mortars[3] · pestles[4] · bowls[5] · other.[6] ____ ground?[7] polished?[8]

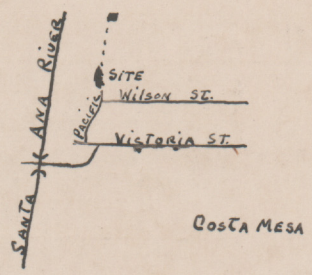
m Loc. of coll: L.A.[1] · SB[2] · SD[3] · SW[4] · KH[5] · AV.[6] · SH[7] · PS[8] · other[9] ____ Photos.[10] ____ Report.[11] ✓

n Date: 11/25/49 Recorded by: J. & H. EBERHART Excavation? ✓

M 11 WINTERBOURNE, J.W.

LOCATION OF COLLECTION · REPT. PHOTO m · OTHER STONE WORK l · CHIPPED STONE WORK k · MATERIALS USED BY INHABITANTS j · OWNER · CONDITION h · GEOLOGIC LOCATION · WATER

30-000058



30-000058 MAPPED

University of California

ARCHAEOLOGICAL SITE SURVEY RECORD

1. Site Ora-58 6.5 2. Map Newport Bch. USGS 7½ ~~Santa Ana~~ -1949 3. County ORANGE
4. Twp. Newport Bch. Range 10.W ; ____ 1/4 of E half of 1/4 of Sec. 8
5. Location End of Wison St. in Costa Mesa, Calif. in wheat fields.

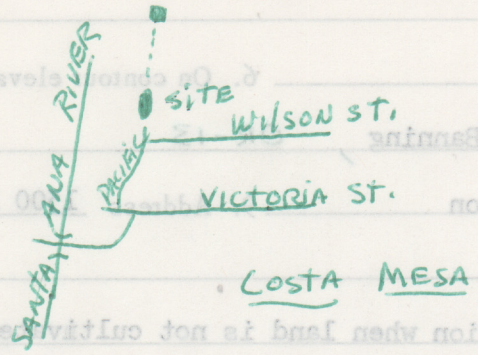
6. On contour elevation 75
7. Previous designations for site Banning, OR-13
8. Owner Mr. Geo. A. Capron 9. Address 1500 E Ocean Front, Balboa, Cal.
10. Previous owners, dates
11. Present tenant No objection when land is not cultivated
12. Attitude toward excavation Large habitation site near Santa Ana River.
13. Description of site
14. Area 100 yds by 500 yds N-S 15. Depth 5' 16. Height
17. Vegetation 18. Nearest water 500'
19. Soil of site 20. Surrounding soil type
21. Previous excavation numerous excavations by artifact hunters (pot type)
22. Cultivation yes (part of yr.) 23. Erosion WATER EROSION ALONG BLUFF
24. Buildings, roads, etc.
25. Possibility of destruction State Hospital will be built in this area. (P.S. it has been!) jml
26. House pits
27. Other features
28. Burials Yes.
29. Artifacts A large number of flint tools, proj. pts. metates, etc. have been removed by artifact hunters.

(EIR #ORA-530-WPA Report) ↓
J.W. WINTER BOURNE; Daily Notes for Banning Site, Dec-21, 1937 to Jan 21, 1938 ms in Southwest Museum

30. Remarks Informationon this site was obtained from Mr. H. Strandt, 1025 E. Bdwy., Anaheim, Calif.; who has excavated here several times. Artifacts are still found here, tho the area has been "worked over" for many yrs.
31. Published references
32. Accession No. 33. Sketch map OVER
34. Date 4/ 27/49 35. Recorded by Briggs 36. Photos

30-000058

ORA-58



30-000058

University of California — California Archaeological Survey

ARCHAEOLOGICAL SITE SURVEY RECORD

1. Site Ora 58 2. Map Corona 3. County ~~Orange~~

4. Twp. _____ Range _____ ¼ of _____ ¼ of Sec. _____

5. Location Ca 200 yds N of the N end of Pacific Ave, Costa Mesa

6. On contour elevation Less than 100'

7. Previous designations for site Winterbourne's Banning

8. Owner Mr. George A. Capron 9. Address 1500 E. Ocean Front, ~~Balboa~~(?)

10. Previous owners, dates Banning Estate

11. Present tenant lives in house just off the N end of the site

12. Attitude toward excavation _____

13. Description of site Shell midden on bluff to E of Santa Ana R.

14. Area ca 500 yds along top of bluff x 100 yds back from edge 15. Depth Erosion xposes 5' on W side 16. Height _____

17. Vegetation short grass 18. Nearest water Santa Ana R

19. Soil of site Dark friable sandy 20. Surrounding soil type Light friable sandy

21. Previous excavation Winterbourne

22. Cultivation Wheat 23. Erosion Along W side (edge of bluff)

24. Buildings, roads, etc. Pvt road runs along E side of site

25. Possibility of destruction _____

26. House pits _____

27. Other features _____

28. Burials _____

29. Artifacts 2 crude scrapers (so far as I have been able to learn, Winterbourne reports no artifacts of this class from Banning nor any of his other sites); 1 granite metate (?) frag; 1 mano or metate frag.

30. Remarks _____

31. Published references J. W. WINTERBOURNE, Daily Notes For Banning Site, December 21, 1937 to January 21, 1938 ms in SW Museum.

32. UCMA Accession No. _____ 33. Sketch map _____

34. Date Nov. 27, 1949 35. Recorded by J. & H. Eberhart 36. Photos _____

AS-UCLA files 30-000058

Ora-58
supp. info.

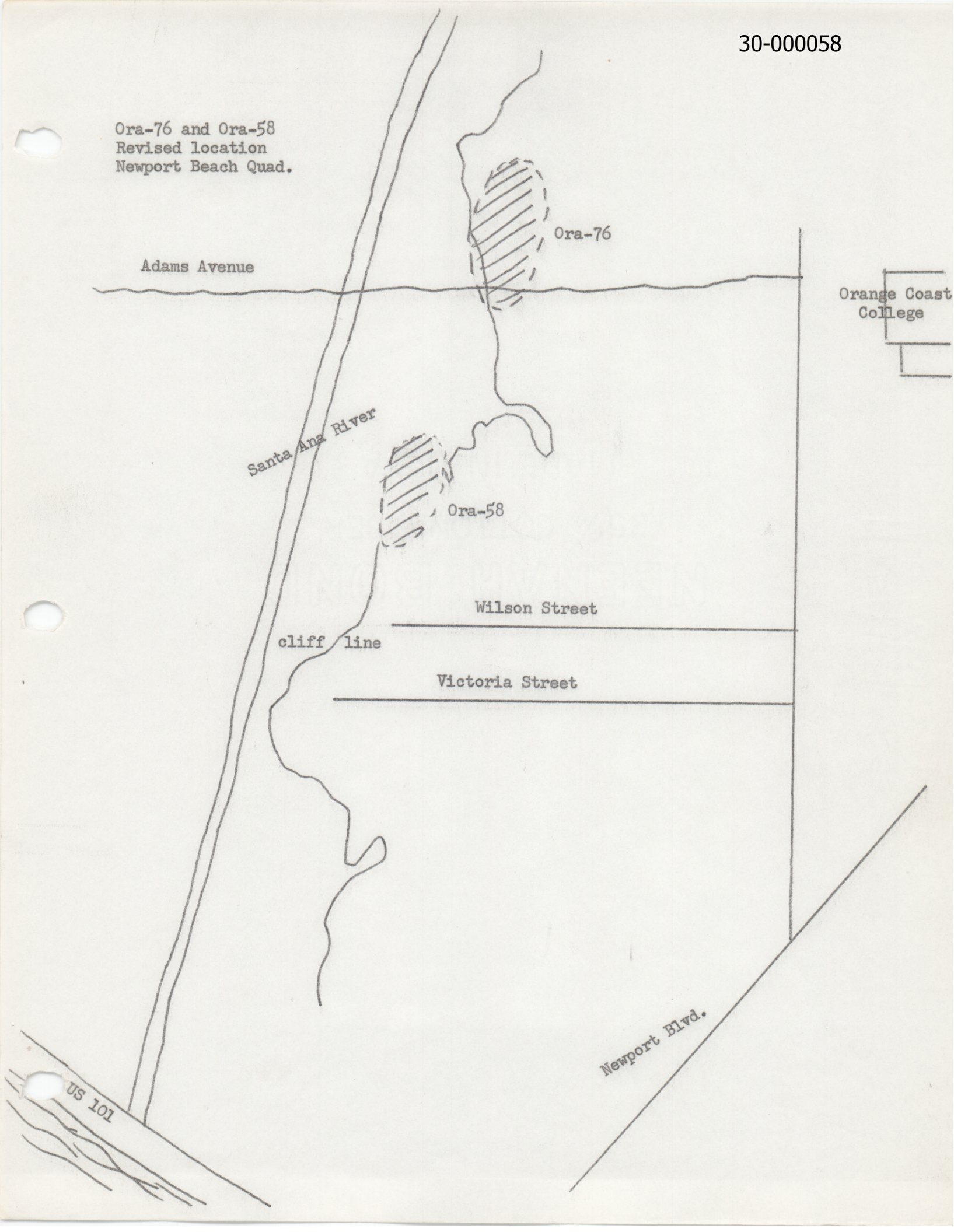
Ora-58

This site sheet needs extensive revision. It has been excavated by Long Beach State College from 1957 on through current work. A revised site sheet will be forwarded when studies are more complete. Meanwhile, any questions will be answered in correspondence.

K. Dixon
L.B.S.C.
16 Feb 1960

Note revision in location of site, attached.

30-000058


Ora-76 and Ora-58
Revised location
Newport Beach Quad.
Ora-76
Adams Avenue
Orange Coast
College
Santa Ana River
Ora-58
Wilson Street
cliff line
Victoria Street
Newport Blvd.
US 101

30-000058 30-000058

Form 10-300
(Dec. 1968)

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES INVENTORY – NOMINATION FORM

(Type all entries – complete applicable sections)

STATE: California
COUNTY: Orange
FOR NPS USE ONLY
ENTRY NUMBER | DATE

SEE INSTRUCTIONS

1. NAME

COMMON: Fairview Indian Site /or/Fairview Hospital Indian Site/ and/Ora-58

AND/OR HISTORIC: Banning-Norris Site/and/Banning Estate (Norris Property) Site

2. LOCATION

STREET AND NUMBER: 7,000 ft. west of Harbor Blvd.; 3,000 ft. south of Adams Street

CITY OR TOWN: Costa Mesa

STATE: California | CODE: 06 | COUNTY: Orange | CODE: 059

3. CLASSIFICATION

CATEGORY (Check One)	OWNERSHIP		STATUS	ACCESSIBLE TO THE PUBLIC
District ☐ Building ☐	Public ☒	Public Acquisition:	Occupied ☐	Yes:
Site ☒ Structure ☐	Private ☐	In Process ☐	Unoccupied ☒	Restricted ☒
Object ☐	Both ☐	Being Considered ☐	Preservation work in progress ☐	Unrestricted ☐
				No: ☐

PRESENT USE *(Check One or More as Appropriate)*

Agricultural	☐	Government	☐	Park	☐	Transportation	☐	Comments	☐
Commercial	☐	Industrial	☐	Private Residence	☐	Other *(Specify)*	☒		
Educational	☐	Military	☐	Religious	☐	Grazing			
Entertainment	☐	Museum	☐	Scientific	☐				

4. OWNER OF PROPERTY

OWNERS NAME: General Services Administration, State of California

STREET AND NUMBER:

CITY OR TOWN: Sacramento | STATE: California | CODE: 06

5. LOCATION OF LEGAL DESCRIPTION

COURTHOUSE, REGISTRY OF DEEDS, ETC: Orange County Courthouse

STREET AND NUMBER:

CITY OR TOWN: Santa Ana | STATE: California | CODE: 06

APPROXIMATE ACREAGE OF NOMINATED PROPERTY: 91.83

6. REPRESENTATION IN EXISTING SURVEYS

TITLE OF SURVEY: Archaeological Survey, University of California at Los Angeles

DATE OF SURVEY: Revised, 1949;1959 Federal ☐ State ☒ County ☐ Local ☐

DEPOSITORY FOR SURVEY RECORDS: Archaeological Survey, University of California at Los Angeles

STREET AND NUMBER: 405 Hilgard Avenue

CITY OR TOWN: Los Angeles | STATE: California | CODE: 06

STATE: California
COUNTY: Orange
ENTRY NUMBER | DATE | FOR NPS USE ONLY

00144

30-000058

7. DESCRIPTION

CONDITION	(Check One) Excellent ☐ Good ☒ Fair ☐ Deteriorated ☐ Ruins ☐ Unexposed ☐	
INTEGRITY	(Check One) Altered ☒ Unaltered ☐	(Check One) Moved ☐ Original Site ☒

DESCRIBE THE PRESENT AND ORIGINAL (*If known*) PHYSICAL APPEARANCE

The Fairview Indian Site is a large California Indian midden, one of the very few in coastal Southern California which has not been completely or largely destroyed. Test excavations have shown that there is a long period of early occupancy, extending from at least 1500 B.C. to approximately A.D. 500. In the stratum overlying that is the later occupancy, which lasted from about A.D. 500 to sometime late in the 19th century. People lived here over the millennia because of the site's proximity to a lagoon or embayment which provided natural foods in abundance, including shellfish, water fowl, fish, and mammals.

The site is about 2,000 feet square, with a zone of concentrated settlement that is about 1500 feet in diameter, averaging about 3 feet deep. The site contents include many food preparation implements, hunting implements, objects of personal decoration, ceremonial and religious paraphernalia, and burials. Appropriately conducted excavations should disclose living areas such as house floors and other kinds of activity areas.

In its present deceptive appearance, the site is now a nearly featureless flat surface, covered with millions of food-shell fragments and a few scattered artifacts. There is also a cross section of the deposit exposed in the adjacent bluff edge, where the site overlooks an expansive view of the Santa Ana River drainage.

Plans are being formulated to turn the site into an outdoor archaeological museum, which will preserve the archaeological features that are uncovered, will display reconstructions of the Indian houses, and by means of dioramas and other devices, will show reconstructions of Indian life at the site. A botanical garden will reconstruct the original plant cover and show how the Indians processed the resources. The deposit also contains samples from many aspects of the past environments, a rich source of data for other sciences. There will be a self-guiding archaeological and nature trail, and ultimately a museum devoted to regional Indian prehistory and the local ecological systems through time.

SEE INSTRUCTIONS

30-000058

6. SIGNIFICANCE

PERIOD *(Check One or More as Appropriate)*

Pre-Columbian	X	16th Century	X	18th Century	X	20th Century	☐
15th Century	☐	17th Century	X	19th Century	X		

SPECIFIC DATE(S) *(If Applicable and Known)* 1500 B.C. or earlier, to end of 19th Century; major culture change at approx. A.D. 500

AREAS OF SIGNIFICANCE *(Check One or More as Appropriate)*

Aboriginal		Education	☐	Political	☐	Urban Planning	☐
Prehistoric	X	Engineering	☐	Religion/Philosophy	☐	Other *(Specify)*	☐
Historic	X	Industry	☐				
Agriculture	☐	Invention	☐	Science	☐		
Art	☐	Landscape Architecture	☐	Sculpture	☐		
Commerce	☐			Social/Humanitarian	☐		
Communications	☐	Literature	☐				
Conservation	☐	Military	☐	Theater	☐		
		Music	☐	Transportation	☐		

STATEMENT OF SIGNIFICANCE *(Include Personages, Dates, Events, Etc.)*

The Indian populations of California's southern coast occupied the region at least by some time between 10,000 and 5,000 B.C. Since that time, people of different cultural traditions adapted to different aspects of the changin environment. There is archaeological evidence of a variety of patterns in subsistence, social organization, technology, and religion. But most of the archaeological evidence has now disappeared, due to vandalism and the destruction caused by the rapid advance of urban construction. Certainly, nowhere in coastal Southern California is there a preserved or developed example of an Indian site, or other means of comprehending the Indian ways of life, that can be visited, viewed, and understood by the public.

The one appropriate exception that is still left in good condition of preservation, and which could easily serve such a purpose, is the Fairview Indian Site in Costa Mesa.

Extensive tests have shown it to be an Indian midden rich in ancient implements, items of personal decoration, religious or cult objects, and burials. There probably is good evidence of house floors and other activity areas awaiting exposure by proper archaeological procedures.

Some of the characteristics that make this particular site significant are:

1) Its large size, containing perhaps 750,000 cubic yards of deposit, thus providing an excellent opportunity for scientific analysis and educational development.

2) Its intensive prehistoric occupancy, reulting from people returning again and again to live here over a period of more than 3,000 years, leaving behind great quantities of the refuse from which archaeologists reconstruct the culture patterns.

3) The large number of human burials, providing a skeletal population that can yield important information such as data on disease, pathologies, and nutrition, for physical anthropology and medicine.

(See Continuation Sheet)

SEE INSTRUCTIONS

30-000058

Form 10-300a
(July 1969)

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES
INVENTORY - NOMINATION FORM

(Continuation Sheet)

STATE	
California	
COUNTY	
Orange	
FOR NPS USE ONLY	
ENTRY NUMBER	DATE

(Number all entries)

8. Significance

4) Its relatively secure dating--while much remains to be done, there are more radiocarbon dates and obsidian hydration dates for this site than for any other in this region, showing that the site began to be occupied at least as early as 1500 B.C., and that there was a culture change at about A.D. 500.

5) The clear stratification, showing clearly the time relationships between the two successive major culture types and that occupied this area (the other, smaller sites do not show this relationship, which means that this site is a major key to the reconstruction of the regional prehistory).

6) The large number of "cogged stones" excavated from their original position, rather than being found only on the surface--this site therefore provides a major opportunity to learn, and show the public, what very likely will turn out to be a very early religious cult that flourished in this area.

7) Its extensive record of past ecology--the Indians brought to the site their selection from the available natural resources. Because the archaeologist can date samples from various periods and can reconstruct the culture patterns which guided the Indians' choices, the ecologist can reconstruct the changes in the total ecological systems of the past 3,000 years, which in turn can lead to very practical public use of such information for long-range regional planning by scientists, engineers, and civic officials.

The site is located conveniently, adjacent to major population centers. There are museums and educational institutions from primary schools through universities. When the site is developed, it will be a prime attraction for the local people as well as for the visitors to Southern California. The scientific research into this rich storehouse of prehistory and the plans for its development are designed to be compatible with, and even enhance, its simultaneous use as a public park.

This site is now unique in an area of California where such sites were once typical; it represents the last well-preserved remnant of an important part of the Indian heritage.

Now that the local Indian populations are extinct, we should not allow the memory of them to be erased completely. We can commemorate them and explain their accomplishments by preserving this Fairview Indian Site as a small gesture toward what we have lost and, even more important, as a positive contribution to public understanding of a part of our national heritage.

30-000058

9. MAJOR BIBLIOGRAPHICAL REFERENCES

Dixon, Keith A.
"A Brief Report on Radiocarbon and Obsidian Hydration Measurements from Ora-58 (The Banning-Norris or Fairview Hospital Site), Orange County, California". Pacific Coast Archaeological Society Quarterly, Vol. 6, No. 4, pp. 61-68, 1970.

"Cogged Stones and Other Ceremonial Cache Artifacts in Stratigraphic Context at Ora-58, a Site in the Lower Santa Ana River Drainage, Orange County". Pacific Coast Archaeological Society Quarterly, Vol. 4, No. 3, pp. 57-65, 1968.

(See Continuation Sheet)

10. GEOGRAPHICAL DATA

LATITUDE AND LONGITUDE COORDINATES DEFINING A RECTANGLE LOCATING THE PROPERTY						OR	LATITUDE AND LONGITUDE COORDINATES DEFINING THE CENTER POINT OF A PROPERTY OF LESS THAN ONE ACRE					
CORNER	LATITUDE			LONGITUDE				LATITUDE			LONGITUDE	
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds		Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
NW	33°	39'	57"	117°	56'	35"		°	'	"	°	'	"
NE	33°	39'	57"	117°	56'	12"							
SE	33°	39'	37"	117°	56'	12"							
SW	33°	39'	37"	117°	56'	35"							

LIST ALL STATES AND COUNTIES FOR PROPERTIES OVERLAPPING STATE OR COUNTY BOUNDARIES

STATE:	CODE	COUNTY	CODE
STATE:	CODE	COUNTY:	CODE
STATE:	CODE	COUNTY:	CODE
STATE:	CODE	COUNTY:	CODE

11. FORM PREPARED BY

NAME AND TITLE:
Keith A. Dixon, Professor of Anthropology

ORGANIZATION
California State College at Long Beach

DATE
June 6, 1971

STREET AND NUMBER:

CITY OR TOWN:
Long Beach

STATE
California 90801

CODE
06

12. STATE LIAISON OFFICER CERTIFICATION

As the designated State Liaison Officer for the National Historic Preservation Act of 1966 (Public Law 89-665), I hereby nominate this property for inclusion in the National Register and certify that it has been evaluated according to the criteria and procedures set forth by the National Park Service. The recommended level of significance of this nomination is:

National ☐ State ☐ Local ☒

Name _____

Title _____

Date _____

NATIONAL REGISTER VERIFICATION

I hereby certify that this property is included in the National Register.

_____
Chief, Office of Archeology and Historic Preservation

Date _____

ATTEST:

_____
Keeper of The National Register

Date _____

SEE INSTRUCTIONS

30-000058

Form 10-300a
(July 1969)

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES
INVENTORY - NOMINATION FORM

(Continuation Sheet)

STATE	
California	
COUNTY	
Orange	
FOR NPS USE ONLY	
ENTRY NUMBER	DATE

(Number all entries)

9. Major Bibliographical References.

"A Proposal for the Development of a 'Fairview Park' Open-Air Archaeology Museum and Educational Resource, Costa Mesa, California." Duplicated typescript, widely distributed and on deposit with professional organizations and government offices. California State College at Long Beach, 1971.

In preparation: A monograph on the site, with a complete report on test excavations of 1959-1966, with a summary of the history, previous excavations, and surface collections.

Winterbourne, J.W.
"Orange County California Historical Research Project, Report of Banning Estate Excavation (Norris Property) (1935)". Pacific Coast Archaeological Society Quarterly, Vol. 4, No. 2, pp. 10-17, 1968.

30-000058

Form 10-301
(July 1969)

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES

PROPERTY MAP FORM

(Type all entries - attach to or enclose with map)

STATE	
California	
COUNTY	
Orange	
FOR NPS USE ONLY	
ENTRY NUMBER	DATE

SEE INSTRUCTIONS

1. NAME

COMMON: Fairview Indian Site/or/Fairview Hospital Indian Site/and/Ora-58

AND/OR HISTORIC: Banning-Norris Site/and/Banning Estate (Norris Property) Site

2. LOCATION

STREET AND NUMBER:
7,000 ft. west of Harbor Blvd.; 3,000 ft. south of Adams Street

CITY OR TOWN:
Costa Mesa

STATE:	CODE	COUNTY:	CODE
California	06	Orange	059

3. MAP REFERENCE

SOURCE: U.S.G.S. Newport Beach Quad. - 7.5' Series - Twp. 6 South, Range 10 West, SE 1/4 of Sec. 8 (as township system is projected onto the Santiago de Santa Ana Spanish Land Grant).

SCALE: 1:24000

DATE: 1965

4. REQUIREMENTS

TO BE INCLUDED ON ALL MAPS

1. Property broundaries where required.
2. North arrow.
3. Latitude and longitude reference.

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES

PROPERTY PHOTOGRAPH FORM

(Type all entries - attach to or enclose with photograph)

STATE	
California	
COUNTY	
Orange	
FOR NPS USE ONLY	
ENTRY NUMBER	DATE

SEE INSTRUCTIONS

1. NAME

COMMON: Fairview Indian Site/or/Fairview Hospital Indian Site/and/Ora-58

AND/OR HISTORIC: Banning-Norris Site/and/Banning Estate (Norris Property) Site

2. LOCATION

STREET AND NUMBER:
7,000 ft. west of Harbor Blvd.; 3,000 ft. south of Adams Street

CITY OR TOWN:
Costa Mesa

STATE:	CODE	COUNTY:	CODE
California	06	Orange	059

3. PHOTO REFERENCE

PHOTO CREDIT: City of Costa Mesa

DATE OF PHOTO: May 1971

NEGATIVE FILED AT:
City of Costa Mesa

4. IDENTIFICATION

DESCRIBE VIEW, DIRECTION, ETC.

View of site looking N.E.

30-000058

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

Primary # _____
HRI# _____
Trinomial CA-ORA- 58
NRHP Status Code
Other Listings _____
Review Code _____ Reviewer _____ Date _____

Page 1 of 3 ***Resource Name or #:** (Assigned by Recorder): Site Supplement

P1. Other Identifier:
***P2. Location: [X] Not for Publication [] Unrestricted**
***P2a. County:** Orange
***P2b. USGS 7.5' Quad** Newport Beach, CA **Date** 1965, Photorevised 1981 **T** 6S ; **R** 10W **(Not sectioned)**
_1/4 of_1/4 of Sec_; San Bernardino **B.M.**
P2c. Address _ City, CA Zip
P2d. UTM: (Give more than one for large and/or linear resources) Zone 11; 412995mE/3725167mN a 412729mE/3725315mN and 412746mE/3724715mN and 412642mE/3724751mN and 12609mE/3724518mN
P2e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate). The site is located along the bluff in Fairview Park at an elevation of about 80'
***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting and boundaries). Extensive archaeological excavation has occurred on the site over many decades. The latest excavation was in 1993 by Koerper. This purpose of this site supplement is only to show the site boundaries as established by his study. Please refer to the continuation sheet.
***P3b. Resource Attributes:** (List attributes and codes) AP 15; Habitation debris .
***P4. Resources Present:** [ ] Building [ ] Structure [ ] Object [X] 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 #)
***P6. Date constructed/Age and Sources:** [] Historic [X] Prehistoric [] Both: See Continuation Sheet.
***P7. Owner and Address:**
***P8. Recorded by:** (Name, affiliation and address) 2004: Joan C. Brown SWCA Inc, Environmental Consultants 23392 Madero, Suite L, Mission Viejo, CA 92691, (949) 770-8042
***P9. Date Recorded:** December, 2003; Originally recorded 1975 by K. Dixon
***P10. Survey Type:** (Describe) Extended Phase I Survey
***P11. Report Citation:** 2004: Fairview Park Multi-Purpose Bicycle/Pedestrian Trail, Costa Mesa, California; Joan C. Brown

***Attachments:** [ ] NONE [X] Location Map [] Sketch Map [X] 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)

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

Primary #
HRI#
Trinomial CA-ORA-58

Page 2 of 3 ***Resource Name or #:** (Assigned by Recorder):
***Recorded by** Joan C. Brown ***Date** December, 2003 [ ] Continuation [X] Update

The purpose of the 1993 Koerper study was to determine site boundaries and the core area of CA-ORA-58, a prehistoric archaeological site that is listed on the National Register of Historic Places. This study occurred on the west side of Placentia Avenue. Koerper found that the largest concentration of cultural material was located towards the bluffs in the west and northern portions of the park. He determined the southern and eastern site boundaries based on the paucity of cultural remains and thought it likely that shellfish and other remains had been spread towards the east by farming equipment (1993:61).

REFERENCES

Brown, Joan C.

2004 Fairview Park Multi-Purpose Bicycle/Pedestrian Trail, Costs Mesa, California. On file at SWCA Environmental, Mission Viejo, CA.

Koerper, Henry C.

1993 Report on Investigations to Delineate Site Boundaries and Further Characterize Cultural Remains at CA-ORA-58, Costa Mesa, California. On file at the South Central Coastal Information Center, California State University, Fullerton.

30-000058

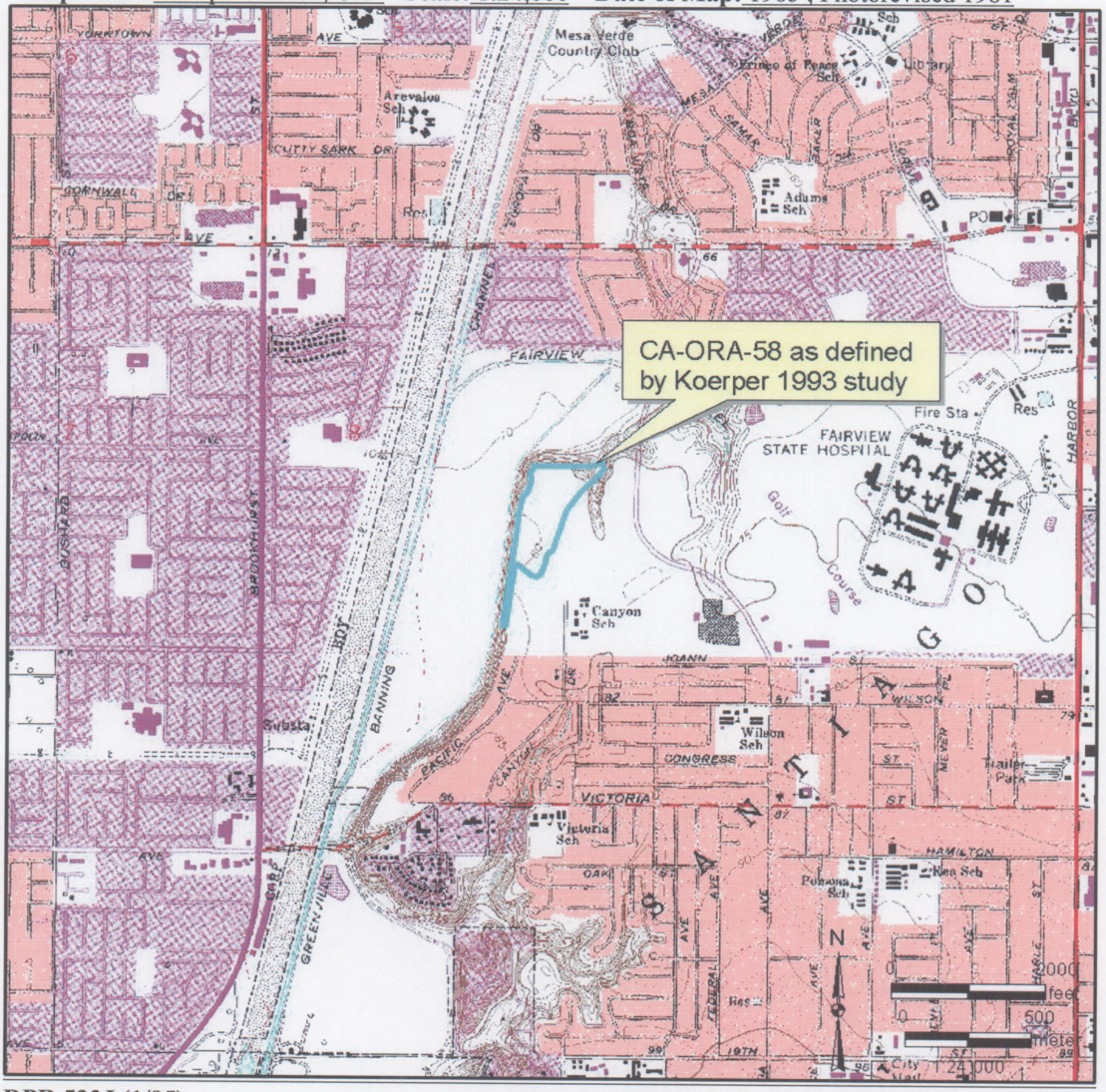
State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LOCATION MAP

Primary #
HRI#
Trinomial CA-ORA-58

Page 3 **of** 3

***Resource Name or #** (Assigned by Recorder): Site Supplement

***Map Name:** Newport Beach, CA ***Scale:** 1:24,000 ***Date of Map:** 1965 , Photorevised 1981



DPR 523J (1/95)

***Required Information**

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

Primary #_____
HRI# _____
Trinomial CA-ORA-58/CA-ORA-506

 * Resource Name or # (Assigned by recorder) CA-ORA-58/CA-ORA-506 (Update)

Fairview Bike Trail Development, Costa Mesa, Orange County, CA.

The proposed bike trail will be located in the northwestern portion of Fairview Park and will extend from Placentia Avenue (eastern extent) to the western boundary of the park (in the area of the Santa Ana River Trail System (see Figure 4); roughly paralleling the southern side of the Fairview Chan-nel. A pedestrian survey of the alignment (and some added areas to the east of Placentia Avenue and along the Santa Ana River frontage), completed by McKenna et al. surveyors (M.A. McKenna and D. McKenna) on March 13, 2007, did yield evidence of cultural materials both east and west of Placentia Avenue.

To the east (and in the area more directly associated with CA-ORA-506), shell deposits and a mano fragment were noted on the surface and near rodent burrow back dirt. The shell was small and did not appear to represent a developed midden deposit, but did indicate (with the mano) that cultural remains are present further north than previously mapped and additional midden deposits may be present in a buried context. This area will not be impacted by the proposed bike trail development.

To the west of Placentia Avenue, north of CA-ORA-58, and in the immediate area of the proposed bike trail, McKenna et al. found scant evidence of shell remains and one lithic flake. All items were found near the fence line along the Fairview Channel and in areas of weed abatement and shallow soil disturbance.

These scant resources are not unique or unexpected and may represent additional deposits associated with either CA-ORA-58 or CA-ORA-506 (as CA-ORA-506 is likely an extension of CA-ORA-58) and their presence must be tentatively associated with the National Register of Historic Places site (CA-ORA-58). Impacts to this area, therefore, would constitute a potentially adverse impact to a National Register of Historic Places resource.

Recent investigations for the Fairview Park proposed bike trail resulted in the identification of small shell fragments, one mano and one lithic flake. These items were found north of the defined boundaries of CA-ORA-58 and CA-ORA-506, suggesting additional deposits associated with the sites may be present in a buried context. No evidence of surface materials was found between the reported CA-ORA-58 site boundary and the few items nearer the Fairview Channel. Therefore, the association is suggested, but no proven.

At this time, McKenna et al. is considering the sparse scatter (one mano, one flake, and some small shell fragments) peripheral to the significant deposits of CA-ORA-58 and CA-ORA-506. The area is highly disturbed and there is no immediate indications that the area contains intact cultural deposits or retains integrity of any deposits. As such, the development of the proposed bike trail will not adversely impact known significant deposits associated with either site, but will still impact an area sensitive for cultural resources that may be associated with CA-ORA-58.

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

Primary #_____
HRI# _____
Trinomial CA-ORA-58/CA-ORA-506

 * Resource Name or # (Assigned by recorder) CA-ORA-58/CA-ORA-506 (Update)

McKenna et al. recommends that the proposed project be reviewed by the Office of Historic Preservation in Sacramento and an agreement be reached as to how to proceed in a manner that will avoid or mitigate impacts to CA-ORA-58, should components be identified in the future. McKenna et al. recommends that the development of the bike trail be designed in a manner to do as little damage to the area as possible (e.g. shallow grading that does no exceed the depths of the plow zone) and that all activities be monitored by a qualified archaeological monitor.

If evidence of potentially significant components of CA-ORA-58 are identified within the bike trail area of potential effects, the monitor must have the authority to halt any and all activities impacting the resource(s) and means must be developed to mitigate any adverse impacts. Phase III data recovery may be necessary.

If evidence of significant deposits are identified, a qualified Native American monitor should be added to the monitoring program. If human remains are identified, the County Coroner must be notified immediately and, if of Native American origin, the Native American Heritage Commission will designate the Most Likely Descendent (MLD) who, in consultation with the City and consulting archaeologist, will make a determination as to the disposition of the remains.

Jeanette A. McKenna, Principal Investigator, McKenna et al. Date

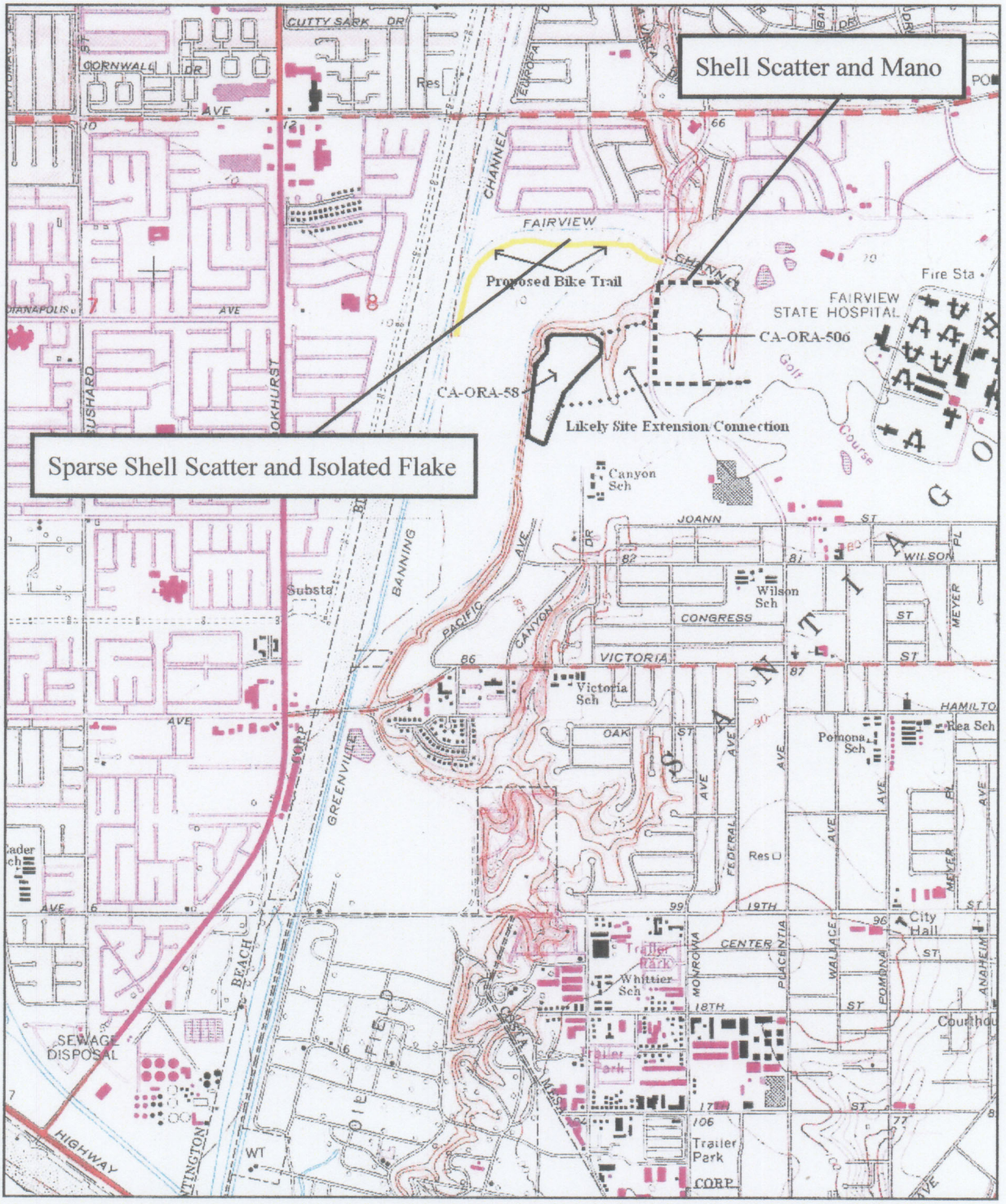
30-000058

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

LOCATION MAP

Primary #_____
HRI# _____
Trinomial CA-ORA-58/CA-ORA-506

Page 3 of 3 * Resource Name or # (Assigned by recorder) CA-ORA-58/CA-ORA-506 (Update)
*Name of Map: USGS Newport Beach *Scale: 1:24000 *Date of Map 1981



University of California

MAPPED

ARCHAEOLOGICAL SITE SURVEY RECORD

1. Site 4-ORa-165 2. Map Newport Beach Quad. 3. County ~~Orange~~

4. Twp. 6S Range 10W; ____ 1/4 of ____ 1/4 of Sec. ____

5. Location Adjacent to corner of Valley Road and West Victoria St. on bluff at Hamilton St. Bridge

6. On contour elevation USC&GS 89'

7. Previous designations for site Banning Xtract, Portion "A"

8. Owner Macco Corporation, % Box 126 9. Address Corona Del Mar, Calif.

10. Previous owners, dates Banning Pfahler, et al.

11. Present tenant % Macco

12. Attitude toward excavation very cooperative

13. Description of site Triangular plot of 24 acres of fairly level ground with irregular distribution of midden of various ages

14. Area not reported 15. Depth not reported 16. Height not reported

17. Vegetation wild oats and grasses 18. Nearest water Pacific Ocean, ½ Mile

19. Soil of site adobe and loam 20. Surrounding soil type adobe

21. Previous excavation none

22. Cultivation thim plowing 23. Erosion bluff edge erdding

24. Buildings, roads, etc. none

25. Possibility of destruction Aug. 15, 1959. This area will be converted to a tract of better-class homes

26. House pits none

27. Other features oil well fxoundation and sump as shown on map

28. Burials none

29. Artifacts broken stone bowl frggments and parts of pestles found on surface. Fragments of jasper and other chalcedony found as spalls at scattered gopher mounds etc.

30. Remarks see photos, object cards, and drawings of this site. It is suspected of being the site of the ~~XXXX~~ Gabrielino village of Lukup.

31. Published references Swanton, "Ind. of No. Am." and Kroeber, "Calif. Indians"

32. Accession No. ____ 33. Sketch map ____

34. Date 1960 35. Recorded by ~~XXXX~~ Payne 36. Photos ____

LONG BEACH STATE ~~COLLEGE~~ UNIVERSITY

Mapped

30-000506

ANTHROPOLOGY LABORATORY

ARCHAEOLOGICAL SITE SURVEY RECORD

1. Site Ora-506 2. Map NEWPORT BEACH USGS 7.5 min. 3. County Orange

4. Twp. 6 S Range 10 W projected onto Santiago de Santa Ana grant ¼ of ¼ of Sec.

5. Location In Fairview Park, on the western edge of Newport Mesa (west edge of city of Costa Mesa), on the bluffs overlooking Santa Ana River drainage to the west. The site was continuous with Ora-58 to the southwest, divided now by the new Estancia Street. Present Santa Ana River channel is on the west, Adams St. is on the north, 6. Contour 40' to 75' Harbor Blvd. to the east.

7. Previous designations for site none (can be considered part of Fairview Indian Site--see Ora-58)

8. Owner Orange County (Fairview Park) 9. Address

10. Previous owners (dates)

11. Present tenant See #8.

12. Attitude toward excavation Preservation is prime goal in park development. No destructio through contouring is planned--much of the site may be covered by layers of soil. I have recommended that no research excavation be permitted unless fully justified.

13. Description of site Indicated boundaries are the visible limits of shell-scatter; the midden is deepest (60 cm. or more) along the gentle gully slppes. See #30 below.

14. Area max. visible in park is 350 by 800 m. See #13 & #30 below. 15. Depth from surface-scatter to 60 cm. in places--see #13. 16. Height --

17. Vegetation weeds like Ora-58. 18. Nearest water probably originally springs along gullies

19. Soil of site See Ora-58 20. Surrounding soil See Ora-58

21. Previous excavation none known

22. Cultivation plowed 23. Erosion slight; in gully

24. Buildings, roads, etc. some informal paths and roads;

25. Possibility of destruction some roads, parking areas, planting will be done; efforts will be made to avoid the site area, and to cover parts of site with soil where necessary.

26. ~~House pits~~ The parts north and east of the park boundaries are largely destroyed by the housing tract and golf course--not yet surveyed in detail (as of January 1975).

27. Other features

28. Burials

29. Artifacts

30. Remarks The indicated boundaries are artificial to the north and east, where the midden was destroyed by extensive earth moving for a housing tract and where a golf course was built. The golf course has not been carefully checked, and more may be preserved there. The site fades out toward the south (as does Ora-58) the farther away from the gully and cliffs, and is therefore probably a 'natural' boundary, at least as far as shell midden marks a boundary.

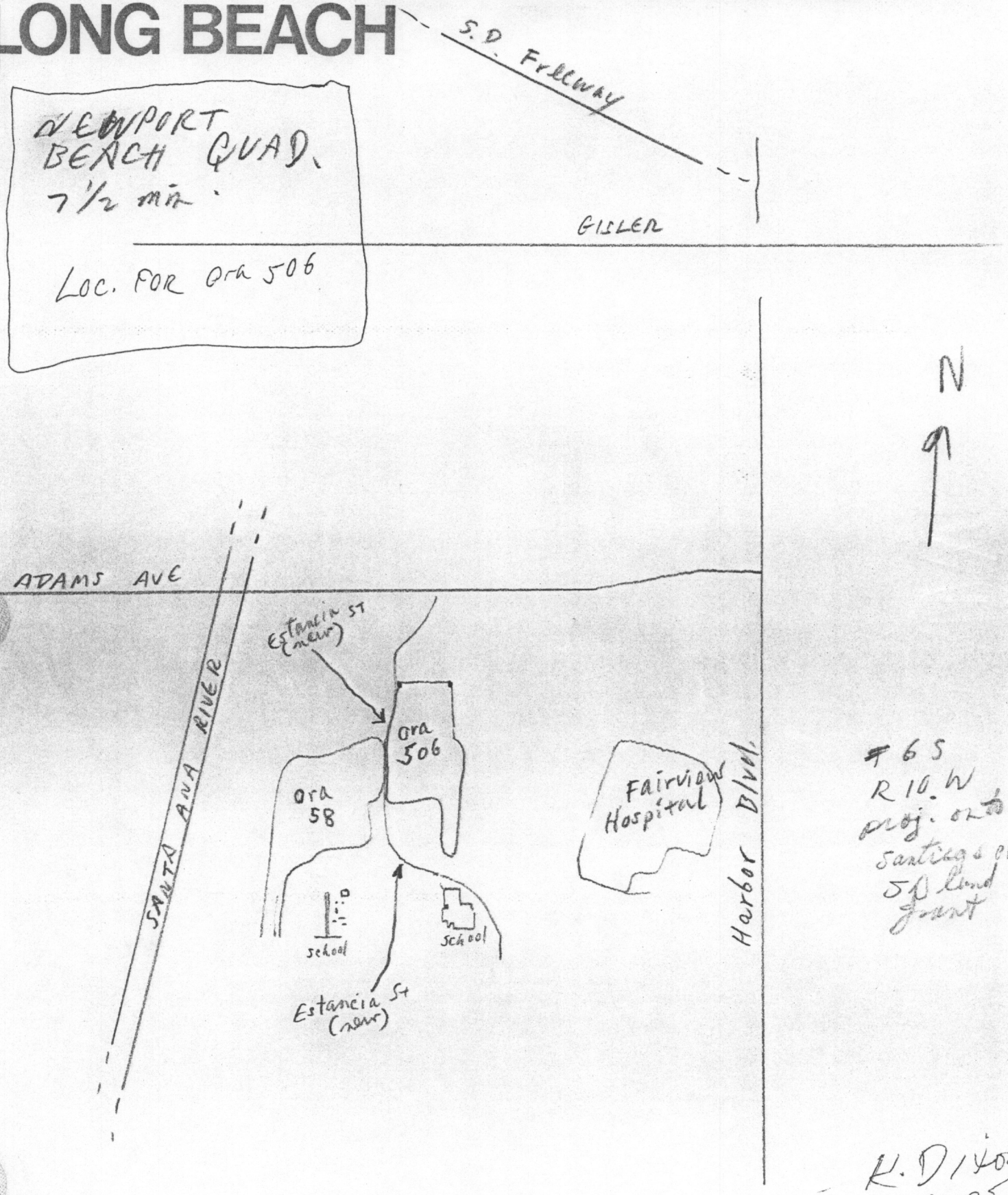
31. Published references

32. Code number 33. Sketch map attached by Dixon

34. Date 30 Jan 1975 35. Recorded by K. Dixon 36. Photos

30-000506

CALIFORNIA STATE UNIVERSITY
LONG BEACH



LONG BEACH CALIFORNIA 90840
THE CALIFORNIA STATE UNIVERSITY AND COLLEGES

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

Primary # _____
HRI# _____
Trinomial CA-ORA- 506
NRHP Status Code _____

___
Other Listings _____
Review Code _____ Reviewer _____ Date _____

Page 1 of 4 ***Resource Name or #:** (Assigned by Recorder): Site Supplement

P1. Other Identifier:
***P2. Location: [X] Not for Publication [] Unrestricted**
***P2a. County:** Orange
***P2b. USGS 7.5' Quad** Newport Beach, CA **Date** 1965, Photorevised 1981 **T** 6S ; **R** 10W **(Not sectioned)**
_1/4 of_1/4 of Sec_; San Bernardino **B.M.**
P2c. Address _ City, CA Zip _ 413235mE/3725285mN
P2d. UTM: (Give more than one for large and/or linear resources) Zone 11; 413220mE/3725620mN
P2e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate). The site is located at an elevation of about 80' in Fairview Park east of Placentia Ave.
***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting and boundaries). Described as a shell refuse area by Martz, Cottrell, and Van Wormer (1985); the area to the north of Fairview Channel contains historic deposit. Refer to the Continuation Sheet.
***P3b. Resource Attributes:** (List attributes and codes) AP 15; Habitation debris (shell).
***P4. Resources Present:** [ ] Building [ ] Structure [ ] Object [X] 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 #)
***P6. Date constructed/Age and Sources:** [] Historic [] Prehistoric [X] Both: See Continuation Sheet.
***P7. Owner and Address:**
***P8. Recorded by:** (Name, affiliation and address) Joan C. Brown SWCA Inc, Environmental Consultants 23392 Madero, Suite L, Mission Viejo, CA 92691, (949) 770-8042

***P9. Date Recorded:** March, 2004; Originally recorded 1975 by K. Dixon
***P10. Survey Type:** (Describe) Extended Phase I Survey
***P11. Report Citation:** Fairview Park Multi-Purpose Bicycle/Pedestrian Trail, Costa Mesa, California; Joan C. Brown

***Attachments:** [] NONE [X] Location Map [X] 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 [X] Other (List). Aerial Photograph

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

Primary #
HRI#
Trinomial CA-ORA-506

Page 2 of 4 ***Resource Name or #:** (Assigned by Recorder):
***Recorded by** Joan C. Brown ***Date** December, 2003 [ ] Continuation [X] Update

The project area was the subject of an archaeological excavation in 1985 by Martz, Cottrell, and Van Wormer. The 1985 test excavation of CA-ORA-506 took place on the east side of Placentia Avenue and consisted of the excavation of 17 backhoe trenches and six one-meter square units. The four units and seven trenches located on the north side of Fairview Channel produced both prehistoric and historic artifacts. Almost all of the 10 backhoe trenches and two excavation units that were on the south side of the channel proved to be sterile with the exception of those located at the northern fringe closest to the channel (Martz, Cottrell, and Van Wormer 1985:15). However, the archaeologists placed the site boundary approximately 1,000 feet south of their southernmost excavation (1985:4, 16). Based on their study, Martz et al. thought that the prehistoric deposit represented a shell disposal area and the historic artifacts were related to the Polloreno Adobe.

An archaeological study in support of a proposed multi-purpose trail in Fairview Park consisted of the excavation of 12 backhoe trenches east of Placentia Avenue and south of Fairview Channel. One backhoe trench revealed an intact marine shell deposit and a small amount of shell was observed on the ground surface. The shell was found in the general area that the earlier 1985 excavators had observed shell. During SWCA's 2003 excavation, a major portion of the ground surface and seven of the backhoe trenches failed to reveal any evidence of cultural remains in those areas. The southern boundary of CA-ORA-506 is being redrawn to reflect that information. Because the current study only examined the area south of Fairview Channel, the location of the northern boundary remains the same as drawn by the Martz et al. study. The aerial photo shows the CA-ORA-506 site boundaries as drawn by Martz et al. and the boundary as revised by SWCA.

The bluff top also contains CA-ORA-58 a site listed on the National Register of Historic Places. CA-ORA-58 is located approximately 750 feet (200 meters) southwest of CA-ORA-506. There is a small area containing redeposited material consisting of shell, a flake, and modern trash midway between the two sites about 350 feet (110 meters) southwest of CA-ORA-506.

REFERENCES

Brown, Joan C. 2004 Fairview Park Multi-Purpose Bicycle/Pedestrian Trail, Costs Mesa, California. On file at SWCA Environmental. Mission Viejo, CA.

Martz, Patricia, Marie G. Cottrell, and Stephen R. Van Wormer
1983 Report of Preliminary Test Level Investigations Conducted at CA-ORA-506, Fairview Regional Park Site, Orange County, California. On file at the South Central Coastal Information Center, California State University, Fullerton.

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

Primary #
HRI#

AERIAL PHOTO SHOWING TRENCH LOCATIONS

Trinomial CA-ORA-506

Resource Name or #: (Assigned by Recorder):

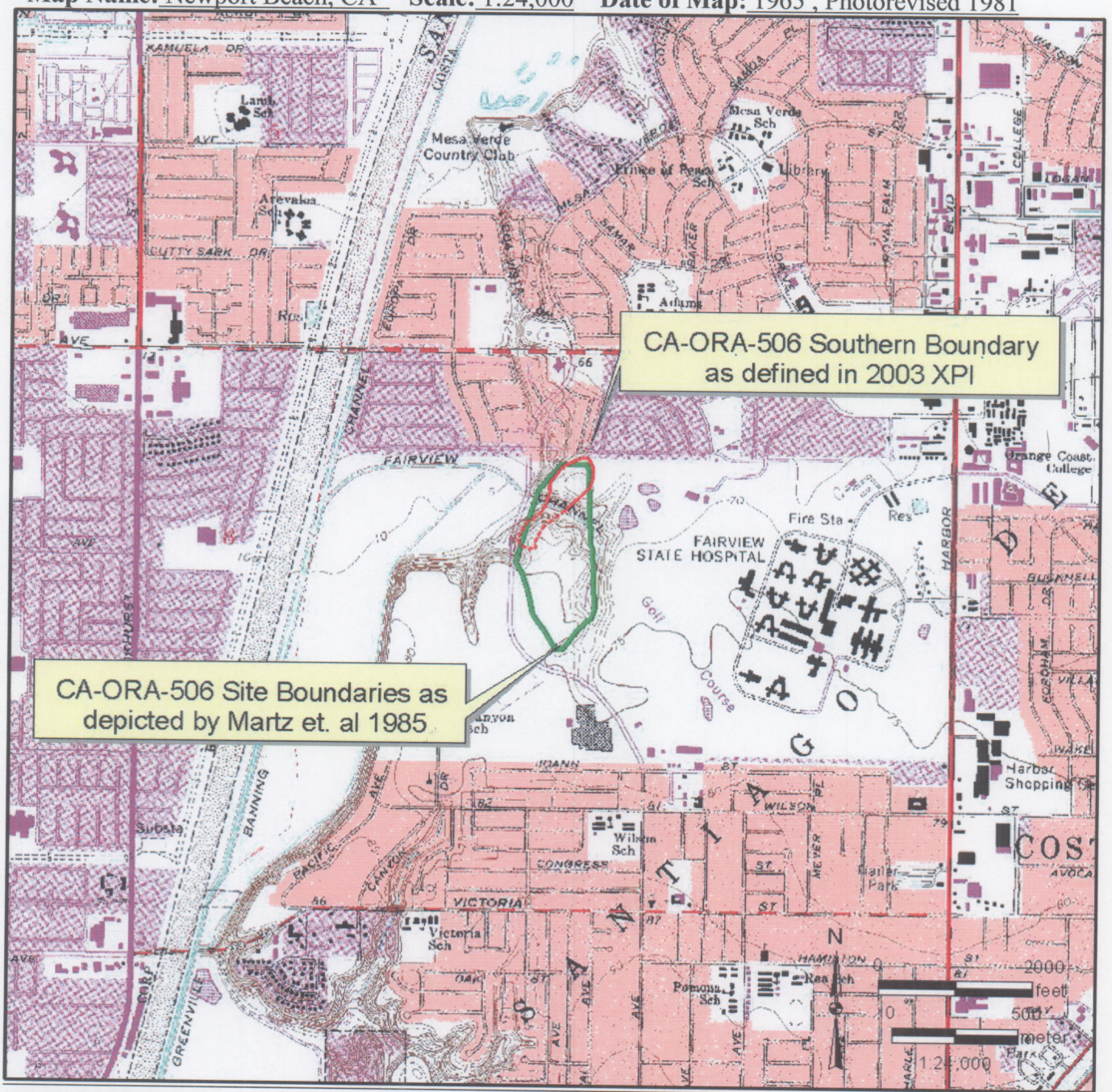
***Drawn By:**_____ **Date:** March 2004

30-000506

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

Primary #
HRI#
Trinomial CA-ORA-506

Page 4 of 4
***Resource Name or #** (Assigned by Recorder): Site Supplement
***Map Name:** Newport Beach, CA ***Scale:** 1:24,000 ***Date of Map:** 1965 , Photorevised 1981



DPR 523J (1/95)

*Required Information

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

Primary #_____
HRI# _____
Trinomial CA-ORA-58/CA-ORA-506

Fairview Bike Trail Development, Costa Mesa, Orange County, CA.

The proposed bike trail will be located in the northwestern portion of Fairview Park and will extend from Placentia Avenue (eastern extent) to the western boundary of the park (in the area of the Santa Ana River Trail System (see Figure 4); roughly paralleling the southern side of the Fairview Chan-nel. A pedestrian survey of the alignment (and some added areas to the east of Placentia Avenue and along the Santa Ana River frontage), completed by McKenna et al. surveyors (M.A. McKenna and D. McKenna) on March 13, 2007, did yield evidence of cultural materials both east and west of Placentia Avenue.

To the east (and in the area more directly associated with CA-ORA-506), shell deposits and a mano fragment were noted on the surface and near rodent burrow back dirt. The shell was small and did not appear to represent a developed midden deposit, but did indicate (with the mano) that cultural remains are present further north than previously mapped and additional midden deposits may be present in a buried context. This area will not be impacted by the proposed bike trail development.

To the west of Placentia Avenue, north of CA-ORA-58, and in the immediate area of the proposed bike trail, McKenna et al. found scant evidence of shell remains and one lithic flake. All items were found near the fence line along the Fairview Channel and in areas of weed abatement and shallow soil disturbance.

These scant resources are not unique or unexpected and may represent additional deposits associated with either CA-ORA-58 or CA-ORA-506 (as CA-ORA-506 is likely an extension of CA-ORA-58) and their presence must be tentatively associated with the National Register of Historic Places site (CA-ORA-58). Impacts to this area, therefore, would constitute a potentially adverse impact to a National Register of Historic Places resource.

Recent investigations for the Fairview Park proposed bike trail resulted in the identification of small shell fragments, one mano and one lithic flake. These items were found north of the defined boundaries of CA-ORA-58 and CA-ORA-506, suggesting additional deposits associated with the sites may be present in a buried context. No evidence of surface materials was found between the reported CA-ORA-58 site boundary and the few items nearer the Fairview Channel. Therefore, the association is suggested, but no proven.

At this time, McKenna et al. is considering the sparse scatter (one mano, one flake, and some small shell fragments) peripheral to the significant deposits of CA-ORA-58 and CA-ORA-506. The area is highly disturbed and there is no immediate indications that the area contains intact cultural deposits or retains integrity of any deposits. As such, the development of the proposed bike trail will not adversely impact known significant deposits associated with either site, but will still impact an area sensitive for cultural resources that may be associated with CA-ORA-58.

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

Primary #_____
HRI# _____
Trinomial CA-ORA-58/CA-ORA-506

McKenna et al. recommends that the proposed project be reviewed by the Office of Historic Preservation in Sacramento and an agreement be reached as to how to proceed in a manner that will avoid or mitigate impacts to CA-ORA-58, should components be identified in the future. McKenna et al. recommends that the development of the bike trail be designed in a manner to do as little damage to the area as possible (e.g. shallow grading that does no exceed the depths of the plow zone) and that all activities be monitored by a qualified archaeological monitor.

If evidence of potentially significant components of CA-ORA-58 are identified within the bike trail area of potential effects, the monitor must have the authority to halt any and all activities impacting the resource(s) and means must be developed to mitigate any adverse impacts. Phase III data recovery may be necessary.

If evidence of significant deposits are identified, a qualified Native American monitor should be added to the monitoring program. If human remains are identified, the County Coroner must be notified immediately and, if of Native American origin, the Native American Heritage Commission will designate the Most Likely Descendent (MLD) who, in consultation with the City and consulting archaeologist, will make a determination as to the disposition of the remains.

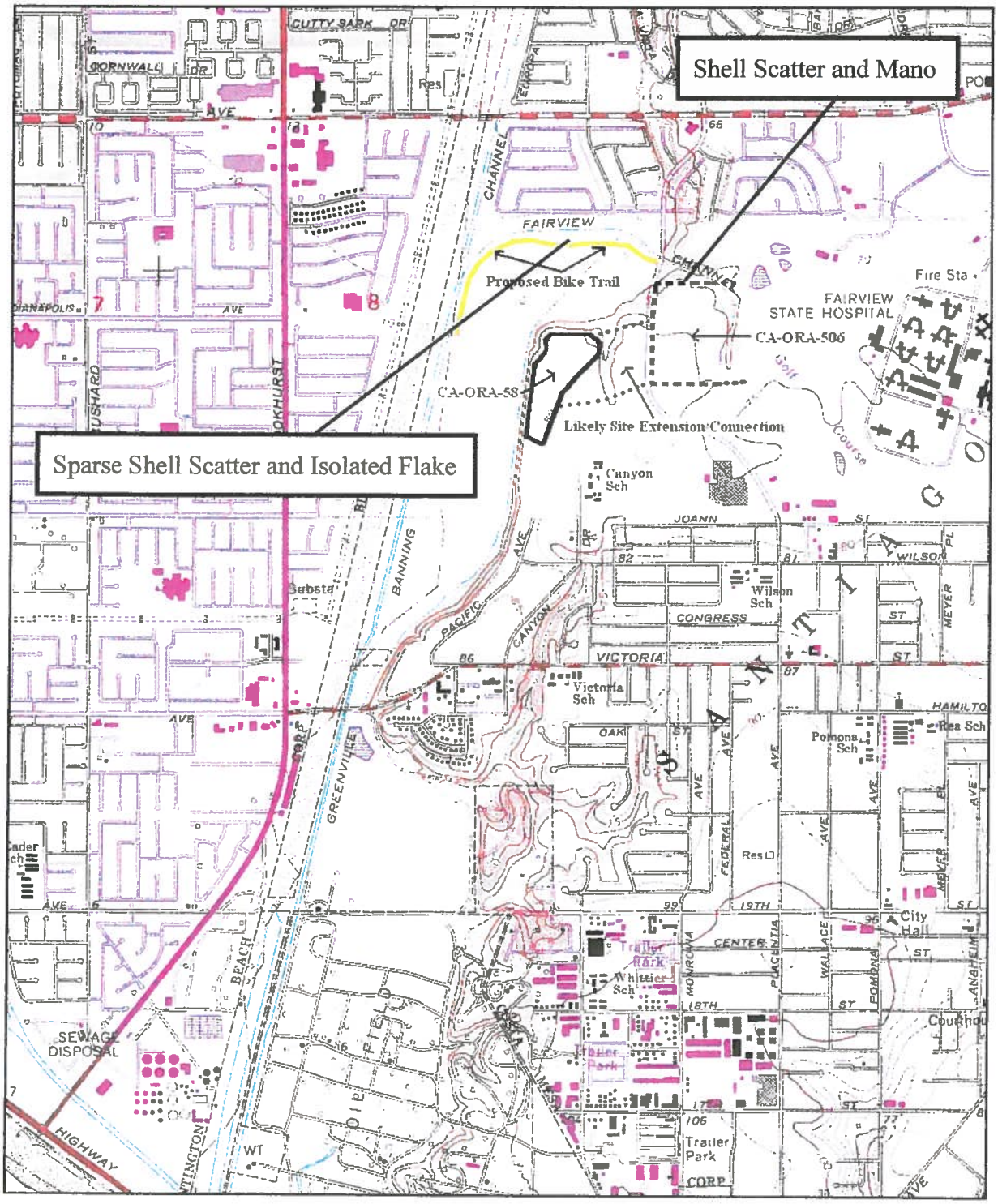
Jeanette A. McKenna, Principal Investigator, McKenna et al. Date

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

LOCATION MAP

Primary #_____
HRI# _____
Trinomial CA-ORA-58/CA-ORA-506

Page 3 of 3 * Resource Name or # (Assigned by recorder) CA-ORA-58/CA-ORA-506 (Update)
*Name of Map: USGS Newport Beach *Scale: 1:24000 *Date of Map 1981



30-000839

MAPPED

State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
ARCHEOLOGICAL SITE SURVEY RECORD

SITE No. CA-Ora-000839

1. Previous Site Designation None 2. Temporary Field No. Mobil 1
3. USGS Quad Newport Beach 7½ X 15' Year 1965
4. UTM Coordinates 12600-12640E - 22320-22520N
5. Twp. 6S Range 10W -- ¼ of -- ¼ of Sec. --
6. Location Site located on ridge oriented N-S, adjacent to the southern side of the Santa Ana River floodplain, 5100 meters north of the ~~Pacific~~ coastline.

7. Contour 94' 8. Owner & Address Mobil Oil
9. Prehistoric X Ethnographic ___ Historic ___ 10. Site Description Shell midden with associated with lithic artifacts and debitage.

11. Area 320 x 50 meters, 16000 square meters. 12. Depth of Midden approx. 1 meter
13. Site Vegetation chaparral Surrounding Vegetation chaparral/floodplain flora
14. Location & Proximity of Water 1000 meters to the west Santa Ana River
15. Site Soil hardpacked loam Surrounding Soil same
16. Previous Excavation None
17. Site Disturbance Western portion of site cut away (over).
18. Destruction Possibility Mobil Oil protecting remaining midden from impact.
19. Features None observed
20. Burials None observed
21. Artifacts Mano fragment (unifacial), domed scraper, cores, small plano-convex scraper, spokeshave, flake scraper.

22. Faunal Remains Shell: pecten, dhoine, turbin, oyster, etc.

23. Comments Shell and lithic scatter visible on surface. Midden soil darker than surrounding soil.
24. Accession No. _____ 25. Sketch Map X by J. Murray where field
26. Date Recorded 10/12/79 27. Recorded By Colquehoum/Murray
28. Photo Roll No. 1 Frame No. _____ Film Type(s) _____ Taken By J. Murray
Photographs on file at Archaeological Associates.

DPR 422 (Rev. 9/76)

30-000839 Ora-839

National Register Status: Listed _____ Potential _____ No Determination X Nominated _____

State Historical Landmark (No.) _____ Point of Historical Interest _____

SPECIAL ATTRIBUTES (Place an X in only those spaces which pertain to the site)

Midden/Habitation Debris X Lithic Scatter X

Bedrock Mortars/Milling Surfaces _____ Petroglyphs/Pictographs _____ Stone Features _____

Burials _____ Caches _____ Hearths/Roasting Pits _____ Housepits _____ Structure Remains _____

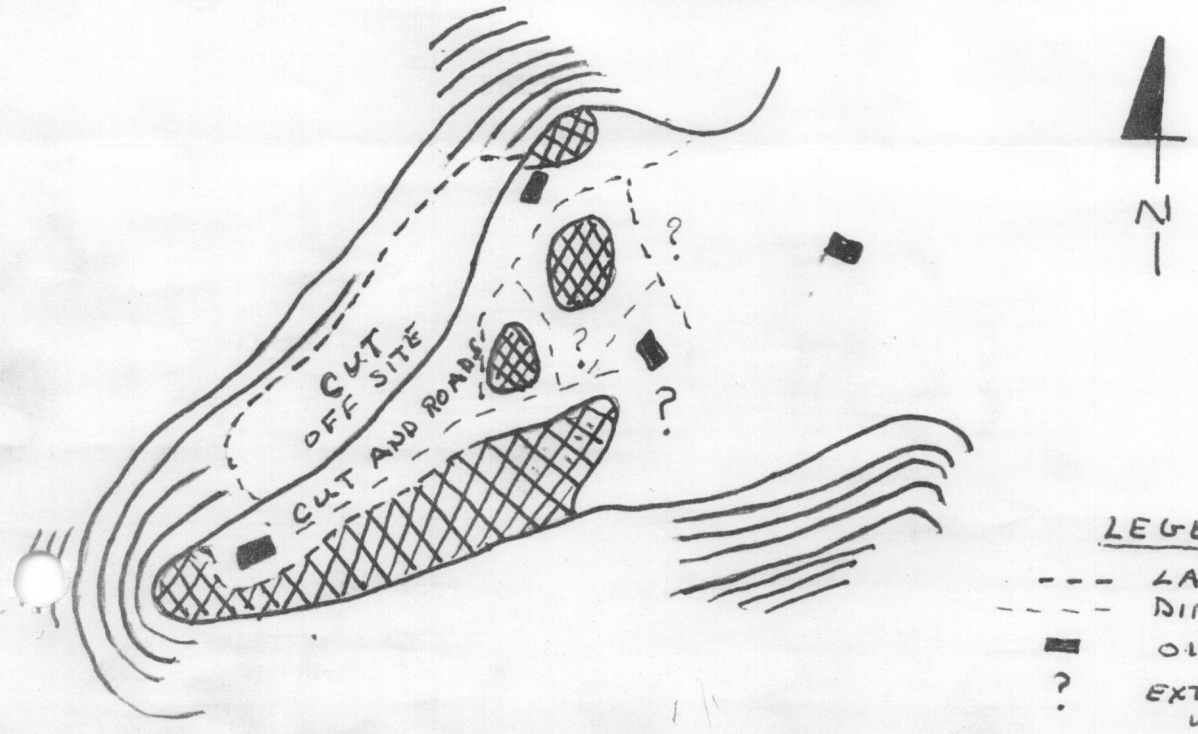
Underwater _____ Open Air X Rockshelter _____ Cave _____ Quarry _____ Trail _____

REMARKS Although site impacted, what portions remain intact appears to have scientific value for study of prehistoric occupation/utilization of natural resources for this region of southern California.

SKETCH LOCATION MAP (Include permanent reference markers, North Arrow, and Scale)

See attached.

SKETCH SITE MAP (Same criteria as above) Not to scale



Location of Mobil 1 site on Newport Beach 7.5 USGS Topographic Quadrangle. Site situated in unincorporated Orange County, south of 19th. Street, adjacent to the western boundary line of the city of Costa Mesta.

State of California -- The Resources Agency
DEPARMENT OF PARKS AND RECREATION

Primary # 30-000839
HRI #
Trinomial #
NRHP Status Code:

PRIMARY RECORD

Other Listings:
Review Code: Reviewer: Date:

Page 1 of 4 Resource Name or #: **n/a**

P1. Other Identifier: **n/a**

P2. Location: ✔**Not for Publication**

a. County: **Orange** USGS 7.5' **Newport Beach** Quadrangle Photorevised: **1981 (1965)**

T **6S**; R **10W**; Sec: **unsurveyed**; S.B.B.M.

c. Address : n/a

d. UTM: Zone 11 ; **412380** mE/ **3722380** mN

e. Other Locational Data: **This site is located 1.5 km north of the southern gate to the Banning Ranch property at PCH. The site is on the mesa on a southwest-trending finger ridge.**

P3a. Description: **This is a habitation shell midden site consisting of four loci of midden.**

P3b. Resource Attributes: **AP2 (lithic scatter), AP15 (habitation debris)**

P4. Resources Present: Building Structure Object ✔ **Site** District Element of District Other

P5a. Photo or Drawing: **See maps**

P5b. Description of Photo: none

P6. Date Constructed/Age and Sources: Historic ✔ **Prehistoric** Both

P7. Owner and Address:
Taylor Woodrow Homes, Inc.
24461 Ridge Route Drive
Laguna Hills, California 92653

P8. Recorded By: **David M. Smith, Bill McManis, Jaime Paniagua, Heather Mills, Diane Reeves, Charles Reeves, Daniel Juday**
The Keith Companies
2955 Redhill Avenue
Costa Mesa, CA 92626

P9. Date Recorded: **June 18, 1998**

P10. Survey Type: **Reconnaissance survey**

P11. Report Citation:

Brock, J. and Van Horn, D

1980 Addendum Archaeological Report: A Further Test Excavation Unit at Ora-839D on Banning Oil Lease Near Newport Beach, California. January 1980. Prepared for Mobil-G.C., Newport Beach, California. Archaeological Associates, Inc. Costa Mesa, California. Manuscript on File at South Central Coastal Information Center, Institute of Archaeology, UCLA

Drover, C

1998 *A Cultural Resources Inventory for the Banning Ranch, Newport Beach, California.* Manuscript on file at South Central Coastal Information Center, Institute of Archaeology, UCLA. Prepared for Taylor Woodrow Homes, Inc. Prepared by The Keith Companies, June 1998.

Attachments: ✔**Archaeological Site Form,** ✔**Site Map,** ✔**Site Location Map**

State of California -- The Resources Agency
DEPARMENT OF PARKS AND RECREATION
Primary #: 30-000839
Trinomial#:

ARCHAEOLOGICAL SITE RECORD

Page 2 of 4 Resource Name or #: **n/a**

A1. Dimensions: a. Length **50 meters n/s** x b.Width **20 meters e/w**
Method of Measurement: Paced ✔ **Taped** Visual Estimate Other
Method of Determination: Artifacts Features Soil Vegetation Topography
Cut bank Animal Burrow ✔ **Excavation** Property Boundary ✔ **Other**
Reliability of Boundary Determination: ✔ **High** Medium Low Explain: **loci fenced**
Limitations: ✔ **Restricted Access** Paved/built over Site limits incompletely defined
✔ **Disturbances** Vegetation Other

A2. Depth: **see A14**

A3. Human Remains: Present Absent Possible ✔ **Unknown** (Explain): **None observed**

A4. Features: **None observed**

A5. Cultural Constituents: none

A6. Were Specimens Collected? ✔ **No** Yes

A7. Site Condition: Good ✔ **Fair** ✔ **Poor**

A8. Nearest Water: **Santa Ana River, 1.5 km west**

A9. Elevation: **80 - 90'**

A10. Environmental Setting: **Native vegetation remaining in the area is primarily widely scattered *Erioganum,* mule's fat, mustard, sumac and various grasses**

A11. Historical Information: **n/a**

A12. Age: **late prehistoric**

A13. Interpretations: **n/a**

A14. Remarks: **This site was fenced by a welded iron pipe fence. Each locus is still easily identifiable and the old units excavated by A.A. are still obvious.**

A15. References: **none**

A16. Photographs: **none**

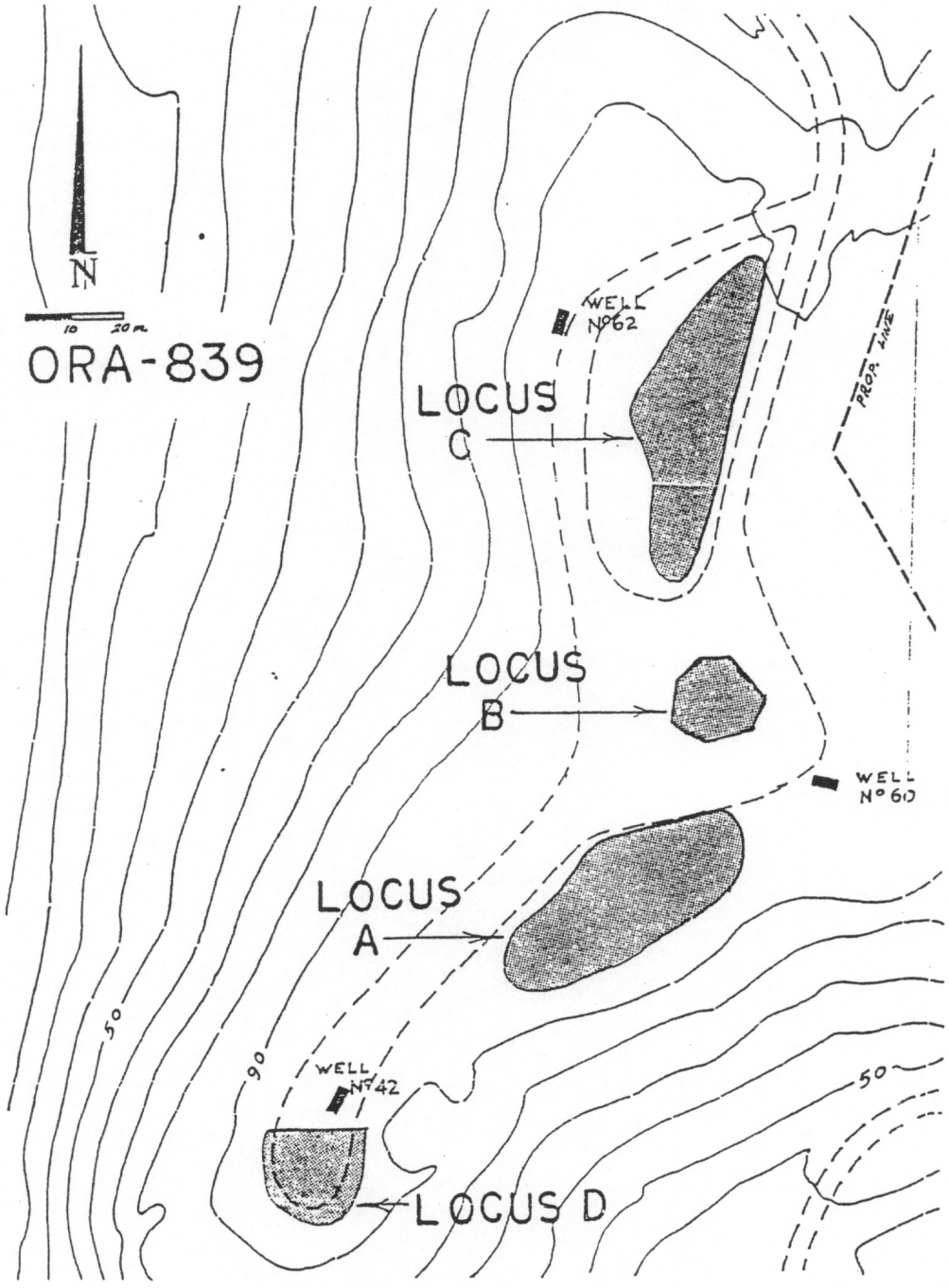
A17. Form Prepared By: **David M. Smith** Date: **June 18, 1998**
Affiliation and Address:
The Keith Companies
2955 Redhill Avenue.
Costa Mesa, Ca 92626

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

Primary # :_____
HRI#:_____
Trinomial#: *30-000839*
Resource Name or #: *n/a*

SITE MAP

Page 3 of 4



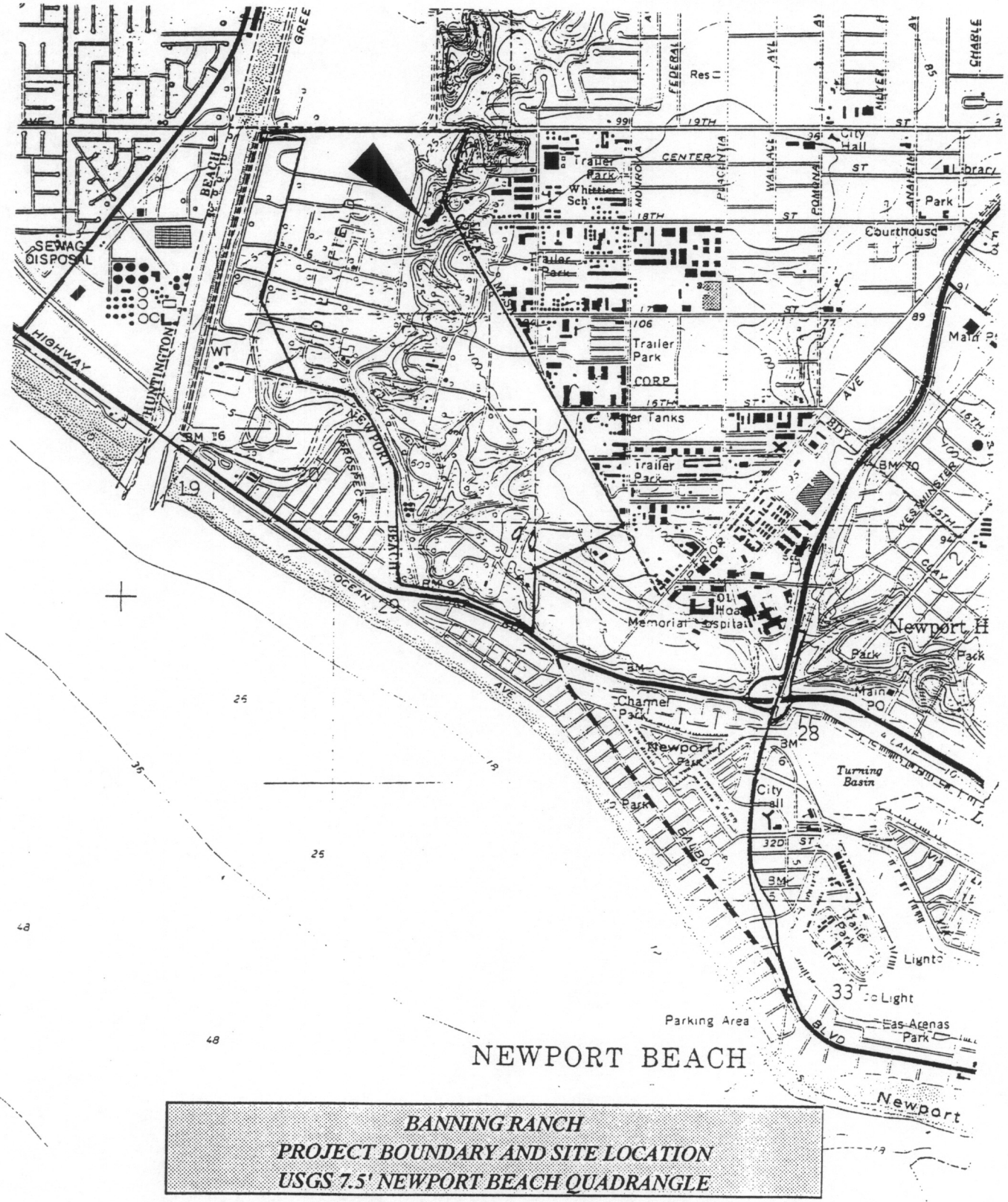
BANNING RANCH
ARCHAEOLOGICAL SITE
30-000839 PREHISTORIC HABITATION SITE
MAP FROM VAN HORN 1980, SITE HAS NOT CHANGED.

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

Primary#: _____
HRI#: _____
Trinomial#: *30-000839*
Resource Name or # *n/a*

SITE LOCATION MAP

Page 4 of 4



BANNING RANCH
PROJECT BOUNDARY AND SITE LOCATION
USGS 7.5' NEWPORT BEACH QUADRANGLE

ARCHAEOLOGICAL ASSOCIATES
1022-B Victoria St.
Costa Mesa, Ca. 92627

MAPPED

State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
ARCHEOLOGICAL SITE SURVEY RECORD

SITE No. CA-Ora-845

1. Previous Site Designation ACE-SAR-8 2. Temporary Field No. _____
3. USGS Quad Newport Beach 7½' x 15' Year 1965
4. UTM Coordinates ^{4}12330E - ^{37}227--N
5. Twp. T6S Range R10W ; -- ¼ of -- ¼ of Sec. --
6. Location Site located on the slope at the base of a bluff on the southern edge of the Santa Ana River flood plain. The Pacific Ocean lies approximately 1.7km. to the south of the site. A dirt access road transects the site in roughly a north-south direction.
7. Contour 20' 8. Owner & Address Mobil Oil
9. Prehistoric x Ethnographic ___ Historic ___ 10. Site Description Heavily impacted shell midden. Surface shell scattered over large area.
11. Area 200 x 75 meters, 15,000 square meters. 12. Depth of Midden 60 cm.
13. Site Vegetation chaparral/grass Surrounding Vegetation same/flood plain vegetation
14. Location & Proximity of Water Santa Ana River within 1 km. of site.
15. Site Soil brown sandy loam Surrounding Soil light brown sandy loam
16. Previous Excavation none
17. Site Disturbance heavy-soil borrow sources, oil well pads, access road.
18. Destruction Possibility Unknown
19. Features none observed
20. Burials " "
21. Artifacts " "
22. Faunal Remains Shellfish remains. (Predominately Pecten and Chione).
23. Comments Approximately 20% - 30% of site may remain unimpacted.
24. Accession No. 25. Sketch Map ___ by ___ where ___
26. Date Recorded 11/16/79 27. Recorded By J. Murray
28. Photo Roll No. ___ Frame No. ___ Film Type(s) ___ Taken By ___

OCa-845

SITE STATUS:

% Destroyed 80% How Construction Excavated _____ %, if known

National Register Status: Listed _____ Potential _____ No Determination X Nominated _____ Ineligible _____

State Historical Landmark (No.) _____ Point of Historical Interest _____

SPECIAL ATTRIBUTES (Place an X in only those spaces which pertain to the site)

Midden/Habitation Debris X Lithic and/or Ceramic Scatter _____

Bedrock Mortars/Milling Surfaces _____ Petroglyphs/Pictographs _____ Stone Features _____

Burials _____ Caches _____ Hearths/Roasting Pits _____ Housepits _____ Structure Remains _____

Underwater _____ Open Air X Rockshelter _____ Cave _____ Quarry _____ Trails _____

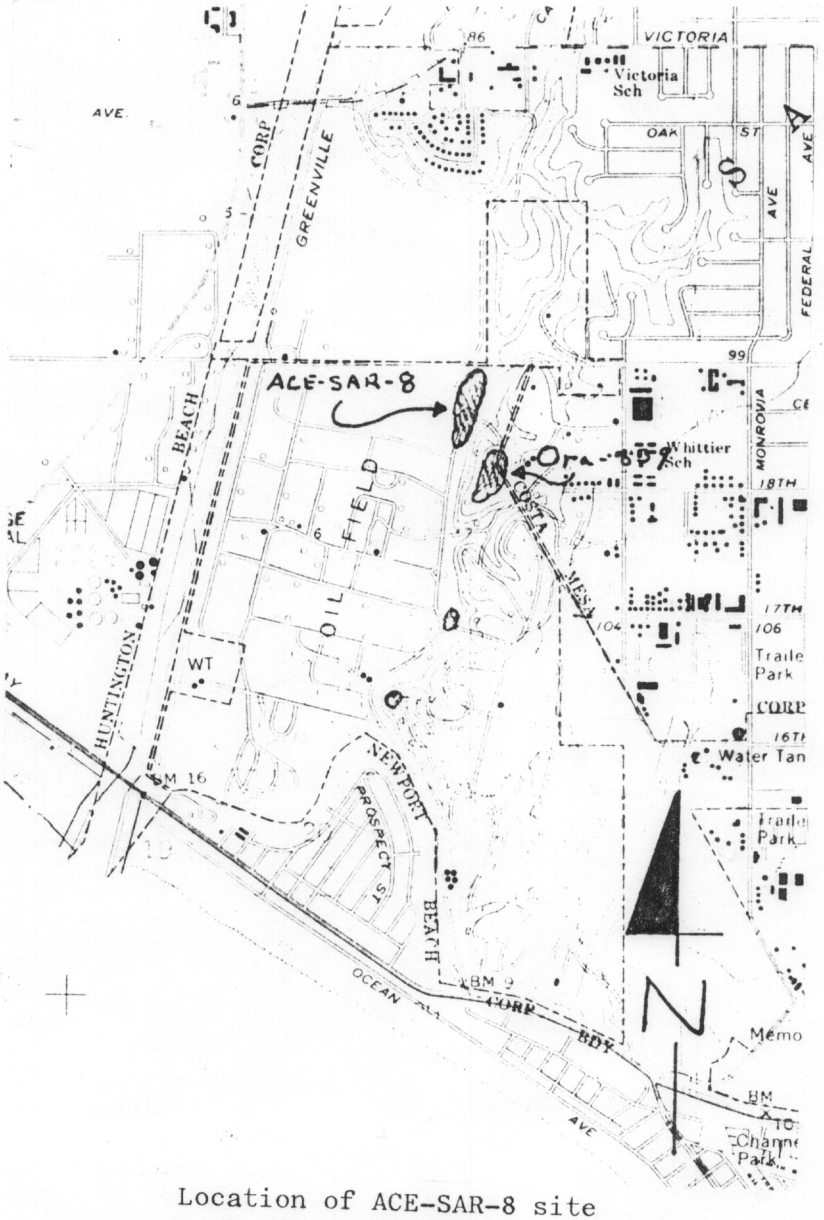
REMARKS Site may represent special activity area-food processing. Site originally discovered during a survey of the Santa Ana River in 1975 by ARU for Army Corps of Engineers (Hall, 1975: 1-3 to 1-4).

SKETCH LOCATION MAP (Include pertinent reference markers, North Arrow, and Scale)

See attached

SKETCH SITE MAP (Same criteria as above)

Ora-845



Location of ACE-SAR-8 site on Newport Beach 7.5' USGS Topographic Quadrangle. Site situated in unincorporated Orange County southwest of 19th. Street, adjacent to the Costa Mesa corporate boundary.

State of California -- The Resources Agency
DEPARMENT OF PARKS AND RECREATION

Primary # 30-000845
HRI #
Trinomial #
NRHP Status Code:

PRIMARY RECORD

Other Listings:
Review Code: Reviewer: Date:

Page 1 of 3 Resource Name or #: **n/a**

P1. Other Identifier: **n/a**

P2. Location: ✔ **Not for Publication (SITE NOT LOCATED--HEAVY VEGETATION)**

a. County: **Orange** USGS 7.5' **Newport Beach** Quadrangle Photorevised: **1981 (1965)**

T **6S**; R **10W**; Sec: **unsurveyed**; S.B.B.M.

c. Address : n/a

d. UTM: Zone 11 ; **412500** mE/ **3722680** mN

e. Other Locational Data: **This site is located on the edge of the Newport Mesa in the far northwestern corner of the Banning Ranch property. The site overlooks Balboa Blvd and 19th Street to the north and the wetlands downslope to the west.**

P3a. Description: **This site was identified in 1979 as consisting of a "heavily impacted shell midden. Surface shell scattered over large area." (See P11)**

P3b. Resource Attributes: **AP2 (lithic scatter), AP15 (habitation debris)**

P4. Resources Present: Building Structure Object ✔ **Site** District Element of District Other

P5a. Photo or Drawing: **See maps**

P5b. Description of Photo: none

P6. Date Constructed/Age and Sources: Historic ✔ **Prehistoric** Both

P7. Owner and Address:
Taylor Woodrow Homes, Inc.
24461 Ridge Route Drive
Laguna Hills, California 92653

P8. Recorded By: **David M. Smith, Bill McManis, Jaime Paniagua, Heather Mills, Diane Reeves, Charles Reeves, Daniel Juday**
The Keith Companies
2955 Redhill Avenue
Costa Mesa, CA 92626

P9. Date Recorded: **June 18, 1998**

P10. Survey Type: **Reconnaissance survey**

P11. Report Citation:

Murray, J.
1979 Archaeological Site Survey Record. CA-Ora-845. On file at South Central Coastal Information Center, Institute of Archaeology, UCLA

Drover, C
1998 A Cultural Resources Inventory for the Banning Ranch, Newport Beach, California. Manuscript on file at South Central Coastal Information Center, Institute of Archaeology, UCLA. Prepared for Taylor Woodrow Homes, Inc. Prepared by The Keith Companies, June 1998.

Attachments: ✔**Archaeological Site Form,** ✔**Site Location Map**

State of California -- The Resources Agency
DEPARMENT OF PARKS AND RECREATION
Primary #: 30-000845
Trinomial#:

ARCHAEOLOGICAL SITE RECORD

Page 2 of 3 Resource Name or #: n/a

A1. Dimensions: **unknown**
Method of Measurement: **n/a**
Method of Determination: **n/a**
Reliability of Boundary Determination: **Indeterminate**
Limitations: ✔ **Restricted Access** ✔ **Disturbances** ✔ **Vegetation** Other

A2. Depth: **unknown**

A3. Human Remains: Present Absent Possible ✔ **Unknown** (Explain): **None observed**

A4. Features: **None observed**

A5. Cultural Constituents: none

A6. Were Specimens Collected? ✔ **No** Yes

A7. Site Condition: Good ✔ **Fair** ✔ **Poor**
A8. Nearest Water: **Santa Ana River, .8 km west**
A9. Elevation: **40 - 90'**
A10. Environmental Setting: **Native vegetation remaining in the area is primarily widely scattered *Erioganum,* mule's fat, mustard, sumac and various grasses**
A11. Historical Information: **n/a**
A12. Age: **late prehistoric**
A13. Interpretations: **n/a**
A14. Remarks: **The area where this site was thought to be located was so completely overgrown with mustard and other plants that a visual assessment of the surface soils was impossible. Considerable brushing, or grubbing will have to occur before a reliable assessment of the site can be made. A site location map has been included in this report depicting the presumed site location.**
A15. References:

Murray, J.
1979 Archaeological Site Survey Record. CA-Ora-845. On file at South Central Coastal Information Center, Institute of Archaeology, UCLA

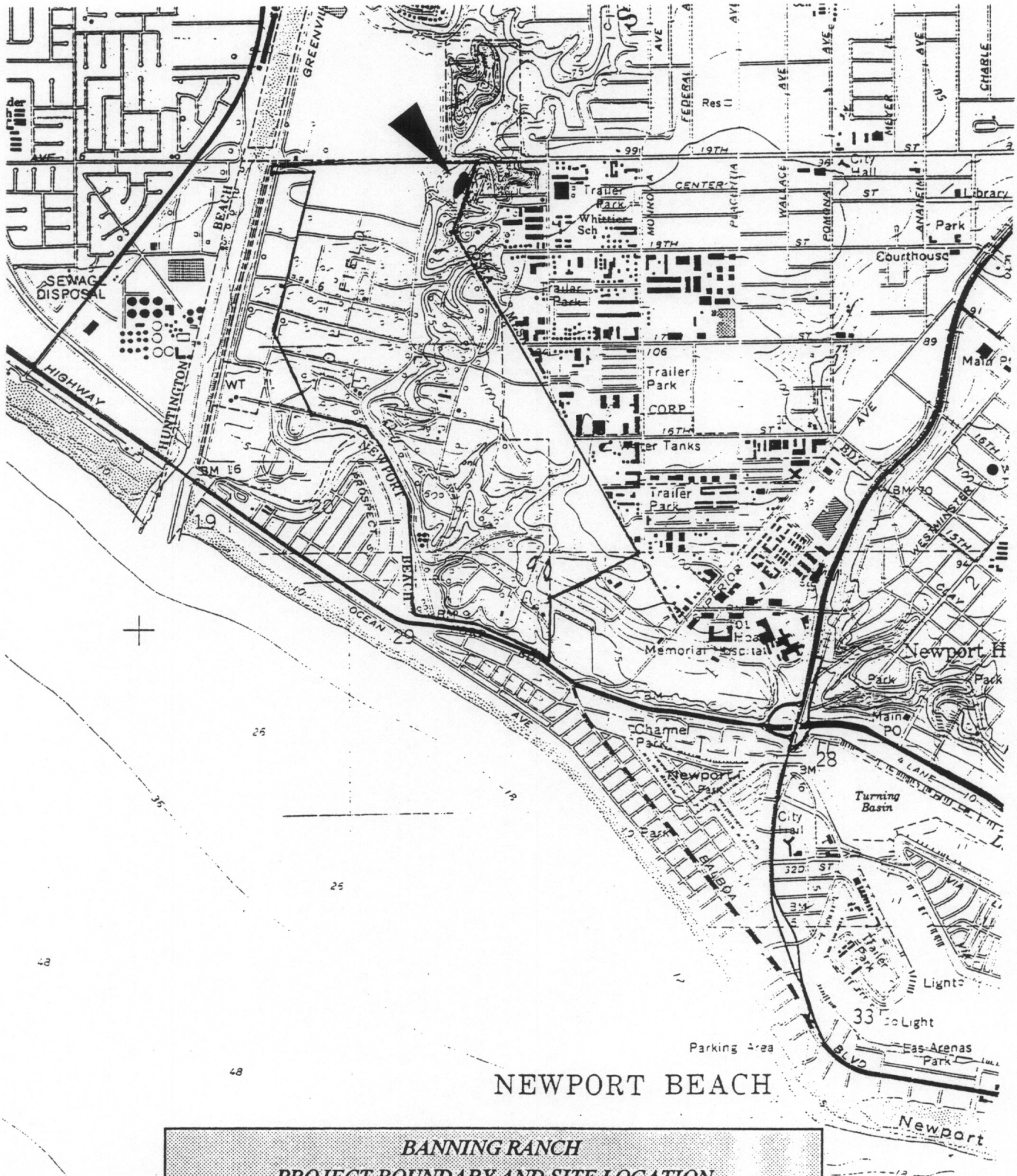
Drover, C
1998 *A Cultural Resources Inventory for the Banning Ranch, Newport Beach, California.* Manuscript on file at South Central Coastal Information Center, Institute of Archaeology, UCLA. Prepared for Taylor Woodrow Homes, Inc. Prepared by The Keith Companies, June 1998.

A16. Photographs: **none**
A17. Form Prepared By: **David M. Smith** Date: **June 18, 1998**
Affiliation and Address:
The Keith Companies
2955 Redhill Avenue.
Costa Mesa, Ca 92626

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

Primary # : *30-000845*
HRI#:
Trinomial#: Page 3 of 3
Resource Name or #: *n/a*

SITE LOCATION MAP



BANNING RANCH
PROJECT BOUNDARY AND SITE LOCATION
USGS 7.5' NEWPORT BEACH QUADRANGLE

ARCHAEOLOGICAL ASSOCIATES
1022-B Victoria St.
Costa Mesa, Ca. 92627

MAPPED

State of California – The Resources Agency,
DEPARTMENT OF PARKS AND RECREATION
ARCHEOLOGICAL SITE SURVEY RECORD

SITE No. CA-Ora-906

1. Previous Site Designation None 2. Temporary Field No. none
3. USGS Quad Newport Beach 7½' X 15' ___ Year 1972
4. UTM Coordinates 3,722,320N 412,260E ✓
5. Twp. 6S Range 10W ; UNSECTIONED ¼ of ___ ¼ of Sec. ___
6. Location 300' S.E. of Ora-839; at base of mesa upon which Ora-829 is located. Sine is within the Banning Oil Lease presently being operated by Mobil G.C. All roads on the lease are unnamed but an oil road is adjacent to site (i.e. just west of site)--this may be seen on the quad sheet.
7. Contour 25 8. Owner & Address Mobil G.C.--Newport Beach
9. Prehistoric x Ethnographic ___ Historic ___ 10. Site Description This ~~is a~~ shell midden under ca. 10' of modern fill. It was noticed in the section of a fresh cut while Van Horn and Murry were inspecting the protective fence around Ora-839
11. Area 2 x ___ meters, ___ square meters. 12. Depth of Midden 70 cm.
13. Site Vegetation chaparral Surrounding Vegetation same
14. Location & Proximity of Water Santa Ana River ½ mile to west.
15. Site Soil sandy black midden Surrounding Soil brown sandy loam
16. Previous Excavation none--site was completely buried until this month.
17. Site Disturbance exposed in a cut--see attached photos.
18. Destruction Possibility Most of site still buried--Mobil says it will remain so.
19. Features unknown.
20. Burials unknown
21. Artifacts none observed. Dense marine shell, one bird long bone ~~were all that are visible in the cut.~~
22. Faunal Remains one bird long bone (complete)
23. Comments Site must have been buried in the 1940's when portions of the mesa above were levelled for oil drilling. It was not visible until a fresh cut was made recently.
24. Accession No. ___ 25. Sketch Map ___ by ___ where see attached quad.
26. Date Recorded 7/17/80 27. Recorded By Van Horn, Murray
28. Photo Roll No. n.a Frame No. n.a. Film Type(s) B&W Taken By Van Horn
see attached copies.

DPR 422 (Rev. 9/76)

Ora-906

30-000906

SITE STATUS:

% Destroyed ____ How unknown but most probably still intact under fill. Test Excavated _____ %, if known.

National Register Status: Listed ____ Potential ____ No Determination X Nominated ____ Ineligible ____

State Historical Landmark (No.) _____ Point of Historical Interest _____

SPECIAL ATTRIBUTES (Place an X in only those spaces which pertain to the site)

Midden/Habitation Debris X Lithic and/or Ceramic Scatter ____

Bedrock Mortars/Milling Surfaces ____ Petroglyphs/Pictographs ____ Stone Features ____

Burials ____ Caches ____ Hearths/Roasting Pits ____ Housepits ____ Structure Remains ____

Underwater ____ Open Air ____ Rockshelter ____ Cave ____ Quarry ____ Trails ____

REMARKS The fact that this site has been buried for at least twenty years (and probably more) might lend it to some very interesting research with regard to the effects of fill on a shell midden. Midden looks very dense.

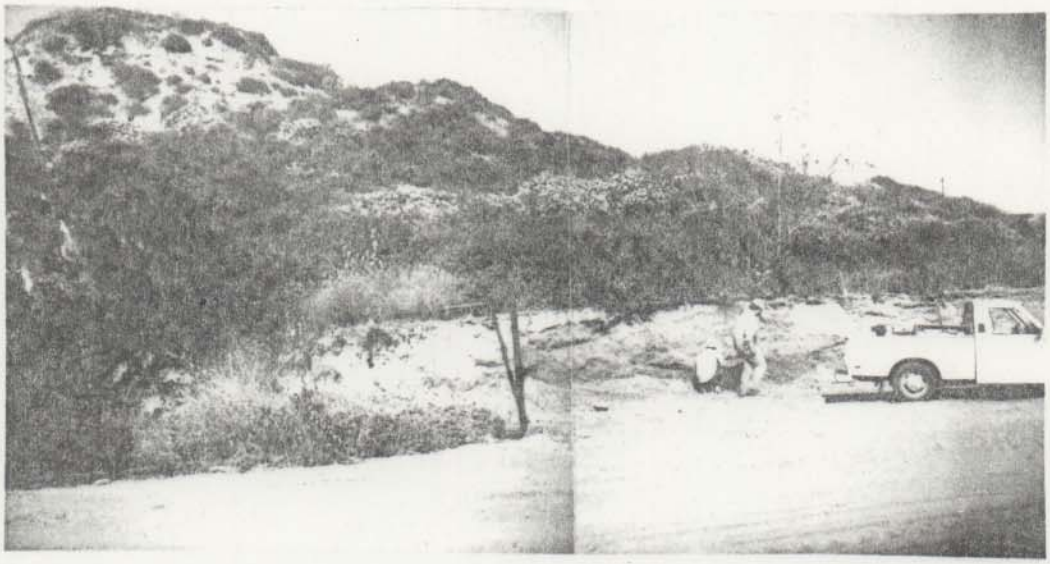
SKETCH LOCATION MAP (Include permanent reference markers, North Arrow, and Scale)

See attached quad sheet and copies of photographs.

SKETCH SITE MAP (Same criteria as above)

Section of midden

close-up of shell in midden



midden is at cut where men are standing. Ora-839 is on top of mesa above upper left corner.

30-000906

Ora-906

State of California -- The Resources Agency
DEPARMENT OF PARKS AND RECREATION

Primary # 30-000906
HRI #
Trinomial #
NRHP Status Code:

PRIMARY RECORD

Other Listings:
Review Code: Reviewer: Date:

Page 1 of 3 Resource Name or #:

P1. Other Identifier:

P2. Location: ✔**Not for Publication**

a. County: **Orange** USGS 7.5' **Newport Beach** Quadrangle Photorevised: **1981 (1965)**

T **6S**; R **10W**; Sec: **unsurveyed**; S.B.B.M.

c. Address: **n/a**

d. UTM: Zone 11; mE/ mN

e. Other Locational Data:

P3a. Description: This site was described by Van Horn as consisting of a shell midden under 10' of fill. One bird bone was observed in with the shell.

P3b. Resource Attributes: **AP15 (habitation refuse)**

P4. Resources Present: Building Structure Object ✔ **Site** District Element of District Other

P5a. Photo or Drawing: **See maps**

P5b. Description of Photo: none

P6. Date Constructed/Age and Sources: Historic ✔ **Prehistoric** Both

P7. Owner and Address:
Taylor Woodrow Homes, Inc.
24461 Ridge Route Drive
Laguna Hills, California 92653

P8. Recorded By: David M. Smith, Bill McManis, Jaime Paniagua, Heather Mills, Diane Reeves, Charles Reeves, Daniel Juday

P9. Date Recorded: June 18, 1998

P10. Survey Type: Reconnaissance survey

P11. Report Citation:

Van Horn, D and Murray, J.
1980 Archaeological Site Survey Record. CA-Ora-906. On file at South Central Coastal Information Center. Institute of Archaeology, UCLA

Drover, C
1998 A Cultural Resources Inventory for the Banning Ranch, Newport Beach, California.
Manuscript on file at South Central Coastal Information Center, Institute of Archaeology, UCLA. Prepared for Taylor Woodrow Homes, Inc. Prepared by The Keith Companies, June 1998.

Attachments: ✔**Archaeological Site Form,** ✔**Site Location Map**

State of California -- The Resources Agency
DEPARMENT OF PARKS AND RECREATION

Primary #: 30-000906
Trinomial#:

ARCHAEOLOGICAL SITE RECORD

Page 2 of 3 Resource Name or #: n/a

A1. Dimensions: **unknown**
Method of Measurement: Paced Taped ✔ **Visual Estimate** Other
Method of Determination: ✔ **Artifacts** Features ✔ **Soil** Vegetation Topography
Cut bank Animal Burrow Excavation Property Boundary Other
Reliability of Determination: High ✔ **Medium** Low Explain: dense brush
Limitations: ✔ **Restricted Access** Paved/built over ✔ **Site limits incompletely defined**
✔ **Disturbances** ✔ **Vegetation** Other

A2. Depth: **unknown**

A3. Human Remains: Present Absent Possible ✔ **Unknown** (Explain): **None observed**

A4. Features: **None observed**

A5. Cultural Constituents: **none**

A6. Were Specimens Collected? ✔ **No** Yes

A7. Site Condition: Good ✔ **Fair** ✔ **Poor**

A8. Nearest Water: **Santa Ana River, .8 km west**

A9. Elevation: **20-40'**

A10. Environmental Setting: This site is located midway down the west face of the Newport Mesa. The site is situated on sandy marine terrace alluvium, which may have been pushed over the edge from above.

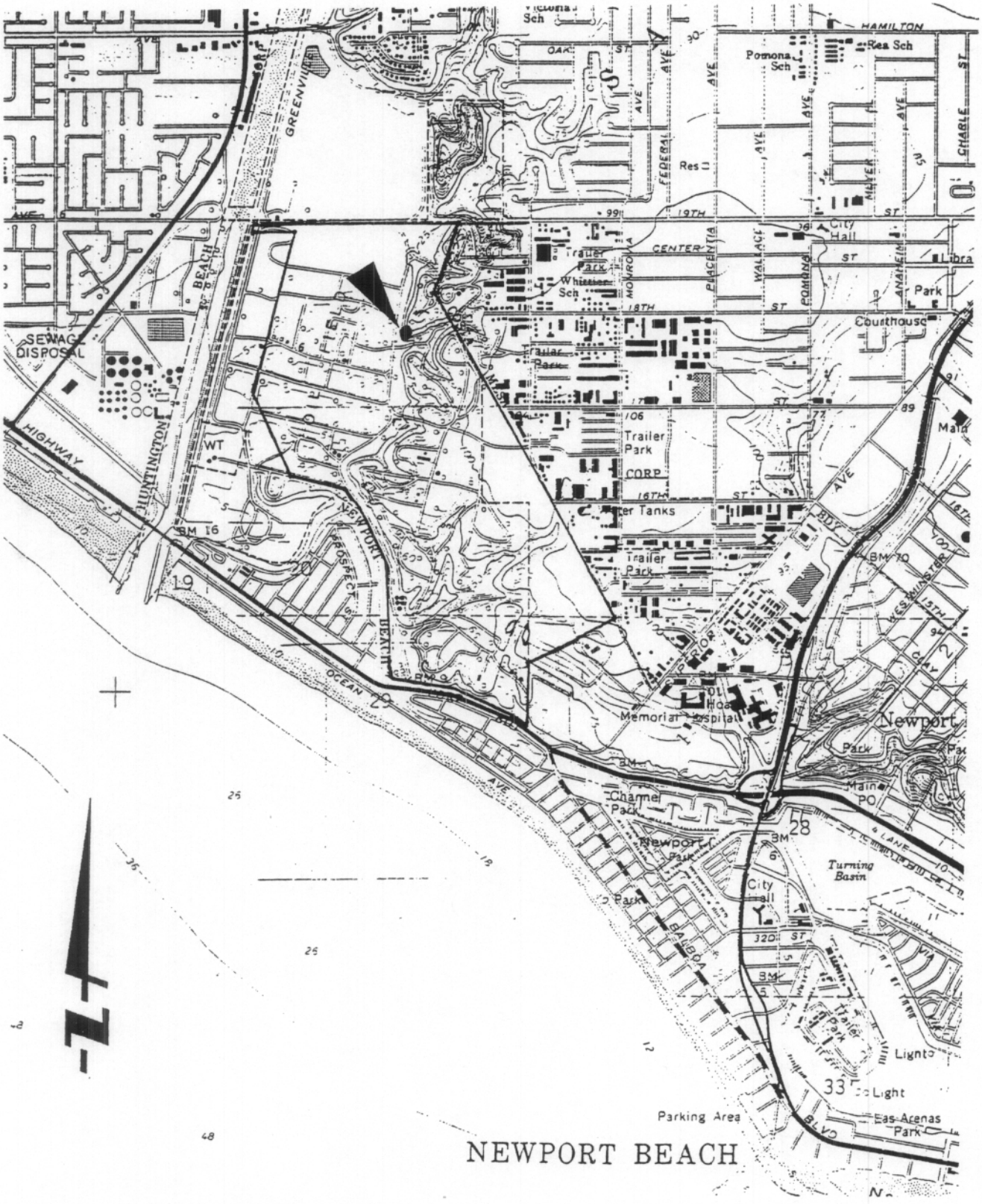
A11. Historical Information: n/a
A12. Age: Undetermined
A13. Interpretations: n/a
A14. Remarks: **This site could not be relocated during the current reconnaissance. The site may be covered with alluvium. Future test phases should include some form of excavation to determine the disposition of the site. The site location map on page 3 of this record indicates the purported location only.**
A15. References: **see P11**

A16. Photographs: **none**
A17. Form Prepared By: **David M. Smith** Date: **June 18, 1998**
Affiliation and Address:
The Keith Companies
2955 Redhill Avenue.
Costa Mesa, Ca 92626

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

Primary # : *30-000906*
HRI#:
Trinomial#:
Resource Name or #: *n/a*

SITE MAP



30-001667

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

Primary # _____
HRI# _____
Trinomial _____
NRHP Status Code
Other Listings _____
Review Code ____ Reviewer _____ Date _____

Page 1 of 4 ***Resource Name or #:** (Assigned by Recorder): Redeposited material

P1. Other Identifier:
***P2. Location: [X] Not for Publication [] Unrestricted**
***P2a. County:** Orange
***P2b. USGS 7.5' Quad** Newport Beach, CA **Date** 1965, Photorevised 1981 **T** 6S ; **R** 10W **(Not sectioned)**
_1/4 of _1/4 of Sec _; San Bernardino **B.M.**
P2c. Address _ City, CA Zip
P2d. UTM: (Give more than one for large and/or linear resources) Zone 11; 413084mE/3725144mN
P2e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate). The deposit is located at an elevation of about 80' in Fairview Park west of Placentia Ave.
***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting and boundaries). The area contains marine shell and one chert flake in a disturbed context mixed with modern glass fragments and gravel. There are two recorded sites in the area; CA-ORA-58 is located approximately 300 feet (90 meters) west of the deposit and CA-ORA-506 approximately 350 feet (110 meters) to the east.
***P3b. Resource Attributes:** (List attributes and codes) AP 15; Habitation debris (shell).
***P4. Resources Present:** [ ] Building [ ] Structure [ ] Object [] Site [ ] District [ ] Element of District [ ] Other (Isolates etc.) Redeposited shell and trash..

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

P5b. Description of Photo:(View, date, accession #) N.A.
***P6. Date constructed/Age and Sources:** [] Historic [X] Prehistoric [] Both: See Continuation Sheet.
***P7. Owner and Address:**
***P8. Recorded by:** (Name, affiliation and address) Joan C. Brown SWCA Inc, Environmental Consultants 23392 Madero, Suite L, Mission Viejo, CA 92691, (949) 770-8042
***P9. Date Recorded:** March, 2004
***P10. Survey Type:** (Describe) Extended Phase I Survey
***P11. Report Citation:** Fairview Park Multi-Purpose Bicycle/Pedestrian Trail, Costa Mesa, California; Joan C. Brown (2004)
***Attachments:** [ ] NONE [X] Location Map [] Sketch Map [X] Continuation Sheet [] Building, Structure and Object Record [ ] Archaeological Record [ ] District Record [ ] Linear Feature Record [ ] Milling Station Record [ ] Rock Art Record [ ] Artifact Record [] Photograph Record [X] Other (List) Aerial view showing boundaries of deposit and nearby sites.

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

Primary #
HRI#
Trinomial

Page 2 of 4 ***Resource Name or #:** (Assigned by Recorder): Redeposited material
***Recorded by** Joan C. Brown ***Date** March 2004 [X] Continuation [] Update

During an archaeological survey, shell was observed on the surface west of and near Placentia Avenue on the northern portion of the mesa. (Please refer to the Location Map) An excavation was accomplished of three units in that area. All three units yielded shell fragments; one unit also produced a chert flake. Gravel, which had evidently been spread on the surface of the existing trails in this area, was found throughout each level of the units. The distribution, both horizontal and vertically, of the gravel is probably a result of the plowing and, or disking that occurs regularly for weed abatement in the area. Two units also contained modern glass fragments. The unit that produced the flake also contained glass fragments in the same level and the level beneath the glass.

In 1993, an extensive excavation was undertaken by Dr. Koerper to determine the boundaries, of CA-ORA-58. During his study, Koerper found a small disturbed shell deposit in the same area and thought it could be a loci of CA-ORA-506 that is recorded east of Placentia Avenue.

Because this material is located mid-way, between two recorded archeological sites, approximately 300 feet (90 meters) east of CA-ORA-58 and 350 feet (110 meters) southwest of CA-ORA-506, the origin of the deposit cannot be ascertained at this time, however; this record is documenting its presence.

Brown, Joan C.

2004 Fairview Park Multi-Purpose Bicycle/Pedestrian Trail, Costa Mesa, California. On file at SWCA Environmental, Mission Viejo, CA.

Koerper, Henry C.

1993 Report on Investigations to Delineate Site Boundaries and Further Characterize Cultural Remains at CA-ORA-58, Costa Mesa, California. On file at the South Central Coastal Information Center, California State University, Fullerton.

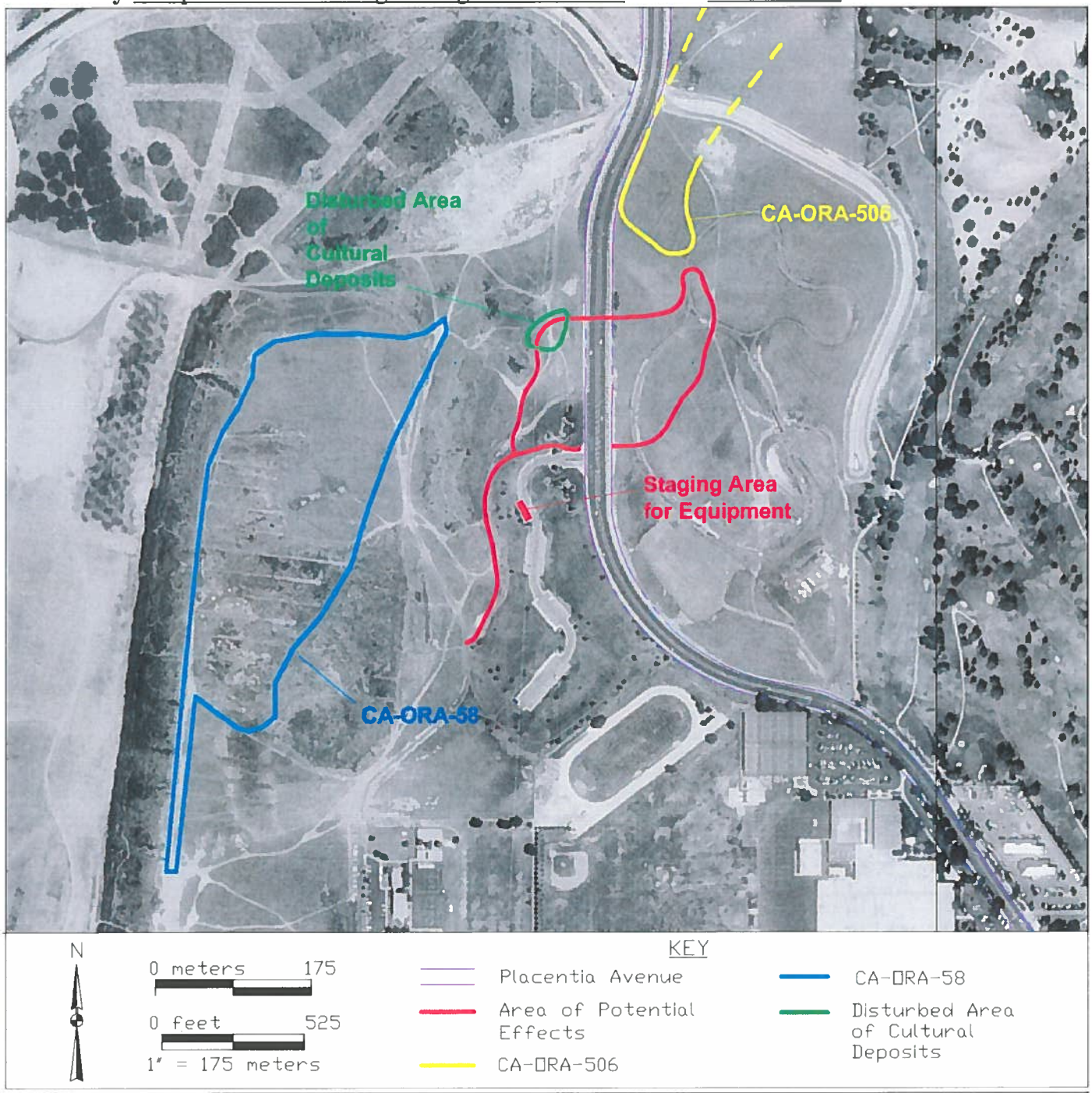
State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

Primary #
HRI#

AERIAL MAP

Trinomial

Page 3 of 4
Resource Name or #: (Assigned by Recorder): Deposit Relative to Recorded Archaeological Sites
***Drawn By:** Adapted from Merit Engineering **Date:** March 2004



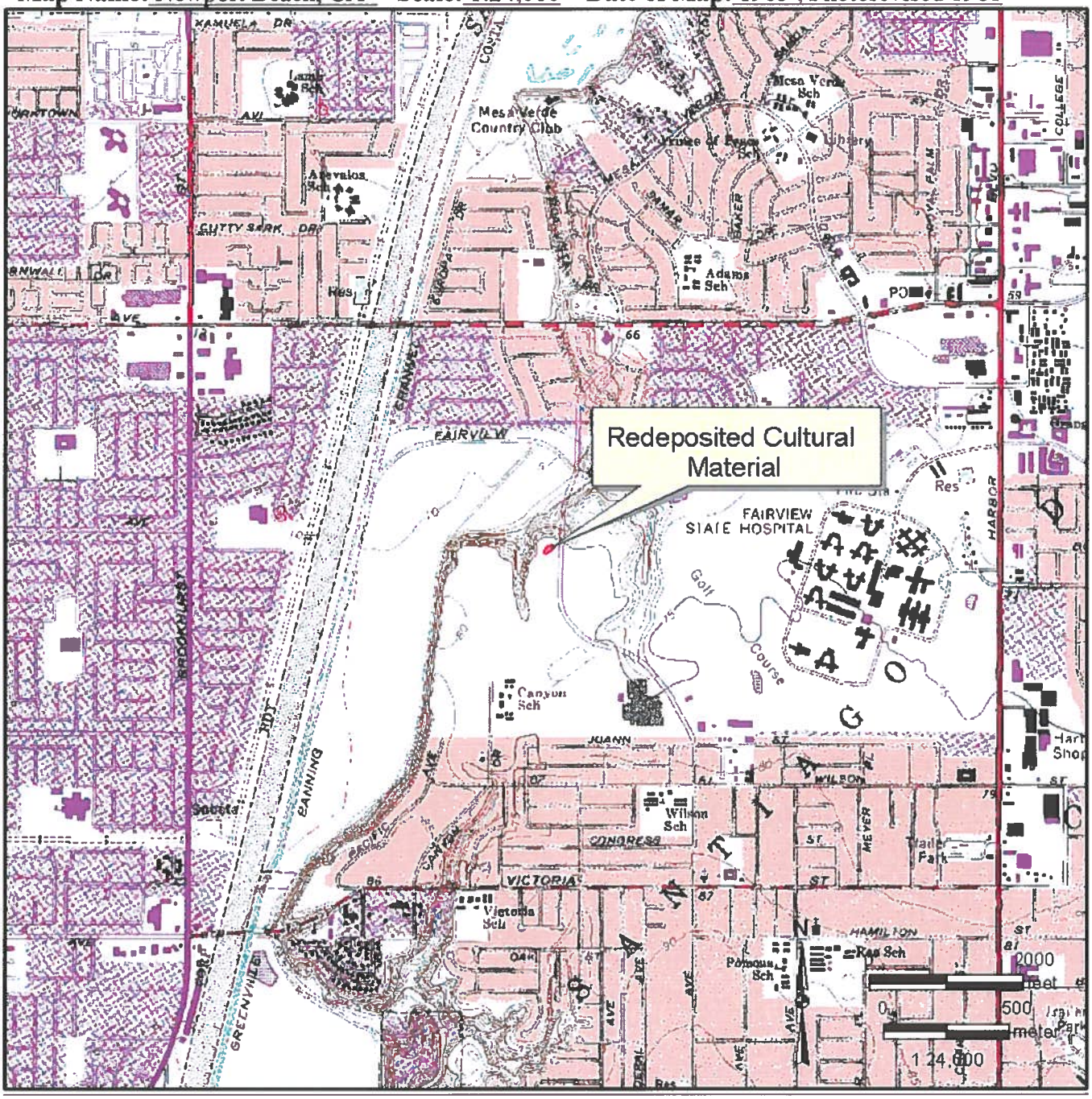
30-001667

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

Primary #
HRI#
Trinomial

Page 4 of 4 ***Resource Name or # (Assigned by Recorder):** Redeposited material

***Map Name:** Newport Beach, CA ***Scale:** 1:24,000 ***Date of Map:** 1965 , Photorevised 1981



DPR 523J (1/95)

***Required Information**

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

Primary # 30-1667
HRI #
Trinomial
NRHP Status Code
Other Listings
Review Code Reviewer Date

Page 1 of 4 *Resource Name or #: (Assigned by recorder) 30-1667 UPDATE
P1. Other Identifier: _____

*P2. Location: ☒ Not for Publication ☐ Unrestricted
*a. County Orange and (P2c, P2e, and P2b or P2d. Attach a Location Map as necessary.)
*b. USGS 7.5' Quad Newport Beach Date 1965 PR 1981 T 6S; R 10W; __ ☐ of __ ☐ of Sec 8 ; S.BB.M.
c. Address _____ City Costa Mesa_ Zip _____
d. UTM: (Give more than one for large and/or linear resources) Zone 11, 413084 mE/ 3725144 mN
e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, decimal degrees, etc., as appropriate) Located within the southwest Quadrant of Fairview Park at an elevation of approximately 80' west of Placentia Avenue.

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

Surface deposits of dark/ possibly midden soil containing marine shell, lithic flakes, and groundstone fragments. The site sits between CA-ORA-58 and CA-ORA-506.

While surveying a portion of an asphalt trail slated for improvements in the southwest quadrant of Fairview Park in Costa Mesa, CA, SRSinc also looked at a previously improved portion of this trail to the east, where the site 30-1667 had been recorded in the early 2000s. The trail was walked by Nancy "Anastasia" Wiley, Connie "Destiny" Colocho, Andrew Garrison, Ricky Saldana and two Native American monitors, Fred Garcia of the Gabrieleno tribe and Abel Silva of the Juaneño tribe(see continuation sheet)

*P3b. Resource Attributes: (List attributes and codes) AP15 (Habitation Debris)
*P4. Resources Present: ☐ Building ☐ Structure ☐ Object ☒ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5b. Description of Photo: (view, date, accession #) _____
*P6. Date Constructed/Age and Source: ☐ Historic ☒ Prehistoric ☐ Both
*P7. Owner and Address: Costa Mesa
*P8. Recorded by: (Name, affiliation, and address) Andrew Garrison, Destiny Colocho, Anastasia Wiley, Ricky Saldana.
SRSinc 2324 N Batavia
Orange, Ca
*P9. Date Recorded: June 22 and July 23 2014 *P10. Survey Type: Linear Reconnaissance
*P11. Report Citation: (Cite survey report and other sources, or enter "none.") Fairview Park Propose Multi-purpose Trail Costa Mesa, CA Archaeological Survey Report, SRSinc 2014

*Attachments: ☐NONE ☒Location 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): Sketch Map/Site Map

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

Primary#
HRI #
Trinomial

CONTINUATION SHEET

Property Name: _____
Page _____ of _____

SWCA conducted an Extended Phase I (EPI) study recording the archaeological site 30-1667 in the early 2000s. SWCA placed three units in the area. All three units yielded shell fragments with one producing a chert flake. Because gravel was found throughout the levels, SWCA concluded that the deposit likely represented redeposited disturbed material (Brown 2004). While walking this eastern portion of the trail SRSinc discovered an unrecorded portion of the archaeological site 30-1667 extending north and south of the original boundary. Looking at material brought up in rodent burrows, and a small embankment created when Placentia Avenue was put in, artifacts and midden soil was observed outside of the original 30-1667 boundary. The SRSinc survey team looked at two sets of transects, each containing five test areas. One transect ran from the west to the east (WET) and the second transect continued south to north (SNT) along the embankment separating the mesa from the sidewalk and Placentia Avenue below. The soil and any material within it that was brought up by the rodents was noted. SRSinc documented the soil from each rodent burrow comparing it with data from previous studies.

The soil collected ranged in Munsell Hue and Value, with the soil appearing to have come from areas containing midden ranging from 10YR 3/2-10YR 3/4 and being of a silty sand. The soil that appeared to come from a midden deposit matched up with the Munsell Hue and Value derived from erosion soil samples along the eastern bluff of the mesa, adjacent and within the ORA-58 Boundary. Further, the rodent disturbed soil showed no signs of midden and often contained concentrations of land snail shells. As the transects encountered darker midden soil the snail shell decreased, and in contrast, contained an abundance of sea shells.

A new site boundary for 30-1667 was drawn based on the soil data, the visual documentation of shell north of the established boundary, and the inclusion of an area identified by Koerper (1993). Koerper tested CA-ORA-58, to establish that sites boundaries (which sits to the west of 30-1667). One auger, auger 48, found 170 meters from all the other non-sterile augers produced a deposit of shell indicate possible archaeological deposits associated with ORA-58, and ORA-506, a site that sits immediately to the east across Placentia Avenue.

References

Brown, Joan C.
2004 Positive Archaeological Survey Report, Fairview Park Proposed Multi-purpose Bicycle/Pedestrian Trail, Costa Mesa, California. On file at the South Central Coastal Information Center, Department of Anthropology, California State University, Fullerton.

Koerper, Henry C.
1993 Report on Investigations to Delineate Site Boundaries and Further Characterize Cultural Remains at CA-ORA-58, Costa Mesa, California. On file at the South Central Coastal Information Center, California State University, Fullerton.

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

Primary#
HRI #
Trinomial

CONTINUATION SHEET

Property Name: _____
Page _____ of _____

Page 3 of 4 ***Resource Name or #** (Assigned by recorder) 30-1667 update ***Recorded by: SRSinc**
***Date** July 23, 2014 ☒ Continuation ☒ Update

Tables Comparing Soil Samples from ORA-58 Erosions and Eastern Portion of the Mesa West of Placentia Ave (30-1667).

1. **Soil in and Around 30-1667**

Sample	Comments	Shell Midden Present/Visible	Munsell Hue and Value	Munsell Color Name	Soil Comments
WET1	Taken From Erosion Area	no	2.5Y 3/3	Olive Brown	silty clay
WET2	Nothing	no	2.5Y 4/4	Olive Brown	silty sand
WET3	Land Snails	no	10YR 3/4	Dark Yellowish Brown	silty sand
WET4	Land Snails and Shell	yes	10YR 3/4	Dark Yellowish Brown	silty sand
WET5	Heavy Shell	yes	10YR 3/4	Dark Yellowish Brown	silty sand
SNT1	Hard soil, Roots	no	10YR 3/2	Very Dark Greyish Brown	silty sand, lots of roots in soil near grass
SNT2	Land snail and Min. Shell	yes	10YR 3/4	Dark Yellowish Brown	silty sand
SNT3	Land Snail and Min. Shell	yes	10YR 4/3	Brown	silty sand
SNT4	Heavy Shell	yes	10YR 3/2	Very Dark Greyish Brown	sandy silt
SNT5	Heavy Shell	yes	10YR 3/2	Very Dark Greyish Brown	sandy silt

2. Soil Located in Erosion Cuts on the Eastern Edge of the Mesa in and Adjacent to CA-ORA-58.

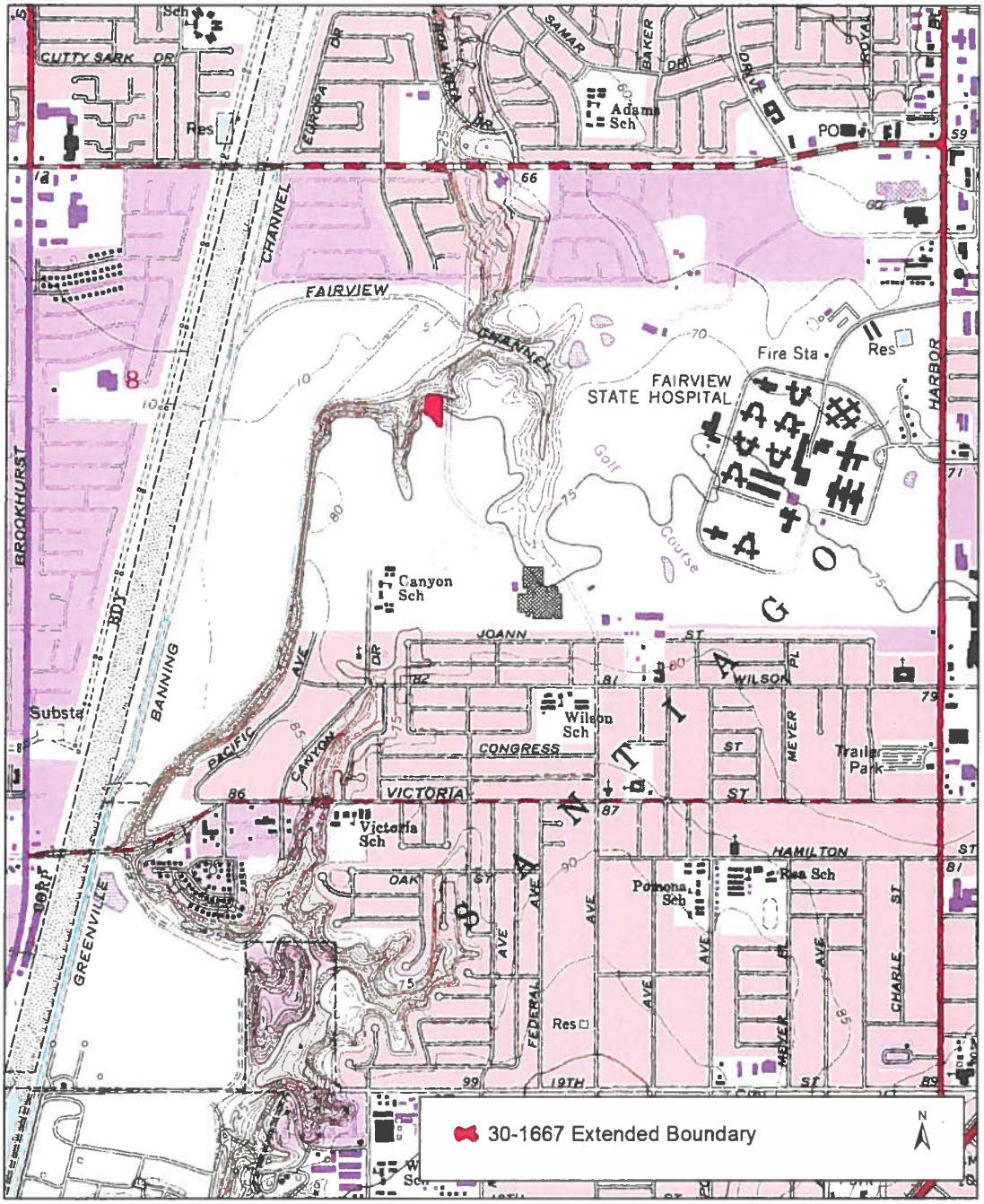
Sample	Easting	Northing	Shell Midden Present/Visible	Munsell Hue and Value	Munsell Color Name	Soil Comments
Erosion Sample 1	412629	3725308	Yes	10YR 3/2	Very Dark Greyish Brown	silty sand
Erosion Sample 2	412570	3725130	Yes	10YR 4/3	Brown	silty sand
Erosion Sample 3	412561	3724946	no	10YR 4/3	Brown	silty clay
Erosion Sample 4	412551	3724844	no	10YR 2/2	VeryDark Brown	clay
Erosion Sample 5	412548	3724650	no	10YR 5/4	Yellowish Brown	sandy clay

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

Primary #
HRI#
Trinomial

*Resource Name or # (Assigned by recorder) 30-1667 (update)

*Map Name: USGS Newport Beach 7.5 *Scale: 1:24000 *Date of map: 1965 PR 1981



* Required information

30-001740

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

Primary #
HRI #
Trinomial CA-ORA-1740H
NRHP Status Code

Other Review Code | Reviewer | Date | Listings

Page 1 **of** 5 ***Resource Name or #:** (Assigned by recorder) SRS1759-1
P1. Other Identifier:

***P2. Location:** ☒ **Not for Publication** ☐ **Unrestricted**
- ***a. County** Orange **and** (P2c, P2e, and P2b or P2d. Attach a Location Map as necessary.)
- ***b. USGS 7.5' Quad** Newport Beach **Date** 1965 PR 1981 **T** 6S; **R** 10W; __ ☐ **of** __ ☐ **of Sec** 8 ; S.B**B.M.**
- c. Address _____ City _____ Zip _____
- d. UTM: (Give more than one for large and/or linear resources) Zone 11, 412807 mE/ 3725433 mN
- e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, decimal degrees, etc., as appropriate) Located within the southwest Quadrant of Fairview Park

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

Site Consists of two trash scatters immediately adjacent to the west and east, bisected by a dirt which extends down from an upper mesa in the southwest quadrant of Fairview Park. The western portion of the site contains three fragmented and two complete still standing wooden posts. The standing posts have nails and barbed wire attached to them indicating possible use as a fence or corral. The western scatter contains fragments of glass, ceramic, concrete, and eating utensils amongst other domestic material. The eastern scatter contains glass and ceramic fragments as well, but has more industrial material than the western scatter with asphalt, metal, and concrete. Also of note, shell from an archaeological midden, CA-ORA-58, found on top of the mesa has slumped down the hill through erosion and can be observed along the upper portions of this historic site. Historic maps and aerial photos show the dirt path roughly follows a road that was once present in the area, and that buildings sat where the two scatters are located (see continuation sheet).

***P3b. Resource Attributes:** (List attributes and codes) AH4. (Trash Scatter); AH11 (Fence Posts)
***P4. Resources Present:** ☐ Building ☐ Structure ☐ Object ☒ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5b. Description of Photo: (view, date, accession #) Looking west towards site. Two wooden posts show general location of scatter.

***P6. Date Constructed/Age and Source:** ☒ Historic ☐ Prehistoric ☐ Both

***P7. Owner and Address:**
City of Costa Mesa

***P8. Recorded by:** (Name, affiliation, and address) Andrew Garrison, Ricky Saldana, and Nichole Marte
SRSinc 2324 N. Batavia
Orange CA 92865

***P9. Date Recorded:** July 23, 2014

***P10. Survey Type:** (Describe)
Reconnaissance

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") Fairview Park Propose Multi-purpose Trail Costa Mesa, CA Archaeological Survey Report, SRSinc 2014

***Attachments:** ☐NONE ☒Location 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): Sketch Map

State of California — The Resources Agency **Primary #**
DEPARTMENT OF PARKS AND RECREATION **Trinomial**
ARCHAEOLOGICAL SITE RECORD

 ***Resource Name or #:** SRS1759-1

***A1. Dimensions: a. Length:** 81 m. × **b. Width:** 45 m.
Method of Measurement: ☐ Paced ☐ Taped ☒ Visual estimate ☒ Other: GIS
Method of Determination (Check any that apply.): ☒ Artifacts ☒ Features ☒ Soil ☐ Vegetation ☒ Topography
☐ Cut bank ☐ Animal burrow ☐ Excavation ☐ Property boundary ☒ Other (Explain): Historic aerials and Maps

Reliability of Determination: ☒ High ☐ Medium ☐ Low Explain:

Limitations (Check any that apply): ☐ Restricted access ☐ Paved/built over ☐ Site limits incompletely defined
☒ Disturbances ☒ Vegetation ☐ Other (Explain):

A2. Depth: ☐ None ☐ Unknown Method of Determination:
***A3. Human Remains:** ☐ Present ☐ Absent ☐ Possible ☒ Unknown (Explain): No excavations have taken place below the mesa and it is unlikely human remains would be encountered. However, the sites CA-ORA-58, just south on top of the mesa, has produced prehistoric burials.

***A4. Features** (Number, briefly describe, indicate size, list associated cultural constituents, and show location of each feature on sketch map.):
Site Consists of two trash scatters immediately adjacent to the west and east, bisected by a dirt path running south to north down from an upper mesa in the southwest quadrant of Fairview Park. The western portion of the site contains three fragmented and two complete still standing wooden posts. The standing posts have nails and barbed wire attached to them indicating possible use as a fence or corral.

***A5. Cultural Constituents** (Describe and quantify artifacts, ecofacts, cultural residues, etc., not associated with features.):
The western scatter contains fragments of glass, ceramic, concrete, and eating utensils amongst other domestic material. The eastern scatter contains glass and ceramic fragments as well, but has more industrial material than the western scatter with asphalt, metal, and concrete. There is small gully created through erosion found in the western half of the site. Historic artifacts can be observed eroding out of the western bank of this cut. Also of note, shell from an archaeological midden, CA-ORA-58 found on top of the mesa has slumped down the hill through erosion and can be observed along the upper portions of this historic site.

***A6. Were Specimens Collected?** ☒ No ☐ Yes (If yes, attach Artifact Record or catalog and identify where specimens are curated.)
***A7. Site Condition:** ☐Good ☒ Fair ☐ Poor (Describe disturbances.):

***A8. Nearest Water** (Type, distance, and direction.): Santa Ana River located just west of the site
***A9. Elevation:** The elevation of the site area ranges from 15-40 feet above mean sea level (AMSL).

A10. Environmental Setting (Describe culturally relevant variables such as vegetation, fauna, soils, geology, landform, slope, aspect, exposure, etc.): The site is located just north and below a mesa. Portions of the site sit on the slope. The area historically was used for agriculture. Vegetation constists of purple sage scrub, grasses, ruderal and coastal sage scrub.

A11. Historical Information:
Historic maps and aerial photos show the dirt path roughly follows a road that was once present in the area, and that buildings sat roughly where the two scatters are located. The buildings were built sometime after 1945 and appear to have been demolished in the early to mid-1960s. All observed historic artifacts appear to be from after the 1940s.

***A12. Age:** ☐ Prehistoric ☐ Protohistoric ☐ 1542-1769 ☐ 1769-1848 ☐ 1848-1880 ☐ 1880-1914 ☐ 1914-1945
☒ Post 1945 ☐ Undetermined **Describe position in regional prehistoric chronology or factual historic dates if known:**
See Continuation Sheet

A13. Interpretations (Discuss data potential, function[s], ethnic affiliation, and other interpretations):

A14. Remarks:

A15. References (Documents, informants, maps, and other references):
Historic USGS 7.5' maps

A16. Photographs (List subjects, direction of view, and accession numbers or attach a Photograph Record.):

Original Media/Negatives Kept at: Scientific Resource Surveys

***A17. Form Prepared by: Andrew Garrison** **Date:** 7/23/14
Affiliation and Address: SRS, Inc. 2324 N. Batavia St., Ste 109, **Orange**, CA 92865

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

Primary#
HRI #
Trinomial

CONTINUATION SHEET

Historic Topographic maps, USGS 1945 and 1953 7.5', and historic aerials indicate a buildings once stood at the base of the northeastern corner of the mesa found in the southwest quadrant of Fairview park. In addition, a dirt road, which is now utilized by visitors to the park, traversed the upper mesa descending down the bluff to these buildings. The maps and aerial indicate the building was not present until the mid- to late-1940s and destroyed sometime before the 1963. The dirt road remained, and is represented by a dirt path that runs parallel to the asphalt path straight down the mesa.

On July 22, 2014, SRSinc crew returned to Fairview Park and surveyed the area and recorded the site. SRSinc walked the area in 3 meter transects documenting any possibly historic features or cultural material. The area surveyed measured approximately 7500 square meters, just under 2 acres. The survey area can be separated into two sections, a western and eastern section. The sections are separated by the dirt trail located roughly were the previously discussed historic dirt road ran. The historic aerial photos and maps indicated that in the mid twentieth-century, both sides of the road contained one structure. Historic material was documented in both the western and eastern portion of the survey area. A site boundary was drawn based on the density of surface material located within the survey area. Further, it should be noted that shell material likely associated with ORA-58 immediately south, up on the mesa, has slumped down and is visible on the southern portions of the historic areas, eventually petering out as the topography levels off. Lastly, immediately north of this survey area, the historic documents indicate there once sat a barn. This northern portion has in recent years been cleared as part of the restoration efforts of the lowlands, and no material was observed in that portion during this survey.

No structures remain in the area. Nevertheless, in the western half of the survey area 2 complete still standing wooden posts were documented. The posts had nails and barbed wire still connected to them. In addition, three fragmented wooden post bases were documented as well. The western survey area was covered in debris, the material included concrete fragments, ceramic fragments, broken glass from bottles and other applications, metal eating-utensils, and other utilitarian material likely associated with a domestic structure. Further, a gully located in the southeastern section of the western survey area show signs of water erosion. Along the western edge of this cut, historic material can be seen eroding out of the gully wall. They area appears to be eroding as a result of redirected water running from the storm drain pipe place in the area in the 1980s along with the current bike path. The material documented from this area include domestic utilitarian material as that described above, as well as one blue ceramic bead. This area was documented with the GPS and Photographed

The eastern portion of the survey area also was littered with historic debris. The material observed and documented in the eastern portion appeared to be more industrial in nature, containing more concrete than observed on the other side of the road. Also identified were many more large pieces of rusted metal that looked to have come from machinery, brick fragments, asphalt, and glass. One glass bottle bottom was documented with manufacture date of the item researched. The topography of the eastern area gently sloped up; however, what appeared to be a flattened area in the southern portion of the eastern survey section was located and documented.

The western scatter appeared to contain domestic material. However, the wooden posts and barbed wire, also suggest the area could have been utilized as a corral. The historic documents suggest that the building once located in the western half of the survey sat on the flat northern portion of the survey area while the posts were located as the topography begins to slope up to the south. The flattened area located in the eastern half of the survey area appears to be located roughly where the historic documents show some sort of outbuilding. With this area containing more industrial material, this suggests a building housing equipment once sat there. All the material recorded and identified are associated with the mid-twentieth century to the present. Modern trash could be seen within the area. The bottle bases located within the survey all date approximately the 1950s, falling into the time period when the buildings stood.

State of California ♿ The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
SKETCH MAP

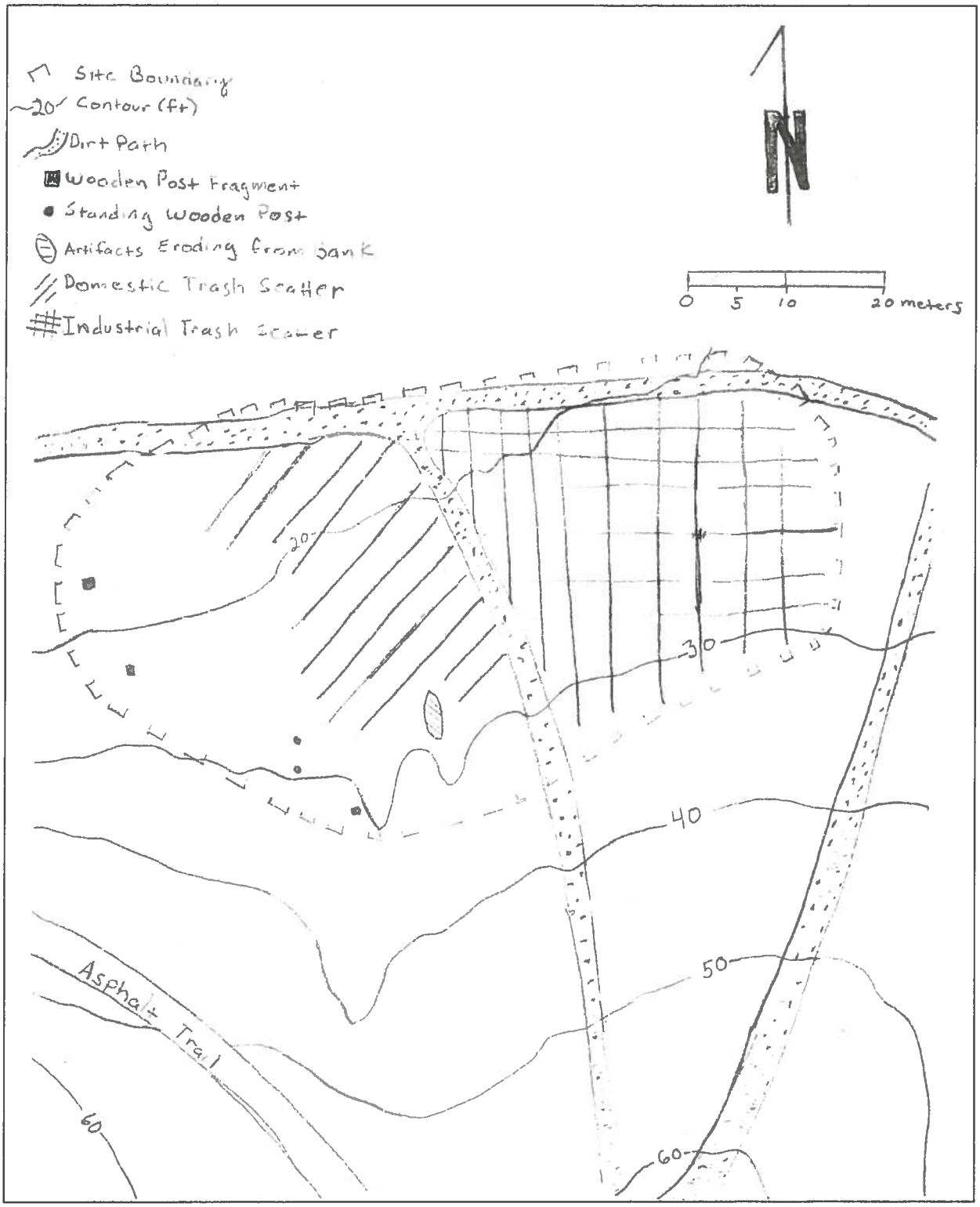
Primary #
HRI#
Trinomial

Page 4 of 5

*Resource Name or # (Assigned by recorder) SRS1759-1

*Drawn by: Andrew Garrison

*Date of map: 7/23/14



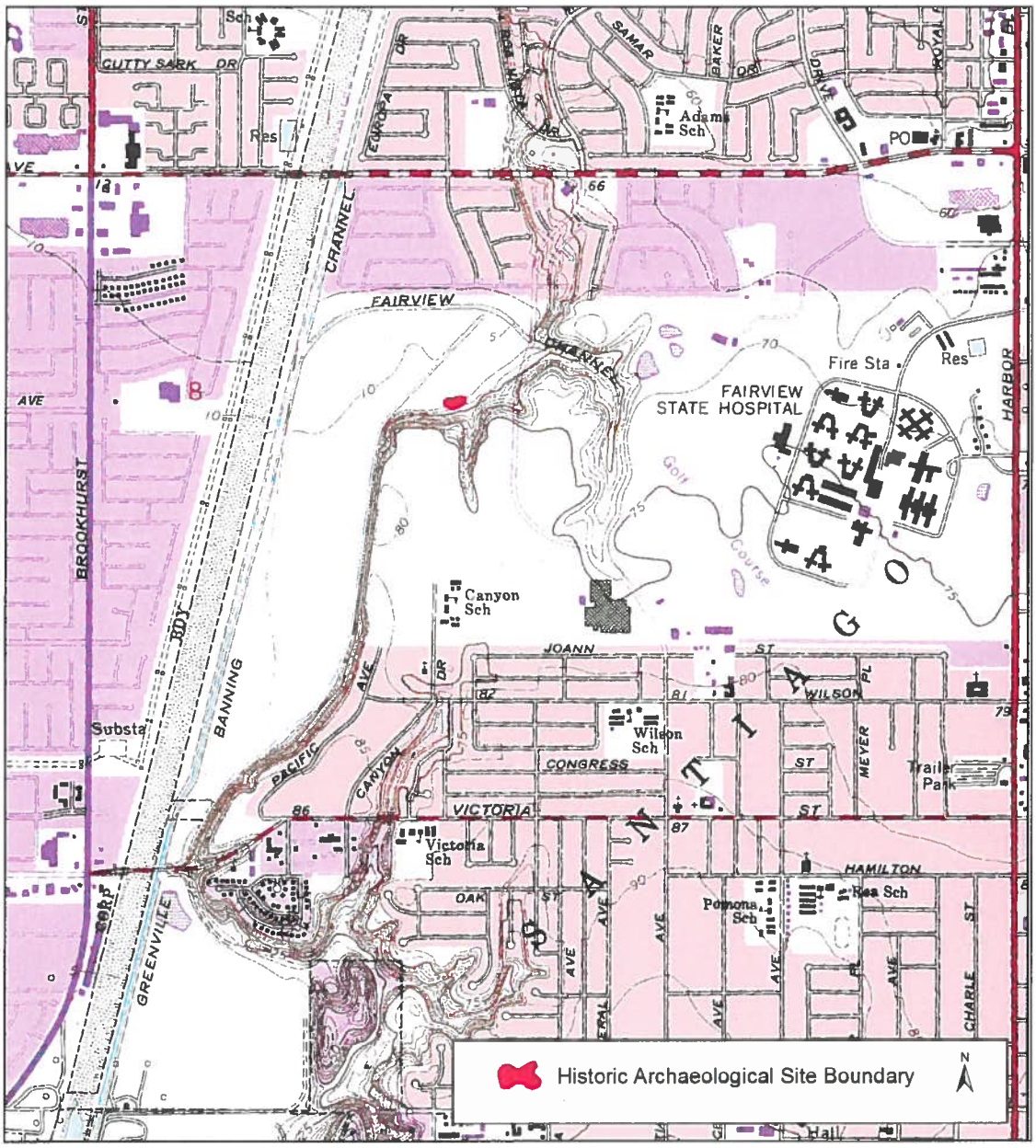
NOTE: Include bar scale and north arrow.

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

Primary #
HRI#
Trinomial

*Resource Name or # (Assigned by recorder) SRS1759-1

*Map Name: USGS Newport Beach 7.5 *Scale: 1:24000 *Date of map: 1965 PR 1981



* Required information

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

Primary #: _____
HRI # _____
Trinomial _____
NRHP Status Code: _____
Other Listings _____
Review Code ____ Reviewer _____ Date _____

 ***Resource Name or #:** SCE Transmission Tower M2-T6, Ellis-Huntington Beach No. 2

P1. **Other Identifier:** None
***P2.** **Location:** ☐ Not for Publication ■ Unrestricted ***a.** **County:** Orange
b. **USGS 7.5' Quadrangle**: Newport Beach, California
c. **Address**: 20462 Ravenwood Lane **City:** Huntington Beach **Zip:** 92646
d. **UTM:** N/A
e. **Other Locational Data (e.g., parcel #, directions to resource, elevation, etc., as appropriate):** APN 155-211-02.

***P3a.** **Description:** The property consists of one of a pair of Southern California Edison (SCE) high-lead electrical transmission towers that run approximately north to south tying into the SCE power plant located along the Pacific Coast Highway near Brookhurst Street. The riveted steel, truncated pair of towers were reportedly built in 1964 and each stand approximately 121' tall, resting on concrete piers, and having three arms with porcelain insulators conducting electricity along wires affixed to each arm. The subject tower parallels the Santa Ana River flood control channel, which lies immediately to the east. The SCE power plant is located approximately 2 miles south of the project area.

***P3b.** **Resource Attributes:** HP11- Engineering structure
***P4.** **Resources Present:** ☐ Building ☒ Structure ☐ Object ☐ Site ☐ District ☒ Element of District

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

P5b. **Description of Photo:** Looking north towards the project site (right tower) through the Pacific Nursery.
***P6.** **Date Constructed/Age and Sources:** ■ Historic 1964, based on SCE records.
***P7.** **Owner and Address:** Southern California Edison, 4900 Rivergrade Road, 2B-1, Irwindale, California 91706.
***P8.** **Recorded by:** Dana E. Supernowicz, Architectural Historian, Historic Resource Associates, 2001 Sheffield Drive, El Dorado Hills, CA 95762.
***P9.** **Date Recorded:** September 2012
***P10.** **Type of Survey:** ■ Architectural
***P11.** **Report Citation:** Cultural Resources Study of the SCE - Monroe Pacific Nursery Project, MetroPCS California, LLC Site No. MLAX04188, 20462 Ravenwood Lane, Huntington Beach, Orange County, California 92646. Prepared for EarthTouch, Inc., 3135 North Fairfield Road, Layton, UT 84041. Prepared by Historic Resource Associates, 2001 Sheffield Drive, El Dorado Hills, CA 95762. October 2012.

***Attachments:** Building, Structure, and Object Record; Project Location Map; Photograph Record

State of California — The Resources Agency
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Primary #:
HRI#:

BUILDING, STRUCTURE, AND OBJECT RECORD

 ***Resource Name or #:** SCE Transmission Tower M2-T6, Ellis-Huntington Beach No. 2 **NRHP Status Code:** 6Y

B1. Historic Name: Tower M2-T6, Ellis-Huntington Beach No. 2
B2. Common Name: Same as above
B3. Original Use: Public Utility Transmission Tower **B4. Present Use:** Same
***B5. Architectural Style:** Industrial riveted steel, lattice-braced design
***B6. Construction History:** The pair of truncated steel transmission towers were reportedly built in 1964, according to SCE records, and connect to the Huntington Beach SCE plant at the intersection of Brookhurst Street and the Pacific Coast Highway.
***B7. Moved?** ■ No ☐ Yes ☐ Unknown **Date:** N/A **Original Location:**
***B8. Related Features:** The property lies west of the Santa Ana River flood control channel.
B9a. Architect: N/A **B9b. Builder:** Southern California Edison
***B10. Significance: Theme:** Hydroelectric Power and Electrical Transmission/Economic Development of Orange County **Area:** Southern California/Orange County **Period of Significance:** 1964 **Property Type:** Industrial **Applicable Criteria:** A and C

The subject property is situated in Huntington Beach, which after 1960 witnessed unprecedented growth as areas outside the original incorporated city boundaries were annexed. The conversion of agricultural land within and near the project area began in earnest during the 1920s and continued through the 1960s. The historic context for the project site lies in the development of a reliable source of electrical power generation and the role that Southern California Edison (SCE) played in regional and local power generation and the transmission of electricity to emerging metropolitan areas and suburbs, such as those in the coast communities of Orange County. The history of the company began in 1886, when several small independent power companies, which would later become Southern California Edison, including San Bernardino Electric Company, Visalia Electric Light & Gas Company, Santa Barbara Electric Light Company, and Ventura Land & Power, brought electric lighting to Southern California. By 1892, hydroelectric plants were constructed in San Antonio Creek (San Bernardino Mountains) and Mill Creek. In 1894, San Francisco financiers licensed Thomas Edison's name and patents from General Electric Company and organized the Los Angeles Edison Electric Company. In 1896, the West Side Lighting Company bought the franchise to operate the Los Angeles' power system, which by 1897 merged with the Los Angeles Edison Electric Company to form Edison Company of Los Angeles. To obtain 3,000 kilowatts more generating power, in 1898 the Edison Company purchased Southern California Power Company (Myers 1983; Southern California Edison Website 2012) Refer to BSO, Page 3 of 4.

B11. Additional Resource Attributes: N/A
B12. References: Myers, William A. *Iron Men and Copper Wires: A Centennial History of the Southern California Edison Company.* Trans-Anglo Books. 1983; Southern California Edison Website. "History." www.sce.com. Accessed September 2012; Wolcott, Barbara and Richard Nailen. "Big Creek Project." *The Electrical Apparatus.* October 1999; Wolff, Eric. "Energy: Huntington Beach Power Plant helps fuel region's electric needs." *North County Times* Newspaper. May 11, 2012; Associated Press Staff. "H.B. Generators: With San Onofre shuttered, retired H.B. power plant to pick up slack." *Orange County Register* Newspaper. p. 3. May 18, 2012.
B13. Remarks:
B14. Evaluator: Dana E. Supernowicz, Architectural Historian, Historic Resource Associates, 2001 Sheffield Drive, El Dorado Hills, CA 95762
Date of Evaluation: September 2012

Aerial Photograph 2012
(arrow points to the project location)

(This space reserved for official comments.)

***B10. Significance (Continued):**

In 1901, John Barnes Miller assumed the presidency of the Edison Company, which expanded from 1902-1909 by modernizing old plants and building new steam and hydroelectric plants. On July 6, 1909, to reflect the transformation of a small Los Angeles utility to an electric company serving 600,000 people in five counties, the Edison Company changed its name to Southern California Edison. In 1917, SCE purchased the Pacific Light & Power Corporation and became the country's fifth largest power company, serving over 100 communities of 1.25 million people. Between 1917-1929, SCE expanded with the Big Creek project, the first large-scale progressive hydroelectric development. During the 1920s severe drought compelled Southern California Edison to reduce its reliance on hydroelectric power plants and expand into steam plants in Long Beach (Myers 1983; Southern California Edison Website 2012).

On June 19, 1939, power generated at the newly completed Hoover dam was delivered to SCE. In May 1942, all investor and government-owned utilities in California, Southern Nevada, and Arizona banded together to form the Pacific Southwest Power Pool to provide services during World War II. During 1941-1945, SCE powered much of the wartime aircraft, steel, and shipyard industries. By 1964, California Electric Power Company merged with Edison. In January 1996, SCE was incorporated as a subsidiary of Edison International. In compliance with deregulation, in 1997 SCE sold 12 power plants, including Highgrove (Colton), Ellwood, Redondo Beach, and San Bernardino (Myers 1983; Southern California Edison Website 2012).

The Big Creek Project was the catalyst for development of a dependable supply of electrical power to portions of Southern California. When the transmission of electricity became practical, a large number of small generating companies sprang up largely because low-voltage direct current could only be reliably delivered a maximum of three miles. The advent of high-voltage alternating current brought the Sierra Nevada's water resources into the economic lifeblood of southern California, fueling exponential growth. The population of Los Angeles exceeded 105,000 by 1905, and Huntington's inter-urban Pacific Electric and Los Angeles Railway, the famous "Red Cars," used 80 percent of the power produced in the area. The entire Big Creek system was changed to 220,000 volts in May of 1923, the first commercial use of such high voltage in the world. Building continued at a record-breaking pace until the demand for electricity leveled off and even dropped during the Great Depression. World War II intervened before more dams and powerhouses could be added to Big Creek, but eventually the project encompassed eight lakes and five forebays, plus nine powerhouses, and three tunnels, one of which pumps water back to reflow downstream for times of peak power demands (Wolcott and Nailen 1999).

By the late 1920s, historic documents, maps, and photographs indicate that SCE had developed a transmission line through Fort Tejon from the Central Valley and over the pass and into Southern California. The line ran along the west side of the highway, and jogged east at Fort Tejon, where it continued south paralleling present-day I-5. The transmission towers were built of steel, riveted together with lattice and bents for support. Transmission lines were attached to the top of the tower along a slightly arched riveted steel lattice brace. In an electrical power grid or transmission system, the electricity first went to a transformer at the power plant that boosted the voltage. The long thick cables of transmission lines were made of copper or aluminum because they have a low resistance. High voltage transmission lines carried electricity long distances to a substation, where transformers changed the very high voltage electricity back into lower voltage electricity to be supplied to businesses and residences. Ultimately, the transmission line or grid reached the San Fernando Valley where it branched out with separate lines running east-west and north-south (Myers 1983; Southern California Edison Website 2012).

Steel, lattice-braced transmission towers were the industry standard from the 1920s through the 1950s. In 1968 leading industrial designer Henry Dreyfuss worked with SCE engineers to produce the nation's first aesthetic transmission towers. The new towers were drastically different than those of the 1920s-1940s towers, although still clearly identifiable as transmission towers. The history of much of California, and indeed almost all of southern California, is tied to both water and power. The need for electricity was particularly acute in southern California due to the building boom in the 1920s and sprawling suburbs extending north into the San Fernando Valley, a region that prior to the 1920s was laden with farms and ranches. The 1950s ushered in a new wave of commercial and residential development in Los Angeles and Orange counties, hence the need for expanded transmission lines and substations became particularly acute by early 1950s. Transmission lines or cable were attached to the top of the standard steel towers along a slightly arched riveted steel lattice braces. The design of the towers was both practical and stable, particularly in areas with high winds (Myers 1983; Southern California Edison Website 2012). Refer to BSO, Page 4 of 4.

State of California — The Resources Agency
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Primary #:
HRI#:

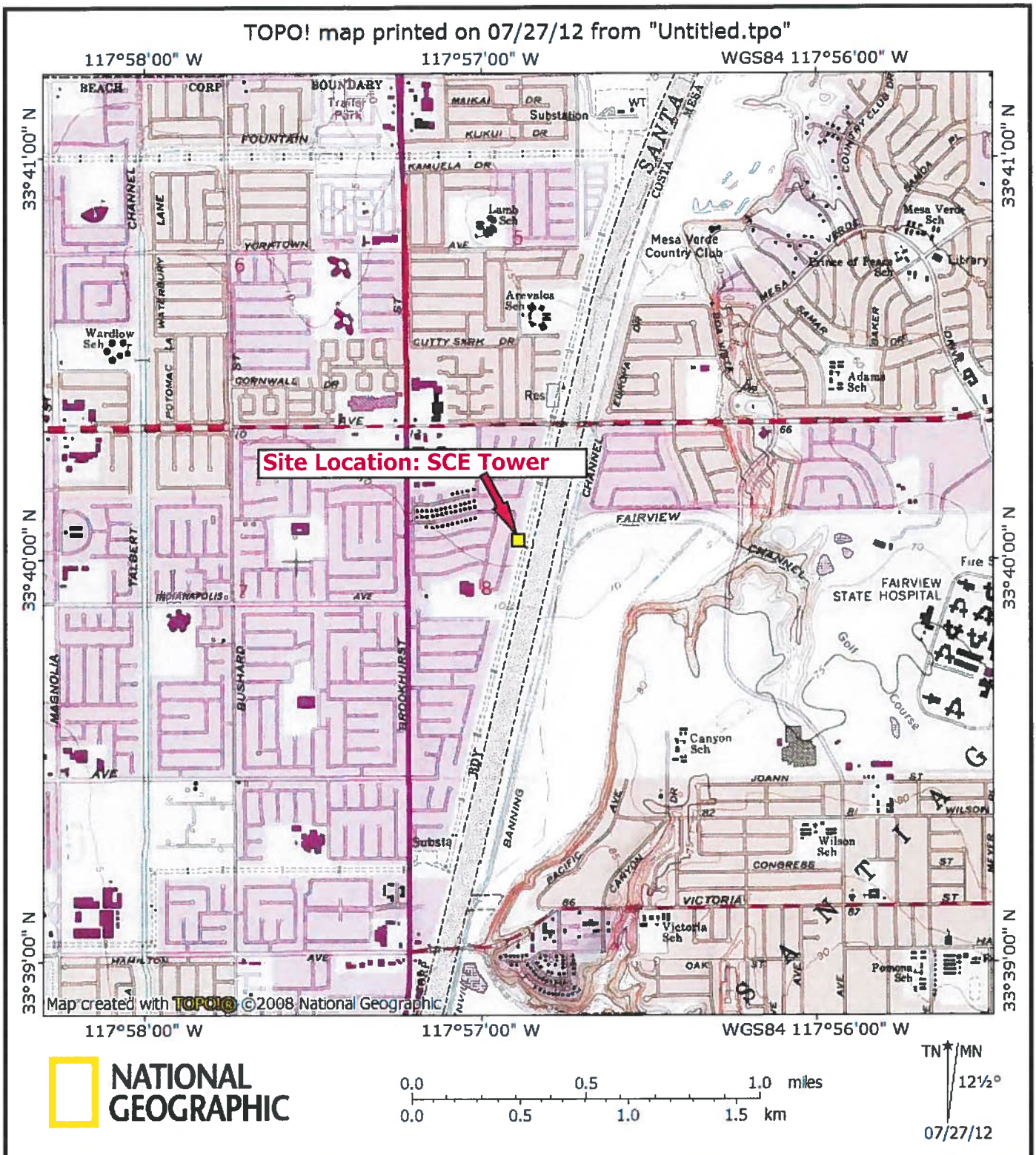
BUILDING, STRUCTURE, AND OBJECT RECORD

***B10. Significance (Continued):**

The SCE power plant at Huntington Beach Generating Station, now owned by AES Huntington Beach, LLC, began operating in 1958. The power plant utilized fuel oil for production of electricity through its five generating units until the late 1980s, when the generating units were converted for natural gas operation. The plant reportedly produced roughly 440 megawatts of power, considerably less than other plants in the area. In 1995, SCE retired two existing generating units (Units 3 and 4) due to limited use. After 1995, the importance of the plant began to diminish as other energy sources were tapped, particularly the San Onofre Nuclear Power Plant, until 2012 when retired units were brought back on line (Wolff 2012; Associated Press Staff 2012).

National Register of Historic Places (NRHP) Criteria A and C were particularly important in assessing the significance of the subject property. Criterion A was applied because of the property's relationship with SCE and its expansion of the electrical grid system in west Orange County during the 1960s, associated with the completion of the SCE power plant in Huntington Beach. Criterion C was applied because the subject steel transmission towers are engineering features related to the development of other similar types of properties after the turn of the century, including windmills, fire lookout towers, and radio towers. Comparing tower types, most of the electrical towers owned and operated by Pacific Gas & Electric Company in northern California were built after 1940 and are a slightly different design then those operated by SCE in southern California. It is also important to note that the subject property is a very small part of an extensive power grid that extends for miles outside the immediate project APE. Therefore, the property must be considered both individually and as part of a linear district comprised of multiple steel transmission towers and electrical lines tied to substations and ultimately power generating plants.

Despite the fact that the approximate 121' tall lattice-braced transmission tower appears to retain very good integrity of design, materials, location, setting, association, and feeling, there remain hundreds of similar transmission towers throughout California and along the SCE power grid. Furthermore, the pair of towers are an ubiquitous property type and were constructed in 1964 to provide additional electrical power to the expanding suburban communities of west Orange County, including Huntington Beach. The subject property does not represent an early SCE tower type, which would have been designed and built in the 1920s through 1940s. Thus, the subject property does not appear to be individually eligible for the NRHP under Criteria A and C. In regards to a linear district, the subject property is representative of a rather late class of riveted steel transmission towers, associated with electrical grids that provided power to specific substations along the line of the grid. This particular power grid, while important, is not the first of its kind in Orange County, and appears to relates more directly to a more "modern" period of suburbanization in the area. The SCE Huntington Beach power plant itself was the catalyst for the electrical grid, and, being built some six years earlier than the transmission towers, may represent a significant industrial feature when compared or contrasted with the region's electrical power structure in the post-Modern period of growth in Orange County.



EarthTouch, Inc.
3135 North Fairfield Road
Layton, Utah 84041
Tel: 801.771.2800
Fax: 801.771.2838

Topographic Map
(Site Location)
SCE Tower
(Ellis-Huntington Beach No. 2)
20462 Ravenwood Lane
Huntington Beach, Orange Co., CA
T6S R10W Section 8

Figure: TOPO/APE Map

Project: MLAX04188A-MPCS / SCE
Monroe Pacific Nursery

Source: USGS 7.5-minute quadrangle
Newport Beach, CA

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

Primary #
HRI #
Trinomial
NRHP Status Code 6Y
Other Listings
Review Code Reviewer Date

***Page** 1 of 6 ***Resource Name or #:** (Assigned by recorder) Royal Street Commun. LLC SCE Lebard Park LA2812A

***P1. Other Identifier:** SCE Tower M2 T5 Ellis/HB No. 2

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

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

***b. USGS 7.5' Quad** ~~Huntington Beach~~ ***Date:** 1975 **T ; R ; ¼ of ¼ of Sec; B.M.:** SB

c. Address: South of Ravenswood City: Huntington Beach Zip: 92646

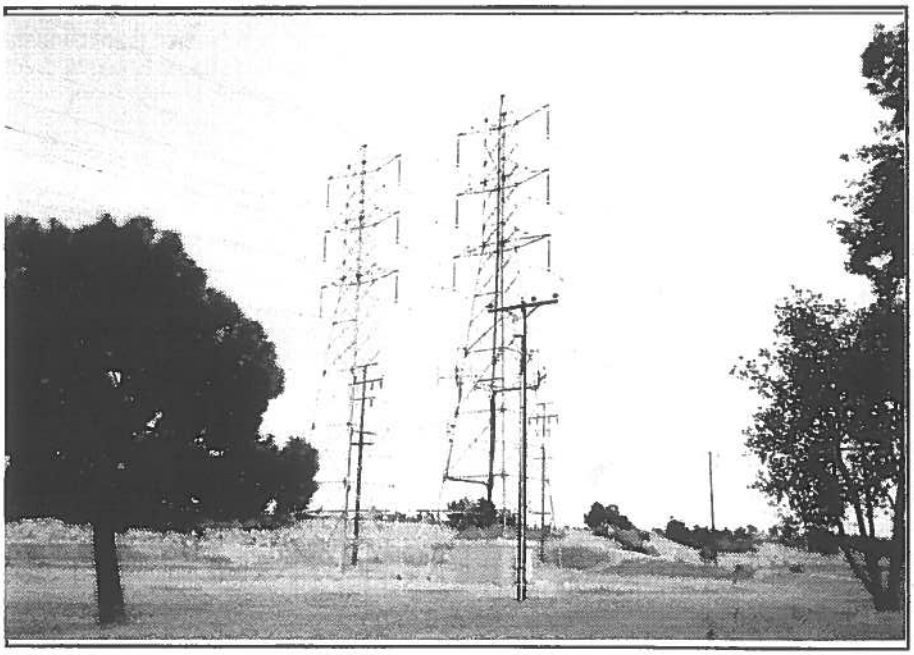
d. UTM: (Give more than one for large or linear resources) Zone; **Me/** **mN**

e. Other Locational Data (e.g., parcel #, directions to resource, elevation, etc., as appropriate):
Assessor's Parcel No.: 155-201-02

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

The resource consists of a steel lattice type transmission tower, 122' high. The base of the tower section measures 30' on each side. The footings are rectangular shaped concrete bases. The transmission tower was constructed with bolted steel L-shaped profiles. The tower was installed as part of the Southern California Edison Company as part of their expansion of electrical service in the Huntington Beach area. The center of the tower base contains a square, concrete block building. The building has a hipped roof with Spanish tile. A single metal door provides access to the structure. The tower and building are in good condition and has retained their integrity.

***P3b. Resource Attributes:** (List attributes and codes) HP- 11: Engineering Structure



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

P5b. Description of Photo: (View, date, accession#) Looking southeast, 03/20/07

***P6. Date Constructed/Age and Sources:** ☒ Historic ☐ Prehistoric ☐Both Ca.1957 SCE Records

***P7. Owner and Address:**
Southern California Edison
2244 Walnut Grove
Rosemead, CA 91776

***P8. Recorded by** (Name, affiliation, and address): K. Crawford, P.O. Box 3693, La Mesa, CA 91941

***P9. Date Recorded:** 03/20/07

***P10. Type of Survey:** (Describe) Section 106 Compliance Project Review

***P11. Report Citation** (Cite survey report and other sources, or enter "none".) None

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

State of California — The Resources Agency Primary # _____
DEPARTMENT OF PARKS AND RECREATION HRI# _____
BUILDING, STRUCTURE, AND OBJECT RECORD ***NRHP Status Code** 6Y
***Page** 2 **of** 6 ***Resource Name or #** (Assigned by recorder) Royal Street Comm.LLC SCE Lebard Park LA2812A

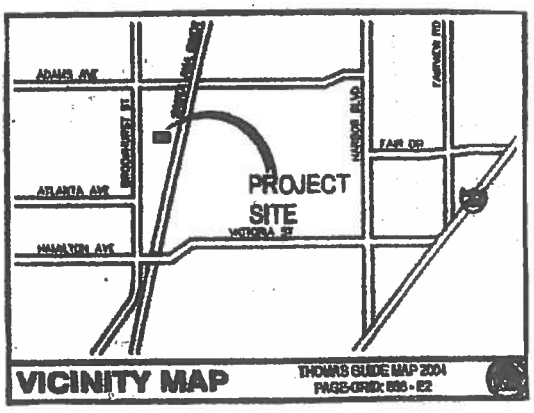
B1. Historic Name: SCE M2T5 Ellis/HB No. 2 Transmission Tower
B2. Common Name: SCE M2T5 Ellis/HB No. 2 Transmission Tower
B3. Original Use: Lattice Tower to transmit electricity B4. Present Use: Lattice Tower
***B5. Architectural Style:** Engineering structure
***B6. Construction History:** (Construction date, alternations, and date of alterations) The tower was constructed in 1957.
***B7. Moved?** ☒No ☐Yes ☐Unknown Date: _____ Original Location: _____
***B8. Related Features:** None
B9a. Architect: Unknown/Southern California Edison b. Builder: Unknown/Southern California Edison
***B10. Significance:** Theme: Electrical development Area: Southern California/Huntington Beach
Period of Significance 1957- Present Property Type Engineering Applicable Criteria N/A
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

The transmission tower was constructed in 1957 as part of the overall general expansion of Southern California Edison in the 20th century. The company provides electrical services to the population in the Huntington Beach area from the early twentieth century until the present time. SCE was formed by the consolidation of several small, independent local electrical companies in 1886 to bring power to Southern California. As the Los Angeles and San Bernardino basins expanded and developed, the Los Angeles Edison Company was formed and was the first company in the southwest to install Edison-type DC underground electrical systems. To obtain more generating power, the LAE purchased the Southern California Power company in 1898. To expand their potential service to more sections of the Los Angeles area, the company purchased more small companies in Pasadena, Redlands, Santa Ana and other areas. In 1901, John Barnes Miller assumed the presidency of LAE and began an aggressive program of expansion and marketing with a "Good Service, Square Dealing and Courteous Treatment" motto. Miller believed the industry would overcome its high risk reputation if all the small independent companies were incorporated into the larger companies to create a stable regional system. The company expanded rapidly by modernizing old plants, building new steam and hydroelectric plants and acquiring new systems such as the Santa Barbara Gas & Electric Company. In 1914, LAE built the Long Beach power plant and a new network of transmission lines and power poles that extend across Southern California. As appliances are created during the World War I years and into the 1920s, more power is needed to power the new radios, vacuum cleaners, washing machines and other new appliances in Southern California homes. In 1917, Edison purchased rival Pacific Light & Power Corporation, doubling its assets and services and making it the fifth largest company in the nation. The company serves over 100 cities with a population of over 1.25 million people. The company continued to expand aggressively as the Southern California area underwent massive growth in the post-World War II era and up to the present time. The transmission tower continues to operate as part of the power system stretching across the Orange County area.

B11. Additional Resource Attributes: (List attributes and codes) None
***B12. References:** County of Orange Assessor's Office; Southern California Edison files; (no original plans, drawings or paperwork were available for review); http://www.sce.com/AboutSCE/History/Historical Timeline 1879-1978.htm.
B13. Remarks:
***B14. Evaluators:** Kathleen A. Crawford
***Date of Evaluation:** 03/20/07

(This space reserved for official comments.)

(Sketch Map with north arrow required.)



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

Primary # _____
HRI # _____
Trinomial _____

*Resource Name or # (Assigned by recorder Royal Street Comm.LLC SCE Lebard Park LA2812A
*Recorded by K.A. Crawford/Crawford Historic Services
Date 03/20/06 ☒ Continuation ☐ Update

(continued from page 2)

Integrity Statement

In regard to the seven aspects of integrity of location, design, setting, materials, workmanship, feel and association, the ca. 1957 transmission tower on this property has retained its original location. It has not been moved. The tower's setting, feel and association have remained essentially intact. In addition, its design, materials, and workmanship have remained intact. No alterations were noted to the transmission tower. The integrity level of the property is good and the condition of the tower is good.

National Register of Historic Places Eligibility Evaluation

The property was assessed under National Register Criterion A for its potential significance as part of a historic trend that may have made a significant contribution to the broad patterns of our history. The tower was constructed as part of the overall expansion of electrical service by the Southern California Edison Company in the Southern California/Huntington Beach area during the twentieth century. There is no significant historic trend or event that is associated with this property. **Therefore, the property does not appear to qualify for the National Register of Historic Places (NHRP) under Criterion A.**

The property was considered under Criterion B for its association with the lives of persons significant in our past. There is no evidence to suggest that any of the persons associated with the construction or development of the transmission tower were considered important in the history of this property. None of the persons associated with this tower appear to have made any significant contributions to the development of the area and do not appear to be historically significant in any way. **Therefore, the property does not appear to qualify for the National Register of Historic Places (NHRP) under Criterion B.**

The property was evaluated for Criterion C for embodying the distinctive characteristics of a type, period, or method of construction, or representing the work of a master, or possessing high artistic values, or representing a significant and distinguishable entity who components lack individual distinction. The transmission tower was constructed as part of the overall development of electrical power in Southern California in the 1940s in the post-World War II period. No changes to the tower were noted and according to SCE records, the tower is a standard transmission tower constructed by the thousands across Southern California. The tower does not represent a significant and distinguishable entity whose components may lack individual distinction. No architect or builder was identified in association with this tower; it was constructed from standard plans created by the SCE and constructed by their in-house work crews. **Therefore, the property does not appear to qualify for the National Register of Historic Places (NHRP) under Criterion C.**

The property was considered for Criterion D for the potential to yield, or may be likely to yield, information important to prehistory or history. In order for buildings, structures and objects to be eligible under this criterion, they would need to "be, or must have been, the principal source of information." This is not the case with this property. **Therefore, the property does not appear to qualify for the National Register of Historic Places (NHRP) under Criterion D.**

In summary, the property does not appear to qualify for the NHRP under these criteria. Therefore, the transmission tower is not a historic resource for the purposes of NHPA.

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

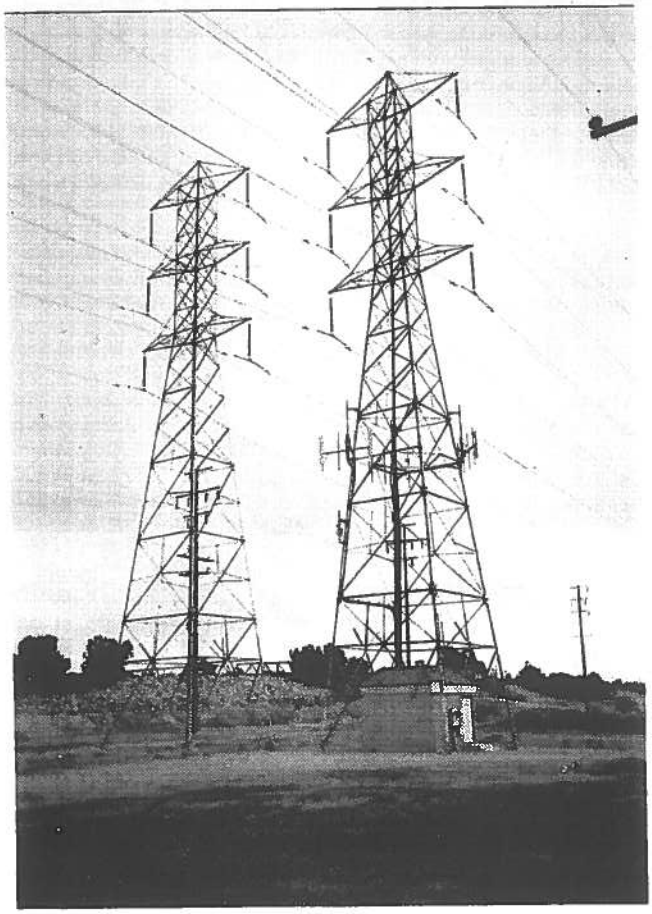
CONTINUATION SHEET

Primary # _____
HRI # _____
Trinomial _____

*Resource Name or # (Assigned by recorder) Royal Street Comm. LLC SCE Lebard Park LA2812A

*Recorded by K.A. Crawford/Crawford Historic Services Date 03/20/07 ☒ Continuation ☐ Update

SCE Lebard Park Tower M2 T5 Ellis/HB No. 2
View Southeast/North and West Facades
March 20, 2007



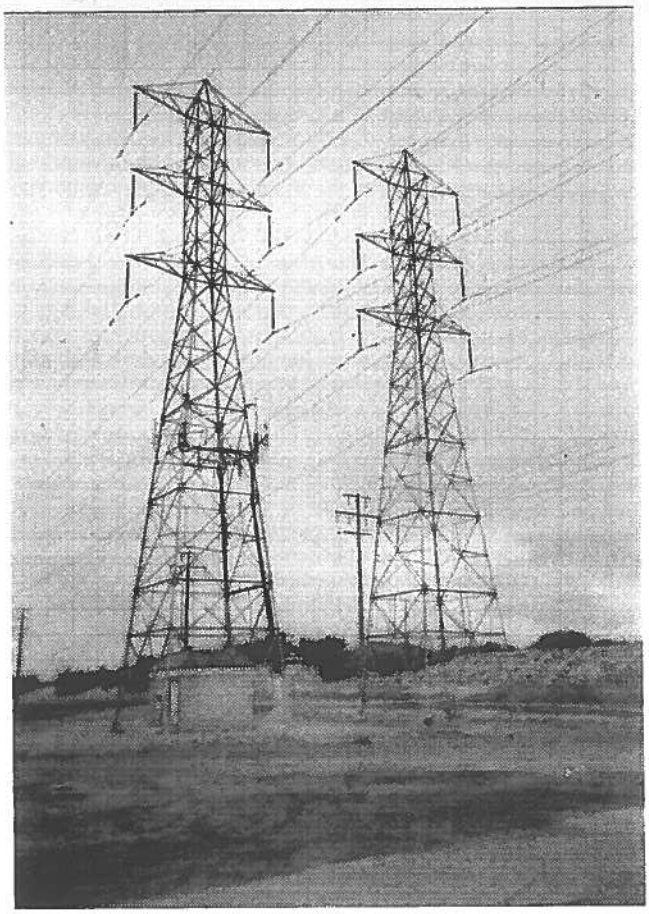
State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary # _____
HRI # _____
Trinomial _____

Page 4 of 6 *Resource Name or # (Assigned by recorder) Royal Street Comm. LLC SCE Lebard Park LA2812A

*Recorded by K.A. Crawford/Crawford Historic Services Date 03/20/07 ☒ Continuation ☐ Update

SCE Lebard Park Tower M2 T5 Ellis/HB No. 2
View Northeast/South and West Facades
March 20, 2007



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

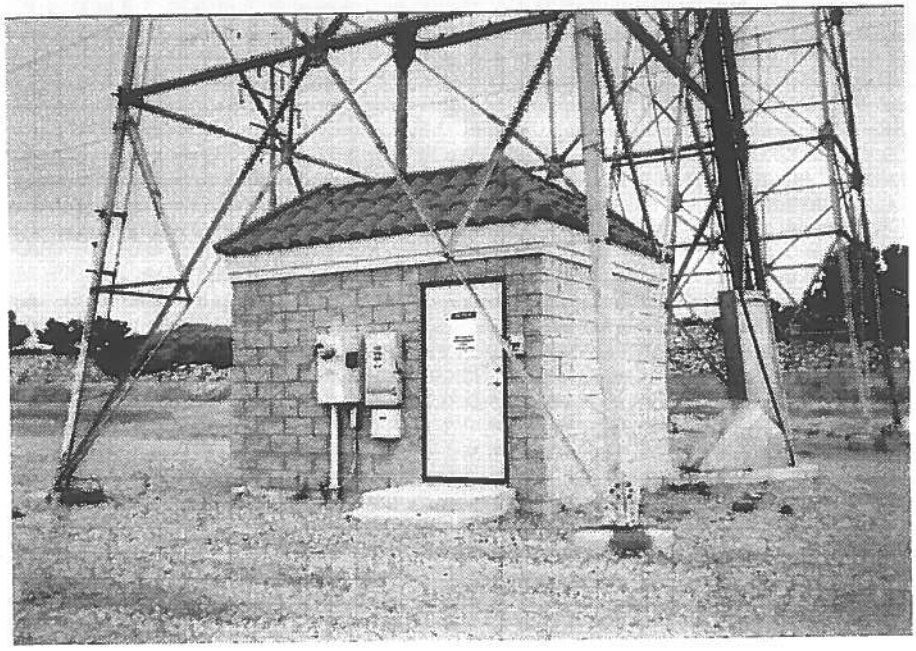
CONTINUATION SHEET

Primary # _____
HRI # _____
Trinomial _____

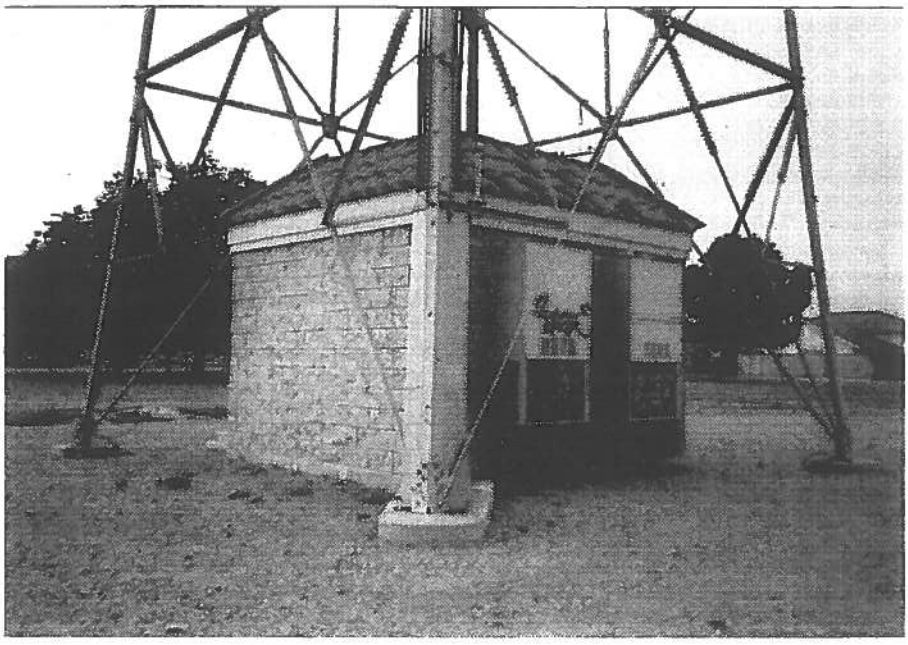
*Resource Name or # (Assigned by recorder) Royal Street Comm. LLC SCE Lebard Park LA2812A

*Recorded by K.A. Crawford/Crawford Historic Services Date 03/20/07 ☒ Continuation ☐ Update

SCE Lebard Park Tower M2 T5 Ellis/HB No. 2
View East/South and West Facades
March 20, 2007



SCE Lebard Park Tower M2 T5 Ellis/HB No. 2
View Northwest/ South and East Facades
March 20, 2007



Appendix B
NAHC SLF Search Results

NATIVE AMERICAN HERITAGE COMMISSION
Cultural and Environmental Department
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691 Phone: (916) 373-3710
Email: nahc@nahc.ca.gov
Website: http://www.nahc.ca.gov

October 23, 2019

Ted Roberts
Dudek

VIA Email to: troberts@dudek.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, Talbert Regional Park Master Plan Project, Orange County

Dear Mr. Roberts:

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 NAHC was positive. Please contact the Juaneno Band of Mission Indians, the Juaneno Band of Mission Indians Acjachemen Nation, the Gabrieleno Band of Mission Indians – Kizh Nation, and the Gabrieleno/Tongva San Gabriel Band of Mission Indians on the attached list for more information.
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: steven.quinn@nahc.ca.gov.

Sincerely,

Steven Quinn
Associate Governmental Program Analyst

Attachment

Native American Heritage Commission
Tribal Consultation List
Orange County
10/23/2019

Agua Caliente Band of Cahuilla Indians
Jeff Grubbe, Chairperson
5401 Dinah Shore Drive
Palm Springs, CA, 92264
Phone: (760) 699 - 6800
Fax: (760) 699-6919
Cahuilla

Gabrieleno Band of Mission Indians - Kizh Nation
Andrew Salas, Chairperson
P.O. Box 393
Covina, CA, 91723
Phone: (626) 926 - 4131
admin@gabrielenoindians.org
Gabrieleno

Gabrieleno/Tongva San Gabriel Band of Mission Indians
Anthony Morales, Chairperson
P.O. Box 693
San Gabriel, CA, 91778
Phone: (626) 483 - 3564
Fax: (626) 286-1262
GTTribalcouncil@aol.com
Gabrieleno

Gabrielino /Tongva Nation
Sandonne Goad, Chairperson
106 1/2 Judge John Aiso St., #231
Los Angeles, CA, 90012
Phone: (951) 807 - 0479
sgoad@gabrielino-tongva.com
Gabrielino

Gabrielino Tongva Indians of California Tribal Council
Robert Dorame, Chairperson
P.O. Box 490
Bellflower, CA, 90707
Phone: (562) 761 - 6417
Fax: (562) 761-6417
gtongva@gmail.com
Gabrielino

Gabrielino-Tongva Tribe
Charles Alvarez,
23454 Vanowen Street
West Hills, CA, 91307
Phone: (310) 403 - 6048
roadkingcharles@aol.com
Gabrielino

Juaneno Band of Mission Indians
Sonia Johnston, Chairperson
P.O. Box 25628
Santa Ana, CA, 92799
sonia.johnston@sbcglobal.net
Juaneno

Juaneno Band of Mission Indians Acjachemen Nation - Belardes
Matias Belardes, Chairperson
32161 Avenida Los Amigos
San Juan Capisttrano, CA, 92675
Phone: (949) 293 - 8522
kaamalam@gmail.com
Juaneno

Juaneno Band of Mission Indians Acjachemen Nation - Romero
Teresa Romero, Chairperson
31411-A La Matanza Street
San Juan Capistrano, CA, 92675
Phone: (949) 488 - 3484
Fax: (949) 488-3294
tromero@juaneno.com
Juaneno

La Jolla Band of Luiseno Indians
Fred Nelson, Chairperson
22000 Highway 76
Pauma Valley, CA, 92061
Phone: (760) 742 - 3771
Luiseno

Pala Band of Mission Indians
Shasta Gaughen, Tribal Historic Preservation Officer
PMB 50, 35008 Pala Temecula Rd.
Pala, CA, 92059
Phone: (760) 891 - 3515
Fax: (760) 742-3189
sgaughen@palatribe.com
Cupeno
Luiseno

Pauma Band of Luiseno Indians
Temet Aguilar, Chairperson
P.O. Box 369
Pauma Valley, CA, 92061
Phone: (760) 742 - 1289
Fax: (760) 742-3422
bennaecalac@aol.com
Luiseno

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 Talbert Regional Park Master Plan Project, Orange County.

Pechanga Band of Luiseno Indians
Mark Macarro, Chairperson
P.O. Box 1477 Luiseno
Temecula, CA, 92593
Phone: (951) 770 - 6000
Fax: (951) 695-1778
epreston@pechanga-nsn.gov

Rincon Band of Luiseno Indians
Jim McPherson, Tribal Historic Preservation Officer
One Government Center Lane Luiseno
Valley Center, CA, 92082
Phone: (760) 749 - 1051
Fax: (760) 749-5144
vwhipple@rincontribe.org

Rincon Band of Luiseno Indians
Bo Mazzetti, Chairperson
One Government Center Lane Luiseno
Valley Center, CA, 92082
Phone: (760) 749 - 1051
Fax: (760) 749-5144
bomazzetti@aol.com

San Luis Rey Band of Mission Indians
San Luis Rey, Tribal Council
1889 Sunset Drive Luiseno
Vista, CA, 92081
Phone: (760) 724 - 8505
Fax: (760) 724-2172
cjmojado@slrmissionindians.org

Soboba Band of Luiseno Indians
Scott Cozart, Chairperson
P. O. Box 487 Cahuilla
San Jacinto, CA, 92583 Luiseno
Phone: (951) 654 - 2765
Fax: (951) 654-4198
jontiveros@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 Talbert Regional Park Master Plan Project, Orange County.

Roshanne Bakhtiary

From: Roshanne Bakhtiary
Sent: Thursday, October 9, 2025 9:17 AM
To: NAHC@NAHC
Subject: DUDEK PN 13230.70 NAHC SLF Search Request
Attachments: DUDEK_13230.70_NAHC_SLF_Request.pdf

Dear NAHC,

Please find attached to this email the NAHC Sacred Lands File search request with project location map for DUDEK PN 13230.70, located in the City of Costa Mesa, Orange County, California. Dudek is requesting an NAHC Sacred Lands File Search for any sacred sites, tribal cultural resources, and other places of Native American community value that may fall within a half-mile radius of the proposed project location.

Please let me know if you have any questions regarding this project. You can email the results to me at: rbakhtiary@dudek.com.

Thanks in advance,

Roshanne Bakhtiary
Archaeologist

DUDEK 45 Years of Impactful Projects

O: 949 373 8307 **C:** 760 557 0998
dudek.com

Sacred Lands File & Native American Contacts 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

Information Below is Required for a Sacred Lands File Search

Project: Talbert Regional Park Master Plan Update Project PN 13230.70

County: Orange

USGS Quadrangle Name: Newport Beach

Township: 6S **Range:** 10W **Section(s):** 4, 5, 7, 8, 9, 16, 17, 18, 19, 20, 21

Company/Firm/Agency: DUDEK

Street Address: 27271 Las Ramblas Suite 340

City: Mission Viejo, CA **Zip:** 92691

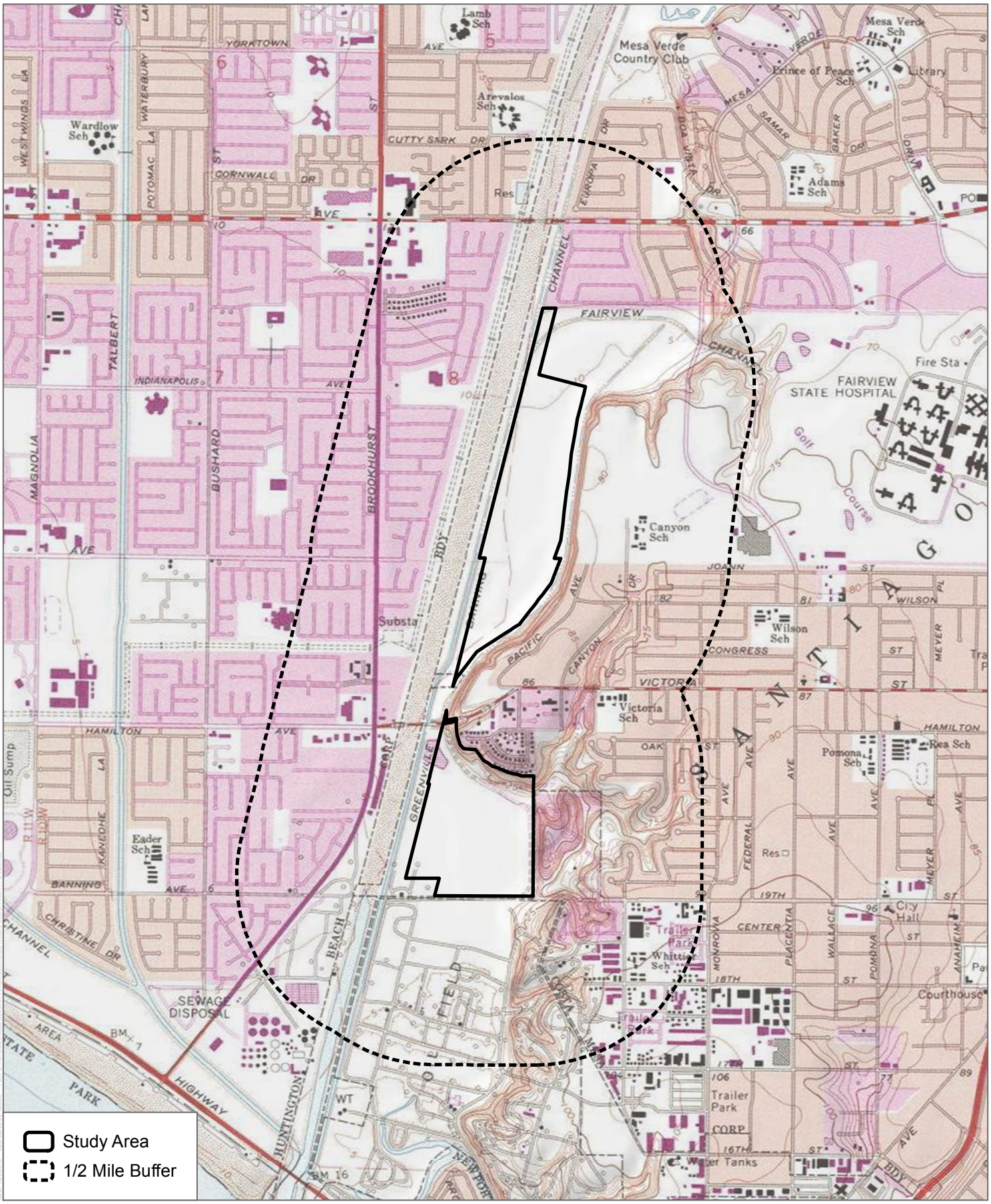
Phone: (760) 557-0998

Fax:

Email: rbakhtiary@dudek.com

Project Description:

Restoration of 160-acres of open space.



SOURCE: USGS 7.5-Minute Series Newport Beach Quadrangle
Township 6S; Range 10W; Sections 4, 5, 7, 8, 9, 16, 17, 18, 19, 20, 21

DUDEK

0 1,000 2,000 Feet
0 285 570 Meters
1:24,000

Records Search

Talbert Regional Park Master Plan

Roshanne Bakhtiary

From: Green, Andrew@NAHC <Andrew.Green@nahc.ca.gov>
Sent: Wednesday, October 15, 2025 3:41 PM
To: Roshanne Bakhtiary
Cc: Gabrieleno Administration; Gttribalcouncil; sonia.johnston@sbcglobal.net; kaamalam@gmail.com
Subject: Talbert Regional Park Master Plan Update Project
Attachments: SLF Yes Talbert Regional Park Master Plan Update Project 10.15.2025.pdf; Talbert Regional Park Master Plan Update Project 10.15.2025.xlsx

Follow Up Flag: Flag for follow up
Flag Status: Flagged

Good afternoon,

Attached is the response to the project referenced above. If you have any additional questions, please feel free to contact me directly.

Regards,

Andrew Green
Native American Heritage Commission
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
Andrew.Green@nahc.ca.gov
Direct Line: (916) 573-1072
Office: (916) 373-3710

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1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov

October 15, 2025

Roshanne Bakhtiary
DUDEK

Via Email to: rbakhtiary@dudek.com

Re: Talbert Regional Park Master Plan Update Project, Orange County

To Whom It May Concern:

As requested, a search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed based on information submitted for the above referenced project. The results were positive. Please contact the Gabrieleno Band of Mission Indians – Kizh Nation, the Gabrieleno/Tongva San Gabriel Band of Mission Indians, the Juaneno Band of Mission Indians, and the Juaneno Band of Mission Indians Acjachemen Nation - Belardes on the attached list for more information. Be aware that tribes do not always record their sacred sites in the SLF, nor are they required to do so. As such, an SLF search is not a substitute for consultation with all tribes that are traditionally and culturally affiliated with a project's geographic area.

Attached is a list of Native American tribes that are traditionally and culturally affiliated with the project's geographic area. Please contact all of the listed tribes as they may have information about sacred sites within the project area that is not listed with the NAHC.

If within two weeks of notification, a response has not been received, the Commission requests that you follow up with a telephone call or email to ensure that the project information was received.

If you receive notification of a change of address or phone number from a tribe, please inform the NAHC so that we can assure that our lists contain current information.

In addition to engaging in tribal consultation, you should consult the appropriate regional California Historical Research Information System (CHRIS) information center to determine whether it has information regarding the presence of recorded archaeological sites within the project area.

If you have any questions or need additional information, please contact me at Andrew.Green@nahc.ca.gov.

Sincerely,

Andrew Green

Andrew Green
Cultural Resources Analyst

Attachment

Native American Heritage Commission
Native American Contact List
Orange County
10/15/2025

Tribe Name	F/N	Contact Person	Contact Address	Phone	Email Address	Cultural Affiliation	Counties
Cahuilla Band of Indians	F	BobbyRay Esparza, Cultural Director	52701 CA Highway 371 Anza, CA, 92539	(951) 763-5549	besparza@cahuilla-nsn.gov	Cahuilla	Imperial, Los Angeles, Orange, Riverside, San Bernardino, San Diego
Cahuilla Band of Indians	F	Anthony Madrigal, Tribal Historic Preservation Officer	52701 CA Highway 371 Anza, CA, 92539	(951) 763-5549	anthonymad2002@gmail.com	Cahuilla	Imperial, Los Angeles, Orange, Riverside, San Bernardino, San Diego
Cahuilla Band of Indians	F	Erica Schenk, Chairperson	52701 CA Highway 371 Anza, CA, 92539	(951) 590-0942	chair@cahuilla-nsn.gov	Cahuilla	Imperial, Los Angeles, Orange, Riverside, San Bernardino, San Diego
Gabrieleno Band of Mission Indians - Kizh Nation	N	Christina Swindall Martinez, Secretary	P.O. Box 393 Covina, CA, 91723	(844) 390-0787	admin@gabrielenoindians.org	Gabrieleno	Los Angeles, Orange, Riverside, San Bernardino, Santa Barbara, Ventura
Gabrieleno Band of Mission Indians - Kizh Nation	N	Andrew Salas, Chairperson	P.O. Box 393 Covina, CA, 91723	(844) 390-0787	admin@gabrielenoindians.org	Gabrieleno	Los Angeles, Orange, Riverside, San Bernardino, Santa Barbara, Ventura
Gabrieleno/Tongva San Gabriel Band of Mission Indians	N	Anthony Morales, Chairperson	P.O. Box 693 San Gabriel, CA, 91778	(626) 483-3564	GTTribalcouncil@aol.com	Gabrieleno	Los Angeles, Orange, Riverside, San Bernardino, Santa Barbara, Ventura
Gabrielino Tongva Indians of California Tribal Council	N	Christina Conley, Cultural Resource Administrator	P.O. Box 941078 Simi Valley, CA, 93094	(626) 407-8761	christina.marsden@alumni.usc.edu	Gabrielino	Los Angeles, Orange, Riverside, San Bernardino, Santa Barbara, Ventura
Gabrielino Tongva Indians of California Tribal Council	N	Robert Dorame, Chairperson	P.O. Box 490 Bellflower, CA, 90707	(562) 761-6417	gtongva@gmail.com	Gabrielino	Los Angeles, Orange, Riverside, San Bernardino, Santa Barbara, Ventura

Tribe Name	F/N	Contact Person	Contact Address	Phone	Email Address	Cultural Affiliation	Counties
Gabrielino/Tongva Nation	N	Sandonne Goad, Chairperson	106 1/2 Judge John Aiso St., #231 Los Angeles, CA, 90012	(951) 807-0479	sgoad@gabrielino-tongva.com	Gabrielino	Los Angeles, Orange, Riverside, San Bernardino, Santa Barbara, Ventura
Gabrielino-Tongva Tribe	N	Sam Dunlap, Cultural Resource Director	P.O. Box 3919 Seal Beach, CA, 90740	(909) 262-9351	tongvatcr@gmail.com	Gabrielino	Los Angeles, Orange, Riverside, San Bernardino, Santa Barbara, Ventura
Gabrielino-Tongva Tribe	N	Charles Alvarez, Chairperson	23454 Vanowen Street West Hills, CA, 91307	(310) 403-6048	Chavez1956metro@gmail.com	Gabrielino	Los Angeles, Orange, Riverside, San Bernardino, Santa Barbara, Ventura
Juaneno Band of Mission Indians	N	Sonia Johnston, Chairperson	P.O. Box 25628 Santa Ana, CA, 92799		sonia.johnston@sbcglobal.net	Juaneno	Orange, Riverside, San Diego
Juaneno Band of Mission Indians Acjachemen Nation - Belardes	N	Joyce Perry, Cultural Resource Director	4955 Paseo Segovia Irvine, CA, 92603	(949) 293-8522	kaamalam@gmail.com	Juaneno	Los Angeles, Orange, Riverside, San Bernardino, San Diego
Juaneno Band of Mission Indians Acjachemen Nation 84A	N	Shannon Wingfield, Secretary	31411-A La Matanza Street San Juan Capistrano, CA, 92675	(949) 488-3484		Juaneno	Los Angeles, Orange, Riverside, San Bernardino, San Diego
Juaneno Band of Mission Indians Acjachemen Nation 84A	N	Heidi Lucero, THPO/MLD	31411-A La Matanza Street San Juan Capistrano, CA, 92675	(562) 879-2884	thpo@jbmian.com	Juaneno	Los Angeles, Orange, Riverside, San Bernardino, San Diego
Juaneno Band of Mission Indians Acjachemen Nation 84A	N	Nathan Banda, Chairman	31411-A La Matanza Street San Juan Capistrano, CA, 92675	(949) 426-8804	nbanda@jbmian.com	Juaneno	Los Angeles, Orange, Riverside, San Bernardino, San Diego

Tribe Name	F/N	Contact Person	Contact Address	Phone	Email Address	Cultural Affiliation	Counties
Pala Band of Mission Indians	F	Christopher Nejo, Legal Analyst/Researcher	PMB 50, 35008 Pala Temecula Road Pala, CA, 92059	(760) 891-3564	cnejo@palatribe.com	Cupeno Luiseno	Orange, Riverside, San Bernardino, San Diego
Pala Band of Mission Indians	F	Alexis Wallick, Assistant THPO	PMB 50, 35008 Pala Temecula Road Pala, CA, 92059	(760) 891-3537	awallick@palatribe.com	Cupeno Luiseno	Orange, Riverside, San Bernardino, San Diego
Pala Band of Mission Indians	F	Shasta Gaughen, Tribal Historic Preservation Officer	PMB 50, 35008 Pala Temecula Road Pala, CA, 92059	(760) 891-3515	sgaughen@palatribe.com	Cupeno Luiseno	Orange, Riverside, San Bernardino, San Diego
Santa Rosa Band of Cahuilla Indians	F	Vanessa Minott, Tribal Administrator	P.O. Box 391820 Anza, CA, 92539	(951) 659-2700	vminott@santarosa-nsn.gov	Cahuilla	Imperial, Los Angeles, Orange, Riverside, San Bernardino, San Diego
Santa Rosa Band of Cahuilla Indians	F	Mercedes Estrada, Cultural Director	P.O. Box 391820 Anza, CA, 92539	(951) 659-2700	mestrada@santarosa-nsn.gov	Cahuilla	Imperial, Los Imperial, Los Angeles, Orange, Riverside, San Bernardino, San Diego
Santa Rosa Band of Cahuilla Indians	F	Steven Estrada, Tribal Chairman	P.O. Box 391820 Anza, CA, 92539	(951) 659-2700	sestrada@santarosa-nsn.gov	Cahuilla	Imperial, Los Angeles, Orange, Riverside, San Bernardino, San Diego
Soboba Band of Luiseno Indians	F	Joseph Ontiveros, Tribal Historic Preservation Officer	P.O. Box 487 San Jacinto, CA, 92581	(951) 663-5279	jontiveros@soboba-nsn.gov	Cahuilla Luiseno	Imperial, Los Angeles, Orange, Riverside, San Bernardino, San Diego
Soboba Band of Luiseno Indians	F	Jessica Valdez, Cultural Resource Specialist	P.O. Box 487 San Jacinto, CA, 92581	(951) 663-6261	jvaldez@soboba-nsn.gov	Cahuilla Luiseno	Imperial, Los Angeles, Orange, Riverside, San Bernardino, San Diego

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 contacting local Native Americans with regard to cultural resources assessment for the proposed Talbert Regional Park Master Plan Update Project, Orange County.